

NEW ZEALAND HEALTH TECHNOLOGY ASSESSMENT (NZHTA)  
THE CLEARING HOUSE FOR HEALTH OUTCOMES AND  
HEALTH TECHNOLOGY ASSESSMENT

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# Evaluation of the Pegasus Health Global Budget Contract

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## FOREWORD FROM PEGASUS HEALTH

This evaluation report of the beginning of the Global Budget is the first of its size and scope in the primary health sector. It was an important undertaking, and has proved to be a unique and valuable experience for Pegasus Health, the funder and the evaluation team. This study probably offers the most thorough research on a health contract over the last 20 years, and we commend the evaluation team for this report.

Agreeing to the necessity of this evaluation of the Global Budget was a significant step for both the funder and Pegasus Health. This is the evaluation of an innovative solution – an alternative health funding model – which could have widespread implications for future application across the health sector. It has been an opportunity for all parties involved to learn more about the benefits and potential limitations of a creative risk-holding funding model.

The ways in which organisations are funded by the government are critical to the way they deliver services. The Global Budget is a unique funding arrangement as it allows Pegasus Health and the funder to tackle directly some complex issues around risk-holding funding. In this sense, the Global Budget framework was uncharted territory for the funder and Pegasus Health. It is fair to say that both parties went into this arrangement with the belief that together we could make a difference in the use of limited government funding to primary healthcare.

In our view, the health sector must maintain a focused approach to improving services to patients. Pegasus Health is a strong believer in the need for thorough and robust evaluation, as a means for identifying the most beneficial and cost effective ways to use our health funds in delivering effective healthcare to our community. Pegasus Health willingly participated in this evaluation for that reason.

We believe that the full benefits of the Global Budget funding model will only become apparent in years to come.

With the flexibility that the Global Budget has brought to Pegasus Health, we have been able to invest in creative solutions such as the acute demand, Community Care services, clinical education and population health programmes. These are challenging areas some of which we may have never tackled under historical funding arrangements.

These services have made significant changes to the way in which Pegasus Health General Practitioners and Practice Nurses deliver care to patients and the community. Pegasus Health has assisted in developing some of these services in other parts of New Zealand. This is a testament of success, in that the Global Budget framework has enabled the development of innovative solutions which have been delivered elsewhere.

The evaluation points to positive direction and outcomes in some key areas in the first year of the three-year Global Budget. This is a credit to our staff and members, particularly as it relates to such a short period of time in terms of the health sector development.

We are also open about those areas in which we need to improve. Healthcare is a complex array of competing priorities. The Global Budget allowed us to focus on identifying the services that could make a difference in the delivery of better healthcare. It allowed us to implement improved strategies with the people who make the key decisions, the Doctors and Nurses.

Finally, it allowed us to create systems and processes that supported these strategies. It is in this area that we have undergone the greatest learning and where we still have some way to go.

We believe that the Global Budget has been an innovative and effective contract for the people of Canterbury. We also believe that this preliminary evaluation gives a snapshot of the Global Budget model during its early stages. We encourage ongoing evaluation internal and external to Pegasus Health to create an evaluation culture that will inform and shape the continuing development of Pegasus Health and the sector at large.

A handwritten signature in black ink, appearing to read 'Paul McCormack', with a horizontal line underneath.

Dr Paul McCormack  
Chairman  
Pegasus Health

## EXECUTIVE SUMMARY

### Background

In Christchurch, the Pegasus Medical Group was established in 1993, and an agreement was signed between Southern Regional Health Authority (SRHA) and Pegasus that year, outlining certain health and disability services to be provided by Pegasus members. Under a head agreement individual variations were entered into, for example the first variation was a pilot to hold a notional budget for laboratory tests which was subsequently expanded. The next variation was notional budget holding for pharmaceuticals. Success in these areas freed up funds to invest in separate services. Over six years there were a number of smaller variations added to the head agreement. In 1998 one significant variation was to the pharmaceutical notional budget holding arrangement – over a defined level, savings went into a joint integration pool. Under this head contract Pegasus did not obtain funding for administration, but these costs were covered from savings in the Pharmaceutical and Laboratory budgets. The Global Budget contract cancelled these prior agreements and for the first time brought everything together including GMS, in a risk holding arrangement.

In 1999, a new contractual arrangement was developed between the Health Funding Authority and Pegasus Medical Group. The new contract replaced the previous multi-stream funded approach with a single Global Budget contract. The Global Budget contract funds all services within a lump sum – i.e., covering general practice services (including GMS, Practice Nurse subsidy, maternity, immunisation, rural practice bonus), pharmaceuticals, laboratories and administration.

The Global Budget contract commenced on 1 July 1999, although it was not signed until November 1999 and was to run for a 27-month term with an opportunity for a 9 month extension based on a review of services and preliminary results of this evaluation. The contract was extended in October 2001 to run for the full 36 months. Activity related to the Global Budget started after it was signed in November 1999.

The contract included within it, provision for an evaluation of the Global Budget. This recognised the importance of the change from a multi-stream approach to a single budget, and signaled a desire on the part of the HFA to be sure that the benefits of a Global Budget were captured as intended.

### Evaluation approach

The evaluation provides an opportunity to learn lessons from the Pegasus Health experience as other District Health Boards contemplate innovative approaches to the purchasing and delivery of primary health care services in New Zealand.

Evaluation may be seen as “the systematic application of social research procedures in assessing the conceptualisation and design, implementation, and utility of social intervention programmes” (Rossi and Freeman, 1993). This evaluation has adopted a stakeholder-based approach with its commitment to listen to their inputs for the evaluation.

It is important to note that this evaluation was not an evaluation of different funding models, for example, a capitated model versus fee-for-service; it was not an audit of the Global Budget contract and it was not a comparison of the Pegasus Health IPA with another IPA. A before and after research design was used to evaluate the effectiveness of the Global Budget as a model of funding primary health care services.

The 'before period' was the calendar year 1999 and the after period' was the calendar year 2000. The calendar year 2000 was the first year of operation under the Global Budget contract.

## Evaluation aims and objectives

The Global Budget contract evaluation Request for Proposal (RFP) listed the following objectives of the evaluation:

- A To assess initiatives undertaken for improved access and to determine their impact to date on access by the PMG patient population to services provided by PMG.
- B To assess initiatives undertaken by PMG for improving quality and to determine the impact to date that these initiatives have had on the quality of service.
- C To assess initiatives that targets the needs of Maori and Pacific Island People.
- D To determine the impact on the ability of PMG to be responsive to the needs of the community including meeting the targets detailed in the agreed Service Plan.
- E To determine the impact on the ability of PMG to measure, monitor and improve the health status of their population.
- F To assess the potential for the funding model to be expanded to include other health services.
- G To assess the cost benefit of the "Global Budget" model and the degree to which the "Global Budget" enables innovation in the administration, delivery of services, the ability to target services, local responsiveness, and fit with national HFA/Ministry of Health policy and strategy.
- H To determine the impact on equity of funding for health services of the PMG population taking into account any health needs analysis.

These objectives were translated into a number of evaluation aims and in turn these evaluation aims were translated into the evaluation questions which were embedded into a logic model evaluation framework. The aims were assessed within the following topic areas: access, quality, Māori health, Pacific Peoples' health, community needs assessment, health status, funding model, cost-benefit and equity of funding.

## Evaluation methods

After considering various research designs to evaluate the effectiveness of the Global Budget as a model of funding primary health care services, it was decided that a before and after research design was methodologically rigorous given the constraints of time, access to health information (both regional and national) and resources (evaluation budget). This design is used when stakeholders want to know whether desired changes occurred as a consequence of a particular intervention.

For the purposes of this evaluation project, the 'before time period' is 1 January 1999 to 31 December 1999, and the 'after time period' is 1 January 2000 to 31 December 2000.

The evaluation includes both summative and process components. The summative evaluation focuses on the overall performance of the Global Budget as a funding model for primary health care services. Thus, the primary emphasis of this evaluation approach was to assess as far as possible, within the before and after research design, the implementation and impact of the Global Budget funding model for primary health care services.

The process evaluation focused on the process of delivering the initiatives associated with the Global Budget contract. Process evaluation was concerned with documenting and analysing the way the programme was implemented, including the ongoing interactive processes between the stakeholders involved in the implementation of the Global Budget funding model. Also, it examined the characteristics of the population being served by Pegasus Health and the degree to which the Global Budget contract operates as expected.

Essential to the comprehensive evaluation of the Pegasus Health Global Budget, is the ability to ascertain types of patients most affected by the initiative. Two key patient descriptors are **location** and **socio-economic status**. Most Pegasus Health patients have NHI numbers, and it is possible to link address information to each NHI number, and then assign each address to a census MeSH block. Each MeSH block in turn, can be linked to the NZDep96 index of deprivation. This means that for any patient information available with a NHI number, **location** and **socio-economic** indicators are also available.

Given the complexity of the Global Budget funding model, a mixture of quantitative and qualitative analyses were used. The main qualitative methods were focus groups and in-depth interviews using semi-structured formats. The main quantitative methods included economic and service utilisation analyses. Data on quality of life and patient satisfaction measurement through surveys and secondary data, were examined where present. Access to information on databases at Pegasus Health, HFA, and Canterbury Health Limited (CHL) were negotiated during the planning phase of the project.

## Evaluation results

Key themes from the evaluation include:

- context for the implementation of the Global Budget funding model
- Global Budget funding model
- governance
- stakeholder impact and relationships
- innovation and flexibility
- education and professional development
- culture change and sustainability
- funder and provider relationships.

Context for the implementation of the Global Budget funding model

- The development of the Global Budget for Pegasus Health occurred in a particular context. The HFA was desirous of finding innovative ways in which to better manage financial risk, and to delegate responsibility for decision making to primary care providers, who are closer to their communities than a national Health Funding Authority.

- The Global Budget enabled Pegasus Health to consider the best ways in which it could allocate resources, to become more population-focused and to be more innovative without continually needing to refer back to the purchaser to approve funding.
- The history and size of the Pegasus Health IPA may have produced unique approaches to the delivery of primary health services for its defined population.
- Pegasus Health has been a leader in development of PHC organisational change, and the implementation of the Global Budget drew on the experience of Pegasus Health as an IPA since the early 1990s.
- The evaluation is taking place during the first year of the functional Global Budget contract operation, and too little time has elapsed for the full impact of the expected results from the Global Budget contract to be realised.
- Pegasus has been developing as an IPA for some years now, and there is a need for this evaluation, to separate out the changes related to the development of Pegasus as an IPA from the impact of the Global Budget. Maintaining and building on the positive features of Pegasus Health pre-Global Budget was a desired outcome of the Global Budget contract, not just achieving new gains.
- The Global Budget Service Plan was intended as a dynamic document to operationalise and specify accountability for the service initiatives under the Global Budget. But the negotiation of the content of the Service Plan was not progressed until towards the end of the contracting process, and was then hastened by the desire to finalise the Global Budget arrangements. Consequently, the Service Plan appears to be a less robust document than the Global Budget financial contract, as acknowledged by the HFA.

#### Global Budget funding model

The quantitative data suggest there has been no fundamental change in the *delivery* of primary care services to Pegasus Health patients, although some changes in the scope and range of services occurred during the evaluation period. We believe that any major changes would have been surprising, principally because the way individual member GPs are paid has not changed: fee-for-service has continued, therefore the financial incentives for provision of primary health care at the individual GP level are the same after the introduction of the Global Budget. The funding model used for pharmaceuticals and laboratory services appear to be appropriate. Targeted initiatives (smoking cessation and sexual health services) are in a growth phase, with the targeting mechanisms working efficiently, although we note that both these initiatives were in place prior to the Global Budget. There are ongoing improvements to Pegasus Health information systems, but it is impossible to say that these are a result of the Global Budget although there is evidence they will help Pegasus Health to better monitor group activities.

It is important to note that there are many group activities that were in place before the Global Budget, and that Pegasus Health has been maturing as an organisation since 1993. This has resulted in a lack of distinction pre and post-Global Budget.

With respect to secondary care, evidence regarding cost effectiveness is not clear. At worst, it could be said that Pegasus Health patients are largely responsible for the growth in acute hospital admissions. However, the growth rate in acute admissions is declining, potentially indicating some success in the acute care initiatives. The data relating to ED utilisation provide no clear results during the evaluation period. Individual GPs have been given direct budget control to manage patients requiring care out of their home, and there are indications that GPs use this budget with a good

degree of responsibility. There is some evidence that empowering GPs with some control over out-of-practice care can provide better patient care. We conclude that there has been insufficient time for the secondary care initiatives to show a positive influence on patient outcomes, if utilisation is taken as the outcome of the initiatives. We note that utilisation may be a poor proxy of outcome, but we had no other objective indicator available for analysis. We note too that CHL had its own initiatives running concurrently, and it was not possible to adequately separate the effect of CHL and Pegasus Health initiatives.

The GP survey results provided some further insight into how the Global Budget is directly affecting GPs. We noted in particular that after the introduction of the Global Budget: 84% believe that information for patient care decisions has improved; 94% have more links with colleagues in other practices; 83% have increased awareness of quality issues; 61% have increased skills in clinical areas. Perhaps most significantly, 74% believe that patient care has improved. However, post-Global Budget 94% believe there has been increased paperwork and bureaucracy, although we note that many GPs in New Zealand are feeling under increased pressure from paperwork so this may be a generic issue for all GPs. With regard to payment systems, 44% of GP respondents indicated they did not agree that they were less concerned with the move away from fee for service, while 26% agreed; 30% neither agreed nor disagreed. This may lead to the tentative conclusion that GPs feel more comfortable with the fee-for-service payment system Pegasus Health uses.

We conclude that there is no evidence that the Global Budget is any less cost effective in delivering primary health care to Pegasus Health patients than the previous funding arrangements, and there may be increased benefits to patients in a very broad sense that are not quantifiable yet due to the short evaluation period.

The evaluation team believes there is no quantitative evidence to support discontinuation of the Global Budget for Pegasus Health. Document reviews and personal interviews have provided valuable background information that has also led us to the view that there is no fundamental qualitative evidence to support discontinuation of the Global Budget either. Formalising the diverse and numerous sources of data in the framework of an attributed dollars and cents cost effectiveness model is impossible. This is because the development of Pegasus Health as an organisation was already underway prior to the Global Budget, and equally importantly because the Pegasus Health view of the Global Budget does not always readily support direct attribution of costs to specific work. While this makes evaluation difficult, we agree with Pegasus Health that in many cases it is impossible and inappropriate to separate costs at the micro level. However, it may be appropriate in the future to better consider providing defined evaluation indicators and outcomes in the planning stage of initiatives.

The evaluation team believe the Global Budget is an appropriate funding model for Pegasus Health and the unique situation that Pegasus Health has in primary health delivery in Christchurch. The geographical aspects relating to Pegasus Health should not be understated, as they are a key aspect of how Pegasus Health operates. The management and administration team is in close proximity to all member GPs and secondary providers. There is a high GP membership rate within Christchurch. There would necessarily be some concern about the applicability of the Global Budget model to other IPAs if they were to have a very wide geographical dispersion of doctors and secondary providers. To be able to co-ordinate delivery and initiatives would be very much harder for such organisations, and require micro level initiatives to avoid being just another administrative agency for payments' processing. That said, there might well be other IPAs around the country with broadly similar circumstances to Pegasus Health (i.e., well defined geographical boundary, high membership of GPs within that boundary, limited number of secondary service providers) for whom a Global Budget funding model could well be appropriate.

Pegasus Health has developed a skilled corporate and planning workforce that has a core belief in Pegasus Health as an organisation. As a general observation this is not because of the Global Budget, rather it is a result of the development of Pegasus Health as an organisation over some years. This leads us to conclude that a prerequisite for the applicability of the Global Budget model is a sound and mature underlying organisation infrastructure. Pegasus Health has developed its structure over some time, with Board stability and development of Board skills over time. The Board also maintains an active role in the organisation, actually reading papers and providing sign off.

There were some difficulties with the implementation of secondary care initiatives with particular reference to consultation between the HFA and CHL. We believe it would be incorrect to blame this situation on the Global Budget as a model, and note that communication between Pegasus Health and CHL has, in general, been satisfactory. Earlier tripartite communication between the HFA, CHL and Pegasus Health would have facilitated the development of a more cohesive approach to secondary care initiatives. While Pegasus Health clearly has ownership of the Global Budget, there are indications that further consideration could have been given to other providers for whom the initiatives had a direct impact. Earlier, more effective communication with CHL may have helped to mitigate any feelings of disenfranchisement held by individuals within CHL.

The evaluation team does not believe these difficulties are a fault of the Global Budget, but clearly there are lessons to be learned. The early communication issue cannot be changed now, but there may be ways to improve the unity of purpose between CHL and Pegasus Health. For example, one option is a “ringfence” could be placed around a portion of the Global Budget money for joint primary/secondary initiatives with a shared steering committee of providers from both sectors. Other options that positively align incentives could also be considered, for example, secondary care budget holding arrangements. However, this is a fundamental move away from the concept of the Global Budget as viewed by Pegasus Health. It also brings into question the validity of primary led health care. Potentially, it is an issue for Pegasus Health to acknowledge itself; there is anecdotal reporting of its perceived arrogance to other providers.

If this is the case, then it is a Pegasus Health organisational issue that would require further self-assessment. We still do not believe this is a flaw with the Global Budget. It is a flaw within Pegasus Health in implementing aspects of the Global Budget, which requires internal acknowledgment of a problem. Pegasus Health found frustrations at times in dealing with the secondary providers, but it is not clear if they ever came to realise exactly why some of these problems came about. These types of issues would need to be considered in a more formal manner if other IPAs were to move to a Global Budget model.

The evaluation team were disappointed we were unable to measure the transaction costs of implementing the Global Budget. MoH/HFA indicated they had no idea of the transaction costs and had no way of finding out. There were indications in the Pegasus Health Annual Report of increased legal costs relating to the Global Budget, but these are not quantified. What is clear is that both the MoH/HFA and Pegasus Health expended considerable energy in getting to a working document allowing the implementation of the Global Budget. There is the potential for reduced MoH costs because it would not have individual contracts for each initiative involving separate monitoring and accounting functions, although there are still monitoring functions associated with the Global Budget. In the long run, compliance costs for Pegasus Health may reduce.

The evaluation team reported differing perceptions of the relationship between MoH/HFA and Pegasus Health during the contract negotiations from a variety of

sources. We found there were perceptions of quite unbalanced power structures in that Pegasus Health was believed to wield a disproportionate amount of power during contract negotiations. However, further interviews revealed there was a fundamental degree of trust between Pegasus Health and MoH/HFA. We doubt that without this trust the Global Budget could have been brought to fruition. In many ways this probably reflects the maturity Pegasus Health has as an organisation.

Other key issues related to the Global Budget funding model include:

- The Global Budget has allowed the transition from a savings-based model to an investment-based model. This necessitated a move to risk-taking behaviour with the hope of future payoffs (dividends). Due diligence is a necessary process to go through whenever there is an element of risk. This appears to have been thoroughly applied, particularly with regard to integrated care and acute admissions initiatives. A shift to an investment-based model would have been difficult to achieve without implementation of the Global Budget.
- The single funding stream and ability to make decisions quickly have been pivotal to the shift to an investment-based model.
- There has been insufficient time for the secondary initiatives to show a positive influence on patient outcomes.

#### Governance

- There is a consensus that the Global Budget has led to significant change in the way nurses are involved at policy and planning levels in Pegasus with overall gains to the development of quality approaches.
- Since the Global Budget there appears to be a much stronger involvement of nurses in planning and a greater involvement of nursing at senior level, with a nursing advisor appointment at management level and from 2001, a nurse represented on the Board.
- The Global Budget funding acted as a catalyst to look at Māori health as a priority.
- Prior to the Global Budget, documentation highlighted Māori health-focused initiatives were in a fairly preliminary stage of development.
- The Global Budget has allowed more flexibility and defined public health focus together with flexibility about how they can fund identified services.
- There may be increased benefits to patients in a very broad sense that is not quantifiable due to the short evaluation period.
- The geographical aspects relating to Pegasus Health should not be understated, as they are key aspects of how Pegasus Health operates. For example, the management administration team is in close proximity to all Pegasus Health members, other community-based and secondary health care providers.

#### Stakeholder impact and relationships

- There was a perception that the Global Budget contract has had no impact on hospital clinicians or on changing hospital clinician behaviour. In particular, the ED project has not reached its potential.
- There is a possible tension with other providers regarding contestability, accountability, collaboration and partnership.

- There is a need for more overt and strategic communication/collaboration strategies that represent stakeholders, community providers and community.
- Since the introduction of the Global Budget, patients have noticed changes in service provision.
- In the Pegasus Health instance the Global Budget was held by a primary care organisation. It may, however, be appropriate for other stakeholders to have access to marginal funding for projects of their own – in effect miniature localised Global Budgets.

#### Innovation and flexibility

- The Global Budget has enabled greater flexibility and enabled the development of innovative practice.
- There is an emphasis on teamwork, and increased practice nurse involvement at Pegasus level and practice level.
- With an extension into new service areas both in primary and secondary arenas, there are implications for collaboration, partnerships, accountability and contestability.
- Since the Global Budget there have been changes toward a more collaborative disease management approach for the four disease areas prioritised by Pegasus.
- There has been increased responsiveness to Pegasus patients with these diagnosed health problems.
- Ongoing improvements in Pegasus Health information systems are arguably the result of the Global Budget, and will help in better monitoring groups.
- The built-in flexibility of the Global Budget is clearly a strength where innovation and rapid changes are concerned; however, flexibility may well be a weakness when it comes to establishing clear direction and cohesion.
- The Global Budget changed the scope and focus of the information system development with the extensive parallel development of IT and Decision Support systems. For example, two information projects under development with a strong quality implication have arisen from the Global Budget End User project.
- The Pegasus QualityMark programme pre-dated the Global Budget, but was in the development stage, with the Global Budget providing additional impetus and the opportunity to appoint a GP part time as portfolio manager.
- Pegasus has worked with the Clinical Audit Committee from the 24 hour surgery to anticipate any clinical care under the new Global Budget projects and there are now moves to develop a similar committee with Pegasus.
- There was a great deal of activity in the year after the Global Budget in the development and implementation of projects designed to increase the range of services available to Pegasus Health patients.
- A key change is that the Global Budget funding model has facilitated the ability to innovate and experiment with novel ways of service delivery. For example, the community care projects implemented were as a direct result of Global Budget funding.
- The Global Budget funding model appears to have given greater impetus to access issues, with the ability to rapidly trial and implement innovative forms of service delivery. The programmes implemented have been highly innovative and well received by patients and significantly increased access in terms of availability.
- The utilisation data on existing services indicate improved accessibility in some areas. There has been significant activity in the areas of availability in improving the capacity for Pegasus Health patients to access services. Also, the

Global Budget process has served to highlight issues of access. Themes relating to access and barriers to access have appeared as an issue increasingly in documentation around population health since the Global Budget contract was signed.

- The evaluation reported a number of innovations that have occurred since the introduction of the Global Budget, these include:
  - since the introduction of the Global Budget patients have noticed changes in service provision
  - appointment of a Public Health Physician
  - appointment of a Māori Project Manager
  - formal development of Access Strategic reference group
  - since the Global Budget information systems have included such quality initiatives as web-based support for the day-to-day decision of practitioners
  - the community care portfolio launched by Pegasus soon after the Global Budget service plan was finalised to offer GPs and practice nurses more options for looking after their patients in the community
  - communications portfolio development since the Global Budget
  - establishment of the team of six practice facilitators is one of the key mechanisms Pegasus has put in place since the Global Budget to help practices get on board with the community care initiatives and all big changes under the Global Budget
  - formation of Community Advisory Board
  - integrated care programmes consolidated.

#### Education and professional development

- The Global Budget has had a two-fold impact on education programmes:
  - expanded the range of topics addressed
  - extended the small group education programme to practice nurses
- a majority of GPs surveyed agreed or strongly agreed that since the Global Budget their range (52%) and level (61%) of clinical skills had increased
- specific training courses have been set up to meet the need for skill development etc
- the Global Budget has provided extensive opportunities for Pegasus GPs and practice nurses to become involved in professional development directly relevant to the quality of services they are providing
- the introduction of projects/services and philosophical shifts has necessitated education/training.

#### Culture change and sustainability

- The evaluation research is unable to comment on the sustainability of an investment-based model because of short evaluation period.
- There is concern regarding the sustainability of new projects and collaborations initiated or boosted post Global Budget. The sustainability of new projects and new collaborations is yet to be demonstrated.
- There is concern whether sufficient structures and mechanisms have been put in place since the Global Budget to effectively guide the development of new projects and ensure they respond to the identified needs, the existing programmes and partners, and are sustainable.
- The introduction of projects/services and philosophical shifts has necessitated education/training.

- Increased staffing levels have implications for management in all areas: human resources, management structures, strategic planning.
- Issues identified around change management include:
  - dynamic environment
  - keeping directors/members up to date with the play
  - notion of early and late adopters of innovative practices
  - philosophical shift
  - taking on board new ways of working
  - challenge to a big and complex organisation
  - significant increase in staff recruitment and therefore growth of the organisation.
- Aspects of quality have been challenged by the Global Budget contract. These include:
  - the importance of teamwork and team responsibility
  - the incorporation of population health approaches
  - issues on inequality in health status
  - the role of community in relation to Pegasus decision-making.
- Increased staffing levels have implications for management in all areas: human resources, management structures, strategic planning.
- There has been a shift in culture with the employment of the Māori health project manager, learning of waiata, and making provision for karakia.
- There has been a philosophical shift in view of access as it relates to the Pegasus Health organisation since the introduction of the Global Budget.
- There have been structure/process changes but little in the way of addressing inequality in access.
- There has been a philosophical shift in defining those with access difficulties as not just those who are identified patients in a practice who do not attend often, but also concern for those who are not identified patients and who do not access a GP at all (community focus).

#### Funder and provider relationships

In terms of the wider context of the evaluation, the evaluation team have found themselves sometimes in uncertain territory. The way in which the Global Budget has been implemented by Pegasus Health has not been entirely due to the actions of Pegasus, but has been influenced by other players, including the HFA/Ministry of Health. However, the HFA/Ministry also let the contract for the evaluation and was the body to whom we were accountable in doing the work. Recent writing (Feldman, 1999; Lomas, 2000) had drawn attention to the need for better links between researchers, funders and decision-makers. We endorse this, but draw attention to the model developed in Canada (Lomas, 2000) where a research foundation is placed between researchers and decision-makers. The foundation acts on behalf of the decision-makers and encourages partnerships with researchers. It permits an independent assessment of the research and monitoring and oversight of research programmes without the danger of compromising the research through too close a link between researchers and decision-makers.

In noting this, we report that during the Global Budget project our dual relationship with the HFA/Ministry of Health as both our funder and a key player created few problems for us. This was partly due to the professionalism of the individuals concerned, but also to the general disarray of the funding environment for much of this period. We

merely alert both researchers and policy makers to the implication of direct funding of evaluation projects and the need for structures that protect both parties.

## Conclusions

### 1. Clarity of objectives

Pegasus Health has clearly embraced a population approach to primary health care and has devoted resources and expertise to advance this. This is highly innovative and consistent with national policy and international best practice. This is part of its mission and objectives but it will be important to link quality and other expectations to these through a formal process. Tying measures of Pegasus Health effectiveness and quality to population health status indicators, though, is likely to pose problems. There are many non-primary health care variables, both inside and outside the health sector, which will influence these, operating at various population and time scales. The current KPI system permit alternative types of indicators. It is suggested that KPIs be used judiciously, so that population-based quality indicators remain focused on the practice or IPA level and related to enrolled populations and specific interventions, with initiatives beyond these (i.e., those related to the wider community or the non-enrolled) recognised in other ways.

Pegasus Health needs to define its primary objective for carrying out population health and community needs assessment. The primary purpose of health needs assessment is usually to provide much of the evidence for decision-making and to make primary care more strategic, more effective at improving the health of the community (not just health of individuals) by targeting the available resources. The evaluation data from most of the different stakeholder groups point to a persistent lack of clarity in this regard.

### 2. Management systems

Pegasus Health appears to have acknowledged the need for a more integrated and organisation-wide approach to quality management. Over the last year, a more systematic approach to management in general, including strategic and project planning and internal communication, has been developing, which should assist in the management of quality. It is recommended that a formal quality management system be established that is linked to organisational objectives and managed at senior level.

### 3. Pressures on individuals

Despite the obvious enthusiasm, levels of participation and enhanced performance of practitioners, there is a danger that the drive for better quality, more services and wider roles in the health sector, will place excessive pressure on individual GPs. This in part may be an artefact of the period of the evaluation which saw rapid organisational growth and implementation of new services. There are indications that Practice Nurses, too, experience this pressure. This is a quality issue which will require strategic management, including alternative resource allocation models, if it is not to undermine the considerable individual and organisational achievements already made.

### 4. Inequity of access

In the year following the introduction of the Global Budget there was little progress in identifying specific barriers to access and sub-groups of Pegasus Health patients vulnerable to these. This requires development of the baseline tools required to better understand the Pegasus Health population in relation to access issues and inform projects to try to address barriers to access. Descriptors of sub-groups of the Pegasus Health population likely to be vulnerable to access barriers need to be able to be matched against health needs and utilisation patterns to determine where access barriers might exist. Socio-economic description of the population using geocoding with the New Zealand Index of Deprivation had begun, but was not yet complete

during the evaluation period and ethnicity recording had not been initiated to any great extent. The lack of adequate data means that little definitive can be said about health outcomes or even project impact (utilisation) as it relates to groups likely to experience barriers to access. This evaluation involved geocoding the Pegasus Health population and some overall utilisation data has been related to this.

Adequate description, according to these variables of the denominator Pegasus Health population and of vulnerable groups, and their current access patterns are essential in planning, prioritising and implementing effective strategies. There are a number of projects aimed at addressing barriers to access that are in the conceptual/development stage.

Only one has reached the implementation stage (the Link Nurse project which offers the services of a nurse to help practices link with their hard to reach patients for immunisation), and no results are available. The next steps forward are crucial, and it is vital that these are given a high priority while not undermined by unsustainable time pressures and outcome expectations.

#### 5. Community assessment methodology

Pegasus Health needs to adopt a community assessment methodology within an overarching framework or systematic structure for integrated care and to put in place a mechanism for tracking and monitoring key process, output, impact and outcome indicators. This framework will go a long way to help Pegasus Health demonstrate increasing integration with the overall health system and increasing benefits to consumers. Key process indicators will be those that attest to strengths of the systems and the links that have been put in place to enhance and achieve collaboration.

#### 6. Patient enrolment

An acceptable enrolment scheme should be institutionalised that tracks the discrete enrolled populations for each practice. When patient enrolment procedures are in place, it will be possible to conduct practice-based needs assessments by means of case note analysis, complemented by other methods such as rapid appraisal, key informant interview and community consultation to build a community profile for each practice area.

#### 7. Targeted health services – Māori and Pacific Peoples

Pegasus Health needs to specifically target health services and improve access in areas with high deprivation and high morbidity rates, and especially targeting resources to Māori and Pacific Island communities.

In conclusion, the evaluation team considers that the Global Budget funding model is an appropriate funding model for Pegasus Health given the unique situation that Pegasus Health has in primary care delivery in Christchurch.

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## DISCLAIMER

This report uses data as supplied from a variety of sources, and is based on those data being a true and accurate reflection of activities. No responsibility can be accepted for errors or omissions in data obtained from outside sources.

This evaluation covers the calendar years 1999-2000 and hence this is an evaluation of the year immediately before the Global Budget contract was signed and the first year of operation of the Global Budget contract. As such, the evaluation is a snapshot of Pegasus Health at this time in its history.

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## LIST OF ABBREVIATIONS

$\chi^2$	Chi Square Statistic
CAB	Pegasus Community Advisory Board
CC	Complications or Co-morbidity
CHE	Crown Health Enterprise
CHL	Canterbury Health Limited
CI	Confidence Interval
CME	Continuing Medical Education
COPC	Community Orientated Primary Care
COPD	Chronic Obstructive Pulmonary Disease
CQI	Continuous Quality Improvement
CRG	Community Reference Group
CSC	Community Services Card
DHB	District Health Board
DRG	Diagnostic Related Group
ED	Emergency Department
FGD	Focus Group Discussion
FRACS	Fellow Royal Australasian College of Surgeons
GB	Global Budget
GM	General Manager
GMS	General Medical Services
GP	General Practitioner
HFA	Health Funding Authority
HHS	Hospital and Health Service
HUHC	High User Health Card
KPI	Key Performance Indicator
IPA	Independent Practitioner Association
MeSH	Medical Subject Heading
MoH	Ministry of Health
NHI	National Health Index
NZDep96	New Zealand Index of Deprivation
NMDS	National Minimum Dataset for Secondary Care
NZHIS	New Zealand Health Information Service
PH	Pegasus Health
PHC	Primary Health Care
PCO	Primary Care Organisation
PHO	Primary Health Organisation
PMG	Pegasus Medical Group Limited
PMR	Performance Monitoring Return
PTC	Pacific Trust Canterbury
QM	Quality Management
RFP	Request for Proposal
RHA	Regional Health Authority
RNZCGP	Royal New Zealand College of General Practitioners
SRHA	Southern Regional Health Authority
THA	Transitional Health Authority

## INTRODUCTION

Over the last 18 years, the New Zealand health sector has undergone considerable change. As a result, the health care sector in 2001 looks quite different to that of 1983. In primary care, not only have there been changes in the subsidies made available to New Zealanders for care, but significant changes have also occurred in the way primary care providers work together and work with government. In particular, we have seen the establishment of a government purchasing function, with primary care providers increasingly moved into contractual relationships with government agencies, while the government funding for primary care has gradually moved away from fee-for-service to capitation and budget-holding arrangements. Primary care providers have, in turn, grouped together more into networks, forming organisations which support primary care providers in contracting, and which encourage primary care providers to work together to improve primary care provision.

In Christchurch, the Pegasus Medical Group was established in 1993, and an agreement was signed between Southern Regional Health Authority (SRHA) and Pegasus that year, outlining certain health and disability services to be provided by Pegasus members. Under a head agreement individual variations were entered into: The first variation was a pilot to hold a notional budget for laboratory tests which was subsequently expanded. The next variation was notional budget holding for pharmaceuticals. Success in these areas freed up funds to invest in separate services. Over six years there were a number of smaller variations added to the head agreement. In 1998 one significant variation was to the pharmaceutical notional budget holding arrangement – over a defined level, savings went into a joint integration pool. Under this head contract Pegasus did not obtain funding for administration, but these costs were covered from savings in the Pharmaceutical and Laboratory budgets. The Global Budget contract cancelled these prior agreements and for the first time brought everything together including GMS, in a risk holding arrangement.

In 1999, a new contractual arrangement was developed between the Health Funding Authority (HFA, which replaced the SRHA) and Pegasus. The new contract replaced the previous multi-stream funded approach with a single Global Budget contract. The Global Budget contract funds all services within a lump sum – i.e., covering general practice services (including GMS, Practice Nurse subsidy, maternity, immunisation, rural practice bonus), pharmaceuticals, laboratories and administration.

The Global Budget contract commenced on 1 July 1999, although it was not signed until November 1999 and was to run for a 27-month term with an opportunity for a 9-month extension based on a review of services and preliminary results of this evaluation. The contract was extended in October 2001 to run for the full 36 months. Activity related to the Global Budget started after it was signed in November 1999.

The contract included within it, provision for an evaluation of the Global Budget. This recognised the importance of the change from a multi-stream approach to a single budget, and signaled a desire on the part of the HFA to be sure that the benefits of a Global Budget were captured as intended. The evaluation was tendered for by the HFA, and won by a team led by NZ Health Technology Assessment.

## BACKGROUND

### Historical context to funding primary care in New Zealand

Over the last 18 years, the New Zealand health sector has undergone considerable change. The 1980s and early 1990s saw structural change, contracting, competition, changes in funding approaches, and moves towards equitable resource-allocation formula being used as key strategies to reduce inefficiency in key areas of health expenditure. The 1980s began with hospital care provided through 29 locally-elected hospital boards, public health delivered through 18 district offices of the Department of Health, primary care delivered by independent practitioners and funded directly through government subsidies. During the 1980s, the hospital boards and district offices of the Department of Health were gradually integrated into 14 locally elected territorial area health boards (AHBs). This meant that for the first time, NZ health agencies had responsibility for planning the health of their populations, rather than just focusing on delivering a particular set of services. Primary care, however, remained separately funded and organised.

The Ministerial paper, *Your Health and Public Health* (1991), heralded the next set of structural reforms that took effect from 1 July 1993, with the passing into law of the Health and Disability Services Act. In these reforms, purchasing and provision functions were separated. Five purchasers were established with four regional health authorities (RHAs) purchasing primary and hospital care, and a Public Health Commission (PHC) purchasing public health services. AHB services were replaced with 23 Crown Health Enterprises (CHEs), with a profit focus. The Department of Health became the Ministry of Health. Later, the PHC was abolished; 23 CHEs become Hospital and Health Services (HHSs), and the RHAs were transformed into a single, national purchaser, the Health Funding Authority (HFA). In 2001, the HFA was dis-established, with its functions and roles integrated into the Ministry of Health during the transitional period as 21 territorial District Health Boards (DHBs) were established.

These changes have occurred against the backdrop of a number of reviews undertaken; this is to ensure that the health sector maximises health gain within a given resource base. These have included the Health Benefits Review 1986 (Choices for Health Care), the Gibbs Report 1988 (Unshackling the Hospitals), and the Green and White paper 1991 (*Your Health and the Public Health*). More recently, the government has released a number of discussion documents for public consultation and debate. Documents relevant to the evaluation of the Pegasus Health IPA Global Budget, include the Report of the Ministerial Taskforce on Nursing, August (1998); the Future Shape of Primary Health Care, March (2000); and the New Zealand Health Strategy June (2000).

Changes in the structure and delivery of primary health care have been at the forefront of New Zealand's health reforms. Since 1938, primary care has been partly publicly funded through uncapped fee-for-service benefits paid to general practitioners, and a salary subsidy paid for Practice Nurses. The balance of GPs' fees was made up of a variable co-payment paid directly to the GP by the user. Until 1993, GPs were essentially independent providers with no direct contractual relationship with the government. The search for new ways of delivering primary care began in earnest in the early 1990s, with funding of 10 pilot initiatives in personal health care contracting (Kirk, 1994). Since then, primary care organisations have evolved along a number of evolutionary pathways (Malcolm, Wright and Barnett, 1999).

Of particular importance to the development of primary care during the 1990s, was the establishment of the four RHAs, and the moves towards contractual relationships.

RHA budgets were capped to promote macro-economic efficiency, putting pressure on the RHAs to find ways of better controlling uncapped primary care expenditure. In 1993/94, a rollover option using section 51 notices<sup>1</sup>, enabled existing fee-for-service claiming arrangements for general medical services (GMS) to be maintained by GPs. However, the establishment of the RHAs and the health reforms process, provided GPs with an opportunity to look at alternative arrangements for primary health care services. Some GPs took this opportunity.

The Southern Regional Health Authority (SRHA) negotiated a contractual arrangement with the Pegasus Medical Group Limited to begin on 1 July 1993<sup>2</sup>. This agreement was to establish a contractual relationship with Pegasus IPA members by providing them with an alternative to the Section 51 Notice, and was for a three month duration until a further agreement was agreed between the parties. This agreement maintained the pre-July 1993 terms and conditions under which Pegasus IPA members claimed for subsidies and benefits. This agreement was superseded on 1 October 1993 by the Health and Disability Services Agreement ("the head agreement"), which outlined certain health and disability services to be provided by Pegasus IPA members, and the development and implementation of pilot and full scale projects. This "head agreement" has consequently seen over 20 variations negotiated between the parties.

More recently, the HFA entered into a new contractual arrangement with Pegasus IPA that replaced the previous multi-stream funded approach with a single Global Budget contract. The Global Budget contract commenced on 1 July 1999, although it was not signed until later that year, for a 27-month term with provision for an extension for nine months subject to a performance review. The Global Budget funds all services within the contract. The base service components are general practice services (including GMS, Practice Nurse subsidy, maternity, immunisation, rural practice bonus), pharmaceuticals, laboratories, and administration. The Global Budget contract also includes additional services to be purchased.

## The Global Budget in the HFA/Pegasus Health contract

The Global Budget in the HFA/Pegasus Health contract, refers to a single revenue stream from which Pegasus Health is funded by the HFA for all existing and agreed new health care services provided by Pegasus Health, including:

- general practice services including GMS, Practice Nurse services, after hours surgery, well child services, maternity and immunisation services
- primary referred treatment services being pharmaceuticals in the Pharmaceutical Schedule
- primary referred diagnostic services being subsidised laboratory diagnostic services
- those services detailed in the Service Plan to achieve agreed health outcomes.

This single revenue stream is adjusted by changes to population – a key aspect that introduced a 'population focused' contract. The Global Budget funding model can be thought of as a mixed model as it allows components of fee-for-service along with principles of a capitated 'population-focused approach. That is, the organisation is

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<sup>1</sup> Advice notice to General Practitioners pursuant to Section 51 of the Health and Disability Services Act 1993.

<sup>2</sup> Pegasus Medical group was a standard corporate for-profit company. In August 1995, variation 4 changed the contracting relationship so it was between the Southern Regional Health Authority (SRHA) and Pegasus Medical Group (1995) Limited, a non-profit organisation bound to abide by its charitable objectives. Its constitution makes explicit that company assets are to be applied exclusively to the "charitable objects" of the company, including enhancing health care provision of the population of Canterbury who are the patients of members of Pegasus Health and the improvement of the health status of those patients.

funded on a capitation basis, and the individual practitioners are mostly funded fee-for-service but with some additional quality-based payments.

The old HFA/Pegasus Health contract (immediately prior to the Global Budget contract), was largely based on a fee-for-service model, with notional budget holding for laboratory tests and pharmaceuticals based on historical spending.

Under the fee-for-service and budget holding arrangements, funding could be spent only on specific services (general practice services, pharmaceuticals or laboratory tests). Between 1993 and 1999 there were various arrangements, but generally they permitted Pegasus Health to retain savings against a notional budget. Decisions around the investment of those savings required the approval of the SRHA. One notable exception was the pharmaceutical contract variation of 1998. This put any savings over a set level into a specific pool for application in integrated activity, again to be applied involving the SRHA.

The new funding contract is a Global Budget arrangement, where there is a lump sum of money for a range of services to be delivered as identified in the contract, and the Pegasus Health service delivery plan. The Global Budget contract offers Pegasus Health flexibility about how they can fund these identified services in order 'to better meet local health needs and achieve outcomes agreed by both' the HFA and Pegasus Health. Funding is no longer held in specific pools. Any savings derived from the Global Budget do not involve the HFA in decision making where agreed health outcomes or key performance indicators are not altered. In the new Global Budget contract, Pegasus Health made a commitment to invest at least \$2.15 M from existing reserves (along with additional strategic investment in conjunction with the HFA).

## Māori health

This evaluation is inclusive of a Māori Research Team which is committed to the practice of Kaupapa Māori research. Such practice promotes the importance of working within Māori communities in a way that maintains high levels of accountability, and best practice methodologies that promote and validate Māori paradigms and perspectives. The research team worked alongside members of He Oranga Pounamu, in an attempt to ensure Ngai Tahu involvement and participation within the research. In working together, the research team was able to be supported and critiqued within an appropriate Māori framework.

The focus of the Māori research team is to:

- identify Māori strategies and initiatives that were part of the Pegasus process previous to the Global Budget, and align how these strategies/initiatives matched perceived outcomes and goals
- identify Māori strategies and initiatives that are now part of the Pegasus working processes due to the framework of the Global Budget
- identify the impact of strategies/initiatives pre- and post-Global Budget on Māori health and within Māori communities.

## Pacific Peoples' health

Nationally, the Government developed a work programme initially called "Closing the Gaps for Māori and Pacific Peoples ". A Pacific Health Strategy is being developed and the Pacific Health and Disability Action Plan was published in February 2002 (Ministry of Health, 2002). Locally, the Pacific Trust Canterbury was launched in late 1999 to address priorities for the Pacific Island communities. Funded by the Health

Funding Authority, the Pacific Trust Canterbury is a dedicated Pacific Peoples' team who are committed to improving the health and conditions of Pacific Peoples in Christchurch. The Trust intends to be the provider of choice in health, social and educational services to Pacific Island children, young people and families delivered by Pacific Peoples with Pacific Island values.

Currently, the Trust operates two community-based services; the Well Child Health Service for children under the age of five, and the Mental Health Service that focuses on delivering and facilitating culturally safe services for Pacific Peoples. Members of the Research Team have worked collaboratively with the Manager, Manu Sione, and Chair of the Trust's Board, Dr Kiki Moate, in culturally relevant community research with Pacific Island families and with Pacific Island youth.

The Manager of the Trust, Manu Sione, has been consulted in the development of this proposal. Furthermore, he is committed to serving as a member of this project's Advisory Group, and has already identified a Pacific Island researcher for the project. As with Māori, primary health care is of critical importance to the Pacific Island communities. Pacific Islanders are more adversely affected by social and economic determinants of health, such as low income and housing, and by cultural factors, including language barriers and feelings of shame, than other groups in New Zealand (Howden-Chapman and Cram, 1998; Public Health Commission, 1994).

Pacific Islanders, including youth, underutilise mainstream health services (Gray, 1994, pg 32; Ministry of Health, 1997, pg 34).

During the consultation with the Pacific Trust for this proposal, a growing concern for the health of youth was revealed within the Pacific Islands communities in Christchurch. These concerns are also reflected in the priorities of the HFA (Siataga et al. 1999).

The proposed evaluation design is more sensitive to cultural, social, economic, and individual differences in consumer acceptability of, and accessibility to, primary health care services. Focus group discussions and face-to-face interviews are generally more suited to Māori and Pacific Peoples who prefer personal communication, likely to generate more in-depth information than quantitative methods, and more likely to elucidate the intricacies of individual, community, and cultural differences of perception and practice.

## The rationale and purpose for the evaluation

Changes in purchasing policy for the delivery of primary care services provides a unique opportunity to gather evaluative information that can guide further policy development and purchasing decision-making. A comprehensive evaluation is congruent with national trends that national government and territorial district health board decisions be made in an increasingly evidence-based fashion. This is with a focus on outcomes and achievement of goals related to national policy/health strategy documents. The evaluation will provide a feedback loop to policy-makers and primary care providers, by examining where progress under the Global Budget contract approach has been made. Also, what the facilitating factors and barriers were in implementing change in the way primary care services are purchased with the overall aim of making improvements in the contracting system.

An overall goal of the evaluation is to promote active adjustment and refinement mechanisms by facilitating the incorporation of the results into future primary care service planning and purchasing decision-making. The establishment of the evaluation framework will also provide a resource to other health sector organisations

interested in evaluating innovative ways of purchasing and providing primary health care services in New Zealand.

The development of the Global Budget for Pegasus Health occurred in a particular context, with the HFA desirous of finding innovative ways in which to better manage financial risk, and to delegate responsibility for decision-making to primary care providers, as health care providers who are closer to their communities than a national health funding authority.

The evaluation provides an opportunity to learn lessons from the Pegasus Health experience as other District Health Boards contemplate innovative approaches to the purchasing and delivery of primary health care services in New Zealand.

The Global Budget enabled Pegasus Health to consider the best ways in which they allocate resources; to become more population-focused and to be more innovative. Although the context in which Pegasus Health now works has changed with the establishment of the Global Budget this evaluation will enable a better understanding of the role that primary health organisations, envisaged in the Primary Care Strategy, might play in future in NZ health care.

Some limitations on the generalisability of the evaluation results need to be noted. Firstly, the history and size of the Pegasus Health IPA may have produced unique approaches to the delivery of primary health services for its defined population. Pegasus Health has been a leader in the development of primary health care organisational change, and the implementation of the Global Budget drew on Pegasus Health's experiences as an IPA since the early 1990s. A number of service developments reported on in this evaluation began prior to the introduction of the Global Budget. Secondly, the evaluation is taking place during the second year of the functional Global Budget contract operation, and too little time has elapsed for the full impact of the expected results from the Global Budget contract to be realised.

## Stakeholder-based evaluation approach

For the purposes of this evaluation, stakeholders refer to those individuals or groups who have a vested interest in the evaluation findings.

Evaluation may be seen as “the systematic application of social research procedures in assessing the conceptualisation and design, implementation, and utility of social intervention programmes” (Rossi and Freeman, 1993). This evaluation has adopted a stakeholder-based approach with its commitment to listen to their inputs for the evaluation. This is helpful with the collection of information, and for its use. For example, the Evaluation Research Fellow held weekly meetings with the Pegasus Health Contracts Manager, the evaluation team held joint meetings with the Ministry of Health and Pegasus Health, and the Evaluation Team held joint meetings with Pegasus Health to exchange ideas between the stakeholder groups.

The stakeholder-based approach to evaluation is based on several assumptions:

- stakeholders can be identified in advance of the start of the evaluation
- stakeholders want an evaluation of the programme/services/organisation with which they are associated
- stakeholders want specific kinds of information to help plan and make decisions
- evaluation will respond to stakeholder requests for information
- stakeholders involved in the evaluation will develop an ownership in its conclusions

- stakeholder-based decisions will use the evaluation results as a basis for decision-making
- evaluation results will at least enrich discussions about future programmes/services/organisations and stakeholder actions (Weiss, 1983).

It is not always possible for all assumptions to be met, but the approach is at least open, fair and likely to lead to responsiveness among the participants. It also helps ensure that the evaluation process becomes part of the learning culture of the health system to improve quality, performance and effectiveness in health care service delivery.

A key first task in undertaking the evaluation is to determine the nature of the changes that the Global Budget was expected to bring about. Pegasus has been developing as an IPA for some years now, and there is a need to separate out, for this evaluation, the changes related to the development of Pegasus as an IPA from the impact of the Global Budget. It was beyond the scope of the evaluation approach to consider in detail the pre-Global Budget features of the organisation that were in place. Pegasus Health were of the view that one intent of the Global Budget was to 'cement in the critical features of success' already achieved by the organisation.

## The use of logic models in evaluation research

The challenge in developing the evaluation framework for assessing the Pegasus Global Budget model of funding primary health care services is to logically relate structure and philosophy changes to predicted or expected changes in processes – e.g., Pegasus planning and service delivery, and outcomes (e.g., changes in population health status). The development of specific logic models illustrates the specific assumptions underlying the development and implementation of the Pegasus Global Budget model. This approach allows the evaluation to define measurable indicators of change, and develop a framework for answering evaluation questions. Providing evidence for the links between philosophy, structure, process and outcomes is an important step to assessing the Pegasus Global Budget model. The logic models developed for this evaluation are presented in the evaluation project plan that is available on request.

In any evaluation, it is important to ensure that the right questions are posed, and a stakeholder-based evaluation helps to ensure this. This process involves:

- understanding the organisation and the environment in which it operates
- identifying the uses and purposes of the evaluation
- identifying potential evaluation questions.

A key element in understanding an organisation and its environment is to develop a conceptual or logic model of the organisational components, such as resources, activities, outputs, structure, objectives and target groups served by the organisation. Hence, the role of the logic model approach, is to highlight the potential useful information that will be generated by the evaluation, such as:

- linkages between the organisational components and their environment
- highlight the organisation's objectives, processes, components and outcomes
- help develop a common understanding of the organisation
- clarify objectives and aims
- identify barriers and facilitating factors to meeting these objectives
- identify key questions and issues for the evaluation.

The logic models highlight the philosophy, structure, process and outcome components of the key evaluation areas.

The logic models used for this evaluation have used the format of:

- identifying the relevance of the organisation to expected change (the philosophy of the organisation – statements about organisational goals, aims, vision)
- the structure of the organisation (changes in service provision and organisational components including governance and management)
- the process of service delivery (the activities undertaken to facilitate or act as a barrier to achieving objectives such as policy development and project planning)
- outcomes (the intended consequences of the Global Budget model such as increased awareness/knowledge, behaviour change – the development of a learning culture, new structures, and changes in population health status).

## Establishing a framework for the evaluation

As a first step, the evaluation researchers reviewed the previous contracts Pegasus had with the RHAs/THA/HFA, and interviews were undertaken with key personnel in these organisations. This determined the nature of the Pegasus contract prior to the development of the Global Budget. Referring to the New Zealand and international literature, as well as these key informant interviews, the key changes in service delivery and management which were expected might result from the Global Budget funding model were identified. Any barriers to change which the Global Budget was expected to remove were also identified. From there, a model of change that formed the framework for the evaluation was evaluated. This model linked the Global Budget directly to the objectives set out below – i.e., impact on access, quality of care etc. This allowed greater confidence that the evaluation was focusing on the impact of the Global Budget rather than other Pegasus Health activities.

To give an example<sup>3</sup>, one expectation of the Global Budget was that it would provide greater flexibility to encourage both innovative purchasing, the development of innovative solutions, and the flexibility to allocate funds to health services appropriate to the Pegasus Health patient population. In general, a move away from fee-for-service payments towards a Global Budget<sup>4</sup>, for example, is argued to allow the ability to vary service delivery to better meet needs in a number of different ways, that include:

- shifting resources towards populations in need
- altering the way services are delivered (e.g., greater use of the wider primary care team)
- changing the nature of care delivered (e.g., more cost-effective prescribing, more referrals in order to remain within budget)
- more preventive care (in order to keep its population well)
- provision of new services.

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<sup>3</sup> Other examples include: to enable a strategic view of health care compared to the 'silo' focus brought about by separate funding streams and cementing in the gains already achieved from the previous funding models.

<sup>4</sup> The Global Budget funding model applied a population-based approach at the organisational level but allowed for flexibility on how that was applied at the practice level.

A Global Budget may also have some downsides, for example:

- reducing the utilisation and quality of care for some groups in order to remain within budget
- discouraging people with greater health needs from joining up (see Cumming, 1999, for a full review of the literature in this area).

This is not to say that all these things occur in this case, but only to point out that it is extremely important that the nature of the financial arrangements involved are understood, and the nature of the changes the HFA and Pegasus expect to occur as a result of the move to Global Budgeting. Moreover, it has been suggested that some specific features of New Zealand's health care system, primarily user charges, may reduce the benefits which might arise from a move to capitation in New Zealand (Cumming 1999; Cumming and Mays 1999). This evaluation gives an opportunity to gain some empirical evidence on this issue, which will be particularly important if New Zealand moves towards the Primary Care Strategy outlined by the Minister of Health in March 2000.

The main comparison for the evaluation will be a longitudinal before and after comparison. However, from the New Zealand and international literature, and from key informant interviews with similar IPAs which have not moved to a Global Budget, the authors have attempted to provide some external comparative information which may shed some light on the difficulties and differences in management, and service delivery arising from not having a Global Budget.

Notwithstanding the above, it is also important to note that this evaluation was not an evaluation of different funding models, for example, a capitated model versus fee-for service; it was not an audit of the Global Budget contract and it was not a comparison of the Pegasus Health IPA with another IPA.

It needs to be noted that it was difficult at times to separate out the development of Pegasus and its services from the Global Budget and that the evaluation researchers were closer to evaluating performance against contract in some parts of the evaluation than to evaluating the change from the Global Budget.

## EVALUATION AIMS AND QUESTIONS

### Aims of the evaluation

The expectations of the Global Budget contract are detailed in section 3A of the contract. It states the Global Budget exists to:

- provide greater flexibility to encourage both innovative purchasing and the development of innovative solutions to complex health issues generally
- bring flexibility to allocate funds to appropriate health services
- facilitate a reduction in fragmentation of service provision through improved co-ordination of services
- allow better management of the continuum of care
- encourage patient focused responsiveness
- improve levels of appropriateness, quality, effectiveness and efficiency in the delivery of health services
- better manage limited resources
- enable appropriate incentives for change and quality improvement
- encourage the involvement and active support of [Pegasus Health] practitioners.

The following aims address these expectations and provide the focus for the Pegasus Global Budget evaluation.<sup>5</sup>

#### Access

- to assess the initiatives undertaken by Pegasus Health to identify barriers to access

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<sup>5</sup> A clause in the Global Budget contract stated that the "evaluation will involve an assessment of the model for devolving purchasing to you [Pegasus Health] and will potentially include the following deliverables with recommendations for further development:

- a. the impact on access by your population to services provided by your members;
- b. the impact on the quality of service, specifically that related to the impact on Acute Demand and Disease State management;
- c. the impact on your ability to be responsive to the needs of the community;
- d. the impact on your ability to measure, monitor and improve the health status of your community;
- e. the potential for the funding model to be expanded to other areas of health;
- f. assessment of the cost benefit of the Global Budget model;
- g. the impact on equity of funding for health services for your population.

The Global Budget evaluation Request for Proposal (RFP) listed the following objectives of the evaluation:

- a. to assess initiatives undertaken for improved access and to determine their impact to date on access by the PMG patient population to services provided by PMG;
- b. to assess initiatives undertaken by PMG for improving quality and to determine the impact to date that these initiatives have had on the quality of service;
- c. to assess initiatives that targets the needs of Maori and Pacific Island People;
- d. to determine the impact on the ability of PMG to be responsive to the needs of the community including meeting the targets detailed in the agreed Service Plan;
- e. to determine the impact on the ability of PMG to measure, monitor and improve the health status of their population;
- f. to assess the potential for the funding model to be expanded to include other health services;
- g. to assess the cost benefit of the "Global Budget" model and the degree to which the "Global Budget" enables innovation in the administration, delivery of services, the ability to target services, local responsiveness, and fit with national HFA/Ministry of Health policy and strategy;
- h. to determine the impact on equity of funding for health services of the PMG population taking into account any health needs analysis.

- to assess Pegasus Health capacity to improve access for its general patient population and specifically for sub-groups of the patient population identified as likely to experience barriers to access
- to determine the extent to which the Global Budget has improved access for the PMG patient population, with particular reference to vulnerable groups.

#### Quality

Research Aims – within the context of opportunities provided by the Global Budget:

- to assess the extent to which Pegasus Health has quality systems in place and the use made of them by practitioners and other staff
- to assess, as far as possible, the effectiveness of these activities and systems in enhancing standards of practice and improving service outcomes.

#### Māori Health

- to identify the initiatives undertaken before and after the Global Budget contract by Pegasus Health, and to identify the needs of Māori as they relate to primary care services
- to identify initiatives undertaken by Pegasus Health before and after introduction of the Global Budget contract to address these needs
- to assess the effectiveness of these initiatives.

#### Pacific Peoples' health

- to identify the initiatives undertaken before and after the Global Budget contract by Pegasus Health
- to identify the needs of Pacific Peoples as they relate to primary care services
- to identify initiatives undertaken by Pegasus Health before and after introduction of the Global Budget contract to address these needs
- to assess the effectiveness of these initiatives.

#### Community needs

- to assess the extent to which the Pegasus Health has developed and undertaken population-based needs assessment before and after the Global Budget.

#### Health status

- to document the health status measurement policies in Pegasus Health before and after the Global Budget
- to review health status monitoring by Pegasus Health before and after the Global Budget
- to evaluate any specific impacts on health status.

#### Funding model

- to identify further health services for which the Global Budget has greatest potential.

#### Cost-benefit

There are several themes that need to be examined separately in the first instance before pulling them together in a cost benefit analysis. The research aims include:

- to measure the cost of treating Pegasus Health patients in both the primary and secondary sectors prior to, and after, the introduction of the Global Budget model

- to assess the degree to which the Global Budget enables innovation in administration
- to assess the degree to which the Global Budget enables innovation in the delivery of services
- to assess the degree to which the Global Budget enables innovation in the ability to target local services
- to assess the degree to which the Global Budget enables innovation in local responsiveness
- to assess how the Global Budget fits with national HFA/MoH policy and strategy.

#### Equity of funding

- to assess the impact of the Global Budget on equity of funding in Pegasus Health.

#### Evaluation questions

The evaluation questions are listed below, and the logic model evaluation framework is available on request.

Table 1: Access

Philosophy	Structure/Process	Outcomes
<p>Is there a consistent message from the HFA and communication themes between PMH and HFA to identify barriers to access?</p> <p>Compare and contrast 1999 and 2000: Do Pegasus Health documents indicate a commitment to identify barriers to/facilitators of access?</p> <p>Do documents indicate a commitment to identify sub-groups of the Pegasus Health population vulnerable to barriers to access. Is the identification of vulnerable sub-groups and the barriers/facilitators to access for them, a consistent theme in communications?</p>	<p>Compare and contrast 1999 and 2000: Is there a clearly documented framework for trying to identify barriers/facilitators to access, both known in the literature and locally relevant?</p> <p>Is there a committee directly responsible for issues of access? If Yes, when was it set up?</p> <p>Is there a clearly documented framework for identifying sub-groups of the population vulnerable to access issues?</p> <p>Who is vulnerable and how can they be identified?</p> <p>Are there projects designed to enhance access?</p> <p>Are there resource distribution shifts/changes to enhance access to services?</p> <p>Are there resource distribution shifts/changes committed to identifying vulnerable sub-groups?</p>	<p>What changes have occurred in access to health services as a result of the resource allocations (Global Budget) or changes to Pegasus Health programmes? Reference in particular vulnerable sub-groups.</p> <p>What changes have occurred in morbidity as a result of enhanced access to services?</p> <p>What changes have occurred in the integration and co-ordination of services as a result of enhanced access to services?</p> <p>How do consumers perceive barriers to accessing Pegasus Health services and how do they perceive this has changed 1999-2000, focusing on identified initiatives in particular?</p> <p>Is there increased knowledge by consumers of where to access services?</p> <p>Is there increased consumer satisfaction with service access and delivery?</p>

Table 2: Quality

Philosophy	Structure/Process	Outcomes
<p><b>A) QM infrastructure</b> Does the presence of the Global Budget allow the development of a comprehensive quality management infrastructure?</p>	<p>A QM infrastructure includes properly resourced programmes and participation in the following areas:</p> <ul style="list-style-type: none"> <li>▪ audit</li> <li>▪ QA</li> <li>▪ feedback to practitioners</li> <li>▪ informed choice/consent</li> <li>▪ Complaints procedures.</li> </ul> <p>Programmes are applicable, as appropriate to GPs, PNs and other groups.</p>	<p>The influence of the Global Budget on QM infrastructure should result in:</p> <ul style="list-style-type: none"> <li>▪ improved procedures for QM</li> <li>▪ increased levels of participation in QM</li> <li>▪ improved standards of practice.</li> </ul>
<p><b>B) Staff development</b> Does the Global Budget allow more comprehensive and effective staff development?<sup>6</sup></p>	<p>The components of improved staff development are expected to include, for GPs, PNs and others (as appropriate):</p> <ul style="list-style-type: none"> <li>▪ needs assessment</li> <li>▪ attendance at CME</li> <li>▪ development of credentialling<sup>7</sup></li> <li>▪ re-accreditation</li> <li>▪ incentives/sanctions for participation</li> <li>▪ extension of topics/opportunities.</li> </ul>	<p>The Global Budget should result in:</p> <ul style="list-style-type: none"> <li>▪ upskilled workforce</li> <li>▪ improved performance.</li> </ul>
<p><b>C) Evidence based decision-making</b> Does the introduction of the Global Budget allow the development of evidence-based decision-making?</p>	<p>Components facilitated by the Global Budget include:</p> <ul style="list-style-type: none"> <li>▪ increased levels of guideline development and adoption</li> <li>▪ increased levels of training and support for practitioners</li> <li>▪ increased levels of monitoring adherence.</li> </ul> <p>Practitioner satisfaction.</p>	<p>Increased numbers of guidelines.</p> <p>Increased adherence to guidelines.</p> <p>Practitioner satisfaction.</p>

<sup>6</sup> We have used the term 'staff development' in its generic sense. It is not meant to imply that Pegasus GPs are Pegasus Health staff, indeed Pegasus GPs are independent contractors and employers of practice nurses and other staff.

<sup>7</sup> Credentialling is more commonly applied in the secondary care setting compared to the primary care setting. We accept because of its generalist nature, general practice is an area where it is important for general practitioners to know a little about many different areas, and to be comfortable with uncertainty to an extent which would be inappropriate in a secondary care environment.

Table 3: Māori health

Philosophy	Structure/Process	Outcomes
<p>Is Pegasus responsive to Māori consumer health service needs?</p> <p>Does the Pegasus model demonstrate a commitment to the achievement of gains in Māori health?</p> <p>Does Pegasus engage in a partnership model:</p> <ul style="list-style-type: none"> <li>▪ within its organisation?</li> <li>▪ with external Māori providers?</li> </ul>	<p>Information/data</p> <ul style="list-style-type: none"> <li>▪ what Māori health information does Pegasus collect?</li> <li>▪ how is ethnicity data collected?</li> <li>▪ how is ethnicity data analysed and used to input into service design and continuous quality improvement?</li> <li>▪ how does Pegasus identify the service needs of Māori consumers?</li> <li>▪ does Pegasus have best practice models for health service provision to Māori consumers?</li> </ul> <p>Māori participation</p> <ul style="list-style-type: none"> <li>▪ what is the extent and nature of Māori participation in Pegasus?</li> <li>▪ what is intended by including Māori participation in Pegasus?</li> <li>▪ what are the outcomes of Māori participation in Pegasus?</li> </ul> <p>Accessibility</p> <p>Are the services accessible?</p> <p>Does Pegasus assess the accessibility of its services for Māori consumers?</p> <p>Utilisation</p> <p>Are Māori utilisation patterns identifiable?</p> <p>Satisfaction</p> <p>Are Māori consumers satisfied with the quality of services received?</p> <p>Best practice</p> <p>How are best practice models implemented with Māori consumers?</p> <p>QMS appropriate indicators/measures</p> <p>What indicators of best practice for Māori are included in quality management systems? How are these measured?</p>	

Table 4: Pacific Peoples' health

Philosophy	Structure/Process	Outcomes
<p>Is Pegasus cognisant of, and responsive to, the Pacific Peoples' Health Charter (MoH 1997)? Ministry of Health 1997 Making a Pacific Difference: Strategic Initiatives for Health of Pacific Peoples in New Zealand. Wellington. Ministry of Health.</p> <p>Ministry of Pacific Island Affairs Key Document – Programme of Action</p> <p>What is Pegasus responsiveness to Pacific Peoples' models of health (i.e., Pandanus Mat-Fono Fale model including traditional healing practices)?</p> <p>Does the Pegasus model demonstrate a commitment to the achievement of gains in Pacific Peoples' health?</p> <p>What initiatives has Pegasus developed for Pacific Peoples within the Global Budget period?</p> <p>What linkages has Pegasus established with Pacific Island communities/organisations?</p>		

Table 5: Community needs

Philosophy	Structure/Process	Outcomes
<p>Is there evidence that communities are involved in Pegasus Health decision-making?</p> <p>Do Pegasus Health documents clearly indicate a commitment to community needs assessment and broad determinants of health?</p>	<p>What structures allow community participation in decision-making?</p> <p>Is information shared with communities?</p> <p>What are the attitudes and knowledge of Pegasus Health Board members, Pegasus Health members and staff to community needs assessment and the broad determinants of health?</p> <p>Has Pegasus Health produced and used tools or processes (including education) to assist in incorporating community needs assessment into decision-making?</p>	<p>Does the community feel it has:</p> <ul style="list-style-type: none"> <li>▪ adequate information to participate</li> <li>▪ adequate opportunity to participate</li> <li>▪ adequate feedback from Pegasus Health on impact of input</li> <li>▪ adequate representation of views</li> <li>▪ adequate opportunity to react to events.</li> </ul> <p>Is Pegasus Health undertaking community needs assessment on a regular basis and using them in decision-making?</p> <p>Does the content of community needs assessments reflect broad determinants of health?</p>

Table 6: Health status

Philosophy	Structure/Process	Outcomes
<p>Is Pegasus Health demonstrably improving the health status of its population?</p>	<p>Is there a clearly documented definition of 'health status' agreed between Pegasus Health and HFA?</p>	<p>What changes have occurred in the indicators of health status before, and after, the Global Budget allocation?</p>
<p>Is it actively measuring and monitoring health status?</p>	<p>Is there an agreed protocol to operationalise the measurement of health status within the Pegasus Health population?</p> <p>What steps has Pegasus Health taken to collect health status measurement data in line with the protocol?</p> <p>What is the philosophy of Pegasus Health as a provider to the measurement of health status?</p> <p>What health measurement indicators and instruments is Pegasus Health using to reflect a culturally diverse population?</p> <p>Has Pegasus Health undertaken health status measurement that represents a broad view of health, and encompasses wider determinants than the traditional bio-medical definition?</p> <p>Has Pegasus Health undertaken an assessment of mortality and morbidity rates in relation to major causes of ill-health in their area?</p> <p>Has Pegasus Health utilised data from multiple available sources to compile health status profiles to inform the planning cycle of the organisation?</p> <p>What quality control systems has Pegasus Health in place to assess the validity, reliability, and cross-cultural transferability of existing health status measurement tools?</p>	<p>How do health status changes compare to regional/national picture, adjusted for variables – socio-economic, ethnicity, etc?</p> <p>What changes has Pegasus Health instituted in the measurement of health status as a result of resource allocation from the Global Budget?</p>

Table 7: Funding model

Philosophy	Structure/Process	Outcomes
<p>Do the Global Budget documents (HFA/Pegasus Health contract, Pegasus Health service plan) contain statements that define performance targets?</p>	<p>What are the mechanisms that permit the monitoring of the Global Budget contract performance targets?</p> <p>What barriers are there to meeting performance targets?</p> <p>To what degree, and on what basis, is the Global Budget philosophy reflected in operating procedures as measured by performance targets?</p>	<p>HFA is enabled to use information on performance targets for purchasing decisions, and Pegasus Health for service delivery decision-making.</p> <p>New methods for the collection and use of information is developed to assist HFA in purchasing decisions, and Pegasus Health in service delivery decision-making.</p> <p>Is the information to measure performance targets available, and if so, is it available in a user-friendly form? If not, what are the barriers to the production, compilation and dissemination of the information?</p> <p>Is the HFA requesting information on the performance targets to:</p> <ul style="list-style-type: none"> <li>▪ make purchasing decisions</li> <li>▪ justify purchasing decisions</li> <li>▪ evaluate purchasing decisions related to the Global Budget contract.</li> </ul>
<p>Can the Global Budget funding model be used to enable individuals and communities to take responsibility for their own health?</p> <p>Can the Global Budget funding model be used to develop an evidence-based decision-making culture?</p> <p>Can the Global Budget funding model be used to facilitate stronger linkages between health research, policy and practice?</p>	<p>Need to develop programmes and policies to create environments where individuals and communities are more likely to make healthier choices. Need Pegasus Health staff buy-in to affect this change.</p> <p>Do health policies and programmes reflect current research knowledge?</p> <p>What are the barriers and/or facilitators of developing an evidence-based decision-making culture?</p> <p>Establish specific committees or procedures to link research to policy and practice.</p> <p>Establish mechanisms to ensure policy flows into practice.</p>	<p>Community groups taking more responsibility for health.</p> <p>Individuals taking more responsibility for health.</p> <p>What is the effect of these policies or programmes on self-rated health, mental health or disability?</p> <p>What are the barriers to successful linkage of research to policy and practice?</p>

Table 8: Cost-benefit

<b>Philosophy</b>	<b>Structure/Process</b>	<b>Outcomes</b>
<p>To determine if the costs of treating the Pegasus Health patient population have changed after the introduction of the Global Budget and identify possible causes of any change.</p>	<p>Are the databases of sufficient standard to assess utilisation, and therefore, allow accurate assignment of costs?</p> <p>Are accurate cost data available for all utilisation variables?</p> <p>Can cost data be assigned to an individual patient via the encrypted NHI number and/or other identifier?</p>	<p>Estimated total expenditure on the provision of primary and secondary health care services to the Pegasus Health population before, and after, the introduction of the Global Budget.</p>
<p>Does anecdotal and/or documented evidence support the hypothesis that the introduction of the Global Budget has created an environment of administrative innovation?</p>	<p>Have administrative functions and/or procedures changed with the introduction of the Global Budget?</p> <p>In which areas have administrative changes taken place?</p> <p>Have the changes affected staff, budget or other areas?</p> <p>Why were these changes not open to Pegasus Health prior to the Global Budget?</p>	<p>What administrative changes were there after the introduction of the Global Budget?</p> <p>Which areas were affected by these changes?</p> <p>Were the changes minor through to major?</p> <p>How were the changes related to staffing, budgetary, functionality, other issues?</p> <p>How innovative were the changes?</p> <p>Are these changes a direct result of the Global Budget, or could they have been put in place without the Global Budget?</p> <p>Were the changes fully funded from the Global Budget, or were other funding sources used to any extent?</p>

Table 8: Cost-benefit (continued)

Philosophy	Structure/Process	Outcomes
<p>Does anecdotal, documented or utilisation data support the hypothesis that the introduction of the Global Budget has created an environment of service delivery innovation?</p>	<p>Is there a commitment within Pegasus Health to innovation in service delivery?</p> <p>Is there a framework/process for developing new methods of service delivery?</p> <p>Is it possible to quantitatively measure improvements in health service delivery?</p> <p>Do consumer groups agree that service delivery has been improved?</p> <p>Why were any improvements or innovations in service delivery not possible before the introduction of the Global Budget?</p>	<p>What changes were there to service delivery after the introduction of the Global Budget?</p> <p>How have these changes affected Pegasus Health staff?</p> <p>How have these changes affected consumers?</p> <p>What framework(s) are used to develop new service delivery methods?</p> <p>What effect do the changes have on health utilisation by different consumer groups?</p> <p>Why were the changes not possible prior to the Global Budget?</p> <p>Were the changes fully funded from the Global Budget or were other funding sources used to any extent?</p>
<p>Does anecdotal, documented or utilisation data support the hypothesis that the introduction of the Global Budget has allowed better targeting of local services?</p>	<p>Is there a commitment within Pegasus Health to innovating local services?</p> <p>Is there a framework/process for developing new methods of targeting local services?</p> <p>Is it possible to quantitatively measure improvements in local service targeting?</p> <p>Do consumer groups agree that local services have been improved?</p> <p>Why were any improvements or innovations in targeted local services not possible before the introduction of the Global Budget?</p>	<p>What changes were there to targeting local services, after the introduction of the Global Budget?</p> <p>How have these changes affected Pegasus Health staff?</p> <p>How have these changes affected consumers?</p> <p>What framework(s) are used to develop new targeted local services?</p> <p>What effect do the changes have on health utilisation by different consumer groups?</p> <p>Why were the changes not possible prior to the Global Budget?</p> <p>Were the changes fully funded from the Global Budget, or were other funding sources used to any extent?</p>

Table 8: Cost-benefit (continued)

<b>Philosophy</b>	<b>Structure/Process</b>	<b>Outcomes</b>
<p>Does anecdotal, documented or utilisation data support the hypothesis that the introduction of the Global Budget has improved local responsiveness?</p>	<p>Is there a commitment within Pegasus Health to innovating local responsiveness?</p> <p>Is there a framework/process for developing new methods of locality response?</p> <p>Is it possible to quantitatively measure improvements in local responsiveness?</p> <p>Do consumer groups agree that local responsiveness has been improved?</p> <p>Why were any improvements or innovations in local responsiveness not possible before the introduction of the Global Budget?</p>	<p>What changes were there to local responsiveness after the introduction of the Global Budget?</p> <p>How have these changes affected Pegasus Health staff?</p> <p>How have these changes affected consumers?</p> <p>What framework(s) are used to develop new targeted local services?</p> <p>What effect do the changes have on health utilisation by different consumer groups?</p> <p>Why were the changes not possible prior to the Global Budget?</p> <p>Were the changes fully funded from the Global Budget, or were other funding sources used to any extent?</p>
<p>Does the Global Budget, and the way it has been implemented, fit with HFA/MoH policy and strategy?</p>	<p>Are there clear statements in Pegasus documentation about the Global Budget, its objectives and how it has been implemented?</p> <p>Are there clear statements about national policy regarding Global Budgets?</p> <p>Are there clear statements about the future of Global Budgets?</p>	<p>What changes, if any, have occurred in relation to the Global Budget, as a result of experience with the policy, monitoring by the HFA, and changing government policies?</p>

Table 9: Equity of funding

Philosophy	Structure/Process	Outcomes
<p>Has the Global Budget improved equity of health provision for the Pegasus Health population?</p>	<p>Can the Pegasus Health population be successfully geocoded to allow assignment of NZDep96 scores?</p> <p>Equitable defined in consultation with HFA/Pegasus Health/evaluation team.</p> <p>Determine what might be improvement parameters in light of definition of equity.</p> <p>Identify corporate culture shifts in Pegasus Health approach to equity.</p> <p>Measure public and private funding according to NZDep96 scores and location.</p>	<p>Measurement of public funding of primary care services for patients classified according to the NZDep96 scale before, and after, the Global Budget.</p> <p>Was the funding of health services for the Pegasus Health population equitable, as defined by the HFA and Pegasus Health, prior to the introduction of the Global Budget? If not, what areas needed to be addressed to make the funding more equitable?</p> <p>Were any areas defined in point 2 actually addressed after the Global Budget?</p> <p>Have there been any changes in the public funding of primary care services after the introduction of the Global Budget for patients classified according to the NZDep96 scale?</p> <p>What level of increased funding has specifically been made available to low income and Māori groups as part of Project 3.1.8: Smoking cessation; Project 3.1.9: Sexual health for under 21 year olds; Project 3.1.15: Hardship fund.</p> <p>Have other initiatives been undertaken which provide more equitable funding as a result of work completed in association with other projects? If so, how much funding is involved?</p> <p>Is it possible to estimate the appropriate uptake of community services and high user cards? Which groups have lower uptake rates than others? How can these uptake rates be increased if less than (say) 90%?</p> <p>Needs analysis. To incorporate the results of the analysis of delivery question 6d "Impact on the ability of Pegasus Health to be responsive to the needs of the community including meeting the targets detailed in the agreed service plan". Where possible these will be encompassed within the framework of the NZDep96 as the analysis parameter.</p> <p>Assessment of patient costs according to the NZDep96 scale.</p>

## EVALUATION METHODS

### Single group before and after design

After considering various research designs to evaluate the effectiveness of the Global Budget as a model of funding primary health care services, it was decided that a before and after research design was methodologically rigorous given the constraints of time, access to health information (both regional and national) and resources (budget).<sup>8</sup> This design is used when stakeholders want to know whether desired changes occurred as a consequence of a particular intervention.

The project team decided against a concurrent control evaluation, that is, one that compared the Pegasus Health Global Budget contract with another IPA funding model. One reason for this decision, was that there are many disparities between IPAs in terms of both structure and funding levels. It would be difficult to control the important confounders, such as contract price differences and organisational structure that affect service delivery and performance. Their influence over practitioner behaviour and organisation would mask the true Global Budget effect. The project team settled on the before and after evaluation design as a means of arriving at a true result of the Global Budget model effect, as distinct from the budget amount effect. The type of evaluation design would also allow for a more detailed analysis of the process contributing to change.

Notwithstanding the decision against a concurrent control evaluation, the team nevertheless, undertook a series of key informant interviews with selected IPAs with a view of gaining views on the opportunities they see in a Global Budget funding model, problems and otherwise of not having one. It is believed that this will provide an important comparative perspective and reality check.

For the purposes of this evaluation project, the before time period is 1 January 1999 to 31 December 1999, and the after time period is 1 January 2000 to 31 December 2000.

The Pegasus Health Service Plan (26 January 2000), identifies the programmes Pegasus Health plans to implement over the next three years. The Pegasus Health Change Management Project Plan (15 February 2000), identifies 16 key projects that will achieve the following goals:

- reducing secondary expenditure on acute medical admissions
- reducing waiting times for surgery and first specialist assessments
- reducing emergency department attendance
- redirecting patients to primary care for urgent and on-going management of their illness
- being consistent with the wider organisational strategy of supporting Pegasus family practices
- providing a framework for achieving longer-term goals
- being consistent with the Pegasus mission of providing better health and well-being for the population that it serves.

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<sup>8</sup> One of the intentions of the Global budget contract was to put in place a model which retained and built on the positive outcomes that were present before the contract was signed. It was beyond the scope of this evaluation to examine in detail the Pegasus Health activities that took place beyond the timeframe of the evaluation period. We accept that this could be viewed as a limitation of this research design but it was the most appropriate design given the time and resource limitations of the evaluation.

This evaluation project included the impact of the health services described above as they relate to the evaluation objectives, where the information was available for this purpose.

Details of the implementation of this before and after evaluative design provided for each of the evaluation objectives are presented in **Appendix 1**.

## The importance of the NZDep96 to the evaluation

Essential to the comprehensive evaluation of the Pegasus Health Global Budget, is the ability to ascertain types of patients most affected by the initiative. Two key patient descriptors are **location** and **socio-economic status**. Most Pegasus Health patients have NHI numbers, and it is possible to link address information to each NHI number, and then assign each address to a census MeSH block. Each MeSH block in turn, can be linked to the NZDep96 index of deprivation (Salmond, Crampton and Sutton, 1998). This means that for any patient information available with a NHI number, **location** and **socio-economic** indicators are also available. The location data defined by MeSH block will enhance patient anonymity, by negating the need for individual address information, and it is well suited to aggregation to broad suburban areas.

Socio-economic data using deprivation variables selected according to established theories and derived from census information, allows for more accurate description of socio-economic status, than allowed by either Community Services or High User card status. The NZDep96 will allow evaluation of, most particularly, improved access and equity of funding by physical location and socio-economic status. However, the ability to link to the NZDep96 will allow for much more robust evaluation of all service delivery areas. The use of the NZDep96 is core to much of the theory behind the approach to this evaluation, and will enhance the applicability of the results to a much wider population than that of Pegasus Health alone. Also, once a new database is established, it will open up a number of future analytical projects that could be taken up by Pegasus Health or HFA staff, or health services researchers. This is an innovative and exciting component of the evaluation proposal.

## Components of the evaluation framework - summative and process

The proposed evaluation includes both summative and process components. The summative evaluation focuses on the overall performance of the Global Budget as a funding model for primary health care services. Thus, the primary emphasis of this evaluation approach was to assess as far as possible, within the before and after research design, the implementation and impact of the Global Budget funding model for primary health care services. Important features of the summative evaluation were the identification of the attributes of the Global Budget model, the process of implementation, the structure and outcome of the Pegasus Health programmes, and initiatives that contributed to the success or failure of the Global Budget funding model. The aim of the evaluation was to be able to develop a set of recommendations about the future role of the Global Budget funding model, including the devolvement of purchasing primary health care services.

The process evaluation focused on the process of delivering the initiatives associated with the Global Budget contract. Process evaluation was concerned with documenting and analysing the way the programme was implemented, including the on-going interactive processes between the stakeholders involved in the implementation of the Global Budget funding model. Also, it examined the characteristics of the population being served by Pegasus Health and the degree to which the Global Budget contract

operates as expected. The process evaluation addressed, among others, the following questions:

- how was the assessment of needs undertaken?
- what evidence can be found that supports the theoretical assumptions made by the stakeholders of the Global Budget contract?

The process evaluation examined how the Global Budget contract was implemented. It is important to learn how this form of funding primary health care services worked before implementing the model at other settings or with other populations.

## Evaluation approach – use of both qualitative and quantitative methods

The broad evaluation approach adopted by this proposal looked at the effectiveness of the Pegasus Health Global Budget funding model for the Pegasus Health population, and also took a national perspective to determine whether the processes and outcomes were transferable to other primary health care settings in New Zealand. The stated philosophy of the HFA/Pegasus Health Global Budget contract "is to promote the health of the individual and the population through provision of comprehensive, quality primary health care and the integration of other health care services with primary care services". Hence, this evaluation framework was designed to capture the potential for changes in patient outcomes such as utilisation rates, quality of life, consumer satisfaction with issues such as access, acceptability and decision-making. Service provider perceptions about the implementation of the Global Budget funding model was assessed, both in secondary care and other primary care organisations.

Given the complexity of the Global Budget funding model, a mixture of quantitative and qualitative analyses were used. The main qualitative methods were focus groups and in-depth interviews using semi-structured formats. Several project team members have experience in these methods. These are highlighted where appropriate during discussion of the individual evaluation objectives. The main quantitative methods included economic and service utilisation analyses. Data on quality of life and patient satisfaction measurement through surveys and secondary data, were examined where present. Access to information on databases at Pegasus Health, HFA, and CHL were negotiated during the planning phase of the project.

Addressing the proposal delivery questions requires the implementation of data collection strategies relating to the delivery of primary health care services before, and after, the introduction of the Global Budget contract. The purpose of collecting this information was to provide a qualitative, and where possible, quantitative measure of the processes, and where available, outcomes of primary health care service delivery. Comparisons between key variables included:

- clinical and morbidity indicators, and service utilisation rates
- qualitative analyses of patient and provider perceptions related to issues of access, appropriateness of services, participation in decision-making, and so on
- economic analyses – costs of service utilisation measures were required to identify the extent to which services provided under the Global Budget contract differ in their composition, and costs from those services provided prior to the implementation of the Global Budget contract.

Information collection about changes in service delivery and utilisation was obtained from a variety of sources using several collection instruments. Wherever possible, use was made of existing data.

The evaluation methodology (process and summative) was applied across a structure, process and output/outcome framework for assessing the Global Budget contract initiatives. The structure component involved the application of both quantitative and qualitative research methods, the process component – qualitative methods and the output/outcome component – quantitative research methods. This is illustrated in Table 10.

Table 10: Quantitative and qualitative research methods applied to the structure, process and output/components of the Global Budget contract initiatives

<b>Initiative</b>	<b>Structure (quantitative &amp; qualitative methods)</b>	<b>Process (qualitative methods)</b>	<b>Output/outcome (quantitative methods)</b>
Improve access	Document and data analysis Key informant interviews	Pegasus Health document search Key informant interviews Focus groups Document analysis	Pegasus Health data review Pegasus Health population demographic data analysis Utilisation data analysis
Improve quality	Document analysis – use of QA, CME, audit, qualifications, etc	Key informant interviews Document analysis	Utilisation data analysis Pegasus Health data review
Māori Pacific Peoples	Document and data analysis Focus groups In-depth interviews	Document analysis Focus groups In-depth interviews	Pegasus Health data review
Health status	Document and data analysis Focus groups In-depth interviews	Document analysis Focus groups In-depth interviews	Utilisation review Pegasus Health data review
Community needs	Document and data analysis Focus groups In-depth interviews	Document analysis Focus groups In-depth interviews	Utilisation review Pegasus Health data review
Funding model	Document and data analysis Focus groups In-depth interviews	Document analysis Focus groups In-depth interviews	Data review Literature review
Cost-benefit analysis	Document and data analysis	Document analysis	Utilisation data
Equity of funding	Document and data analysis	Document analysis	Utilisation data

The research approach used for each initiative shown in Table 10 above is described in detail in **Appendix 1**.

## Quantitative measures, sampling and analysis

### Databases required for the evaluation

The data sources listed below were the ideal requirements. As many sections of the evaluation will be based solely on existing data sources, it was accepted there might be some differences between the ideal and the actual. All such differences were noted in the evaluation. Where possible, data was provided in both aggregated form and at the patient level identified by practice ID and NHI number. Alister Penrose undertook management of the databases for the purposes of the evaluation. He has considerable experience in this field through his management of the RNZCGP Dunedin Research Unit database of clinical general practice records. He has also worked with the NMDS, pharmaceutical databases, and disease registers.

The databases were securely stored, with access available only by request to Mr Penrose. All access requests were logged, and records created of which evaluation team member accessed which database(s) for which purpose. This log will be made available to Pegasus Health and HFA officials on request. It was acknowledged that some databases contain sensitive material, and that the databases were made available *only* for the purposes of the evaluation of the Pegasus Health Global Budget. All members of the evaluation team signed a confidentiality agreement that included adherence to all relevant privacy legislation. At the conclusion of the evaluation, all databases were erased or securely archived for storage at the Department of Public Health & General Practice, Christchurch School of Medicine.

Databases will include:

- patient registers for the calendar years 1999 and 2000. (Patient registers for Pegasus Health for the calendar year 1999 as the 'before period' and for 2000 as the 'after period'. The patient register includes: year, patient ID, age, sex, community card status, high user card status, last surgery, GMS, all consults)
- consultation numbers for the calendar years 1999 and 2000
- all NMDS data for Pegasus Health patients' hospital admissions for the calendar years 1999 and 2000
- Victorian costweighting tables by DRG for costing hospital admissions via the NMDS
- all Canterbury Health data relating to ED contacts for the calendar years 1999 and 2000 not otherwise accounted for in the NMDS data.

Further details of quantitative measures used in the evaluation are presented in **Appendix 1**.

The quantitative sampling frame comprised the Pegasus patient register for the calendar years 1999 and 2000. As illustrated in the section headed 'primary care and patient registers', the 1999 Pegasus patient register contained 281,795 people and the 2000 register contained 284,731 individuals – representing 91.18% and 92.13%, respectively, of the Christchurch population in 1999 and 2000 according to 1996 census counts for Christchurch.<sup>9</sup>

The majority of the quantitative data analysis was population-based providing descriptive material.

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<sup>9</sup> The Pegasus patient register was developed specifically for the Global Budget contract for payment purposes. Hence it may differ from other IPA patient registers. For example, as well as individuals from the Christchurch City population, it includes casual and out-of-town patients. There will also be a number of Christchurch residents who consider that they belong to a particular practice but, because they have not attended in the previous two years, are not included on the patient register (particularly children over the age of four and young men).

Categorical data was analysed using chi-squared tests. Utilisation and economic data, because of its largely non-normal distributions, required non-parametric tests such as the Mann-Whitney U test. Where appropriate, paired tests could have been used.

As this is a population-based project, no power calculations were performed, as it was not necessary to do so.

The database source and their use in the primary care utilisation, secondary care utilisation and economic analyses, are summarised in the following table:

Table 11: Summary of quantitative analyses and database sources

Database	Source*	Type of Analysis		
		Primary care utilisation	Secondary care utilisation	Economic analysis
Patient register	PH	X	X	
GP consultation data	PH	X		X
Immunisation data	PH	X		X
NMDS	HFA		X	X
Victorian costweight tables by DRG	HFA		X	X
ED encounter data	CHL, HFA		X	X

\* PH = Pegasus Health, HFA = Health Funding Authority, CHL = Canterbury Health Limited

#### Pegasus IPA member survey

The two main approaches to generate primary data used in this evaluation have been the analysis of databases and qualitative studies of key informants. The researchers were aware that these approaches focused largely on global or organisational levels of decision-making and impact. There was concern that the voices of individual practitioners had not been heard, and decided that a survey of IPA members would be an appropriate way to achieve this. Unfortunately, resources precluded a similar survey of Practice Nurses, but the evaluation team strongly recommended that this took place too.

The survey comprised 24 questions on the experience of being in Pegasus. Each question offered a scale of responses from 'strongly agree' to 'strongly disagree'. Respondents were also invited to make additional comments on any matters they felt were important. The questions were designed to complement or illuminate issues arising from interviews or documents for which we felt a practitioner insight would be important. For example, the researchers wanted to know the views of practitioners on a number of initiatives taken by Pegasus, such as Māori health and member support.

A response rate of 80% was achieved with one follow up. The results have been analysed according to simple frequencies and are reported at appropriate points in the report and in tabular format in **Appendix 2**.

#### Qualitative measures, sampling and analysis

Given the complexity of the Global Budget funding model, a mixture of quantitative and qualitative analyses were used. The main qualitative methods focus groups and in-depth interviews using semi-structured formats.

Many of the issues considered by the evaluation could only be effectively analysed by the use of qualitative methods. These issues were highlighted in our proposal. Qualitative methods have an established place in evaluation research (Guba and Lincoln, 1994; Denzin and Lincoln, 1994; Morse and Field, 1995). Qualitative and

quantitative techniques are complementary methods of analysis, especially where an evaluation of a complex system is undertaken.

Qualitative research is particularly useful when an understanding of processes and perceptions is required. In this case, quantitative measures can reveal only a part of what is happening. Qualitative analysis examines the understandings and experience of those individuals involved in a setting, such as the management or the delivery of primary care health, and in doing so, adds considerable analytical depth to the evaluation. Qualitative methods when applied as part of an evaluation framework, are able to address the causes which are associated with a given output or outcome, and provide insight into the processes by which the outputs/outcomes are created. As such, the use of qualitative methods are integral to the evaluation of a major policy initiative such as the evaluation of the Pegasus Health Global Budget contract to address issues which cannot be adequately assessed through the use of quantitative research methods alone. Qualitative research is useful to policy makers and purchasers by providing descriptive information and analysis of the context in which health policy and services will be implemented.

#### The use of focus groups

The focus group discussion is a qualitative research technique used to obtain data about feelings, opinions, perceptions, beliefs and behaviours of a small group of participants, representative of the population of interest, about a given experience, service or other phenomenon. It enables the researcher to gain a broad understanding of why participants think and act the way they do. Focus group discussions are particularly useful, where little is known about the subject under investigation.

Subject recruitment is tailored to the research aims. Selection criteria generally specify the demographic characteristics of the target population. Group members may share a particular health problem (e.g., cancer, hypertension), or use the same health services (e.g., maternity and child). Purposive sampling is used most frequently for selecting focus group participants.

Ethical considerations in the conduct on qualitative research include:

- informed consent [focus group discussions were carried out only with the informed consent of the participants]
- the right to privacy [maximum confidentiality was given to participants]
- the reduction of harm [the researcher makes every attempt to ensure that no one is harmed by taking part in the research], and
- the storage and use of the data [all data gathered during the course of the research was stored securely so that no casual access to them is possible].

Development of the focus group discussion guide requires careful consideration. As in questionnaire design, each item in the discussion guide should have a specific purpose related to the objectives of the research study. The discussion guide is a detailed protocol of sequenced open-ended questions and probes which allow the facilitator to keep the session on track. As well as using the discussion guide, the facilitator follows the leads presented by participants, and allows them to talk freely and spontaneously in their own vocabulary.

Focus groups allow the researcher to get more detailed information than is possible from other research methods. This is because the facilitator asks open-ended in-depth questions, and can deviate from the discussion guide to follow-up points that arise in discussion between multiple participants who can stimulate one another's thoughts on the topic under discussion. A far larger number of ideas, issues, topics

and solutions to a problem can be generated through group discussion than through individual conversations. In a focus group discussion, the facilitator gets the participants to interact with each other by commenting on each others' experiences, and by exchanging anecdotes that reveals additional information. It is this 'open-ended group interaction' or 'group dynamic' effect that distinguishes focus group discussions from the more traditional style of one-to-one, face-to-face interviewing approaches.

Focus groups also have the advantages that they do not discriminate against people who cannot read or write, and they encourage participation in a group discussion setting from people who may otherwise be reluctant to be interviewed on their own.

Focus group discussions are an appropriate research method for examining the attitudes and experiences of representatives from a target population, and how knowledge and ideas are developed, constructed and expressed in a given cultural context. Kitzinger (1995), concluded:

*“Thus, while surveys repeatedly identify gaps between health knowledge and health behaviour, only qualitative methods, such as focus groups, can actually fill these gaps and explain why these occur”.*

Finally, qualitative methods are more culturally-friendly for Māori and Pacific Peoples due at least in part to a stronger tradition of oral communication.

Further general discussion regarding the use of qualitative research methods and how they fit with the overall research method, is presented in **Appendix 3**.

#### Qualitative sampling frame

Patton (1990), stated “qualitative inquiry typically focuses in-depth on relatively small samples, even single cases (n=1), selected *purposefully*”. Quantitative sampling concerns itself with *representativeness*, and qualitative sampling concerns itself with *information-richness*. This was the approach adopted by the evaluation team, and in keeping with the overall stakeholder-focused approach to the evaluation, the stakeholders were engaged in the process of identifying some of the individuals and groups for the in-depth interviews and focus group discussions. The purpose here was to identify those individuals who were informed about the topic of investigation, that is, who were seen as information-rich. As the process of discussion and evaluation takes place, further inquiry takes place to confirm understanding of results, to challenge an understanding, and finally, to enrich an understanding of results.

The evaluation undertook a critical case sampling approach, whereby sources of data (people) were interviewed who were identified as information-rich or enlightening. This approach permits logical generalisation and maximum application of information to other cases/circumstances; if it is true of this case (person), then it is likely to be true of other similar cases (people) (Patton, 1990 pp. 169-186).

#### Qualitative analysis

Thematic analysis was used to analyse the findings from the focus group discussions and in-depth interviews. Thematic analysis is a common method for analysing the qualitative data collected during facilitated focus group discussions (FGD). Data from a FGD is considered qualitative because the complete statements of the group members are audio-recorded and transcribed verbatim. Thematic analysis uses an inductive reasoning process to structure and interpret meanings derived from the discussion. Meanings can be ascribed to individuals, as well as to the collective contribution of the focus group. In order to structure the meanings, the researcher looks for ideas or themes which emerge as transcripts are read and reread. The themes serve the purpose of grouping similar ideas or topics together in order to

discern trends and directions in the individual or group discussion related to the key evaluation questions. Michael Quinn Patton in his book, *Qualitative Evaluation Methods*, discusses the task of discovering or discerning themes.

Focus group discussions and in-depth interviews were tape recorded and transcribed. These records were the raw data used for analysis, along with the facilitator's field notes about context, highlights, and insights. These data were used to generate a list of key ideas, words, phrases, and verbatim quotes that captured the participants' sentiments. The participants' ideas were then clustered into various categories that formed the themes of the discussion<sup>10</sup>. These themes need to be related back to the key questions of the evaluation and identified in responses and quotes used to illustrate particular points. The focus group themes provided the major headings for the written report of focus group discussions. Thus, a thematic analysis of the transcripts was undertaken.

To provide validity checks of the results obtained from the focus group discussion, both investigator and data triangulation was used. The goal of investigator triangulation was to strengthen data analysis through confirmation and completeness. In this evaluation, two experienced researchers independently interpreted the data from the focus group discussion. Their analysis was compared for inter-rater reliability. Data triangulation assesses data acquired by various methods (qualitative or quantitative), compared to information obtained from the focus group method. Multiple sources of data were used to investigate a particular issue or question, thereby strengthening the scientific rigor of the evaluation. Finally, as a further validity check, the results of the focus group discussions were fed back to participants for assessment of accuracy.

The role of the qualitative analysis component of the evaluation of the Pegasus Health Global Budget contract is very important. This is because the evaluation must be able to answer not only what outputs/outcomes were achieved, but also:

- what are the desirable and undesirable features of the Global Budget contract?
- is the Global Budget contract transferable to other IPAs and health provider groups?
- what are the perceptions of those involved in the Global Budget contract, including, Pegasus Health members, consumers, other IPA representatives, other health providers, Māori, Pacific Peoples, HFA, etc?

Many of these aspects of the Global Budget contract require an in-depth understanding that can only be gained from a qualitative analysis.

Further details of the qualitative measures and analysis are presented in **Appendix 1**.

## Evaluation research standards

The Joint Committee on Standards for Educational Evaluation has developed programme evaluation standards to assess whether a set of evaluative activities is well-designed and working to their potential (Joint Committee on Standards for Educational Evaluation, 1994). The standards provide practical guidelines to follow when having to decide among evaluation options.

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<sup>10</sup> There are a number of techniques available for analysing qualitative data (see Denzin & Lincoln, 1994; Miles & Huberman, 1994; Morse & Field, 1995; Silverman, 1993; Wolcott, 1994).

The standards are grouped into the following four categories:

- utility
- feasibility
- propriety
- accuracy.

The American Evaluation Association and 14 other professional organisations have endorsed these standards. The evaluation proposed was guided by these standards.

## Conduct of health research

The conduct of the evaluation was undertaken in accordance with the provisions of the following statutes and regulations:

- Privacy Act (1993)
- Health and Disability Act (1993)
- New Zealand Bill of Rights Act (1990)
- Health Information Privacy Code (1994).

## The Pegasus Health Independent Practitioner Association (IPA)

### Brief History

A group of Christchurch-based General Practitioners (GPs) formed an Independent Practitioner Association (IPA) in 1992. Previously, GPs were individually paid government subsidies, primarily on a fee-for-service basis. There was little or no funding for infrastructure to support the development of primary health care services. In 1993, the IPA established the Pegasus Medical Group Limited (PMG) with 185 members. In the same year, PMG entered into contractual discussions with the Southern RHA; this was established when health reforms were implemented from 1 July 1993. This contractual negotiation was, in part, to provide PMG members with an alternative option to the Section 51 Advice Notice which was being rolled out to fund GPs in the absence of alternative funding arrangements.

A three-month contract between the HFA and PMG was signed which maintained the conditions prior to 1 July 1993 under which PMG members claimed for subsidies and benefits. Later in 1993, a Health and Disability Services Agreement was entered into by PMG and the HFA. The purpose of this agreement was for PMG members to provide Health and Disability Services, and to develop and implement pilot and full-scale projects. The Pegasus approach was born, and subsequently nurtured with over 20 variations to the initial agreement between the HFA and PMG. Key developmental milestones included:

- 1994 – a laboratory services pilot project (notional budget holding contract) commenced plus other projects on immunisation, maternity services, GMS and information systems and outpatient review
- 1995 – notional budget holding contract for pharmaceuticals started
- 1995 – a deed of assignment occurred where PMG Ltd. (Pegasus) assigned all their rights and interest to PMG (1995) Ltd., in effect changing the charitable status of the contacted provider. (Pegasus 1995)
- 1995 – a free mammography screening programme for Pegasus patients was launched three years before the national programme

- 1996 – Pegasus continued with the immunisation project, payment and administration project and information system projects implemented
- 1997 – Pegasus permitted to process laboratory claims and a practice and hospital based smoking cessation programme implemented, a joint initiative with Canterbury Health respiratory services
- 1998 – further immunisation and smoking cessation projects undertaken
- 1995 – onwards new projects undertaken
- 1999 – signing of the Global Budget contract with a single revenue stream of funding
- 2000 – PMG (1995) Ltd. changes name in November to Pegasus Health Ltd.

The name change from PMG to Pegasus Health was significant for the organisation. It symbolised a philosophical shift from a narrow medical to wider public health focus, and this is illustrated in this comment from the Chairperson of Pegasus Health:

*“There are two major points of significance, the first of which is that people interpret medical to mean doctors and historically in 1992, this was a doctors group and you know the history of our forming and the response to the previous reforms, so changing to Pegasus Health meant to us to signal a broader range of health providers, particularly we’ve focused on Practice Nurses but also a working together relationship with other health providers, so that’s key point number one. I think also medical to many people links doctors with care of sick people. This organisation has been very clear about taking a pro-active view of health promotion and disease prevention. At the same time as linking that to good care of sick people but the broadening view of health so they’re highly significant words from my point of view”.*

#### Organisational profile

The governance of Pegasus Health is by way of a Board of Directors made up of Pegasus Health members, namely GPs. Six members made up the first Board of Directors. The current Chairperson is Paul McCormack, and the Deputy-Chairperson is Sandra Hicks. Final sign-off on policy and other major management decisions rests with the Board.

The executive team comprising Board members and Pegasus staff members, including the General Manager, has day-to-day managerial responsibility for the organisation, and some delegated responsibilities. The organisation employs over 70 staff members.

A third organisational structure is the Community Advisory Board (CAB). The CAB held its inaugural meeting on the 9 February 2000. It comprises representatives from the Salvation Army, NZ Aids Foundation, Pacific Island Council, Ngai Tahu Development Corporation, Deputy Mayor of Christchurch, Plunket, Aged Concern and Pegasus Health members and staff. The Chair and General Manager of Pegasus Health are ex officio members. The CAB operates with a terms of reference and budget.

Other major structural groupings within the Pegasus Health organisation are:

- Population Health
- Change Management
- Practice Development
- Nursing Development
- Integrated Care
- Education

- Information Technology
- Analysis
- Corporate Services
- Communication.

Pegasus Health's core purpose

In the document *Proposal for provision of health services* (18 August 1999), the core purpose of the organisation was stated as:

*"Managing change in healthcare with quality solutions".*

Pegasus Health's philosophy

In The Press, 7 April 2001, the philosophy of Pegasus Health was outlined as follows:

*"Pegasus Health is a firm believer that prevention is as important as cure. We invest carefully in public health projects, public education and awareness campaigns, smoking cessation, immunisation awareness and so on.*

*It is better for the health of all of us – and more cost effective – to spend money in the community to prevent illness than to wait until people are really sick and need hospital care".*

Pegasus Health's vision is stated in greater detail in their Global budget report 2001 and the relevant section from this report is presented in **Appendix 4**.

Pegasus Health's vision

In an oral presentation by Pegasus Health to the evaluation team on 26 April 2001, the vision of the organisation was outlined as follows:

*"In the year 2005, Pegasus Health and its members are national leaders in the provision of high quality, patient focused health care. We are continuing to manage change in healthcare with quality solutions".*

We are caring for Canterbury patients by:

- being the best provider of a comprehensive range of innovative, high quality health care services which meet the needs of patients, community and funders
- encouraging a team approach in the delivery of health care
- general practice teams meeting as much of our patients' health care needs as possible, and by assisting patients to access other health services as appropriate
- working effectively with others
- delivering valued services that also enhance the operation of general practice
- where appropriate, enabling Pegasus' health care solutions to be effectively implemented within New Zealand.

## Context of the Global Budget contract

Pegasus was one of the first IPAs to develop a contract with the RHAs in the early 1990s. The early contracts were later viewed by some purchaser staff to have been generous compared to funding available to other IPAs, and Pegasus' ability to retain and decide on how to spend savings under notional budget holding, also put it in a different position from other IPAs. The development of Pegasus and of new service initiatives appears to have been facilitated by these features. More importantly, for this

evaluation, many of the service initiatives reviewed here were begun prior to the signing of the Global Budget contract.<sup>11</sup>

The RHAs and the HFA were desirous of finding innovative ways in which to better manage their financial risk, that is increased health care spending given their capped budget, and to delegate responsibility for decision-making to primary care providers, as health care providers who are closer to their communities than a national health funding authority. With respect to the Pegasus contract in particular, there was purchaser concern over the amount of resource available to Pegasus under its pre-Global Budget contract (especially the automatic built-in rate of increase for the pharmaceuticals budget<sup>12</sup>). Also, there was a view that some Pegasus service initiatives were not the priorities that the purchaser would choose, and both concerns played a part in the development of the Global Budget contract. Key features of the contract from the HFA's perspective, therefore, included improved accountability. This is especially in terms of decision-making processes including a locally-developed, agreed service plan with a desire to move to health outcome targets; improved service delivery to particular groups not currently accessing primary care providers in Christchurch for reasons that need to be established; a Global Budget within which most expenditure was to occur, and specific financial incentives to manage acute admissions to hospital. It was also hoped that the contract would lead to improved working relationships between Pegasus Health and other groups in the health sector and community.

### Pegasus Health, the Global Budget and current government primary care policy<sup>13</sup>

Since the Global Budget contract was signed in 1999, a new government has been elected, the structure of the health care system has changed, and new policy for primary care has been announced. Some of the implications for Pegasus and the Global Budget are discussed in this section, as are the implications of the evaluation for the implementation of the current government's Primary Health Care Strategy.

Since being elected in late 1999, the Labour-Alliance coalition government has restructured New Zealand's health care sector. The HFA has been abolished, and the government has turned the 23 Hospital and Health Services (HHSs) into 21 territorial District Health Boards (DHBs). DHBs are governed by elected boards, with new boards elected in late 2001.

Eventually, funding for DHBs will be on a population basis, and DHBs will be responsible for planning and ensuring the delivery of a full range of health services. However, at the time of writing, DHB funding remains on a contract basis, and responsibility for public health and disability support services has yet to be devolved to DHBs. DHBs will own and manage a range of hospital, public health and mental health services and will complement these services with services they purchase from a range of other providers, including primary care providers.

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<sup>11</sup> As stated previously, pre-Global Budget,

- a. any decisions regarding the spending of 'savings' required SRHA/HFA approval and
- b. Pegasus never accessed specific contract funding for infrastructure costs this came from 'savings'

<sup>12</sup> This was agreed to by the parties to ensure a 'sinking lid' environment was avoided. Also, in 1998 a variation was entered into that capped the 'savings' that would come to Pegasus health from the pharmaceutical budget. Anything over this 'capped' level went into a joint 'integration pool' to a certain level and then straight to the HFA above that level.

<sup>13</sup> The purpose of this section is to provide a policy context for the reader. It should be noted that the more recent policy developments took place after the evaluation period but they have been included here for the purpose of completeness.

NZ Health and Disability Strategies have been produced to guide the sector over the next few years. In addition, a range of other sub-strategies have been developed detailing specific policy issues and developments for Māori health, Pacific Health, older people and women.

The government has also developed a Primary Health Care Strategy to guide DHBs and the sector in relation to primary health care, and achieve the goals of the NZ Health and Disability Strategies. The aim of the Primary Health Care Strategy (PHCS) is to ensure people are part of local primary health services “that improve their health, keep them well, are easy to get to and co-ordinate their ongoing care”, where primary health services focus “on better health for a population, and actively work to reduce health inequalities between different groups” (Primary Health Care Strategy, pg vii). Other changes may also occur in the funding of primary health care, with a community services card review underway, and higher subsidies for primary care being investigated (King, 2001).

Key to the PHCS is the development of Primary Health Organisations (PHOs). These organisations will:

- be funded by DHBs for a set of essential primary health care services, to those people who are enrolled, including services directed towards improving and maintaining health as well as first-line services to restore health
- be expected to involve their communities in their governing processes, and show they are responsive to communities’ priorities and needs
- have to demonstrate that all their providers and practitioners can influence the organisation’s decision-making
- be not-for-profit bodies, fully and openly accountable for all public funds they receive
- have voluntary membership (Primary Health Care Strategy).

In many ways, the development of PHOs is a progression from policy developments in primary care during the 1990s. For example, people will be encouraged to enrol with a particular PHO; PHOs will be funded on a population basis; the focus for care is on population health and care co-ordination within primary care services, and across primary and other services. Accountability for use of government funding via contracts will continue. New requirements are for PHOs to be not-for-profit, to be more representative of communities and providers than in the past, and for more attention to be paid to those with poor health or who are missing out on services to meet their needs.

Pegasus will have already seen the effects of some these changes, as Canterbury DHB has taken over responsibility for managing the Pegasus contract. But overall, it is too early to identify the exact implications of the structural reforms and the PHCS for Pegasus Health, and for other IPAs. Although DHBs will operate within some national guidelines, individual DHBs will be given the responsibility for approving PHOs (King 2001; Hon Annette King, Minimum Requirements for Primary Health Organisations, November 2001), and progress in implementing the strategy appears to be slow.

In many ways, Pegasus Health is well placed to make the move towards becoming a PHO (if it wishes to do so), and drawing on the results of this evaluation the following points can be made:

- it has increasingly taken a population approach to health care planning (and service delivery), although further improvement in the delivery to some high need groups such as Māori is desirable. For example, the identification of ethnicity of

patients is an on-going process. Proving that it can reduce inequalities may be its biggest challenge

- it is a not-for-profit organisation and includes on its board a range of providers not just GPs and a Practice Nurse. The CAB has a broader range of representation.
- it has made moves towards enrolment, and has in place good information systems for a population focus (though there is still some way to go to improve ethnicity recording, but on which it will hardly be alone)
- experience with the Global Budget may well work to help Pegasus in becoming a PHO, if population funding for primary care encompasses global funding for general medical services, pharmaceuticals, laboratories etc
- particular challenges which Pegasus faces include:
  - better relationships with Māori (see section on Māori Health)
  - better relationships with other providers in Canterbury (see section on Community Needs Assessment)
- other issues include:
  - working with a new DHB which is itself trying to find its feet and identify its own roles and responsibilities and how it will undertake these (e.g., needs assessments), and how its priorities will fit with those previously identified by the HFA and Pegasus
  - shift to population funding may have implications for the Pegasus budget.

Although PHO status is voluntary, it is difficult to see that the current government would enable two sets of primary health providers to co-exist without at least some common features. The most likely common feature relates to funding; the current government is likely to want to ensure that primary care is equitably funded, although it may wish to encourage PHO status by increasing the funding levels available to organisations wishing to become PHOs.

A number of points relevant to implementation of the PHCS can be made from this evaluation:

- PHOs will take time to establish; the change to a population focus will be a major change for some; the organisational and managerial requirements to manage a population health focus are significant
- funding for PHOs is to be on a population basis but it is not clear if it will incorporate a Global Budget for a range of services. Based on this evaluation, the evaluation team recommends a cautious approach – enabling a Global Budget, but with reporting requirements in terms of utilisation of key services, enabling targets for individual PHOs to be set in future to meet policy goals.

# Evaluation Results

## ACCESS

### Background

Primary care in New Zealand has been provided on a fee-for-service basis with some government assistance since 1938 when Social Security legislation was introduced (Barnett Coyle and Kearns 2000). At present, access to assistance with these costs is limited to those on low incomes who may apply for a Community Services Card which allows partial subsidisation of consultation fees and prescription costs. This means that access to care is still restricted by ability to pay.

There is evidence that ethnic and socio-economic differentials in utilisation of primary care services, which were narrowing up until the 1970s, have been increasing since the 1980s (Barnett Coyle and Kearns 2000). International evidence also suggests that when cost barriers are removed, utilisation patterns are likely to mirror deprivation. In Canada, since the introduction of national health insurance, the groups with the highest utilisation are those with the lowest income. This matches health needs as predicted by the socio-economic distribution of the burden of disease. It is well known that there are barriers to accessing primary care services for vulnerable populations.

In New Zealand, these vulnerable groups include the socio-economically deprived (Barnett 1998), Māori and minority ethnic groups (Coster and Gribben 1999) with increasing concern being expressed about adolescents within these groups (Siataga et al. 1999). These barriers to accessing primary care are fiscal, cultural, and socio-organisational.

Those who are often in most need of primary care services access them the least (Gribben 1999). This, when contrasted with the high use of secondary care services by the same populations (Malcolm 1996), suggests that the barriers to utilisation of primary care services and the high utilisation of secondary care services may be linked. Attempts have been made through introduction of subsidised consultations by providing Community Service Cards to improve access of low-income earners and beneficiaries to primary care services.

Unfortunately, there are indications that the financial barriers to primary care access remain (Barnett and Coyle 1998), and those who do not take up a Community Service Card when they are entitled to it, often have the greatest health need (Coster and Gribben 1999). The Principles of the New Zealand Health Strategy (Ministry of Health, 2000), released since the evaluation period, highlights current health policy and general focus of access issues in primary care in New Zealand over this time, and includes:

- an improvement in health status for those currently disadvantaged
- timely and equitable access for all New Zealanders to a comprehensive range of health and disability services, regardless of ability to pay.

The Priority Objectives to Reduce Inequalities ensures:

- accessible and appropriate services for people from lower socio-economic groups
- accessible and appropriate services for Māori
- accessible and appropriate services for Pacific Peoples.

More specifically in the Primary Health Care Strategy, the Ministry of Health has six key visions, two of which are relevant to the area of access:

- to offer access to comprehensive services to improve, maintain and restore peoples health
- to identify and remove health inequalities.

The principles of this policy are translated more specifically in the Head Agreement of the Global Budget contract between Pegasus Health and the Health Funding Authority. In the Service Delivery Principles outlined in this document, both availability of a broad range of services and identification of health inequality and subsequent proportional service access are implied as:

- Equity of Access. Subject to recognised medical ethics and geographical limitations, all people should have equitable access to quality health services according to their needs and their ability to benefit.

Hulka (1978), describes a framework for describing access in health service research that incorporates the three main concepts:

- accessibility – reflected as realised accessibility in utilisation data, and potential accessibility which has been studied by a number of researchers and various spatial accessibility indices developed
- availability – closely linked to utilisation are the range and ratio to population (and its vulnerable groups) of services available. This is an important supply side influence
- acceptability – related to patients' perceptions of services and an important influence on the 'demand' for primary care services.

This is a useful framework that allows assessment of access to primary care in terms of both demand and use. These three concepts will form the theoretical framework for the investigation of the three evaluation aims below. Relating this to the evaluation question in the Request for Proposal (RFP) above "to assess initiatives undertaken for improved access and their impact to date on access by the PMG patient population to services provided by PMG":

- improvements in accessibility would be seen in changes in utilisation patterns
- improvements in availability in the range and number of services available
- improvements in acceptability would be seen in focused initiatives to reduce barriers to access resulting in changing patterns of access for groups identified as likely to experience barriers to access.

Particular reference is made where possible to sub-populations identified as likely to experience barriers to access. Issues for Maori and Pacific Peoples are covered in other sections of this report.

## Aims

- to assess the initiatives undertaken by Pegasus Health to identify barriers to access
- to assess Pegasus Health capacity to improve access for its general patient population and specifically for sub-groups of the patient population identified as likely to experience barriers to access
- to determine the extent to which the Global Budget has improved access for the PMG patient population, with particular reference to vulnerable groups.

## Methods

### **Assess the benefit to access anticipated from the Global Budget funding model**

Key informant interviews with members of the HFA and Pegasus Health staff were conducted, and the anticipated benefits were explored in this area resulting from the Global Budget funding model.

### **Assess changes in process and structure as a result of the Global Budget contract**

A review of existing Pegasus documentation and data sources was undertaken investigating policies related to access before and after implementation of the Global Budget contract, plus key informant interviews were conducted.

### **Develop a profile of the Pegasus patient population**

A profile of the Pegasus population was reported in the quantitative data section using currently collected Pegasus data to describe age, sex, socio-economic descriptors. Ethnicity information was not routinely recorded in the Pegasus Health patient register. It is intended to rectify this with the move to enrolment. To pursue any analysis by the limited ethnicity information available in the patient register would be neither valid nor robust. Through the different stages of the research programme detailed below, we used the following indices to identify sub-groups likely to experience barriers to access:

- basic demographic data – age and sex profiles for the Pegasus population were determined and changes since the establishment of the Global Budget were highlighted
- socio-economically deprived groups – the socio-economic profiles were detailed by geocoding and linked to the New Zealand Deprivation index (Salmond, Crampton and Sutton, 1998), which is well established as the most accurate indicator of deprivation in the New Zealand population.

Extra research was conducted where there was insufficient data from documents and existing quantitative data sources. Key informant interviews were conducted with Pegasus directors, management staff, population health team leaders, and community group leaders. Material specific to access is also used from interviews conducted with HFA members, and some contextual material used from interviews carried out for other sections of this report. These were taped and transcribed. Focus groups were conducted with patients and Pegasus Health general practitioners.

To try to gain perspectives from those more likely to experience disadvantage, patient groups were selected to ensure adequate representation from the elderly, patients with chronic disease and Community Service Card holders.

GP groups were selected to ensure adequate representation from lower socio-economic area practices. These were also taped and transcribed. Qualitative analysis was thematic with a narrative approach providing illustrations from the transcripts.

The quantitative survey of GPs conducted for the evaluation in July 2001 included questions of relevance to access issues and reference is made to the responses to these.

Specifically the three areas of access highlighted above were evaluated using the following methods:

- accessibility – this aspect of access is revealed in quantitative analysis of utilisation data, comparing time periods before and after the implementation of the global funding model and focusing on issues related to access and using utilisation data for consultations linked to hospitalisation rates to determine any changing relationships.
- availability – this second facet of access, which is closely linked to accessibility, is evaluated firstly with a broad description of any changes in the range and delivery of services. This is combined with a more focused assessment of new initiatives by Pegasus Health designed to improve access to its services prior to and since the introduction of the Global Budget funding model. These initiatives include those described in the Pegasus Health Service Plan (26 January 2000) and in the Pegasus Health Change Management Project Plan (15 February 2000).
- acceptability – this concept, related to patients' perceptions of access, is evaluated using qualitative data collection methods with consumers of Pegasus Health services. Focus groups were held with patients and general practitioners on issues of access to primary care. Groups identified as likely to experience barriers to access were purposefully sampled to ensure a range of views from different socio-economic, age and gender groups are represented. Themes for these focus groups have been developed to highlight and gain insight into aspects of access raised in the quantitative analysis of before and after utilisation data and the evaluation of new initiatives introduced, as well as canvassing views on cultural organisational and financial barriers to primary care.

## Results

Work has included a review of Pegasus Health documents relating to access. The focus was on identifying differences in philosophy, process and structure related to the initiation of the Global Budget funding model. Key informant interviews have provided insight into the benefits Pegasus anticipated from a Global Budget funding model as well as details of change in process and outcomes. Relevant findings from the quantitative analysis are also highlighted. Issues relevant to Māori and Pacific Peoples are commented on in detail in other sections of the report, however, some general comments are made.

### Expectations of the Global Budget

The Global Budget process has served to highlight the issue of access. Themes relating to access and barriers to access appeared increasingly in documentation around population health since the Global Budget contract was signed. Pegasus expected that a Global Budget funding model would give the organisation the flexibility to prove that general practice could embrace and address population health issues such as access, despite the tensions of motivation in not-for-profit population health goals with the small business model required to run individual practices.

It is interesting to note that while barriers to access (physical, cultural and socio-economic) are highlighted as key aspects of the Global Budget in this evaluation contract, this broader definition of access over and above utilisation is not made explicit in the Global Budget contract, service plan or key performance indicators, despite the comment from an HFA member that Key Performance Indicators (KPIs) provide significant incentive.

*"... my feeling around the experience of do they do what they say they're going to do is that the key performance indicators are quite crucial because I think in the past we haven't had very clear, pre-Global Budget we haven't had clear performance indicators and my experience is that they've said we're going to put money into this project, can we use this money for this project but it's not had much of an outcome".*

There was a perception from directors that a Global Budget funding model would provide appropriate incentives for increasing access not only for those already accessing primary care, but also for those not currently accessing primary care – a move to thinking of the Pegasus population as not just the attending population but the potential population, as well as taking responsibility for infrequent attendees (casuals), whose consultations might in fact be their only point of contact with the health system.

*"I think in actual fact that one of the things that helped us in a significant way to think of our, to shift the thinking was the fact that in actual fact our Global Budget, the denominator is our population. So that now I know that sitting as a director that the organisation continues to have an increased bottom line if we have more patients that we care for. So there's an incentive to increase access".*

More specific expectations of what the Global Budget might facilitate in the area of access are detailed.

Expectations of identifying groups likely to experience barriers to access

Pegasus Health expected they would be able to develop better access to data sets such as the NMDS to match with their population, with the active assistance of the HFA. The Global Budget was also expected to facilitate development of Pegasus' own information systems to identify their population and look at recording ethnicity and socio-economic indicators as a priority. It was expected that this would be done as part of patient enrolment. It was also expected that the Pegasus population linkage with utilisation data would provide information about the way different groups use particular services and therefore help to identify areas where access barriers may exist.

Health Funding Authority staff also had these expectations but felt less certain of the outcome.

*"An example would be the enrolment projects. I think we've funded that originally about four years ago we started funding to do a pilot of enrolment which we're still working on. We've [HFA] funded them to quite specifically to attach NHI numbers to all their practices and then to maintain the NHI thing. They still haven't done that (the enrolment project). We've funded them quite explicitly pre-Global Budget to do that and we're funding them again in the Global Budget to do it" (refers to an initiative listed in the service plan, rather than in the global budget contract).*

HFA staff also alluded to the role of lack of appropriate KPIs and monitoring, as well as changing funder structures and staff in this:

*"I think we didn't tightly monitor the contract. You see that was in the transition period, it was the last year of the Southern Regional Health, first year of the HFA*

*where the primary care team dispersed to the winds. I think that's been a big problem for the funder. We've had no continuity so the monitoring has been patchy because of that. The systems and the personnel and institution knowledge has been vary patchy".*

#### Expectations of identifying barriers to access

It was expected that the Global Budget would allow development of information systems which would allow co-ordinated description of the population, its sub-groups likely to experience barriers to access and their service utilisation patterns. This was expected to identify groups who appeared to be underutilising particular services according to predicted health needs. It was expected funding could be used to perform a more detailed needs analysis relating to access issues within the local population.

#### Expectations around strategies for dealing with barriers to access

Expectations here are less well defined than expected. They focused around having funding flexibility with cost savings providing funds that could then be used to address access issues, but no specific strategies or thoughts on the process by which this might occur. There was an expectation that strategies dealing with cultural barriers to access in the Māori and Pacific Island groups would be progressed.

#### Philosophical Shifts

A specific theme since the introduction of the Global Budget has been a shift to a population health focus at an organisational level overlaying the client-based/individual health focus. As part of this shift, there has been a change in the philosophical view of access as it relates to the Pegasus Health organisation since the introduction of the Global Budget. Access is now viewed as a core theme, rather than a component part of individual contracted projects, and this has been reflected by statements in documents relating to access which are moving from a fragmented to cohesive view. The IPA now views itself as having a public health role in this respect, with a shift among management to a community as well as a client-based level of responsibility.

Pegasus Health has now identified access as a concept aligned with public health, which impacts on the health status of the population, as well as individuals where inequality exists.

Was this change a direct result of a Global Budget funding model or a result of the changes occurring within the organisation that were the drivers for seeking a Global Budget funding model and if so, did the Global Budget give this greater impetus?

Some in Pegasus believe the driver for this was as much the negotiated process to get to the Global Budget as the Global Budget per se. This process was led partly because Pegasus had already sought to develop and establish a wider role for itself as an organisation in certain best practice areas (such as immunisation and mammography) which related to population health and to a limited extent access. For example, the concept of responsibility for those not accessing general practice and improving access for them seems to have grown out of the immunisation co-ordination programme in trying to find strategies to make contact with hard to reach children. There has been a philosophical shift in defining those with access difficulties as not just those who are identified patients in a practice who don't come often enough, but also those who aren't identified patients – who do not access general practice at all.

Other Pegasus staff believe the Global Budget funding model has been instrumental in this philosophy shift:

*"I think it has facilitated it (the shift to a population health focus). I think it's allowed to be promoted and it's brought it to the forefront probably in many GPs minds but they're now more aware of the application of population health theory so I do think it's made a difference. I think there are practical things around being able to fund more projects and more people which has helped Pegasus move towards a more population-based approach, but at the same time because of those people and projects, there has been much more healthy debate about how services should be delivered to a whole population so it's got rank and file members thinking about it".*

Pegasus directors and management indicate that this population health focus has variable acceptance from GP members and that there is a tension between fee-for-service and budget holding perspectives to be recognised.

*"I think there's a sense they're moving towards it and they're beginning to understand it and there are some GPs who have a great, very good understanding but there are still a lot of members who think that population is basically only ones who turn up to their surgery".*

*"I don't think you can say there's been a complete shift anywhere so I don't think you can say that Pegasus has moved from individual care to population care. I think there's a move towards it. If I were running a small business, whether I were a midwife or a GP or a physiotherapist, I wouldn't necessarily want to improve the health of the population. I might want to deliver quality care to the people who choose to come and see me perhaps so I think that Pegasus need to be careful about their membership. They need to really make sure that they are moving in the direction that their membership wants".*

This is supported by survey data: 71% of GP members agreed or strongly agreed that the IPA has a role in meeting the needs of disadvantaged groups but only 43% agreed or strongly agreed that a population approach helps my patients.

These key informant interview data are supported by clear statements in Pegasus documents including a board paper ("Access to Practice Team Primary Care Services", Pegasus Health, 2000), minutes of the Access Strategies Reference Group, and immunisation documents relating to the Link Nurse Project and the Global Budget Report 2000. Although these documents all indicate a commitment to reducing barriers to access, they are less specific about how these will be identified and targeted.

#### Structural and process shifts

There was a great deal of activity in the year after the Global Budget in the development and implementation of projects designed to increase the range of services available to all Pegasus patients. These included initiatives which were innovative and designed to allow patients access to services or methods of services delivery (e.g., in the home or 24 hours) which were previously unavailable.

These projects came under the umbrella of the Community Care programme that developed specific services designed to reduce hospital admissions. These included the Acute Observation Unit where patients could be referred for observation for acute illness, as well as the Acute Care project which provided money per patient which the GP could use to purchase any services (diagnostic, treatment) which were thought to be necessary to manage a patient in the community during acute illness which would otherwise necessitate hospital admission.

The other group of projects was the Extended Care at Home programme, a series of projects aimed at providing access to a range of diagnostic and treatment services in the home and/or community and free of charge to the patient. These programmes also had overlap with chronic disease projects that focused on prevention strategies and best practice for management of chronic diseases such as diabetes, obstructive airways disease and heart failure. These structure and process changes relate directly to improved availability.

To assess structural and process shifts relating to acceptability, it is necessary to look at changes relating to health inequalities with a specific focus on barriers to access and identification of groups likely to experience barriers to access. There were really no structures, groups or processes with access as a specific focus prior to the Global Budget. Key informants indicated that one of the key changes the Global Budget funding model facilitated was the ability to innovate and experiment with novel ways of service delivery:

*“I get the impression that the Global Budget has facilitated innovations, they’ve been able to experiment with a range of options so there does seem to have been a change and the population health portfolio has been closely involved with some of those changes”.*

A number of structural and process shifts relating to capacity to improve access for vulnerable groups have occurred since the Global Budget. These include the following:

Formation of a Community Advisory Board. This has representation from some community groups serving the disadvantaged. While there have been some initiatives to highlight key areas of concern for specific groups, at present the Community Advisory Board does not have a mechanism to gain regular systematic input from consumers. This is not part of its terms of reference and concern has been expressed from community organisations about this:

*“What are their responsibilities, are they [Pegasus Health] accountable for anything, how does one know whether they’ve acted in the best interests of the community, are they meant to consult with other members of the community? I’m not aware of any formal approach by any member of the community board to (community organisation) requesting our view on any strategy or any project or anything like that”.*

Development of a memorandum of understanding and relationships Māori and Pacific Island community representatives who live locally lay a foundation for developing initiatives in this area (see the specific sections of this report for detailed comment regarding the effectiveness of this strategy and comment on specific Māori and Pacific Island issues).

Appointment of a public health physician to the organisation. The organisation previously had a series of public health registrars working on specific projects. It was felt that specialist population health advice would further benefit the organisation. During the Global Budget evaluation time period there were frustrations with the structuring of this position within the organisation – being located as part of a management line within population health meant there was no clear way for this specialist population health advice to feed in across all portfolios or for the board to have direct access to this advice in informing general policy and decisions. This is currently under review.

Appointment of a Māori Project Manager to the organisation.

Submission of a Board Paper specifically relating to access as an issue: "Access to Practice Team Primary Care Services".

Formal development of an Access Strategies Reference Group in September 2000 (though this group had been meeting since June 2000). The terms of reference for this group indicate that they are not responsible for strategic planning and development in this area, rather they are to act as a resource to Pegasus staff implementing access strategies identified in the internal Pegasus paper *Access to Practice Team Primary Care Services*. There are indications from key informant interviews that there is confusion around the role of this group that it is seen by some as having a more strategic function and that the process for this group is currently under review.

Commissioning of a research report encompassing Pacific Peoples health issues: "Primary Health Services and the Pacific Peoples of Christchurch: A Qualitative study of community and health professionals views." (Siataga, P., Utai, S., Humphreys, A. 2001) (see the specific sections of this report for detailed comment on the effectiveness of this strategy and comment on specific Māori and Pacific Island issues).

The provision of adequate data systems and information gathering on vulnerable groups within the Pegasus Health population (e.g., geocoding and ethnicity recording), is identified as a priority issue in documents and key informant interviews with management, population health staff and directors. In the year following the Global Budget introduction, there does not appear to be any documentation of a framework for identifying and monitoring key sub-groups of the Pegasus population vulnerable to access.

Key informant interviews indicated progress may have been slowed by a lack of capacity. However, no documentary evidence was apparent to indicate an explicit shifting of resources to increase capacity within the organisation to deal with these issues as a priority. Descriptors of sub-groups of the Pegasus population likely to be vulnerable to access barriers need to be able to be matched against health needs and utilisation patterns to determine where access barriers might exist. Socio-economic description of the population using geocoding with the New Zealand Index of Deprivation had begun but was not yet complete during the evaluation period and ethnicity recording had not been initiated to any great extent.

Some systematic literature research in the area of access was carried out prior to the Global Budget inception and a report written by a public health registrar working at Pegasus Health. In the evaluation period (the year after the introduction of the Global Budget), there appeared not to have been any ongoing systematic framework for identifying barriers/facilitators of access. For example, in documents relating to the Link Nurse Project the advantages of gaining more understanding of the barriers is highlighted as a key advantage. However, it is not clear from the documents how this information would be collected in a systematic way, nor what the key questions would be. No ongoing evidence-based search strategy or process, such as that used in the CPEC groups and in development of the Community Care projects, was identified.

A similar process may be helpful in informing new initiative areas and some suggestions are made with regard to this at the end of this section. In the year after the Global Budget introduction, locally relevant information was gained in two areas by developing relationships and projects to look at barriers to access for Māori and Pacific Peoples. A series of groups were run in conjunction with the Pacific Trust to ask Pacific Peoples about the difficulties they experienced accessing primary care, and

what they would see as elements of an ideal primary care service. Parallel groups were run with GPs and Practice Nurses.

The community knowledge base of the consumer advisory group was also used as a tool to identify groups who may be vulnerable. Groups highlighted as vulnerable include Māori and Pacific Peoples, youth, elderly, and the socio-economically deprived. This is consistent with the literature. There is also cognisance of national policy documents in relation to priority setting. There is no systematic way for the Community Advisory Board to gather and provide information from a representative range of consumers about access and other population health issues, nor is there any framework for Pegasus Health to access its consumers' views in a systematic and regular way.

This data from document analysis has been supported by initial key informant interviews that indicated that not as much progress has occurred in the first year of the global budget as anticipated in terms of understanding the population – there was an understanding of socio-economically deprived groups as well as Māori and Pacific Island groups as vulnerable prior to the Global Budget.

*“Well for example we haven’t I think progressed our geocoding of our population and we should have”.*

A key process/structure change that has hampered development in the area of access since the introduction of the Global Budget has been the high turnover of staff in this area, often as a result of transfer of staff to other project areas. In the year following the Global Budget, there was a high staff turnover rate with the Population Health Manager and key project managers in the access area changing. Key informants indicate that this, combined with a large number of temporary staff and an overwhelming emphasis on project implementation at the expense of staff development and training in the population health area, have impeded progress of this area in the evaluation period.

#### Strategies implemented

Prior to the Global Budget smoking cessation, immunisation, mammography and the under-21 sexual health projects were the only ongoing projects which had access as a significant part of their focus. An earlier initiative providing free care for children under six years of age ceased when the government rolled this out nationally.

During the evaluation period there have been a number of projects implemented that provide increased access for all Pegasus patients to services that previously did not exist. These have been identified as arising directly from the Global Budget funding model. In discussions about opportunity costs of the Global Budget contract, Pegasus Health staff were clear that these would not have been implemented without the Global Budget funding model. These projects fall under the umbrella title of the Community Care Project and include:

#### **Managing Acute Demand – a series of projects aimed at reducing hospital admissions**

The Acute Care Project. This project provides funding for extra community-based services, treatment, investigations and consultations for patients almost at the point of requiring hospital admission. A service co-ordinator assists GPs to access the most appropriate services.

The Acute Observation Unit. This is a purpose built, five-bed unit based at the Bealey Avenue After Hours General Practice Surgery. The after hours surgery is the largest after hours general practice care facility in Christchurch. The aim of the unit is to provide intermediate care between home and hospital; it could provide for treatment

and monitoring for patients for a period of up to eight hours in the hope that this would reduce the number of patients for whom admission was required.

Extended Care at Home. This project was being developed during the evaluation period and provides for an extended level of home-based care including a mobile diagnostics unit for assessing rapidly such conditions as acute chest pain.

Specific disease management projects concentrating on asthma/Chronic Obstructive Pulmonary Disease (COPD), cardiovascular disease and diabetes provide for free chronic disease management consultations, which are specifically aimed at review rather than the treatment of any acute issues. For example, an annual review for diabetics is \$45 nationally and Pegasus Health makes this up to \$90 for a longer review.

Emergency department initiative. This provides for free consultations to look at management plans for frequent attendees at the emergency department, in particular those who do not have a current GP.

Communication with patients to inform and enhance access to services was occurring via the media and a bulletin called Pegasus Mail (which comes with the major daily newspaper) prior to the Global Budget and continues to be used. One-off media advertisements have been used to describe and increase awareness of the Pegasus profile as well as provide information to patients about the new initiatives. Specific communication has also been occurring to enhance access to new initiatives such as the Acute Demand series of projects by ensuring GP awareness of projects. This strategy is specifically linked to access in the Service Plan.

One of the focus group patients commented about this:

*"There has been something in the Press a few weeks ago now where it said the fees chargeable to diabetics visitation to the doctor were going to be covered by Pegasus".*

There are some initiatives at the concept/development stage specifically addressing access and identifying groups likely to experience barriers to access. A report has been commissioned and completed on Pacific Peoples perceptions of general practice and barriers to access. One other project that has reached the implementation stage is the Link Nurse project. This has been piloted with the intention of finding the hard to reach children for immunisation. The philosophy behind the Link Nurse project is to make contact with those not accessing general practice for immunisation. This has been accompanied by appropriate practice level incentives. Practices are given responsibility for finding patients last seen at their practice, rather than recording them as 'no longer a patient of this practice'.

Financial incentives are linked to this and the Link Nurse provides support for this process. It has been suggested this model could be extended to the wider hard to reach population.

#### Strategies in development

During the evaluation period, there were some initiatives at varying stages of the conceptualisation/development stage specifically looking at access and identifying groups vulnerable to access. The development of these appears to have been ad hoc rather than systematic. These include:

- a Hard to Reach Fund using a voucher system to link those for whom cost is a barrier and who are not accessing general practice back into general practice, and to provide free medical care for 12 months for those identified as insufficiently accessing general practice because of cost barriers

- developing a process for dealing with debtors so existing debt is not a barrier to accessing care
- developing closer links with community and social agencies likely to already have knowledge and contact with the hard to reach segment of the population
- looking at debtors for after hours care to try to identify those who have unmet health needs and for whom cost or debt is a barrier to effective care
- looking at the emergency department as a tool for identifying those not accessing general practice care appropriately and for whom there may be barriers
- a youth forum run by the Community Advisory Board to identify access issues.

There is a sense that while the motivation behind these projects was appropriate, the approach has not been systematic. A formal structure and good information systems are necessary for this systematic approach to both project development and for assessing outcomes. Access issues for vulnerable sub-groups cannot be identified and addressed, and the efficacy of projects cannot be monitored when there is no facility to identify these groups in the data and therefore monitor their utilisation patterns. Some of this approach is undoubtedly a response to the short-term contracting process related to the Global Budget introduction and the need to show activity.

*“I think part of the residual problem for Pegasus around access is I think at least they haven’t entirely approached everything systematically. They’ve said oh there are poor people who can’t afford to go to the GP so we’ll give them vouchers or we’ll make it free or subsidise it, but we’ll leave it to GPs decide who it should be, and I think that’s too arbitrary and very difficult to evaluate and it causes problems. It causes problems when they decide they want to see how effectively it works; so I think they do need to be a bit more systematic and that’s about having a better grasp of the public health. . It’s not like throwing a dollar into the cap of the man sitting on the side of the street...it’s more about finding out the best use of that dollar Maybe giving a sandwich instead of the dollar.”*

## Outcomes

### Accessibility

#### **Primary care data and patient registers**

Pegasus Health was asked to develop comprehensive patient registers for the calendar years 1999 and 2000. The source registers contained unencrypted NHI numbers that were only used for linking to other databases. Unencrypted NHI numbers were not stored in the analysis registers to preserve patient confidentiality. All NHI numbers were encrypted after stripping from the source registers. Only one member of the evaluation team knows the encryption key and no unencrypted NHI numbers are available to any other member of the evaluation team. These registers, as used for this part of the evaluation, were manipulated to the form shown in Table 12.

Table 12: Patient register fields

Field name	Description
Patient ID	Unique patient identifier created by Pegasus Health systems
Year	Evaluation period year
NZDep	NZDep96
Gender	Gender
DoB	Date of birth
GMS	GMS code A, Y or J
CSC	CSC/HUHC status
Consulted?	Flag indicating whether patient consulted during the period
Age	Age in years
Age group	Age group in 5 year bands
Last surgery	ID number of last surgery attended
GMSQ1	GMS claims/contacts quarter 1 of year
GMSQ2	GMS claims/contacts quarter 2 of year
GMSQ3	GMS claims/contacts quarter 3 of year
GMSQ4	GMS claims/contacts quarter 4 of year
All consults	Total consultations/GMS claims for the year

The Selwyn Health Group and the after hours surgery were excluded from the patient registers in both years, as Pegasus Health only manages their GMS payments. Additionally, one practice joined on 1 July 2000 (practice ID number 3339). This practice was excluded from the analysis, reducing the 2000 patient register by 927 patients (0.32%). One practice moved during the evaluation period, but as the distance involved was minimal it retained the same MeSH block identifier – in 1999 the practice ID was 2010, while in 2000 it was 3359. Accordingly, the 1999 ID was changed to 3359.

Ages were defined as at 31/12/1999 and 31/12/2000. Date of birth fields were retained for analysis requiring date specific ages.

Ethnicity information was not routinely recorded in the patient register. It is intended to rectify this with the move to enrolment. A Pegasus Health staff member documents the issues below. We concur with his view that to pursue any analysis by the limited ethnicity information available in the patient register would be neither valid nor robust.

*“Capturing ethnicity data was to be included as an integral part of the enrolment process using the enrolment form. All information pertaining to asking the question (how, why and so forth) is included in the enrolment policy and the enrolment information handouts for practices”.*

*“Since the enrolment project has not been able to start because of concerns over privacy, collection of ethnicity has also not proceeded in the careful and organised manner that we desire. However, it is now possible that collection of ethnicity data may begin as a separate project until the enrolment project starts, once the privacy concerns have been overcome. The data that is contained in the ethnicity fields at the moment was not entered with any direction or guidance. The data is in a free text field with no standards adopted by the 90 odd surgeries. Coding structures are incompatible, and interpretation would be misleading”.*

## The patient register

Table 13: Patient registers 1999, 2000 and census counts for Christchurch 1996

Age group	1999		2000		Census	
	Males	Females	Males	Females	Males	Females
<1	1727	1586	1889	1857	2085	1920
1-4	9307	8950	9336	8899	8250	7827
5-9	9391	9100	9408	9223	10485	10065
10-14	8163	8249	8559	8520	9798	9564
15-19	8379	9317	8389	9682	11646	11802
20-24	9128	11677	8569	11682	14109	14001
25-29	10131	13142	9271	12559	12489	12651
30-34	10384	12518	10178	12747	11901	12465
35-39	10507	12103	10316	11992	11508	11973
40-44	9698	10717	9773	11052	10479	11016
45-49	8582	9828	8882	9970	10098	10578
50-54	8302	9386	8503	9692	7737	7845
55-59	6359	7089	6714	7400	6372	6777
60-64	5198	5977	5604	6388	5592	6087
65-69	4438	5055	4307	4987	5865	6540
70-74	4341	5198	4485	5287	4953	6486
75-79	3318	4921	3458	4967	3267	5079
80-84	1850	3376	1981	3606	1965	3711
85+	1230	3173	1322	3277	1056	2997
<b>Totals</b>	<b>130433</b>	<b>151362</b>	<b>130944</b>	<b>153787</b>	<b>149655</b>	<b>159384</b>
	<b>281795</b>		<b>284731</b>		<b>309039</b>	

The patient registers as a percentage of the Christchurch population within each age/sex group is shown in Table 14 below, and graphically in Figures 1 and 2.

Table 14: Patient registers as a percentage of census 1996 counts

Age group	1999		2000	
	Males (%)	Females (%)	Males (%)	Females (%)
<1	82.83	82.60	90.60	96.72
1-4	112.81	114.35	113.16	113.70
5-9	89.57	90.41	89.73	91.63
10-14	83.31	86.25	87.35	89.08
15-19	71.95	78.94	72.03	82.04
20-24	64.70	83.40	60.73	83.44
25-29	81.12	103.88	74.23	99.27
30-34	87.25	100.43	85.52	102.26
35-39	91.30	101.09	89.64	100.16
40-44	92.55	97.29	93.26	100.33
45-49	84.99	92.91	87.96	94.25
50-54	107.30	119.64	109.90	123.54
55-59	99.80	104.60	105.37	109.19
60-64	92.95	98.19	100.21	104.94
65-69	75.67	77.29	73.44	76.25
70-74	87.64	80.14	90.55	81.51
75-79	101.56	96.89	105.85	97.79
80-84	94.15	90.97	100.81	97.17
85+	116.48	105.87	125.19	109.34
<b>Totals</b>	<b>87.16</b>	<b>94.97</b>	<b>87.50</b>	<b>96.49</b>

This table requires comment. The percentage of the Christchurch population contained in the Pegasus Health patient registers is very high, and in some age/sex groups even exceeds the population. There are some factors involved with the construction of the patient register that contribute to this phenomenon that include:

- the registers are constructed on the basis of all patients consulting within a two-year timeframe, hence visitors to the region and from rural areas consulting a Pegasus Health practice are included

- regular Pegasus Health patients may not be from the Christchurch area as defined in the 1996 census. This means that the Pegasus Health population pool is in fact larger than the Christchurch population
- some age/sex groups showed a significant increase (defined as an increase of more than 5%) in proportion of the Christchurch population covered between 1999 and 2000: males and females aged <1; males and females aged 60-64; males and females aged 80-84; males aged 85+. Other age sex/groups showed a significant decrease as defined by a decrease of more than 5%: males aged 20-24; males and females aged 25-29
- although there were changes in other age groups, we believe they are insignificant in terms of the evaluation and are within the bounds of normal year to year variation
- low proportions of males on the register between the ages of 15 and 24 years of age are not unexpected, as it is well documented that this group of patients are irregular users of primary care services
- the 1996 census was used and there will have been changes in the population since that time.

Figure 1: Percentage of patients in each age/sex band – males

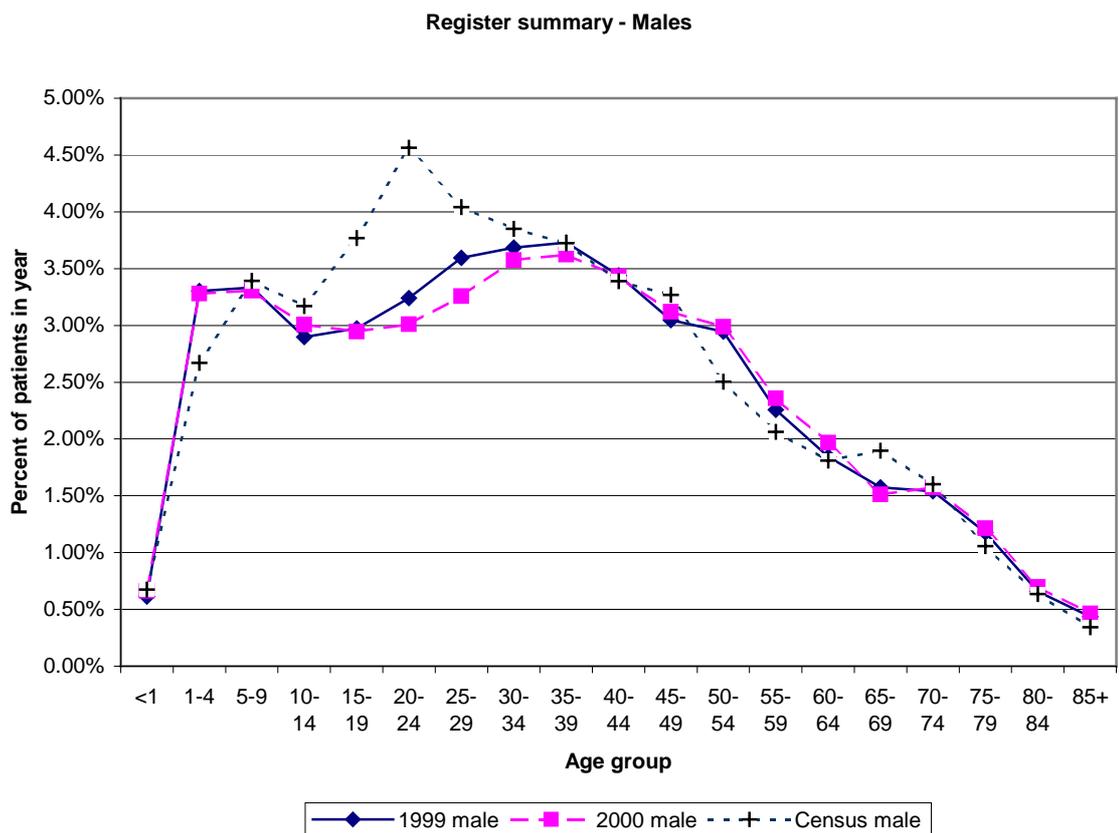
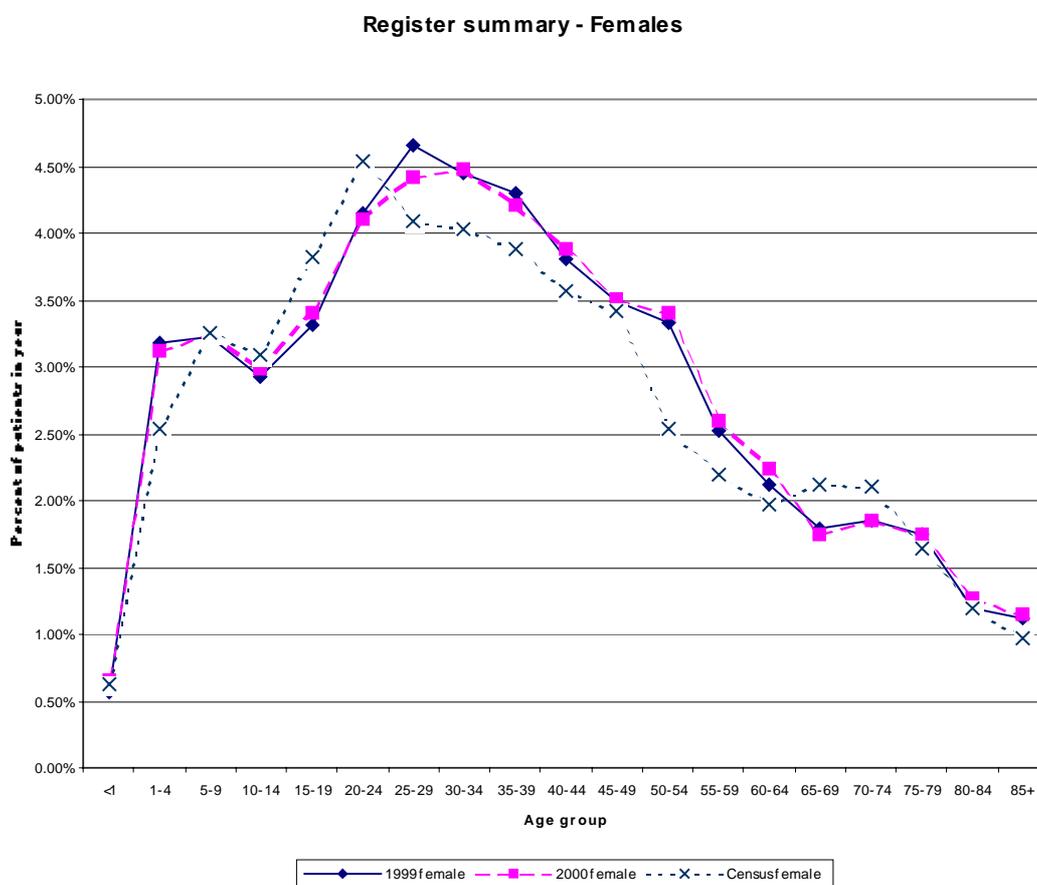


Figure 2: Percentage of patients in each age/sex band – females



Initially, community services card (CSC) and high user health card (HUHC) was as a proxy of socio-economic status. A subsequent section of the report includes the NZDep96 index of deprivation as the indicator of socio-economic status. In 1999 there were 47 patients without a valid CSC status, and in 2000 there were nine patients without a valid CSC status. These patients were excluded from all further analysis, making the 1999 register 281,748 patients and the 2000 register 284,722 patients. The exclusion of these 56 patients will have no effect on the results.

Tables 15 and 16 show the counts and proportions of patients on the registers by age, sex, CSC, HUHC and year. However, the core issue in this evaluation is changes after the introduction of the Global Budget, and we believe that the patient registers are fundamentally similar between the evaluation periods. Key points arising from these tables are shown below.

- The patient registers are largely similar between the years; however, there have been some significant changes in the proportions of patients in different age groups on the register. All other changes fall below 5% and are considered of no public health significance.
  - 12% increase in the proportion of patients aged less than 1 year, however to add context, this equates to only 2 extra under 1 year olds per Pegasus Health member
  - 7% decrease in the proportion of patients age 25-29 years

- 6% increase in the proportion of patients aged 60-64 years
- 6% increase in the proportion of patients aged 80-84 years
- Overall, the proportion of CSC holders has not changed significantly, and although there are some statistically significant changes in the proportion of CSC holders by age and sex, they are of no public health significance. Given the large numbers of patients it is comparatively easy to achieve statistical significance in terms of the provision of primary health care these differences have little meaning.
  - There are declining proportions (11.3%) of CSC holders in the 1-4 year age group in both sexes. This is to be expected over time after the introduction of the Free Child Health Care Scheme, as there are no longer any benefits in holding a CSC. This may also have influenced a decrease in CSC holding among 5-9 year olds.
  - There was an 8.2% decline in the proportion of females aged 15-19 holding a CSC. The reasons for this change are not clear, although there is the possibility of some connection to the provision of free sexual health services for this age group. Females in this age group are the heaviest users of the sexual health service provided by Pegasus Health, and there may be a reduced incentive for them to obtain a CSC because of the lack of other incentives to do so.

Table 15: Patient register counts by age group, sex, CSC, HUHC and year

Age group	99M1	99M3	99MZ	99F1	99F3	99FZ	Total99	00M1	00M3	00MZ	00F1	00F3	00FZ	Total00
<1	483	1244	0	422	1164	0	3313	499	1390	0	508	1349	0	3746
1-4	3296	6001	10	3141	5801	8	18257	2883	6449	4	2803	6091	5	18235
5-9	3931	5428	31	3880	5194	25	18489	3833	5553	21	3697	5500	26	18630
10-14	3172	4976	13	3070	5162	17	16410	3193	5355	10	3192	5319	9	17078
15-19	2644	5717	13	3381	5922	9	17686	2568	5810	8	3226	6442	14	18068
20-24	3397	5708	14	5746	5889	36	20790	3312	5244	13	5765	5883	34	20251
25-29	2533	7572	25	4213	8859	67	23269	2308	6945	18	4046	8441	70	21828
30-34	2453	7906	23	3858	8581	76	22897	2437	7718	23	3997	8664	85	22924
35-39	2523	7945	39	3932	8070	100	22609	2461	7818	37	3940	7958	93	22307
40-44	2352	7287	57	3142	7430	145	20413	2281	7431	61	3309	7590	153	20825
45-49	1690	6828	64	2240	7416	170	18408	1781	7045	56	2376	7430	164	18852
50-54	1482	6708	110	2072	7080	234	17686	1530	6883	90	2086	7379	227	18195
55-59	1340	4899	118	2139	4767	183	13446	1371	5213	130	2182	5032	186	14114
60-64	1759	3321	118	3063	2774	140	11175	1903	3596	105	3200	3030	158	11992
65-69	2680	1637	121	3473	1463	119	9493	2576	1618	113	3508	1357	122	9294
70-74	3027	1181	133	3891	1167	140	9539	3194	1159	132	4023	1109	155	9772
75-79	2404	789	125	3803	956	162	8239	2513	814	131	3946	863	158	8425
80-84	1348	417	85	2620	614	142	5226	1498	401	82	2883	571	152	5587
85+	866	282	82	2329	639	205	4403	940	296	86	2506	557	214	4599
Totals	43380	85846	1181	60415	88948	1978	281748	43081	86738	1120	61193	90565	2025	284722
<b>Sextotal</b>	<b>130407</b>			<b>151341</b>				<b>130939</b>			<b>153783</b>			

Table 16: Patient register proportions of age group by sex, CSC, HUHC and year

Age group	99M1 %	99M3 %	99MZ %	99F1 %	99F3 %	99FZ %	00M1 %	00M3 %	00MZ %	00F1 %	00F3 %	00FZ %
<1	14.58	37.55	0.00	12.74	35.13	0.00	13.32	37.11	0.00	13.56	36.01	0.00
1-4	18.05	32.87	0.05	17.20	31.77	0.04	15.81	35.37	0.02	15.37	33.40	0.03
5-9	21.26	29.36	0.17	20.99	28.09	0.14	20.57	29.81	0.11	19.84	29.52	0.14
10-14	19.33	30.32	0.08	18.71	31.46	0.10	18.70	31.36	0.06	18.69	31.15	0.05
15-19	14.95	32.33	0.07	19.12	33.48	0.05	14.21	32.16	0.04	17.85	35.65	0.08
20-24	16.34	27.46	0.07	27.64	28.33	0.17	16.35	25.90	0.06	28.47	29.05	0.17
25-29	10.89	32.54	0.11	18.11	38.07	0.29	10.57	31.82	0.08	18.54	38.67	0.32
30-34	10.71	34.53	0.10	16.85	37.48	0.33	10.63	33.67	0.10	17.44	37.79	0.37
35-39	11.16	35.14	0.17	17.39	35.69	0.44	11.03	35.05	0.17	17.66	35.67	0.42
40-44	11.52	35.70	0.28	15.39	36.40	0.71	10.95	35.68	0.29	15.89	36.45	0.73
45-49	9.18	37.09	0.35	12.17	40.29	0.92	9.45	37.37	0.30	12.60	39.41	0.87
50-54	8.38	37.93	0.62	11.72	40.03	1.32	8.41	37.83	0.49	11.46	40.56	1.25
55-59	9.97	36.43	0.88	15.91	35.45	1.36	9.71	36.93	0.92	15.46	35.65	1.32
60-64	15.74	29.72	1.06	27.41	24.82	1.25	15.87	29.99	0.88	26.68	25.27	1.32
65-69	28.23	17.24	1.27	36.58	15.41	1.25	27.72	17.41	1.22	37.74	14.60	1.31
70-74	31.73	12.38	1.39	40.79	12.23	1.47	32.69	11.86	1.35	41.17	11.35	1.59
75-79	29.18	9.58	1.52	46.16	11.60	1.97	29.83	9.66	1.55	46.84	10.24	1.88
80-84	25.79	7.98	1.63	50.13	11.75	2.72	26.81	7.18	1.47	51.60	10.22	2.72
85+	19.67	6.40	1.86	52.90	14.51	4.66	20.44	6.44	1.87	54.49	12.11	4.65
Totals	15.40	30.47	0.42	21.44	31.57	0.70	15.13	30.46	0.39	21.49	31.81	0.71
Sextotal	46.28			53.72			45.99			54.01		

The description of the Pegasus Health patient population by NZDep96 scores was made possible by geocoding the patient addresses. This involved the assignment of a MeSH block code to each address, with the NZDep96 score for that MeSH block. In 1999 there was an 85.9% success rate for NZDep96 attachment, compared with 85.2% in 2000. While it would have been physically possible to increase the matching rate, this would have been at some expense in cost and time. The delivery timeframe for the final report did not allow for this. However, we are confident that valid observations can be made even with a less than perfect NZDep match rate. We also note that only Christchurch addresses were geocoded, so patients from outside the Christchurch area were excluded. We note that not all Pegasus Health patients live in Christchurch. We have used the NZDep96 index of deprivation scale rather than the interval variable. The scale ranges from 1 to 10, with 1 representing the least deprived areas and 10 the most deprived areas. The NZDep96 scores actually apply to areas rather than individuals because they are based on MeSH blocks, which are geographical units defined by Statistics New Zealand. Each MeSH block contains a median of 90 people. Pegasus Health commenced geocoding the patient register in 2000 and a different method of geocoding was established in 2001 that was integrated into the claiming systems. At the time of writing Pegasus Health had achieved a 75% success rate.

Table 17: Patient registers versus census by NZDep96

NZDep96	1999		2000		Census	
	Male	Female	Male	Female	Male	Female
1	15,035	17,212	15,080	17,410	19,404	20,439
2	13,091	15,650	13,077	15,794	17,649	19,032
3	12,189	14,447	12,331	14,739	16,104	17,373
4	12,147	14,734	12,031	14,995	16,431	17,838
5	10,042	12,287	10,140	12,556	13,992	15,030
6	11,066	13,242	11,048	13,445	14,931	15,954
7	9,042	10,571	8,897	10,786	12,495	13,479
8	10,686	12,685	10,268	12,656	14,604	15,234
9	11,054	13,003	10,729	12,992	15,075	16,044
10	6,697	7,267	6,498	7,109	8,970	8,961
Sub total	111,049	131,098	110,099	132,482	149,655	159,384
Total	242,147		242,581		309,039	

NZDep96 counts are presented as percentages of the total in each year and for the census overall, as separate analyses by sex showed no significant differences. We believe that this shows the Pegasus Health patient population is broadly representative of the Christchurch population in terms of the NZDep96, although there is some indication that the least deprived may be slightly over represented and the most deprived may be slightly under represented. It should be noted that there is some variation between Christchurch census NZDep96 scores and those for the whole country. Therefore, any consideration in extrapolating results to the whole country, or different regions in the country, should be undertaken with caution. We note in particular that Christchurch has a higher percentage of people in NZDep96 bands 1, 2, and 4, and a lower percentage of people in bands 5, 7 and particularly 10 (Crampton et al. 2000).

Table 18: Percentages of patient registers and census by NZDep96

NZDep96	1999	2000	Census
1	13.3	13.4	12.9
2	11.9	11.9	11.9
3	11.0	11.2	10.8
4	11.1	11.1	11.1
5	9.2	9.4	9.4
6	10.0	10.1	10.0
7	8.1	8.1	8.4
8	9.7	9.5	9.7
9	9.9	9.8	10.1
10	5.8	5.6	5.8

**Key result: The Pegasus Health patient registers are largely representative of the Christchurch population in terms of NZDep96 before and after the introduction of the Global Budget, although there is some indication that the least deprived are marginally over represented and the most deprived are marginally under represented.**

#### NHI number allocation

The evaluation requires linking between primary and secondary care records, which is possible through the use of the NHI number. Pegasus Health sees much value in maintaining the NHI, and the data received shows no invalid NHI numbers in 1999 and less than 20 in 2000. The invalid NHI numbers were removed from the register. Pegasus Health undertakes checking procedures on the validity of NHI numbers regularly, and invalid NHI numbers were corrected on them being notified.

In 1999 there were 266,535 valid NHI numbers allocated, meaning 94.6% coverage. In 2000 the situation became a little more complex, with 267,393 NHI numbers allocated (93.9%), of which only 266,950 were unique. There were 439 NHIs allocated twice, and two allocated three times. In some cases the patient was clearly the same person, however, they had been associated with two different practices, hence appeared in the register twice. In other cases it was completely unclear why the duplication had occurred. It is noted that Pegasus Health analysts developed the registers specifically for the evaluation and while they are as good as was available at the time, the registers are continually being maintained. It is of note that there are no duplications in the 1999 register, which has undergone routine maintenance to ensure its validity. There was some pressure on Pegasus Health to deliver the 2000 register quickly, and there is confidence that duplications such as have occurred will be rectified in the normal course of Pegasus Health data maintenance.

Table 19 shows the percentage of NHI allocation by age, sex, CSC and HUHC status. As would be expected HUHC holders have the highest coverage. Coverage also increases with age. There are no significant differences between years.

Table 19: NHI allocation percentages in age group by sex, CSC, HUHC and year

Age group	99M1 %	99M3 %	99MZ %	99F1 %	99F3 %	99FZ %	Total99 %	00M1 %	00M3 %	00MZ %	00F1 %	00F3 %	00FZ %	Total00 %
<1	74.3	74.4	NA	74.2	74.7	NA	74.5	82.4	80.4	NA	80.5	77.1	NA	79.5
1-4	93.8	90.3	100.0	91.5	90.1	100.0	91.1	92.2	88.9	100.0	91.0	89.2	100.0	89.9
5-9	95.3	93.9	100.0	94.9	93.1	96.0	94.2	95.3	93.2	100.0	94.3	92.2	100.0	93.6
10-14	96.6	95.2	100.0	96.1	94.7	100.0	95.5	96.8	93.5	100.0	96.0	93.7	100.0	94.7
15-19	96.7	92.5	100.0	96.4	91.2	88.9	93.4	95.7	90.5	100.0	96.2	88.8	100.0	91.7
20-24	97.6	93.3	100.0	96.9	89.7	94.4	94.0	97.2	90.7	100.0	96.5	88.1	97.1	92.7
25-29	96.2	93.0	96.0	96.7	91.6	98.5	93.5	95.6	90.9	100.0	96.4	89.8	97.1	92.0
30-34	94.5	93.1	100.0	96.4	93.7	97.4	94.1	94.7	91.3	100.0	96.6	92.6	98.8	93.1
35-39	95.2	94.0	97.4	96.1	95.0	99.0	94.9	95.9	92.6	100.0	96.7	94.4	100.0	94.3
40-44	95.2	94.5	100.0	96.3	95.5	98.6	95.3	95.6	93.3	100.0	96.6	95.0	100.0	94.8
45-49	96.0	94.7	100.0	96.8	95.1	98.2	95.3	95.6	93.9	100.0	96.7	94.8	98.8	94.8
50-54	97.0	95.6	100.0	96.7	94.8	99.6	95.6	97.1	95.0	100.0	97.7	95.4	98.7	95.7
55-59	97.5	95.6	100.0	97.1	93.7	98.9	95.4	97.3	94.9	100.0	97.1	93.1	100.0	94.9
60-64	97.4	93.7	99.2	97.9	91.8	98.6	95.1	97.7	93.7	99.0	97.8	90.5	100.0	94.8
65-69	98.8	94.7	99.2	99.0	93.4	100.0	97.4	98.5	93.8	100.0	98.7	93.0	100.0	97.0
70-74	99.0	94.6	99.2	99.3	94.1	97.9	98.0	99.1	93.8	99.2	98.9	92.5	98.7	97.6
75-79	99.1	95.9	99.2	98.8	93.2	100.0	98.0	98.9	94.2	99.2	99.0	93.5	99.4	98.0
80-84	99.4	97.1	100.0	99.3	98.4	99.3	99.0	99.1	95.5	100.0	99.0	93.7	100.0	98.3
85+	98.4	95.7	100.0	99.2	96.6	99.0	98.5	98.9	94.3	100.0	99.0	96.1	98.6	98.3
<b>Total</b>	<b>96.4</b>	<b>93.6</b>	<b>99.5</b>	<b>96.8</b>	<b>93.1</b>	<b>98.8</b>	<b>94.6</b>	<b>96.4</b>	<b>92.3</b>	<b>99.7</b>	<b>96.8</b>	<b>92.1</b>	<b>99.3</b>	<b>93.9</b>
<b>Sextotal</b>	<b>94.6</b>			<b>94.6</b>				<b>93.7</b>			<b>94.1</b>			

### Primary care utilisation

This analysis uses only those patients having a valid CSC or HUHC status. As noted previously, this excludes 47 patients in 1999 and nine patients in 2000. The loss of these patients to the analysis is inconsequential. A summary of patients and consulting rates is shown in Table 20 below.

Table 20: Summary of consultation patterns by year

	1999	2000
Registered patients	281,748	284,722
Patients consulting	223,463 79.31%	221,630 77.84%
Patients not consulting	58,285 20.69%	63,092 22.16%
Total consultations	957,492	971,049
Mean no. consultations – all patients	3.40	3.41
Mean consultations – consulting patients	4.28	4.38

Although the number of patients on the register has increased, the proportion of patients consulting has decreased. While this is statistically significant, there is doubt that it has public health significance as it equates to each Pegasus Health member seeing just over eight fewer patients per year. When all patients are considered, there was no statistical difference between the mean number of consultations per year between years. However, there was a statistical difference in the mean consultation rate between years when only those patients consulting were considered. However, as this difference equates to nearly 60 extra consultations per year for each Pegasus Health member, it is not considered of public health significance. Also, the evaluation took place during the first year of the Global Budget contract and it may have been too early to ascertain the precise impact of the Global Budget. This needs further examination by future research on the Global Budget funding model.

**Key result: There has been no change of public health significance in consultation patterns as a result of the Global Budget in its first year of its operation.**

Further examination of general practitioner utilisation is required to ascertain if sub-groups of the patient population have significantly changed consultation patterns. Analysis of the proportion of patients consulting in the two years was performed by age, sex, CSC (Community Services Card) and HUHC (High Use Health Card) status; the results are presented in Table 21. Percentages indicate the change in proportion of patients consulting in 2000 as a proportion of patients consulting in 1999. There are several points of interest. Results of public health significance have arbitrarily been set at a change in the proportion of patients consulting by 5% or more in either direction between evaluation periods; these figures are in bold in the table. Statistical significance may be achieved at lower levels than this; however, as noted earlier statistically significant changes may have little public health significance.

Overall, the proportion of males without a CSC has declined by just over 5%, and those patients aged 15 to 65 years are contacting a GP less. As a group, the decline is 7.8%, compared with those out of these age groups showing a marginal increase of 1.6%.

The only other changes of note were an increase in the proportion of females with a CSC aged 5-9 years consulting, and a decrease in the proportion of females without a CSC aged 60-64 years consulting. These changes are cautiously interpreted, as they do not appear to be part of a larger trend. The low numbers of patients with a HUHC makes interpretation of their data difficult, as one patient difference can have a significant effect on percentages. There is no comment about patients with HUHC

because of this, but in 1999 there were 3,183 HUHC patients (1.42% of consulting patients) who had 41,824 consultations (4.39% of all consultations); in 1999 there were 3,123 HUHC patients (1.41% of consulting patients) who had 44,703 consultations (4.60% of all consultations)

**Key result: The proportion of males consulting without a CSC aged 15 to 64 years has reduced overall by 7.8%.**

Table 21: Change in proportion of all patients consulting by age, sex, CSC, HUHC

Age group	M1 %	M3 %	MZ %	F1 %	F3 %	FZ %	Total %
<1	100.45	99.99	NA	99.88	100.29	NA	100.15
1-4	103.27	100.34	100.00	103.12	101.24	114.29	101.56
5-9	104.80	100.80	100.00	107.15	103.70	100.00	103.71
10-14	96.72	98.03	108.33	100.28	97.64	77.78	98.04
15-19	98.33	93.18	100.00	101.70	99.27	100.00	97.76
20-24	97.48	92.64	100.00	99.36	95.59	100.00	96.58
25-29	95.79	91.04	100.00	100.46	96.59	101.60	95.82
30-34	97.69	90.53	100.00	100.89	97.48	102.70	96.15
35-39	99.76	91.75	102.63	102.17	97.73	101.01	96.89
40-44	96.29	90.54	101.79	99.59	96.94	102.84	95.29
45-49	98.04	93.98	98.21	101.24	96.95	99.98	96.57
50-54	97.34	94.40	100.00	99.16	98.52	100.00	97.00
55-59	99.43	95.01	100.85	99.78	96.20	99.46	96.74
60-64	99.29	94.35	99.05	99.38	94.87	98.73	96.74
65-69	99.70	97.82	100.83	99.75	98.78	100.02	99.30
70-74	99.58	97.83	99.24	99.88	97.26	98.77	99.25
75-79	100.08	97.18	98.47	100.08	100.07	100.61	99.81
80-84	100.36	98.70	100.00	99.89	97.90	100.00	99.75
85+	99.08	99.41	98.84	100.13	97.45	98.61	99.47
Totals	99.79	94.99	99.89	101.01	98.03	100.02	98.14

Changing consultation rates excluding those patients not consulting during the year are shown in Table 22. Percentages indicate the consultation rate in each age/sex/CSC/HUHC cell in 2000 as a percentage of the consultation rate in 1999. Interpretation of this table is made more difficult by the fragmented nature of the changes. In the broadest terms there appears to be an increasing consultation rate (for those who do see a Pegasus Health health professional) among CSC holders, and a decreasing consultation rate for those without a CSC.

Of particular interest are consultation rates for males aged 10 to 64 years showing a decline. The previous table showed a declining proportion of this group actually consulting after the introduction of the Global Budget, and here it is shown that for those who do consult, they are consulting less frequently. There is also an interesting decline in the consultation rate for females without a CSC in the 25-34 age group. There are indications across all groups from 0 to 9 years of at least maintained consultation rates, and at best improving consultation rates. Women aged 70 years and over without a CSC also have declining consultation rates, although there is no clear reason for this.

Table 22: Change in proportion of consulting patients consulting by age, sex, CSC, HUHC

Age group	M1 %	M3 %	MZ %	F1 %	F3 %	FZ %	Total %
<1	100.52	108.87	NA	95.09	106.57	NA	104.32
1-4	106.94	104.49	133.20	104.34	102.62	118.07	103.84
5-9	110.68	105.39	183.89	105.97	101.71	130.62	105.78
10-14	103.29	94.34	148.51	103.17	98.61	186.92	99.30
15-19	104.44	93.64	107.48	104.80	104.12	135.37	102.37
20-24	97.96	89.08	74.77	103.33	98.47	111.21	99.82
25-29	105.69	88.37	97.42	103.31	93.16	119.06	98.16
30-34	97.34	88.54	136.79	104.74	94.00	122.11	98.57
35-39	101.09	90.04	122.60	103.39	96.95	110.18	99.16
40-44	100.27	92.99	108.61	103.71	97.15	116.71	100.24
45-49	107.76	96.03	114.26	104.44	97.56	111.39	101.23
50-54	111.62	93.94	98.88	109.59	98.11	101.78	100.48
55-59	103.58	95.07	107.04	105.36	96.54	103.31	99.89
60-64	103.77	95.46	108.52	102.24	101.38	109.98	101.46
65-69	103.89	98.48	112.08	104.44	99.07	106.99	103.79
70-74	104.87	98.10	108.12	101.47	93.64	101.72	102.56
75-79	103.64	96.12	86.98	104.77	93.16	105.83	102.93
80-84	105.72	101.40	121.00	100.07	85.24	99.64	101.53
85+	103.79	91.41	104.53	97.85	90.73	98.11	99.03
Total	105.57	98.41	107.89	103.65	98.52	106.93	102.25

Caution should be exercised in the interpretation of these broad trends. It would be premature to form a causal link between the introduction of the Global Budget and declining consultation rates for some groups. Anecdotal evidence relates that Christchurch had a relatively mild winter in 2000 and it is possible that this impacted on overall consultation rates. There was insufficient evidence to suggest major seasonal influences markedly different from whole year comparisons in the data available.

In terms of equity of health provision, CSC holders appear to be making increased use of Pegasus Health services, although it is potentially of concern if this was at the expense of non-CSC holders receiving treatment if needed. This could potentially be the situation if GPs generally had more demand for consultations than time allowed, but Pegasus Health staff indicated they believed this was not the case, and there was no evidence of restricted supply of primary care services. There is a slight trend towards increasing consultation rates for those aged under 10 years.

**Key result: There are indications of increasing consultation rates among the young and CSC holders. There are declining consultation rates among males aged 10 to 64 years without a CSC.**

To examine equity of access issues, consultation patterns by NZDep96 were further examined.

Table 23: Proportion of patients consulting by NZDep96

NZDep96	1999			2000		
	No. patients	Percent consulting	Mean consults	No. patients	Percent consulting	Mean consults
1	32,247	80.1	3.08	32,490	80.4	3.14
2	28,741	80.3	3.30	28,871	81.5	3.43
3	26,636	81.1	3.42	27,070	81.8	3.52
4	26,881	81.1	3.53	27,026	81.6	3.60
5	22,329	81.3	3.58	22,696	80.9	3.69
6	24,308	80.0	3.64	24,493	80.8	3.74
7	19,613	81.2	3.77	19,683	81.2	3.86
8	23,371	79.0	3.73	22,924	80.4	3.90
9	24,057	78.6	3.64	23,721	79.3	3.78
10	13,964	79.4	3.92	13,607	79.9	3.96
Total	242,147	80.24	3.52	242,581	80.85	3.62

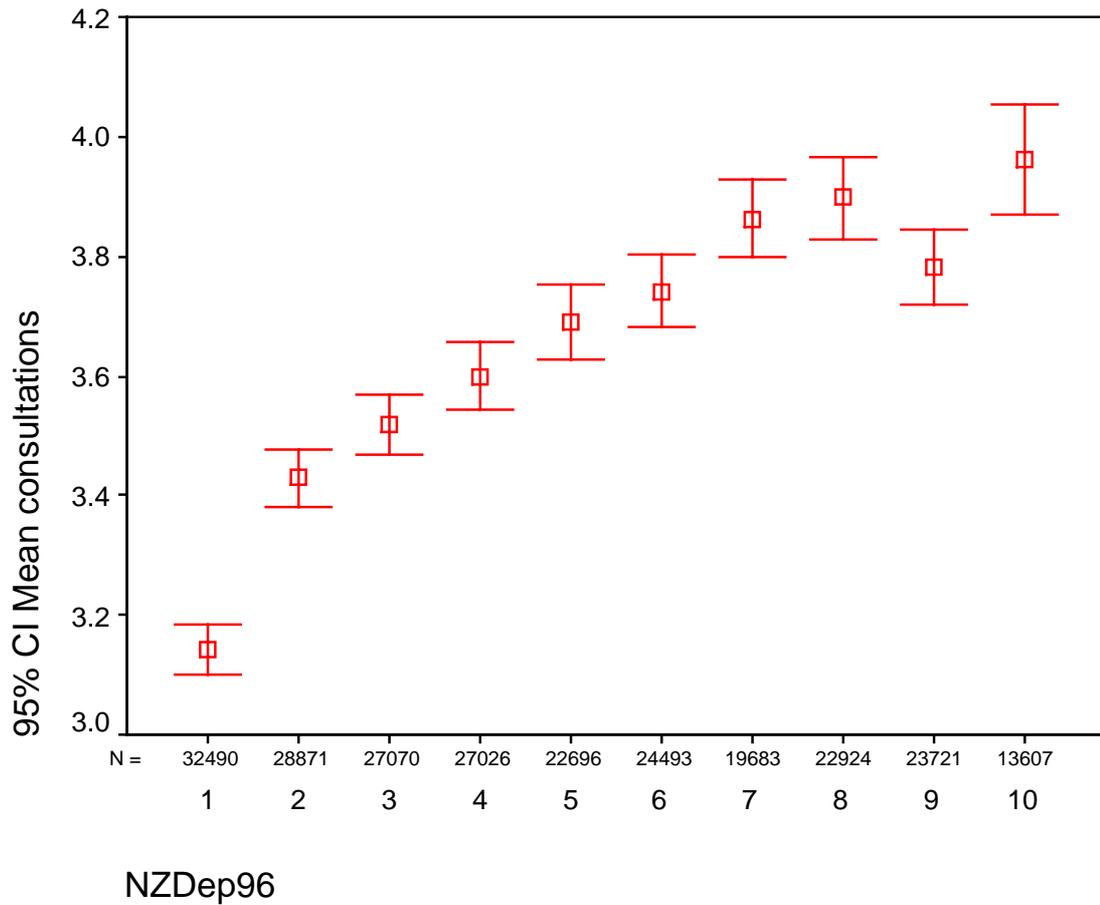
Table 23 can be used to assess equity of access to primary health care before and after the introduction of the Global Budget. The proportion of patients consulting at least once during each year is remarkably consistent within each year across deprivation bands. Although there was a statistically significant difference in the proportion accessing primary care between bands, this is not considered of public health significance. There were also statistically significant increases between years in the proportion of patients accessing primary care services in deprivation bands 2, 3, 6 and 8. However, this is again not considered of public health significance, and within the range of normal year to year variation in consulting patterns. Similar proportions of patients consulting were also found in the 1996/97 New Zealand Health Survey (Ministry of Health, 1999).

**Key result: The proportion of Pegasus Health patients consulting is similar in all NZDep96 bands. There was no significant change in the proportion of patients consulting in each NZDep96 band during the first year of the Global Budget contract.**

The mean consultation rates by deprivation band show a clear trend to increasing consultation rates with increasing deprivation. This is shown graphically in Figure 3 for the 2000 year. A similar pattern exists in 1999. All deprivation bands except 4 and 10 show statistically significant increases in consultation rates, but the confidence intervals for the change all closely approach zero (range 0.003 to 0.04). Given this, it is concluded that the changes are of no public health significance. Similar results were again found in the 1996/97 New Zealand Health Survey.

**Key result: Consultation patterns have not changed after the introduction of the Global Budget within NZDep96 bands. Consultation rates increase with increased deprivation.**

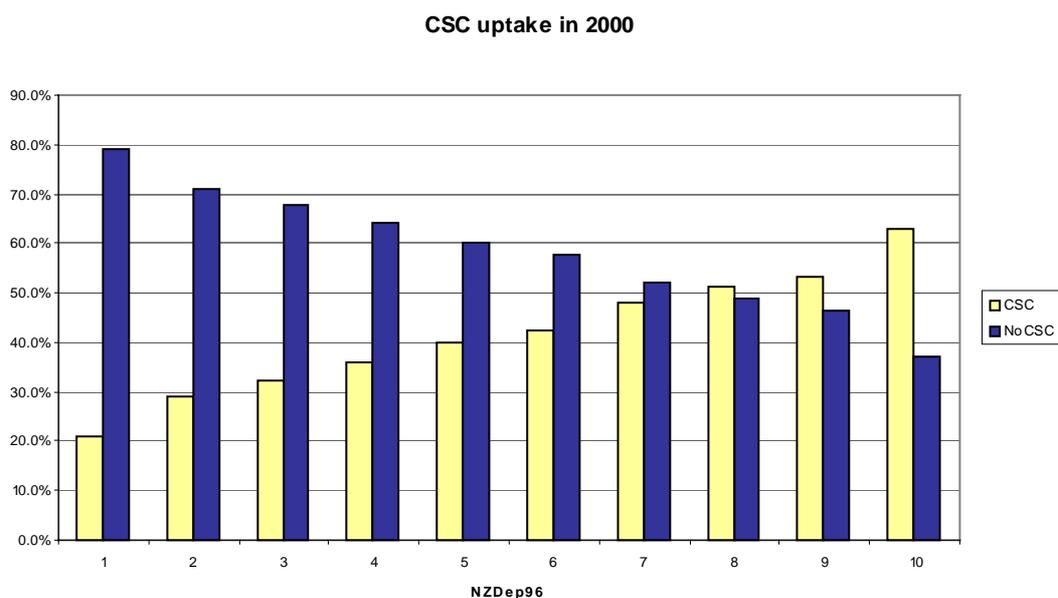
Figure 3: 95% confidence intervals for mean consultation rates by NZDep96



Interaction issues were explored surrounding the NZDep96, CSC holding and consultation patterns. Patients under six years old were excluded as CSC uptake is no longer relevant to this group because of the introduction of the free child health care scheme. There was no significant difference in CSC uptake within each NZDep96 band between years, so Figure 4 below shows only the proportions with and without a CSC for the 2000 year.

**Key result: There was no change in CSC uptake by NZDep96 band during the first year of the Global Budget.**

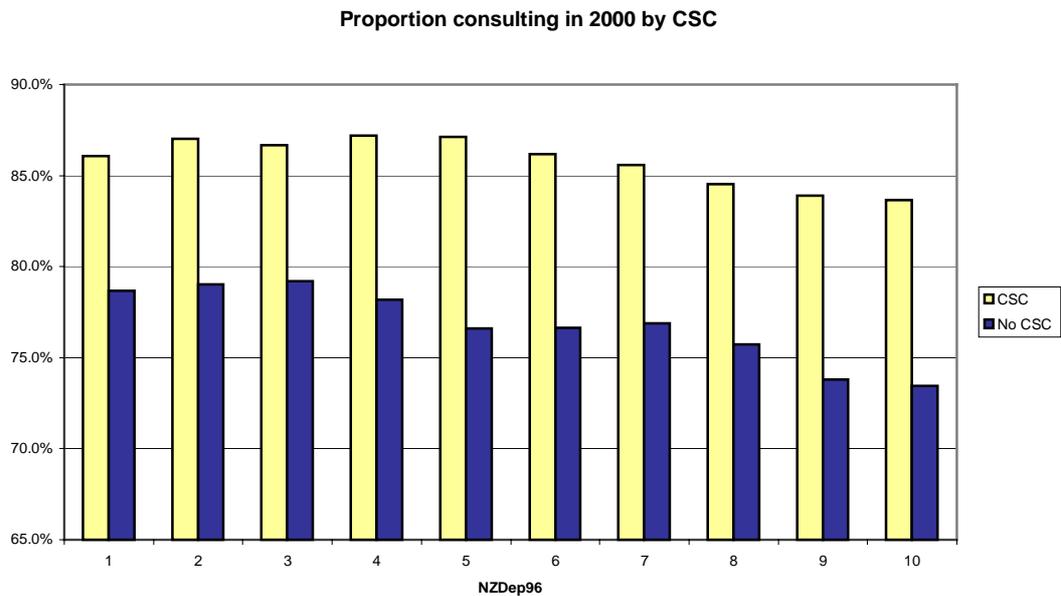
Figure 4: CSC uptake by NZDep96



As expected, the proportion of patients holding a CSC increases with the NZDep96 score. Similar trends with CSC uptake by NZDep96 have been found in another large urban IPA in the North Island (Personal communication, Dr Peter Crampton, Wellington School of Medicine). It is well documented that not all those eligible for a CSC take one up, with some work estimating that of the order of 75% of those eligible for a CSC actually having one (Crampton, et al. 2000).

Another paper suggests that over 60% of those with equivalised incomes lower than \$26,000 not holding a CSC are actually eligible for one, and that over 50% of those not holding a CSC with a family size of five or more people are also eligible (Gribben, 1995).

Figure 5: Proportion of patients consulting by CSC and NZDep96



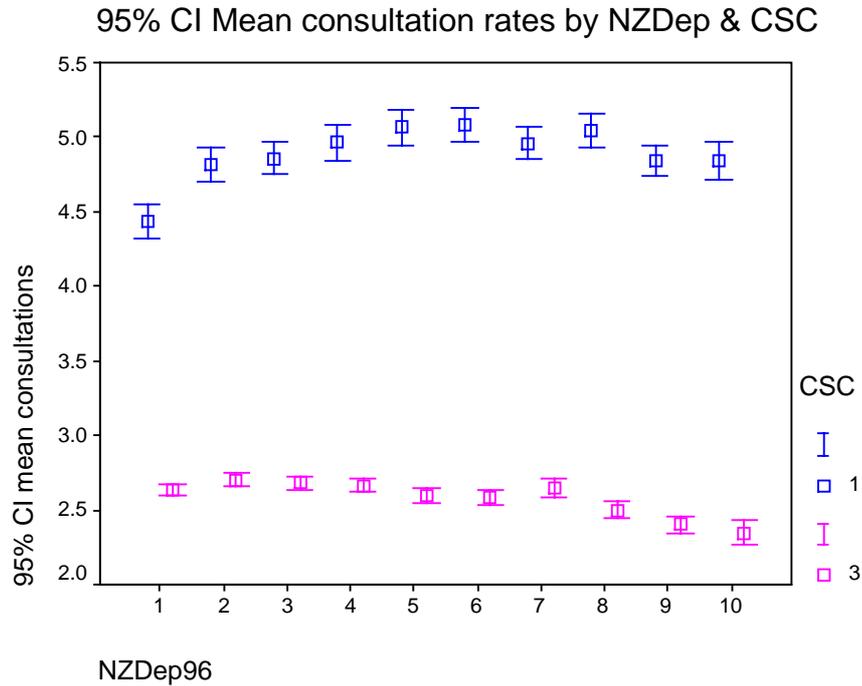
As noted earlier, consultation rates also increase with increasing NZDep96 scores. Consultation proportions and rates by NZDep96 were plotted to illustrate the effects. Figure 5 above should be interpreted with caution: there is an apparent declining proportion of patients consulting as NZDep96 increases for both those with and those without a CSC, however, this is because of the interaction of CSC status and NZDep96. As stated earlier, the proportions consulting across NZDep96 bands are similar. This Figure is to illustrate the impact of CSC on the proportion of patients consulting. The differences between proportions of patients consulting within each NZDep96 band were all highly significant ( $p < 0.001$ ) in both years, hence only 2000 results are shown above. Comparing between years there was a significantly greater proportion of CSC holders consulting after the introduction of the Global Budget in NZDep96 bands 2, 4, 5, 6, 8, 9, and 10. The increases ranged between 2% and 3% and may therefore be of limited public health significance.

There were significant decreases in the proportion of consulting patients after the introduction of the Global Budget for non-CSC holders in NZDep96 bands 5, 9 and 10, also between 2% and 3%. This may indicate the importance of CSC uptake particularly for patients in NZDep96 bands 9 and 10.

Figure 6 shows mean consultation rates by NZDep96 and CSC. The figure relates only to the 2000 year, as there were no significant differences in consultation rates between years within each NZDep96 band. It clearly illustrates the large effect CSC uptake has on consultation rates. However, it also shows a decline in consultation rates for those in higher deprivation bands without a CSC.

As already described, CSC uptake has not changed between study years within each NZDep96 band. Given the consultation patterns that this figure shows, it is believed that Pegasus Health should consider implementing initiatives that may increase appropriate uptake of the CSC.

Figure 6: Consultation rates by NZDep96 and CSC



**Availability**

As noted previously, there have been a number of projects implemented that provide increased access for all Pegasus patients to services that previously did not exist, hence increasing availability. Statistical data is outlined below.

The Acute Observation Unit saw 858 patients between its opening (04/04/2000) and 03/12/2000. This equates to 5.61 patients per day. No data is available on proportion of CSC holders among these patients due to data collection system problems.

The number of patients seen in 2000 between 01/01/2000 and 31/12/2000 for extended care at home includes:

- acute demand = 822 (from March 2000)
- mobile diagnosis = 313 (from July 2000)
- GP in ED – not a patient contact service at that time. Frequent User project which involved patient contact was initiated from March 2001
- disease management contacts – some are included in the extended care numbers and management plans but were not captured separately at the time.

GPs comments provided some insight into these projects; they spoke about overload of new projects and the paperwork problems it generated, but also of the value of practice facilitators in transmission and clarification of information enhancing accessibility for GPs.

*"I think my problem in some respects is remembering that there are other things, other ways I can do things now so, and so maybe instead of just ringing a registrar or sending them home and seeing them again later, there is an option and just remembering that to use that because I'm not that familiar with using it yet".*

*"I know exactly who to phone at Pegasus – I've got this situation, is this suitable, what can you do, I've got no qualms about thinking oh you know I wonder whether we could do something here, I'm not too sure, let's give her a ring, tell her where we are and see what she says. I mean...I've got no hassles and I know there's a direct number I can ring".*

#### Acceptability

This concept is related to patients' perceptions of access. Data from patient satisfaction surveys with two new projects (the Acute Care and Acute Observation Unit projects), as well as data gathered from focus groups with patients utilising projects, related to management of acute demand and management of chronic disease, were used to assess patient views of changes in services since the introduction of the Global Budget. Patients were selected to represent groups likely to experience barriers to access – participants were selected to include the elderly, community card holders, chronic disease and disability sufferers and rest home residents.

Focus group discussion themes related to patients' perceptions of access to existing and new services provided since the Global Budget model was introduced. Though patients were unaware of the change in funding, they were aware of changes in service provision in the year since the date the Global Budget was introduced. The general tone of patients' views from focus group discussions has been positive. Patients have noticed changes in service provision since the introduction of the Global Budget although they were not specifically aware of individual projects. A significant number commented on a perceived change in health outcomes as a result, particularly in avoiding hospital admission.

Key themes emerging from the data were patients' perceptions that since the time of the Global Budget there were changes in:

- timeliness of access to services
- improved geographic access to services
- a perception of improved communication between primary and secondary care
- a lowering of barriers within the doctor/patient relationship
- removal of some cost barriers
- improved access to information of two types:
  - health information
  - information about available services
- improved advocacy and information from practice teams about other services/benefits they were entitled to
- patients felt their anxiety about their health was reduced with the knowledge their GP had access to a broader range of services.

Some illustrative quotes from the data are provided below:

#### Timeliness of access to services

*"Just ring up on the phone and they're there. They're there for you. It doesn't matter what time of the day or night or morning they're there all the time, you know 24 hours a day and I think that's fantastic".*

#### Improved geographic access to services

*"Yes I think that they keep people out of hospital and able to keep going and have access at home. I mean I had a blood test done and an ECG done at home, well at the time I would not have driven because I didn't know what my heart was doing. So I wouldn't drive and I didn't actually have anybody that could take me*

*anywhere at the time and I thought that was an absolutely marvellous service because it isn't easy to get to where you've got to go and buses never seem to run in the right direction and I found that spectacular really. That was something that I thought saved probably being admitted to hospital to have the ECG and the blood tests done and taken to bed for at least a day".*

*"The physical barrier I think, for our age group, is the worst of the lot. Being able to actually get to where you've got to go and you can't perhaps walk very far, even if you can catch a bus you can't walk terribly far to get from the bus to get to wherever. That means you've got to organise somebody to take you and drop you off and then come back again. Also I think our age group's so independent, it doesn't really like doing it".*

*"But the access to the hospital, the access to medical care has been exceptional. One session I had, things went wrong at home and I rung (GP) and he sent some young woman round in a motor car and she came in with a baggage full of instruments and things you switch and lights and everything else and told the wife it had cost \$11,000 just for one little bit and they tested me there, blood tested me, did everything in the home".*

#### **A perception of improved communication between primary and secondary care**

*"I was in (another city) for five years and I'm afraid that the co-operation between the doctor and the hospital was very disappointing. I mean you'd go and get an x-ray, you could go into the surgery and ask the results, nothing would come through and I had a scan and there's no record of it, when we got to Christchurch here I had a bout and the doctor was very good... the first thing that I noticed that once I arrived here that I got service. I was able to go up to the Medical Centre and he kept an eye on me you know and I was maybe there once a week for three or four weeks. It carried on and I suppose it was a period of about four weeks before it really cleared up enough to allow me to pick up again and he was in contact with Dr (Hospital Consultant) any time he wasn't just sure of the medication and he got his advice and I found that was terrific you know".*

#### **A lowering of barriers within the doctor/patient relationship**

*"I just feel we've gone from being a number to a person again, specially with the doctor relationship and they explain everything where before they'd be talking away up above your head and you'd ask them and they'd sort of still sidestep what they were trying to tell you, or that was my experience in some cases".*

*"...but I noticed that when (GP) came round with the letter he was looking see you know oh is that your wood out there and you manage your fire and just checking to make sure that he could see pots and things ready to get a meal or meals were ready and that sort of thing. Just bringing everybody closer together and easier, the doctor isn't up here on his pedestal any more he's down with us and you can talk to them and as you say the Practice Nurse, you ring and you can talk and they will help you access things because it isn't always easy to know how, when, where and why to get the help".*

*"But there's a personalised, don't you feel there's a personalised interest in you, as a person?"*

*"Yes definitely".*

*"And I think it's because they have reorganised their way of working".*

*"Their attitudes".*

### Removal of some cost barriers

*"I've trouble with my ears, and have started to have difficulty hearing and (GP) said oh well we'll have to get them fixed up, he said I'll send you to so and so. Look, I said, I've had a friend just had his ears done and they cost four thousand dollars with the hearing aid, I said I can't afford it. Oh don't worry about that he said we'll get it fixed up he says, in Pegasus we got a way where we could probably assist you in getting that done".*

*"What surprises me is that the doctor and the Practice Nurses they put in so much time doing things that you don't pay for".*

*"So far as the cost, well take a couple of weeks ago I think I had pneumonia you know so they put me in the Observation Unit fixed that up and sent me out and then the old breathing packed up you see so I went up to my doctor and he put me on the nebuliser and he give me all the stuff, I paid for the first visit and then after that I had three visits where I didn't have to pay anything and I was pretty bad so they put me on an extended and I went the whole seven days Sunday included and they never charged me a penny. You know that in itself is pretty good".*

*"I still go twice a year for blood tests and for the tabs for the meter and one visit I pay and the other one is free so I'm quite happy with the service, I get a really good going over from my GP so I have no qualms about that at all. So I have noticed that difference".*

### Improved access to information of two types:

#### 1. Health service information

*"I think in my case the practice has made the services available more obvious to the patient, being me".*

*"The doctor isn't up here on his pedestal anymore – he's down with us and you can talk to them and as you say the Practice Nurse, you ring and you can talk and they will help you access things because it isn't always easy to know how, when, where and why you know to get the help you need but I think that's, I think that's improved a lot in the last year or two".*

#### 2. Information about available services, with improved advocacy and information from practice teams about other services/benefits they were entitled to.

*"You don't get told that you can get these things from WINZ".*

*"No".*

*"You really have to know that you're entitled to them before you start getting them I think".*

*".....the doctor he's the intermediary and he knows where things are and with your permission, he'll discuss it with you and do it for you".*

*"We had a bit of a problem with, my wife did, but we rang the clinic and spoke to the senior Practice Nurse there, she said oh don't worry about that she said I'll fix that up and thank goodness it was all fixed up and we got help for my wife because I wouldn't have known where to start".*

### Patients felt their anxiety about their health was reduced with the knowledge their GP had access to a broad range of services

*"Not only do these things (extra services) keep us out of hospital but it makes a patient like me feel more secure. I know that everything's there on tap, you've only got to ask*

*and you shall receive. And it makes the patient feel a lot better you know, I go out and do a bit of stuff out in the shed now and I think well if I get crook you know there's somebody there to pick up, I don't have to sit around sort of you know worrying about it".*

There was little awareness of the individual projects themselves. For example, in the group of patients selected, because they had received services as part of the Community Care project, all were aware of the services they had received but when asked about the project itself, there was no awareness of its structure.

*Facilitator: "...describe in your own words what you think the Community Care project is all about".*

*Patient A: "Well what do you mean by Community Care? How does it fit, what are you talking about when you talk about Community Care?"*

*Patient E: "That's just my feeling. I'm unaware that I'm part of it".*

Cost of prescriptions was identified as a difficulty for some.

*"It can be expensive until you've used up your allotment. Once you use your allotment up you're right there but it's quite expensive, yes, it's quite expensive".*

These comments were tempered with an appreciation that medication is still subsidised and the health budget is limited.

*"They haven't got an unlimited supply of money...the country's too small...oh we don't expect to be waited on hand and foot".*

Other negative themes related to access with secondary care.

*Patient E: "One of our biggest problems is still access to that hospital. I mean, for instance when I was taking my husband in I had to take him in, drop him at the front door, go away, park the car. He had to sit there because he couldn't see enough to get himself to the eye department so he'd have to sit there, wait for me and go through the same process again you know going home again".*

*Patient A: "The whole afternoon".*

*Patient E: "Major, major thing every time we went in. Going in at three and coming out at 7".*

*Patient A: "We were all sitting there (at the clinic) one day like this and nothing much happening, and the wife said look our appointment is at half past one yeah then we just got chatting and the whole blooming lot of us were there for half past one!"*

These themes are echoed by comments from GPs working in lower socio-economic areas:

*"I had a patient with terrible leg ulcers that had got worse and worse and worse and she'd been seen occasionally at the hospital and last year and she was you know really depressed, the district nurse was depressed, I was depressed and I sent the letter to the hospital and this is just a perfect example of what we're up against – she gets a letter in the mail one day, this is at the end of May last year, to say she'd been assessed as urgent and she'd be seen within four to six weeks and the next day in the mail she gets an appointment for October which was five and a half months away and we eventually got her seen earlier and it was just because I rang the secretary of the department every day to hassle them and I eventually got a lady I hadn't spoken to*

*before who was gullible and gave this lady the attention she deserved you know. She just said oh that's terrible she should be seen within the, and she was seen and admitted but you know the amount of time spent was ridiculous".*

There are limitations of these data from focus group discussions; the data describing the Pegasus population did not allow clear identification and invitation of Pegasus patients who were likely to be vulnerable to socio-economic barriers to access. Community Service Card use was used as a selection criteria; however, this is a very coarse indicator of deprivation. As patients were selected from the groups known to be already accessing Pegasus services, the views of consumers not currently accessing these services are not represented, however, these consumer comments do reflect changes in access since the introduction of the Global Budget.

Some comments from Pegasus GPs provide extra information on acceptability.

### Cost

*"I've got a retired schoolteacher who's a diabetic and she just falls outside and she said it costs every time she goes to the GP which is minimum of course four times a year it's about \$120 every time she goes. I mean that's a lot of money and she's only just over the top because of her retirement fund what have you".*

*"...for example, people who have no community card on prescription items can be up to \$15 a throw and I had somebody in yesterday with a skin condition who I've put on small amounts of repeats and the chemist had given the whole lot at once because it was cheaper for the patient although they probably wouldn't need the repeats and they were saying plus the things they've got from the ENT surgeon who they went privately with their insurance had a prescription that cost \$75 and that's a lot for people. Just because they don't meet the criteria for community services card doesn't mean that they've got money to throw away and these people are like the new poor in a way".*

*"I think that's because I mean as time goes on I mean nobody will convince me otherwise that finances are the main barrier for a huge number of the people. The particular sorts of people that we are dealing with, we've talked about it being a medication thing over \$100, well that's hard enough if you haven't got card you know you're not rich without a card. If you're on a benefit I mean that is undoable".*

### Pegasus GPs working in a lower socio-economic area

There was not a strong feeling from the general GP survey that the Global Budget had made it easier for low income patients to access their services; a third (36%) felt there has been a change, a third (36%) neither agreed or disagreed and the other third (30%) disagreed or strongly disagreed.

### Time

*"Time for me is one (barrier to access for vulnerable groups. I mean when somebody wants to be seen they would like to be seen then and we don't always have time to do that and we can't afford to put aside time. I can't leave spare appointments just in case someone might come in. I know at (medical centre) one of the things they used to do they used to have one of the six or seven people in the practice who was on a sort of carrying fee as it were and they would just see the urgents, which was a great idea and they had enough people to cover that but when you've only got two or three people in a practice you can't do that and when you get the urgent people coming in they immediately stress the place out.*

*There is a group who move around, a group who have their own doctor but if they can't get in to their own doctor they'll come up and see us because they want someone more flexible. It's difficult if you're not seeing the person the whole time, because I don't think they get the same quality of care".*

Pegasus GP working in a lower socio-economic area

Comments from patients also indicated a change in health outcomes on a personal level, certainly in terms of hospitalisation.

*"I think that one of their aims which I think is working in a lot of cases is to keep people out of hospital and in their own homes. And if you can get the help to do that doesn't it make sense? I mean it's a lot cheaper for instance. I mean I've got osteoarthritis and they have organised that I have somebody come in and do the electroluxing and things like that that I can do, but if I do them they cripple me, so instead of becoming worse and getting crippled and needing more help my doctor's instigated that to stop me getting worse and keep me out of trouble you know".*

*"I've got emphysema and I'd end up in hospital, but in the last 12 months (GP), he keeps me out of hospital and if I want something urgently I go along to Bealey Avenue and they put me on the nebuliser, bit of oxygen and all that stuff and that on one occasion I had a young lady bring the oxygen out to me. And that saved in my book a bed in the hospital which was I think pretty good so I'm quite happy with the way things go".*

## Discussion

Equity of access to health care services is not a new problem and has been grappled with internationally both at political and at health service management levels for decades. The current fee-for-service model for delivery of primary care in New Zealand means that there are fixed baseline cost barriers to accessing primary care. It is clearly unrealistic to expect a primary care organisation, which is new to the area of population health, to be able to address all of the complex issues of inequality in access in the timeframe of the post Global Budget evaluation (one year). The more so when there is little alignment of, or agreement between, the contractual obligations set out in the Global Budget contract, KPIs or the Service Plan (all of which are largely still based on the historically fragmented view of access). In this instance the drive for initiatives addressing access came from the organisation rather than being explicitly driven by the contract.

Philosophical and structural/process changes are all that could reasonably be expected to be found within the 12-month timeframe of the Global Budget evaluation. There is a danger that the tension of time constraints within the Global Budget will force implementation of projects designed to address access barriers before an adequate supporting framework is in place, and projects will not be supported by adequate information or measurement tools. However, it appears that competing organisational demands, priorities and resources have also limited progress in this area.

Some difficulties have been identified for IPAs moving into areas with a population focus.

- Without patient enrolment, it is very difficult to obtain good denominator description of the IPA population sub-groups and therefore identify their needs. There are perceptions that barriers to this exist both at patient and member/individual practice team level – in both cases the perception is that there is little value placed

on the need for, and usefulness of, collection of this information. This will be a difficult area to progress without politically sanctioned compulsory enrolment with appropriate incentives and support at practice team level.

- Privacy issues create difficulties for primary care organisations trying to move from a purely business model to work in a population-based/public health paradigm.
- Pressure on staff. Key informants indicated that in the evaluation period pressure on staff, and a high rate of staff turnover with staff being moved to other projects, had significantly hampered progress in this area.

Are the changes that have occurred a direct result of a Global Budget funding model or a result of the changes occurring within the organisation that were the drivers for seeking a Global Budget funding model? It would seem that the changes were already occurring within the organisation. However, the balance of opinion seems to be that the Global Budget gave this greater impetus, with the ability to rapidly trial and implement innovative forms of service delivery. Projects implemented have certainly been highly innovative and well received by patients, and significantly increased access in terms of availability. It is essential that information systems enable the assessment of whether there are measurable changes in access for vulnerable groups as a result of strategies implemented and ultimately measurable changes in health outcomes.

#### Suggestions for further action and consideration

When implementing a Global Budget, the baseline requirements in the area of access, includes the following points:

Alignment of Global Budget contract, key performance indicators and service plan to ensure expectations and priorities for funder and IPA are clear.

A formal strategic plan and a systematic framework for moving forward within the organisation, with a systematic process for searching for evidence in an ongoing way to inform this framework, so that it is in effect a living document.

An effective mechanism for population health and the access strategy to feed in at board level as well as horizontally across portfolios.

Progression of baseline data collection tools that will adequately describe the Pegasus population and its vulnerable sub-groups, allow detailed utilisation analysis at a range of levels from practice, through project to population, and which would form the basis for needs analysis. This includes socio-economic and ethnicity descriptors as well as age and in the longer term chronic disease indicators. On a national level, changes in data collection are also required to facilitate this process. For example, It is essential that prescription data becomes NHI linked in order that changing patterns in health inequalities, utilisation and quality practice may be assessed. The sector has been calling for this for over a decade with little or no central acknowledgement or response. This will allow effective prioritisation and access strategy development.

Once patient groups within the Pegasus population which are likely to experience barriers to access are identified, robust methods for data collection are needed to determine the nature of the barriers to access they experience. An example of this process is the Pacific Island project (see other sections of this report). Comments indicate an openness of member GPs to input from consumers in determining barriers, needs and priorities.

### Strategic planning

In the year following the Global Budget introduction, the initiatives for consideration in improving access for vulnerable groups were developed in an ad hoc way. A more formalised strategic plan and framework to guide development of initiatives in the area of access would be useful. Ideally, it would include a statement of policy and a common understanding of the scope and facets of access as it applies to the IPA, which provides the underpinning philosophical rationale for addressing this area as well as a supporting strategic plan and framework which sets priorities for this (including capacity, staff training and retention and data requirements). Staff retention, public health training and staff development is essential. It is important that as much as possible this process is informed by evidence-based review of potential models, and that well validated methods are used to gather new information.

A useful way to ensure the access strategy is based on the most current evidence might be to use the capacity for evidence-based literature searching, already in place for the CPEC programme. Extra capacity would need to be added, but there are a significant number of Pegasus' initiatives which could use this process, and it makes sense not to duplicate the process and to free up individual project team members time. Effective interpretation of the literature is facilitated by public health training.

The most common causes of disruption to an effective planning cycle are vague objectives, lack of information, and changing circumstances, people or politics (Murray & Gillam, 1997). All these influences have impacted to varying degrees on the development of access initiatives in the first year after the introduction of the Global Budget contract. A model of a planning cycle adapted from Murray & Gillam (1997) is included in **Appendix 5**.

### Information collection and needs assessment

Tools for effective description of the population and identification of vulnerable groups using, ethnicity and deprivation measures as a minimum standard are essential before this area can be progressed. This will enable the identification of vulnerable groups and their patterns of service use in a systematic way, so that needs assessments for these groups can be performed as well as needs assessment for those groups not currently accessing general practice. It will allow effective prioritisation and best use of resources in this area. It will also enable baseline measures to be performed against which project effects can be measured.

In order to achieve this, the progression of data enrolment and privacy issues need to be made a priority. This requires commitment of funding, staff time and training, and appropriate facilitation and incentives at practice level. These issues are complex and time consuming to address, and development of extra capacity may be needed in order to ensure access does become a priority issue among many competing demands for staff time and attention. Providing the capacity needed and progressing the data and privacy issues as a priority, are necessary in order to adequately understand the population and its needs and be able to develop strategies that have an impact on access for patients experiencing barriers. This must occur before projects can realistically be fully developed and implemented. If this is not in place before projects are implemented, it will be very difficult to know whether initiatives to improve access for vulnerable groups are successful, either in effectively identifying and targeting vulnerable groups, and relevant barriers, or in measuring outcomes. It will also be very difficult to assess whether the access dollar is being most effectively spent. At present, ethnicity recording is linked to enrolment and progress is therefore at a standstill because of two areas highlighted by Pegasus Health in the Performance Monitoring Return 1 July to 31 December 2000.

Lack of political momentum for a national enrolment policy

The Privacy Commissioner has expressed concerns about the enrolment process and there is concern within Pegasus Health that this may carry legal risks if Pegasus Health is used as a test case around the issues of patient information use and privacy.

In order to move forward it may be necessary to unlink ethnicity recording from the patient enrolment process. This may have other advantages. Accurate collection and recording of ethnicity information is essential and it may be easier to facilitate this at practice level if it is unclouded by other issues related to enrolment.

There are two important aspects of data collection required to inform an effective access strategy – firstly current utilisation patterns with detailed breakdown by socio-demographic characteristics and secondly a structure for needs assessment ("what are the health needs and barriers to access that exist for the Pegasus population?"). There are numerous models for needs assessment in the literature. Bradshaw (in Murray & Gillam, 1997) has identified a classification of need which is a useful perspective which ensures a comprehensive needs assessment process. Bradshaw identifies four types of need:

**Expressed needs** (needs expressed by action – e.g., visiting a doctor, emergency department or hospital admission).

**Normative needs** (defined by experts – GP service providers, Public Health experts).

**Comparative needs** (comparing one group of people with another).

**Felt needs** (those needs people say they have).

At present, the Community Advisory Board has no systematic way of gaining regular input from consumers. Pegasus Health has also no structure in place for gaining information on local access to primary care/barriers to access. It may be possible to use the same structure for each to avoid research fatigue of the community. One way of doing this might be to use a model similar to the practice facilitators for communication of, information to, and from consumer groups. The process may be informal but use a formal research framework where necessary, and be supplemented by occasional population-wide quantitative surveys for needs assessment/health status data collection.

Possible topics for inclusion might be:

- chronic illness
- acute illness
- a general health status instrument such as the SF36 (this has been applied in general practice and found to be internally consistent, valid and acceptable to patients. It is also able to detect low levels of ill health)
- a disease specific instrument
- specific questions for people with chronic disease
- use of health services over the last six or 12 months
- perceived (felt) need for current or potential services or barriers to accessing current services
- social and demographic characteristics
- specific concerns which may affect health
- patient satisfaction.

## Conclusion

The findings of this evaluation confirm there has been a change in the funding structure relevant to access issues with the introduction of the Global Budget funding model. Prior to the Global Budget 'historical funder silos', directing financial streams to specific projects such as immunisation, resulted in a fragmentation and dilution of strategies addressing access. Pegasus Health mirrors this change from a fragmented to a combined funding stream in its philosophical and structural response since the Global Budget, with the drawing together of access as an issue for specific focus.

Prior to the Global Budget the issue of access was only addressed in a fragmented way, if it was relevant for a particular project, for example immunisation. Pegasus has made some significant shifts in philosophy, and in initiating structural changes and relationships necessary to be able to deal with issues surrounding access. Some overarching goals were set and this has been followed by some structural and process changes. Utilisation data on existing services indicate improved accessibility in some areas. There has also been significant activity in the area of availability in improving the capacity for Pegasus patients to access services. Many innovative services and methods of service delivery are available to Pegasus Health patients that were not available prior to the Global Budget funding model. This fits well with the third key direction of the national Primary Health Care Strategy: "To offer access to comprehensive services to improve, maintain and restore peoples' health".

There is some indication from the qualitative data that as a result of the increased range of services offered since the Global Budget some access barriers were reduced for patients. In particular, the initiation of the Community Care and Extended Care projects seem to have had an impact on timeliness of access to services and removal of some cost barriers, and have improved geographic access to services by providing them in the home or community.

Nevertheless, in the year since the introduction of the Global Budget there was little activity toward the next step, which involves addressing inequity in access. In the year following the introduction of the Global Budget there was little progress in identifying specific barriers to access and sub-groups of Pegasus Health patients vulnerable to these. This requires development of the baseline tools required to better understand the Pegasus population in relation to access issues and inform projects to try to address barriers to access. Descriptors of sub-groups of the Pegasus population likely to be vulnerable to access barriers need to be able to be matched against health needs and utilisation patterns to determine where access barriers might exist. Socio-economic description of the population using geocoding with the New Zealand Index of Deprivation had begun, but was not yet complete during the evaluation period and ethnicity recording had not been initiated to any great extent. The lack of adequate data means that little definitive can be said about health outcomes or even project impact (utilisation) as it relates to groups likely to experience barriers to access. This evaluation involved geocoding the Pegasus population and some overall utilisation data has been related to this.

Adequate description, according to these variables of the denominator Pegasus population and of vulnerable groups, and their current access patterns are essential in planning, prioritising and implementing effective strategies. There are a number of projects aimed at addressing barriers to access that are in the conceptual/development stage.

Only one has reached the implementation stage (the Link Nurse project which offers the services of a nurse to help practices link with their 'hard to reach' patients for immunisation), and no results are available.

The next steps forward are crucial, and it is vital that these are given a high priority while not undermined by unsustainable time pressures and outcome expectations.

Progress in this area is fundamental to the second of the six key visions of the national Primary Health Care Strategy: “To identify and remove health inequalities” (Ministry of Health, 2001).

## QUALITY

The original Request for Proposal (RFP) indicated that the requirements for the evaluation of quality initiatives within the PMG Global Budget were essentially twofold:

- to assess initiatives undertaken by PMG for improving quality
- to assess the impact to date that these initiatives have had on the quality of service.

The first of these components is entirely about the nature of a quality system – i.e., the way in which an organisation assures itself that it is providing a quality service, but not an assessment of the service itself. The second has a broader implication – that quality initiatives will have some impact on the quality of service.

The short time span since the implementation of the Global Budget and the absence of baseline data prior to that, suggest that an emphasis must be placed on providing an evaluation of the quality systems rather than actual quality result.

The aims of the quality evaluation, therefore, are:

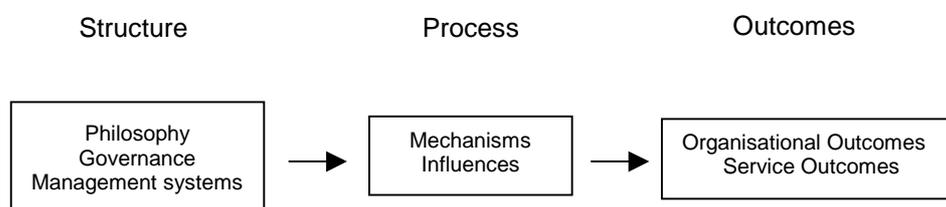
- to assess the extent to which Pegasus Health has quality systems in place, and the use made of them by practitioners and other staff
- to assess, as far as practicable, the effectiveness of these activities in enhancing standards of practice and care.

Ovretveit (1998, pg 254), suggests a number of possible evaluation strategies, but the first step will normally be a Type 1 descriptive study. Such a study is most useful if it is based on a conceptual framework relevant to the nature of the organisation and sector within which it is set; in this case, a large primary health care organisation.

### Introduction to evaluation of quality

#### Evaluation approach

The evaluation approach used by the project is a modification of the classic structure-process-outcome framework for evaluation. This can be operationalised for quality in primary health care organisations through the following general scheme.



Despite the apparently self-contained boxes in this framework, a flexible approach needs to be taken, with systems often being mechanisms and processes often also being outcomes, especially organisational outcomes. In general, though, this framework is consistent with the recent literature on quality as it applies to general practice in *large primary care organisations*, an approach to quality somewhat different from that applying to individual practitioners or even group practice settings. Specific

literature is cited below, but much of the discussion is within the context of the key document *Quality in General Practice: Supporting Clinical Governance in Primary Care Groups* (Roland et al. 1998), from the UK National Primary Care Research and Development Centre.

## Quality structures

### **Strategic quality and clinical governance focus**

It is clear from the literature relating to health and primary health care that quality is seen as much an attribute of organisations, as of individual professionals. This organisational approach to quality ensures both clinical and management leadership in quality, and is encapsulated most effectively within clinical governance concepts (Allen, 2000). Sutherland and Dawson (1998, pg 22), note that clinical governance, by taking an organisational view of quality, gives legitimacy to both manager and clinician involvement. This is explained by one informant: clinical governance will make connections between general management areas – strategic planning, strategic positioning, business planning, and so on – and clinical practice (pg 22). Quality, therefore, becomes one management system alongside others in the organisation, directed and monitored from the governance level, and implemented through management or decentralised systems.

Organisational, or systems, approaches to quality are based on governance level decisions and the preparation of a quality strategy or quality plan (Rosen, 2000), with appropriate objectives against which implementation is subsequently monitored. Such an approach involves identifying essential requirements for standards of primary health care, determining the organisational effort and resources necessary to secure these, providing appropriate incentives and sanctions, ensuring open-systems style monitoring and feedback loops, and mechanisms for accountability for performance.

### **Culture and values**

Primary care organisations such as IPAs are not based on the hierarchical arrangements of hospitals, and have the opportunity to develop collegial leadership styles. Spooner et al. (2001), identified professional pride on the part of practitioners, peer communication and opinion leaders as some of the important determinants of quality. These, along with a willingness to learn and improve (Huntingdon et al. 2000), are likely to create an open or learning culture in which new ideas are accepted.

### **Population approach**

A population orientation is now recognised as central to the quality management of primary health care (Rosen, 2000; McColl and Roland, 2000). This is a departure from the more narrow focus on presenting individuals or even the practice population, and involves recognition of the wider needs of the community and strategies to reduce inequalities.

### **Clarity of objectives**

There is no single perspective on what represents quality in primary health care (Rosen, 2000). Different authors suggest alternative ways of looking at quality, from a core group of indicators (Roland et al. 1998), to understandings about better care and better teams (Spooner et al. 2000), or the presence of components such as evidence-based approaches or audit, and risk management procedures (Rosen, 2000). Organisational mission and objectives need to be congruent with quality perspectives.

## Quality processes

Quality processes operate at three levels: the organisation, the team and the individual. These levels are replicated to some extent in the broad processes of change and the procedures which need to be in place to ensure quality (Table 24).

Table 24: Levels of analysis of quality

Level of analysis	Type of change (Shortell, 1995)	Quality processes
Organisational	Development of systems	Planning and management systems
Team	Cultural change	Performance enhancement
Individual	Technical developments	Education and development

### Planning and management systems

Quality planning and management systems require the key ingredients of strategic vision, an evidence base, a consumer focus, effective information and monitoring systems (at both practice and aggregate level (McColl and Roland, 2000)), and levels of involvement to ensure commitment (Rosen, 2000). With respect to monitoring, caution has been expressed about over-reliance on performance indicators. Sheldon (1998), for example, points out that monitoring systems should be integrated with guidelines for good practice and service frameworks, and should be established in a participative way. Feedback should be supplied in a positive and facilitative manner.

At both individual and team level, both cultural change and technical development are required to ensure that both education and performance enhancement mechanisms are effective.

### Performance enhancement

Recent literature (Spooner et al. 2001; Shapiro and Devlin, 2000; Campbell et al. 2001; Allen, 2000; Rosen, 2000; Pringle, 2000), identifies a number of mechanisms that can enhance the performance of individuals and teams. These include:

- accreditation of facilities, services and personnel
- accountability systems – e.g., local development of standards and protocols, audit and feedback. This includes acknowledgement of consumer interests
- management of poor performance
- recognition of the role of both financial and professional incentives
- facilitation of performance.

These mechanisms do not stand alone but need to be woven into an integrated system of quality management that links individual, practice and organisational levels (Baker et al. 1999).

### Education and skill development

Education and the development of skills have focused primarily on individuals, with changing clinical behaviour identified as the main challenge in promoting quality (McColl and Roland, 2000). Increasingly, however, there is concern about the skills and capacity of the primary care team as a whole (Rosen, 2000), with Pringle (2000), noting the need to move beyond continuing medical education to continuing professional development for the entire team. Gillam et al. (1999), highlights the potential problems with multidisciplinary learning in general practice, including issues of gender, hierarchy and varied educational achievements of team members. Approaches using adult learning principles, local opinion leaders, structured visits from valued colleagues, academic detailing and financial incentives have been recognised as effective (Roland et al. 1998).

## Quality outcomes

Outcomes have been variously conceptualised, from the general better teams, better care (Spooner et al. 2001), to the adoption of an extensive range of key performance measures as set out in the Pegasus Global Budget contract. Alternative approaches are to recognise a limited number of markers (McColl and Roland, 2000), or the more comprehensive standards of some professional Colleges. There are debates around appropriate indicators, the relationship between quality and activity, and the easy and tricky to measure items (Roland et al. 1998). The distinction between indicators and standards is important, with large primary care organisations to some extent, required to establish their own standards or expectations of performance, or to do so in association with funders. This involves an IPA, for instance, recognising both organisational and service quality, and at three levels: the organisation, the practice setting and the individual practitioner, although, as for process outcomes, it is difficult to differentiate between the practice team and practitioner.

Table 25: Examples of desirable outcomes at different levels in an IPA

Level of quality outcome	Organisational outcomes	Service outcomes
IPA level	Strategic population perspective Quality system	Key performance measures (e.g., IPA screening coverage, etc) New service programmes
Practice/team level	Effective team functioning Effective practice systems (e.g., practice profiling; recall)	Key performance measures Quality care
Individual professional		Extended services, diversity and choice Consumer satisfaction

## Research methods

As noted elsewhere in this report, there are problems in providing a before and after evaluation when such a short timeframe is involved, particularly if it is desirable to assess outcomes. In the case of quality, the issue is not only to relate before to after, but to assess the impact of the Global Budget according to independent and accepted standards of performance. The methodology, therefore, includes the broad categorisation of desirable outcomes (see previous section), with subsequent data collection designed to address the issues identified at organisational, practice team and individual level, across a range of organisational and service outcomes, as set out in Table 25. This part of the evaluation relied on multiple sources of data, set out below.

### Analysis of Pegasus documents

The most important documents for the analysis of quality systems and performance are reports from the Clinical Practice Education and Practice Development Portfolios, reports on developments in population health and the planning and development of new projects, and the reports on Key Performance Indicators (KPIs) required under the Global Budget contract, including a Ministry of Health Review of the Pegasus Health Service Plan (29 June 2001), in terms of KPIs. There were significant gaps in the documentation on organisational aspects of managing quality. The reason for this became apparent through the interviews, and increased the significance of the interviews to the project.

### Key informant interviews

Fourteen interviews with selected directors and senior managers, were undertaken specifically for the quality component of the evaluation. While the interviews were tailored specifically to the position of each interviewee, the broad themes of the interviews related to:

- scope of quality issues in primary health care

- presence of quality systems within Pegasus prior to the Global Budget
- the difference made by the Global Budget to achieving quality
- detail of some of the quality activities and experiences.

Additional reference is made to contextual interviews and to focus group interviews undertaken by other members of the team.

#### Survey of GPs

The survey of GPs undertaken for the project in July 2001, included questions of relevance to quality issues, and reference is made to the responses to these.

## Results

### Quality structures: organisation and systems

#### **Strategic systems and clinical governance**

Quality has been endorsed at governance level since Pegasus was formed, and is an important component of the Pegasus discourse. Interviews with directors, in particular, confirmed the longstanding emphasis. "We made a conscious decision to go for quality...rather than just try to save money". "We do talk about quality a lot, we always want data and feedback and we always want to do things better".

The directors have taken a strong clinical leadership role and talked of Pegasus as a "clinically led" organisation, with directors taking responsibility for driving clinical portfolios. To ensure the quality focus was maintained, the Board had worked in "hands-on way to get it right. We had a committee with half the board on it because it was such a critical part of the growth of the organisation". This may have been important in the mid-90s, but continuing this approach as the organisation became bigger under the Global Budget led to some difficulties: pressure on directors ("stressed to the max"), and uncertain lines of accountability for managers who sometimes felt their roles to be pre-empted. Clinical leadership roles have been redefined with the appointment of clinical directors from mid-2001. This is intended to ensure that elected directors remain in a governance role, but that high level clinical input is available to managers.

At a more specific level, there is no person or group within Pegasus that has overall responsibility for quality issues, other than the Board. A quality policy or co-ordinated systematic approach seems overdue in an organisation of the size and complexity of Pegasus. Some directors acknowledge this, recognising that the organisation as a whole has quality responsibilities, not just clinicians: "we've probably achieved the quality outcomes we're searching for by having that as a fundamental principle of the organisation rather than needing to have a document. I think that as an outcome of this process we will probably develop a document...".

A document, however, is not a management process. Some informants recognise the need for a more organised approach to management systems generally, not just quality. The overall growth of Pegasus (over 70 staff), suggests a need for a quality approach to management in all areas: human resources, management structures, strategic planning, for example, which appears to be being addressed.

#### **Culture and values**

Quality has been a strongly-held value at board level and, as in any large organisation, the membership has a spectrum of views. On the one hand, directors report that at meetings members strongly challenge directors to ensure quality remains a focus. On

the other hand, a Senior Manager reported that “some GPs need to be dragged along”. There is a strong consensus among both directors and senior staff that overall quality is a strongly held value among members. This appears to be confirmed by the survey of GP members, with 83% agreeing or strongly agreeing that “I have increased awareness of quality issues”, although the concept of ‘quality’ in a modern primary care organisation may be variably understood.

Among directors, it has always been understood that “quality and cost go together”. Even in the early days, budget-holding contracts had a strong quality/education initiative alongside them. Even though a clinical quality culture was well embedded prior to the Global Budget, other aspects of quality have been challenged by the new contract. These include the importance of teamwork and team responsibility, the incorporation of population health approaches, issues on inequality in health status and the role of the community in relation to Pegasus decision-making. Although such aspects of quality have been embraced by both directors and senior management, they may be variably understood or endorsed by practitioners. For example, there is strong GP member support for the IPA role in meeting the needs of disadvantaged groups (71% agree or strongly agree with this), but only a minority of members (43%), agree or strongly agree that a population approach helps my patients, with 40% having no views either way. These results indicate GP recognition of the importance of addressing population disadvantage, but also reflect a more limited, but evolving, understanding of the broader application of population health strategies and their role in primary health care.

#### **Population health focus**

A specific theme since the Global Budget, and one that has strongly challenged the cultural norms of general practice, is the emphasis on population health. Pegasus directors have seen this, as ‘extending Pegasus beyond the GP walls...responding to the HFA challenge’. One Senior Manager commented: “Since the Global Budget there’s been a real shift to actually looking at a population level, looking beyond the regular patients to the casuals and...thinking about who in the community is not accessing [services]”. This moves Pegasus from an exclusively led clinical organisation to one that recognises the importance of approaches to address the needs of whole and sub-populations, and the use of preventive and community as well as clinical interventions.

#### **Clarity of objectives**

As there are no specific quality objectives for Pegasus, it is not possible to confirm the alignment of these with organisational objectives or mission. The Pegasus mission statement (Managing change in health care through quality solutions), pre-dates the Global Budget and seems inadequate as an expression of the intentions and activities of the organisation as they are today. A mission statement more aligned with the core purpose itself, is also now somewhat out of date but orientated to improving the health of the community through primary health care, might be more appropriate. At portfolio and management level, there appears to be more clarity of objectives, but at organisational level, the mission statement does not seem to have kept pace with the rapid reorientation of activities under the Global Budget, including a population health focus. Establishing a clearer link between organisational mission and objectives, quality objectives and the service plan, will be an important target for effective management of a Global Budget.

Quality processes: influences and mechanisms

### **Planning and managing for quality**

According to the literature on primary health care, the planning and management system necessary for quality performance requires a number of mechanisms: organisational co-ordination; planning systems; evidence-based approach; effective information systems for both planning and monitoring; and appropriate participation.

### **Organisational co-ordination**

The rapid growth of Pegasus since the Global Budget contract, has placed significant strain on the co-ordination capacity of the organisation. Enquiries of both directors and senior staff indicate that both management arrangements and staff positions have been the subject of change over the last two years in order to accommodate the growth in functions and personnel. The most recent available organisation chart indicates no senior level co-ordinating mechanism, although there is a senior management team that meets regularly to co-ordinate operational matters. This group has been increasingly involved in strategic planning, but there is no equivalent focus for quality management, a significant omission.

### **Planning systems**

The initiatives of the Global Budget required a more systematic approach to project planning, implementation and monitoring and evaluation. The recruitment of new senior staff with these skills has brought a project planning discipline into Pegasus, and a more defined project planning system is now in use for all new ventures. Recently developed projects (such as the Community Care project), have involved such a process. Stages identified included concept development (using research and analysis and focused meetings), board approval, project development (using feedback from small-group and other meetings, the use of multi-disciplinary teams, and input from secondary care), and a staged launch that allowed adjustments to be made and implementation to be properly managed. Monitoring and evaluation systems were incorporated into the planning process via the Decision Support team. Similarly, population health initiatives benefit from the presence of staff with public health training and associated research, and evaluation skills. Pegasus has used outside expertise (such as NZHTA), to supplement its research and analytical resources.

### **Evidence base**

The Pegasus focus on evidence-based approaches long pre-dated the Global Budget. The early involvement of pharmaceutical facilitators in the Clinical Practice Education Programme linked budget holding with evidence-based quality. This approach has persisted in all Pegasus activities, but both directors and senior staff acknowledge that since the Global Budget, the understanding of the scope of evidence has had to change:

*“We’ve had to stretch staff...we’ve had to work with new data sets. I think people have had to adapt to a different set of evidence, not necessarily the kind of clinical evidence from randomised trials we’ve been used to”.*

In interviews, all senior staff and directors confirmed the commitment to evidence-based decision-making for both policy and planning as well as clinical decisions, and gave examples of how this had been implemented in such diverse areas as disease management, population health and integrated care. A clear majority of GP survey respondents (84%), agreed or strongly agreed that “information for patient care decisions has improved”.

### **Effective information systems**

Pegasus developed information systems early, but as with most IPAs, these tended to develop as silos around particular data sets and activities, such as providing appropriate audit trails and for feedback on pharmaceutical prescribing. The analytical function within Pegasus has always been recognised as important, and was initially directed largely towards feedback for the Clinical Practice Education programme, an important quality initiative. The Global Budget changed the scope and focus on information system development with the extensive parallel development of Information Technology (responsible for developing and maintaining networks and systems), and Decision Support (responsible for providing analytical services).

Since the Global Budget contract, the Decision Support team has been closely involved in project development. It provides information and generates alternative scenarios at planning stages, and ensures systems and reports for subsequent monitoring. There are two information projects under development, with strong quality implications, that have arisen from the Global Budget. The first of these is the End User Project which will enable the Decision Support team to integrate databases, and focus on developing both query-driven and regular reporting to meet information needs of programmes. The second is the Population Health Project which is intended to provide an integrated approach to defining and co-ordinating key data sets, eventually permitting profiling at Pegasus, practice or practitioner level, or according to key identified criteria. While this Project is under the auspices of the Population Health portfolio, it has Pegasus-wide ramifications and is clearly consistent with quality approaches to primary care. All Pegasus informants indicated an understanding of the potential of this project, although recognised that it might not be well understood by all members.

Since the Global Budget, information systems developments have included such quality initiatives as web-based supports for the day-to-day decisions of practitioners. However, by providing information to enhance planning and monitoring procedures, and developing more sophisticated Pegasus-wide systems, the role of information is likely to be more strategic and make contributions to quality at a range of decision levels. Not only were these systems essential to the implementation of the Global Budget, a global funding budget model has been essential to ensure the flexibility of resourcing required for investment in information systems. The Ministry of Health Review (29 June 2001), indicates the significant efforts made by Pegasus to develop data by age, sex, gender, ethnicity, domicile and CSC status, and suggests that this should be prioritised via KPIs.

### **Participation**

Quality primary care involves participation of professionals and consumers. Pegasus has high levels of professional participation in planning and management systems. Approximately 45% of Pegasus GPs are involved in some way on planning and development committees – an extraordinary level of participation, and 51% reported that they had become more involved in policy issues. In addition, since the Global Budget, there has been much stronger involvement of nurses in planning, with over 40 Practice Nurses participating on committees. There is greater involvement of nursing at senior level, with a Nursing Advisor appointed at management level and from 2001, a nurse representative on the Board. A Nursing Forum facilitates Practice Nurse feedback on Pegasus initiatives and a Nursing Strategy, approved by the Board, will facilitate the development of nursing within Pegasus. There is consensus that the Global Budget has led to significant change in the way nurses are involved at policy and planning levels in Pegasus, with overall gains to the development of quality approaches. The level of community and consumer involvement in Pegasus decision-making is of more recent origin and less well developed.

### Performance enhancement

There are two broad approaches to performance enhancement: **performance systems** for linking standards, monitoring and intervention to improve performance; and operational or **facilitation** systems that support quality performance on the job. Aspects of both of these approaches are used extensively in Pegasus to enhance performance.

### Performance systems

The performance system approach is largely the responsibility of Practice Development, a recently established portfolio (mid-1999), incorporating two key programmes: the Pegasus QualityMark, an accreditation strategy, and the Continuous Quality Improvement programme (CQI), which identifies desirable practices and targets, and provides financial incentives for participation and performance.

### *Accreditation*

Entry to Pegasus is by application, and new members must meet standards determined by the Practice Development Portfolio and undergo an induction process, ensuring new members fully understand the obligations of membership.

The Pegasus QualityMark project pre-dated the Global Budget, but was in the development stages with the Global Budget providing additional impetus, and the opportunity to appoint a GP as part-time portfolio manager. The QualityMark provides the basis for assessing the clinical, service and physical standards of a practice, with standards based on the RNZCGP standards, but extended to reflect Pegasus and member specifications. All practitioners in a practice setting must be members of Pegasus.

A visit by the Practice Development Manager and Nursing Advisor assesses a number of mandatory and optional standards. Assessment is thorough, taking about five hours, and free to the practice. Practices not meeting standards are assisted by the help manual to reach appropriate levels. Successful practices self-report on their standards each year and receive reassessment visits every three years. Pegasus staff have received training in assessing from the RNZCGP. As of January 2001, over a dozen practices had been assessed. Successful practices are entitled to use Pegasus branding and signage. Application has been made for the RNZCGP to recognise the programme as fulfilling its requirements, and a decision is pending.

### *Accountability systems*

In our survey of Pegasus members, 90% of respondents reported that they had more targets set by Pegasus since the Global Budget. The CQI programme is the main accountability mechanism for both individual practitioners and practices. This has been a rapidly evolving programme with limited available documentation – an unfortunate circumstance, as the programme is becoming increasingly important organisationally. It also consumes considerable funds in incentive payments to GPs (over \$500,000 per annum 1999-2000, although this represents a relatively small amount per practitioner).

The CQI programme defines desirable performance targets across a range of clinical and systems areas, and provides small payments to GPs for achieving the target. The targets are reviewed on an annual basis and may be raised or even removed from the programme if achievement levels are considered sustainable under normal practice circumstances. Practitioners select the components of the programme in which they wish to participate, and 100% of practitioners are involved in some way.

The schedule of CQI indicators varies annually and reflects attainment in a combination of personal education, practice performance and quality system areas. For 2000/01, 18 targets were included. Six targets are practice-based, for example, there are targets for cold chain monitoring, payments for having appropriate systems

to ensure that eligible patients receive community services cards or other entitlements, and for having an active infection control policy. A further 12 targets are practitioner-based, for example, relating to smoking cessation (three targets), green prescriptions, mammography and immunisation (three targets), attending cultural awareness programmes, and others.

It became clear in discussing the CQI programme with key informants, that it was seen as a valuable tool for Pegasus managers to advance Global Budget programme objectives in areas of community care and population health. This places considerable pressure on the limited resources of the CQI programme, which retains voluntary participation only. In the past, there has been some confusion among managers over who has the final say over access to the CQI programme. Although, some more systematic process for access to the CQI schedule is evolving, a more co-ordinated and strategic approach to quality would allow this to be resolved more readily. This is consistent with the findings of the Ministry of Health Review (29 June 2001), which recommends a more rounded approach to CQI and more congruence between the CQI programme, RNZCGP standards and the Pegasus contract.

#### *Managing poor performance*

Managing poor performance, or performance outside the preferred range, relies on audit systems that highlight variation. This has been a feature of pharmaceutical and laboratory budget holding, and its linkage with the small group education programme since the first Pegasus contracts. Based on pharmaceutical reporting, Pegasus has been able to intervene when evidence, for example, of excessive levels of narcotics or benzodiazapine prescribing emerged from routine systems. Pegasus has also worked with the Clinical Audit Committee from the 24-Hour Surgery to anticipate any concerns about clinical care under new Global Budget projects. There are now moves to develop a similar committee within Pegasus itself. In doing this, Pegasus moves from being just an association of GPs to becoming a responsible provider working through those GPs, and collectively responsible for quality. The inclusion of good documentation processes in the new projects provides both guidance for practitioners, and appropriate audit trails.

#### *Role of incentives*

As much of the literature points out, incentives to perform well are essential, but variable in nature. Pegasus programmes integrate both financial and professional incentives as a means of encouraging performance. The financial incentives are relatively minor (on average \$2,000 per annum per GP), but are a symbolic recognition for both effort and results. Clearly, there are additional incentives at work. Many informants point out that practitioner participation in Pegasus activities and the new Global Budget projects, suggest that widening the scope of GP activity, being able to offer a wider range of services, being more involved with GP colleagues and a team approach have been important motivators in quality improvement. One informant reported:

*“GPs say they’ve had more fun doing this than they’ve had in 20 years”.*

On the other hand, 72% of GP survey respondents agreed or strongly agreed that they are “under more pressure professionally”, with 94% reporting that they “had more targets to meet set by Pegasus” since the Global Budget, but nevertheless 39% reporting increased job satisfaction. This is higher than in a national study where only 19.7% of GPs reported that being in an IPA had increased their job satisfaction overall. (Barnett, 2001)

#### **Facilitation**

The facilitation of quality performance on a day-to-day basis is largely hidden in operational management procedures, but is an integral part of enhancing quality.

Pegasus has extensive systems in place, over a range of projects, although the absence of any overall quality management system means that these may be hard to find in any analysis of quality mechanisms. Quality facilitation includes the following components:

#### *Liaison and support<sup>14</sup>*

Liaison and support services aim to assist the practice team in implementing Pegasus projects. A multi-disciplinary group of six facilitators was appointed to assist the implementation of Global Budget Community Care programmes by acting as a liaison with practice groups. Each facilitator is responsible for a group of practices, visiting regularly to assist with special projects, clarification of information or general troubleshooting on behalf of the practice. Feedback from facilitators indicates that the building of a relationship with both nurses and doctors, and offering practical help has encouraged a greater receptiveness to the practices' participation in Pegasus projects. Among GP survey respondents, 67% agreed or strongly agreed that they "received appropriate support from their practice facilitator".

In the same way, support co-ordinators, appointed as part of the Community Care programme and based at Pegasus, assist with information and mobilisation of community resources to enable practices to keep people at home. The support co-ordinator role is facilitative, introducing Practice Nurses to available resources so that the nurse is later able to access such resources independently.

#### *Operational guidelines*

Global Budget projects have all developed operational guidelines to enhance quality levels. Examples include Community Care guidelines developed in association with secondary care specialists regarding intervention and referral options, or the extended Disease Management protocol for the annual review of diabetics. Similarly, Population Portfolio projects require particular recall practices and reporting. Such guidelines and protocols ensure that day-to-day activity within surgeries is guided by best-practice. Key informants reported that the overall strategy is to use Pegasus resources and infrastructure to provide the frameworks, and "get it right before rolling projects out in the practices".

#### **Overall**

Performance enhancement strategies are well developed in Pegasus. Performance enhancement is addressed through both the Practice Development Portfolio, and through facilitation and clinical audit procedures linked to specific Global Budget projects. Both systems have evolved rapidly and interact at various levels. Both are essential to effective quality management, but would benefit from a more co-ordinated approach.

#### **Education and skill development**

The development of clinical skills has been the key to quality in Pegasus since the first budget holding contracts. The programme was developed under the auspices of the Clinical Practice Education portfolio, initially for GP members only, based on small-group education principles and supported by facilitators with pharmacy qualifications. The inputs included evidence-based information, skilled facilitation and feedback on performance. Research evidence indicates the overall success of the programme in terms of enhanced quality of laboratory and pharmaceutical prescribing (Kerr et al. 1996; Malcolm et al. 1999). The key to the success of the programme from the earliest days, has been the commitment of small group leaders drawn from among Pegasus GPs.

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<sup>14</sup> This included ongoing leadership support and liaison offered to Practice Nurses on all aspects of nursing care through the Nursing Advisor and Nursing Facilitator roles. Also clinical facilitators had a significant role in quality and review of practice.

The programme explicitly conforms to adult learning principles and the criteria summarised by Roland et al. (1998), strongly modelling the evidence-based approach it endorses. Small group leaders receive specific training in educational techniques and feedback from external evaluators.

The Global Budget has had a two-fold impact on the education programme. First, it expanded the range of topics addressed by the programme, targeting not only clinical decision-making but also issues arising from new Pegasus ventures, such as referral and admission behaviour and managing population or disease groups. Key informants commented that these topics sometimes took leaders, facilitators and participants out of their comfort zone, but that this was seen as essential if Pegasus was to achieve its Global Budget aims. The second impact of the Global Budget was the opportunity to consolidate and sustain the extension (begun in 1998) of the small group education programme to practice nurses. Nurses have their own small groups and leaders, but address the same issues. The education topics are worked up by the joint group of GP and nurse leaders, using the same evidence-based information. A majority of GP survey respondents agreed or strongly agreed that since the Global Budget, their range (52%) and level (61%) of clinical skills had increased.

Informants commented on the tension between pre-Global Budget arrangement, whereby education group leaders had owned and driven the programme and the need under the Global Budget for Pegasus management to use the programme to facilitate organisational objectives. Each month approximately 80% of GPs attend, with over 97% of members attending on a regular basis. Nurse participation is increasing, with 87% of nurses having signed a memorandum of understanding with Pegasus and 65-70% attending small group education.

Specific training courses have been set up to meet the need for skill development associated with Global Budget and other innovations. These include training in reading paediatric x-rays for staff involved in the Observation Unit, and developing patient education skills for Practice Nurses through the disease management programme. A six-session course on anxiety disorders (in association with the specialist mental health services), arose from Pegasus' participation in the Access Canterbury project. The Practice Development portfolio arranged for 60 GPs to attend a Level 7 Advanced Cardiac Life Support Course, involving training on resuscitation techniques.

The development of personal skills is also supported by Pegasus' scholarships for further education for Practice Nurses, GPs and Pegasus' staff. A special course run by the Christchurch Polytechnic Institute enables upskilling of practice receptionists, and a group of practice managers attended a Goodfellow Unit training programme for their group.

Overall, the education programme and skill development initiatives associated with Global Budget projects have provided extensive opportunities for Pegasus' GPs and Practice Nurses to become involved in professional development directly relevant to the quality of service they are providing. The small group education programme was well established prior to the Global Budget, but its rigour and style provided an important model and infrastructure on which post-Global Budget education and skill development initiatives have been based.

#### Quality outcomes

Quality outcomes can be documented at both IPA and practice level, and be in terms of organisational achievements or service/health outcomes.

### IPA level outcomes

Organisational outcomes surrounding quality are documented earlier in this section. In terms of service outcomes/health benefits, other sections of this report address issues of access, utilisation and meeting the needs of special groups, such as Māori and Pacific Peoples. Some specific health benefit service outcomes are identified through the KPI schedule of the Global Budget contract. In those related to immunisation and screening, Pegasus achieved levels above the national rate. Service development activities are also identified through KPIs, and were not always equally well developed, according to the recent Ministry of Health review (29 June 2001), and the July 2001 KPI report.

### Practice level outcomes

Quality organisational achievements at practice level relate to both team development and functioning, and the development of practice systems. Key informants, including practice facilitators, reported the growth of a team culture at practice level, particularly with respect to the development of the Practice Nurse role. This is supported by nurse key informants and by the survey of GPs, 67% of respondents reporting that they agreed or strongly agreed with the statement that “nurses have assumed more responsibility” since the Global Budget. A smaller proportion (48%), however, agreed or strongly agreed that “the practice team is working much better”.

Effective practice systems are measured both by selected KPIs and through the CQI programme. Data is available for KPIs, but not at this stage, for CQI indicators developed by Pegasus. GPs have acknowledged the importance of the application of information systems within practices, with 74% agreeing or strongly agreeing that “we now use computers more effectively for patient care”.

In terms of the quality of service overall, a strong majority of GPs (74%), report that since the Global Budget “care for my patients has improved”, although there is no way of confirming this objectively. A substantial minority of GPs (43%), report “referring more of my patients to other services in the community” since the Global Budget. While this may indicate some increase in diversity and choice for patients, only 22% of GP respondents themselves reported that they have become more involved with other non-Pegasus providers in the community, suggesting that practice level integrated care models are not yet well. Although it must be noted that comparisons across countries are difficult with different environments leading to different outcomes in terms of staffing and practice organisation to name a few.

## Discussion

Of the three elements of evaluation (organisational systems, processes and outcomes), organisational systems provide the foundation for quality. Of the four components of quality systems identified from the literature, Pegasus is well advanced in terms of quality culture and population approaches, but less certain in the establishment of strategic systems for quality and clarity of objectives. Viewing this poses no insurmountable difficulty, but requires the application of intention and some resources. Developing systems and clarifying objectives are technical matters, which can be addressed. Both a quality culture and a population perspective, however, if absent, would require significant paradigm shifts and might be more difficult to achieve. A hint of this, however, is present in the minority recognition of the significance of a population approach on the part of GP members, but Pegasus appears to have this shift in hand, comparing quite favourably with developments in primary care trusts in the UK, for example (Regen et al. 2001).

With respect to quality processes, technical aspects of quality development through both the facilitation of practice level activity and the enhancement of skills is well

developed, with significant resource commitment. Again, the area requiring most attention is the overall co-ordination and planning of activity, most obviously in relation to quality, but perhaps overall. The innovation of the last two years, in response to the opportunities of the Global Budget, have been undertaken at a frenetic pace. Stable organisational arrangements and management systems are important for progress to be made in high investment areas, such as IT and service projects. Pegasus (after accounting for differing sizes of population), has relatively higher staff numbers than UK primary care trusts (Regen et al. 2001). This is both expected and appropriate as Pegasus is required to be more independent and self-sustaining in terms of its planning and analysis functions and relationships with the funder, and requires more sophisticated management arrangements.

With respect to outcomes, the most obvious quality gains appear to be in areas where practice systems, both technical and professional, have been enhanced. These have then been the basis for providing additional services, more targets and increasing expectations of the scope, quality and volume of what might be done in general practice settings. Amidst all this, there is a clear perception on the part of GPs that care for patients has improved since the introduction of the Global Budget, with a number of KPI and other indicators supporting this.

## Conclusion

The findings of this review confirm that the philosophical understandings of quality and quality approaches are present in Pegasus, and have been advanced by committed leadership, staff and practitioners. For the future, three important issues need to be addressed:

### **1. Clarity of objectives**

Pegasus Health has clearly embraced a population approach to primary health care and has devoted resources and expertise to advance this. This is highly innovative and consistent with national policy and international best practice. It will be important for Pegasus Health to incorporate this into the mission and objectives of the organisation, and link quality and other expectations to these through a formal process. Tying measures of Pegasus Health effectiveness and quality to population health status indicators, though, is likely to pose problems. There are many non-primary health care variables, both inside and outside the health sector, which will influence these, operating at various population and time scales. The current KPI systems permit alternative types of indicators. It is suggested that KPIs be used judiciously, so that population-based quality indicators remain focused on the practice or IPA level and related to enrolled populations and specific interventions, with initiatives beyond these (i.e., those related to the wider community or the non-enrolled) recognised in other ways.

### **2. Management systems**

Pegasus Health appears to have acknowledged the need for a more integrated and organisation-wide approach to quality management. Over the last year, a more systematic approach to management, in general, including strategic and project planning and internal communication, have been developing, which should assist in the management of quality. It is recommended that a formal quality management system be established that is linked to organisational objectives and managed at senior level.

### **3. Pressures on individuals**

Despite the obvious enthusiasm, levels of participation and enhanced performance of practitioners, there is a danger that the drive for better quality, more services and wider

roles in the health sector, will place excessive pressure on individual GPs. There are indications that Practice Nurses, too, experience this pressure. This is a quality issue which will require strategic management, including alternative resource allocation models, if it is not to undermine the considerable individual and organisational achievements already made.

Māori health disparities and Māori health gains have been intertwined with many political developments and agendas over the past 100 years. Current Ministry of Health policies and the buzz words of 2000<sup>15</sup> – closing the gaps – continue to highlight the need for the health sector to address Māori health issues within their core business. This will invariably call for participation from within Māori communities, the training and employment of a Māori workforce, and the establishment of services and programmes that specifically focus on Māori health issues as identified by Māori communities.

Government policy dictates the need to implement the principles of the Treaty of Waitangi into health policies.<sup>16</sup> The core principle encompasses the need for Māori to be able to enjoy the same level of health as other New Zealanders. This goal is seen as attainable through the partnership between Māori and the Crown in service agreement between HFAs and service providers. This partnership implicit on the Treaty of Waitangi means that Māori should have a significant and equal voice in deciding their own services.

Māori models have consistently recognised the impact of broader socio-economic and cultural factors on health. Examples include Durie's Whare Tapa Wha model, which identifies a concept of health as interaction of wairua (spiritual), hinengaro (mental), tinana (physical), and whanau (extended family).<sup>17</sup> Also, in 1988 the Royal Commission on Social Policy described the prerequisites for Māori health and well-being as a set of interacting variables, nga pou mana (four supports). These four supports are whanaungatanga (family), taonga tuku iho (cultural heritage), te ao taroā (physical environment), and turangawaewae (a land base with cultural, social and economic significance).

The 1999 Primary Care Models for Delivery Population Based Outcomes provided two models for Māori perspectives of health and well-being; firstly Te Whare Tapawha<sup>18</sup> and Principles relating to Health Service Delivery. The document stated that services that attempted to incorporate both models of well-being by incorporating its principles were more likely to be appropriate for and acceptable to Māori. Therefore, it was seen that if a service could encompass such principles it would have greater opportunity to impact positively on Māori health.

The Primary Health Care Strategy 2001 document specified that all providers and primary health organisations are required to identify disadvantaged groups in their populations in order to reach out to them and address their needs. It also highlights that PHOs are required to identify the ethnic mixes within their populations, so they can identify and implement practices that are culturally competent and effective. The recommendation is made that if specific numbers of Māori and Pacific Peoples are identified within the mainstream primary health organisations, then providers should consider establishing specific services for these clients.

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<sup>15</sup> Subsequently replaced with the more politically palatable phrase 'equity for all'.

<sup>16</sup> Ministry of Health, (1997) Kawe Korero: Guidelines for Communicating with Māori. April.

<sup>17</sup> Durie, M. 1994 Whaiora: Māori Health Development. Oxford University Press.

<sup>18</sup> Durie, M. 1994 Whaiora: Māori Health Development. Oxford University Press.

It is also highlighted that Māori providers and Pacific Island providers may form primary health organisations in their own communities where it is appropriate for that population.

The provision of health services by IPAs is growing within New Zealand. This is reflected by the movement of Government to trial a Global Budget to see if it is able to provide flexibility in the delivery of health services. The Global Budget framework can allow shifting of resources towards more needy populations, the ability to alter the way services are delivered, and flexibility to change the priorities for the provider and to develop new health initiatives<sup>19</sup>.

The Pegasus Global Budget evaluation was an opportunity to assess the impact of the Global Budget on the culture of Pegasus and whether this change in culture has, in turn, resulted in a movement to achieve Māori health gains. This latter area is the central theme of this component of the evaluation.

## Methodology

The development of methodologies that validate Māori knowledge and experiences have been referred to as 'kaupapa Māori' processes.<sup>20</sup> The present research developed and worked within a framework that encompassed the value base of kaupapa Māori.

- the aims and objectives of the study were based on principles that value Māori beliefs and experiences
- all research tools (e.g., questionnaires, consent forms, information sheets, interviewing protocols) allowed the researchers to maintain integrity and be accountable to the community from which they derived the information
- appropriate cultural protocols were followed (e.g., karakia, whakawhana ungatanga) within interview forums, to build cultural comfort and to provide a safe environment for participants<sup>21</sup>
- the information shared was treated with respect and disseminated to participants to ensure that their rights to retract and re-submit information were honoured. This process allowed for joint ownership and accountability between researchers and participants of the research findings/recommendations
- appropriate analytical tools have been employed within a kaupapa Māori structure to ensure less distortion in analysis, and that the information works to validate Māori experiences
- the report will be formatted in a way that promotes the experiences of Māori and non-Māori participants, and uses other resources to support these findings<sup>22</sup>
- the overall findings of the Māori component will be disseminated back to the community from which they came
- the research team has worked alongside He Oranga Pounamu,<sup>23</sup> with He Oranga Pounamu actively assisting in the recruitment process and providing administration support.

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<sup>19</sup> Gribben, B. & Coster, G. (1999) A future for primary health care in New Zealand. *Australian Health Review*. Vol. 22 No 4 p 118-131

<sup>20</sup> Smith, L.T. (2000). *Decolonizing methodologies: Research and indigenous peoples*. New York: Zed Books & Dunedin: Otago University Press.

<sup>21</sup> Cram, F. (2001) 'Rangahau Māori: Tona Tika, Tona Pono', in M. Tolich (Ed.), *Research Ethics in Aotearoa*. Auckland: Longman. p.35-52.

<sup>22</sup> Rather than a literature and resource review driving the analytical framework.

<sup>23</sup> He Oranga Pounamu is an independent Māori Provider organisation that has been developed through the Ngai Tahu Development Corporation and is iwi mandated.

Within the Kaupapa Māori framework the following was undertaken:

**1. Review of all current documentation made available by Pegasus**

The research team went through each document and noted the tone, quality of information, process and context in which Māori health and initiatives were set. The research team noted authors to the documents where possible and dates of the documents (specifically pre and post-global dates). All information was collated on an electronic database, re-reviewed and then placed under specific reference headings to allow for effective collation of the data. This documentation included the GP survey conducted by the evaluation team.

**2. Focus group discussions.**

All participants received the relevant information sheets three to four weeks prior to the interview.

The information sheets outlined their rights as participants, the role of this component of the evaluation, areas that the questions would focus on, and information about the research team.

The interviews with Pegasus staff and the Māori Advisory Board were held at the Pegasus Health Group offices; the Māori consumer and provider groups were hosted by the facilities at He Oranga Pounamu.

The interviews involved a process that was in line with tikanga Māori in that the researchers welcomed the participants, outlined the purpose of the evaluation and re-visited the rights of participants. To ensure the appropriate tone and relevant information was captured one interviewer took on the facilitator role and the complementary researcher took on the role of co-facilitator and notetaker. Interview groups were offered the opportunity of karakia before the commencement of the interviews and time at the end of the interview to have questions answered. All participants were offered refreshments before (and sometimes after) the interviews began. Interviews ranged from one hour, to one hour and 40 minutes in duration.

Participants were then sent key summary sheets of the interview to which they contributed and were invited to submit feedback (written or oral) to the research team (a self-addressed envelope was enclosed as well as a contact phone number). A meeting was also held with Pegasus to gain direct feedback to the summary sheets.

The groups interviewed consisted of<sup>24</sup>:

- a. A group of six Pegasus General Practitioners who were identified by Pegasus as having practices that encompass a substantial number of Māori clients.
- b. The three non-Māori members of Pegasus that developed/formatted the Māori Health plan.
- c. The Pegasus Māori Advisory Board and staff members were invited to meet as a combined group to discuss issues around delivering services to Māori through a mainstream provider, and to establish their role within the Pegasus structure.
- d. A Māori consumer group identified by He Oranga Pounamu as Māori clients of Pegasus services within the Christchurch area. Two consumer groups were held over a period of four weeks. All participants identified as being Māori.

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<sup>24</sup> Information Sheets and Schedules are available on request.

- e. He Oranga Pounamu identified a Māori provider group consisting of members of entities that currently provide health services within the Christchurch area. Two provider groups were held over a period of four weeks. All participants identified as being Māori.
- f. A meeting with the past and current Population Health Manager(s) of Pegasus.

## Results

Current documentation made available by Pegasus

Documentation highlighted that prior to the advent of the Global Budget in July 1999, Māori health-focused initiatives were in fairly preliminary stages of development. After extensive consultation and co-ordination with the HFA Māori health team, a document was produced that recognised Māori as a significant population which experienced poorer health overall. Several key Pegasus objectives were identified as being:

- to enable identification of ethnicity in general practice and collection of ethnicity data
- to enhance the existing relationship with Ngai Tahu
- to establish education processes for Pegasus staff and membership to enhance cultural competency
- to establish a core advisory group with Māori and Pegasus representation to provide advice to all associated Māori Health projects
- to agree on projects to be funded by the budget already made available to Ngai Tahu, and to exercise the duty to develop a Māori health plan with assistance from the HFA.

In the financial year 1999/2000, targeted Māori health expenditure was \$8,062. In December 1999, the introduction of the Global Budget saw the allocation of \$250,000 allocated to implement the Māori health plan. This Māori health plan initially commenced implementation in June 2000, and was officially released as a document in December 2000. This plan saw the establishment of a joint Ngai Tahu/Pegasus Core Advisory Group and the employment of a Māori Health Project Manager.

By August 2001, progress on the specified objectives in the Māori Health Plan (70% completed) included:

- six cultural awareness education sessions for staff had been held
- discussions with and advice to the group within Access Canterbury (Mental Health) had been held to plan a cultural awareness educational workshop for GP practices
- advice provided to Pegasus on barriers to Māori accessing primary care services through the Māori Advisory Board and the Māori Health Project Manager
- the development and implementation of health promotion to Māori with sponsorship of the Otautahi Māori sports tournament
- 15% of practices collecting accurate ethnicity data (January 2001, Performance Monitoring return)
- 24 practices and the 24-hour surgery involved in cultural education programs. This included 40 GPs, 29 Practice Nurses, four Practice Managers, 23 Receptionists and one Driver
- the signing of the Memorandum of Understanding between Ngai Tahu and Pegasus in the final stages, but not yet signed (final version: 20 August 2000)
- Relationship Management Agreement with He Oranga Pounamu in draft format (Final version: 29 November 2000)

- Ngai Tahu/Pegasus Core Advisory Board established
- traditional meeting protocols and waiata policies in place(May 2001)
- Māori student scholarships approved (May 2001).

#### Focus group discussions

The results from all the interviews and GP survey questionnaire were merged to establish key themes that were shared and discussed. The following is a summary of the main points raised within the key themes by all participant groups.

##### a. Marketing of Pegasus Health

Both Māori providers and Māori consumers were often unsure exactly which doctors/practices were directly affiliated with Pegasus. This meant that a discussion took place at the recruitment stage for the interviews to assist the consumers/providers with deciding whether the doctors/practices they interacted with, were affiliated with Pegasus Health.

##### b. Global Budget

Both the Pegasus GPs and non-Māori Pegasus staff groups applauded the new initiatives and flexibility allowed to them due to the Global Budget.

*"...it's enabled us to have a culturally sensitive environment to collect ethnicity data to then pursue those patients who have greater need by virtue of specific projects which are available to both Pakeha and Māori, such as diabetes checks..."*

*"One thing about the Global Budget... it means we can spend the money on what we see as important and that means that if we are spending it on less somewhere we can spend it somewhere else..."*

*"...it's kind of helped to remove some of the Chinese walls within our funding and that sort of thing and we can think a little more holistically about spending that money and looking at how we have a little bit more flexibility within the Global Budget and it has changed us to more of an investment focus..."*

*"That the intention was to how we work with Māori and improve Māori health regardless of the fact that the Global Budget existed so I don't actually think the Global contract itself has made any difference in that respect..."*

Some Māori providers felt that the Global Budget was more about Pegasus supporting their members to develop cultural sensitivity as opposed to direct Māori health initiatives.

Māori consumers and other Māori providers were not informed/aware of the Global Budget framework and what this meant in terms of changes to past/current service delivery.

##### c. Memorandum of Understanding with Ngai Tahu

All participants expressed that the memorandum would allow a relationship to develop to work towards setting appropriate agendas and direction to improve Māori health gain.

GPs commented that the memorandum was vital to the development of relationships that would further Māori health.

*“...That we have a mutual agreement to develop a relationship over the years to come to benefit Māori health and to work together for that”.*

However, within the GP survey only 23% agreed or strongly agreed that they understood the importance of relationships with iwi.

The non-Māori Pegasus staff group commented:

*“...so penetration into the Māori community would be some of the key things, real willingness to engage from a partnership model and perspective with Ngai Tahu and an openness to the development path – I think are the Pegasus key strengths in this and commitment.”*

*“I think Pegasus have expertise in terms of primary care development...with He Oranga Pounamu and Ngai Tahu, we both bring different expertise to the table, so we can develop a primary care focus strategy for Māori health. Without each other I don't think that either of us are in a strong position to make the impact, but with each other we are”.*

The main outcome Māori consumers would like to see result from this relationship between Ngai Tahu and Pegasus is that Ngai Tahu will consult with the Māori community and Māori health providers. There was also the hope that Ngai Tahu would liaise pan-tribally to assist in addressing the needs of all Māori, within Christchurch, or set up a process by which that could happen.

Both Māori consumers and providers commented that by taking on this responsibility, Ngai Tahu/He Oranga Pounamu needed to get out into the communities, find out the needs of consumers and providers and feed this back effectively to Pegasus.

d. Treaty of Waitangi and Organisational commitment to Māori health gain

The focus discussion groups highlighted that the Global Budget had in no way affected the actual governing of the organisation to encompass the recommendations by the Ministry of Health, as there are still no Māori representatives on the Pegasus Board.

*“To start at the top, I'd like to see Māori on the Board...I would like to see more Māori working from within the structures....I'd like to see Pegasus consulting with the Māori community involving Māori consumers in discussions about new projects...”*

The Pegasus Māori Advisory Board perceives its role as restrained due to lack of available data about Pegasus' Māori clientele or service utilisation. The Board also discussed the lack of the development of a separate Māori health portfolio, which would identify it as a priority for Pegasus.

e. Cultural Shift

There was a lot of positive discussion by the Pegasus Māori Advisory Group about the response by practices to engage the cultural education training, and felt that this could lead to more support towards a population health focus on Māori. This was further supported with data from the GP survey where 35% agreed or strongly agreed that their understanding of Māori and Pacific Health had improved since the Global Budget (rollout of cultural education training).

*“For the surgeries who take up the cultural training, I hope that there will be advantages to those patients who use those surgeries and that their needs will be better met...”*

*“But our vision is that we get Māori to that equitable health status level and that health status level is high, it's not just equitable but for everyone it's high...”*

The non-Māori Pegasus staff commented that they definitely perceived a change in the working culture of the organisation, and credited this to the Global Budget's flexibility.

*“Assuming a population perspective I think is one of the key initiatives there so the Global Budget actually liberated us...I suppose it makes it possible for us to not just be service providers and a bureaucracy that monitors service provision but actually a strategic organisation...”*

*“In a sentence I would say that what I want to see is that the Pegasus success being applied to provision of Māori health services”.*

The Pegasus population managers felt that there definitely were specific changes in the culture of the organisation, and felt this was a positive movement. This included hearing waiata and karakia in the work area, and that staff were engaging in these processes. The population managers also had been informed that there had been a lot of positive feedback from those members within the practices that had attended the cultural training/education classes.

In terms of a culturally safe practice environment, Māori providers discussed the absence of a shift in clear levels of cultural competence.

*“I just don't think Pegasus are capable at the moment of walking the talk basically. They are unsafe, as far as Māori they are not culturally sensitive or aware. If it comes with a dollar attached to it and that dollar attached to it goes to them it doesn't go out of their community, they are just not interested...what happened to article three of the treaty?”.*

Māori providers also commented that for a safer cultural environment to be achieved there was a need to re-focus on relationships with their clients. They highlighted the pre-requisites of Pegasus GPs ensuring that a basic rapport was established and that time was spent talking with the client, building trust with the client, not just focussing on churning the clients out.

*“If they don't trust you then they won't tell you what their problem is, which leads to inadequate care”.*

Māori providers discussed the possibility of Pegasus trying different approaches to clinical care to effectively show a cultural shift in the organisation. One example shared was one free afternoon per fortnight in the local clinics (an approach used by one Ashburton GP) which was working on increasing the likelihood of clients accessing consistent care (regular contact and with the same GP).

f. Māori Health Plan

Non-Māori Pegasus staff commented that the Māori health plan involved a shift in focus for Pegasus Health, and emphasized its ability to promote a population health focus.

*“Until the time that Pegasus began engaging with Ngai Tahu and the organisation took a more holistic approach to the development of its projects, it didn’t take a particular focus on Māori or Pacific Islanders or anyone else...and that the development of the Māori Health Plan and a relationship is the sort – is a shift in our philosophy in actually targeting new services specifically for Māori”.*

There were a number of advantages seen as resulting from the development and implementation of the Māori Health Plan including upskilling of clinicians, the proposed increase in the Māori clinical workforce through the scholarship programme, the potential for practitioners to pay more attention to community values and need, and being able to monitor trends, barriers and gaps in service provision to Māori.

*“Upskilling existing clinicians and practice teams and reviewing current practice in terms of delivery to Māori and working in partnership with Ngai Tahu to do that, and then introduction of new services that are specifically targeted towards Māori, and ensuring projects that operate across all of our general practices are also targeted towards Māori”.*

The non-Māori Pegasus staff also discussed that despite the expressed satisfaction with the development and implementation of the Māori Health Plan so far, the participants named a number of further developments and outcomes they hoped to see implemented.

*“...starting to build the understanding with meaningful data to back it up, specific access initiatives, the on-going kind of implementation of the clinicians’ education and the Māori clinical workforce development...”*

Māori were involved on a variety of levels in the development of the Māori Health Plan, although the main interaction was with organisational bodies such as Ngai Tahu and the Māori division within the Ministry of Health, rather than providers or individuals within the Māori community. The Māori Advisory Group discussed that this consultation was driven by timeframe and based on the premise that the Māori Health Plan was an internal document.

The Māori Advisory Group commented that the cultural education aspect of the Māori Health Plan and the role of the Māori Project Manager had grown considerably since the development of the plan. A number of advantages arising from the Māori Health Plan were cited ranging from provision of culturally appropriate services to Māori, practitioner education to Māori workforce development as a result of the proposed scholarship programme.

g. Ethnicity data collection

There was a range of interaction and involvement in the collection of ethnicity data by GPs. However, it was noted that this increased quite dramatically after practices had attended the cultural education training sessions by the Māori Health Project Manager (and team).

The Pegasus Māori Advisory Board commented that in gathering the ethnicity data they would have completed a needs analysis in terms of what services Māori consumer clients were accessing and utilising. They felt this information would guide them in future initiatives they could support.

The non-Māori Pegasus staff viewed the ethnicity data collection as a positive initiative.

*“...it’s got huge potential once we have ethnicity recording and we can actually track our population to actually look at trends and gaps and that’s going to be one of the huge advantages that comes out of this...”*

GPs appeared to have a positive perception of ethnicity data collection and felt their clients were engaging in this process also. There were obvious strategies that GPs were adopting to increase the likelihood of more efficient data collection strategies being undertaken.

*“...I do collect ethnicity data, not iwi though we are just starting to do that...about 35% of my practice would be Māori...I think we are generally perceived as being fairly friendly and open...I have a Māori Practice Nurse, and a part Māori receptionist...”*

*“Yes it’s interesting my experience of collecting data is that when the patients identify that they want to attend our clinic that they often leave the ethnicity question blank, but when you meet them face to face and there is a trusting relationship between client and doctor, they are more happy to divulge ethnicity data...”*

Māori consumers felt overall that they did not mind having their ethnicity information collected, although both Māori consumers and Māori providers would prefer that more information was given about why the data was being collected and being clear that it would not be used for other purposes. Māori consumers also discussed their preference within the ethnicity question just to have ‘Māori’ listed as opposed to New Zealand Māori.

*“I’d feel okay about it if they didn’t have New Zealand Māori first, I’d probably answer. If they just had Māori you know, cause they have Cook Island Māori and then they have New Zealand Māori and make us feel like we’re newcomers too and we’re tangata whenua...it’s an ownership thing”.*

*“If it is just for basic ethnicity stuff ‘kei te pai’ and I am okay about that provided it serves a purpose like this one has. If there is going to be a beneficial outcome for us then I’m into that”.*

*“For that ethnicity question you’d like them to say something like why they want to know, why they need to know if you are Māori?”*

Māori providers also collect ethnicity data, and felt positive that by sharing information collected by Pegasus and themselves would lead to positive outcomes for clients.

#### h. Service Delivery

Pegasus Health GP’s raised their concern about service delivery to Māori clients, ranging from barriers to access and increasing clients’ personal responsibility for their own illness and treatment, to the inability of practitioners to embrace a Māori model of health care.

*“My concern is they don’t access the service and they have more than their share of the disease and they don’t access the service”.*

Māori consumers discussed at length their accessing care only in acute times; this pattern emerged within both groups quite clearly. There was often an undertone with past experiences where they had felt uncomfortable by the service they received from a practice, and hence would only return in an emergency. Such uncomfortable experiences were more than likely occurring with reception staff;

consumers felt disrespected and not welcome by the front line interaction. This was often further enforced by continual mispronunciation of consumers' names.

*"You are sitting in a waiting room, and like because T has got special needs, he's had to have a lot of medical care and it's always, "T....T...um..." and you know it is you, so you just get up and go in. But it's that whole thing".*

*"Some days I feel as though our nurses and doctors are in a bad mood...you can't really talk, they cut you off quick and I think to myself are working too long a hours, you don't get the whole service that you really want to have".*

The most influencing factor to whether a Māori consumer returned to a GP was if they felt they had a good relationship with that Doctor. For one participant, this meant travelling from Rangiora to Opawa to continue to have themselves and their whanau seen by this practitioner.

Providers commented that they feel clients are not accessing Pegasus services because they do not feel comfortable, and felt this was because there was no relationship and trust between doctor and the client, which for Māori was very important.

*"If they don't trust you then they won't tell you what their problem is, which leads to inadequate care".*

## Discussion

Current literature and Ministry documentation highlight the need for strategic health plans to work towards decreasing Māori health disparities and focusing on initiatives that promote Māori health gain. Within this component of the Global Budget evaluation, the objective was to determine the effect the Global Budget had had on Pegasus Health and whether there had been a move to achieve Māori health gains.

The results highlight the following specific points:

- the Global Budget has created a financial structure that is able to move resources to fit current priorities and identify service delivery needs
- Pegasus Health has developed a public health perspective, which can be supported through a Global Budget structure. This indicates a clear change in culture from a distinct health delivery system to a more socio-politically driven entity.

The discussion must then focus on whether these specific points have been able to identify Māori health needs and whether these are now working towards achieving Māori health gains.

The results specifically highlight that Māori health has been identified as a priority and more financial expenditure has been allocated to Māori health. It is positive that prior to the Global Budget, Pegasus initiated a Memorandum of Understanding with Ngai Tahu and were committed to undertake a working relationship with He Oranga Pounamu. However, it is difficult to tell whether this change would have occurred without the Global Budget structure (due to a need to fulfil Ministry obligations under usual IPA contracts). There are also questions around the actual allocation of the ring-fenced Māori health model and its actual ability to contribute to Māori health gains.

Pegasus has shown that through the adopting of a Māori Health Plan, they are ready to engage in a more population health focus, and with the employment of a Māori

Health Project Manager they have created a specific resource to oversee the Māori Health Plan. The increasing number of practices now collecting ethnicity data also shows a movement to prioritise collecting data that will assist in developing further Māori health strategic direction. However, the Māori Health Plan should be seen as a first step in a development towards showing a commitment to both a public health focus and as positioning Māori health as a priority. This is because the Māori Health Plan is founded on assumptions; there is an absence of needs analysis data that pinpoint that the objectives and goals within the Māori Health Plan will meet the needs of Māori within the Christchurch catchment. Secondly, that the main outcomes of the Pegasus plan are based around building internal capacity and capability.

Therefore, it would be desirable that a complete needs analysis (of which the ethnicity data will comprise) be undertaken to identify and substantiate current health practices within the client base and then further develop the Māori Health Plan to meet these needs, and establish specific goals and objectives that will contribute towards Māori health gain. This should then drive what the actual allotment of money to Māori health should be, and should be inclusive of both internal capacity and capability building as well specific initiatives targeted towards the client base needs.

To roll out a Māori Health Plan that can both address internal and community needs would require the established structures within Pegasus Health to assist with the process. This may include a Māori board member (in terms of governance (treaty obligations) and clinical Māori expertise assisting in funding allocation), moving Māori health to its own portfolio (establishing it as a priority), and the establishment of a Māori team that is able to effectively roll out the new Māori Health Plan and provide the necessary support to practices and staff.

Pegasus Health has shown its ability to work collaboratively across teams, to complete both formative and process evaluations within other aspects of its service delivery, and to have the membership that support changes to its approach to health and well-being. Pegasus Health has also shown its ability to work alongside Ngai Tahu and He Oranga Pounamu and seek cultural advice. These are assets that if positioned to support movement in Māori health will be able to support Māori health gains and close Māori health disparities.

#### Issues for further action

1. That a full needs analysis of Māori health needs be completed.
2. That the Pegasus Board address the need for a Māori board member to assist in prioritising Māori health.
3. That when the results of the needs analysis are complete, a second phase of the Māori health plan be developed.
4. That Māori health is established as its own portfolio, which will work across strands of Pegasus health.
5. That a Māori health team is employed to support the implementation of phase two of the Māori health plan.

### Introduction

The following report provides a series of snapshots of Pegasus Health and its evolving responsiveness to Pacific Peoples' health issues as an outcome of the Global Budget, and the flexibility for innovation which this provided. The evaluation provided a significant opportunity to gain better understanding of the primary health care sector in relation to its responsiveness to Pacific Peoples at a regional level. Following some deliberation and after requesting more specific expectations from the Ministry of Health of the Pacific Island component to the evaluation, the following general aims were identified:

- to identify the initiatives undertaken before, and after, the Global Budget contract by Pegasus Health
- to identify the needs of Pacific Peoples as they relate to primary care services
- to identify initiatives undertaken by Pegasus Health before and after the introduction of the Global Budget contract to address these needs
- to assess the effectiveness of these initiatives.

Since the implementation of the Global Budget, Pegasus Health has made important steps forward at the organisational/structural level on Pacific Health issues. However, assessing effectiveness of initiatives being operationalised at the general practice level, is not possible given the early stage of these developments. Identifying Pacific Peoples' consumer utilisation patterns, and recruiting Pacific Peoples' consumers for this research, which is necessary to gain a more comprehensive picture, was not possible given the logistics of identifying, locating and approaching Pacific Island patients from Pegasus general practice surgery databases.

At the time of this evaluation, the capturing of accurate Pacific Peoples' ethnicity data by Pegasus Health, appears to be of significantly variable quality and in an early developmental phase. The short time span in the before and after design of this evaluation also does not allow for any real assessment of effectiveness of service delivery. However, some general comments can be made on the acceptability of services based on interviews conducted for this evaluation, an earlier qualitative study commissioned by Pegasus Health on the general perceptions of primary health care by Pacific Peoples in Christchurch, and a focus group discussion with Pegasus members (Siataga et al. 2001).

NZHTA initiative to include a Pacific Island research component to the evaluation

The inclusion of the Pacific Island component to the evaluation in terms of the HFA/Pegasus Global Budget contractual arrangements, was not technically required by either HFA or Pegasus Health, and was not discussed by either party until after the evaluation began. Pegasus Health was not, therefore, required to accept a Pacific Island research component to the evaluation, and the MoH/HFA were not contractually obliged to purchase this as an essential part of the NZHTA evaluation. The inclusion of the Pacific Island component to the evaluation was undertaken because NZHTA rightly identified that there was sufficient evidence of disparities in the health status of Pacific Peoples in New Zealand compared to other groups to represent a major concern. Pacific Peoples often fall within the hard to reach category. Issues of equity and difficulties in accessing and using primary health care services by this population group, have been well attested to (Bathgate et al. 1994, Tukuitonga 1999, 2000, MoH 1997, NZHTA 2000). In some respects, the assessment of outputs and processes

when none were explicitly required to be developed within the GB contractual arrangements, could have diffused the Pacific Island evaluation within broader considerations concerning equity in health in general. It is, therefore, commendable that all parties involved, led by NZHTA's initiative and with the assistance of Pacific Trust Canterbury, agreed to include a more specific approach to Pacific Health issues.

#### Pegasus Health response to Pacific Health issues raised during the evaluation

As the evaluation progressed, an initial interim report (NZHTA Pegasus Interim Report 2001), was presented to the MoH and Pegasus Health. Following the interim report, Pegasus Health invited the evaluation team and the MoH (the latter were not, however, present at this meeting), to discuss the report with them. This was a valuable meeting with the PH Board and senior management providing some important feedback on the Pacific Island issues raised. Following this, Pegasus Health also made several presentations to the evaluation team, which again provided important information and assisted in contextualising the evaluation findings. Pegasus Health also presented a general report on their view of issues raised in the interim evaluation report, and provided a specific report for the evaluation, *Pacific Health Report* (Copland 2001).

### Background and key developments

Prior to May 2000, Pegasus Health had not established any targeted initiatives to identify and address the health needs of Pacific Peoples in Christchurch.

#### Timeline of key developments

<b>May-June</b>	<b>2000</b>	The Governing Boards of Pacific Trust Canterbury and PH meet.
<b>October</b>	<b>2000</b>	PH commission Pacific Island research in collaboration with PTC.
<b>December</b>	<b>2000</b>	NZHTA sign-off on the Pacific Island component of the GB evaluation.
<b>January</b>	<b>2001</b>	Research completed January and presented to PH.
<b>February</b>	<b>2001</b>	PTC proceed with feasibility study for a Pacific Health clinic independently of Pegasus Health.
<b>March</b>	<b>2001</b>	A Pacific Health plan report and recommendations drawn from research, is presented to Pegasus Health Board. Pegasus Health clearly states the organisations' objectives in relation to Pacific Health.
<b>May</b>	<b>2001</b>	NZHTA interim reports presented to PH, and the MoH Recommendations for Pacific Health presented in this report and respond through meeting with NZHTA, and in PH summary response documented presented to NZHTA.

**June 2001** Pacific Reference Group established with representation from PTC and PH Board, Community Advisory Board. PH Board delegate PRG to progress Pacific Health issues which includes consideration for developing a Pacific Island communication strategy, professional development and cultural sensitivity training for Pegasus practice teams. Ongoing.

**May-June 2000 The Boards of Pacific Trust Canterbury and Pegasus Health meet**

In mid-2000, the Boards of Pacific Trust Canterbury (a newly-established Pacific Island provider in Christchurch) and Pegasus Health, met to explore possibilities of collaboration to identify, and meet the health needs of Pacific Peoples. The General Manager of Pacific Trust Canterbury comments:

*“When Pacific Trust Canterbury was first launched in May 1999, with the two contracts from the Health Funding Authority Child Health & Mental Health Services....we knew that [Pegasus] was one of the major connections or relationships that we needed to build as well, because we felt that there were certainly benefits for our service in that relationship, but we also thought that there would be huge benefits to Pegasus and their organisation for that relationship to develop..... We looked at what the common issues were for both Pegasus & PT in terms of the Pacific Island community here in Christchurch, and how they might benefit from this relationship and what we could develop together. So, in that initial meeting, we identified that there were certainly a few issues around communication that needed to be appropriately delivered to our Pacific Peoples, because they didn't know there were things like hardship grants”.*

**October 2000 Pegasus Health commissioned Pacific Health research**

In October 2000, Pegasus Health commissioned research in collaboration with Pacific Trust Canterbury to cover the perceived health needs of Pacific Island populations in Christchurch. Pegasus Health funded this research, which was completed in January 2001 (Siataga et al. 2001). A qualitative approach was utilised, involving several focus group discussions with Samoan, Cook Islands Māori, Tongan, Fijian, Tokelauan, a Pasefika Women's Group, a mixed heritage Pacific Island youth group, and a focus group of Pegasus GPs and one Practice Nurse. The findings of that report marked an important phase in Pegasus Health's approach towards identifying the needs of Pacific Peoples. The results of that research led to five recommendations for the Pegasus Health Board to consider.

1. A feasibility study for a Pacific Health centre.
2. Development of a comprehensive communication strategy to assist general practitioners deliver to Pacific Peoples, and to assist local Pacific Peoples to understand the New Zealand health service, the philosophy of preventative care and disease management.
3. Develop a plan collaboratively to subsidise some Pacific Island primary care services, including “get to know” visits, interpreters, transport, and nursing/community health services.
4. Organise some cultural awareness sessions for general practitioners, with a focus on circumcision and traditional healing practices.
5. Provide a database of Pacific Island nurses and community services who can follow-up Pacific Island clientele on behalf of local general practitioners.

These recommendations were considered favourably by Pacific Trust Canterbury. As one Pacific Health professional commented:

*“There are things in the recommendations that can be started right now. There are things in the recommendations that yes, will take a few months, there are things in the recommendations that will take years but I think that we’re not rushing into anything. I mean the opportunity is there, the willingness is there..... currently out there is a need to be able to provide a more culturally appropriate service”.*

#### **Feb-March 2001 Pegasus Health’s Pacific Health Plan Report**

Based on the above research, a Pacific Health Plan report was presented to the Pegasus Board in March 2001, which supported in general all recommendations above with some qualifications due to changing context (Humphreys: 15 March 2001). The recommendations presented to the Pegasus Board were as follows:

- The Board should affirm its commitment to this [feasibility study]. We wish to understand the nature of the centre (would it provide medical services; what other services could be provided; how would Pegasus GPs contribute to the service etc?). However, we should participate with all Pacific Island providers in Christchurch as an equal partner, and the process should be facilitated impartially by a Pacific Island leader. It is suggested that the appropriate forum is the Community Reference Group established by the Ministry of Pacific Island Affairs which intend to meet with Pegasus shortly after their inauguration.
- The Board should recommend that applications for tender should be sought for a Pacific Island organisation to carry out a communication strategy with local Pacific Peoples to get across the importance of having a regular GP, and how primary care works in New Zealand.
- Recommendation three needs no further action at present [*due to the feasibility study being undertaken independently by Pacific Trust Canterbury*]. However, the access strategy should be promoted among Pacific Peoples (see communication above). The interpreter project is being developed as part of the refugee project. An expansion of the Link Nurse project from immunisation to other issues should be considered as part of the Diabetes Life Education project.
- The Board should recommend running some Pacific Island cross-cultural practice education sessions in collaboration with Pacific Trust Canterbury. Mr Kiki Maoate (FRACS), has already run circumcision sessions, and can presumably set this up in conjunction with other issues to be run by appropriate people.
- A Pegasus staff member should be asked to compile a database from Pacific Trust Canterbury, Pacific Community Health Trust, Crown Public Health and the Ministry of Pacific Island Affairs, which should be circulated to all Pegasus GPs.
- The Board should recommend that copies of the report be sent to all GP/Practice Nurse participants, that the report is made available to all members and a summary is placed in Pegasus Mail.
- The rationale of potential impacts of the recommendations in the report to the Board and the issues considered in making the recommendations are sound.

### **March 2001 Stated objectives of Pegasus Health to Pacific Health**

Pegasus Health also established several objectives in the Pacific Health Plan Report, which are congruent with MoH (2000) New Zealand Health Strategy, the MoH (1997) Pacific Peoples' Health Charter, Ministry of Pacific Island Affairs (2001), and Christchurch Programme of Action and the Primary Health Care Strategy (MoH 2001). The objectives are consistent with current Ministry of Health Policy aims. The stated PH objectives were:

- to optimise the delivery of current care services to Pacific Peoples in Christchurch, particularly by Pegasus GPs who have significant numbers of Pacific Island patients
- to increase the use of Pegasus GPs by the Pacific Peoples of Christchurch (currently, of Pegasus clientele whose ethnicity is known, 93% are European versus 84% in the general population)
- to develop cross-cultural skills by Pegasus GPs (and not simply cultural awareness)
- to improve the perceived value of general practice among the Pacific Peoples of Christchurch, thereby reducing late presentations of disorders to hospitals and other providers which could have been prevented by appropriate use of general practice
- to build capacity among all Pacific Health workers in Christchurch
- to link Pacific Peoples with current projects and establish specific Pacific Island projects where necessary.

### **June 2001 Recommendations in the NZHTA interim report Pacific Health**

In June 2001, at the bequest of MoH, the NZHTA presented an interim evaluation report to MoH and Pegasus Health. This report included several recommendations (see below), in response to the evolving context and Pegasus Health's developments on Pacific Health.

- Pegasus Health should develop a comprehensive Pacific Health Service plan in consultation with Pacific Island primary health care specialists, and collaboration with Pacific Health providers.
- Pegasus Health should establish appropriate resourcing for a comprehensive communication strategy and communication plan.
- Pegasus Health should seek to establish a Memorandum of Understanding with Pacific Trust Canterbury to improve the channels of communication, and explore possibilities for collaboration.
- Pegasus Health should assess its capacity to provide cross-cultural competent healthcare for Pacific Peoples, and establish processes to address gaps in cultural awareness and cultural sensitivity through training of Pegasus staff and members.
- Pegasus Health should establish a plan for building Pacific Island workforce capacity.

### **July-August 2001 The Pacific Reference Group – Population Health**

In July 2001, a Pacific Reference Group (PRG) was established within the Population Health group of Pegasus Health, and has some budgetary discretion to develop and progress Pacific Health initiatives. The PRG membership of this group includes two Pegasus Board Members (including the former deputy chair), the Public Health Physician, a Fijian GP, the Manager of Population Health with significant experience with Pacific Health issues in Christchurch, a Pacific Island Practice Nurse, and the

Pacific Island Community Advisory Board representative. The General Manager of Pacific Trust Canterbury is also a member. The establishment of a Pacific Reference Group is an excellent strategy within the infrastructure of Pegasus Health, and is indicative of the genuine commitment to prioritise Pacific Health. It is too early to evaluate the effectiveness of this initiative, but it signals a significantly positive step forward.

In response to the above recommendations in the interim report, Pegasus Health have commented that:

*"It is their expectation the recently established internal Pacific Reference Group will consider all potential avenues as they advise the Board on next steps in Pacific Health"* (Summary of PH response 2001 Response to Interim Report to NZHTA Team, August 1, 2001).

This delegation of responsibility to the Pacific Reference Group is a reasonable and pragmatic step. It potentially allows Pacific Health issues to be widely and robustly discussed, and progressed within the population health group.

## Research methodology

Relevant Pegasus Health documents provided to the NZHTA were reviewed in terms of their inclusion or omission of Pacific Health issues. Two focus group discussions with Pacific Island key informants were held at Pacific Trust Canterbury. Eight in-depth interviews were conducted with numerous follow-ups, and several discussions with key Pacific Island stakeholders. A consumer focus group for Pacific Peoples was originally planned, but not undertaken because (i) it became apparent that there would be difficulties obtaining accurate ethnicity data from surgeries and (ii), recent information based on several focus group discussions with Pacific Peoples had already been provided in the earlier report commissioned by Pegasus Health (Siataga et al. 2001).

### Samoan researchers

Philip Siataga and Sam Uta'i were contracted by NZHTA to undertake the Pacific Island research. Pacific Trust Canterbury were also contracted to provide administrative assistance and support in terms of community liaison. This was also in line with best practice initiatives to build Pacific Island workforce capacity in research and evaluation. It is indicative of a model of participatory research which is a necessary development in the research community if health data on Pacific Peoples is to be appropriately captured and utilised.

### Developing a Pacific Island framework

The NZHTA evaluation's multi-disciplinary approach enabled the development of a Pacific Island framework within a Pacific Island friendly process.<sup>25</sup>

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<sup>25</sup> The community context in which research is undertaken with Pacific Peoples, is complex. Researchers must have some credibility already with Pacific Peoples or at least be supported by those who do in order to undertake this kind of research. The ethics and principles of a participatory model of research have two chief components: (i) It must benefit the participants in some form recognised and acknowledged by the participants; (ii) researchers engaging Pacific Peoples are establishing a relationship with these participants which is likely to be ongoing and continue after the evaluation or research is completed. There are community expectations that need to be carefully managed. A Pacific-friendly approach is premised on the acceptance and encouragement of this relationship building process.

The Pacific Island framework was based on the Ministry of Health's strategy document *Making a Pacific Difference: Strategic Initiatives for the Health of Pacific People in New Zealand* (1997).

This document had involved extensive national consultation with Pacific Island stakeholders, and was designed and undertaken by Pacific Peoples. It identified, that in general, changes at several levels are needed to make health services more *responsive* and *user-friendly* for Pacific Peoples. These changes were broadly outlined in the areas of infrastructure development, recruitment and training, health promotion and inter-sectoral collaboration. Subsequent MoH policy has continued to reiterate these issues. In line with these areas, the initial intention within the context of the before and after design included evaluating:

- Pegasus Health's operational and strategic planning concerning Pacific Health
- the level of quality linkages and communication channels with Pacific Island communities and stakeholders (i.e., whether Pegasus had consulted widely and established collaborative models)
- how service decisions, relevant to service provision for Pacific Peoples, are made (i.e., where does decision-making on Pacific Health sit within the infrastructure of the organisation)
- Pegasus Health's utilisation of health documentation and research of relevance for population-based planning specific to Pacific Island population groups
- Pacific Island consumer satisfaction and acceptability of PH services
- does Pegasus Health's approach demonstrate an overall commitment to achieving health gains for Pacific Peoples?
- are services accessible, and what ethnic specific data is collected on utilisation of Pegasus Health services?
- assessing Pegasus Health commitment to building Pacific Island workforce capacity
- assessing professional development initiatives developed for Pegasus Staff and members concerning the development of cross-cultural competencies.

This report comments generally on a number of these areas, but as noted, could not pursue all areas with sufficient depth given logistical limitations. However, several recommendations are made which will assist in moving Pegasus Health forward on Pacific Health issues.

#### Pegasus Health document review

General awareness of issues impacting on Pacific Peoples' health in Canterbury, is evidenced in few Pegasus Health documents. The following documents provided explicit reference to Pacific Peoples' health: the Community Advisory Board minutes; Pegasus Board Minutes, 11 August 2000; A Pacific Health Plan report to Pegasus Board, 15 March 2001; Pacific Health Report (Copland: 29 March 2001); and Siataga et al. (2001) *Primary health services and the Pacific People of Christchurch: A qualitative study of community and health professionals' views* commissioned by Pegasus Health in 2000.

Explicit evidence of inclusive consideration or reference to Pacific Peoples' health issues in other Pegasus documents available to the evaluation team is absent. The Market Research Report (May 1999), *Consumer Attitudes & Behaviour in relation to Pegasus Medical Group Ltd* was designed to survey the 'needs' of the community, albeit the population using Pegasus health Services. However, it provided no specific

information on Pacific Peoples or ethnicity in general<sup>26</sup>. The design of the survey questionnaire did not contain questions which could open up the dialogue on culturally appropriate service delivery. The *Pegasus Medical Group Service Plan* (1999-2000), contained no Pacific Health plans. The *Pegasus Health Global Budget Report 2000*, did not provide any specific references to Pacific Island populations, although it did have a population portfolio.

The Pegasus Medical Group and HFA (1999), Minutes of PMG/HFA Contract Negotiations Meeting and the Pegasus Medical Group and HFA et al. (1998-2000), Minutes of Pegasus Health/HFA Steering Committee Meetings, do not identify Pacific Health issues.

A broader view of Pacific Health and primary health care

It is important to place these findings within a broader view of Pacific Health and primary health care in New Zealand. Increasing general awareness of the disparities in the health status of Pacific Peoples in Aotearoa/New Zealand progressed throughout the 1990s (Bathgate et al. 1994, Tukuitonga 1999, 2000). This is reflected in the current Ministry of Health's prioritisation of Pacific Health issues in policy, and increasing public expenditure on Pacific Health programmes and services (MoH 2000, 2001). However, mainstream primary and secondary health care services are faced with considerable challenges to adequately respond to issues of inequity in service provision which affect inequalities in health status, and address the barriers to access. Developing strategies and providing services that genuinely embody the public health sentiments expressed in the Ottawa Charter, the Alma Ata Declaration (WHO 1978), and which implement various models of integrated care or Community Oriented Primary Care, is still an "ideal" rather than a pragmatic reality (Tukuitonga 1999, Coster & Gribben 1999).

Utilisation of primary care and preventive services

Pacific Peoples have low utilisation of conventional primary care and preventive health services, despite having greater health needs. According to Tukuitonga (1999):

*"This has led to high use of secondary services for selected disciplines with many hospital admissions among Pacific Peoples being avoidable".*

There is yet no hard data on utilisation patterns by the various Pacific Island groups accessing secondary services in Christchurch. The actual extent to which Pacific Peoples are accessing these services *instead of* primary care services, is unknown. It is essential that accurate ethnicity data is recorded, and information systems for sharing data are well co-ordinated to ensure better targeting of resources and services as funding based on the needs of an enrolled population develops (MoH 2001 Primary Health Care Strategy, pg 25). It is a vital part of producing local health needs assessments which is a growing area of research (Gribben and Coster 1999, pg 37). As noted during the presentation of access issues:

*"Tools for effective description of the population and identification of vulnerable groups using as a minimum standard, ethnicity and deprivation measures are essential before this area can be progressed. This will enable the identification of vulnerable groups and their patterns of service use in a systematic way, so that needs assessments for these groups can be performed as well as needs assessment for those groups not currently accessing general practice. It will also enable baseline measures to be performed against which project effect can be measured".*

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<sup>26</sup> Pegasus Medical Group had also conducted two previous surveys researching consumer needs and perceptions of need – e.g., GP Attitudes [consumer attitudes towards GPs] August 1996 (S. Aitken, MRL Research Group and Consumer) and *Consumer/Patient Attitudes*, August 1997. (S. Aitken, AC Nielsen).

Population perspective

Tukuitonga (2000, pg 4) comments that:

*“Limited experience from recent years suggest that public health service provision to Pacific Island communities need to be part of a total package of care including personal health services for individuals. Stand alone public health programmes for Pacific Peoples have been generally ineffective, because Pacific Peoples generally do not utilise preventive services as much as other New Zealanders. However, personal health services provide a locus of care that could be utilised for public health action”.*

In New Zealand, only a few Pacific owned and/or managed primary health care providers, have developed. The overall impact of these services on improving Pacific Health outcomes has yet to be formally evaluated, however, indications are positive. The workforce capacity of Pacific Peoples to provide such services at the present time, is limited. Building Pacific Island workforce capacity has become an important part of health-related policy and strategies to address Pacific Health issues (MoH 1997, 2000). Tukuitonga (1999) comments that:

*“Pacific communities are also aware that services provided by Pacific people for Pacific people cannot meet the needs of the whole community. Therefore, mainstream providers need to be supported and encouraged to provide their services in a Pacific friendly manner”.*

At present, the majority of Pacific Peoples in Christchurch (as elsewhere), are served by non-Pacific Health providers and non-Pacific Health professionals. The size of the Pacific populations in Christchurch is relatively small compared to the general population, and this is likely to remain the case for some time. Emphasis on Pacific-friendly service development by primary care providers in Christchurch, is therefore vital. This includes the planning for, and upskilling of, general practice teams to work in culturally sensitive and appropriate ways with Pacific Peoples. However, clinical education in medical training, which addresses the need for health practitioners to take seriously the importance of developing cross-cultural competencies, is generally inadequate.

Broadly speaking, the culture shift in Pegasus Health towards population-based and public health perspectives in general practice, carries the seeds/incentives for the kind of training needed to develop. IPAs in general, may be some way off in convincing all members of their organisations that this is important, particularly, when many members' medical training has not prepared them specifically for working with Pacific Peoples, nor sufficiently emphasised the importance of meeting the needs of diverse populations. Nevertheless, it is exactly this sort of training which is essential. It is vital that over the next decade, increasing emphasis on this aspect of clinical governance and professional development-continued education for general practices teams, is pursued.

Supporting Pacific provider development through genuine collaborations and building Pacific Island workforce capacity should be part of all primary care providers strategic plans. Tukuitonga (2000) comments:

*“While there is considerable enthusiasm among Pacific providers to provide more services, their clinical and public capacity is limited. This is likely to remain limited for at least two decades, and investment in Pacific people is necessary. For this reason and for economies of scale mainstream, providers will remain a necessary feature of public health service provision to Pacific communities for the long-term. However, it is important that as Pacific providers develop and mature, they should be considered as ‘preferred providers’, if the management, clinical public health and financial requirements, are assured. If this scenario and philosophy is accepted as a matter of*

*policy, the MoH should signal this intention to DHBs and public health providers, and encourage appropriate alliances between mainstream and Pacific providers. In certain highly specialised areas, mainstream provision to all New Zealanders (with appropriate adjustments for Pacific peoples) appears reasonable”.*

#### Inter-sectoral collaboration

An important aspect of effective population-based approaches is the need to identify accurately diverse community population health needs.

Tukuitonga (1999) states:

*“Population-based approaches in primary care provides the best strategy for achieving health improvements among Pacific people in New Zealand. While there are diverse language groups within the Pacific community, there are sufficient similarities for population-based approaches to work”.*

He rightly identifies that population-based approaches will not, however, reduce health inequities without inter-sectoral collaboration. Health is affected by social, economic, environmental and cultural factors. The importance of establishing collaborative approaches with Pacific Island providers, and consultation with Pacific Peoples and other key stakeholders, cannot be over emphasised.

## Results

#### Global Budget contract arrangement negotiations

Within the terms of the Global Budget contract, there was no explicit expectations from the purchaser (HFA), for Pegasus Health to address Pacific Health issues. The minuted documents of the *HFA/Pegasus Medical Group Global Budget contract negotiation* contain no reference to Pacific Peoples. This raises important considerations. Firstly, Pegasus Health was not required legally to develop any initiatives to address the health needs of Pacific Peoples. The MoH/HFA had clearly not advised it or encouraged it to do so. It is unclear why the HFA was not advising it of Pacific Peoples' health issues. In the 1990s, significant health documents highlighted an emerging awareness and concern to address the Pacific Peoples' health needs (Bathgate et al. 1994, Ministry of Health 1997, National Health Committee, 1998). These documents, one presumes, would not have been inaccessible to the funders/purchasers, if they had requested or asked the right questions.

#### Funder-purchaser-provider responsibilities and accountabilities for Pacific Health

The Global Budget contract negotiations on this issue were certainly incongruent with the intentions espoused in the Ministry of Health's *Making a Pacific Difference* (MoH 1997, pg 12), which emphasised the role of funder.

*“The funder is charged with the responsibility for ensuring high quality health care, and is therefore, uniquely placed to improve health outcomes for Pacific populations. The onus is on the funder of health services to be proactive in its development of regional services for Pacific people”.*

Clearly, HFA as purchaser had a responsibility to raise Pacific Health issues as a major concern, given the prioritisation of Pacific Health in the latter part of the last decade by the Ministry of Health. Pegasus Health also had responsibility to address these issues during negotiations with HFA. In this light, it could have been expected that Pacific Peoples' health might have been prioritised in the Global Budget contract

within the population health portfolio. The Population Portfolio in the Pegasus Health Global Budget Report (2000, pg 12) states:

*“That with the new Global Budget contract comes added opportunities in the area of population health... This portfolio groups projects that are focused on preventive care, population screening/action and initiatives that centre on the care of specific population groups”.*

It appears for both parties, the accountability to do so was not required.<sup>27</sup> It is a concern that prior to the Global Budget, the Pegasus Medical Group had not developed any initiatives to address the quality of its primary care services to identify and meet the needs of Pacific Peoples. Future negotiations should explicitly include Pacific Health consistent with the aims of MoH New Zealand Health Strategy (2000), and the Primary Health Care Strategy (2001), to reduce inequities in health by improving services to Pacific Peoples. Pegasus Health did not have any specific plans or processes for addressing Pacific Peoples' health issues pre-Global Budget (Copland, 2001).

A Pacific Island GP and member of Pegasus Health confirmed from his experience, that Pacific Health issues were not adequately considered in previous Pegasus Medical Group planning processes pre-Global Budget. From his perspective, there was sufficient information pre-Global Budget for the Pegasus Medical Group (as it was then called), to progress Pacific Health.

*“The Pacific population in my view was treated as the New Zealand population on mass, and Pacific was just part of that, and there were no specific initiatives ... if there were any [initiatives], it would come from people with an interest in it, who were doing it on their own back like.....but that was completely non-Pegasus involvement”.*

Nevertheless, Pegasus Health has taken positive steps forward since the Global Budget, and has framed its progress to date on Pacific Health as an innovation emerging from the flexibility provided by the Global Budget funding mechanism. Pegasus Health has acknowledged that:

*“Previous activity is minimal and not satisfactory, but it still is positive that even without funder push, the organisation has owned the issue and moved to work in this area”* (Response to Interim Report to NZHTA Team, August 1, 2001).

While the Population portfolio did not specify Pacific Island populations, the seeds for subsequent developments are clear. This has been clearly acknowledged by PH.

*“Our initial aim has been to consider population wide strategies out of the access strategy development area with the expectation that as our understanding increases, we will look to target specific groups. We are aware that Māori and Pacific communities have specific issues around access and will ensure the access strategies that are developed are mindful of this and/or specific targeted strategies are developed”* (PH Response to NZHTA Interim Report).

Pegasus Health should be commended for developments to date on Pacific Health which it has made in a relatively short time. However, the key challenge is to develop a strategic, comprehensive, and well co-ordinated approach based on good consultation with Pacific Peoples.

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<sup>27</sup> The issue here concerns the mechanisms and processes by which the Government as funder holds purchasers accountable for promoting equal access for equal need (see Cumming & Scott:1998) . It is outside the scope of this report to look at this with depth, but future important issues were raised for consideration.

## Communication channels to Pacific Island communities

MoH and other government agency consultations with Pacific Island communities in Christchurch throughout the 1990s and 2000, also led to a context in which many Pacific Peoples involved in these kinds of meetings appeared to be becoming increasingly suspicious and cynical concerning the benefits of such processes.

“Consultation fatigue” aptly captures the community context in which the Pacific Island researchers are involved (Siataga et al. 1999). Participants, however, viewed the research as an important undertaking, and were generous in their time and their willingness to contribute. They were generally positive about the possibilities and opportunities for better health provision, but were also reserved when it came to their expectations of the MoH/HFA and Pegasus Health.

Pacific Island participants conveyed concerns about the kind of treatment that they had either received or knew others had experienced in the primary and secondary health care sector in general. Pegasus Health was perceived as a “major player with millions of dollars” and questions were raised about what they were doing for Pacific Peoples, and the resources it was putting into Pacific Health issues. For most participants, very little was known about Pegasus Health. The Pegasus newsletter was not considered as reaching Pacific Peoples. Most participants were unaware of the Community Advisory Board and the role of the Pacific Island representative. The interviews and focus group discussions further confirmed the key findings of the earlier Pegasus Report (Siataga et al. 2001), on Pacific Peoples’ perceptions of primary health care. This highlighted the need for culturally sensitive practices, cost barriers, cultural and generational diversity, longer consultations times needed in the initial engagement of client, and more flexible appointment times.

## Consultation

Two strategies were implemented to identify and build relationships with Pacific Island communities. One was the appointment of a Pacific Island representative on the Community Advisory Board. The other, evidently a more vital strategy, was to build a relationship with Pacific Trust Canterbury on the latter’s initiative in mid-2000. As noted, the General Manager of Pacific Trust Canterbury, and the CAB Pacific Representative have also been invited onto the Pacific Reference Group. Pegasus Health are clearly in an early phase of development with respect to its relationships with Pacific Island communities in Christchurch, but are building the foundations for this to develop.

## Community Advisory Board

The establishment of a Pacific Island position on the Community Advisory Board (CAB) is appropriate. The process of appointment of the Pacific Island Community Representative without wider consultation with the Pacific Island community, is problematic. The Pacific Island Community Representative has yet to establish the CAB profile with Pacific Island communities. At the time of writing, the CAB terms of reference are under review. The CAB has been commented on in further detail in other parts of the evaluation (see Access and Community Health Needs sections).

A process for mandating the position of a Pacific Island Community Representative for is needed. This requires consultation with Pacific Island communities. Clearly, this has not been achieved, and it is a recommendation that the CAB and Pegasus Health consider establishing this process. This is not a comment on the current Pacific Island representative’s professionalism in this role on the Board. It is a comment on a process that does not reflect a model that promotes Pacific Island community participation, and is a particular challenge for the CAB and the PH to consider. Nevertheless, the prioritisation of Pacific Peoples as one of several areas which the CAB are seeking to address, is a positive indicator that Pacific Health is being taken

seriously. It also reflects an increasing awareness that Pacific Health issues need urgent attention.

Community Reference Group – Ministry of Pacific Island Affairs  
Pegasus Health has indicated that establishing relationships with Pacific Island providers is important. It has stated it is prepared to also discuss issues through consulting the recently established Pacific Community Reference group (CRG). This is a reasonable strategy, and will allow Pegasus Health to receive relevant information and provide input on their own progress. This group was established as part of the National Ministry of Pacific Island Affairs' initiative to corroborate the newly-developed regionally-based Programme of Actions.

#### Budget allocation

Service delivery to Pacific Peoples (including GMS, labs and pharms etc) is not captured in this evaluation. The following is not indicative of total expenditure. There are two instances in the Pegasus Health documents where finances have been tagged specifically to Pacific Health. The 11 August 2000 Pegasus Health's Board Report, mentions a possible figure of \$100,000 being allocated. This was an indicative budget for scoping and development of initial projects. The budget setting process is annual. A Community Advisory Board Report also noted that \$5,000 was allocated towards Pacific Island projects. There is no indication that the budget has equity issues in relation to Pacific Peoples. As Pegasus Health has more information of the health status and needs of Pacific Peoples, the allocation of resources will need to be more aligned with considerations of equity.

#### Clinical education and professional development

Pegasus has embarked on cultural safety and awareness education sessions and initiatives as part of its Māori Health Service plan, which should signal optimism in respect to similar sessions regarding Pacific Peoples. Further, Pegasus Health has indicated a commitment to develop education sessions for general practice teams, and are currently organising a first session on a specific health-related issue.

Pegasus Health has also indicated other cultural education sessions may be developed for interested Pegasus members, but this is yet to be confirmed.

## Discussion

Evaluation challenges: a participatory approach

#### Research gaps

Significant gaps in specific Pacific Health-related research and the varying quality of ethnic-specific data currently available, further contributes to difficulties in the identification and targeting of preventive and personal health services for the diverse Pacific Island populations in New Zealand (Bathgate 1994, Mavoa 1999, Gribben 1999). Much of the available health information is anecdotal or derived from small studies which are limited in terms of extrapolating findings to the wider community (Tukuitonga 1999).

This report is written with several limitations. The first is that there has been no comprehensive health needs assessment of Pacific Peoples in the geographical region served by Pegasus Health, either by the MoH/HFA, mainstream providers, or Pacific Health providers in Canterbury. At present, there is onus on the CDHB to provide this information, which is vital if services are to respond adequately to the various Pacific Island communities they serve (MoH 2001b Health Needs Assessment for New Zealand). A more extensive discussion of community health needs

assessment is elaborated elsewhere in this report (see Community Needs). The Global Budget did not require Pegasus Health to undertake a Pacific Island community health needs assessment.

Secondly, this report relies heavily on qualitative data which does provide a significant amount of valuable information at one level, but would be better balanced if the information systems used by the mainstream primary and secondary health care services in Christchurch accurately recorded ethnicity data. There is currently no hard evidence of morbidity trends among the various Pacific Island populations in Christchurch, or about health service utilisation patterns regarding these groups. Current presumptions concerning the low use of primary and preventive care are usually based on anecdotal data, generic research exploring socio-economic and cultural determinants of health (Barnett 2000, National Health Committee 1998), data sets (i.e., NZDep96, New Zealand Census 1996), and a small body of Pacific Island research which is generally undertaken in regions in the North Island with significantly larger concentrations of Pacific Peoples. There is a strong argument that local regional research is desperately needed, given that Pacific Peoples are not homogeneous, and that culture (loosely defined) is a dynamic influenced significantly by environment.

Thirdly, this report takes a general pan-Pacific Island population-based perspective, and should be read as a broad-brush approach. In some important areas, a more in-depth contextual analysis is needed, which is outside the scope of this evaluation. This would include a more comprehensive ethnic demographic profile. Current census data is dated. The population data from the recent census should be referred to as soon as it becomes available in 2002. It should also be noted, that under reporting of Pacific Peoples in census data, and misclassifications of ethnicity are evident (Mavoa 1999, Tukuitonga 1999). Further, Mavoa argues that the exclusion of Pacific ethnic categories, or collapsing of census and health data into pan-ethnic and broad age categories, creates difficulties in identifying specific health needs of children from diverse ethnic groups at different developmental levels. This has significant repercussions for the targeting and allocation of limited resources.

Importantly, Mavoa (1999, pg 215) states:

*“While many reports acknowledge the diverse nature of people from Pacific islands living in New Zealand, they often fail to identify specific ethnic affiliation, which renders children, their families and communities, invisible. Currently, we do not know whether children from different Pacific islands have different health needs, and whether these needs differ according to age, country of birth and length of time spent in New Zealand”.*

The time involved for the research significantly exceeded that initially planned for by the Pacific Island researchers, and also exceeded the time budgeted for. This had an impact on the provision of feedback to Pacific Island communities, and the face-to-face processes originally intended are no longer feasible given the researchers' other commitments in 2001. At this stage, a summary of findings will be sent to all participants. The researchers will assist in the dissemination process in 2002. This should be kept in mind for future reference by MoH/CDHB, because future consultations and research can be affected by inadequate feedback processes. This is important within the context where the careful building of participatory research approaches (NAPCRG,1998) with Pacific Island communities in this region, is greatly needed. It is suggested that avenues for wider dissemination of this report to Pacific Island stakeholders could be developed by CDHB, Pegasus Health and Pacific Trust Canterbury.

Capturing an accurate picture of an organisation the size of Pegasus Health, with its complex array of projects and services in the midst of wide sweeping health reforms

presented a variety of challenges, not least managing the political climate in which the information desired by MoH/HFA, and the expectations of all parties involved, needed careful consideration and ongoing negotiation. Describing the range of activities undertaken by Pegasus Health in a multi-disciplinary context required not only gaining a perspective of one's own area of interest, but also attempting to understand developments in other areas. Various pictures of Pegasus Health gradually emerged. Overall, the Pacific Island researchers faced several challenges given the Pacific Island community context, and the need to balance community expectations, clarify misinformation held about Pegasus Health, and the evaluation in general. Assessing Pegasus Health's evolving responsiveness to both the evaluation team and the Pacific Island issues, were also being raised. This was greatly assisted by members of the evaluation team's openness, and the many valuable discussions and team meetings which eventuated as the evaluation progressed.

### **Is the Global Budget providing impetus for positive change?**

In responding to the following question, "Do you think then with the Global Budget, whatever that motivation or drivers are is making some progress on Pacific Health?". One Pacific Health professional commented:

*"I think it is and ...I've talked about this with a few people within Pegasus and the DHB, there is a sense of it happening but it so slow and what can we do to speed it up and make it happen and because it's not a new problem. Let's get out there and do it but maybe it's just being impatient on my part. It's just I just find it's so slow. I'm a bit nervous in that I see this as a window of opportunity and that if the players drag their feet too long it may not happen but I'm worried that the opportunity will pass....Here in Christchurch and Canterbury I think that Pegasus is really a key player and I think that Pegasus has made the right moves in that direction to engage the Pacific community to work with Pacific providers but I think it could happen faster".*

Pegasus Health has stated that they "have not moved as quickly on issues as they might have preferred", and commented that a "key inhibiting factor has been the volume of work Pegasus have been involved in to date" (Copland 2001). This suggests that some prioritisation of Pacific Health is developing at the conceptualisation level. Further work implementing or action planning is required, and these should be developed within reasonable timeframes. The prioritisation of Pacific Health is indicated by the structural establishment of the Pacific Reference Group.

It is commendable that Pegasus Health funded earlier research to identify the needs of Pacific Island populations. It undertook this in a spirit of partnership with Pacific Trust Canterbury, although this relationship has yet to be formalised through a Memorandum of Understanding. Pacific Trust Canterbury was a significant driver of this development. It was also anticipated that Pegasus Health might undertake the feasibility study for a Pacific Health clinic, but this was pre-empted by Pacific Trust moving independently to undertake this. (The feasibility study has at the time of writing been completed; however, the results are not yet available for comment). If the direction to establish a Pacific Health clinic is pursued by Pacific Trust Canterbury, Pegasus Health could potentially have an important contribution to make. A more synergistic relationship with Pacific Trust Canterbury might emerge if the opportunities for collaboration are carefully negotiated.

### Barriers to access

Pegasus Health's strategies, such as the hard to reach fund need to be communicated to Pacific Island key stakeholders. It would appear that relevant information is not reaching the majority of Pacific Peoples. A Pacific Island communication strategy (see below) would be an important development. As noted in the Access section, there has been lack of systematic approach to the initiatives to address access which PH have undertaken. This hinges on good information systems. It is impossible to assess the efficacy of any project at implementation stage without accurate ethnicity data and monitoring systems in place. Pegasus Health has not developed plans to specifically address barriers of access experienced by Pacific Peoples, although, it has recognised the need to do so, and is moving in the right direction. Low disposable income levels affect housing conditions, diet and nutrition and coping strategies health seeking behaviours. This has significant implications for developing policies which recognise social disadvantage and inequalities in health for vulnerable populations.

*"There are Pacific people that do generally like the doctors and who like the services that they go and visit and that's fine. I think that probably where our concern lies is that there are a lot of high risk families. There are a lot of families who are not accessible by going to a clinic because their English is bad, they've got immigration issues, they've got money issues, they got family issues around people that are working all day and half the night their grandparents are looking after the kids during the day. There are all these sorts of things that have impacted, and add to this whole issue around barriers and when they get to the doctors and they don't understand what the person is asking them to do at the beginning – they turn around and say well we're gonna go back home and say don't worry about it. So, there are those things that can be worked on quite quickly and we are certainly wanting to help in that respect".*

Samoan Health Professional

### Equity

At present, Pegasus Health has developed some policy (i.e., Pacific Health Plan objectives), which reflects the equity issues as they relate to Pacific Island populations. The key developments outlined earlier also identify a pragmatic approach to these issues. Equity has been identified within the Population Health Group, as an important consideration for future initiatives (Pegasus Presentation NZHTA Population Health August 9). It is to yet to be determined whether equity will be more comprehensively developed in Pegasus Health, and just what practical impact this will have on improving Pacific Health. Whitehead (2000) points to the importance of distinguishing between inequalities in the level and quality of health of different groups in the populations, and inequities in the provision and distribution of health services. It is important that Pegasus Health approaches Pacific Health with a clear view of the relation between equity in health care and Pacific Peoples' health needs. It is difficult to see, however, that identifying health needs of Pacific Peoples is going to happen without strategic planning to do so.

### Provision of affordable care

Affordable care is a key issue, as cost is generally acknowledged as a major barrier for Pacific Peoples. This is a national concern and not isolated to Christchurch. In terms of socio-economic status, statistics point to widening gaps in the status of Pacific Peoples compared with other New Zealanders (MPIA 2000).

According to Tukuitonga (1999, p 16):

*“There are no good studies on the effects of co-payments on service utilisation by Pacific people. However, the Rand Health Insurance Experiment in the USA showed that as size of the co-payment increased, the number of patient-initiated visits declined, and there was a greater reduction in service use by the poor and sick. Similar findings have been demonstrated in the United Kingdom, where the introduction of free medical care showed greater increase in service utilisation by the poor. It is difficult to extrapolate these findings to the New Zealand situation. However, Pacific-owned clinics in Auckland which have low patient co-payments generally have higher utilisation than services which charge standard fees”.*

An affordable co-payments system being used by Pasifika Healthcare in West Auckland is reported to have substantially increased people registered with its services (Tukuitonga 1999, pg 18).

### **Traditional healing**

The extent to which Pacific Peoples are accessing traditional healing is also unknown, but anecdotal information suggests that many Pacific Peoples, particularly those raised in their Island of origin, consider some form of traditional healing as beneficial (MoH 1997, Siataga et al. 2001). There are currently no standards or guidelines to integrate Pacific Island traditional healing practices (which means different things to different Pacific Island groups) within mainstream primary health care services. One Pacific Health professional commented:

*“I think the medical fraternity needs to come into some sort of a negotiation with traditional healers across the board, and that something that is taboo at this stage none of them want to sort of get into it and the same applies for traditional healers”.*

### **Community participation**

Pegasus Health’s approach to community participation, in general, is at an early phase of development. It is, however, necessitated by the shift to population-based approaches. The Pacific Island communities’ public demand for more community-orientated approaches in Primary health care is also growing. While ideological arguments based on democracy, politics of voice, and natural justice are implied, careful consideration of what it means in context is needed to prevent knee-jerk reactions or ad hoc response to complex issues. Crampton (1999, pg 5), suggests that “community participation in primary health care occurs across a range of activities, including receiving benefits of a programme, participation in programme implementation, monitoring and evaluation, and contributing to programme planning and management”. What is meant by Pacific Peoples community participation needs to be explored in considerably more depth, but is outside the general scope of this report. As Crampton (1999, pg 5), rightly comments, “Community participation is slippery and has many definitions”. In as much as community participation is identified clearly with community-based approaches, empowerment of Pacific Island communities to meet identified health needs is essential.

### **Community Orientated Primary Care (COPC)**

Coster and Gribben (1999, pg 19), assert that “the boundaries between public health and primary care are becoming blurred, and in the future many functions of public health will become responsibilities of primary care organisations taking a population-based approach”. They raise an important question, “To what extent can, or should, community development be integrated with the formalised systems of primary health care delivery currently evolving in New Zealand?” (pg 18). It would appear that Pegasus Health’s evolving approach to Pacific Health is best viewed within the context of an IPA moving towards a model of Community Orientated Primary Care. This

allows a useful delineation between community development models and the more pragmatic expectations of Pegasus Health's capacity as an IPA to respond to Pacific Health issues in Christchurch.

#### **Future collaborations**

The inclusion of the General Manager of Pacific Trust Canterbury in the Pegasus Health's Pacific Reference Group, is an important indicator of goodwill between the organisations and the possibility of win/win developments emerging from this process. As noted above, it may be anticipated that the possible development of a Pacific Health clinic under the Pacific Trust Canterbury, could provide significant opportunity for these organisations to establish synergistic relationships to address key Pacific Health areas. There are some considerations concerning workforce capacity development and training which Pegasus Health might assist in providing if a Pacific Health clinic is established. Certainly, some difficulties may be anticipated in staffing such a clinic with Pacific Health professionals (since the pool to recruit from is so small).

#### **A comprehensive communication strategy**

Pegasus Health, as with other Mainstream providers of health services, faces challenges to promote better awareness of its services to Pacific Peoples. Currently, the development of community education and outreach strategies are being considered by the Pacific Reference Group. The development of a comprehensive communication strategy is a crucial component to achieving Pegasus Health's Pacific Health objectives. A comprehensive communication strategy would have the aims of educating and raising awareness of the needs of Pacific Peoples as clients and potential consumers of health services, and assisting Pacific Peoples to be better informed of available services, to utilise them effectively and better manage their personal health. There are two phases which should be considered which include the development of an overall communication strategy framework and the development and co-ordination of a specific communication plan based on the framework.

A comprehensive communication strategy and communication plan is best developed within the context of a strategic long-term vision with specific short to medium-term planning, an in-depth rationale for each specific element of the plan, which includes a contextual analysis of local Pacific Island communities and inter-intra-cultural diversities, and a culturally appropriate built-in monitoring and evaluation process. The comprehensive communication strategy will require appropriate resourcing. The potential development of new resources is also an important consideration. A communication strategy would clearly identify the target audience(s), the channels and tools of communication, establish the key messages, and provide relevant information for improving awareness, accessibility, acceptability, and best use of health services.

#### **Cultural awareness, cultural sensitivity and cultural appropriateness**

The GP survey indicates that these are issues for consideration. Sixty percent of GP practices/group with 5+ indicated they strongly disagree with the statement: *"My understanding of Māori and Pacific Health issues has improved"*.

Figure 7: Response to statement

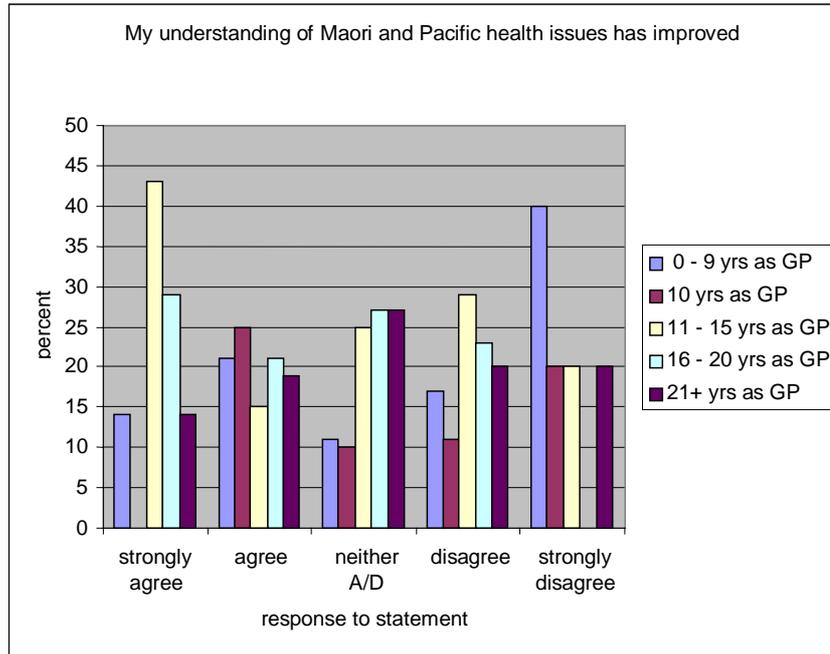
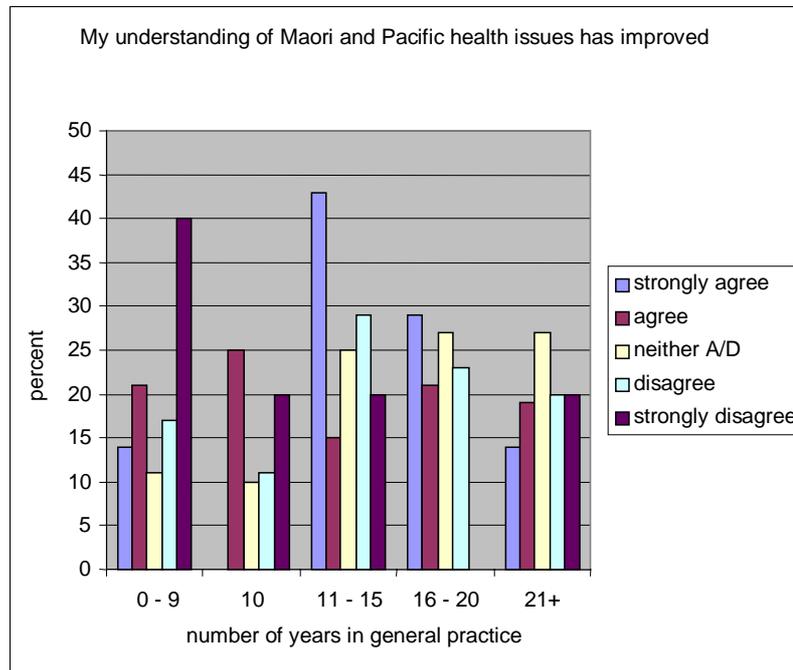


Figure 8: Number of years in general practice



Cultural awareness and cultural sensitivity are key elements to the provision of quality primary health care services. At present, cultural appropriate service delivery is a term bandied about with considerable liberality. Some parameters around what this entails needs to be established. These must be clearly defined in order to develop cross-cultural competencies or best practices within the context of a Continuous Quality Improvement ethos as it relates to professional development. Cultural Awareness is here taken to mean simply the level of knowledge of cultural norms and values.

The key findings of the earlier report (Siataga et al. 2001), and which were supported by participants in this evaluation, clearly indicated that general practitioners (non-Pacific Island), were not expected to have an in-depth knowledge with respect to cultural knowledge(s), customs and traditions of Pacific Island clients. While this may be an advantage in improving communication, it is only one element of a culturally competent service. Pacific Island participants consistently commented that cultural sensitivity was the essential component. The aforementioned Pegasus report also highlighted the need for cultural sensitivity – i.e., the ability to build rapport, convey empathy and respect as a priority in quality GP consultations expected by Pacific Peoples. Acceptability of services was based on the capacity of GPs to build trust with Pacific Island clients.

The failure to distinguish between cultural awareness and cultural sensitivity is not merely semantic. Without clarifying what is meant, assumptions about the level and kind of knowledge required, can become convoluted, diffuse and impractical. All Pegasus staff and members should be encouraged to see cross-cultural practice as an essential part of quality service provision. Pegasus Staff, particularly the Board and senior management, need to provide leadership in this area.

There is a need for some educational training which encapsulates the essential components of working with cultural and generational diversity in the Pacific Island populations. However, it would be unreasonable to expect general practice teams to be trained/educated in the protocols and customs of each respective Pacific Island group represented in Christchurch. Any such expectation does not necessarily contribute to better primary health care service delivery. In the long-term, developments of this kind may eventuate in populations with sizeable Pacific Island populations, and filter into regions such as Christchurch.

Pegasus Health has a responsibility to educate members in cross-cultural practice with Pacific Peoples. It is important that the development of cross-cultural education and training is not ad hoc. Such training should be designed to seriously promote holistic approaches to primary health care which are informed by Pacific Island models (MoH 1997). Pegasus Health documentation has not provided any evidence that cross-cultural competencies are considered a core component of best practice. It is worth noting that the Royal New Zealand College of General Practitioners has responsibility for establishing best practices in relation to general practice. It is also a limitation that the QualityMark document does not require a cross-cultural measure.

Pegasus Health has a responsibility to encourage its members to develop cultural-competencies. A first step is to develop greater awareness of key issues related above. While the terminology of competencies suggests standards and measures, and an authoritative body to audit these, the discourse and development of cross-cultural competencies will take significant time and energy to develop, and it is not likely that the medical fraternity will address this until it becomes more aware and receptive of the need to do so. It should be noted that some shifts are already being developed in one health-related field. ALAC (Alcohol Advisory Council of New Zealand), after a period of consultation over the past two years, is moving to establish competencies for the Alcohol and Drug workforce working with Pacific Peoples. It would appear, however, that in general practice this is some way off.

Encouraging best practices which are responsive to the needs of Pacific clientele will be a continuing challenge as Pegasus move forward.

## Conclusion

### Summary of Pegasus Health's progress

Developments to date, reflect the flexibility provided by the Global Budget for Pegasus health to identify a need (i.e., Pacific Health issues), and to make appropriate organisational change to begin addressing it. A significant driver for these developments includes an evolving culture shift in Pegasus Health towards population-based perspectives. A number of important developments have occurred since the Global Budget.

1. Pegasus Health has taken ownership of their lack of historical process and practical experience with respect to engaging and working with Pacific Island communities.
2. Pegasus Health has demonstrated the capacity and willingness to work with a Pacific Health provider and key stakeholders to advance Pacific Island issues as evidenced by:
  - commissioning a report investigating the perceptions of Pacific Peoples in Christchurch with the assistance of Pacific Trust Canterbury
  - contracting Pacific Island researchers for this work
  - establishment of a Pacific Reference Group within the Population Health Group with high level Board representation
  - inviting the Pacific Trust Canterbury General Manager and a PTC Board member as members of the Pegasus Health Pacific Reference Group
  - Pegasus Health are also aware of the importance of building relationships with other Pacific Health providers and stakeholders, and plan to consult with the Ministry of Pacific Island Affairs (MPIA) Community Reference Group, as an Independent Community Advisory Committee
  - Pegasus Health has demonstrated an increasing awareness of the Pacific Island community context in Christchurch, but has not yet established a community presence. This will take time to build
  - Pegasus Health has established clear objectives in line with current MoH policy on Pacific Health
  - Pegasus Health has allocated money to Pacific Health initiatives and provided PRG with budgetary responsibilities under the Manager of Population Health
  - Pegasus Health has achieved the above without funder push which appears indicative of its stated claim to flexibility and innovation as result of the Global Budget
  - Pegasus Health is establishing a platform for accurate ethnicity collection
  - Pegasus Health is beginning some education sessions for professional development of general practice teams.

The lack of integration of information systems<sup>28</sup>, and inconsistencies in accurate specific ethnicity data collection, has made it difficult to identify need, target interventions, allocate resources, and measure effectiveness of interventions.

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<sup>28</sup> This refers to the integration between primary and secondary data for needs analysis.

This evaluation considers Pegasus Health within the context of an evolving response to addressing Pacific Health. It does not assess the effectiveness of initiatives, since the timeframe for measuring this is too short. Assessing the quality of current service delivery to Pacific Peoples is difficult, since PH is in an early phase of developing systems and member buy-in to capture accurate ethnicity data. The Ministry of Health and the former Health Funding Authority omission to raise Pacific Health issues, and purchase primary health care services within the Global Budget contractual arrangements, which would have explicitly required Pegasus Health to prioritise Pacific Health, is of considerable concern. The CDHB should pay particular attention to this omission. Pegasus Health is clearly moving forward on Pacific Health issues. Pegasus Health has established clear and appropriate objectives in line with MoH policy (MoH 2000, MoH 2001), to remove barriers to access and provide quality primary health care services to Pacific Peoples. Achieving these objectives requires establishing a constructive relationship with Pacific Health providers and Pacific Island communities. The groundwork is in place for this to continue developing.

The Pegasus Public Health Physician has been instrumental in developing and actioning Pacific Health, and should be commended for his efforts to date. Pacific Trust Canterbury is a key health provider and essential to implementing key elements of the Pacific Health approach/plan. The model of CPOC is most likely the best fit to appreciate the approach of Pegasus Health to Pacific Health which is in an early phase of development.

Pegasus Health has not developed a formalised strategic plan to address barriers to access for Pacific Peoples in Christchurch, although, it has developed a number of initiatives which lend themselves positively to this development. Pegasus Health has not developed a comprehensive Pacific Health Service plan. Pegasus Health can achieve its stated Pacific health objectives by establishing a Pacific Health Service Plan with short to long-term planning. Pegasus Health is just beginning to address Pacific Health issues and has begun a process which could, if properly managed, result in the provision of leading quality primary health care services for, and with, Pacific Peoples in Canterbury.

Pegasus Health should be supported in the general approach it has undertaken. How Pegasus proceeds in terms of timeliness for achieving progress on Pacific Health issues, is vital to maintaining confidence with Pacific communities. Pegasus Health faces challenges to inform Pacific communities of their services, current progress, and intentions to date. One participant commented that:

*“They will lose the patience the faith that the pacific people have in them and their organisation. I have to be honest, I’m there at meetings and the cynicism and sarcasm that comes out from people it’s all like yeah yeah yeah we’ve heard this before for how long and I must agree. I mean it’s just rhetoric. We’ll do this we’ll do that when you know is what people are ... the new DHB environment needs to look good and not just be seen to make all the right noises. It has to look like you are doing something making a difference for disparities and health for Pacific people in Canterbury because that becomes the responsibility of the DHB ....they’re making the right noises but without an actual frame with a time so I mean I question whether it will progress any better. I think that the recommendations that have gone to the board are really good”.*

Overall, Pegasus Health is moving forward, and while frustrations about timeframes are evident, there are considerable positive developments to warrant optimism about the contribution to Pacific Peoples’ health which they may make.

*“.....there are some very good Pegasus GPs that I know of who work wonderfully with pacific people and who pacific people find incredible and amazing and those guys have mastered that cultural gap and it’s a cliché. It’s not wearing a lavalava*

*to your surgery, it's just understanding that this person there needs you to repeat the instructions, needs you to get an interpreter, needs you to call them back and maybe not charge them and show that you are really concerned for them controlling their asthma. I'm really proud of those guys who are members of Pegasus who do that and probably and I hear it from some of the Pacific people who say 'you know doctor so and so is great, but as an organisation I'm afraid that its still very poor very slow'.*

(Pacific Island health professional)

Pegasus Health is evolving, and have approached Pacific Health issues seriously. Pegasus Health needs to continue in the direction it has begun and should be supported to do so.

### Possible ways forward for consideration by Pegasus Health

The Evaluation Specifications indicated that the *Report should include recommendations for further developments and enhancements of the funding and service delivery model.* The following suggestions, however, are not specific to the Global Budget and funding model. They have arisen in an evolving context and are presented as important considerations for Pegasus Health to move forward on Pacific health issues identified during the course of the evaluation. Pegasus Health is under no contractual obligation to respond to these suggestions within the context of this Evaluation. It is this researcher's considered opinion that these ideas will assist Pegasus Health to build on the platform it has been establishing.

- a. Pegasus Health would benefit from establishing a comprehensive Pacific Health Service Plan and operationalising it within realistic timeframes.
- b. Pegasus Health should consider the possible benefits of possible funding/scholarships designed to build Pacific workforce capacity in general practice.
- c. Exploring a range of creative options for spreading key messages to Pacific populations could be further developed as an implicit part of a communication strategy.
- d. *It is the evaluator's opinion* that Pegasus Health should develop further practical mechanisms for assisting Pacific Peoples as hard to reach populations to overcome barriers, and to access particularly where costs and inflexible appointment times are evident barriers. The Link Nurse initiative to assist hard to reach groups is important for this reason. Developing a similar position(s) or function for targeting the Pacific population should be given due consideration.
- e. Pegasus Health needs to develop a range of strategies to best educate staff, and encourage members to appreciate the benefits of developing best practice cultural competency relevant to the populations they serve. Pegasus Health could include Pacific education sessions as a routine that is part of the Clinical Education programme and set targets (over time to have as many general practice teams and staff as possible receive this training within three to five years).

- f. Pegasus Health's success in meeting the health needs of Pacific Peoples will be determined to some extent by the strength and nature of the relationships/partnerships it forms with Pacific communities. Pacific Trust Canterbury is an important potential partner in this respect. Other Pacific Health services are also important and should be consulted.
- g. Pegasus Health should evaluate the Pacific Health initiatives it establishes in line with continuous quality improvement practices.

# COMMUNITY NEEDS ASSESSMENT AND RESPONSIVENESS TO THE COMMUNITY

## Introduction

The Global Budget contract between the HFA and Pegasus Health, was initiated as an evolutionary step in response to dynamic changes in the structure and delivery of primary health care and their increasing prominence in the overall health care system. Elements of the new Global Budget concept were evident in early 1999 and are highlighted in the Pegasus Medical Group 1999 Annual Report and Accounts (PMG, 1999). By agreeing to a single Global Budget rather than the previous multi-stream funding approach, Pegasus Health committed to the delivery of all standard services as well as additional new services in a planned, responsible manner with accountability to the funder and to the community. This section focuses on that part of the Global Budget contract which specifies “This evaluation will involve an assessment of the model of devolving purchasing to you [Pegasus Health] and will potentially include the following deliverables with recommendations for further development; c) the impact on your ability to be responsive to the needs of your community...”. Furthermore, Section A4.6, 3 states, “We [HFA] agree to support and facilitate through staff involvement the analysis of needs and utilisation of services by your population through access to the National Minimum Data Set (NMDS) and/or HHS data. We accept that this will be fundamental to the measurement of progress against KPIs [Key Performance Indicators]” (PMG-HFA contract, 1999, pgs 77-78). The Global Budget evaluation Request for Proposal (RFP) listed community needs assessment as one of the objectives of the evaluation, namely “To determine the impact on the ability of PMG to be responsive to the needs of the community including meeting the targets detailed in the agreed Service Plan”. Both Pegasus Health and the HFA recognised that in order to achieve this goal, Pegasus Health would want to identify community needs, prioritise them and plan new services to address the needs of the population.

The Service Plan, section 3.1.1 on Population Analysis/Needs Analysis, states that under the Global Budget, Pegasus Health will strive to do the following, in addition to “building on Māori health development” and “enhancing the targeting of services”.

- to build on information systems developed to better quantify the population it serves, to identify needs of that population and trends in access to services/projects
- to identify need and plan new services to address needs of the population we serve. (i.e., needs analysis)
- build on Māori health development
- better understand appropriate population-based funding formula
- examine existing health status info on the Christchurch population and supplemented with Pegasus Health patient utilisation figures where available
- build on this analysis by enhancing consistency of data in practices and developing processes for accurate ethnicity data collection, moving into more in depth analysis of our own population after their enrolment
- work jointly with HFA on analysis comparing the Pegasus Health utilisation data with the whole Christchurch population” (PMG, 9 May 2000).

One of the main aims articulated in the original Service Plan was specific to the Pegasus Health population and did not appear to include the wider community: “To

quantify the need of the Pegasus Health population and utilisation of services available” (PMG, 9 May 2000).

The evaluation framework was designed to examine the structures, actions and outputs relevant to community needs assessment before and after the Global Budget, including how the Pegasus Health needs assessment directly supports decision-making and impacts on service provision.

## Evaluation aims and objectives

The evaluation framework, re: Community Needs states the research aims are:

Aim 1: To assess the extent to which Pegasus Health has developed and undertaken population-based needs assessment.

Aim 2: To assess the extent to which Pegasus Health has met community needs key performance targets/indicators (KPI).

The evaluation framework suggests a number of key evaluation questions and performance indicators for measuring progress in relation to three dimensions of the community needs assessment aims: 1) the Pegasus Health philosophy or model of community needs assessment, 2) the structure and processes for community needs assessment and 3) the outputs and outcomes of the needs assessment activity, such as the KPIs.

The evaluation questions were originally posed as follows; some were slightly modified along the way as the Ministry of Health’s needs become more clear.

Table 26: Evaluation framework – community needs assessment

<b>Aim 1: To assess the extent to which Pegasus Health has developed and Undertaken population-based needs assessment.</b>	
Philosophy	Is there evidence of community involvement in decision-making? Do documents clearly indicate a commitment to community needs assessment and the broad determinants of health?
Structures and processes	What structures enable community participation? How is information shared with communities? What are the members' knowledge and the attitudes of the Board and staff about community needs assessment and the broad determinants of health? How is this related to the 'culture change' of Pegasus Health 'required to support the Community Care project', mentioned on page 22 of the GB Report 2000? Have processes been put in place and have tools been developed to assist in incorporating community needs assessment into decision-making? What has changed about these processes and tools from before the GB and after?
Outputs and outcomes	From the community's perspective: How does the community feel? Does it have adequate information? Opportunity to participate? Feedback from Pegasus Health on impact of input? Representation of views? Opportunity to react or respond to events? Is Pegasus Health undertaking community needs assessment on a regular or ongoing basis and using the results in decision-making? Does the content of community needs assessment reflect the broad determinants of health?
<b>Aim 2: To assess the extent to which Pegasus Health has met community needs key performance targets/indicators (KPI).</b>	
Philosophy	Do the Global Budget documents (HFA/PMG contract, PMG Service Plan) contain statements that define performance targets?
Structures and Processes	What are the mechanisms that permit the monitoring of the GB contract performance targets? What are the barriers for meeting performance targets? To what degree and on what basis is the GB philosophy reflected in the operating procedures as measured by performance targets? What are the processes by which new services or projects are developed and introduced, reportedly in response to some identified need?
Outputs and outcomes	Are HFA/MoH enabled to use information on performance targets for purchasing decisions and is PH for service delivery decisions? Are new methods for collection and use of information made available to HFA/MoH for purchasing decisions and for PH service delivery decisions? Is the information for measuring performance targets available in a user-friendly format? If not, what are the barriers to the production, compilation, and dissemination of the information? Is the HFA/MoH requesting information on the performance targets to: a) make purchasing decisions, b) justify purchasing decisions, c) evaluate purchasing decisions related to the Global Budget contract? Once these services of projects are put in place, how is their effectiveness monitored and assessed?

Other evaluation questions were added when additional information became available and to accommodate the three models that make up the conceptual framework for this investigation and that influence the analysis of the data (elaborated in **Appendix 6**). The three models are: 1) the integrated care model, 2) the five-stages model for health needs assessment in primary care, and 3) the six key health needs assessment activities-objective setting, data collection, data analysis, prioritisation, and planning and evaluation.

## Data collection methods and data analysis plans for community needs assessment

### Data collection methods

Many of the critical questions for reviewing changes and progress of community needs assessment and related performance targets overlap with other areas for this evaluation, such as Māori and Pacific Health, access and to a certain extent, the issue of quality. The development of the interview schedules, the selection of interviewees,

the focus group discussion guidelines and the recruitment of consumers, staff and members were co-ordinated with other members of the team, particularly the Māori and Pacific Island researchers, to maximise efficiency in data collection. Specific reference to progress for Māori and Pacific Islands objectives is noted in the accompanying sections to this report.

Multiple data collection methods were used to assess relevant information for understanding progress made in health needs assessment and changes from before the Global Budget. These methods included:

- review of the literature and the existing research, including a review of the HFA needs assessments
- review of Pegasus Health policies and practices from available documentation and from Pegasus Health staff presentations to the evaluation team
- key informant interviews from relevant representatives from four stakeholder groups: 1) HFA/MoH staff, 2) community organisations and/or community health service providers, 3) Pegasus Health staff, and 4) the Community Advisory Board (CAB)
- focus group discussions among targeted consumers/patients
- focus group discussion among Pegasus Health members whose practices are located in areas of deprivation
- self-administered survey questionnaire among Pegasus Health members
- vignettes (stories) provided by Pegasus Health staff to illustrate co-ordination, co-operation, and/or integration with other community service providers.

#### **Rationale for qualitative data**

The type of data collected using the methods listed above is largely qualitative in nature. The qualitative analysis component of the Pegasus Health Global Budget evaluation has an important role in the overall evaluation framework and methodology. The evaluation aimed to assess not only what interim outputs/outcomes were achieved but also the strengths and weaknesses of the Global Budget contract and whether the Global Budget concept is transferable to other IPAs and health provider groups. It was also important to understand the perceptions of those involved in the Global Budget contract, including Pegasus Health members, consumers, other health providers and community groups, as well as Māori, Pacific Peoples, and staff at the HFA/MoH. These aspects of the Global Budget require an in-depth understanding that can only be gained from a qualitative analysis approach (NZHTA, 2000).

The use of qualitative methods is integral to the evaluation of a major policy initiative such as the evaluation of the Pegasus Health Global Budget contract to address issues that cannot be adequately assessed through the use of quantitative methods alone. Qualitative research is useful to policy makers and purchasers by providing descriptive information and an analysis of the context in which health policy and services will be implemented. Qualitative methods, such as semi-structured interviews and focus groups, can actually fill the data gaps and explain why certain phenomena occur. Furthermore, the integration of appropriate qualitative and quantitative methods ensures that the explanations for the changes and progress of the Global Budget approach will be better understood. Qualitative and quantitative techniques are complementary methods of analysis, especially where an evaluation of a complex system is undertaken. Qualitative research is particularly useful when an understanding of processes and perceptions is required. Qualitative analysis examines the understandings and experience of those individuals involved in a setting, such as the management or delivery of primary health care and adds considerable analytical depth to the evaluation. The research team's qualitative methods application to the Canterbury Ethics Committee for all consumer-related data collection (including

Māori and Pacific Peoples) was submitted and approved well in advance of data collection.

#### Review of documentation

The review of documentation took place periodically throughout the evaluation process, whenever relevant documentation became available. All requests for documents and print information concerning community needs assessment were made and tracked weekly by the researcher, along with all other evaluation documentation requests.

#### Key informant interviews

Face-to-face interviews were conducted among four stakeholder groups of key informants. Two group interviews and one individual interview were conducted with MoH staff, most of who were formerly with HFA and had worked with Pegasus Health prior to the Global Budget contract. Staff from the Canterbury District Health Board were interviewed. Five community providers were selected based on recommendations from MoH staff and on the results of the document review. Three members of the Pegasus Health Community Advisory Board were interviewed. Five Pegasus Health staff were interviewed. At least six transcripts from other Pegasus Health staff interviews conducted by other members of the evaluation team were also reviewed and included in the analysis. In total, 16 key informant interviews were completed for this part of the evaluation.

All informants were sent a letter or memo in advance of the interview by NZHTA. The memo contained a brief description of the evaluation project, the community needs assessment themes and a list of key questions for each theme. Most of these interviews took place in the respective key informant's office or adjoining conference space. Three interviews took place in the researcher's office and were conducted jointly by two members of the evaluation team to avoid duplication and maximise information sharing. In these instances, questions regarding the assessment of needs in the Pacific Island communities were added to the interviews.

The face-to-face key informant interviews followed a semi-structured interview schedule with predominantly open-ended questions that were grouped according to primary themes focused on health needs assessment. The research probed liberally whenever a key informant led the discussion in an interesting and informative direction. Essentially, the same themes were covered for each of the three key informant groups to elicit perceptions of Pegasus Health' involvement in community health needs assessment. Every attempt was made to assist key informants in considering changes or differences from before the Global Budget in 1999 to after the Global Budget in 2000. It was anticipated that this retrospective approach would be somewhat conceptually challenging. The primary interview themes concerning community health needs assessment were:

- Pegasus Health philosophy, definitions and frameworks
- methods for assessing, prioritising and responding to community needs
- co-ordination of care and partnerships with community providers
- community and consumer involvement (see **Appendix 3 and 5**).

The interviews ranged in duration from 45 to 90 minutes and were audiotaped and transcribed. In most cases the transcripts were posted with a cover letter to each key informant who was invited to review his/her transcript for accuracy and clarity, and return it to the researcher. All key informants signed consent forms that are maintained in a locked file cabinet in the NZHTA office, along with the audiotapes and transcripts.

Focus Group Discussions; consumers, general practitioners, staff

The Focus Group Discussion (FGD) is a qualitative research technique used to obtain data about attitudes, opinions, perceptions, beliefs, and behaviours related to a given experience or phenomenon. An FGD is usually composed of six to 10 individuals whose characteristics or experiences are somewhat similar for a population or sub-population of interest. The FGD approach enables the researcher to gain a broad understanding of why members of this sub-population think and act the way they do. Purposive sampling was used for selecting FGD participants based on study criteria. All recruitment of consumers and members for the respective FGDs was carried out with assistance from Pegasus Health.

Originally, three consumer focus groups were planned, each with a focus on a specific chronic disease area selected from the four priorities: diabetes, asthma, chronic obstructive pulmonary diseases (COPD), and heart failure. Based on the document review, the research team decided to recruit Pegasus Health consumers diagnosed with diabetes for one focus group and Pegasus Health consumers who had some experience with the Community Care Project for a second focus group (the Consumer FGD guidelines are available on request). Pegasus Health produced a list of consumers who met these criteria and the research team scheduled and facilitated the 90-minute focus groups.

The primary criterion for participating in the general practitioners' focus group was location of practice in a deprived neighbourhood, based on NZDep96. A member of the research team conducted a randomised selection of GPs from a list of all members who practice in the deprived areas. Pegasus Health then recruited the participation of these general practitioners. All consumers and Pegasus Health members participated voluntarily and were fully informed about the evaluation design, the protection of their confidentiality, and each participant signed a consent form (the Information Sheet and Informed Consent form are available on request). All Focus Group discussions were audiotaped and transcribed.

The topics selected for the focus group guidelines were based on the Global Budget contract and the results of the document review, namely; access to care, quality improvement, health status, and community needs. The FGD guidelines for both consumer groups and the Pegasus Health members are available on request. Each focus group was co-facilitated by two members of the research team and a third member of the team served as note taker to observe and take notes of verbatim comments. Non-verbal interactions were also observed, as well as the general atmosphere of the discussion, to ascertain levels of agreement or disagreement, differences of opinion, levels of participation or non-participation, and any gender variations with regard to group dynamics. Following each focus group, the facilitators and note taker debriefed to compare their observations. The results of the FGDs were analysed according to the thematic categories and peer reviewed relative to the FGD guidelines and evaluation objectives by other members of the evaluation team. The transcript from a fourth focus group with the Pegasus Health Practice Facilitators was also added to the analysis. This group was facilitated by two other members of the research team and included discussion relevant to the interaction of practices with their respective communities.

#### Data analysis

All key informant interviews and focus group discussions were audiotaped and professionally transcribed. The thematic analysis technique was used to sift through the rich information generated from the interviews and focus groups. Thematic analysis is a common technique for considering qualitative data collected in semi-structured key informant interviews and facilitated focus group discussions. For example, thematic analysis allows meanings to be ascribed to individuals as well as to the collective contribution of the focus group. In order to structure the meanings, the

researcher looks for ideas or themes, which emerge as the researcher reads and rereads the transcripts. The themes serve the purpose of grouping similar ideas or topics together in order to discern trends and directions in the individual or group discussion related to the key evaluation questions. This analysis yields primarily descriptive results. Quantitative data can also result from open-ended key informant interviews and focus groups. For example, individuals may be asked to indicate their level of agreement or disagreement with a statement, and the results could then generate a count of the numbers who agreed and disagreed. This approach is useful when the numbers of study participants is sufficiently large. However, because the numbers of respondents was quite small for the qualitative portion of this evaluation, the analysis of the interview and focus group discussion data is predominantly descriptive. The quantitative analyses for this evaluation are reported elsewhere in this report.

## Key findings and discussion

A conceptual filter was constructed from the key supporting elements found in the literature to guide the evaluation data analysis (see **Appendix 6**). These core elements are highlighted in Table 27. The evaluation framework categories, i.e., Pegasus Health philosophy, structures and processes, outputs and outcomes, were also part of the analysis plan for reviewing the results of the document review, the interviews, and the focus group discussions.

Table 27: Core elements of the conceptual filter for assessing Pegasus Health' aim to carry out community needs assessment and to be responsive to the community.

<b>Integrated Care</b>	<b>Health needs (and strengths) Assessment process</b>	<b>Responding to, and preventing health needs</b>
<p>Provides quality services to patients and the community by tracking their needs and strengths and by responding in collaborative relationships with other service providers and community groups.</p> <p>This requires:</p> <ol style="list-style-type: none"> <li>1. organisational systems</li> <li>2. information systems</li> <li>3. communication systems</li> <li>4. educational systems</li> </ol>	<p>An on-going process that:</p> <ul style="list-style-type: none"> <li>-sets clear objective(s)</li> <li>-collects data (practice, national, community, other)</li> <li>-collaborates with stakeholders (patients, community, service providers)</li> <li>-collates and analyses information</li> <li>-compiles list of needs and strengths</li> <li>-prioritises according to established criteria</li> <li>-reviews evidence</li> <li>-identifies appropriate interventions</li> <li>-plans/designs services, programmes as well as evaluation and documentation</li> <li>-pilots, implements and monitors</li> <li>-evaluates, reassesses, feeds-back</li> <li>-disseminates findings routinely</li> </ul>	<p>Based on the analysis and prioritisation of needs data and on a review of the evidence, appropriate programmes are planned. It is essential that the programme designs and/or strategies be based on theory and evidence that have been shown to be effective in meeting and/or preventing specific health needs or problem areas</p>
<p><b>NZ Health Strategy, 2000 – Priorities</b>            Reduce smoking, improve nutrition, reduce obesity, increase the level of physical activity, reduce the rate of suicides, minimise harm from alcohol and other drugs, reduce the incidence of cancer, reduce the incidence of cardiovascular disease, reduce the incidence of diabetes, improve oral health, reduce violence, improve health status of those with severe mental illness, ensure access to appropriate child health services (well child, family health care and immunisation)</p>		
<p><b>NZ Health Strategy, 2000 – Māori and Pacific Health Priorities (pp 18-19)</b></p>		
<p><b>NZ Disability Strategy Priorities, 2001</b></p>		

## Review of documentation<sup>29</sup>

There are at least three components integral to community needs assessment that would be expected to show up in the documentation of Pegasus Health policies and practice. These three components are: 1) a statement articulating the main objective or purpose for carrying out community needs assessment, (i.e., the Pegasus Health philosophy or definition of community); 2) an identified methodology or framework for conducting community needs assessment, (i.e., the Pegasus Health structures and processes); 3) the responsiveness to community (i.e. Pegasus Health collaboration and partnerships with community and consumer involvement in decision-making).

Section 3.1.1 of the Service Plan stipulates the primary purpose and the main source of information to be collected and used for community health needs assessment.

*“To build on information systems developed to better quantify the population it serves, that identifies needs of that population and trends in access to services/projects”.*

*“We have examined existing health status information on the population of Christchurch and have supplemented this with information on Pegasus patient utilisation figures where available. We will build on our analysis by enhancing consistency of data in practices and developing processes for accurate ethnicity data collection, moving onto more in depth analysis of our own population after their enrolment. We will work jointly with HFA on analysis comparing this with the whole Christchurch population” (Service Plan, 2000).*

It was important to understand the funder’s expectations regarding Pegasus Health’ role in community needs assessment. From Section 3.1.1 of the January 2000 Service Plan, it appeared the HFA was encouraging Pegasus Health to adopt a community needs assessment method that was centred around the comparison of patient utilisation data, with accurate ethnicity data and enrolment information, compared to existing Christchurch data. The analysis of practice utilisation data can provide an indication of health service seeking behaviour, access, demand for services, perceived quality, and potentially disease prevalence, but only for those who routinely access primary care services, not for the non-users and more vulnerable populations.

The review of available documentation revealed a small number of specifically relevant documents on community needs assessment. In light of the scarcity of official documentation and in response to a specific request from the evaluation team, Pegasus Health prepared a useful list of activities and outputs to illustrate the community intersect with Pegasus Health. This summary acknowledged the difficulty of providing a complete record of how and where Pegasus Health intersects with the community, attributing this challenge to the large size and rapid growth of the organisation (Pegasus Health, April 2001). It was not obvious from the summary which activities preceded the Global Budget, which were new, which were ongoing and which were one-off. Nor was it clear at whose initiation and for what purpose the contacts or linkages had been made.

However, a number of interesting self-assessments were noted regarding changes in the community intersect since the Global Budget. The groundwork for relationship development that began with the Integrated Care portfolio and expanded to the Community Care portfolio preceded the Global Budget contract. Apparently, since the Global Budget, Pegasus Health has “worked hard to achieve a culture of openness”, compared to their tendency to be “private about our activity” in the previously competitive climate. Nevertheless, this report noted that because of the large size and

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<sup>29</sup> Further material related to the document review is presented in **Appendix 7**.

complex organisational structure of Pegasus Health, it is “often difficult to communicate with other agencies about our vision and purpose” and “we have at times been perceived as a threat by some community groups/agencies” (Pegasus Health, April 2001). These perceptions were also shared by some of the community key informants.

A number of official documents and/or promotional materials were identified and retrieved that articulate the Pegasus Health commitment to and/or involvement with the community<sup>30</sup>. On 18 November 2000, not quite one full year after the signing of the Global Budget contract, Pegasus Health shared with the public its philosophy, its self-assessment of progress made during the financial year ending June 2000, and its key aims for its patients and the community.

Pegasus Health is a firm believer that prevention is as important as cure. It invests carefully in public health projects, public education and awareness campaigns, smoking cessation, immunisation awareness and so on. It is better for the health of all of us – and more cost effective – to spend money in the community to prevent illness than wait until people are really sick and need hospital care.

*“Building on the successes of our community care projects, we will continue to be responsive to the needs of our patients. We are also working to be responsive to the needs of the community and ensuring there is general practice input into the future health system by having some input into the new District Health Boards”.*

*“We want to ensure those who most need our help know we are there. With the help of agencies already working with disadvantaged groups in the community, we are working to decrease the obstacles to anybody in our community getting care from their family practice team” (Blueprint for Community Care, Christchurch Press, 18 November 2000).*

Six months later in the blueprint update, Pegasus Health affirmed, “Our community health initiatives are targeting key areas that concern us all and we are working towards finding the best solutions to these issues”. From these public statements and a review of the Pegasus Health documentation, meeting the needs of diverse communities in Christchurch is an important aim of the new Pegasus Health Global Budget.

The documentation and Pegasus Health presentations to the evaluation team provided evidence of a great deal of new or recent activity in the areas of community initiatives and/or community care. Pegasus Health has a philosophy of ‘community engagement’ in needs identification, prioritisation, service design and delivery. The monthly activity reports to the Steering Committee could have been strengthened by having a standard structure for reporting changes, impact, outputs, and outcomes of the Pegasus Health ‘community engagement’ process whereby the reader (funder) could gauge the project’s progress in meeting its objectives. There was a lack of consistency in the use of technical programme planning and evaluation terminology, such as goal and objective. Statements of objectives or goals were not uniform, nor were they necessarily articulated in measurable terms.

A strategically designed process whereby community needs were assessed, identified and prioritised on either a periodic or on-going basis using well-documented public health methods was required in order for targets and performance indicators to be relevant and to be expressed in measurable and attainable terms.

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<sup>30</sup> See Bibliography for a listing of documents identified and retrieved as part of the overall evaluation research project.

This is particularly crucial where vulnerable and hard-to-reach populations are concerned to address government's priority to reduce inequalities in health. Pegasus Health established a number of strategic initiatives such as: the Community Advisory Board, Youth Health Forum, Refugee and New migrant forum participation, and a Pacific Health Reference group, to name a few.

Even more fundamental than having a strategic plan is the underlying ideological rationale for doing so. In order for community needs assessment to be relevant and effective, it is important that the primary objective(s) for community needs assessment be articulated and clearly understood by all stakeholders. From analysis of the documentation and interviews the following priority aims emerged: to provide quality support for the member practices and to promote the awareness of Pegasus Health and its services among its consumers.

Traditionally, primary health care has had a client focus and a services focus. This focus contrasts with a population focus that prioritises collaborative linkages with complementary services and programmes. The Global Budget was meant to enable Pegasus Health to strengthen the population focus and to analyse the needs of the wider community, not just the needs of their existing client population. The Global Budget Report 2000 refers to the need for a "culture change required to support the Community Care project".<sup>31</sup> Perceptions of what culture change means to staff, members, and community were explored in the key informant interviews and are reported in later sections.

In 1999, Pegasus Health commissioned a random telephone survey of Consumer Attitudes and Behaviour. This was conducted among 506 randomly selected Christchurch City residents age 15 and over. The primary purpose of the survey was to assess consumer awareness and utilisation of Pegasus Health services and projects (Survey Report, May 1999). Respondents were asked "what key health areas [they] felt Pegasus Health could address". Important health areas were noted. What was not clear from the documentation was how or whether this information from Pegasus Health clients was factored into subsequent Pegasus Health decision-making, either to make changes at the practice level or for guiding staff in developing new projects under the Global Budget.

#### Community Advisory Board

The main structure or process Pegasus Health has put in place since the Global Budget to listen to and elicit community input, is the Community Advisory Board (CAB), established in July 2000. Three of the six community representatives were nominated by the Christchurch City Council. In addition, the Deputy Mayor attends most meetings as an observer. The Performance Monitoring Return dated 1 July to September 2000, stated that "The group [i.e., Community Advisory Board] agreed that in the period ahead they would look to achieve greater communication with the community – it would aim to put more energy into developing community networks" (PMR, 2000, page 13). The article in the Christchurch Press later that year, introduced the public to the members of the new Community Advisory Board. The article went on to explain that the role of CAB is to "give patients and the community at large a voice in the care they receive" (Blueprint for Community Care, Christchurch Press, 18 November 2000).

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<sup>31</sup> For clarification the Pegasus health 'community and integrated care' initiatives focused primarily on extending the opportunities for general practice teams to respond to patient needs in a primary care centred way, rather than refer to secondary care services. By contrast, the Pegasus Health philosophy of 'community engagement' relates to community needs identification, prioritisation, service design and delivery. Much work in this area is undertaken by the Community Advisory Board, the Population Health portfolio team and the communication team.

A full report for the Ministry of Health on the CAB's first year's experience was expected in the first quarter of 2001. This report was not available at the time of this writing. From early August 2000, the Chair of the CAB requested a review of the CAB among its members and senior Pegasus Health staff. The review was postponed over the ensuing months and took place at the December meeting. Representatives from the Pegasus Health Board expressed their satisfaction with the progress of the CAB thus far. Everyone apparently agreed that while much had been learned, there was still a great deal of work to be done in order to accomplish the main aims of the CAB: to promote greater responsiveness to community needs and views, and to foster relationships (Community Advisory Board, 2000).

The CAB has taken the opportunity to reach out more into the community during the first half of 2001. The Chair and members have proactively sought to attend relevant community meetings and to meet key facilitators of change in the community who represent the target audiences prioritised by the CAB. The purpose of prioritising community groups or populations was to explore barriers to seeking primary care among these groups and to promote the services and projects of Pegasus Health. The CAB initially considered they would host a series of gatherings with members from the respective groups, to consult with them.

The first initiative in this direction concerned youth. The CAB decided to host a youth forum. The CAB engaged youth leaders from Youth Tutors to facilitate a group of young people recruited from a number of Christchurch schools and organisations. The forum was held in April 2001, and represented the first real interaction with community groups since its inception in early 2000. A report summarising the results of the Pegasus Health Youth Forum was prepared by the Youth Tutors and published in the August 2001 edition of Pegasus Mail and also disseminated to Pegasus Health staff. Suggestions made at the Youth Forum included a review of the CAB Terms of Reference and inclusion of youth representation, development of posters targeted at youth for member practices, receptionist training concerning the use of jargon/language and youth confidentiality concerns, and advice to practices and the private availability of sexual health and other relevant information. According to a status report from Pegasus Health staff to the CAB in late August, progress had been made in response to all suggestions made at the Youth Forum.

The other groups prioritised by CAB are Pacific Peoples' communities, people of the third age, Ngai Tahu, and women of child-bearing age. By mid-2001, refugee groups were added to the list, based on a recommendation from the Deputy Mayor whose knowledge of the city and its priority needs is recognised and valued by the CAB membership and Pegasus Health Board. More recently, the CAB appears to be pursuing additional ways of interacting with members from the prioritised communities, including initiating meetings and making opportunistic approaches to groups such as being invited to meetings of on-going groups, as with the Refugee Resettlement Committee. Only time will tell whether or how this approach will result in building important collaborative relationships for the primary benefit of those most in need and those communities who are the least advantaged. Opting for a more strategic and planned approach that directly involves members of the targeted communities, may yield more optimal health-related benefits in the medium and long-term.

Despite the recent activity and visibility of the CAB in the community, the committee remains an advisory committee with no direct representation in the Pegasus Health decision-making process and with no budget. Pegasus Health is to be commended for leading the way and being the first IPA in New Zealand to establish a community advisory group.

The evaluation team was not able to access documentation that specifically lays out the Pegasus Health approach to community needs assessment and the collection, analysis, prioritisation and utilisation of data to strategically design client, practice,

and/or community-based programmes in the context of an integrated care model. While individual documents from 1999 and 2000 on the project portfolios point to either an assessment process or information gathering exercise or to a review of the evidence or a planning template, the only documentation that provided insight into a comprehensive model or cohesive strategic plan with on-going community needs assessment at its core for all Pegasus Health services and project planning was information contained in the service plan. Pegasus Health saw this as a starting point regarding the strategic development of community needs identification and prioritisation and felt this process was on-going and would take time to bed in, a developmental and evolutionary process for Pegasus Health. Again, developments were taking place during the evaluation time period and expectations of what can be realistically achieved over this time frame need to be considered along with the evaluation results.

#### Key informant interviews with stakeholder groups

Key informant interviews were conducted with Ministry of Health and District Health Board staff, community representatives (including members of the Community Advisory Board), and with Pegasus Health staff.

#### Ministry of Health and District Health Board interviews

Because the health systems environment was undergoing significant changes when the Global Budget was being negotiated and put in place, it was important to clarify early in the evaluation what the HFA's expectations were regarding Pegasus Health' professional and contractual responsibilities for community needs assessment.

The summaries and quotes selected from the transcripts illustrate the major themes that emerged in the course of the interviews.

#### 1. Expectations for community needs and responsiveness to the community.

Ministry staff were somewhat unclear about what they expected of Pegasus Health for community needs assessment. The transcripts recount the specifications in the Pegasus Health Global Budget contract and Service Plan, "an examination of the health and disability needs specific to the Canterbury population and Pegasus Health enrolled population is essential to determine health priorities", the governing principles for "developing a comprehensive picture" of the health needs, and the process by which a needs assessment occurs. A certain amount of ambiguity in the funders' expectations of Pegasus Health' role in conducting community needs assessment was apparent. This ambiguity, coupled with the structural changes to the national health care system, could affect the providers' ability to proceed in this area, but the ambiguity and structural changes may not offer the full explanation.

*"Yeah, there is a requirement around that [needs assessment]. I guess where the contract becomes less clear is around whether there is any clear expectation for there to be any defined level of community engagement as opposed to them doing their own analytical work. Certainly in the end the expectation is in the contracts around the analysis, probably less so around any expectation around Treaty engagement".*

*"Well, I think there maybe was a lack of clarity probably in the Ministry or HFA as to what Pegasus should be doing and what we should be doing because my feeling would be that we didn't want them to go out there and employ someone and do massive great statistical health profiles probably because we have the information sitting here. They should be taking that information and applying their own utilisation data to it and using it. They should be comparing the sort of stuff that we've got and published in fact that year or the year before on mortality rates, morbidity rates,*

*hospital utilisation rates and so forth for the five areas of Christchurch which we had broken into socio-economic status”.*

*“So, in terms of conducting a population needs assessment, I think Pegasus are grappling with trying to pull together information about individual people. They do know a lot about the numbers of people with particular conditions and again it’s around the population that their practices serve. ... There are big gaps. I mean in areas where people are very transient or they don’t enrol then we know from our needs assessment work the number of GPs in Merivale – for example, is about three times the number of GPs in Aranui and that people are more stable and so in terms of that population, I don’t think their health needs or their health assessment’s very clear because I don’t think anyone has done it. My concern is for those people because those people by and large, when we look at our emergency department, the admissions come from the poorer parts of Christchurch where GPs are not great, whether that’s Pegasus GPs or GPs generally”.*

2. Expectations for prioritising, for project planning and for collaboration with other service providers are problematic but possible, provided the funding mechanism changes.

The interviews raised thoughtful discussion about whether collaboration and integration with community providers are possible, given that competition persists in the post Global Budget period, guidelines are not in place for prioritising and planning projects, the fee-for-service financial stream has essentially not changed, the community providers find it difficult to trust Pegasus Health, and privacy issues for patient information constantly resurface. Improvements and changes are possible, according to these interviews, if government changes the way primary care is funded.

*“One of the weaknesses of the old Pegasus contract where they generated substantial savings, those savings were put back into service initiatives, but largely at the discretion and prioritisation of the Board. My perception is that various initiatives were launched by Pegasus with probably minimal influence from the region...without it necessarily stacking up with the prioritisation that the region had for that particular initiative”.*

*“[Under the old budget] there wasn’t very much [developing a broader population-based determinants of health perspective and relationship building with other providers]. They were constrained by the way they were funded. GPs are still funded fee-for-service. They can’t easily take on a social worker or a physio or have a close link with Family Planning or Youth Health Trust or whatever, unless they are not competing with them for clients”.*

*“That’s right. On the individual membership level they continue to make the GMS claim to the Pegasus corporate office structure. In a sense, nothing has changed, it’s still fee-for-service”.*

*“I think [their approach] is very haphazard. I’m not saying they don’t want to make it more structured or engaging. It takes them awhile to engage with people. I think in terms of how long it took them to engage in mental health. Before we all could actually start doing anything, it probably took a good couple of years for both sides to trust each other, to talk to each other and then to actually start working through things and when we got anywhere near money you had to be really careful, the barriers came up. Because there was a perception, and quite rightly so, that if Pegasus got more of it, there would be less for someone else”.*

### 3. Expectations for delivering services, expectations for patient enrolment.

Pegasus Health only recently began to pilot an enrolment scheme with one of the practices whose patient population is around 1,000 individuals. MoH staff expressed frustration at the constant delays. This issue is critical to profiling the Pegasus Health patient population as a whole as well as profiling individual practice populations, relative to understanding patients' needs, gaps in service and utilisation patterns, as well as for comparing with the greater Christchurch community. According to the MoH staff, this lack of success is attributable to lack of "clear performance indicators" and hence some of the responsibility rests with the funders.

*"There is a distinction between the population stuff which is a step in the right direction and the actual enrolment which most other people in the country are doing. Finally, at this point, they're looking at doing a pilot now. Their reasoning behind not moving to enrolment has been concerns over the privacy issues".*

*"I guess there was probably a degree of frustration that Pegasus were not delivering on the areas that the region was funding them and as any contract where funding was provided to do something and there's been a lack of progress in that area, then the purchaser clearly wants to see that responsibility is still delivered. ....So an area like enrolment where there was heaps of effort or funding and where it is still an issue, we're keen to ensure that there is delivery on it now and that we don't let history repeat itself".<sup>32</sup>*

*"I think that basically we've said at the end of the day, well, we've got a larger book of information than you want to collect and is the minimal required from the Ministry's perspective. Why don't you go and collect the minimal and sort out the other issues later. After lots of to-ing and fro-ing, they are now doing a pilot towards enrolment".*

### 4. Expectations for data collection and analysis.

With the Global Budget, the Ministry expected more data and more data analysis, to have health profiles of Pegasus Health patients and the practices, and to be able to compare this data with the Christchurch health data.

*"You know it wasn't very high level. It was regurgitation and we'd been pressing them for literally years to say this is the sort of information we'd like in terms of being able to see how you're getting through in terms of accessing the population and so on. They didn't, they haven't met that, partly because they don't have the information to do it because they've been so resistant to enrolment and having a register. They've got no data they can base it on. Yeah, they set up information systems but they've not actually come out with anything from it, which is endless frustration".*

*"The information systems are primarily financial management systems, systems to pay the GP members, pay for the labs and pharms and everything else".*

*"They should do a breakdown of their GMS claims, their pharm claims, their lab claims to see if you get some idea of what sort of people they're getting through to and contrast it with the census, to see how many Māori patients they've got to, how many Pacific Island patients and how they're dealing with refugee and migrant populations, how they're getting through to low income people, to get at what is the distribution of doctors around low income versus high income areas, that sort of thing. They've got a lot of utilisation data, they could, even if they haven't got enrolment data, they could at*

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<sup>32</sup> The Global Budget contract details clear objectives and KPIs which are reported against regularly and this was not in place prior to the Global Budget contract.

*least have played around with the utilisation data, like from years back. I guess with the Global Budget we hoped this would give them the resources to do that”.*

5. Expectations for monitoring the contract and taking a strategic approach.

MoH staff took ample responsibility for not consistently monitoring and co-ordinating the contract and negotiation process and since the Global Budget, for not working with Pegasus Health to regularly review and update the Service Plan as originally intended. Furthermore, the analysis of the interview transcripts indicates that the MoH were not as satisfied with their own less-than-strategic approach to fashioning the Pegasus Health contract. On the other hand, the discussion made it quite clear that there was, and is, nothing usual or customary about the negotiation and management of this particular contract, that it is/was particularly challenging and that Pegasus Health invariably negotiated strongly for its preferences.

*“I think a lot of the weaknesses of the Global Budget are to do with how we negotiated it...for a couple of years there wasn’t anybody in the Christchurch office who had the background, who knew how it linked to primary care policy...There was no guidance nationally because the primary care team had dissipated. In the HFA, it was noticeable there was no primary care policy or strategy. So we had about a year and a half in the transition from the RHA to the HFA when it sort of exploded and there was no policy input as to how we should be dealing with this massive, great, powerful provider and where we wanted primary care to go in Christchurch”.*

*“With the internal processes for the funder changing, even as a primary care team member from the past, I didn’t know that Pegasus had separate contracts going with mental health and public health. I think nobody in that team knew. ...We didn’t have a funder co-ordinated activity around Pegasus”.*

*“The purchaser should have been taking a rather strategic approach to the sort of services and projects we wanted to see Pegasus deliver and we should have had that sort of initial negotiation around determining the range and nature of certain projects and service delivery”.*

6. Expectations for information technology and data collection for needs assessment.

The MoH was quite clear about its expectations of all contractors to put information and data collection systems in place and to routinely analyse and report on the results.

*“Prior to the Global Budget, there was explicit funding around IT [information technology] and information development. I’m struggling to remember now because it’s going back some time, but I think it was about 300,000”.*

*“The Global Budget does have the nationally consistent figure of \$6,300 per GP as a management fee and that management fee is to cover the costs of providing the infrastructure required to deliver the information in support of the contract. So, it’s not explicitly an IT funding but, yes, that \$6,300 is designed to cover the administration costs of information provision”.*

*“...all of those contracts have seen information as being part of the overall cost. If we don’t fund you separately for information, we fund you for a service and that includes giving us information on that service. That’s just the standard practice throughout the organisation”.*

## 7. Expectations for primary health care and a population health focus.

The group interviews provided the opportunity for concurrence that the Global Budget funding approach had helped move primary health care in the right direction, but that Pegasus Health had much more work to do before it had truly achieved a population focus.

*“You know, earlier on we talked about the Global Budget as a stepping stone towards some sort of population-based approach. Well, clearly that is the direction the government is intending to go and with a primary care organisation doing that full range of package of primary care services, that opens the way to funding that organisation around the population and the range of primary care services that they are delivering. That’s quite a different sort of strategic direction and also there are quite different dynamics around now than we had with Pegasus two or three years ago”.*

*“As a funder, you see, whether you’re a DHB or a Ministry or whatever, it seems to me if you were doing proper planning on a regional basis, from the public purse, you would be getting those entities [community groups and other providers] together to figure out how could this best be organised and planned and determine what the needs are. You would be talking to the consumers, the consumer groups and you’d bring in all the different providers. That’s a role the Ministry, the HFA, the DHB, could take and I think that’s a useful role because it’s a facilitating role and yet you still, the providers are still doing it, but the funding entity facilitates it”.*

*“So the GPs just do not have that development approach. They think that they can get into population health initiatives, but they can’t... it’s going to take awhile for them [Pegasus] to grow that knowledge and ability to feel comfortable doing it. I think they are doing it in some ways, but they’ve got an up hill battle. It’s about giving the GPs more education and support. From some of the projects I know, they’ve done very well. They had this sum of money to put into particular care for individuals to keep them at home, to engage meals-on-wheels, domiciliary care, sort out the electricity. So I think they are trying, but with the limits of the GPs training, it’s going to take some time”.*

## 8. Expectations for accountability to the community and to other providers.

The expectation that Pegasus Health be accountable was expressed in a variety of terms, including measuring effectiveness, membership ownership or accountability for Pegasus Health, as well as clinical accountability, and accountability to the community.

*“Without the policy resources to figure out whether all that [the Mobile Unit] is effective or not. We don’t know if it’s been effective actually. We don’t even know if it’s a very useful thing to do in terms of the literature”.*

*“We certainly wanted to try and encourage a greater level of participation and collaborative working with other providers and particularly Canterbury Health. The various parts of the contract included incentives for Pegasus to take a more inclusive approach to a relationship with other providers, particularly Canterbury Health. So, the desire and intent to achieve that was certainly there and we tried to build it into the contract. But we simply don’t know the effectiveness of what’s happening”.*

### **Pegasus Health staff interviews and focus group discussion with members**

The following themes and questions were developed for the key informant interviews among Pegasus Health staff. A similar set of themes and questions was used for the interviews with key informants from community service providers. The community

interviews took place first followed by the staff interviews. A shorter version of these themes and questions was included in the focus group discussion guidelines for the GPs, along with other discussion questions about access and quality.

- A. Pegasus Health philosophy, definitions and frameworks.
1. How do you think Pegasus Health defines the following; 'community', 'community providers', 'community groups', 'community care'?
  2. What do you think 'community involvement' means to Pegasus Health?
  3. In your opinion, what is Pegasus Health' role in the community?
  4. What framework or model has Pegasus Health adopted for working with the community?

- B. Community needs assessment.
1. Prior to (in 1999) and after (in 2000) the Global Budget, what methods do you think or do you know Pegasus Health used to:
    - assess community needs in relation to the broader determinants of health
    - prioritise from among multiple community needs
    - determine how Pegasus Health will respond to the prioritised community needs?
  2. You may be aware that with the restructuring of health and health care, the new District Health Boards are being asked to carry out community needs assessments. In your opinion, should this mandate have anything to do with how or whether Pegasus Health assesses community needs? Why or why not?
  3. One of the main reasons the Ministry of Health agreed for Pegasus Health to trial the Global Budget was to enable Pegasus Health to respond quickly and creatively to emerging needs or issues. Do you know how Pegasus Health decides which new and innovative services and projects to develop? Do you know whether these new initiatives are being evaluated?
  4. Please tell me what you know about the Health Education and Promotion programme priorities of Pegasus Health.
  5. How would you assess Pegasus Health' responsiveness to community needs and priorities?

- C. Community partnerships and co-ordination of care with other providers.
1. What is the status of communication and links between Pegasus Health and your organisation, or other community-based services, consumer groups, and volunteer organisations? What are the processes or mechanisms for creating and maintaining the links? What is Pegasus Health' role?
  2. How does Pegasus Health ensure improvements in communication between Pegasus Health staff and community, between their GP members and patients, and between the Pegasus Health GPs and the community?
  3. Pegasus Health has targeted a number of local organisations that specialise in various public health, health promotion, mental and primary health care services and programmes, as potential collaborators for new Pegasus Health projects. Many of these organisations are also funded by the MoH. Does this cause any concern for your organisation? For other organisations? What do you think is Pegasus Health' role in working across special interest areas within the public health and primary health care sectors?

- D. Community and consumer involvement.
1. Do you happen to know how and whether the results of community needs assessment are incorporated into the Pegasus Health decision-making? What has changed from before the Global Budget began in 2000?
  2. Do you happen to know how and whether the community perspectives and consumer perspectives are incorporated into Pegasus Health decision-making?

Key phrases were selected from the staff interview transcripts and GP focus group to illustrate the major responses to each of the main discussion themes. The illustrative data are arranged in Table 82, **Appendix 8** according to the five themes for both staff and members to demonstrate the contrasting views of the two major stakeholder groups, as well as some inconsistencies within each group.

There were more staff interviews than GP focus groups, resulting in greater amounts of information from staff. Nevertheless, sufficient discussion occurred during the GP focus groups to reveal a number of important similarities as well as differences of perception between the GPs and Pegasus Health staff. Additional information was collected from the GPs via the posted self-administered questionnaire and is reported elsewhere in this document.

The data analysis showed some not-so-surprising differences in perception between the staff and the members regarding culture change, community needs assessment, community linkages, and responsiveness to community. In this in part due to the timing of the evaluation - taking place during the first year of the Global Budget contract and hence limited time was available for culture change to take place. For example, you would expect Pegasus Health leadership to confirm the culture and direction of the organisation and then this would be communicated to the organisation as a whole.

Both staff and members clearly referred to the Board as the source of all Pegasus Health decision-making. For staff, the Board clearly represents the members, but when the members spoke about the Board, it was as though they were referring to a decision-making entity that is quite separate from themselves. Neither staff nor members seemed confused about the various Pegasus Health roles or structures. This contrasted with the confusion expressed by many of their community provider colleagues who participated in the key informant interviews.

However, the members definitely wondered whether general practice is appropriately equipped to be involved in assessing community needs. Also, a number of the members were not entirely convinced that taking on a population health approach is what primary health care is all about. Several members questioned whether there has been sufficient and supportive rationale for determining the priority and start-up of new projects. It was clear that members were not aware of any existing Pegasus Health structures, mechanisms, or guidelines for prioritising projects or assessing community needs.

Another source of data from Pegasus Health staff was an informative focus group discussion with the team of Practice Facilitators. Establishing the team of six Practice Facilitators is one of the key mechanisms Pegasus Health has put in place since the Global Budget to help the practices get on board with the Community Care initiatives and all the big changes under the Global Budget. The primary role of the Practice Facilitators is to help the practices to take advantage of the new projects for the benefit of their practices as well as for the benefit of their patients. Each Practice Facilitator

has developed a relationship with approximately 15 practices that they visit regularly to provide encouragement and support. The personal visit and consistent support have proven far more effective for helping GPs and nurses actively participate in the new projects than any amount of letters, faxes, phone calls and e-mails.

One Practice Facilitator noted: "It's much harder to ignore one of us than a stack of paper on your desk".

Moreover, the practices seem to have an increased sense of making a difference, an increased confidence that they actually can have input into the organisation. The Practice Facilitators are backed up by the Support Co-ordinator who is readily accessible by phone and who accesses the variety of services offered by the Community Care project. The Facilitators highlighted the progress made over the last 12 months during a focus group discussion with the evaluation team.

### 1. Benefiting the patients.

*"Having somebody there to point out that the effect of these things is going to be beneficial for their patients, to say, now look, if you do this, some of your patients may get off the waiting list".*

### 2. Feeling part of the organisation, making and expecting a difference.

*"You can come back to the organisation and the process or whatever has changed and you can feed back to them [the practices] and they see their opinion and what they said has actually made a difference".*

*"When I took over the role, they [the GPs] didn't feel they were very much a part of Pegasus because they were just a little practice, and maybe they didn't agree with Pegasus philosophy, but there's been a huge shift over the last 12 months. Now these GPs are totally supportive, enthusiastic, and they've got the big picture".*

*"GPs are now actually more aware of some of the access issues. I had a GP mention the other day that he really thinks [Pegasus] should be looking at a head lice project because he keep seeing patients coming through the door with head lice. So they [the GPs] start identifying needs and sort of bring them back to us to feedback to Pegasus".*

*"We have a high proportion of Pacific Island people in one practice and they want to know this sort of thing. They expect Pegasus to be doing that, the cultural awareness course. They've got into that culture but only Pegasus has got the flexibility to do what we ask them now".*

*"I think GPs get a lot of satisfaction out of that, feeling that they can offer comprehensive and continuous care to their patients, which as been lost of late, but with various after hours surgeries and the Pegasus projects, they can offer more services and be that sole provider that can give everything to the patient".*

### 3. Changes in thinking and changes in practice.

*"I think they're more aware now of things like population health, like the group, not just the individual patient, looking more preventively at the health care as well. ... They can now sort of do it, when they're talking about things like disease management and they start thinking more about their wider community".*

*"You can see a real change in the thinking. It's more that they are health professionals therefore the health of the population rather than just reacting to who comes in. I mean it's a huge change and it amazes me how much the attitude has changed just over a year".*

*"I don't think this could have happened without a Global Budget, where it's just fee-for-service you're locked into the reactive sort of approach whereas you've got a Global Budget that gives you a chance to be active rather than reactive".*

*"I think all but one now belong to the education programme and I think that indicates there's been a real attitudinal shift in practices, not only the GP or the Practice Nurses, but actually both of them together, exciting".*

#### 4. Responsive to the community.

*"In the past they haven't been quite sure who to go to. They haven't been able to get the response they needed so I think they're more confident now they can ring the Community Support Co-ordinator".*

*"Of course Pegasus played a part in putting the Community Service Directory together with someone else. That's going to be on-line so that's ready access for them, isn't it?"*

*"...just slowly sort of thinking in terms of preventive care and diabetes, trying to link it all together. We've been talking to them for quite awhile about things like exactly that. That thing about walking groups and just starting from outside the practice so that they are seen to be a bit more taking part in the community and a lot of them are just starting to think about that a bit more. Perhaps we can and we will get the practices more involved".*

*"One of my practices had a big concern about youth suicide because the community had three young people kill themselves fairly close together. I'm not sure whether they instigated or everybody sort of talked about it in the community quite a bit, so they linked in with the local youth centre and started to sort of run sessions. It was a nice way to see the practice working with the community, but also benefiting from it because the practice was all part of it as well. It actually had that community feel".*

*"Now that Pegasus has taken the lead, encouraging practices to do more, the practices are actually jumping one step ahead and they're looking to see what else they can do to in response to the needs that they feel in their practice".*

*"It's not just doctors-nurses, also quite often it's the practice manager and reception staff who are involved as well. [in the patient relationship]"*

The Practice Facilitators are obviously pleased with the progress made since the Global Budget, the culture change in particular. They have clearly provided an important communication link between the corporate Pegasus Health and the practices. Establishing and strengthening this communication link has been an important priority for Pegasus Health. A number of examples of how this improved communication is spilling over into the linkages between the practices and their respective communities also came up in the focus group. The deliberate and strategic nature of these linkages is somewhat less obvious.

While, the patients are undoubtedly better served with the team of Practice Facilitators in place, the direct communication linkages between Pegasus Health and the community, and between the practices and their communities appear less structured and less strategic. Several advisory groups are in place, but the linkages between

them are not as clear, and the extent to which their respective terms of reference are mutually supportive should be further strengthened. The Practice Facilitators have been strategic and effective in working with the practices.

### Key informant interviews among community providers

The same themes and similar questions were pursued with the community key informants, as with Pegasus Health staff. The community interviews were the first to take place in the data collection sequence for the needs assessment topic. Each informant was affiliated with a specific community provider organisation representing a well-defined sub-segment of the Christchurch population, be it youth, children, families, people living with disabilities, refugees and migrants, the elderly and so on. As was revealed in the interviews with members of the Pegasus Health Community Advisory Board, most of these populations have apparently been identified by the CAB as targets for further investigation and potential project or service linkages with Pegasus Health.

All informants participated with good will and great interest in the evaluation process, clearly wanting to make a constructive contribution to improving opportunities and outcomes for all provider organisations and their clients. Every community informant expressed a strong desire for his/her organisation to achieve a true partnership with Pegasus Health, to maximise limited resources, minimise duplication, and to jointly promote improved health status. Each informant came to the interview well prepared, clearly having reviewed the themes and questions sent to them in advance. In several cases, the key informants had actually prepared written responses prior to the interview.

One of the key community key informants did not feel very informed about Pegasus Health and the Global Budget projects, primarily because the clients from his/her organisation usually seek and obtain primary care services from another community-based provider. Nevertheless, this informant hastened to point out that his/her clients are encouraged "to seek and build a relationship with their local GP, rather than go to what is probably a very good medical centre and maybe run the risk of seeing somebody different each time, not necessarily building up an ongoing relationship". Clearly, this community provider perceived the strong potential for a positive, sustainable doctor-patient relationship with Pegasus Health (and/or other) practices.

The following section highlights and provides direct quotations to illustrate the dominant perceptions and experiences expressed by a selection of representatives from community provider groups, including several CAB members.

#### 1. Philosophy, definitions, population health, culture change.

On the whole, the community informants perceived that community means the patients and clients who sought services from the Pegasus Health GPs. Those who served on the CAB considered that community for Pegasus Health meant all of Christchurch. The key informants spoke very positively about Pegasus Health' work keeping people out of hospital, providing home care and so on. But when it came to Pegasus Health' role in the community, most informants felt Pegasus Health did not have the training, nor necessarily the mandate, to work effectively in partnership with community groups.

*"I believe Pegasus defines the community as their patients only and their GPs only, without any real desire to involve others unless they are part of the Pegasus group."<sup>33</sup>*

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<sup>33</sup> Point of clarification – the Pegasus Health 'community care' initiatives have been available to other providers.

*They are very keen to have control of everything, so that is comes under the Pegasus banner. So, their definition of community is very narrow....And community providers are the people Pegasus refer their patients to and if they don't use somebody, then those organisations are not recognised as community providers...And once again, community care is the Pegasus care. Anything outside that is not community care".*

*"Pegasus is doctor driven, it's GP driven. It has a general manager and a support team, but they're very much in the background".*

*"From what I understand [from the Board] there was a need for primary care to abandon its old position...and if primary health was to take its proper place then it has to go to the community to make sure that the total health resources, and not just primary care, are best utilised".*

*"I think it means immediate care for specific illness or injury and a greater sort of public health approach".*

*"I think they would like to try to take an integrated care approach".*

*"They have a wonderful philosophy of community care, but it's just when they're 'talking the talk', they're not walking it at this stage. Maybe it just takes time to learn how to change their practice".*

*"I think [with the Global Budget] they were set up to provide better resourcing of limited funds, instead of one GP having access to X number of dollars. If they can be pooled by one organisation, then you can actually provide a better service to higher needs patients. So that's what I think they were funded for, that's what they were initially trying to do. But I think they've just seen the opportunity to expand and become a large organisation and I don't know if the patients are benefiting from it....I'm not convinced anyone's better off because of it".*

## 2. Needs assessment, prioritisation and project planning.

A number of the provider key informants seemed to feel that it is not and should not be, the role of Pegasus Health to conduct health needs assessment. This feeling was strongly reinforced by the providers' knowledge of the DHB's role in this area. However, several of the informants noted that they thought Pegasus Health should have been collecting and reporting on data from among at least their own patient population. As far as project planning was concerned, the key informants did not seem to be aware of an organisational strategy or planning process. They did not appear to have any idea how service priorities were determined or how Pegasus Health decides which new service or project to develop, nor whether the new services and projects were being evaluated. The word that was used on several occasions in the interviews to describe how Pegasus Health initiates projects and other activity was reactive rather than proactive.

*"It is [our] expectation...that health needs assessment is not just handed over to an organisation like a large IPA, like Pegasus, or any other IPA, but there's a responsibility there that the DHB include all health providers, particularly community ones".*

*"Well, I think if a service provider is serious about wanting to meet the needs of their prospective client group, then they do need to assess needs. It needs to be an ongoing process and I don't think it's something you can just hand over to somebody else. I think that if you're involved in it yourself, you're more likely to own that information too rather than pick up a report that comes from the DHB or whoever else does it. I think any service provider needs to be out there, trying to find out how they can improve their service".*

*"We are not aware of any [community needs assessment models employed by Pegasus]. Certainly I haven't seen any published information, but I'm vaguely aware of initiatives through my own GP that there has been work in respect to labs, after hours services, but these have been more to assist their own members be more efficient in terms of doing what they do rather than looking at the community needs per se".*

*"We've no idea at all how Pegasus responds to prioritise needs. I haven't seen anything published...except for what they have done as opposed to what they are going to do, but these are pretty straightforward things that one would expect them to do anyway, rather than being really innovative".*

*"To me, if primary care was actually doing the job, they could go to the DHB and say this is what it is like, there is so much percentage of this, there is so much percentage of that, these are the health care needs as far as we know, as far as we have been able to evaluate, not just the ones in our practice, but the needs of the population. Pegasus should be ascertaining the health care needs of the population in their area".*

*"They are good at analysing what they do...but you're not getting the whole picture of what is needed in Christchurch, current trends and demands for the future. Our system here can actually monitor the trends, and how much service has occurred in three budget areas, and so on....We have a system here, that Pegasus know about, that is actually more of a global picture for Christchurch than Pegasus have. But some of our GPs don't want Pegasus to be a part of it, so we can't give information out....according to the Ministry of Health, no one else in the country has the kind of database we have".*

*"From what I gather, they do involve themselves on an ongoing basis with needs identification and they also, think they do things like patient surveys and patient evaluations and they have their advisory boards, their communications with other groups, such as Ngai Tahu and Pacific Island and seven areas the CAB has identified, which include Pacific Island and Māori, but also youth and women and men, new migrants, I mean refugees".*

### 3. Community collaboration and partnerships.

It was interesting to note that the community informants almost unanimously felt that the persistently competitive environment for primary care funding is not, and should not be, a deterrent to provider groups for working effectively together to develop and deliver on agreed standards of care and protocols for ensuring consistency and quality of care. However, a common perception was expressed that Pegasus Health want to control the interactions with other community providers and control the budgets.

The community providers are aware that Pegasus Health has been repeatedly urged by the MoH to work with other providers to manage their budgets. The MoH has urged community providers to work with Pegasus Health, and in some instances, to actually seek budget support from Pegasus Health. At least one provider expressed frustration with the Pegasus Health referral process.

A number of experiences with Pegasus Health concerning specific projects were shared in the course of these interviews. Many of them provided reasons why community providers are not yet convinced that Pegasus Health wants to collaborate. These experiences have resulted in a lack of trust, at least from among the providers who participated in the key informant interviews. Pegasus Health' intentions were seen as controlling and less than co-operative. One informant used the word 'interested party' to describe the way Pegasus Health interacts with other community provider groups. This description suggested a lack of participation, involvement or

commitment. Despite these experiences, the providers expressed their optimism. Most of them looked forward to a future where on-going relationships and true partnerships with Pegasus Health could develop. The answer for some was that Pegasus Health needed to take a hard “look at its organisational structure, how it operates, how it communicates, and how it conducts its business”.

*“Pegasus has been invited to be a part of a ‘loose’ provider association that meet with MoH to discuss these issues, but they refuse. One particular issue at the moment is the primary referred budget and Pegasus want to control that budget. Pegasus are only part of a group of GPs that can refer to that particular budget, but there are other IPAs and independent GPs who also access that budget. Pegasus have approached the MoH to manage that, the MoH said ‘no’ but invited Pegasus to work with the providers to manage the budget.”*

*“I thought all GPs need to care about these things, each of the different groups who are marginalised. I know before the Global Budget they, or at least one of the registrars, took up the whole refugee and migrant issue and really tried hard to go along and find out what they wanted Pegasus to do, but it was down to a personality thing. I don’t know if it ever got off the ground after the registrar left. My impression with all the community stuff they’ve been doing is it’s just window dressing, because you never see anything happen....And other groups, like I know lesbians find it really difficult to find a doctor who’s friendly”.*

*“I’ve read the Pegasus ads in the newspaper, which are lovely and they would appeal to people like me, but I’m aware that a lot of my client groups don’t read the paper. So I think if they really want to link in with people who work with at risk young people, well then they need to have different strategies”.*

*“We want to work closely with GPs, but we also have something we don’t want to lose”.*

*“In terms of the future, we are looking to develop a strategic relationship with Pegasus, to break down some of the barriers and the mistrusts that we have had with Pegasus and to improve relationships. We’ve talked about making joint submissions, looking to work together, and using our individual strengths”.*

*“I’d be interested in developing something, a partnership arrangement because I think we have better access to the client group than they do and we could develop something together that would focus on some of the health issues that are really important”.*

*“It seems to me it’s in Pegasus’ best interest to work in collaboration/partnership with community groups for a variety of reasons, 1) to ensure good access and good needs work to be sure they are actually targeting the needs of the people, and not just the needs they [Pegasus] think exists and 2) in terms of Pegasus’ public profile among agencies in town, it can only be improved by working in partnership with community agencies”.*

#### 4. Responsiveness to the community and accountability.

An important question raised by several of the key informants concerned the whole issue of how Pegasus Health GPs approach somebody from a different culture. As a result of this discussion, a very clear and practical suggestion was made for helping Pegasus Health members become sensitised to cultural differences and preferences to avoid seriously offending someone from a different culture. From this informant’s perspective, a primary motivation for offering cultural training to all GPs would be to

“facilitate some feedback from clients to the practices and to make sure that the GPs and Practice Nurses are better well equipped to help them”.

Another theme emerged repeatedly during the community interviews that is related to the theme of responsiveness. A number of key informants from the provider organisations expressed serious concern about what they perceived to be a lack of accountability. Informants clearly expect the funder to actively monitor Pegasus Health’ performance, and they expect Pegasus Health to demonstrate its accountability not only to the funder, but to other community providers, and to the community as a whole.

*“We all [other community providers] have a concern with Pegasus as to what their real intentions are. We have got a perception that they want to control all of primary care. We don’t believe they have the mandate to represent all primary care providers, whether GPs or allied health professionals. We certainly wish to see a transparent process in the awarding of any contracts. We wish to see that the process is performance-based, that there is appropriate reporting of the performance against objectives and that they [all of us] are monitored regularly so there is accountability for these contracts”.*

*“What are the Pegasus’ project measures in terms of success? Looking through this document [the Global Budget Report 2000], you could run several buses through it. It’s so open, it’s not very tight and really for \$73 million, one would have expected greater definition in terms of outputs expected”.*

*“A lot of us involved in health organisations give our time free in government’s matters. We know that the Directors of Pegasus Health treat themselves to reasonably healthy directors’ fees and that is a sore point among a lot of community health providers, so there needs to be a lot more accountability in terms of the money that is spent”.*

## 5. Community and consumer involvement.

Several of the informants knew about the Community Advisory Board, but were not necessarily aware of its role and how or whether it represents the community. None of the informants knew of consumer representation or community involvement in Pegasus Health decision-making. One informant offered a constructive recommendation that Pegasus Health might like to form a community reference group whose role would be to review and critique, from a consumer perspective, any new initiatives proposed by Pegasus Health. It is apparently not uncommon for many of the community provider organisations to have consumer representation on their decision-making bodies and in some cases, to employ consumers in their workplace. This was apparently the case with several of the organisations represented in the key informant interviews.

*“I used the word ‘trail blazing’ before, this is what it is, the CAB. I’m not aware of any other group around the place and as I said at Christmas time, I just didn’t want complacency to set in because of the fact that we hadn’t done anywhere near half of what we were doing. We were providing a sounding board for Pegasus and so on, but the bigger job was to be a community advisory board”.*

*“What we [the CAB] has to sort out, has to find a door that opens [for each of the sub-segments of the community targeted by the CAB]”.*

*“Well, I think a community advisory board’s a really good thing, but I know, except for the Deputy Mayor, I have no idea who else is on that board. ...Another that worries me is they may or may not have youth representation but people who don’t have a lot of*

*experience with youth participation or representation then start to dabble in it can mess things up enormously”.*

*“I don’t know if the CAB meetings are open to the public. My guess is there wouldn’t be a problem....I don’t think the CAB has discussed [forging alliances with other community boards]. But I have suggested we move our meeting location around to various organisations we represent, cultural settings as well”.*

*“I think the Papanui practice used to have a consumer group. If each practice had a consumer group and sat down and had coffee or did some education about how to use your doctor best, you know, just little things.... Then you can negotiate and you can say ‘well, this is a very long list, but we’ve only got a short time, so which bits of the list would you like to do first and we’ll do the next bits next time’. Would make it so much easier”.*

*“I would probably say there are two major functions [of the CAB], one is to try to initiate these forums [the Youth Forum] to find out from people in the community what they really need and secondly just to be a voice to bounce things off. The Pegasus people bounce off us, say, ‘we’re thinking of doing such and such, what do you think of this?’ and we [CAB] share our opinions. Just a lot of brainstorming, discussion and debate....The communication with the community is fairly informal really”.*

In summary, the community key informants offered a number of very constructive and practical suggestions for the future for various approaches to working in partnership with other community providers with which they would expect a large IPA to become involved. These suggestions appear in the conclusions and moving forward section.

#### **Focus group discussions among targeted consumers/patients**

Two consumer focus groups were convened on consecutive days. Four men and two women who have received services as part of the Community Care project participated in the first focus group discussion. Five men and three women who participated in the Pegasus Health Diabetes Case Management project, made up the second focus group discussion. All participants in the second group were aware that they were selected because of their diabetes. Several of the participants in the first group appeared to be unfamiliar with Pegasus Health’ Community Care project, but were familiar with Pegasus Health’ services.

The discussions proceeded according to the FGD guidelines and all consumer members for each group participated in the lively and informative discussions. The participants seemed to enjoy the opportunity to share their views and, in many cases they shared their own personal stories. At the end of both groups, several participants asked if there “would be any more of these sort of sessions”. They clearly indicated their desire to discuss similar topics with their Pegasus Health GPs and nurse practitioners, and said they would welcome the opportunity to provide periodic feedback to their GPs about their services.

The consumers were very expressive of their sincere gratitude for what they consider are excellent services provided by their Pegasus Health GPs and nurses. They were also grateful for the other community services accessed for them by Pegasus Health. It was also clear that they feel they have a relationship with their GPs and nurses.

*“I can’t speak highly enough of them at the Pegasus there because we, you know they just more or less bent over backwards for the service they’ve given us and that’s my experience anyway for a start”.*

*“The GP came round with the letter. He was looking to see, you know, ‘oh, is that your wood out there, and ‘do you manage your fire?’ and just checking to make sure that he*

*could see pots and things ready to get a meal or meals ready and that sort of thing. Just bringing everybody closer together and easier. The doctor isn't up there on his pedestal any more. He's down with us and you can talk to them and as you say, the Practice Nurse, you ring and you can talk and they will help you access things because it isn't always easy to know how, when, where and why, you know, to get help, but I think it's improved a lot in the last year or two".*

*"I find there's a great co-operation between the doctor and the Practice Nurse, and the Practice Nurse and yourself".*

*"I just feel we've gone from being a number to a person again, especially with the doctor relationship. And they explain everything. Before, they'd be talking way up above your head and you'd ask them and they'd sort of still side-step what they are trying to tell you".*

*"Yeah, I still go twice a year for blood tests and for the tabs for the meter. One visit I pay and the other one is free, so I'm quite happy with the service. I get a really good going over from my GP so I have no qualms about that at all. So I have noticed that difference".*

The consumer participants all seemed very much aware that the primary aim of the Community Care project is to keep people out of the hospital.

*"I think that one of their aims is working to keep people out of the hospital and in their own homes. And if you can get the help to do that, doesn't it make sense? I mean it's a lot cheaper, for instance. I mean I've got osteoarthritis and they have organised that I have somebody come in and do the electrofluxing and things like that, that I can do, but they cripple me, so instead of becoming worse and getting crippled and need more help, my doctor has instigated the help to stop me from getting worse and it keeps me out of trouble, you know".*

*"Not only keeps us out of the hospital, but it makes a patient like me feel more secure. I normally go into hospital about four or five times in a year, but now I know, like everybody here has said, everything's there on tap now. You've only got to ask and you shall receive. Yeah. And it makes the patient feel a lot better you know.... I don't have to sit around sort of, you know, worrying about it".*

*"That means life really is for living".*

When asked if they had noticed any changes to Pegasus Health in 2000, since the Global Budget began, a number of things were noted, including increased services in the home. A few of the participants in the first group were actually newcomers to Christchurch and couldn't speak comparatively. On the other hand, improved health care was one of the main reasons these participants had moved to Christchurch from more rural areas.

*"I think in my case the practice has made the service more obvious".*

*"Well, I noticed a change in personnel. Or rather, it's a change in personalities, from the top to the bottom".*

*"Yes, my mother, it was only myself and my mother at home. My mother passed away in February last year. The previous two years, she was old, but she wasn't going out of the house. They came. I mean they came several times because they were giving her a blood test fairly regularly and I mean that was no problem. They just came to the house. I mean it was something new. It was very good".*

*“The other thing I find very good is that place on Bealey Ave. Some time they opened that Observation Unit. I think it was August last year. I had an experience myself....I’d stopped eating and I eventually stopped drinking and I mean they just took me. They bundled me actually straight into there for the day and they had me on this saline solution and I mean it was the first time that I’d had the experience as I say that place had just opened just a matter of months before”.*

Both groups were invited to comment on the role of Pegasus Health in the community and to talk about whether they think Pegasus Health GPs and nurses have a responsibility to be responsive to the community. The first group required some probing to urge them to discuss services in the community. Once they got going, most of the discussion concerned perceived problems of access. They began to think very inclusively of many different ethnic and marginalised groups.

*“Well, there’s no reason for anyone not to be able to be in contact with them [Pegasus practices]”.*

*“With some people, cost would be a big factor”.*

*“The process is still there actually. You’ve still got to go from point A to point B, the only factor is distance, how far do I go? Can I afford the fuel to go? I’ve got to catch a bus to go. It’s a hassle to get there and also the service you get there, how long you have to wait....Once again, cost is a factor and travel is a factor. It depends on age, how ill you are, do you have young children to get to the doctor? So there’s a range of factors which will affect the individual people in the community, ethnic grouping, Māori, Pacific Islander, Chinese, Sudanese”.*

*“Language is a barrier. In fact, communication is quite a [an access] factor. If you can’t express yourself as to what’s wrong, you may have a Ethiopian refugee that’s there, sort of points to the ear but he’s got a tooth ache, you know to access what his problem is, is really very difficult”.*

*“They’ve got to be responsive to people’s needs”.*

*“Yeah, and the people dictate whether they’re going to go to a doctor or not. So it’s, I mean, it’s two ways, the doctor has a responsibility to the community, if they present themselves. If they don’t present themselves, then he doesn’t know what’s going on”.*

*“I think their culture [Māori and Pacific Islander] is being invaded by the Pakeha doctors or the Pakeha medical fraternity. You’ve got to target these people, I think”.*

*“Well, the Islanders, Pacific Islanders, because their thought patterns are different. Their language construction is different also and sometimes, when I was working, I found it very hard for them to express what they wanted. When they meant ‘no’, they meant ‘yes’, and ‘yes’ meant ‘maybe’ “.*

The groups were then asked about community needs and priorities as well as how Pegasus Health might target people’s needs. The priorities listed were all medical conditions. When probed further for health problems, the consumers began to come up with a broader range of community issues. Clearly they felt the GP practice should be responsible for identifying and responding to the needs of their own patients but also the needs of others. Several of the consumer participants came up with a few creative ideas for additional services to help meet the needs, (and they wondered whether the aim would be to help recruit more patients for Pegasus Health).

Schools and youth were mentioned as appropriate Pegasus Health targets and someone recommended a community drop-in centre where anyone could go to get information about health services. Other members of the first group noted that

community is a difficult thing to define these days, saying with everyone moving around more frequently and people keeping to themselves, communities were no longer stable.

*“He has a patient on his books and he knows there is a problem there and hasn’t seen that patient for a while, he should target that patient. Go and see them or send somebody around to see them to see how they’re getting on”.*

*“Well, regardless of whether they’re on the books, if someone needs the doctor, can’t afford to go to the doctor, I’m suggesting that a fund be put aside through the Pegasus group and the Funding Authority, that if the doctor is called out, that fund covers the doctor. Yeah, I mean when you go to WINZ to get special funding...if they can’t take me on faith, why should I bother”.*

*“Well, who’s going to say which [health problem] is the most important? It’s a never ending list: cancer, asthma, angina, arthritis, diabetes, alzheimers”.*

*“Mmmm...health problems? When I’m driving around and see school kids and it’s raining like crazy, and all they have on is shorts and shirt sleeves. They’re out there by the hundreds and of course a couple of days later, they’re at the doctor’s”.*

*“Education, start early. Target teachers. Once again, we could target these children at risk. If you’re sort of going to break the cycle as I say, to go back to the children, they’re half dressed and it’s raining. They in turn get married and have children. You got to start young”.*

*“I know it’s all patient recruitment, but that’s another access to the community. [through the schools]”.*

*“I think one thing the community does need is somewhere you could go to find out what goes on in the community or what’s available”.*

*“...there isn’t any community because nine out of ten people don’t know the next door neighbour and if they were lying sick, you wouldn’t notice it you see. The days when you used to know everyone on the street are gone”.*

*“The community will only come together when they have a common interest shared. I think we’ve lost the ability to help each other out. We’ve gone back into ourselves”.*

For the consumers who participated in the two focus group discussions, the face of Pegasus Health is definitely the general practitioners and nurse practitioners working in the Pegasus Health practices throughout Christchurch.

### **Vignettes**

Finally, to bring another dimension of the human face into the evaluation picture of Pegasus Health in the community, a number of vignettes or stories were provided by Pegasus Health staff. The vignettes presented in **Appendix 11** offer illustrations of Pegasus Health efforts, since the Global Budget, to increase co-ordination, co-operation, and/or integration with other community service providers. The initial investment of time and energy in networking and getting to know people was time well spent for the Community Project Manager to build trust and credibility for gaining access to a large number of community providers and organisations.

## Conclusions and moving forward<sup>34</sup>

Implications for moving forward have been distilled from the findings in response to the following key questions:

- why is Pegasus Health engaging in community needs assessment and for what purpose?
  - what are the implications of what Pegasus Health has learned in the first year of the Global Budget implementation that will strengthen their integrated care approach, their population health focus and their responsiveness to and collaboration with communities?
  - what are the essential building blocks required for a primary care organisation to be successful in adequately assessing, prioritising and responding to community needs?
  - what are the implications for informing the national primary care priorities for working across sectors?
1. Pegasus Health should clearly define its primary objective for carrying out any future population health/community needs assessment. The primary purpose of health needs assessment is usually to provide much of the evidence for decision-making and to make primary care more strategic, more effective at improving the health of the community. This task should be undertaken in consultation with other stakeholders who have an interest/responsibility in this area, for example, the Canterbury District Health Board.

The evaluation data from most of the different stakeholder groups point to a persistent lack of clarity in this regard. As one of the key informants put it:

*"We have discovered the need to be absolutely clear about setting objectives which again was something that was more intuitive earlier. Often what we did and what we were going to do wasn't written down. We're actually finding that we should be doing a lot more of the documenting during the planning. Put the role of health needs assessment in the middle of the programme planning process".*

2. A structured rationale and approach should be adopted for proposing, designing, and implementing projects and strategies that respond to the prioritised needs, based on sound population health, health promotion, and primary health care evidence and are most likely to be effective. To date, so many new and innovative projects have been started without a well-founded set of criteria for developing, maintaining or rejecting new initiatives.

The Ottawa Charter provides a framework for developing a comprehensive and strategic approach for planning and implementing programmes. Applying this framework should help Pegasus Health consolidate its multiple projects and portfolios that are currently not integrated. Pegasus Health deserves to start working towards long-term, sustainable programmes whereby a significantly increased contribution to building community can be made.

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<sup>34</sup> This section provides suggested actions for moving forward. The process by which these actions are implemented is the responsibility of Pegasus Health, in consultation with other stakeholders, and should be assessed in terms of timelines, financial and staff resources, service planning, community needs and priorities, health policy and other relevant factors. The list is not meant to be exhaustive but rather illustrative based on the evaluation results.

3. Pegasus Health needs more people who are trained and competent in population health.
4. Pegasus Health should seriously consider its commitment to involving community in its decision-making. For example, the Chair of the Community Advisory Board could become a member of the Board of Directors.
5. The Practice Facilitators are successful. The communication between the practices and Pegasus Health is significantly enhanced because of them. The same model should be used to create, establish and maintain stronger relationships in the community. For example, an infrastructure like the one that supports the Practice Facilitators could be established to support a group of Community Link Persons, the Community Link Team, to tie together all community outreach and collaboration. Alternatively, with the Practice Facilitators' model becoming more and more institutionalised, perhaps their role could expand to include some of the community liaison work on behalf of and with the practices.
6. Pegasus Health should map the existing and the desired structures that foster key linkages and the critical relationships with the community and other community provider groups; first, the internal structures, such as information systems, staff/organisational structures, portfolio structures, decision-making structures and any other systems; second, the external structures, such as networks, committee memberships, on-going collaborations, etc.
7. The following types of data should be routinely collected and analysed – routine practice information, hospital data, data from other community service providers, national and local data, the prevalence of disease and health problems and mortality data, community data sources such as surveys, rapid appraisals, practice profiles, partnerships and linkages, community and organisational structures, etc. This will require cooperation among providers in terms of availability and access to health data while being cognizance of patient confidentiality and privacy issues.
8. Pegasus Health should apply a community assessment methodology within an overarching framework or systematic structure for integrated care and to put in place a mechanism for tracking and monitoring key process, output, impact and outcome indicators. This framework will go a long way to help Pegasus Health demonstrate increasing integration with the overall health system and increasing benefits to consumers. Key process indicators will be those that attest to strengths of the systems and the links that have been put in place to enhance and achieve collaboration.

Different monitoring methods can be used that include:

- ongoing or regular review of current literature
- ongoing or regular review of current policy
- case studies of current integration (both of vertical and horizontal integration)
- an assessment of community provider linkages and partnerships
- a survey of individuals, GPs, hospital and other community health service providers
- a situational analysis of referrals from GP to other services, including support services
- observing, noting, tracking the contextual and environmental changes
- documenting systems and procedures for facilitating referral continuity and management of care

- identifying sustainability factors
  - regular assessment of the aggregated rates of individual health status
  - document community support, such as whether community environments, social norms and social policies support health
  - assess consumer (Pegasus Health and non-Pegasus) satisfaction, at the practice and project levels, as well as in the wider community, looking at variables like, satisfaction with interpersonal aspects of care, attention given to psychosocial concerns, cultural competency and sensitivity of service providers, provider's technical competence, access to and quality of services (Blumenthal, 1996; Buetow et al. 1995; Wensing et al. 1998).
9. A patient enrolment scheme should be institutionalised that tracks the discrete enrolled populations for each practice. When patient enrolment procedures are in place, it will be possible to conduct practice-based needs assessments by means of case note analysis, complemented by other methods such as rapid appraisal, key informant interview and community consultation to build a community profile for each practice area.
  10. Pegasus Health should specifically target health services and improve access in areas with high deprivation and high morbidity rates, including and especially targeting resources to Māori and Pacific Island communities.
  11. Pegasus Health should follow the Ministry of Health's priorities and guidelines in the National Health Strategy, Striking a Better Balance, The Primary Health Care Strategy, and The New Zealand Disability Strategy, Making a World of Difference Whakanui Oranga. The selection and prioritisation of projects should also consider the inequalities criteria in Striking a Better Balance (HFA August 2000).

In addition, a number of practical suggestions were made by various key informants to help Pegasus Health enhance its ability to assess community needs and be responsive to the community. Some of these suggestions were noted in the results and discussion section above. Others include:

- create a consumer reference group for critically reviewing proposed projects and feeding back consumer perceptions
- subcontract the development and implementation of cultural advisor training for refugee and migrant cultures
- enable the Community Advisory Board to elect its own Chair and to be represented on the Pegasus Health Board
- identify members who have adolescent health expertise and interests and pilot a school-based clinic programme
- convene informal consumer groups for each practice.

## HEALTH STATUS MEASUREMENT

### Background

Ongoing health status measurement is an important part of the planning process of a health care organisation. This ongoing measurement helps ensure that appropriate priorities are made, sufficient resources are allocated, effective services are delivered and appropriate evaluation is undertaken to determine that the organisation is improving health outcomes for the whole of its catchment population, and specifically those people with greatest health needs.

Health status measurement is often undertaken using a traditional biomedical definition of health that mainly includes mortality and morbidity data related to a number of important diseases. Although this information is very important it is also essential that data describing a broader view of health that includes information about psychological and emotional wellbeing are also incorporated into the assessment of health status. Other culturally-based elements such as contact with family and tribal identity may also provide important measures of health status for Māori.

Age, gender, ethnicity and socio-economic status are key determinants of health status and any measurements of health status will need to be adjusted (where possible) to allow for the influence of these factors. NZDep96 is a valid measure of a geographic community's socio-economic status, the measure summarises several indicators of social and economic deprivation in the community by means of census data. The indicators include measures of unemployment, sole-parent families, marital status, households with no cars, rental housing, low income, education and income support.

Measuring the health status of the population served by Pegasus Health pulls together data from many sources and provides an overview of the health of the people in the region. To be most useful, health status measurement should utilise data that is both readily available and frequently updated. Assessing the health status of a large population is a complex task that must largely draw upon existing information to ensure that health status profiles can be obtained in a timely manner to inform the planning cycle of an organisation. In addition, to be a valid measure of what has changed it is important that similar information should be collected in comparable ways.

The HFA and the MoH already undertake health status measurements at regional and national levels. The HFA has described the health status of people in Christchurch City in relation to five localities that were constructed by ranking the city's suburbs according to a socio-economic scale that used census-based data and then clustering them into approximately equally sized groupings. The MoH has completed a series of national health surveys obtaining health status information from individuals along with other data about their use of and preference for health services.

## Secondary care inpatient utilisation

### Secondary care analyses<sup>35</sup>

Extreme caution should be taken in considering the results of the secondary care analysis. This is because of the very limited time period for which data were available post Global Budget.

All valid NHI numbers in the Pegasus Health patient registers were provided to the MoH for matching to the National Minimum Dataset for Secondary Care. MoH staff performed linking of the NHIs to the NMDS and then the linked NMDS data was returned to the evaluation team for analysis. As noted earlier, there were some duplicated NHI numbers in the 2000 patient register. This related to 114 secondary care contacts in the NMDS in the 2000 year. In some analyses these patients had to be excluded because of uncertainty about their primary care utilisation. This has the effect of reducing year 2000 Pegasus Health patient contacts by 114, or 0.23%. The exclusion of these contacts has no effect on the outcome of the analyses. In 1999 there were 94.6% of Pegasus Health patients with a valid NHI number, while in 2000 there were 93.9% with a valid NHI number.

Table 28 below shows gross utilisation by admission type code, and includes all health specialties (i.e., medical and surgical). This table is presented as *background only*, setting the scene, as the admission type code “AC” does not accurately define acute admissions as they are reported by CHL. It includes all medical and surgical admissions.

Table 28: Secondary care inpatient admissions by year for all CHL admissions

Admission type code	1999		2000	
	Patients	Contacts	Patients	Contacts
All admission types	49,718	74,185	52,331	77,637
Arranged admission (AA)	11,186	15,414	11,708	16,275
Acute admission (AC)	25,447	34,203	26,157	34,989
Waiting list (WN)	13,833	16,177	15,380	17,859
Arranged admission, ACC covered (ZA)	567	676	427	506
Acute, ACC covered (ZC)	5,533	6,117	5,878	6,405
Waiting list, ACC covered (ZW)	1,461	1,598	1,448	1,603
<b>Total inpatient days</b>		<b>289,515</b>		<b>294,908</b>
<b>% of contacts with same day discharge</b>		<b>29.5%</b>		<b>30.1%</b>
<b>Sum of costweights</b>		<b>78,803</b>		<b>78,854</b>

While DHB population could be used as a denominator, presenting the data in nominal form was elected because using the DHB population means using the same denominator for both years. This would add nothing to the interpretation. Contacts are defined as the number of separate discharges recorded in the NMDS. Patient numbers should not be added together as individual patients who can have several different admission types during the year.

<sup>35</sup> As mentioned elsewhere in the document the evaluation applied a before (1999) – after (2000) research design whereby the evaluators examined information in the year prior to the implementation of the Global Budget contract compared with information relating to the first year of operation of the Global Budget contract.

Table 29: Changes in admissions 1999 – 2000: all CHL admissions

	% Change between 1999 & 2000	
	Patients	Contacts
Total utilisation	5.3	4.7
Arranged admission	4.7	5.6
Acute admission excluding neonates	2.8	2.3
Waiting list	11.2	10.4
Arranged admission, ACC covered	-24.7	-25.1
Acute, ACC covered	6.2	4.7
Waiting list, ACC covered	-0.9	0.3
<b>Total inpatient days</b>	<b>1.9</b>	
<b>Sum of costweights</b>	<b>0.06</b>	

Overall there was a 4.7% rise in hospital admissions between study years (1999 versus 2000).

### Length of stay

On the NMDS, patients admitted at any stage in 1999 could logically have a discharge date in 2000, effectively increasing their maximum theoretical length of stay from 365 days to 730 days. To adjust for this, length of stay was calculated on the basis that no patient admitted in 1999 could have an event lasting longer than to the end of 1999. A similar adjustment was made for 2000 patients. This adjustment has the effect of removing outliers from 1999 data that do not feature in 2000 data.

The proportion of secondary events that were “same day” – meaning admission date and discharge date are the same – has increased (29.5% to 30.1%) with statistical significance ( $\chi^2 = 6.5$ ,  $df = 1$ ,  $p = 0.01$ ). The mean length of hospital stay has reduced from 3.9 days to 3.8 days and the mean difference in length of stay between years was 0.1 days (95% CI 0.04 – 0.17,  $p = 0.003$ ). There is some concern that the length of stay result is of little public health significance, particularly given the confidence interval lower bound being so close to zero. It is believed that there is little of importance with respect to length of stay or same day admissions that can be directly inferred to the Global Budget.

### Costweights

There has been a 0.06% increase in overall costweights from 78,803 in 1999 to 78,854 in 2000. The dollar multiplier excluding both tertiary adjuster and GST was: \$2433.62 in 1998/99; \$2,399.22 in 1999/2000; \$2,487.16 in 2000/2001. The implication of the increase in costweights in dollar terms is an increase of 1.35%, from \$190,295,817 to \$192,865,475. The mean costweight in 1999 was 1.062, and in 2000 was 1.016, being a mean difference of 0.047, 95% CI 0.029 to 0.064. This amounts to a mean dollar cost per admission in 1999 of \$2,565, and in 2000 of \$2,484, a mean decrease of \$80.96, 95% CI \$39.37 to \$122.53. This change in mean admission cost is statistically significant ( $p < 0.001$ ), and it is considered to be of minor public health significance.

**Key result: There has been a small reduction in mean cost per admission between study years.**

Within the framework of the Global Budget, Pegasus Health sets itself clear goals with particular regard to the primary/secondary interface. The first goal listed was to reduce secondary care expenditure on acute medical conditions by \$6 million in 2000/2001. Their success in achieving this goal could not be fully evaluated, as the evaluation periods are different from the fiscal periods and data are not available through to June 2001. However, trends and differences could be identified between 1999 and 2000 calendar years.

Table 28 earlier shows a classification of acute admissions; however, the classification is a little misleading. CHL describes acute admissions as all medical specialty admissions from the AA, AC, WN, ZA, ZC or ZW admission types, and excludes admissions that are not a DRG case mix purchase unit. This is largely nationally consistent as specified by HFA/MoH, though WN and ZN are included for the purposes of a risk sharing arrangement between CHL and HFA.

Furthermore, within the NMDS reporting framework patients being transferred from Canterbury to Burwood Hospital for certain health specialty codes are recorded as a discharge from both facilities, effectively showing up as a double entry for what CHL defines as a single event. The NMDS data extraction performed by the MoH has incorporated this adjustment. All subsequent analyses indicating acute admissions conform to the definition given in this paragraph.

Every effort has been made to align calculations with actual utilisation data provided by CHL. Actual acute costweights for the 99/00 year were 27,472 according to CHL. Calculations direct from the NMDS using the same acute admission definitions, returned an estimated actual costweight total for the 99/00 year of 27,629. This is 157 costweights higher (0.6%) than CHL figures. It is believed that this is an acceptable margin of error in the wider context of the evaluation.

Table 30 below shows the number of contacts and number of patients by correctly defined acute and non-acute admission type by half year. Table 31 examines costweights and expenditure by acute and non-acute admission type by half year. Note: that column summations do not equate exactly with figures presented above due to rounding errors.

Table 30: Acute/non-acute admissions: all CHL admissions

	1999			2000		
	First half	Second half	Whole year	First half	Second half	Whole year
	Patients					
Acute	9,242	10,726	18,195	9,709	10,834	18,763
Non-acute	18,697	19,658	35,757	20,393	20,197	37,951
	Admissions					
Acute	11,829	13,945	25,774	12,442	14,262	26,704
Non-acute	23,728	24,683	48,411	25,510	25,423	50,933

Table 31: Secondary inpatient costweights and expenditure by whole and half year: all CHL admissions

Admission type	1999		2000	
	Costweights			
	First half of year			
Acute admissions	12,252	32.3%	12,340	33.3%
Other admissions	25,670	67.7%	24,719	66.7%
First half year total	37,922		37,059	
	Second half of year			
Acute admissions	14,710	36.0%	14,761	35.3%
Other admissions	26,170	64.0%	27,034	64.7%
Second half year total	40,880		41,795	
Whole year acute total	26,962		27,101	
Whole year other total	51,840		51,753	
Whole year total	78,802		78,854	
	Dollars			
	First half of year			
Acute medical admissions	\$29,798,366	32.3%	\$29,607,195	33.3%
All other admissions	\$62,409,245	67.7%	\$59,308,064	66.7%
First half year total	\$92,207,611		\$88,915,259	
	Second half of year			
Acute medical admissions	\$35,292,075	36.0%	\$36,711,869	35.3%
All other admissions	\$62,796,130	64.0%	\$67,238,345	64.7%
Second half year total	\$98,088,205		\$103,950,214	
Whole year acute total	\$65,090,441		\$66,319,064	
Whole year other total	\$125,205,375		\$126,546,409	
Whole year total	\$190,295,817		\$192,865,475	

Both tables present material by half year because it is considered appropriate to compare spending using only data relating to the periods 1 July to 31 December 1999 and 1 July to 31 December 2000. This allows for more focus to be given to Global Budget initiatives that came on stream during 2000 and that could realistically be expected to have some learning curve aspects to achieve significant results.

Table 30 shows the number of patients admitted acutely in the second half of each year rose by 1%, compared with 5.1% in the first half year. The number of acute contacts in the second half of each year rose by 2.2%, compared with 5.2% in the first half year. This indicates a trend that the growth rate in acute patients and contacts is declining. A similar trend is evident from the costweight figures, which grew by 0.3% in the second half of the year, compared with 0.7% in the first half of the year. These trends toward reducing growth may be the result of increasing impact of Pegasus Health acute initiatives over time; however, this cannot be proved from this analysis. This is because of the short evaluation period, anecdotal evidence of a particular mild winter in 2000, and uncertainty about the effects of CHL initiatives running concurrently. The evaluators were unable to verify if this is a typical pattern of admissions. This result requires further investigation examining post-2000 data which was beyond the time period of this evaluation.

**Key result: Although acute admissions are still rising, the rate of rise in number of patients has fallen from 5.1% to 1%, and the rate of rise in number of admissions has fallen from 5.2% to 2.2%. The rate of rise in costweights has fallen from 0.7% to 0.3%. However, it is not possible to confirm that this is a direct result of Pegasus Health initiatives under the Global Budget.**

Table 31 shows that acute expenditure has risen by \$1,419,794 (4.0%) in the second half of the year. This compares with a decline in acute expenditure in first half year of \$191,171.

In order to estimate the likely cost effect over the entire 2000/01 financial year, the following calculation was performed.

Actual costweights 2 <sup>nd</sup> half 2000	=	14,761 (A)
Estimate of whole year costweights	=	A * 2
	=	29,522 (B)
Actual costweights 99/00 ex CHL	=	27,976 (C)
Increase in costweights 99/00 to 00/01	=	B – C
	=	1,546 (D)
Estimated total cost increase	=	D * \$2,487.16
	=	\$3,845,149 (E)
Service contract PH contribution	=	E * 0.5
	=	\$1,922,574

The result of this calculation is Pegasus Health that is estimated will be required to pay MoH \$1,922,574 excluding GST. However, this figure excludes the tertiary adjuster so it is an underestimate. It was not possible to include the tertiary adjuster in the calculations. CHL estimates that Pegasus Health liability for acute admissions will be \$2,250,000 excluding the tertiary adjuster (Key informant interview: Chris Hoar, CDHB).

**Key result: Total expenditure on acute admissions is estimated to rise by \$3.85 million in 2000/01.**

The service contract specifies that all medical CHL acute admissions are covered under acute initiatives. It is noted that Pegasus Health patients are responsible for 55.4% of all hospital admissions, and 58.4% of acute hospital admissions. Given that Pegasus Health acute care initiatives are directed to Pegasus Health patients, it seems reasonable to perform the analyses in Tables 30 and 31 for Pegasus Health patients only.

Table 32: Acute/non-acute admissions for Pegasus Health patients only

	1999			2000		
	First half	Second half	Whole year	First half	Second half	Whole year
Patients						
Acute	5,349	6,200	10,495	5,542	6,369	10,842
% acute	57.9	57.8	57.7	57.1	58.8	57.8
Others	10,515	10,560	19,579	11,472	10,927	20,913
% others	56.2	53.7	54.8	57.6	54.1	55.1
Admissions						
Acute	6,651	7,958	14,609	6,876	8,378	15,254
% acute	56.2	57.1	56.7	55.3	58.7	57.1
Others	13,223	13,249	26,472	14,199	13,725	27,924
% others	55.7	53.7	54.7	55.7	54.0	54.8

From data presented in Table 32 it can be calculated that the number of patients admitted acutely in the second half of each year rose by 2.7%, compared with 3.6% in the first half year. The number of acute contacts in the second half of each year rose by 5.3%, compared with 3.3% in the first half year. Given the results obtained from Table 30 previously, the implication of these results is that Pegasus Health patients are above the average increase in both number of patients and number of admissions. Examination of non-Pegasus Health patients confirm this, as there is a 1.3% reduction in non-Pegasus Health patients admitted, and a 1.7% reduction in the number of admissions. The result found was surprising and all figures and calculations were thoroughly checked. A similar trend is evident from the costweight figures, which grew by 7.4% in the second half of the year, compared with 0.9% in the first half of the year for Pegasus Health patients. From this analysis it can be concluded that Pegasus Health patients are driving cost increases more than non-Pegasus Health patients. However, it re-emphasised that the short evaluation period makes making firm correlations from this result to the introduction of the Global Budget scientifically unjustified. Further analysis examining trends over a longer time period is required but this was beyond the time period of this evaluation.

**Key result: For Pegasus Health patients only, the rate of rise in number of patients admitted acutely has risen from 2.7% to 3.6%, and the rate of rise in number of admissions has risen from 3.3% to 5.3%. The rate of rise in costweights has risen from 0.9% to 7.4%.**

Table 33: Secondary inpatient costweights and expenditure by whole and half year - Pegasus Health patients only

Admission type	1999		2000	
	Costweights		Costweights	
Acute admissions	First half of year			
	5,966		6,022	31.6%
OTHER ADMISSIONS	13,563		13,020	68.4%
First half year total	19,529		19,042	
Acute admissions	Second half of year			
	7,533		8,092	36.3%
Other admissions	13,635		14,204	63.7%
Second half year total	21,168		22,296	
Whole year acute total	13,499		14,115	
Whole year other total	27,198		27,224	
Whole year total	40,697		41,339	
Acute admissions	Dollars			
	First half of year			
	\$14,507,813		\$14,450,075	31.6%
Other admissions	\$32,991,011		\$31,238,193	68.4%
First half year total	\$47,498,824		\$45,688,268	
Acute admission	Second half of year			
	\$18,073,737		\$20,126,659	36.3%
Other admissions	\$32,714,045		\$35,328,258	63.7%
Second half year total	\$50,787,782		\$55,454,917	
Whole year acute total	\$32,581,551		\$34,576,734	
Whole year other total	\$65,705,057		\$66,566,452	
Whole year total	\$98,286,608		\$101,143,186	

Table 33 shows that acute expenditure has risen by \$2,052,922 (11.4%) in the second half of the year. This compares with a decline in acute expenditure in first half year of \$57,738. The same cost estimate calculation could not be performed as shown earlier as actual costweights for Pegasus Health patients are only available from CHL. However, a similar estimation model was built using data provided in Table 33. In order to estimate the likely cost effect over the entire 2000/01 financial year, the following calculation was performed.

Actual costweights 2 <sup>nd</sup> half 2000	=	8,092 (A)
Estimate of whole year costweights	=	A * 2
	=	16,184 (B)
Estimated costweights 99/00 ex Table 33	=	2 <sup>nd</sup> half 1999 weights Table 33 * 2
	=	7,533 * 2
	=	15,066 (C)
Estimate		
Increase in costweights 99/00 to 00/01	=	B – C
	=	1,118 (D)
Estimated total cost increase	=	D * \$2,487.16
	=	\$2,780,644 (E)

There is reluctance to present the final calculation of estimated Pegasus Health contribution, as there is some uncertainty about the validity of our estimation of actual costweights for Pegasus Health patients in 99/00. However, this result shows that if only Pegasus Health patients were being considered, Pegasus Health would still be required to make some payment to MoH as per the service contract, the amount of which would likely be in the region of \$1 million to \$1.5 million.

### DRG specific acute admissions initiatives

In the planning stages of the acute care initiatives, Pegasus Health set micro level goals for diagnostic specific reductions in admissions. These will be the focus of the next section. Analysis is performed on acute admissions excluding neonates. Some presentations were for children or adults only, and some presentations were for both children and adults. For those presentations covering both adults and children, a child was defined as being less than 10 years of age.

The analysis is performed in two stages. The first normal font row under each DRG heading in Table 34 below compares the entire year 1999 with the entire year 2000. The second italicised row under each DRG heading compares the second half of 1999 with the second half of 2000. As noted previously, this is to allow for different initiatives to come up to speed and provide a better picture of the likely direct effects of initiatives launched under the Global Budget.

Note: Pegasus Health documents note a forecasted contact rate in DRG 052 Moderate head injury of 447. NMDS data do not support this, as in 1999 there were only 34 admissions in this DRG and in 2000 there were 27. Pegasus Health informs that this issue is the definition of medical versus surgical. Head injuries can fit into both categories and it depends on the business rules used to create the data set. Pegasus Health is trying to get to the bottom of this now and determine which set of business rules is being used where, as well as determine which definition is the most appropriate. (Personal communication, Pegasus Health staff member).

Table 34: Changes in acute admissions and cost by Pegasus Health target DRGs

Admits 99	Cost 99	Admits 00	Cost 00	Change in admits	Change in cost
<b>DRG 252 Heart failure and shock</b>					
Reduction goal = 155					
648	\$1,658,872	543	\$1,485,285	-105	-\$173,587
351	\$886,622	315	\$894,693	-36	+\$8,071
<b>DRG 261 Chest pain</b>					
Reduction goal = 120					
538	\$484,811	829	\$764,319	+291	+\$279,508
335	\$305,910	461	\$439,206	+126	+\$133,296
<b>DRG 270 Unstable angina without CC</b>					
Reduction goal = 35					
406	\$728,307	407	\$728,758	+1	+\$451
202	\$365,559	214	\$387,406	+12	+\$21,847
<b>DRG 048 Headache (adult)</b>					
Reduction goal = 55					
306	\$243,998	390	\$312,735	+84	+\$68,737
143	\$117,671	201	\$159,751	+58	+\$42,080
<b>DRG 347 Abdominal pain or mesenteric adenitis without CC</b>					
Reduction goal = 100					
151	\$106,361	182	\$134,054	+31	+\$27,693
82	\$62,174	108	\$80,465	+26	+\$18,291
<b>DRG 348 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age &gt; 74 or age 10 - 74 with CC</b>					
Reduction goal = 12					
316	\$487,817	354	\$588,517	+38	+\$100,700
173	\$257,019	169	\$282,860	-4	+\$25,841
<b>DRG 349 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age 10 - 74 without CC</b>					
Reduction goal = 40					
252	\$196,098	324	\$246,114	+72	+\$50,016
133	\$106,427	156	\$119,564	+23	+\$13,137
<b>DRG 491 Cellulitis age &lt; 60 without CC</b>					
Reduction goal = 70					
170	\$298,456	176	\$315,699	+6	+\$17,243
66	\$116,416	91	\$170,918	+25	+\$54,502
<b>DRG 815 Viral illness age &lt; 60 (adult)</b>					
Reduction goal = 25					
246	\$258,014	188	\$191,840	-58	-\$66,174
137	\$134,497	101	\$104,361	-36	-\$30,136
<b>DRG 889 Poisoning or toxic effects of drugs age &lt; 60 without CC (adult)</b>					
Reduction goal = 25					
506	\$344,369	540	\$375,975	+34	+\$31,606
243	\$169,497	288	\$213,218	+45	+\$43,721
<b>DRG 135 Otitis media and URI age &lt; 10</b>					
Reduction goal = 320					
929	\$943,239	740	\$780,095	-189	-\$163,144
596	\$606,189	419	\$456,347	-177	-\$149,842
<b>DRG 172 Respiratory infections or inflammations age &lt; 55 without CC (child)</b>					
Reduction goal = 90					
280	\$468,829	268	\$457,449	-12	-\$11,380
181	\$304,346	179	\$311,629	-2	+\$7,283
<b>DRG 187 Bronchitis and asthma age &lt; 50 without CC (child)</b>					
Reduction goal = 210					
517	\$429,599	413	\$339,628	-104	-\$89,971
217	\$177,372	210	\$177,477	-7	+\$105
<b>DRG 188 Whooping cough and acute bronchiolitis (child)</b>					
Reduction goal = 80					
476	\$763,414	416	\$712,216	-60	-\$51,198
354	\$570,000	283	\$484,293	-71	-\$85,707
<b>DRG 350 Gastroenteritis age &lt; 10 (child)</b>					
Reduction goal = 230					
397	\$466,506	530	\$623,820	+133	+\$157,314
282	\$333,889	376	\$450,793	+94	+\$116,904
<b>DRG 815 Viral illness age &lt; 60 (child)</b>					
Reduction goal = 170					
327	\$279,113	239	\$206,453	-88	-\$72,660
180	\$155,866	128	\$113,534	-52	-\$42,332
<b>DRG 889 Poisoning or toxic effects of drugs age &lt; 60 without CC (child)</b>					
Reduction goal = 7					
83	\$51,850	93	\$58,614	+10	+\$6,764
37	\$22,427	45	\$29,606	+8	+\$7,179

Table 34: Changes in acute admissions and cost by PH target DRGs (continued)

Admits 99	Cost 99	Admits 00	Cost 00	Change in admits	Change in cost
<b>DRG 170 Respiratory infections or inflammations age &gt; 54 with CC</b>					
Reduction goal = 95					
517	\$2,109,424	417	\$1,699,126	-100	-\$410,298
324	\$1,330,051	228	\$952,576	-96	-\$377,475
<b>DRG 172 Respiratory infections or inflammations age &lt; 55 without CC (adult)</b>					
Reduction goal = 39					
165	\$293,268	136	\$235,941	-29	-\$57,327
104	\$173,604	76	\$137,636	-28	-\$35,968
<b>DRG 177 Chronic obstructive airways disease</b>					
Reduction goal = 320					
1,326	\$2,738,345	1,074	\$2,109,982	-252	-\$628,363
803	\$1,652,450	593	\$1,196,180	-210	-\$456,270
<b>DRG 187 Bronchitis and asthma age &lt; 50 without CC (adult)</b>					
Reduction goal = 105					
381	\$360,178	317	\$277,445	-64	-\$82,733
187	\$173,577	151	\$135,688	-36	-\$37,889
<b>DRG 999 All other DRGs (adult)</b>					
Reduction goal = 370					
14,405	\$47,295,847	15,511	\$49,386,643	+1,106	+\$2,090,796
7,519	\$24,991,946	8,179	\$27,197,071	+660	+\$2,205,125
<b>DRG 999 All other DRGs (child)</b>					
Reduction goal = 246					
2,432	\$4,083,716	2,617	\$4,288,345	+185	+204,689
1,296	\$2,278,556	1,291	\$2,216,587	-5	-\$61,969

Table 34 is summarised below in Table 35, which shows mixed results between diagnosis codes. Results are presented according to the following success scale and are based on admissions in the second half of each year. For classification into success categories, actual reductions have been doubled to estimate whole year changes.

1. None – no reduction in admissions or an increase
2. Marginal – 10% or less of target reduction in admissions achieved
3. Moderate – 10% to 49% of target reduction in admissions achieved
4. Substantial – 50% to 89% of target reduction in admissions achieved
5. Total – greater than 90% of target reduction in admissions achieved.

Table 35: Changes in acute admissions – summary by success status

DRG	Reduction Goal	Actual achieved	Success Code
DRG 252 Heart failure and shock	155	-36	Moderate
DRG 261 Chest pain	120	+126	None
DRG 270 Unstable angina without CC	35	+12	None
DRG 048 Headache (adult)	55	+58	None
DRG 347 Abdominal pain or mesenteric adenitis without CC	100	+26	None
DRG 348 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age >74 or (age 10-74 with CC)	12	-4	Substantial
DRG 349 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age 10-74 without CC	40	+23	None
DRG 491 Cellulitis age <60 without CC	70	+25	None
DRG 815 Viral illness age <60 (adult)	25	-36	Total
DRG 889 Poisoning or toxic effects of drugs age <60 without CC (adult)	25	+45	None
DRG 135 Otitis media and URI age <10	320	-177	Total
DRG 172 Respiratory infections or inflammations age <55 without CC (child)	90	-2	Marginal
DRG 187 Bronchitis and asthma age <50 without CC (child)	210	-7	Marginal
DRG 188 Whooping cough and acute bronchiolitis (child)	80	-71	Total
DRG 350 Gastroenteritis age <10 (child)	230	+94	None
DRG 815 Viral illness age <60 (child)	170	-52	Substantial
DRG 889 Poisoning or toxic effects of drugs age <60 without CC (child)	7	+8	None
DRG 170 Respiratory infections or inflammations age >54 with CC	95	-96	Total
DRG 172 Respiratory infections or inflammations age <55 without CC (adult)	39	-28	Total
DRG 177 Chronic obstructive airways disease	320	-210	Total
DRG 187 Bronchitis and asthma age <50 without CC (adult)	105	-36	Substantial
DRG 999 All other DRGs (adult)	370	+1,106	None
DRG 999 All other DRGs (child)	246	-5	Marginal

Of the 23 diagnoses groups presented here, 10 were at least moderately successful, three were marginally successful, and 10 were not at all successful. One interpretation of this table is that Pegasus Health has been about 50% successful in achieving its target reductions in acute admissions. An alternative view is that in total the goal was for a reduction of 2,919 admissions, whereas in actuality there was an increase of 763 admissions. It needs to be restated that these results are based on only six months data, so there is still time for Pegasus Health to achieve gains in other diagnoses, but there is clearly significant work to be done in some diagnoses to reverse the growth trend. Pegasus Health acknowledges that the path to reducing acute admissions is still in a development phase and that although achieving all the targets in the first year of operation would have been desirable, realistically it would take some time for all the processes involved to be running at full speed.

**Key result: There were reductions in acute medical admissions for: DRG 348 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age >74 or age 10-74 with CC; DRG 815 Viral illness age <60 (adult); DRG 135 Otitis media and URI age <10; DRG 188 Whooping cough and acute bronchiolitis (child); DRG 815 Viral illness age <60 (child); DRG 170 Respiratory infections or inflammations age >54 with CC; DRG 172 Respiratory infections or inflammations age <55 without CC (adult); DRG 177 Chronic obstructive airways disease; DRG 187 Bronchitis and asthma age <50 without CC (adult). Some of these reductions could have been the result of Pegasus Health initiatives in the first year of the Global Budget contract, and some may have been other factors such as climate.**

The cost implications of success and failures in acute initiatives are shown in Table 36. Increasing costs are designated “+” and falling costs are designated “-“. DRG codes on which no impact was made are shown as positive costs, while DRGs showing some impact in terms of reduced admissions are shown as negative costs. The balance figure shows overall change in spending on acute admissions between the final half of each year, and equals the figure already described in Table 31, subject to rounding errors. The balance figure for priority DRGs is -\$1,236,288. The “All other DRGs” category is noteworthy in that the “+” figure relates solely to adult other DRGs, and shows a 4.4% expenditure increase between years. The “-“ other DRGs figure relates solely to child (age < 10 years) admissions and equates to a 2.7% reduction in expenditure.

Table 36: Balance sheet of acute expenditure

	No impact DRGs	Marginal + DRGs
Priority DRGs	+\$450,957	-\$1,174,319
All other DRGs	+\$2,205,125	-\$61,969
Total	+\$2,656,082	-\$1,236,288
Balance	+\$1,419,794	

**Key result: Overall six month dollar savings for DRGs showing reducing admission rates are estimated at \$1,236,288; DRGs with increasing admission rates show increased expenditure of \$2,656,082; nett six month expenditure increase of \$1,419,794.**

The MoH provided core funding of the Pegasus Health acute admissions initiatives. The level of funding was set at \$3 million on the understanding that costweights would not increase over the agreed contract level. If they were to increase above that level then Pegasus Health would have to use that \$3 million to pay for half the value of the increase. All the evidence that was found in the above analyses suggests there will be increased acute expenditure for the whole year of about \$3 million to \$4 million, implying a Pegasus Health contribution required of \$1.5 million to \$2 million.

As suggested earlier, performing the same analyses shown is considered appropriate and derived from Tables 34, 35 and 36 for Pegasus Health patients only.

Table 37: Changes in acute admissions and cost by Pegasus Health target DRGs for Pegasus Health patients only

Admits 99	Cost 99	Admits 00	Cost 00	Change in admits	Change in cost
<b>DRG 252 Heart failure and shock</b>					
Reduction goal = 155					
297	\$748,554	286	\$780,381	-11	+\$31,827
174	\$435,728	198	\$562,868	+24	+\$127,140
<b>DRG 261 Chest pain</b>					
Reduction goal = 120					
333	\$296,419	517	\$476,663	+184	+\$180,244
199	\$181,420	293	\$282,917	+94	+\$101,497
<b>DRG 270 Unstable angina without CC</b>					
Reduction goal = 35					
215	\$381,053	207	\$367,162	-8	-\$13,891
108	\$191,020	109	\$194,175	+1	+\$3,155
<b>DRG 048 Headache (adult)</b>					
Reduction goal = 55					
209	\$171,129	265	\$209,315	+56	+\$38,186
102	\$87,309	133	\$103,026	+31	+\$15,717
<b>DRG 347 Abdominal pain or mesenteric adenitis without CC</b>					
Reduction goal = 100					
101	\$67,530	121	\$90,796	+20	+\$23,266
52	\$36,149	71	\$52,280	+19	+\$16,131
<b>DRG 348 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age &gt; 74 or age 10 – 74 with CC</b>					
Reduction goal = 12					
176	\$262,449	200	\$321,487	+24	+\$59,038
99	\$139,689	110	\$167,640	+11	+\$27,951
<b>DRG 349 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age 10 – 74 without CC</b>					
Reduction goal = 40					
156	\$122,521	195	\$143,705	+39	+\$21,184
77	\$63,214	97	\$72,557	+20	+\$9,343
<b>DRG 491 Cellulitis age &lt; 60 without CC</b>					
Reduction goal = 70					
105	\$179,091	99	\$179,342	-6	+\$251
37	\$61,837	51	\$96,398	+14	+\$34,561
<b>DRG 815 Viral illness age &lt; 60 (adult)</b>					
Reduction goal = 25					
157	\$168,506	124	\$126,805	-33	-\$41,701
81	\$81,140	66	\$68,695	-15	-\$12,445
<b>DRG 889 Poisoning or toxic effects of drugs age &lt; 60 without CC (adult)</b>					
Reduction goal = 25					
357	\$244,898	360	\$249,868	+3	+\$4,970
174	\$123,121	186	\$138,076	+12	+\$14,955
<b>DRG 135 Otitis media and URI age &lt; 10</b>					
Reduction goal = 320					
639	\$645,032	486	\$515,916	-153	-\$129,116
402	\$404,587	262	\$288,399	-140	-\$116,188
<b>DRG 172 Respiratory infections or inflammations age &lt; 55 without CC (child)</b>					
Reduction goal = 90					
179	\$302,549	179	\$307,906	0	+\$5,357
116	\$197,848	117	\$206,323	+1	+\$8,475
<b>DRG 187 Bronchitis and asthma age &lt; 50 without CC (child)</b>					
Reduction goal = 210					
388	\$320,705	290	\$237,542	-98	-\$83,163
163	\$132,660	149	\$124,702	-14	-\$7,958
<b>DRG 188 Whooping cough and acute bronchiolitis (child)</b>					
Reduction goal = 80					
325	\$520,470	265	\$453,218	-60	-\$67,252
231	\$371,723	179	\$311,458	-52	-\$60,265
<b>DRG 350 Gastroenteritis age &lt; 10 (child)</b>					
Reduction goal = 230					
248	\$297,000	325	\$378,210	+77	+\$81,210
167	\$204,164	226	\$266,978	+59	+\$62,814
<b>DRG 815 Viral illness age &lt; 60 (child)</b>					
Reduction goal = 170					
221	\$186,482	155	\$133,983	-66	-\$52,499
113	\$96,712	81	\$71,861	-32	-\$24,851
<b>DRG 889 Poisoning or toxic effects of drugs age &lt; 60 without CC (child)</b>					
Reduction goal = 7					
54	\$33,638	63	\$39,110	+9	+\$5,472
22	\$13,417	31	\$20,069	+9	+\$6,652

Table 37: Changes in acute admissions and cost by Pegasus Health target DRGs for Pegasus Health patients only (continued)

Admits 99	Cost 99	Admits 00	Cost 00	Change in admits	Change in cost
<b>DRG 170 Respiratory infections or inflammations age &gt; 54 with CC</b>					
Reduction goal = 95					
249	\$1,025,506	184	\$775,879	-65	-\$249,627
162	\$676,703	101	\$438,793	-61	-\$237,910
<b>DRG 172 Respiratory infections or inflammations age &lt; 55 without CC (adult)</b>					
Reduction goal = 39					
100	\$182,019	85	\$145,059	-15	-\$36,960
67	\$111,607	49	\$86,076	-18	-\$25,531
<b>DRG 177 Chronic obstructive airways disease</b>					
Reduction goal = 320					
745	\$1,491,808	595	\$1,134,618	-150	-\$357,190
469	\$940,744	342	\$671,765	-127	-\$268,979
<b>DRG 187 Bronchitis and asthma age &lt; 50 without CC (adult)</b>					
Reduction goal = 105					
251	\$241,795	212	\$185,775	-39	-\$56,020
112	\$103,927	98	\$89,680	-14	-\$14,247
<b>DRG 999 All other DRGs (adult)</b>					
Reduction goal = 370					
7,520	\$22,107,204	8,457	\$25,060,986	+937	+\$2,953,782
4,012	\$12,039,823	4,661	\$14,623,030	+649	+\$2,583,207
<b>DRG 999 All other DRGs (child)</b>					
Reduction goal = 246					
1,584	\$2,585,182	1,584	\$2,262,998	0	-\$322,184
819	\$1,379,183	768	\$1,188,880	-51	-\$190,303

Table 37 is summarised below in Table 38 as done for all admissions previously.

Table 38: Changes in acute admissions – summary by success status Pegasus Health patients only

DRG	Reduction Goal	Actual achieved	Success Code
DRG 252 Heart failure and shock	155	+24	None
DRG 261 Chest pain	120	+94	None
DRG 270 Unstable angina without CC	35	+1	None
DRG 048 Headache (adult)	55	+31	None
DRG 347 Abdominal pain or mesenteric adenitis without CC	100	+19	None
DRG 348 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age >74 or (age 10-74 with CC)	12	+11	None
DRG 349 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age 10-74 without CC	40	+20	None
DRG 491 Cellulitis age <60 without CC	70	+14	None
DRG 815 Viral illness age <60 (adult)	25	-15	Total
DRG 889 Poisoning or toxic effects of drugs age <60 without CC (adult)	25	+12	None
DRG 135 Otitis media and URI age <10	320	-140	Substantial
DRG 172 Respiratory infections or inflammations age <55 without CC (child)	90	+1	None
DRG 187 Bronchitis and asthma age <50 without CC (child)	210	-14	Marginal
DRG 188 Whooping cough and acute bronchiolitis (child)	80	-52	Total
DRG 350 Gastroenteritis age <10 (child)	230	+59	None
DRG 815 Viral illness age <60 (child)	170	-32	Moderate
DRG 889 Poisoning or toxic effects of drugs age <60 without CC (child)	7	+9	None
DRG 170 Respiratory infections or inflammations age >54 with CC	95	-61	Total
DRG 172 Respiratory infections or inflammations age <55 without CC (adult)	39	-18	Total
DRG 177 Chronic obstructive airways disease	320	-127	Substantial
DRG 187 Bronchitis and asthma age <50 without CC (adult)	105	-14	Moderate
DRG 999 All other DRGs (adult)	370	+649	None
DRG 999 All other DRGs (child)	246	-51	Moderate

Of the 23 diagnoses groups presented here, nine were at least moderately successful, one was marginally successful, and 13 were not at all successful. This shows slightly less success in achieving acute admission goals than when all CHL acute admissions are considered. This analysis is also very useful for service design work and should be used by Pegasus Health to support further organisational and policy development in this area.

**Key result: There were reductions in acute admissions for: DRG 815 Viral illness age <60 (adult); DRG 135 Otitis media and URI age <10; DRG 188 Whooping cough and acute bronchiolitis (child); DRG 815 Viral illness age <60 (child); DRG 170 Respiratory infections or inflammations age >54 with CC; DRG 172 Respiratory infections or inflammations age <55 without CC (adult); DRG 177 Chronic obstructive airways disease; DRG 187 Bronchitis and asthma age <50 without CC (adult); DRG 999 All other child DRGs.**

The cost implications of success and failures in acute initiatives are shown in Table 39. The balance figure shows overall change in spending on acute admissions between the final half of each year, and equals the figure already described in Table 33, subject to rounding errors. The balance figure for priority DRGs is -\$958,677. The “All other DRGs” category is noteworthy in that the “+” figure relates solely to adult other DRGs, and shows a 4.4% expenditure increase between years. The “-“ other DRGs figure relates solely to child (age < 10 years) admissions and equates to a 2.7% reduction in expenditure.

Table 39: Balance sheet of acute expenditure, Pegasus Health patients only

	No impact DRGs	Marginal + DRGs
Priority DRGs	+\$428,391	-\$768,374
All other DRGs	+\$2,583,207	-\$190,303
Total	+\$3,011,598	-\$958,677
<b>Balance</b>	<b>+\$2,052,921</b>	

**Key result: Overall six month expenditure reduction for DRGs showing reducing admission rates is estimated at \$958,677; DRGs with increasing admission rates show increased expenditure of \$3,011,598; Nett six month expenditure increase of \$2,052,921.**

This result requires further interpretation. A combined summary of Tables 36 and 39 is shown below in Table 40 that should aid understanding of this unexpected result.

Table 40: Summary balance sheet of acute expenditure in dollars

	No impact DRGs			Marginal + DRGs		
	PH pats	Non-PH pats	All pats	PH pats	Non-PH pats	All pats
Priority DRGs	+428,391	+22,566	+450,957	-768,374	-405,945	-1,174,319
All other DRGs	+2,583,207	-378,082	+2,205,125	-190,303	+128,334	-61,969
Total	+3,011,598	-355,516	+2,656,082	-958,677	-277,611	-1,236,288
<b>Balance PH patients</b>	<b>+2,052,921</b>					
<b>Balance non-PH patients</b>						<b>-633,127</b>
<b>Balance all patients</b>	<b>+1,419,794</b>					

From Table 40, it must be concluded that Pegasus Health acute admission initiatives do not appear to have achieved their goals. If non-Pegasus Health patients are considered to be a quasi control group, one could be drawn to the conclusion that the “do nothing” option is actually more effective than active intervention; however, this would be ill advised because these may also be the result of the quality of referral from Pegasus GPs. It is of note that even within the priority DRG, Pegasus Health achieved

savings of \$339,983 among its patients. However, within those priority DRGs, non-Pegasus Health patients achieved savings of \$383,379.

**Key result: Acute expenditure for Pegasus Health patients in priority DRGs reduced by \$339,983; however, acute expenditure for non-Pegasus Health patients reduced by \$383,379.**

The majority of increased expenditure for Pegasus Health patients is on all other adult DRGs. Further examination of these other DRGs revealed that for Pegasus Health patients, only 10 of the non-priority DRG codes accounted for 84.1% of the increased spending of \$2,052,921. Those codes and their associated proportion of the increased expenditure are shown in Table 41 below.

Table 41: Main increases in acute admissions by DRG<sup>36</sup>

DRG	DRG code description	% increase \$
297	Trans-vascular percutaneous cardiac intervention	24.1
941	Rehabilitation	12.4
249	Circulatory disorders with AMI without invasive cardiac investigative procedure without major CC	8.7
038	Cerebrovascular disorders except TIA without CC	8.7
056	Dementia and global disturbances of cerebral function	6.0
246	Circulatory disorders with AMI with invasive cardiac investigative procedure without major CC	5.5
006	Bone marrow transplant	5.1
037	Cerebrovascular disorders except TIA with CC	4.7
019	Non-acute quadriplegia or paraplegia, with or without OR procedure	4.5
269	Unstable angina with CC	4.4

**Key result: Increased expenditure on acute admissions by Pegasus Health patients is mostly caused by increased expenditure in 10 non-priority adult DRGs: DRG 297 Trans-vascular percutaneous cardiac intervention; DRG 941 Rehabilitation; DRG 249 Circulatory disorders with AMI without invasive cardiac investigative procedure without major CC; DRG 038 Cerebrovascular disorders except TIA without CC; DRG 056 Dementia and global disturbances of cerebral function; DRG 246 Circulatory disorders with AMI with invasive cardiac investigative procedure without major CC; DRG 006 Bone marrow transplant; DRG 037 Cerebrovascular disorders except TIA with CC; DRG 049 Non-acute quadriplegia or paraplegia, with or without OR procedure; DRG 269 Unstable angina with CC.**

<sup>36</sup> It should be noted that *some* of the indications (DRGs) listed in Table 41 would not be expected to be amenable to the effects of the Global Budget initiatives and hence it would be inappropriate to relate increases in these admissions to the Global Budget contract. These DRGs were included in the evaluation for completeness and illustration of the broad acute admissions picture.

## Secondary care inpatient utilisation – Pegasus Health patients only

This section focuses on only Pegasus Health patients to better examine issues surrounding the primary/secondary care interface and to address equity issues.

First it is important to establish how those accessing secondary care services acutely fit into the total Pegasus Health patient population. Overall, the proportion of Pegasus Health patients admitted acutely did not change significantly between study years, although there was a marginal rise from 3.72% to 3.81% ( $\chi^2 = 2.7$ ,  $df = 1$ ,  $p = 0.098$ ). There was a significant rise, from 6.95% to 7.34%, in the proportion of patients being admitted non-acutely ( $\chi^2 = 33.6$ ,  $df = 1$ ,  $p < 0.001$ ). This may be related to increased funding for waiting list procedures, or increased quality of referral but it is beyond the scope of the evaluation to examine this issue.

The link to the NZDep96 allowed examination of secondary utilisation by deprivation index. The first step was to describe those Pegasus Health patients accessing secondary care services with a valid link to the NZDep96 as shown in Table 42 below.

Table 42: Acute contact rates for Pegasus Health patients by NZDep96

NZDep96	Pegasus Health patients accessing secondary care		% change in proportion contacting 2 <sup>0</sup>	Admit rate per contacting patient		% change
	1999	2000		1999	2000	
1	2,318	2,473	5.9	1.43	1.45	1.7
2	2,428	2,592	6.3	1.43	1.44	1.0
3	2,339	2,510	5.6	1.43	1.45	1.7
4	2,536	2,745	7.7	1.46	1.46	-0.3
5	2,359	2,527	5.4	1.50	1.48	-1.4
6	2,621	2,792	5.7	1.49	1.47	+1.2
7	2,349	2,433	3.2	1.47	1.51	2.4
8	2,723	2,833	6.1	1.50	1.53	2.1
9	2,855	3,003	6.7	1.56	1.51	-3.8
10	1,873	1,821	-1.2	1.51	1.53	1.3
Missing	3,338	2,487	0.5	1.49	1.44	-2.9
Total	27,739	29,216	4.6	1.48	1.48	-0.2

There were statistically significant increases ( $p < 0.05$ ) in the proportion of Pegasus Health patients contacting any secondary care service after the introduction of the Global Budget, with the exception of NZDep96 bands 7 and 10, and those patients without a valid NZDep96 allocated. The changes in admission rate per contacting patient are considered to be of little public health significance, and within the range of normal year to year variation.

Table 42 has been reproduced for all health specialties (i.e., medical and surgical) for each admission type in Tables 43 to 48. These tables are presented for completeness and no further interpretation of their contents has been performed, as the core focus of secondary care analysis is acute admissions as defined earlier.

Table 43: Arranged admissions (AA) by NZDep96 by year

NZDep96	Pegasus Health patients accessing secondary care		% change in proportion contacting 2 <sup>0</sup>	Admit rate per contacting patient		% change
	1999	2000		1999	2000	
1	490	475	-3.8	1.34	1.52	12.9
2	477	548	14.4	1.35	1.37	1.2
3	474	483	0.3	1.32	1.36	2.8
4	520	557	6.5	1.39	1.43	2.4
5	462	503	7.1	1.41	1.36	-3.8
6	509	570	11.1	1.36	1.37	1.1
7	461	473	2.2	1.32	1.35	2.3
8	502	622	26.3	1.30	1.35	4.2
9	557	618	12.5	1.37	1.37	0.2
10	364	423	19.3	1.25	1.36	8.7
Missing	673	797	14.0	1.36	1.32	-3.0
Total	5,489	6,069	9.8	1.35	1.37	2.1

Table 44: Acute admissions (AC) by NZDep96 by year

NZDep96	Pegasus Health patients accessing secondary care		% change in proportion contacting 2 <sup>0</sup>	Admit rate per contacting patient		% change
	1999	2000		1999	2000	
1	1,239	1,345	7.7	1.95	1.70	-13.0
2	1,331	1,374	2.8	1.21	1.27	4.8
3	1,237	1,321	5.1	1.40	1.34	-4.7
4	1,309	1,419	7.8	1.20	1.21	0.7
5	1,227	1,301	4.3	1.41	1.42	0.5
6	1,391	1,376	-1.8	1.20	1.26	4.9
7	1,216	1,234	1.1	1.56	1.51	-3.3
8	1,402	1,465	6.5	1.12	1.17	4.7
9	1,504	1,525	2.8	1.27	1.35	5.8
10	974	948	-0.1	2.23	2.20	-1.4
Missing	1,773	1,715	-6.9	0.80	0.78	-2.9
Total	14,603	15,023	2.2	1.35	1.34	-0.7

Table 45: Waiting list admissions (WN) by NZDep96 by year

NZDep96	Pegasus Health patients accessing secondary care		% change in proportion contacting 2 <sup>0</sup>	Admit rate per contacting patient		% change
	1999	2000		1999	2000	
1	544	676	23.3	1.16	1.17	0.3
2	647	738	13.6	1.14	1.18	4.0
3	649	744	12.8	1.20	1.16	-3.9
4	737	825	11.3	1.17	1.16	-0.7
5	704	847	18.4	1.19	1.16	-2.5
6	798	935	16.3	1.15	1.14	-0.8
7	733	833	13.2	1.18	1.14	-3.5
8	868	881	3.5	1.19	1.17	-2.0
9	893	975	10.7	1.19	1.17	-2.3
10	546	521	-2.1	1.16	1.17	0.0
Missing	877	955	4.8	1.18	1.16	-1.0
Total	7,996	8,930	10.9	1.18	1.16	-1.3

Table 46: Arranged admissions ACC covered (ZA) by NZDep96 by year

NZDep96	Pegasus Health patients accessing secondary care		% change in proportion contacting 2 <sup>0</sup>	Admit rate per contacting patient		% change
	1999	2000		1999	2000	
1	26	14	-46.6	1.08	1.00	-7.1
2	25	16	-36.3	1.32	1.06	-19.5
3	26	20	-24.3	1.42	1.05	-26.2
4	23	22	-4.9	1.04	1.00	-4.2
5	26	21	-20.5	1.19	1.14	-4.1
6	37	18	-51.7	1.16	1.11	-4.4
7	27	18	-33.6	1.07	1.11	3.4
8	26	14	-45.1	1.08	1.21	12.8
9	27	14	-47.4	1.11	1.21	9.3
10	18	8	-54.4	1.11	1.00	-10.0
Missing	42	21	-51.9	1.17	1.10	-6.1
Total	303	186	-39.0	1.16	1.09	-6.1

Table 47: Acute admissions ACC covered (ZC) by NZDep96 by year

NZDep96	Pegasus Health patients accessing secondary care		% change in proportion contacting 2 <sup>0</sup>	Admit rate per contacting patient		% change
	1999	2000		1999	2000	
1	277	264	-5.4	1.10	1.05	-4.7
2	248	248	-0.5	1.07	1.06	-1.5
3	243	281	13.8	1.07	1.11	3.0
4	265	301	13.0	1.10	1.07	-2.6
5	279	248	-12.5	1.09	1.12	2.9
6	251	285	12.7	1.11	1.09	-1.2
7	261	257	-1.9	1.14	1.11	-2.9
8	317	277	-10.9	1.11	1.15	3.4
9	321	319	0.8	1.07	1.09	2.4
10	213	208	0.2	1.13	1.07	-5.2
Missing	414	410	-4.7	1.10	1.08	-1.7
Total	3,089	3,098	-0.4	1.10	1.09	-0.7

Table 48: Waiting list admissions ACC covered (ZW) by NZDep96 by year

NZDep96	Pegasus Health patients accessing secondary care		% change in proportion contacting 2 <sup>0</sup>	Admit rate per contacting patient		% change
	1999	2000		1999	2000	
1	68	44	-35.8	1.07	1.02	-4.7
2	57	71	24.0	1.04	1.08	4.8
3	57	67	15.7	1.05	1.15	9.2
4	71	55	-23.0	1.01	1.05	4.0
5	48	47	-3.7	1.13	1.04	-7.3
6	75	63	-16.6	1.05	1.06	1.0
7	73	50	-31.8	1.11	1.04	-6.3
8	85	59	-29.2	1.07	1.10	2.9
9	86	77	-9.2	1.05	1.06	1.8
10	55	38	-29.1	1.05	1.03	-2.7
Missing	94	109	11.6	1.09	1.17	8.2
Total	769	680	-12.2	1.07	1.09	2.0

Previous mention has been made about the importance of initiatives to reduce acute hospital admissions within the overall framework of the Global Budget. Results presented earlier have described acute admissions overall and for Pegasus Health patients only. The latter analysis is repeated again below with the inclusion of the NZDep96.

Figure 9 below shows the proportion of all Pegasus Health patients admitted acutely in the second half of each year. This clearly shows an increasing proportion of patients admitted acutely with rising deprivation index and also, with the exception of NZDep96 bands 6, 7 and 9, a slight increase between years in the proportion being admitted acutely.

Figure 9: Proportion of all Pegasus Health patients admitted acutely by NZDep96 by year

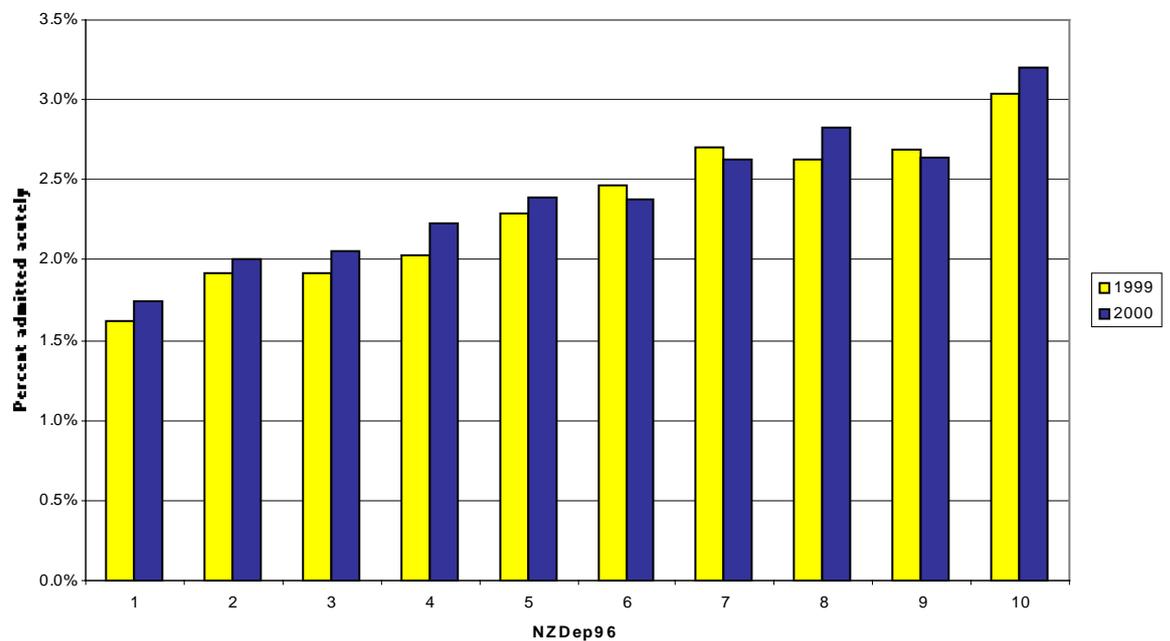


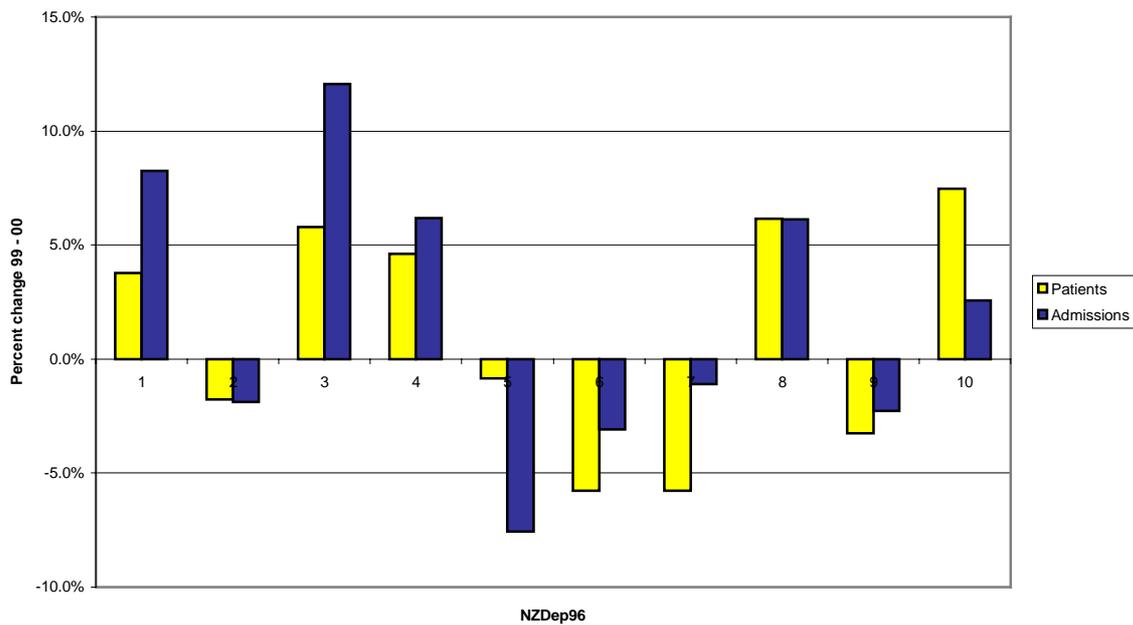
Table 49 below shows the actual number of patients and admissions for the second half of each year, and indicates the proportion of patients contacting secondary care admitted acutely and acute admissions as a proportion of all admissions.

Table 49: Admissions for Pegasus Health patients and percentage of acutes, second half years only

NZDep96	1999				2000			
	Patients		Admissions		Patients		Admissions	
	Total	% acute	Total	% acute	Total	% acute	Total	% acute
1	1,308	40.0	1,732	36.7	1,369	41.5	1,884	39.8
2	1,376	40.0	1,828	39.2	1,472	39.3	1,957	38.4
3	1,364	37.5	1,753	34.7	1,400	39.7	1,891	38.9
4	1,444	37.9	1,948	36.6	1,524	39.6	2,033	38.8
5	1,336	38.3	1,809	38.3	1,429	38.0	1,889	35.4
6	1,532	39.0	2,051	37.9	1,585	36.8	2,141	36.7
7	1,352	39.3	1,779	36.6	1,397	37.0	1,923	36.2
8	1,584	38.8	2,118	38.2	1,575	41.1	2,151	40.5
9	1,644	39.4	2,259	38.0	1,639	38.1	2,255	37.1
10	1,093	38.9	1,445	38.8	1,041	41.8	1,419	39.7
Missing	1,855	39.9	2,485	37.7	1,917	37.1	2,560	36.3
Total	15,888	39.0	21,207	37.5	16,348	39.0	22,103	37.9

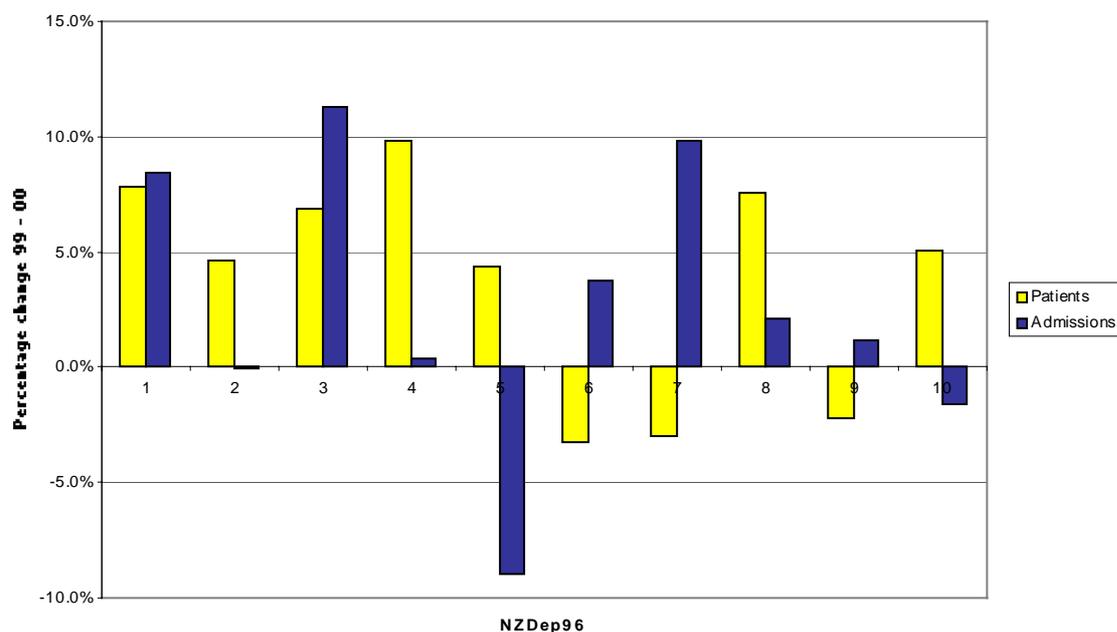
It was of interest to find that when only those patients contacting any secondary inpatient service were considered, there were very mixed changes in acute admission patterns. This is shown graphically in Figure 10 below. Of interest is the change in the proportion of patients contacting secondary care admitted acutely, and the proportion of acute admissions of all admissions. Note: there is no clear pattern by NZDep96 of changing proportions of patients being admitted acutely. There is also no clear link between changes in the proportion of patients admitted acutely and the proportion of acute admissions among all admissions. The magnitude of the changes is also quite small. It is believed that this clearly shows the difficulty in identifying trends over such a short evaluation period.

Figure 10: Change in proportion of patients admitted acutely and proportion of acute admissions



To further explore the mixed results found above, patients admitted acutely as a proportion of all Pegasus Health patients (not just those contacting secondary care) were plotted, and this was compared with the changes in the mean admission rate per acutely admitted patient as shown in Figure 11 below.

Figure 11: Change in proportion of patients admitted and average admissions by NZDep96



This shows some more interesting population level trends. In 7 out of 10 NZDep96 bands, there are increased proportions of all Pegasus Health patients being admitted acutely. An explanation could not be given why there are decreasing proportions of patients in NZDep96 bands 6, 7 and 9. Changes in mean admission rate per acutely admitted patient show no association with changing proportion of patients admitted. However, as with the previous figure, there is concern that the short evaluation period may not reflect long-term reality.

An analysis of the overall cost implications for acute admissions for the second half of each year by NZDep96 band was performed as done earlier in Table 33. This is shown in Table 50 below. Graphical representation of this table showing the change in mean cost per patient and mean cost per admission is shown in Figure 12. NZDep96 bands 2 and 5 are of interest because of the nil or negative cost growth, while band 3 stands out because of the much greater than average cost increase. Changing costweights are shown in Table 51. Further micro level exploration of the data failed to provide robust inferences at the population level.

Table 50: Acute costs by NZDep96, Pegasus Health patients only

NZDep 96	1999			2000			% change in average cost	
	Costs in \$			Costs in \$			Patient	Admit
	Total	Mean/Patient	Mean/Admit	Total	Mean/patient	Mean/admit		
1	1,514,047	1,157	874	1,823,169	1,331	967	15.1	10.7
2	1,559,856	1,153	853	1,680,410	1,141	858	0.7	0.6
3	1,337,350	980	762	1,828,053	1,305	966	33.2	26.7
4	1,593,533	1,103	818	1,924,489	1,262	946	14.4	15.7
5	1,536,154	1,149	849	1,575,173	1,102	833	-4.1	-1.8
6	1,793,255	1,170	874	2,040,272	1,287	952	10.0	9.0
7	1,521,853	1,125	855	1,817,295	1,300	945	15.6	10.5
8	1,991,016	1,256	940	2,150,897	1,365	999	8.6	6.4
9	1,758,483	1,069	778	1,898,114	1,158	841	8.3	8.1
10	1,149,637	1,051	795	1,276,144	1,225	899	16.5	13.0
Missing	2,318,548	1,249	933	2,112,640	1,102	825	-11.8	-11.6
Total	18,073,732	1,137	852	20,126,656	1,231	910	8.2	6.8

Figure 12: Change in average patient and admission cost by NZDep96

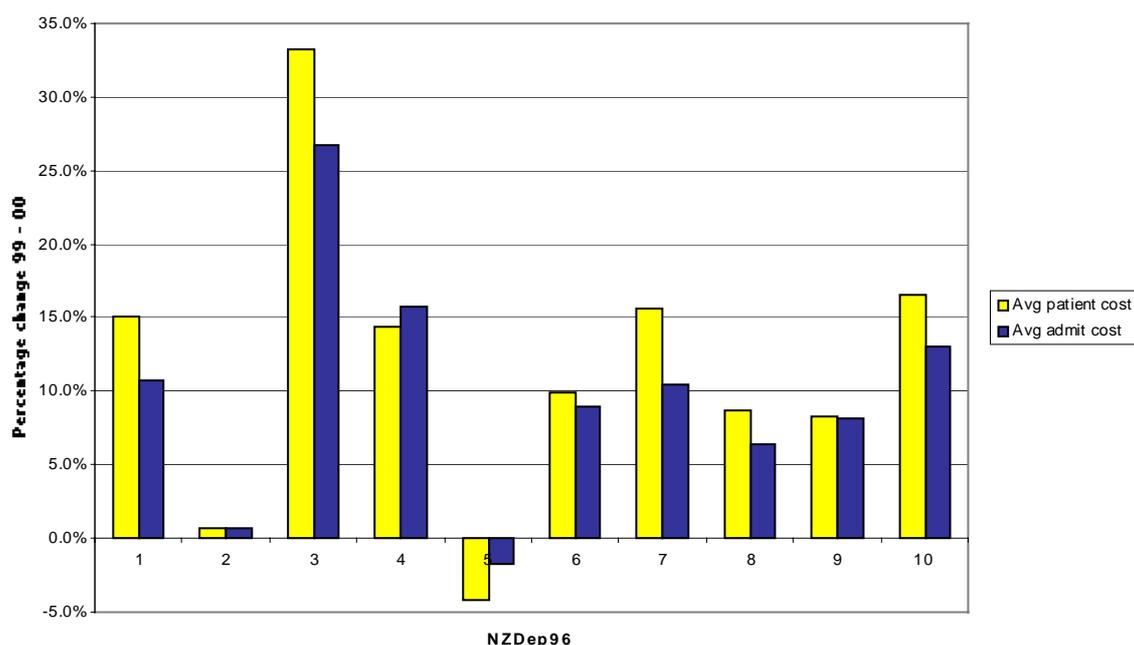
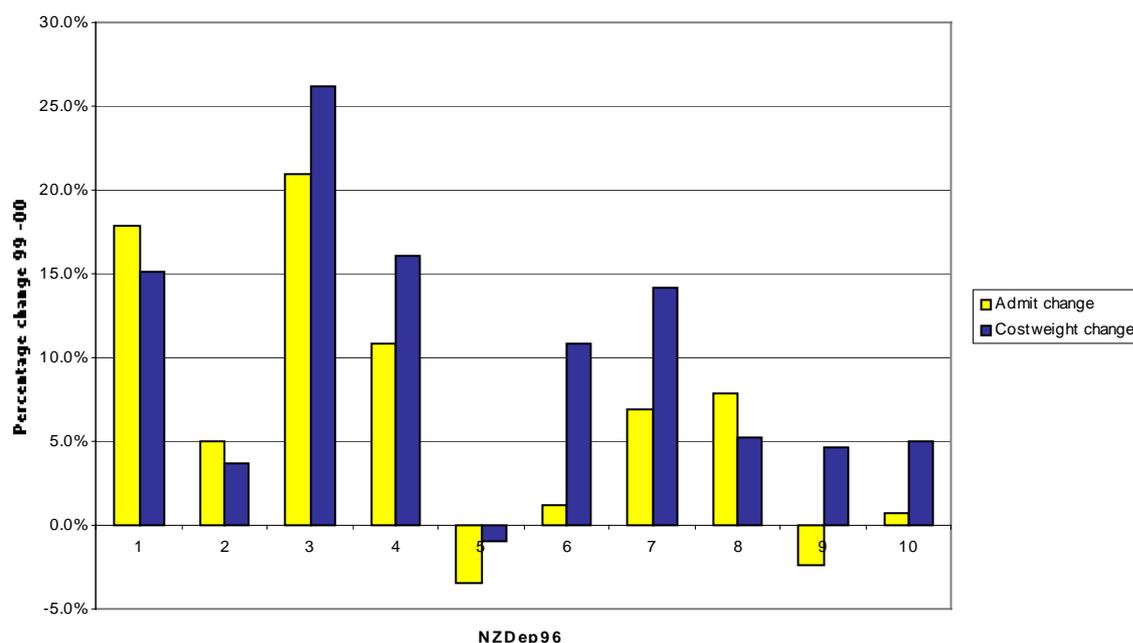


Table 51: Costweights for acutes, second half each year, excluding those missing NZDep96, Pegasus Health patients only

NZDep96	1999		2000		Change	
	2 <sup>nd</sup> half	Whole year	2 <sup>nd</sup> half	Whole year	Whole year change	% of increase
1	631	1,262	733	1,466	204	15.1
2	650	1,300	675	1,350	50	3.7
3	557	1,114	734	1,468	354	26.2
4	664	1,328	773	1,546	218	16.1
5	640	1,280	633	1,266	-14	-1.0
6	747	1,494	820	1,640	146	10.8
7	634	1,268	730	1,460	192	14.2
8	829	1,658	864	1,728	70	5.2
9	732	1,464	763	1,526	62	4.6
10	479	958	513	1,026	68	5.0
Total	6,565	13,126	7,240	14,476	1,350	

Figure 13 below illustrates the interaction between changing admission rates and the percentage of total costweight increases. Some 61% of the total increase in costweights was accounted for in NZDep96 bands 1 to 4, which are the least deprived patients. Correspondingly, 15% of the increase in costweights was accounted for by the most deprived patients in NZDep96 bands 8 to 10. There is doubt about the validity of drawing conclusions about this given the short timeframe available for the evaluation, though it could potentially be of concern if this trend was to continue.

Figure 13: Admission change versus costweight change by NZDep96



Further analysis by NZDep96 was undertaken at the targeted DRG level for the second half of each year as shown in Table 52. Those patients without a valid NZDep96 score were excluded from this analysis. The exclusion of patients without a valid NZDep96 index has not changed the success status of the target DRGs, with the exception of DRG 172 (Respiratory infections, child), which showed a reversal to that found previously. In this analysis a moderate success in admission reduction was found.

In many cases the changing admission rates were quite small, resulting in even smaller changes within NZDep96 bands. This made identification of trends difficult in many cases. There is reluctance to identify any target DRG as having extremely significant effects on any particular NZDep96 bands as there are grave doubts as to the sustainability or other applicability of the results given the short evaluation period and the small sample numbers within DRGs. There were seldom clear patterns in relation to NZDep96 bands; however, attention is drawn to the following priority DRGs.

DRG 270: Unstable angina.

Increased utilisation in NZDep96 bands 5 – 10, reduced utilisation in NZDep96 bands 1 – 4.

DRG 347: Abdominal pain or mesenteric adenitis without CC.

Majority of increased utilisation in NZDep96 bands 6 – 10.

DRG 349: Oesophagitis, gastroenteritis and miscellaneous digestive disorders

Almost all increased utilisation in NZDep96 bands 1 and 2.

DRG 889: Poisoning or toxic effects of drugs

Increased utilisation in NZDep96 bands 4 – 8.

DRG 172: Respiratory infections or inflammations (child)

Major decreases in utilisation in NZDep96 bands 8 – 10.

DRG 815: Viral illness (child)

Reduced utilisation in NZDep96 bands 5 – 8.

DRG 172: Respiratory infections of inflammations (adult)

Reduced utilisation NZDep96 bands 4 – 10, increased utilisation NZDep96 bands 1 – 3.

DRG 187: Bronchitis and asthma (adult)

Reduced utilisation in NZDep96 bands 7 – 10, increased utilisation NZDep96 bands 1 – 6.

Table 52: Changes in acute admissions and cost by Pegasus Health target DRGs, Pegasus Health patients only

Admits 99	Cost 99	Admits 00	Cost 00	Change in admits	Change in cost
<b>DRG 252 Heart failure and shock</b>					
<b>Reduction goal = 155</b>					
151	\$375,527	174	\$500,754	+23	+\$125,227
Increases in NZDep96 bands 2, 3 and 7 outweigh reductions in other bands					
<b>DRG 261 Chest pain</b>					
<b>Reduction goal = 120</b>					
173	\$158,926	257	\$241,562	+84	+\$82,636
Majority of increase in NZDep96 bands 3, 4, 5, 8 & 9					
<b>DRG 270 Unstable angina without CC</b>					
<b>Reduction goal = 35</b>					
94	\$162,721	100	\$178,269	+6	+\$15,548
Increases in NZDep96 bands 5 – 10 outweigh reductions in bands 1 – 4					
<b>DRG 048 Headache (adult)</b>					
<b>Reduction goal = 55</b>					
91	\$75,752	121	\$94,185	+30	+\$18,433
Majority of increase in NZDep96 bands 3, 4, 7 & 8					
<b>DRG 347 Abdominal pain or mesenteric adenitis without CC</b>					
<b>Reduction goal = 100</b>					
45	\$31,749	55	\$35,658	+10	+\$3,909
Majority of increase in NZDep96 bands 6 – 10					
<b>DRG 348 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age &gt; 74 or age 10 – 74 with CC</b>					
<b>Reduction goal = 12</b>					
93	\$131,301	99	\$149,896	+6	+\$18,595
No clear trends evident by NZDep96					
<b>DRG 349 Oesophagitis, gastroenteritis and miscellaneous digestive disorders age 10 – 74 without CC</b>					
<b>Reduction goal = 40</b>					
68	\$53,726	83	\$62,219	+15	+\$8,493
Almost all increase in NZDep96 bands 1 & 2					
<b>DRG 491 Cellulitis age &lt; 60 without CC</b>					
<b>Reduction goal = 70</b>					
32	\$53,004	44	\$84,494	+12	+\$31,490
No clear trends evident by NZDep96					
<b>DRG 815 Viral illness age &lt; 60 (adult)</b>					
<b>Reduction goal = 25</b>					
70	\$69,193	58	\$61,236	-12	-\$7,958
Clear reductions in NZDep96 bands 1, 6, 7 & 8					
<b>DRG 889 Poisoning or toxic effects of drugs age &lt; 60 without CC (adult)</b>					
<b>Reduction goal = 25</b>					
148	\$102,418	173	\$125,556	+25	+\$23,138
Majority of increase in NZDep96 bands 4 – 8					
<b>DRG 135 Otitis media and URI age &lt; 10</b>					
<b>Reduction goal = 320</b>					
355	\$356,517	232	\$251,563	-123	-\$104,954
Reduction reasonably spread across all NZDep96 bands					
<b>DRG 172 Respiratory infections or inflammations age &lt; 55 without CC (child)</b>					
<b>Reduction goal = 90</b>					
108	\$184,741	96	\$166,380	-12	-\$18,361
Major reductions in NZDep96 bands 8, 9 & 10, increases elsewhere					
<b>DRG 187 Bronchitis and asthma age &lt; 50 without CC (child)</b>					
<b>Reduction goal = 210</b>					
147	\$120,387	136	\$113,767	-11	-\$6,619
Clear reductions in NZDep96 bands 4 & 9, inconclusive elsewhere					
<b>DRG 188 Whooping cough and acute bronchiolitis (child)</b>					
<b>Reduction goal = 80</b>					
203	\$328,192	154	\$263,337	-49	-\$64,855
Reasonably uniform reductions in all bands except 3, 8 & 9					
<b>DRG 350 Gastroenteritis age &lt; 10 (child)</b>					
<b>Reduction goal = 230</b>					
155	\$190,681	192	\$227,378	+37	+\$36,697
Majority of increase in bands 1, 2 & 7					
<b>DRG 815 Viral illness age &lt; 60 (child)</b>					
<b>Reduction goal = 170</b>					
102	\$87,214	70	\$61,466	-32	-\$25,748
Majority of reduction in bands 5 to 8					
<b>DRG 889 Poisoning or toxic effects of drugs age &lt; 60 without CC (child)</b>					
<b>Reduction goal = 7</b>					
21	\$12,843	26	\$16,691	+5	+\$3,849
No clear pattern by NZDep96					

Table 52: Changes in acute admissions and cost by Pegasus Health target DRGs, Pegasus Health patients only (continued)

Admits 99	Cost 99	Admits 00	Cost 00	Change in admits	Change in cost
<b>DRG 170 Respiratory infections or inflammations age &gt; 54 with CC</b> Reduction goal = 95					
137	\$572,252	91	\$398,015	-46	-\$174,237
Majority of reduction in NZDep96 bands 1 & 8					
<b>DRG 172 Respiratory infections or inflammations age &lt; 55 without CC (adult)</b> Reduction goal = 39					
57	\$95,224	44	\$74,733	-13	-\$20,190
Reductions in NZDep96 bands 4 – 10, increases in 1 – 3					
<b>DRG 177 Chronic obstructive airways disease</b> Reduction goal = 320					
433	\$856,751	315	\$620,071	-118	-\$236,681
Mixed results by NZDep96 band with no clear trend evident					
<b>DRG 187 Bronchitis and asthma age &lt; 50 without CC (adult)</b> Reduction goal = 105					
93	\$87,538	85	\$78,037	-8	-\$9,502
Reductions in bands 7 – 10, increases elsewhere					
<b>DRG 999 All other DRGs (adult)</b> Reduction goal = 370					
3,528	\$10,418,706	4,178	\$13,142,546	+650	+\$2,723,840
No clear trend evident by NZDep96					
<b>DRG 999 All other DRGs (child)</b> Reduction goal = 246					
716	\$1,229,826	666	\$1,066,206	-50	-\$163,620
Majority of reduction in NZDep96 bands 2, 4, 5, 7 & 9. Increase in band 10.					

The balance sheet of acute expenditure change with the inclusion of NZDep96 was recreated as a variable as shown in Table 53 below.

Table 53: Balance sheet of acute expenditure by NZDep96, Pegasus Health patients only

NZDep96	Priority DRGs No impact DRGs		Priority DRGs Marginal + DRGs	
	Acute cost change in \$	% of total cost change	Acute cost change in \$	% of total cost change
1	1,123	0.3	-67,777	10.1
2	72,428	19.5	-56,480	8.4
3	59,983	16.1	2,281	-0.3
4	33,795	9.1	-74,273	11.1
5	34,436	9.3	-35,291	5.3
6	5,162	1.4	-38,244	5.7
7	57,964	15.6	-75,726	11.3
8	57,455	15.5	-91,621	13.7
9	38,174	10.3	-119,033	17.8
10	11,342	3.1	-113,239	16.9
<b>Total</b>	<b>371,862</b>		<b>-669,404</b>	
NZDep96	All other DRGs No impact DRGs		All other DRGs Marginal + DRGs	
	Acute cost change in \$	% of total cost change	Acute cost change in \$	% of total cost change
1	376,294	13.8	-518	0.3
2	151,797	5.6	-48,916	29.9
3	409,682	15.0	19,077	-11.7
4	340,004	12.5	32,260	-19.7
5	59,843	2.2	-20,672	12.6
6	329,277	12.1	-49,305	30.1
7	255,652	9.4	56,657	-34.6
8	288,117	10.6	-93,623	57.2
9	291,346	10.7	-68,100	41.6
10	221,829	8.1	9,521	-5.8
<b>Total</b>	<b>2,723,840</b>		<b>-163,620</b>	

These figures are shown graphically in Figures 14 to 16 below. No impact bars represent proportion of total cost increase, while Marginal + bars represent proportion of total cost saving. Figure 14 shows priority DRGs, with no impact DRGs featuring a

bimodal distribution of cost increases centred around NZDep96 bands 2 and 3, and 7 and 8. This suggests that no inference can be made on the basis of NZDep96 about cost increases for no impact DRGs. Those DRGs with marginal or greater impact show some indication of increased savings for those with greater deprivation. This cannot be linked at the population level to any greater utilisation of primary care services. Figure 15 shows all other DRGs. Cost increases for no impact DRGs are spread quite evenly across all NZDep96 bands, but cost decreases for marginal or greater impact DRGs show no pattern by NZDep96. When all DRGs are combined in Figure 16, again there is a similar pattern of cost increases for no impact DRG, and the cost savings for DRGs with marginal or greater impact are most prominent in NZDep96 bands 8 to 10 – suggesting that the acute care initiatives may be impacting most on those with greater deprivation.

Figure 14: Priority DRGs - percentage of acute cost change by NZDep96

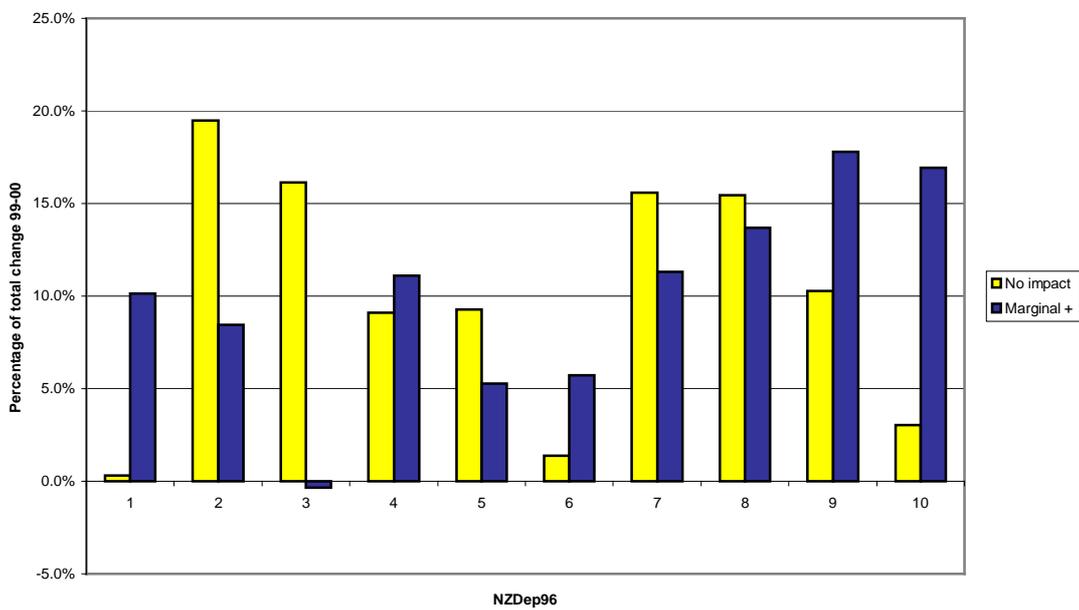


Figure 15: All other DRGs - percentage of acute cost change by NZDep96

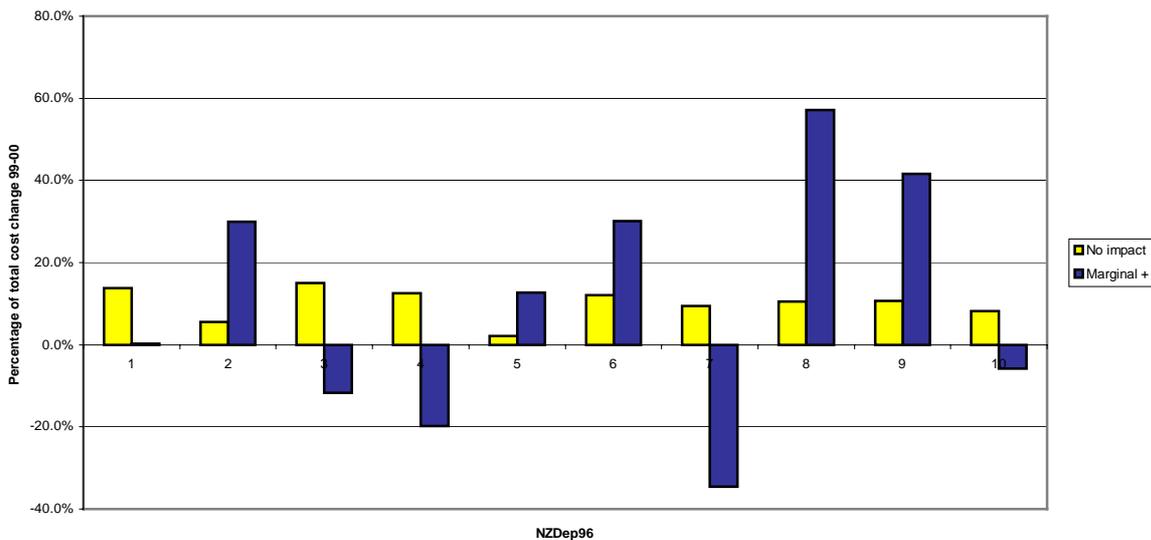
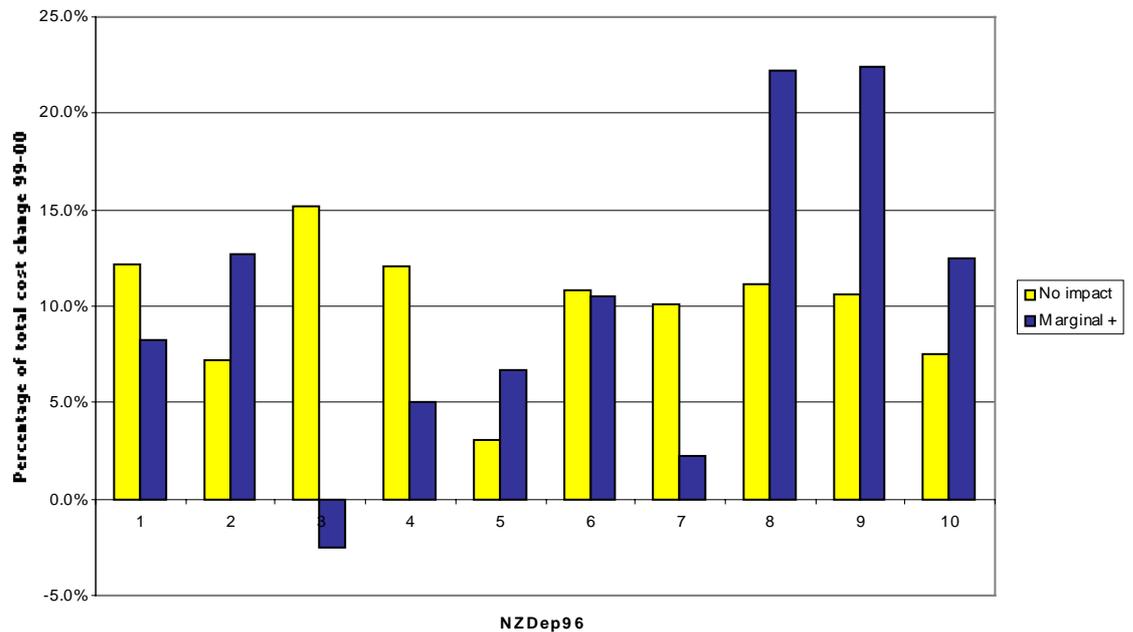


Figure 16: All DRGs combined, percentage of total cost change by NZDep96



### Emergency department (ED) utilisation

ED utilisation data covering all contacts were obtained from CDHB. The database supplied contained the following fields: NHI number; Arrival date; Discharge date; Triage code (1 – 5 scale, 1 being acute/trauma, 5 being lowest priority); Disposal code (outcome of contact); GP code (filled field indicating Pegasus Health patient, blank field indicating non-Pegasus Health patient). This database is also supplied to Pegasus Health without the NHI number. Approved access was granted to the data with the NHI to allow linking to the Pegasus Health patient register and NZDep96 data in accordance with the ethical approval.

There were some difficulties associated with the GP code field. Data analysts performing the data extract at CDHB stated that a blank GP code field indicated that the patient was not a Pegasus Health patient. However, after linking the ED database back to the Pegasus Health patient register, it was found that this was not borne out. There were patients for whom there was no GP code who were on the Pegasus Health patient register, and there were also patients featuring on the Pegasus Health patient register with no associated GP code in the ED database. Some patients would associate with more than one GP and may have indicated their non-Pegasus Health GP when contacting ED. However, it is believed that the error rate is largely a data integrity issue with CHL.

There are no checks on the validity of GP information given by ED patients, and the collection of GP data from patients is not accorded high priority in ED. While the error rate is disappointing, it is acknowledged that at the ED coal face it may not be practical to gather and confirm GP information. No criticism of CHL on this issue would be warranted. There was careful consideration in dealing with this matter, and it was determined that in the interests of internal validity and consistency of analysis, patients on the Pegasus Health patient register as being Pegasus Health patients in the ED database must be arbitrarily defined, regardless of the entry in the GP code field in the ED database. The magnitude of the problem in defining Pegasus Health/non-Pegasus Health patients from the ED database is shown in Table 54 below.

Table 54: ED database errors

	1999		2000	
	Count	Percent of contact/pat	Count	Percent of contact/pat
No GP code in ED data but patient on Pegasus Health register				
Contacts	8,849	13.8	8,627	13.3
Patients	6,080	12.8	5,987	12.4
GP code in ED data but not on Pegasus Health register				
Contacts	6,013	9.3	5,731	8.8
Patients	4,362	9.2	4,373	9.1

Table 55 below shows gross utilisation of ED services for both Pegasus Health and non-Pegasus Health patients.

Table 55: ED utilisation

	1999		2000		Change
	Count	Percent of contact/pat	Count	Percent of contact/pat	
All patients					
Contacts	64,342		65,098		+1.2
Patients	47,435		48,234		+1.7
Pegasus Health patients					Change in proportion
Contacts	39,618	61.6	38,864	59.7	-3.1
Patients	28,121	59.3	27,593	57.2	-3.5
Non-Pegasus Health patients					Change in proportion
Contacts	24,724	38.5	26,234	40.3	+4.4
Patients	19,314	40.7	20,641	42.8	+5.2

Overall, there has been a 2% reduction in the proportion of all Pegasus Health patients on the patient register with a valid NHI number admitted to ED ( $\chi^2 = 6.5$ ,  $df = 1$ ,  $p = 0.01$ ). The public health significance of this change is questioned and it is believed to be within the bounds of normal year to year variation. The mean admission rate per patient contacting ED was 1.41 in both years for Pegasus Health patients, while for non-Pegasus Health patients the rate was 1.28 in 1999 and 1.27 in 2000. The lack of change for in mean contact rate for both Pegasus Health and non-Pegasus Health patients suggests that for those contacting ED, there has been no significant change in ED contacting patterns.

High level analyses of ED admissions by triage code are shown in Table 56 and Figure 17. Table 56 shows the proportion of patients and admissions within each triage code by patient status and year, while the figure shows the change in proportion of admissions and patients by triage code after the introduction of the Global Budget. There were 10 invalid triage codes in the 1999 data and three invalid triage codes in the 2000 data. These were excluded from the analysis.

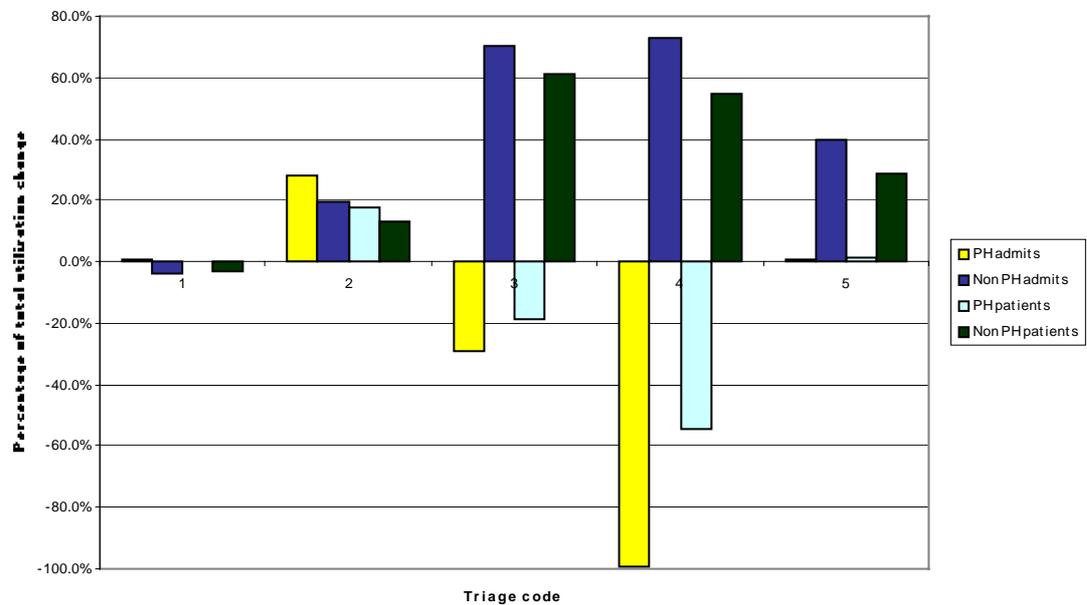
Table 56: ED admissions by triage code and Pegasus Health/non-Pegasus Health patients

Triage	1999				2000			
	PH %		Non-PH %		PH %		Non-PH %	
	Contacts	Patients	Contacts	Patients	Contacts	Patients	Contacts	Patients
1	0.6	0.8	1.4	1.6	0.7	0.8	1.2	1.4
2	8.1	8.5	8.2	8.3	8.8	9.2	8.3	8.3
3	43.0	41.9	40.6	39.2	43.3	42.0	40.3	39.3
4	42.2	42.1	43.4	43.9	41.1	41.3	43.0	43.4
5	6.1	6.7	6.5	7.0	6.2	6.8	7.2	7.7

Approximately 84% of all ED patients and admissions are within triage codes 3 and 4 and consequently they are of substantial interest. The total change in admissions to ED was 763 increase, while the total change in patients was 894 increase. Figure 17 shows the percentage of these increases attributable by triage code and Pegasus Health/Non-Pegasus Health patients. This clearly shows that Pegasus Health patients have a pattern of reduced admissions particularly in the predominant triage codes of 3 and 4. However, the major cost drivers in ED admissions are in triage codes 1 and 2. There are increases in Pegasus Health patients attending ED in triage code 2.

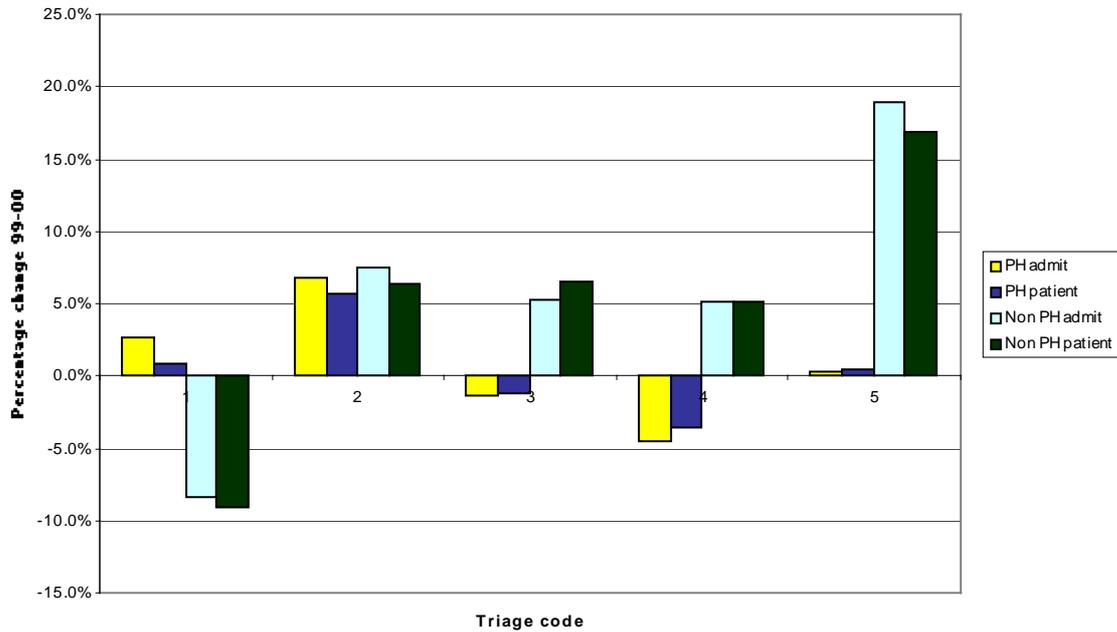
**Key result: Pegasus Health patients show reducing utilisation of ED services, particularly in the major utilisation drivers of triage codes 3 and 4. This is against the trend of increasing utilisation by non-Pegasus Health patients. The major cost drivers are triage codes 1 and 2; Pegasus Health patients show increasing ED utilisation in triage code 2.**

Figure 17: Percentage of total ED utilisation change by triage code and Pegasus Health/Non-Pegasus Health status



The trend of reducing Pegasus Health patient ED utilisation after the introduction of the Global Budget, and against the trend of increasing utilisation by non-Pegasus Health patients is further shown in Figure 18 below. This shows changes in utilisation within each triage code. Again there is reducing utilisation in the major drivers of triage codes 3 and 4 by Pegasus Health patients, against increases by non-Pegasus Health patients.

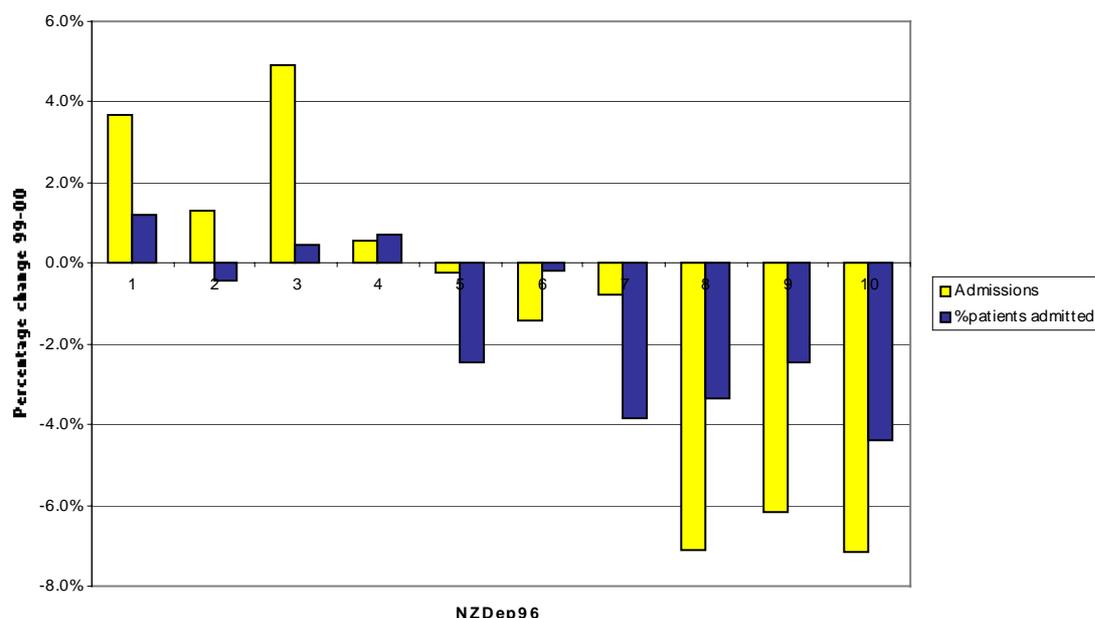
Figure 18: Change in ED utilisation within triage code by Pegasus Health/Non-Pegasus Health status



The ED data were further analysed by NZDep96. Figure 19 shows that there is both reducing numbers of admissions, and a reducing proportion of Pegasus Health patients being admitted to ED, as the NZDep96 increases in value. The majority of the reduction in ED use is in NZDep96 bands 7 to 10 – the most deprived patients. This could be a result of normal year to year variation, or it may be as a result of increased access to primary care services by the more deprived patients.

**Key result: The greatest reduction in ED use is by the most deprived Pegasus Health patients in NZDep96 bands 7 to 10.**

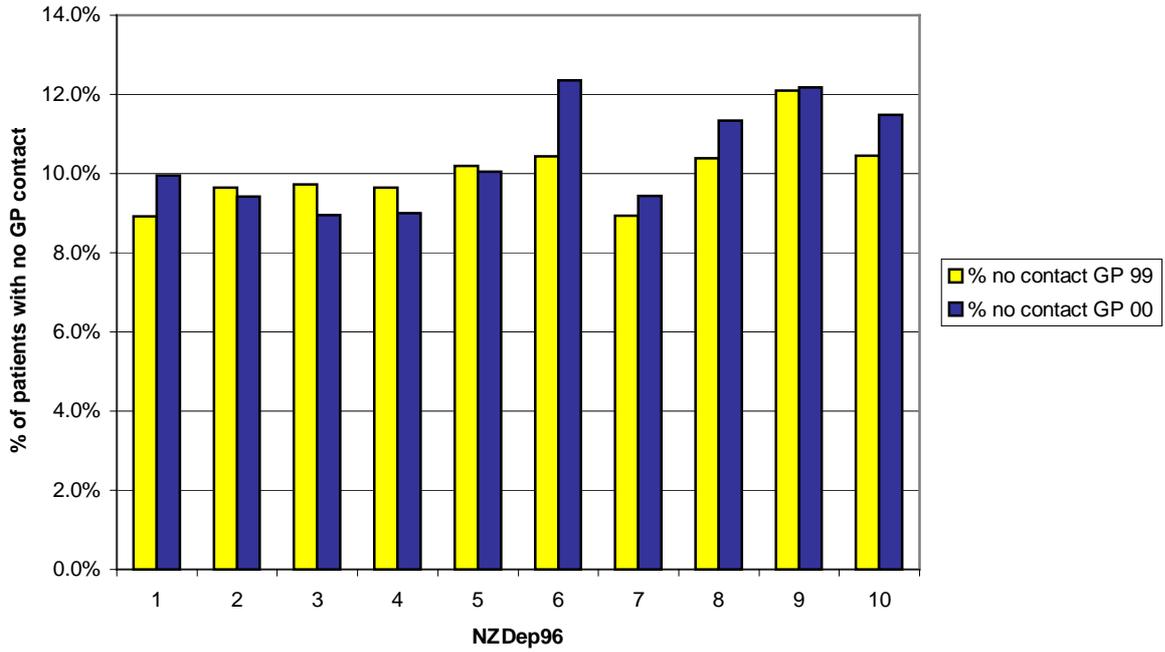
Figure 19: Change in admissions and proportion of all Pegasus Health patients admitted to ED



The data were examined for relationships between accessing ED services and accessing primary care. Within each NZDep96 band, the proportion of patients accessing ED services who had not consulted a Pegasus Health GP in the year of ED contact was calculated. No significant difference within each NZDep96 band in the proportion of patients admitted to ED who had not consulted a GP in the year of admission was found, with the exception of NZDep96 band 6. It is not believed that any of the differences shown in Figure 20 below adequately explain why the reduction in ED use is mostly in NZDep96 bands 7 to 10.

**Key result: As measured, general practice utilisation reduced ED utilisation by Pegasus Health patients in NZDep96 bands 7 to 10 but this is not explained by increased utilisation of *standard* primary care services but it may have been influenced by *non-standard* primary care services introduced by Pegasus Health as a result of the Global Budget contract. This result requires further examination that was beyond the scope of this evaluation.**

Figure 20: Patients admitted to ED with no GP contact in year of admission



Figures 21 to 25 show percentage of admissions by triage code by NZDep96.

Figure 21: Percent of ED admissions by NZDep96, triage code 1

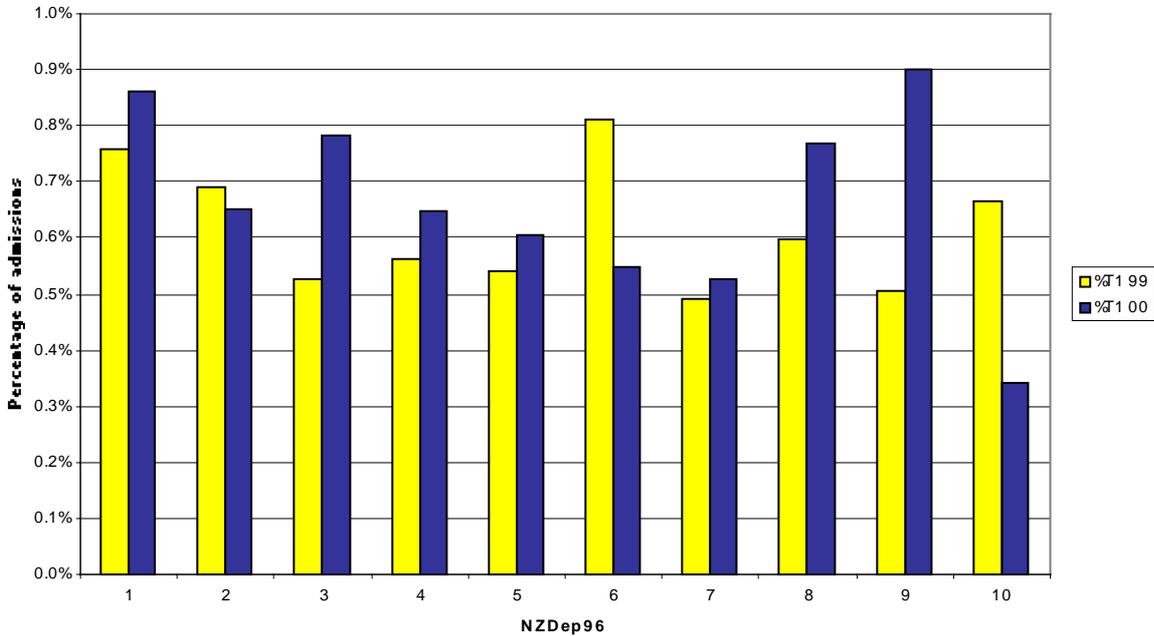


Figure 22: Percent of ED admissions by NZDep96, triage code 2

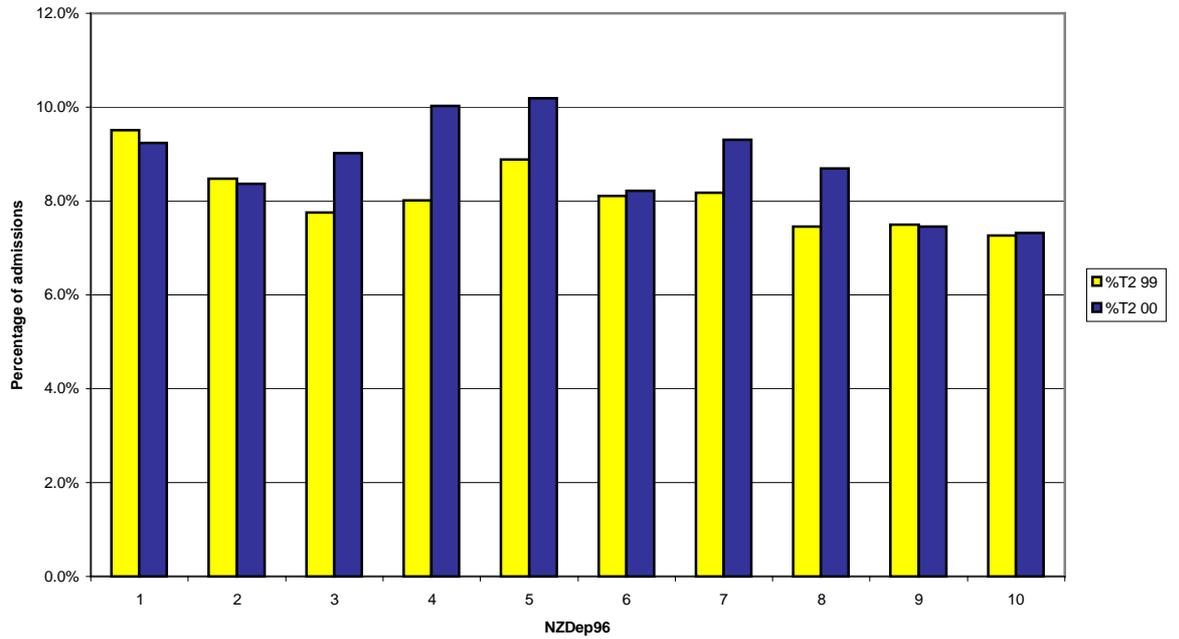


Figure 23: Percent of ED admissions by NZDep96, triage code 3

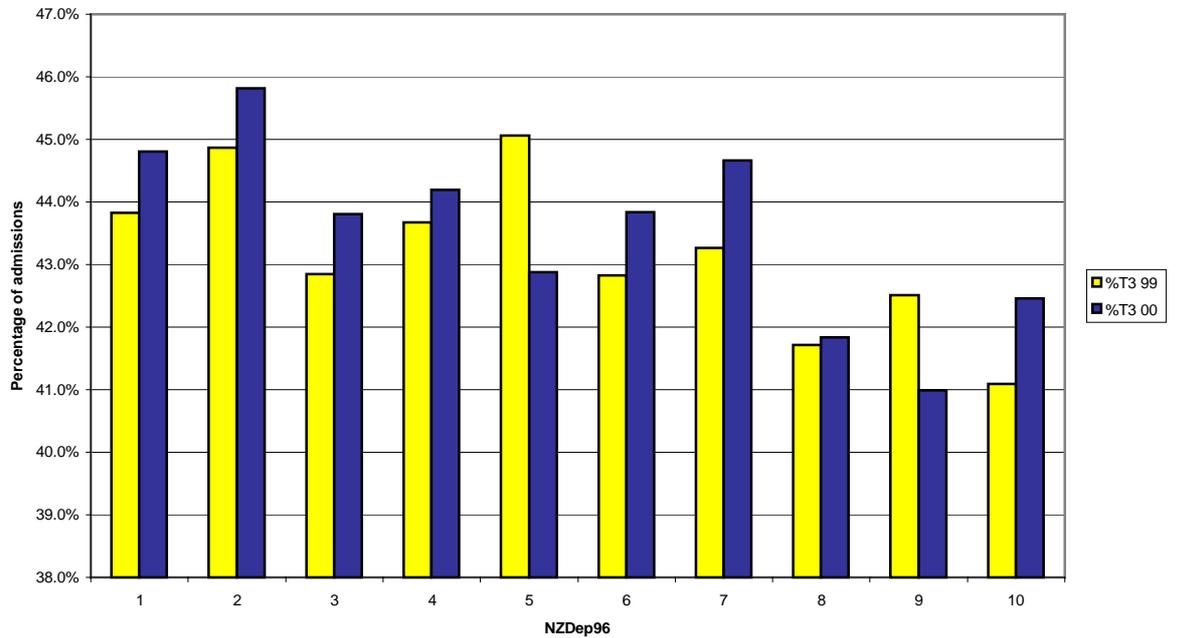


Figure 24: Percent of ED admissions by NZDep96, triage code 4

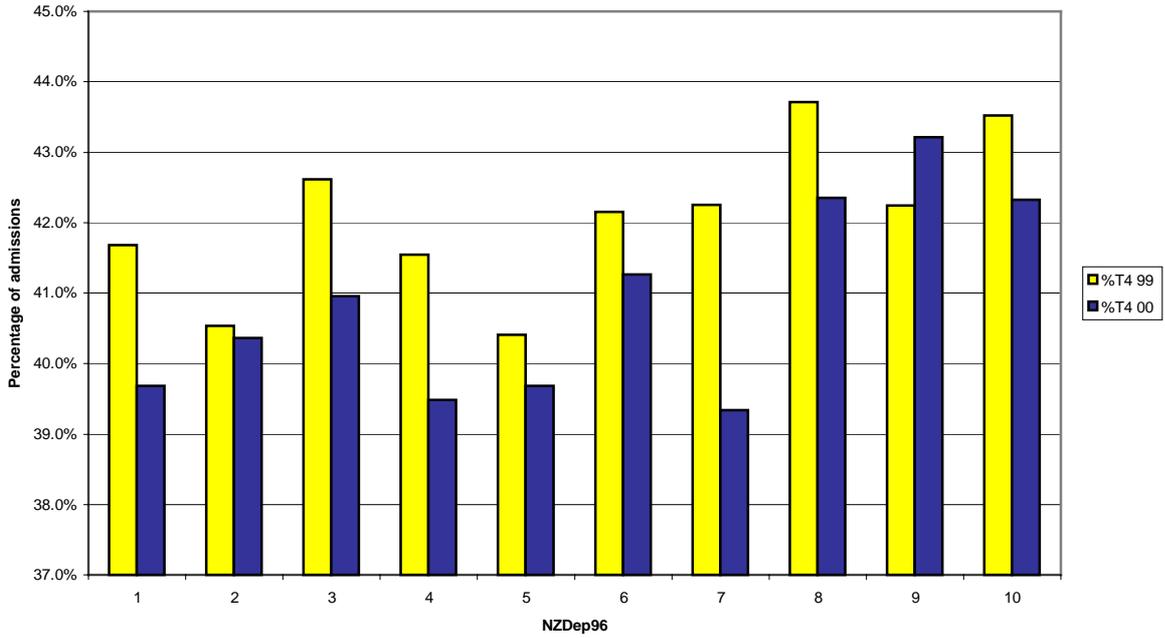
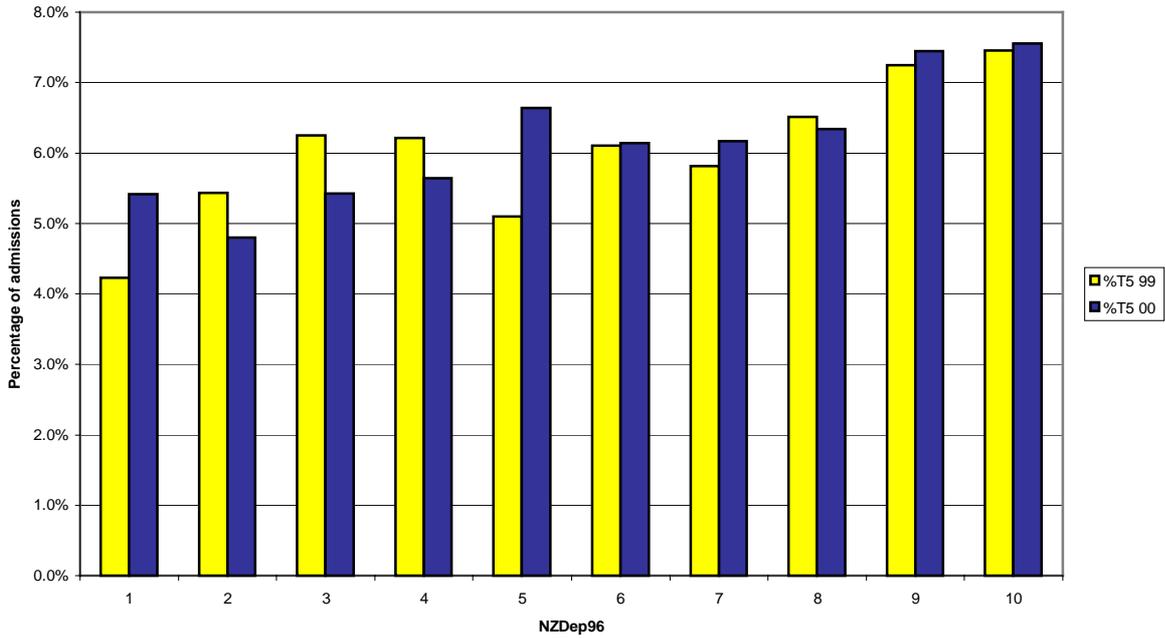


Figure 25: Percent of ED admissions by NZDep96, triage code 5



Each ED admission also had one of 22 disposal codes attached as shown in Table 57.

Table 57: ED disposal codes

Disposal code	Definition
DAM	Discharge to acute medical clinic
DFU	Discharge with follow up
DGP	Discharge to GP
DID	Died in ED
DNF	Discharge with no follow up
DOA	Dead on arrival
DRP	Discharge - return if possible
FDC	Follow up – dressing
FER	Follow up eye return
FOR	Follow up other return
IP	Admit as inpatient
LBC	Left before completion
LBD	Left before doctor attendance
LBT	Left before triage
LEF	Left against advice
OOD	Transfer to ortho
PES	Transfer to psych ED
POL	Left with police
TBW	Transfer to Burwood
TOH	Transfer to other hospital
TPM	Transfer to TPMH
TSS	Transfer to Sunnyside

The majority of ED discharges (92.2% in 1999 and 93.2% in 2000) were confined to the following five disposal codes, with the percentage of discharges for 2000 in brackets: Discharge with follow up (5.2%); Discharge to GP (25.0%); Discharge – return if possible (4.1%); Admit as inpatient (45.6%); Transfer to orthopaedics (13.3%). Given their considerable impact on ED utilisation, these are the focus of the subsequent analysis.

As shown earlier, there was an overall reduction in ED contacts by Pegasus Health patients of 754 admissions, while for non-Pegasus Health patients there was an increase of 1,509 contacts. How the five main disposal codes have affected the changes in utilisation is shown in Table 58.

Table 58: Changing ED utilisation by key disposal codes

Disposal code	PH patients ED utilisation change -754		Non-PH patients ED utilisation change +1,509	
	Change	Percent	Change	Percent
Discharge with follow up	-242	-10.3	+22	+1.8
Discharge to GP	-139	-1.3	+627	+11.3
Discharge, return if poss.	-542	-24.7	-187	-15.1
Admit as IP	+891	+5.3	+883	+8.0
Transfer to ortho	-331	-6.8	+281	+7.3
Sum	-343		+1,626	

This shows that the five major disposal codes are responsible for 45.5% of the reduction in utilisation between years by Pegasus Health patients, while they more than account for the total change for non-Pegasus Health patients. With the exception of discharges to inpatients, Pegasus Health patients show reducing utilisation whereas non-Pegasus Health patients show increasing utilisation. Further examination of the discharge codes showed a further six codes explained almost all the variation between actual utilisation change and the change described by top five codes in Table 58. This is described in Table 59.

Table 59: Additional discharge codes affecting ED utilisation

Disposal code	PH patients ED utilisation change -754		Non-PH patients ED utilisation change +1,509	
	Change	Percent	Change	Percent
Discharge, no follow up	-98	-12.7	-85	-15.9
Follow up eye return	-110	-34.3	-65	-30.2
Follow up other return	-18	-5.5	+66	+44.3
Left before completion	-56	-30.6	-20	-24.7
Left before Dr attendance	-86	-10.0	+4	+0.8
Transfer to psych ED	-32	-14.9	-14	-18.2
Sum (total)	-400		-114	

Summary of key results:

- Pegasus Health patients show reducing utilisation of ED services, particularly in the major utilisation drivers of triage codes 3 and 4. This is against the trend of increasing utilisation by non-Pegasus Health patients. The major cost drivers are triage codes 1 and 2; Pegasus Health patients show increasing ED utilisation in triage code 2.
- The greatest reduction in ED use is by the most deprived Pegasus Health patients in NZDep96 bands 7 to 10.
- As measured, general practice utilisation reduced ED utilisation by Pegasus Health patients in NZDep96 bands 7 to 10 but this is not explained by increased utilisation of *standard* primary care services but it may have been influenced by *non-standard* primary care services introduced by Pegasus Health as a result of the Global Budget contract. This result requires further examination that was beyond the scope of this evaluation.

### Background

As the Global Budget funding model was developed to achieve a number of objectives, it is appropriate to consider not only how effective it has been in meeting those objectives so far, but also how the funding model can be extended to other health services. The general aim is, therefore, to assess the potential for the funding model's expansion to other health services.

The Global Budget encompasses the belief that primary care can best be provided under a population-based funding formula<sup>37</sup>, and that passing control of the budget to primary health providers will result in better management of costs, and allow for localised initiatives to be undertaken without extensive and time consuming consultation with the funder. This model has been applied to Pegasus Health, and there is the opportunity to assess the costs and benefits of such a funding approach. Although the evaluation will not commence until after the first year of operation, the linking of databases will allow effective cost benefit analysis to be performed. As with most cost benefit analyses in the health sector, it will not be possible to measure all parameters in dollar terms. However, appropriate comment will be provided on non-measurables to allow some interpretation of the cost or benefit to the health providers, HFA or patient population. The analysis is more properly called a cost consequences analysis, in that we accept there will be consequences of the Global Budget that may or may not be able to be valued. Some of these consequences will be benefits, but others may be more difficult to arbitrarily define as such.

Where appropriate, statistical testing was performed on variables of interest. In many cases we had substantial numbers of cases to test, which could often result in a statistically significant result. However, we had concerns that, despite the clear statistical significance, there was little practical significance. We have noted instances of statistical significance or otherwise, but in some cases stated that we believe the result has little public health significance. We see little point in stating a result as significant when, in pragmatic terms, it would have little impact in the overall provision of primary or secondary care within the context of the Global Budget.

This quantitative component of the report provides only a portion of the picture of Pegasus Health activities before and after the Global Budget. During discussions with Pegasus Health staff and in reading many background Pegasus Health documents we have become aware of the tremendous amount of work done by Pegasus Health during the transition to the Global Budget. There appears to be a core belief in what they do, and this is reflected in their commitment to that work. The speed with which much work has been done is impressive. All staff with whom we met are very skilled and capable, and credit must be paid to Pegasus Health in being able to attract and retain staff of such calibre.

We must emphasise the limitations of this section of the evaluation. Firstly, we have only one year of post Global Budget data. It is unrealistic to expect that Pegasus Health will have met all the goals they set themselves during that time. Many initiatives require time to reach their full potential. Secondly, where there has been change it cannot always be directly attributed to the Global Budget – there may be other factors involved. For example, we have heard much anecdotal evidence about the mild

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<sup>37</sup> The Global Budget contract represents a mixed model approach whereby funding is population-based at the organisational level with flexibility to allow alternate funding mechanisms, for example, fee-for-service at the practice level.

Christchurch winter in 2000. It is very difficult to isolate the effect that this may have had on health care utilisation after the introduction of the Global Budget.

## GMS expenditure estimates

Estimates of GMS expenditure were made on the basis of consultation patterns, age, CSC and HUHC status. It must be stressed that these are estimates as we are aware that there are flexibilities in subsidies provided for Pegasus Health patients – for example, sexual health consultations for under 21 years olds are fully funded, and Pegasus Health has a hardship allowance which pays the entire cost of consultations for those in extreme hardship. This means that our estimates, based purely on GMS subsidies payable excluding GST, will be understated. Subsidy groups are defined as shown in Table 60 below. The subsidy payable has been rounded to the nearest cent. A summary of gross GMS expenditure is shown in Table 61.

Table 60: GMS subsidy classifications

Subsidy Group	Classification	Subsidy
A	Under 6 years	\$28.89
B	6 – 18 years with CSC or HUHC	\$17.78
C	6 – 18 years, no CSC or HUHC	\$13.33
D	19+ years with CSC or HUHC	\$13.33
E	19+ years, no CSC or HUHC	\$0.00

Table 61: Summary of gross GMS expenditure by year

Line	1999	2000	Change
Estimated GMS spend	\$10,762,964	\$11,481,052	+1.42%
Consultations	957,492	971,049	+6.67%
Subsidy/consult	\$11.24	\$11.82	+5.16%
All consulting patients	223,463	221,630	-0.82%
Subsidy/all patients	\$48.16	\$51.80	+7.56%
Subsidised consultations	647,043	688,391	+6.39%
Subsidy/subsidised consultation	\$16.63	\$16.67	+0.24%
Subsidised patients	151,448	154,513	+2.02%
Subsidy/subsidised patient	\$71.07	\$74.30	+4.54%

Interpreting this table, there is a marginal growth in total GMS spending. Although evaluation period figures are not available, the Pegasus Health Annual Report for the year ended 30 June 2000 states that direct patient expenditure (pharmaceuticals, laboratory and GMS) was \$59,485,116. Pegasus Health have reported a total figure for GMS of \$17,740,041, including maternity payments, immunisations, and practice nurse subsidies. Other data we have received from Pegasus Health suggest the GMS figure should be \$18,223,233 on the basis of direct patient expenditure minus pharmaceuticals and labs payments. We have been unable to reconcile this difference although Pegasus Health indicates the discrepancy is a result, in part of wash-ups and timing issues. We suggest then that direct GMS expenditure for consultations excluding immunisations, maternity and practice nurse subsidies accounts for approximately 19% of direct patient expenditure. The gross change in average subsidy paid for all consultations and all patients is not unexpected, as previously we have shown that the consultation rate among those under 19 years or CSC and HUHC holders (i.e., subsidised patients) has been increasing, whilst consultation rates for non-subsidised patients have declined slightly. There is no significant difference in the average subsidy paid per subsidised consultation, while average subsidy per subsidised patient has risen in almost exact proportion with the increased consultation rate among subsidised patients.

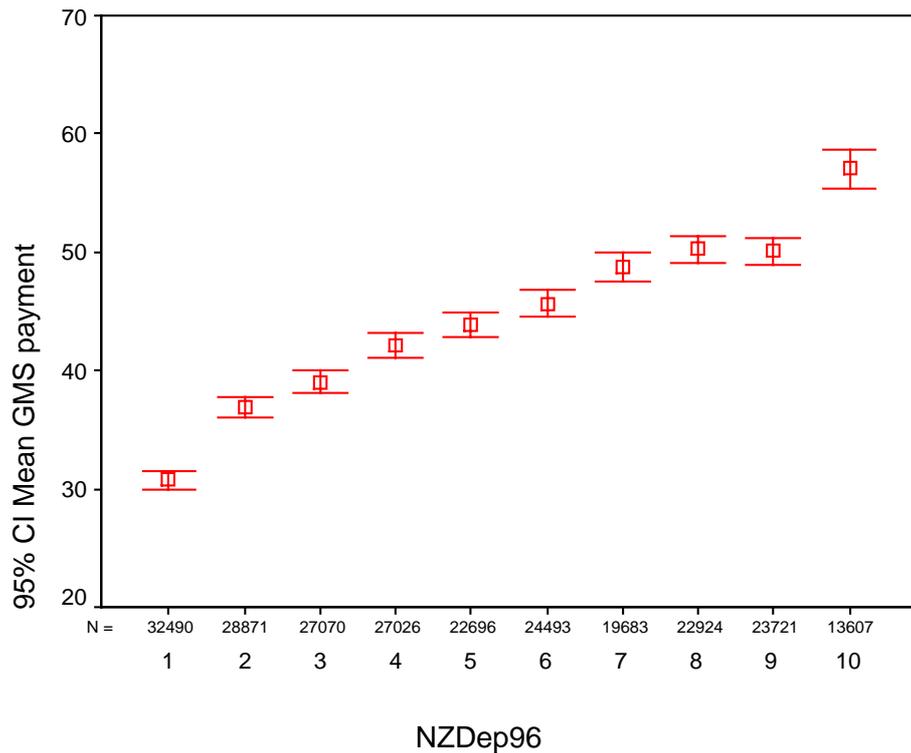
**Key result: Overall GMS expenditure has changed as expected within the pattern of changed consultation patterns. There is little change in the total GMS payment.**

Further examination of estimated GMS expenditure was undertaken by NZDep96 band and is shown in Table 62 and Figure 26. This describes the mean estimated GMS expenditure for all patients within each NZDep96 band. There was a significant change ( $p \leq 0.001$ ) in all bands except band 10. The increases are in line with changing consultation rates described earlier.

Table 62: Estimated GMS expenditure by NZDep96

NZDep96	Mean GMS\$ 1999	Mean GMS\$ 2000	% Increase
1	28.58	30.73	7.5
2	33.37	36.86	10.5
3	35.70	39.05	9.4
4	39.11	42.09	7.6
5	40.29	43.88	8.9
6	42.81	45.66	6.7
7	45.80	48.74	6.4
8	46.32	50.25	8.5
9	46.02	50.06	8.8
10	55.07	57.06	3.6
Total	39.80	43.06	8.2

Figure 26: 95% CI for mean GMS payments by NZDep96 for 2000



## Pharmaceuticals – funding under the Global Budget

The framework of the evaluation had initially anticipated individual data relating to pharmaceutical utilisation being available. However, Pegasus Health did not gather individual information about prescribing over the evaluation period. The IT team is considering a move to individual-based prescribing reporting, but this is still some way off. This would be a very positive move by Pegasus Health, as it would allow for considerable investigation of population and sub-population health issues.

We considered the best approach to analysis of pharmaceutical issues and felt it inappropriate to conduct analysis within drug groups, principally because this would add little to any understanding of how the Global Budget may have affected prescribing. Pegasus Health currently produces many prescribing reports for their members and is proactive in modifying prescribing behaviour on the basis of best evidence. We were also limited by the data available, the disparity of the evaluation periods versus fiscal periods, and timeliness of data provision to meet reporting deadlines.

A key outcome of the evaluation is the applicability of the model to PCOs generally, to practices within PCOs, and as value for money for public funds. We elected to examine pharmaceutical expenditure by practice and compare that within the framework of the Sutton funding formula to create, for the want of a better term, a profit and loss sheet of pharmaceutical expenditure by practice. Our theory was that some practices would overspend and some would underspend the amount predicted by the Sutton formula. How actual expenditure compares with predicted expenditure at the practice level has implications for both the funder and PCOs in terms of future Global Budget negotiations, and also for the potential applicability of the Global Budget model to other PCOs. We were interested in developing a practice profile in an attempt to describe practice features that contribute to over or underspending of predicted pharmaceutical expenditure, however this was beyond the scope of the evaluation.<sup>38</sup>

Pharmaceutical expenditure data were only available for the financial year ended 30 June 2000. We considered including pharmaceutical expenditure data for the financial year ended 30 June 2001 in this final report, however this would have created significant delays in the provision of this report. It was not possible to obtain data relating to the calendar years 1999 and 2000. Using calendar years would be inappropriate because the first six months of 1999 had a different practice membership and a different contract. The last six months of 2000 is subject to a change in date basis (claim date) and brings expenditure forward in a way that Pegasus Health analysts have not yet managed to quantify.

Some arbitrary assumptions have been made.

- The data are extracted by the doctor, and then linked to the surgery in which they worked. The surgery linkage is current surgery and there is the possibility some employee doctors (as opposed to practice principals) moved surgeries during the year. These doctors will be linked to the most recent practice. Pegasus Health analysts are not aware of any examples of this, but the potential for this type of error must not be discounted. The doctor surgery linkage is not relied on for any processing so if is not 100% correct it may not be obvious.
- Two doctors float between two surgeries – they have had their expenditure split 50/50 between surgeries.

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<sup>38</sup> Pegasus Health have confirmed that this will be the result of the population information activity they currently have under way.

- Membership start and finish date does not always match the population profile. Membership changes take time to process and the dates are usually that of when the Pegasus share was brought or sold.

In creating the links to allow for profiling according to the Sutton formula it was necessary to link patients for each year to a practice. In 1999 there were 140 patients for whom no such link was available. There were no such problems for the 2000 register. The loss of these 140 patients in 1999 is inconsequential from a statistical viewpoint.

In the expenditure figures there were 93 practices, as opposed to the 94 practices in the patient registers. This discrepancy is explained by the fact that one practice (2077) provides services to a Christchurch educational organisation (3086). The pharms and labs expenditure were reported as being ascribed to only the servicing practice (ie 2077) although the expenditure related to patients attending either practice 2077 or 3086. For the purposes of this analysis the patient registers for these two practices were merged to correctly indicate the correct Sutton groupings for comparison of actual versus predicted expenditure as ID 2077.

Exploration of the data revealed some concerns with the data relating to two practices, ID 3069 and ID 3085. The patient population for these practices appeared to be grossly understated in 1999 and as a result projected expenditure calculations showed phenomenal discrepancies with actual. These practices were excluded from the analysis. Practice ID 2034 showed actual expenditure of 2.36 times that which would be expected on the basis of Sutton weights. As this was a significant outlier in the data, for the purposes of statistical testing we also excluded this practice. We have spoken with Pegasus Health about these practices and can confirm that these practices fall outside the parameters of a normal Pegasus Health practice because of their organisation, activities or joining membership. We cannot be more specific than this because of the risk of the practices being identified. Pegasus Health analysts noted the desirability of having the National Provider Index attached to claims (at a pharmacy level), which would rectify many issues to do with more accurate assignment of costs. Pegasus Health is keen to capture this variable and are working towards this goal. We note this issue is of relevance nationally, not just to Pegasus Health.

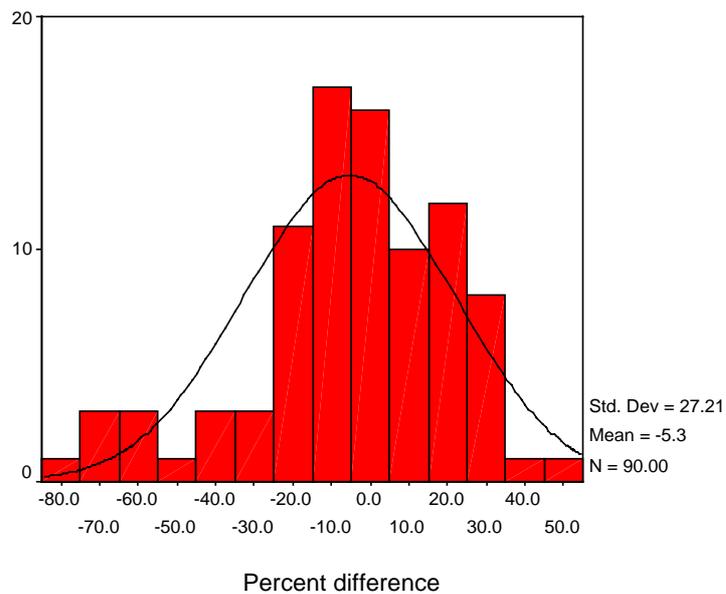
Overall these exclusions mean that there were 90 practices included in this analysis.

Actual pharmaceutical expenditure for the 99/00 year was \$34,541,267, based on population enrolment of 281,795. After excluding practices 3069, 3085 and 2034, expenditure was \$33,819,374 based on a population of 280,230 patients. We assessed the overall estimation power of the 1999 calendar population by estimating expenditure using the Sutton formula based on 99/00 financial year actual expenditure and population. In 1999 the total predicted pharmaceutical expenditure of \$34,378,838 was 1.65% higher than actual. In 2000 the patient population was 282,374, or an increase of 0.8% on the true expenditure population.

In 1999 there were 48 (53.3%) of practices whose actual pharmaceutical expenditure was less than that predicted, while 42 (46.7%) had actual expenditure above that predicted. There was exactly the same scenario in 2000, which makes some intuitive sense given that the practices were the same in both years and the patient populations were largely similar. To allow comparability between practices, actual pharmaceutical over or underspending was calculated as a percentage of the expected expenditure.

We tested the hypothesis that in 1999 mean percentage of actual over or underspending percentage of expected expenditure would be 0%<sup>39</sup>. The interpretation of this is that although there is variation of expected expenditure between practices, the net effect is negligible. We first checked the distribution of over and underspending. There was no evidence that the distribution is not normal (Kolmogorov-Smirnov Z = 0.907, p = 0.384). Figure 27 below shows the distribution of under and overspending. The 95% CI for the mean is -11.04% to 0.36%. As this confidence interval includes 0% we cannot reject the hypothesis that the true average value of the percentage difference in overall spending is not 0%. We performed the same analysis on the 2000 population, and again could find no evidence that the distribution is not normal (Kolmogorov-Smirnov Z = 1.235, p = 0.095). However, there 95% CI for mean was -12.9% to -1.3%. This indicates that the hypothesis of a 0% mean percentage difference must be rejected. However, it should be noted that the population had grown yet we were comparing with actual expenditure for a smaller population, so we had some concerns about the practical significance of this. We then used a paired samples T test to see if there was a significant mean difference in percentage between years. The mean difference between years was 1.79% however, the 95% CI was -0.28% to 3.86%. As this confidence interval includes 0% we cannot reject the hypothesis that mean percentage difference between years is the same. Because of this result all further analyses are conducted on the 1999 data alone.

Figure 27: Distribution of predicted versus actual pharmaceutical expenditure by practice



<sup>39</sup> This section supports the suggestion that 'quality improvement' in clinical practice should not be hard wired into specific models or narrow ranges. The experience of Pegasus Health has been that 'shifting the bell curve while concentrating on the outliers' is a highly effective strategy while holding people to a tight guideline or narrow range as an indicator of quality is not feasible.

It is appropriate to examine the distribution of the spending differences in further depth. Analysis of the 1999 population by deciles including a full summary of relevant descriptive statistics is shown in Table 63 below.

Table 63: Summary of pharmaceutical spending differences

No of practices	90		
Percentiles			
10	-44.56%	Mean	-5.34%
20	-22.44%	95% CI	-11.04% to 3.5%
30	-13.25%	Minimum	-84.96%
40	-8.55%	Maximum	48.09%
50	-1.88%	Std Dev	27.2%
60	4.29%		
70	9.35%		
80	17.72%		
90	26.58%		

This table shows that 70% of practices had a spending differential of between –22.4% and +26.6%. We arbitrarily defined these practices as within expected range as they were within one standard deviation of the mean. Practices with a percentage difference of over 26.6% were defined as overspenders and those with a percentage difference of less than –22.4% were defined as underspenders. There was only one decile including overspenders and two deciles including underspenders. This is in part a reflection of the skewness of the data. Our core analysis file then was 18 underspenders, 63 normal spenders, and nine overspenders.

We undertook analysis of the spending status by percentage of patients within each Sutton age/sex/CSC band. Significant results were found in the bands shown in Table 64. One way ANOVA with Tukey's HSD test was used to test for significant differences.

Table 64: Patient differences relative to pharmaceutical spending

Band	Description	Significant differences
Band 21	Females 65-74 with CSC	Underspenders have a significantly lower proportion of these patients than both normal and overspenders
Band 22	Males 65-74 with CSC	Underspenders have a significantly lower proportion of these patients than overspenders
Band 25	Females 75-84 with CSC	Underspenders have a significantly lower proportion of these patients than both normal and overspenders
Band 26	Males 75-84 with CSC	Underspenders have a significantly lower proportion of these patients than overspenders
Band 27	Females 75-84 no CSC	Underspenders have a significantly lower proportion of these patients than overspenders
Band 28	Males 75-84 no CSC	Underspenders have a significantly lower proportion of these patients than both normal and overspenders

There was no significant difference between spending status and practice population.

This analysis sheds little light on predictors for over or underspending differentials between predicted and actual, although there is some interest in the fact that smaller proportions of elderly apparently contribute to lower spending than predicted. We would have been surprised to find substantial differences on the basis of the Sutton bands given that there are a myriad of other factors which contribute to prescribing behaviour, and that to simply examine broad patient demographic variables may be too blunt an instrument.

Pegasus Health actively targets outliers for further education to encourage wiser use of resources whilst maintaining standards of best practice. Actual expenditure versus expected expenditure would be one method of targeting. However, there have been difficulties with data from the PharmHouse over recent years.

The Pegasus Health approach is to use a more micro analysis, focussing on the individual GP and their current prescribing profile compared with historic, and incorporating factors such as hours worked. Individual classes of drugs are also targeted. This work is necessary because prescribing variation is very rarely determined by broad patient demographics alone, as we have shown above. Micro analysis is required to actively address deeper issues. The Global Budget has allowed for more resources to be devoted to education and we note that expenditure on education for high/low users increased from \$7,463 in 99/00 to a projected \$33,688 in 00/01. It is not entirely appropriate to look at this portfolio dissection in isolation though, as targeting of high/low users comes under the Clinical Practice portfolio, and there is some crossover between components of that portfolio. We note that expenditure on Clinical Practice General and Liaison will increase from \$273,356 in 99/00 to a projected \$554,975 in 00/01. This dissection of the portfolio provides infrastructure for the high/low user targeting.

The most appropriate use of practice-based prescribing differentials may be to examine distribution changes over time. It would be expected that the width of the distribution over time would become narrower when effective educational tools were being used. We are unable to perform such analyses given the absence of data over several years however, such a task would be relatively easy to perform were such data available. We therefore suggest that, assuming the Sutton model of expected expenditure is used, the width of the distribution of percentage differential between expected and actual expenditure may be a valid measurement tool to educational success relating to pharmaceuticals.

**Key result: Over two thirds of practices could be deemed to have normal predicted pharmaceutical expenditure compared with predicted. There were 10% of practices overspending by this measure, and 20% underspending. In broad terms this shows the general applicability of the funding model at a large population level. For Pegasus Health directly it shows potential sentinel practices with low spending, and a minority with high spending. The Global Budget has allowed more resources to be devoted towards education for high/low users.**

#### Laboratory Tests – funding under the Global Budget

The examination of labs data was largely influenced by the same factors as pharmaceuticals, in that data individual to each patient was not available. Accordingly, we used the same analysis framework as for pharmaceuticals, and all our core assumptions are the same as documented in that section.

As with the pharmaceutical analysis there were some practices with projected versus actual expenditure differences that were outside the bounds of realistic expectation. The five practices identified as being outliers were ID numbers 2031, 2034, 2047, 3069 and 3085. Of these, three practices were also outliers in the pharmaceutical data (2034, 3069, 3085). The five practices were excluded from this analysis. In drawing Pegasus Health attention to these practices, three of the exclusions were noted in the pharmaceutical section. Pegasus Health processes had already flagged the other two practices as outliers and are being proactive in addressing the issue. Overall these exclusions mean that there were 88 practices included in this analysis.

Actual laboratory expenditure for the 99/00 year was \$6,720,616, based on population of 281,795. After excluding practices 2031, 2034, 2047, 3069 and 3085, expenditure was \$6,432,200 based on a population of 278,068 patients. We assessed the overall estimation power of the 1999 calendar population by estimating expenditure using the Sutton formula based on 99/00 financial year actual expenditure and population. In 1999 the total predicted labs expenditure of \$6,631,198 was 3.1% higher than actual. In 2000 the patient population was 280,220, or an increase of 0.8% on the true expenditure population.

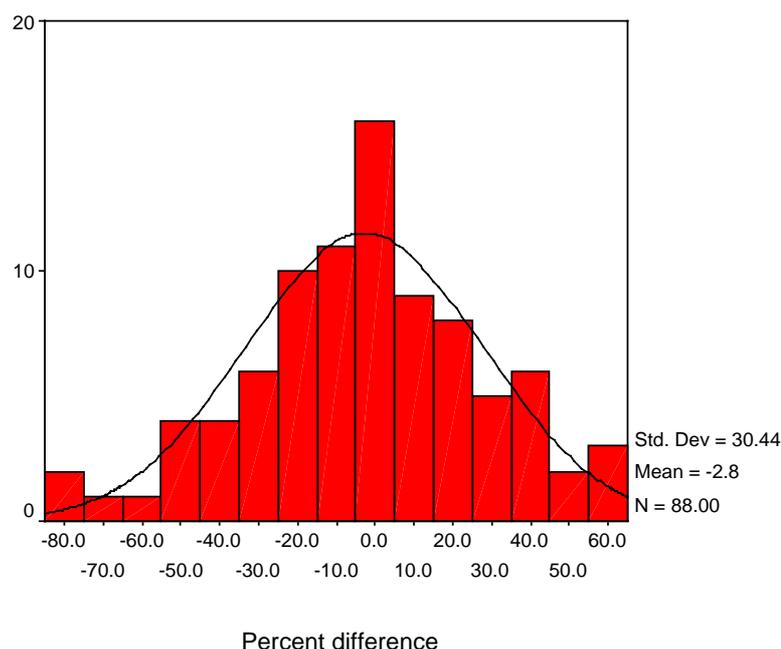
In 1999 there were 48 (54.5%) of practices whose actual laboratory expenditure was less than that predicted, while 40 (45.5%) had actual expenditure above that predicted. In 2000 there was a slight change to 49 (55.7%) with actual expenditure less than predicted and 39 (44.3%) with actual expenditure above that predicted. This is very close to the result for pharmaceuticals. To allow comparability between practices, actual laboratory over or underspending was calculated as a percentage of the expected expenditure.

We tested the hypothesis that in 1999 the mean percentage of actual over or underspending percentage of expected expenditure would be 0%. The interpretation of this is that although there is variation of expected expenditure between practices, the net effect is negligible. We first checked the distribution of over and underspending. There was no evidence that the distribution is not normal (Kolmogorov-Smirnov  $Z = 0.469$ ,  $p = 0.98$ ). Figure 28 below shows the distribution of under and overspending. The 95% CI for the mean is  $-9.24\%$  to  $3.66\%$ . As this confidence interval includes 0% we cannot reject the hypothesis that the true average value of the percentage difference in overall spending is not 0%.

We performed the same analysis on the 2000 population, and again could find no evidence that the distribution is not normal (Kolmogorov-Smirnov  $Z = 0.444$ ,  $p = 0.99$ ). The 95% CI for mean was  $-11.76\%$  to  $1.3\%$  again indicating that we cannot reject the hypothesis that the true percentage difference is not 0%. We then used a paired samples T test to see if there was a significant mean difference in percentage between years. The mean difference between years was  $2.44\%$ , and the 95% CI was  $0.05\%$  to  $4.82\%$ . We must reject the hypothesis that mean percentage difference between years is the same.

Despite the statistical significance of this result, further exploratory analysis of the data showed that there was nothing practical to add in conducting further analysis on both years' data, and we again elected to use only the 1999 data for all further analyses of laboratory expenditure.

Figure 28: Distribution of predicted versus actual labs expenditure by practice



As with pharmaceutical spending, we analysed the distribution of the spending differences in further depth. Analysis of the 1999 population by deciles including a full summary of relevant descriptive statistics is shown below in Table 65.

Table 65: Summary of laboratory spending differences

No of practices	90		
<b>Percentiles</b>			
10	-40.79	Mean	-2.79%
20	-25.45	95% CI	-9.24% to 3.66%
30	-19.23	Minimum	-81.87%
40	-10.02	Maximum	62.89%
50	-2.45	Std Dev	30.4%
60	2.53		
70	11.99		
80	24.30		
90	35.62		

This table shows that 60% of practices had a spending differential of between -25.5% and +24.3%. We arbitrarily defined these practices as within expected range as they were within one standard deviation of the mean. Practices with a percentage difference of over 24.3% were defined as overspenders and those with a percentage difference of less than -25.5% were defined as underspenders. There were two deciles in each expenditure classification. Our core analysis file then was 17 underspenders, 63 normal spenders, and 17 overspenders.

We undertook analysis of the spending status by percentage of patients within each Sutton age/sex/CSC band. Significant results were found in the bands shown in Table 66. One way ANOVA with Tukey's HSD test was used to test for significant differences.

Table 66: Patient differences relative to laboratory spending

Band	Description	Significant differences
Band 8	Males & females 6-14 no CSC	Overspenders have a significantly higher proportion of these patients than normal spenders
Band 15	Females 25-44 no CSC	Underspenders have a significantly lower proportion of these patients than overspenders
Band 20	Males 45-64 no CSC	Underspenders have a significantly higher proportion of these patients than normal spenders

There was no significant difference between spending status and practice population.

Despite the statistical significance of these results, we do not believe they highlight topics of concern or particular interest. There are no clear trends as there were for pharmaceutical expenditure.

As with pharmaceuticals, Pegasus Health actively targets outliers for further education to encourage wiser use of resources whilst maintaining standards of best practice, and the broad approach to targeting is similar. Individual GPs are targeted and many factors are taken into account. Micro analysis is pivotal to effective education approaches. As documented in the pharmaceuticals section, increased resources have been devoted to education of high/low users. There is no specific breakdown for expenditure on education for pharmaceuticals and labs as separate items, so we make the same observation as that for pharmaceuticals of increasing expenditure as a result of the Global Budget both in specific high/low user education and across the broader Clinical Practice General and Liaison budgets.

As with pharmaceuticals, the most appropriate use of practice-based lab differentials may be to examine distribution changes over time. It would be expected that the width of the distribution over time would become narrower when effective educational tools were being used. We are unable to perform such analyses given the absence of data over several years, however such a task would be relatively easy to perform were such data available. We therefore suggest that, assuming the Sutton model of expected expenditure is used, the width of the distribution of percentage differential between expected and actual expenditure may be a valid measurement tool to educational success relating to labs.

**Key result: 60% of practices could be deemed to have normal predicted laboratory expenditure compared with predicted. There were 20% of practices overspending by this measure, and 20% underspending. In broad terms this shows the applicability of the funding model at a large population level. For Pegasus Health directly it shows potential sentinel practices with both low and high spending. The Global Budget has allowed more resources to be devoted towards education for high/low users.**

## Financial issues and reporting – overview

An evaluation team member conducted key informant interviews with Pegasus Health staff members. Meeting notes were fed back to participants to allow for verification of the discussion and correction of any misinterpretations. Financial issues were not addressed in the manner of an audit as that was outside the scope of the evaluation. It was impossible to fully address financial matters within the evaluation calendar years as these do not adequately coincide with the July to June fiscal years. In this section we examine components of the Global Budget and their application to health care provision.

The Global Budget contract total was \$73,527,639. The contract specifies contributions within that budget of: Elective Services Seeding Funding \$750,000; Disease Management Seeding Funding including diabetes and asthma \$750,000; Acute Demand Seeding Funding \$500,000. The Pegasus Health 2000 Annual Report provides no such dissections for these, and total funding from HFA contracts is presented as one figure of \$73,776,963. The Annual Report also notes Global Budget interest received during the year of \$256,653, bringing total Pegasus Health income to \$74,033,606. The difference between reported income and contracted income is due to financial end of year adjustments.

Seeding funding is not accounted for separately because Pegasus Health views income derived from the Global Budget contract as a single income stream; this is the fundamental cornerstone of the Global Budget philosophy. The culture of the organisations with many interrelated initiatives under way, is not always suited to accounting separately for different sectors of income. This is also the case with expenditure, in that there are some areas of crossover between portfolios and between dissections within portfolios. We conditionally agree that this a justifiable approach as, for example, acute demand initiatives span many projects and areas and to split dissections might be a difficult exercise. The sheer number of initiatives and projects Pegasus Health has on the go is a noteworthy achievement. However, the downside to this method of reporting is that it is difficult to isolate the relative impacts of each project or initiative.

Of the total income figure of \$74,033,606, direct patient expenditure on pharmaceuticals, labs and GMS accounted for \$59,485,116, or 80.3%. Of the remainder, \$10,507,084 (14.2%) was dedicated to charitable spending, described in detail below, and an operating surplus before allocations of \$4,041,416 (5.5%) was recorded. Allocations pursuant to the HFA contract (Special Group Savings Adjustment 99/00 and Secondary Care Allocation 98/99) were made of \$434,314.

**Charitable expenditure**

Education	\$1,283,542
Population health initiatives	\$2,940,360
Integrated care projects	\$580,606
Practice development	\$759,211
Information systems	\$2,569,891
Community care	\$547,126
Corporate and administration	\$1,826,348

The charitable expenditure funding has several components: Seeding funding of \$2 million; project funding of \$3 million; administration funding of \$1.5 million.

This makes a total of \$6.5 million, although it should be noted that this is likely to be less as some of the seeding funding has been spread over the term of the contract. This remaining \$6.5 million is the result of direct patient expenditure being less than was negotiated in the contract. This could be seen as an indicator of Pegasus efficiencies as a result of the Global Budget.

The project funding of \$3 million is worthy of further comment. The \$3 million was negotiated with the HFA partly as an acknowledgement of previous reductions in spending levels, meaning historical contract income levels around pharmaceuticals and labs were reduced. The basis for the national calculation of the current pharms/labs levels was from more recent national levels of expenditure, a level that took much effort to achieve for Pegasus Health. The payment could also be interpreted more subjectively as an acknowledgement of previous good performance. We note that maintaining best value for money in primary health is not a one off. To

maintain best value requires ongoing work and communication from Pegasus Health to members to provide them with timely, accurate information and ongoing education. For example, pharmaceuticals is an area of constantly moving goalposts – subsidies and prices change, new formulations come on the market and so on. Appropriate advice two years ago for some pharmaceuticals is now inappropriate. It was suggested that this funding protects savings already made – it maintains the infrastructure necessary to ensure the continuance of best advice and guidance to members.

It was difficult for the evaluation team to make direct before/after Global Budget assessments of the financial reports, not because of shortcomings of the reports but because of the fundamental changes that have occurred because of the Global Budget. In many cases we do not believe that making direct comparisons between the financial reports in the fiscal years 98/99 (before) and 99/00 (after) periods is appropriate. The implementation and sign off of the Global Budget did not occur at the beginning of the 99/00 year and we are well aware that many initiatives were not fully operational until well into that year because of this delay. Furthermore, the evaluation period was moved to the calendar years 99 and 00 to partly adjust for this. In some cases budget items that existed in the 98/99 year did not exist in the 99/00 year, and vice versa. This is an indication of shifting priorities with the Global Budget, and fundamental shift in reporting functions in light of the single income stream. Pegasus Health intends retaining the current (post Global Budget) reporting formats which will make comparisons between future time periods much easier.

We note that Pegasus Health has produced comprehensive sets of charitable expenditure projections for the 00/01 year. These are shown below with comparisons to the previous year.

<b>Charitable expenditure</b>	<b>Budget 00/01</b>	<b>Actual 99/00</b>
Education	\$2,102,679	\$1,283,542
Population health initiatives	\$3,718,028	\$2,940,360
Integrated care projects	\$745,188	\$580,606
Practice development	\$618,286	\$759,211
Information systems	\$1,764,024	\$2,569,891
Community care	\$5,956,792	\$547,126
Corporate and administration	\$1,895,684	\$1,826,348
	<b>\$16,800,681</b>	<b>\$10,507,084</b>

This table shows a substantial overall increase in charitable expenditure during the first full year after the introduction of the Global Budget. Two portfolios show reducing expenditure. Practice development shows a reduction of 18.4% with the two dissections within the portfolio contributing to this drop being Practice Standards and CQI, and Practice Training/Receptionist courses. The drop in the former may be partially explained by the completion of development of the Pegasus QualityMark undertaken in 99/00, whilst the latter contributes very little to the overall drop. Rural Health features in the 00/01 forecast (\$38,907), but having no budgetary allocation in the 99/00 year. Although this was not a major component of portfolio expenditure, we see this as a positive move by Pegasus Health. While at the lowest level this could be seen as benevolence on behalf of Pegasus Health, the organisation sees education services as being of value to all GPs. Note was made that rural health initiatives had been under-resourced in the past and that under the Global Budget this situation had been rectified. Pegasus Health also supports other groups, and sees it active support and leadership of IPAC as a key example of this, although it features under the Corporate and Administration portfolio.

Information Systems shows a drop of \$805,867 (31%). This is largely caused by the reduction in the IT grant from \$1.37 million in 99/00 to \$195,591 in 00/01. The IT grant

distributed in 99/00 was for the development of IT infrastructure in practices. It was negotiated under a previous HFA contract. Further reductions in spending were shown in Special Projects and Software Development. There were substantial increases in Surgery Support and Internal Information Systems. We believe that this shows Pegasus Health ongoing commitment to quality information to allow for more accurate monitoring, analysis and accounting.

It is noteworthy that Corporate and Administration costs show only small growth of 3.8%. This leads us to the tentative conclusion that management costs will not explode under the Global Budget, despite the apparent increase in workload.

## Acute secondary care - implications from the Global Budget

An evaluation team member conducted key informant interviews with Pegasus Health staff members. Meeting notes were fed back to participants to allow for verification of the discussion and correction of any misinterpretations. Much of the meeting related to clarification of material concerning acute and ED initiatives; however, there were further discussions about the philosophy of the Global Budget and much “fuzzy” insight was gained. Two key topics identified during that interview are summarised below.

### Relationships with secondary providers and Pegasus Health organisational issues

The timeframes for the development of initiatives for reducing acute hospital admissions were very tight, and there was a need for considerable speed and responsiveness. Decisions had to be made quickly, and from reviews of meeting notes it is clear that the workload was very heavy for some key staff. It is acknowledged that that level of activity is not sustainable in the long-term, and it appears that much of the developmental work is complete (with the understanding that change is an ongoing necessity within the organisation) and that there is now a movement to a period of consolidation, refinement and monitoring.

The Global Budget has allowed small committees to work quickly to develop initiatives with the reasonable expectation that funding was available to carry them through to their logical conclusion. However, this does not imply that the Global Budget has resulted in a shift of power or authority over expenditure to working committees. The Board is still very much in control, and participants paid some credit to board members for coping with the volume of material that needed to be read prior to informed decision making. This is also noted in the Annual Report in which the increased Board workload is acknowledged in increased payments. Staff acknowledge board accountability as paramount. The Board is seen as key to membership attitudes and acceptance.

On the whole, relationships with secondary providers have been satisfactory, although for some there was a reasonably steep learning curve due to the speed at which change took place. It was noted that perhaps in an ideal world there should have been some buy-in to the concept of a primary led Global Budget from secondary care providers at an earlier stage, meaning that the MoH/HFA should have been having some consultation with secondary providers prior to their being confronted with organisational and operational changes. Although in this instance the Global Budget is held by a primary care organisation, it may be appropriate for other stakeholders to have access to marginal funding for projects of their own – in effect miniature localised Global Budgets. There is some perception that there may be a degree of envy among other providers when they see Pegasus Health able to make its own choices on funding and then carry them through quickly and without the burden of red tape.

The fundamental shift in organisational funding philosophy Pegasus Health has made a fundamental shift in the philosophy of IPAs/PCOs and appears to be the first to do so. Pegasus Health has moved from a predominantly savings-based model of health funding and provision to an investment-based model of health funding and provision. Pegasus Health has necessarily moved to risk taking behaviour, in that money is being invested heavily in infrastructure with the hope of future payoffs (dividends). Due diligence is a necessary process to go through whenever there is an element of risk, and this appears to have been thoroughly applied, particularly with regard to integrated care and acute admissions initiatives.

While the fundamental shift has been towards an investment-based model, this is still a work in progress and the short evaluation period makes it impossible to comment on the sustainability of this model. In saying there has been a shift towards investment, we are not saying that saving become less important. Pegasus Health has made considerable savings in recent years. However, as its management practices are further refined we would expect that savings over historic spending would be more difficult to achieve. Focus is evolving from savings as a concept to appropriate or wise spending.

We believe that the shift to an investment-based model would have been difficult, if not impossible, to achieve without the implementation of the Global Budget. The single funding stream and the ability to make decisions quickly have been pivotal to this shift.

**Key result: The Global Budget has allowed Pegasus Health to speed up decision making, without removing accountability from the board. Earlier buy-in from secondary providers may have improved primary/secondary relationships. The Global Budget has allowed the transition from a savings-based model to an investment-based model.**

A further key informant interview was conducted with a Canterbury Health Limited staff member. Several key points of relevance to the evaluation were raised during that interview.

Negotiation between Canterbury Health Limited and HFA  
There was no interaction or negotiation between Canterbury Health Limited and HFA regarding the Global Budget and secondary care initiatives. At the corporate level, particularly with respect to the potential transfer of purchasing from the HFA to Pegasus Health, Canterbury Health Limited felt impinged upon as they were facing a change in purchaser with unknown implications and risks. This resulted in a degree of uncertainty. The situation could have been proactive, but was not because of the lack of consultation. The main areas of concern from the Canterbury Health Limited perspective were clauses A2.14, A6 and B4 of the Pegasus Health service contract. These are shown below. Canterbury Health Limited corresponded with HFA concerning the clauses. At the time a Pegasus Board member had encouraged the HFA to consult with Canterbury Health Limited however, this did not occur. There was no record of Canterbury Health Limited receiving a copy of the Pegasus Health service contract, despite HFA stating they had been sent a copy in early December 1999. A Canterbury Health Limited staff member prepared a briefing for Canterbury Health Limited from a copy he downloaded from the internet in early January 2000. Canterbury Health Limited had the perception that the HFA had not been particularly communicative, and the onus should have been on the HFA to communicate with CHL.

#### A2.14 Specialist Budget-holding

We agree to work with you in exploring, and if agreed, implementing budget-holding initiatives with specialists so as to achieve better utilisation of health resources.

#### A6 Unbundling secondary care services

1. We agree to work with you and Canterbury Health Ltd to unbundle some funding so that you can work towards disease management and better management of acute demand including primary referred diagnostics. We will meet with you and Canterbury Health Ltd within one month of signing this Agreement and will keep meeting monthly until we have found a way to progress this unbundling process.
2. The HFA will actively promote this process including the areas of first specialist assessment (FSA), follow up management, primary referred services and investigations and agreed total budget-holding for disease management programme areas.

#### B4 Strategic Investments

1. In addition to the Global Budget both of us agree to identify up to \$3m each that may be made available for strategic investments. Any funding identified by us will be within areas that are already funded by us that can be shifted to you for purchasing. This funding will be matched by you to an equivalent level. Subject to funds being made available by both of us, the funding is available for new investments over the period from 1 July 1999 to 30 June 2002. Both of us must agree on the areas of services that are to be funded.
2. Within the three-year period from 1 July 1999 to 30 June 2002 you may contract for a total of up to \$6M of services which we have already committed to purchasing and which we both agree you can purchase on our behalf.
3. By 15 February each year, commencing 15 February 2000, we will meet to discuss which services you wish to purchase on our behalf by 1 July in each year commencing 1 July 2000. We both agree that these services will be selected on the basis of their strategic alignment with your objectives. In the first year (1 July 1999 to 30 June 2001) these dates will not apply and we will work with you at the earliest possible date to progress this area.
4. We will ensure that you have access to appropriate and timely information to support the selection processes referred to in 2 and 3 above and we will support the process in drafting contracts on your behalf.
5. We will both agree on the final list of services and providers by 30 March each year commencing 30 March 2000.

Should we not be able to agree on the services to be purchased or either of us are unable to match the funding contribution required, then there are no obligations on either of us to use the identified funding on strategic investments.

**Key result: There was insufficient communication/negotiation between HFA and Canterbury Health Limited for Canterbury Health Limited to feel fully informed and part of the process. Consideration should be given to developing adequate communication/negotiation processes among all major stakeholders early in the contract negotiations. Note that Pegasus Health key informants also mentioned earlier buy-in from secondary providers as desirable.**

## Negotiation between Canterbury Health Limited and Pegasus Health

Notwithstanding the fact there had been little communication between Canterbury Health Limited and HFA, there were reasonable levels of communication between Pegasus Health and CHL. Initially, there was some tension between Canterbury Health Limited and Pegasus Health, and difficulty in getting the steering group operational to start feeding down to the working group. These issues were largely resolved, in some part because the HFA were eventually excluded from meetings between Canterbury Health Limited and Pegasus Health because of counter productivity issues.

In retrospect, there should have been a three-way negotiation process involving Pegasus Health, HFA and CHL. Canterbury Health Limited became involved some six to eight months after negotiations between Pegasus Health and HFA, and felt rather “on the back foot” and aggrieved with the HFA, but not with Pegasus Health.

## Secondary care initiatives

Although there had been reasonable communication between Canterbury Health Limited and Pegasus Health, there was little consultation between Canterbury Health Limited and the Pegasus Health board regarding the 16 target areas and projects involving secondary care. Canterbury Health Limited felt there was a very strong case for consultation, but were hindered to a certain extent with Pegasus Health concerns about short timeframes. There was a perception, particularly among Canterbury Health Limited clinicians, that Pegasus Health had lots of money; if Canterbury Health Limited clinicians had access to extra money then they could have instigated other initiatives, or contributed improvements to Pegasus Health initiatives. There were surrounding issues of priorities and contestability of funds. With the benefit of hindsight, Canterbury Health Limited would like seeding funding for initiatives.

While Canterbury Health Limited clinicians were consulted about some areas (eg Observation Unit, Diagnostic Service, Mobile Unit), they were definitely not consulted about all areas particularly where Pegasus Health perceived them to be services that were solely ‘primary care’ in their orientation. There were other areas where clinicians thought they should have had sign off. Clinical sign off should have been consistent across all projects. Sometimes Pegasus Health staff attempted to project manage internal Canterbury Health Limited projects, but this was not particularly successful. There were some speed issues: Pegasus Health had resources and some new staff, but Canterbury Health Limited had some problems resourcing to participate in the process with regard to staff, structure and funding. Note was made that Canterbury Health Limited has increased throughput with no increase in SMOs.

## Incentives

For an incentive to be effective there needs to be a direct impact on clinicians. The Global Budget contract has had no impact on hospital clinicians or on changing hospital clinician behaviour. In particular the ED project has not reached its potential. There was potential for people to take actions to make the Global Budget initiatives fail. Clinical opinion is widely divided within CHL, and some would like to scuttle the projects.

## Acute growth

Canterbury Health Limited has been trying to manage acute growth, but there are many seasonal variations. It is not really possible to tell what the situation is post-Global Budget, as there are data for only one year. A Canterbury Health Limited staff member expressed the personal opinion that the Pegasus Health targeted projects looked quite good in general terms; however, sustained support would be needed for them.

## EQUITY OF FUNDING

### Background

In order to adequately address this issue, an agreed definition of equity of funding for health services is needed. Hence, clarity of intended contract outcomes up front is crucial if clear and mutually agreed evaluation is to be effective. Health needs analysis is included as one of the evaluation proposal delivery questions, so an assessment of equity incorporating a need dimension needs to be considered.

At the broadest level a concept of equity in funding may suggest that those with lower socio-economic status should receive a greater slice of public funding for primary care services. It can be argued that ethnicity should be incorporated as a separate factor in equity considerations, particularly given that Māori and Pacific Islanders are over represented in the lower socio-economic groups. Given the nature of the Pegasus Health contract, and its stand alone Māori and Pacific Island initiatives, equity considerations may be considered only in the context of socio-economic status. Other aspects of the evaluation are better able to assess ethnicity-related issues.

In determining the socio-economic status of the Pegasus Health population it is necessary to go beyond community services and high user cards as a proxy for socio-economic status and health need. The uptake of community services and high user cards in some communities, for example, can be well below that which could be expected on the basis of eligibility. A more accurate assessment of socio-economic status is required for an evaluation of equity. We are fortunate in New Zealand to have the NZDep96 which can be linked to NHI numbers to provide a much more accurate assessment of socio-economic status. It is important for a rigorous scientific analysis of equity of health funding that resources are made available to link the Pegasus Health patient register with NHI numbers available to the NZDep96. This is technically feasible and we are aware that this has already been piloted informally with one Pegasus Health practice.

The current system of subsidy payments for primary care already attempts to provide a degree of equity in funding, in that the young, those on low incomes and those with higher health needs are provided more public funding through the Free Child Health Care Scheme, the GMS subsidy linked with community services cards, and the high use health card. These subsidies relate specifically to consulting with a primary care health professional and to prescription medicines. Flu immunisations are provided free to those perceived to be at high risk, which is a measure of health need. Other subsidies are universal, taking no account of the patient's socio-economic status: laboratory tests, immunisations, maternity and referral to secondary care organisations. An assessment of equity of funding needs to account for all these areas.

Within the Pegasus Health service plan there are programmes that are designed to target specific groups, and in doing so attempt to provide a more equitable system of public funding of health. Specific programmes and their targeting plan relating to equity are:

Project 3.1.8: Smoking cessation – targeted to young women, Māori and low income groups.

Project 3.1.9: Sexual health for under 21 year olds – specific strategies to target Māori and low income groups.

Project 3.1.15: Hardship fund – provide funding for health services, equipment or support targeted to Māori and low income groups.

Several other projects are clearly looking to move towards targeting mechanisms, but require further information that will be gathered during the course of the project before such decisions are made.

Work already under way by Pegasus Health shows that a high proportion of Pegasus Health expenditure is linked to the most deprived localities, and that per capita expenditure on both labs and pharmaceuticals is higher in the most deprived localities than the more affluent areas. Further evaluation is required to examine this trend over time. As noted above, laboratory subsidies are universal, while pharmaceutical subsidies are not. It is to be expected that a portion of the increased per capita spend on pharmaceuticals is caused by the higher subsidy regime in place for low-income earners. The assessment of equity in funding must account for this.

## Sexual health services utilisation

Pegasus Health provides patients aged 21 years and under with fully subsidised consultations and prescriptions for sexual health matters. Pegasus Health gathers information about sexual health utilisation, both for payments and for monitoring. The section containing gross GMS and utilisation included sexual health visits in order to give a broad overview of utilisation. This section will examine in depth how this initiative impacts on utilisation and expenditure for patients in the target age group.

Not all patients featuring on the sexual health contact register could be linked to the master patient registers supplied. This is because the master patient register excluded those contacting solely at the 24-Hour Surgery, but these patients are included in the sexual health register. Furthermore, the master patient registers are essentially a snapshot, and patients contacting a Pegasus Health practice, but for whom full information was not provided were excluded from the master register at the time of creation. However, these patients may retrospectively be included in later registers as full information becomes available. We consider these issues to be relatively minor in the context of the wider evaluation, and patients without a direct link to the master registers as supplied are excluded from further analysis.

There were 4,734 patients in 1999 on the sexual health register. Of these 4,513 (95.3%) fulfilled the inclusion criteria for linking to the master registers; in 2000 there were 6,379 patients on the sexual health register, and of these 5,953 (93.3%) fulfilled the inclusion criteria for linking to the master registers. These patients are included in all further analysis of sexual health matters.

Initial analysis indicated that patients aged 15 to 21 years were the predominant users of the sexual health service, accounting for nearly 98% of all consultations provided under the initiative. Full descriptives of all age groups are provided in subsequent tables; however, key results and indicators relate only to those patients aged 15 to 21 years inclusive. Results of the analysis are summarised in Table 67 below.

Table 67: Summary sexual health service users and utilisation: age 15 to 21 years inclusive

Line	1999	2000	Change
Patients in Sexual health register	4,387	5,751	+31.1%
All consulting patients in age group	19,117	19,020	-0.5%
% sexual health patients of all consulting patients in age group	22.95%	30.24%	+31.8%
Sexual health consultations	9,637	14,963	+55.3%
All consultations	21,060	26,939	+27.9%
% sexual/all consultations	45.76%	55.54%	+21.4%
All consultations for age group	59,290	60,112	+1.4%
% sexual/all consultations for age group	16.25%	24.89%	+53.2%
Avg consult rate sexual health patients	4.83	4.73	
Avg consult rate sexual health patients, sexual health contacts	2.20	2.62	
Avg consult rate sexual health patients, non-sexual health contacts	2.62	2.11	
Avg consult rate non-sexual health patients	2.59	2.49	

There has been a significant increase (31.8%) in the proportion of patients accessing the sexual health service, and a marginal decrease in the overall numbers of patients in the target age group. This indicates that the provision of the sexual health service is not attracting new patients to Pegasus Health, rather providing more services to existing patients. This is not unexpected as Pegasus Health has such a wide coverage of the Christchurch population. It is most interesting to see that total consultations for the target age group have risen only marginally (1.4%), and this is unlikely to be of public health significance. However, the proportion of sexual health consultations of all consultations has grown significantly by just over 53%. This indicates that many consultations for this age group are for sexual health issues, and there is an increasing uptake of the subsidised visits. More detailed analysis of sexual health utilisation is provided in Tables 68 and 69.

There have been some changes in GMS expenditure. For all patients in the target age group, estimated GMS expenditure has risen from \$689,045 in 1999 to \$712,983 in 2000 (3.5%). Given that about 93% of sexual health service users are female, and that females in this age group show an increasing consultation rate, this is as expected. However, when estimated GMS expenditure is calculated for only those accessing the sexual health service, the figures are \$236,624 in 1999, and \$311,977 in 2000 – an increase of 31.9%. This situation is explained by several factors. Firstly, sexual health service users have a higher average consultation rate than non-users of the service as shown in the table above. Secondly, CSC holders are higher users of the sexual health service than non-CSC holders, which explains the rise in GMS payments. Non-CSC holders use of the service is increasing. The average consultation rates for non-sexual presentations by users of the sexual health service is not too dissimilar from the average consultation rate for non-users of the sexual health service. This suggests that use of the sexual health service is appropriate.

The question of funding split arises for sexual health services. If only sexual health contacts are examined, estimated GMS expenditure was \$104,589 in 1999 and \$165,632 in 2000, an increase of \$61,043 or 58.4%. This is less than the increase in total estimated GMS expenditure for sexual health patients. It is unclear how much Pegasus Health tops up the GMS payment for sexual health visits however, the 2000 Annual Report states that \$135,985 was spent on sexual health consultations for six months. On this basis it appears that a greater proportion of the cost of sexual health visits is borne by the GMS system rather than extra subsidies provided by Pegasus Health, assuming total expenditure for the 2000 year was \$271,970 (being twice the six month actual).

On this basis Pegasus Health funds 61% of the sexual health expenditure (\$165,632/\$271,970). However, it is clear that the service is now used by nearly one-third of all patients in the target age group and nearly half of the females (47%) in this age group. It appears clear that this initiative is fulfilling a demand and that the Global Budget has freed resources to allow the ongoing development of the project. However, it is not clear what outcomes have resulted from the sexual health service.

**Key result: There is increasing use of the sexual health service and nearly half of female patients aged 15 – 21 years accessed the service in 2000.**

Table 68: Detailed sexual health utilisation 1999

<b>Age</b>	<b>Sexual health patients 99</b>	<b>Sexual health consults</b>	<b>Sexual health patients all consults</b>	<b>All patients</b>	<b>All consults</b>	<b>% sexual health patients/all patients</b>	<b>% sexual health consults/all sex patients consults</b>	<b>% sexual health consults/all consults</b>
11	2	4	10	2740	7719	0.07	40.00	0.05
12	5	6	31	2306	6249	0.22	19.35	0.10
13	27	39	139	2189	6060	1.23	28.06	0.64
14	92	157	379	2365	6744	3.89	41.42	2.33
15	220	443	1082	2349	6887	9.37	40.94	6.43
16	373	823	1897	2570	7862	14.51	43.38	10.47
17	580	1336	2985	2771	8749	20.93	44.76	15.27
18	729	1629	3473	2783	8678	26.19	46.90	18.77
19	898	2098	4329	2858	9127	31.42	48.46	22.99
20	950	2163	4375	2900	9198	32.76	49.44	23.52
21	637	1145	2919	2886	8789	22.07	39.23	13.03
<b>Total</b>	<b>4513</b>	<b>9843</b>	<b>21619</b>	<b>28717</b>	<b>86062</b>	<b>15.72</b>	<b>45.53</b>	<b>11.44</b>

Table 69: Detailed sexual health utilisation 2000

Age	Sexual health patients 00	Sexual health consults	Sexual health patients all consults	All patients	All consults	% sexual health patients/all patients	% sexual health consults/all sex patients consults	% sexual health consults/all consults
11	1	1	1	2893	8118	0.03	100.00	0.01
12	11	17	58	2256	6087	0.49	29.31	0.28
13	45	78	199	2254	6125	2.00	39.20	1.27
14	145	254	563	2387	6776	6.07	45.12	3.75
15	339	813	1795	2458	7683	13.79	45.29	10.58
16	547	1467	2623	2540	7880	21.54	55.93	18.62
17	812	2270	3985	2768	8943	29.34	56.96	25.38
18	1021	2923	4974	2756	9102	37.05	58.77	32.11
19	1025	2669	4570	2792	8620	36.71	58.40	30.96
20	1215	3224	5485	2928	9401	41.50	58.78	34.29
21	792	1597	3507	2778	8483	28.51	45.54	18.83
<b>Total</b>	<b>5953</b>	<b>15313</b>	<b>27760</b>	<b>28810</b>	<b>87218</b>	<b>20.66</b>	<b>55.16</b>	<b>17.56</b>

## Utilisation by NZDep96

In order to assess equity of access to subsidised sexual health services, we linked the sexual health utilisation data to the NZDep96. For those using the sexual health service, there was a 90.7% matching rate to NZDep96 in 1999, and an 89.8% matching rate in 2000. Table 70 below shows the proportion of all patients by sex and NZDep96 band accessing the sexual health service at least once in each year.

Table 70: Sexual health service utilisation by NZDep96

NZDep96	1999		2000		% change male	% change female
	Male %	Female %	Male %	Female %		
1	2.4	33.3	4.6	37.8	+91.7	+13.5
2	2.4	33.8	3.4	41.7	+41.7	+23.4
3	2.5	33.6	4.9	42.5	+96.0	+26.5
4	2.8	38.2	3.3	46.4	+17.9	+21.5
5	3.7	37.4	7.3	45.5	+97.3	+21.7
6	4.2	39.6	7.0	51.6	+66.7	+30.3
7	4.2	46.8	7.2	56.6	+71.4	+20.9
8	3.8	45.7	6.5	56.3	+71.1	+23.2
9	4.0	46.4	8.6	54.1	+115.0	+16.6
10	5.3	45.0	10.2	56.6	+92.5	+25.8
Total	3.3	39.3	5.9	47.9	+78.8	+21.9

There were significant increases in the proportion of patients accessing the sexual health service across all sex/NZDep96 bands. As noted previously, females are the heaviest users of the sexual health service, but this table also shows that among females the heaviest users are those in the higher (i.e., more deprived) NZDep96 bands. This observation also applies to males. While males account for less than 10% of sexual health service utilisation, there was a very significant increase in the proportion using the service.

**Key result: A higher proportion of more deprived females used the sexual health service before and after the introduction of the Global Budget. The proportion of females using the service increased across all NZDep96 bands after the introduction of the Global Budget.**

Given that females are the heaviest users of the service, it is appropriate to further examine their utilisation patterns by NZDep96 as shown in Table 71.

Table 71: Female sexual health utilisation by NZDep96

NZDep96	1999		2000		% change sex cons	% change non-sex cons
	Mean sex cons	Mean non-sex cons	Mean sex cons	Mean non-sex cons		
1	2.2	2.5	2.6	2.3	+18.2	-8.0
2	2.2	2.8	2.6	2.0	+18.2	-28.6
3	2.2	2.8	2.5	2.4	+13.6	-14.3
4	2.2	2.8	2.7	1.9	+22.7	-32.1
5	2.1	2.8	2.7	2.3	+28.6	-17.9
6	2.2	2.7	2.8	2.1	+27.3	-22.2
7	2.5	2.8	2.8	2.3	+12.0	-17.9
8	2.5	2.8	2.9	2.3	+16.0	-17.9
9	2.2	2.4	3.0	2.3	+36.4	-4.2
10	2.6	3.0	2.6	2.2	0	-26.7
Total	2.3	2.7	2.7	2.2	+17.4	-18.5

The changes seen here are all significant, with the exception of non-sexual health consultations for NZDep96 bands 1, 3 and 9, and sexual health consultations for

NZDep96 band 10. We were surprised to see that deprivation band 10 had not increased sexual health consultation rates. However, the previous table shows that this group already had the highest contact rate for sexual health services prior to the introduction of the Global Budget. Considering these two tables together, there are clear indications that those in the lower socio-economic groups use the sexual health service more than those in higher socio-economic groups and that contact rates are increasing by a similar margin across all groups. Additionally, we note again that increased use of the sexual health service is reducing consultation numbers for non-sexual matters, which indicates the dominance of sexual health matters in primary care for this age group.

**Key result: More deprived females make greatest use of the sexual health service. There was increased utilisation of the sexual health service in all NZDep96 bands except the most deprived after the Global Budget. The most deprived group made most use of the service prior to the Global Budget.**

We attempted to assess the success of the sexual health service in terms of abortion rates between the two years. We were able to access this information via the NHI link to the NMDS. Our target group for this was all females aged 15 to 21 years inclusive with a valid NHI number.

Table 72: Abortion rates, females aged 15 – 21 years

	1999	2000
All females on register age 15-21	12,970	13,213
Consulting females age 15-21	10,138	10,363
Not consulting females age 15-21	2,832	2,850
No. consulting sexual health	3,968	5,018
No. not consulting sexual health	6,170	5,345
Total no. abortions	48	75
No. abortions sexual health users	26	35
No. abortions non-sexual health users	16	17
No. abortions non-consulters	6	23

Table 72 reveals that there has been a significant increase in the proportion of all patients having abortions ( $\chi^2 = 5.46$ ,  $df = 1$ ,  $p = 0.019$ ). However, there was no significant difference in the proportion of patients who used the sexual health service having abortions between years, nor was there a significant difference in the proportion having abortions who had consulted but not used the sexual health service. There was a significant increase in the proportion of patients who had not consulted having abortions ( $\chi^2 = 8.48$ ,  $df = 1$ ,  $p = 0.003$ ). For those patients using the sexual health service, we were unable to ascertain if they used the service before or after the abortion as the sexual health data provided did not contain date of contact information. We attempted to analyse abortion rates by NZDep96, but the numbers were too small to determine any significant trends.

**Key result: There is no evidence that the Global Budget has reduced the abortion rate for females aged 15 – 21 years, despite the increasing use of subsidised sexual health consultations. The abortion rate has not changed for patients consulting either routinely or specifically for sexual health, but the abortion rate has increased for those not consulting a GP at all in the year of the abortion.**

## Immunisations

Examination of immunisation rates in the strictly quantitative sense is quite difficult because of the historical nature of immunisation reporting within Pegasus Health. This is not a criticism of the historical process, rather an observation of fact. Certain facts have been made clear in other Pegasus Health documents, most notably the 2000 Annual Report. The purpose of this evaluation is to add value to figures already published, not to audit their accuracy. The Annual Report notes: "Much work has been done to our internal database so we can put in place a live system that will interact more easily with Pegasus and non-Pegasus data". Implicit in this statement, and from further discussions with analysts at Pegasus Health, in 1999 immunisations were not fully incorporated into the master patient registers that largely define the contract population. This in part is a result of the patient register implemented for contract purposes (the patient contract register) being different from the enrolled population. Therefore, analysis of immunisation figures for the 1999 period using the 1999 contract population is neither appropriate nor accurate. Further explanation of this is provided later. The report goes on to say that there was 94% coverage of two year olds and 88% coverage of 11 year olds. Analysis of the figures supplied by Pegasus Health support these figures.

A core requirement in assessing immunisation coverage rates is the ability to accurately assess the denominator population. The denominator for the Annual Report was based on those patients Pegasus Health members (i.e., the GPs) identified as being their patients – that is to say patients with whom they had established what they believed to be an ongoing relationship in terms of providing primary health care. The contract population however includes every two year old that any of the Pegasus Health members have seen. Inherently then, the contract population is different from the enrolled population denominator as previously defined for the purposes of immunisation coverage. Analysis for the purposes of the evaluation is therefore limited. We can comment on issues surrounding immunisations, which we believe reflect Pegasus Health's commitment to improving the quality of immunisation reporting, and increasing immunisation coverage.

Pegasus Health acknowledges that defining the denominator population for immunisations on the basis of members' perceptions of who their patients are was not robust. The move to accurate patient enrolment should rectify this situation in time. The Link Nurse project, which has been introduced since the Global Budget, aims to support practices covering patients whom are not 'enrolled' with any practice and may fall through the cracks. This approach in turn aims to support a "population health" focus and increase coverage of children not ordinarily linked into general practice. Pegasus Health already has a record of every two-year-old who has contacted a Pegasus Health doctor. Currently, the Link Nurse project aims to assign a status to every two year old which will allow much more accurate definition of the denominator figure for immunisations. In 2000, Pegasus Health has already moved to classifying patients for the purposes of maintaining an immunisation register and denominator figure.

Figures for September 2000 for two year olds are shown below.

Non-Responder	3.70%
Declined	1.71%
Non-Resident	8.63%
Other GP/Surgery	13.62%
Given Elsewhere	2.23%
Not yet Finalised	4.45%
Complete	65.66%

Classifying patients in this way will allow much better definition of which patients to follow-up. The Link Nurse project is also using the same system for tracking the 11 year old population. It is not planned to roll this out to 65 year olds at this stage due to the work required, but immunisation status for over 65 year olds will be integral part of the patient enrolment package.

The MoH suggested an assessment technique of immunisation coverage by ascertaining 80% of the population of two and 11 year olds in Christchurch (its suggested Pegasus coverage of the Christchurch population), and then comparing that with numbers of immunisations given. This process has been worked through and we can provide the following figures.

Total number of two year olds immunised in 1999 and 2000 (no individual year breakdown available) = 6,642

Estimated number of two year olds in Christchurch in the years 1999 and 2000 (source Statistics New Zealand) = 8,000

Pegasus coverage estimate =  $80\% * 8,000 = 6,400$

Noted earlier: Evaluation team estimated coverage of Christchurch two year olds is approximately 113%, so increase coverage estimate by 13% to give recalculated Pegasus coverage estimate of 7,232

Estimated Pegasus immunisation coverage =  $91.8\% (6,642/7,232)$

Total number of 11 year olds immunised in 1999 and 2000 (no individual year breakdown available) = 6,237

Estimated number of 11 year olds in Christchurch in the years 1999 and 2000 (source: Statistics New Zealand) = 7,400

Pegasus coverage estimate =  $80\% * 7,400 = 5,920$

Noted earlier: Evaluation team estimated coverage of Christchurch 11 year olds is approximately 100%, so no adjustment is necessary

Estimated Pegasus immunisation coverage =  $105.4\% (6,237/5,920)$

We are unconvinced of the validity of this technique of estimating immunisation coverage, particularly given the apparent erroneous result for 11 year olds. We suggest that using a blanket 80% Pegasus patient coverage of the Christchurch population is too blunt an instrument. A better interpretation of Christchurch population immunisation coverage may be to say:

- for the years 1999 and 2000 it appears that Pegasus Health has immunised about 83% of Christchurch two year olds

- for the years 1999 and 2000 it appears that Pegasus Health has immunised about 84% of Christchurch 11 year olds.

The evaluation team can provide no concrete evidence that the Global Budget has increased immunisation rates in Christchurch. However, we can say that it appears the Global Budget has freed up resources to allow better follow up of immunisation status by dedicated staff.

**Key result: The Global Budget has provided the necessary platform for better immunisation reporting and coverage in future years. There is no objective quantitative evidence available to the team that immunisation coverage has improved in the year immediately following the introduction of the Global Budget.**

Data were not available for flu vaccinations or 65 year old vaccinations. Historic reporting of these immunisations was not at an individual patient level, so no direct link to the patient registers is possible.

## Smoking cessation

Pegasus Health has undertaken a smoking cessation programme for some time. However, the data gathered as part of that programme have only recently been integrated into the main Pegasus Health information system and it was not possible to integrate all historical records relating to participation in the smoking cessation programme. Pegasus Health analysts devoted a considerable time to attempting full incorporation of historical data into a form compatible with the patient registers for the purposes of the evaluation; however, they were only partially successful.

We discovered an apparent shortfall of 575 patients on the smoking cessation programme who could be linked to the patient register. Personal communication from a Pegasus Health Business Analyst documents the issues surrounding this linking issue.

“The smoking cessation data extract was taken from the new system which we have only just integrated. As a result a combination of factors have influenced the extract result.

No gender - There were a number of records that had no specified gender associated with the record, the effect of this being that the patient does not qualify as part of the contract population yet participated in the smoking cessation reported totals. Approximately 80 patients.

Unmatched conversions - The conversion process involves matching patient records to our Patient Register. In a number of instances insufficient patient details from the old database has meant that upon conversion the record was not matched. The effect of this being that the patient has been reported in the smoking cessation numbers and may or may not have been in the contract population (if they meet the contract criteria or not) but was unmatched and hence did not appear in the extract. Approximately 60 patients.

Data take on - During the database conversion there were small numbers of records that were not able to migrate into the new system. Hence, these records will not be in the extract but will be in the smoking cessation reported totals. Approximately 80 patients.

No GMS transaction and GMS > two years - There were a large number of patients who did not have a GMS transactions or that had a consult that was > two years and hence are not included in the contract population but will be on the smoking cessation programme and hence in the reported smoking programme numbers. Approximately 360 patients”.

The sum total of patients with irreconcilable linking problems is 580 for the 99/00 financial year. This matches very closely with our 575 estimated non-matching patients. We suggest that the matched data that Pegasus Health provided is the most complete possible, and have performed limited analysis as is possible with those data. Interestingly, Table 73 below shows a greater matching rate over the calendar years than would be expected on the basis of the fiscal year.

The 2000 Annual Report notes that there were 1,238 newly registered patients between July and December 1999, and 2,269 new patients in the period January to June 2000. The report suggests that the 83% rise in patients enrolling in the smoking cessation programme is due to the increased tobacco price. We suggest that this may be a little simplistic, as price is only one factor among many influencing people to quit smoking.

There may be other factors that are of relevance, such as heightened profile of the Pegasus Health smoking cessation programme or the New Year Resolution syndrome. Expenditure on smoking cessation was \$261,717, or an average cost of \$74.62 per patient. Self-reported smokefree rate at six months was 28%, which equates to an average cost of \$266.51 per programme success. The majority, over 99%, visited a Pegasus Health practice only once in relation to smoking cessation.

Table 73: Enrolments in smoking cessation by year

	1999	2000	Change
Total enrolments*	2,025	3,278	+61.9%
Estimated spend	\$151,106	\$244,604	+61.9%
Links to patient register	2,009	3,210	+59.8%

**\*Note: 62 patients appear to have enrolled in both 1999 and 2000. These patients have been excluded from the analysis.**

Participation in the smoking cessation programme by age, sex and CSC is shown below. HUHC participants have been excluded to aid readability of the Table. HUHC holders accounted for 36 (1.8%) participants in 1999, and 80 (2.5%) participants in 2000. A further two patients in 2000 had erroneous age group links and were also excluded.

Table 74: Smoking cessation participation by age, sex, CSC and year

Age group	99M1	99M3	99F1	99F3	99total	00M1	00M3	00F1	00F3	00total	Change %
10-14	1	1	0	1	3	0	0	0	3	3	0.00
15-19	14	12	17	8	51	17	23	20	20	80	56.86
20-24	22	38	44	33	137	41	65	58	66	230	67.88
25-29	34	74	82	74	264	56	106	115	95	372	40.91
30-34	45	84	80	73	282	63	119	153	113	448	58.87
35-39	37	89	64	82	272	59	130	130	137	456	67.65
40-44	38	77	58	85	258	54	124	87	131	396	53.49
45-49	29	57	36	71	193	50	109	66	116	341	76.68
50-54	20	47	35	67	169	29	102	46	104	281	66.27
55-59	26	42	30	34	132	23	65	62	61	211	59.85
60-64	25	18	31	19	93	24	27	39	22	112	20.43
65-69	26	8	23	3	60	37	10	50	7	104	73.33
70-74	14	5	18	1	38	21	6	24	3	54	42.11
75-79	7	0	10	0	17	8	2	15	1	26	52.94
80-84	0	1	0	2	3	6	0	4	1	11	266.67
85+	1	0	0	0	1	0	0	2	1	3	200.00
<b>Totals</b>	<b>339</b>	<b>553</b>	<b>528</b>	<b>553</b>	<b>1973</b>	<b>488</b>	<b>888</b>	<b>871</b>	<b>881</b>	<b>3128</b>	<b>58.54</b>
Change % by sex/CSC status						43.95	60.58	64.96	59.31		
Change % by sex only						54.26		62.07			

Further understanding of those taking up smoking cessation is found by examining the proportion of the total increase in smoking cessation of 1,155 people by age, sex and CSC as shown in Table 75 below. Females both with and without a CSC and males with a CSC make up nearly 90% of the increased uptake in smoking cessation. The increase between the three groups is surprisingly similar around the 29% figure. However, males without a CSC are much less prominent in the growth figures at 12.9%. Just over 30% of the increased utilisation is for those patients in their 30s.

Table 75: Smoking cessation – proportion of increased uptake by age, sex and CSC

Age group	OOM1 %	OOM3 %	OOF1 %	OOF3 %	Totals %
10-14	-0.09	-0.09	0.00	0.17	0.00
15-19	0.26	0.95	0.26	1.04	2.51
20-24	1.65	2.34	1.21	2.86	8.05
25-29	1.90	2.77	2.86	1.82	9.35
30-34	1.56	3.03	6.32	3.46	14.37
35-39	1.90	3.55	5.71	4.76	15.93
40-44	1.39	4.07	2.51	3.98	11.95
45-49	1.82	4.50	2.60	3.90	12.81
50-54	0.78	4.76	0.95	3.20	9.70
55-59	-0.26	1.99	2.77	2.34	6.84
60-64	-0.09	0.78	0.69	0.26	1.65
65-69	0.95	0.17	2.34	0.35	3.81
70-74	0.61	0.09	0.52	0.17	1.39
75-79	0.09	0.17	0.43	0.09	0.78
80-84	0.52	-0.09	0.35	-0.09	0.69
85+	-0.09	0.00	0.17	0.09	0.17
<b>Totals</b>	<b>12.90</b>	<b>29.00</b>	<b>29.70</b>	<b>28.40</b>	<b>100.00</b>

Pegasus Health smoking cessation initiatives were largely driven by national health policy, particularly with regard to targeting women, and within that targeting Māori, Pacific Islanders and low income earners. For females, we think it is significant that both CSC holders and non-CSC holders feature almost equally in increased participation in smoking cessation programmes. This indicates a degree of equity in the provision of smoking cessation assistance if CSC entitlement is taken as a broad indicator of socio-economic status.

Table 75 above could be seen to have some equity concerns for male CSC holders. We do not think this is the case to any great degree. This is because this group was not specifically targeted for the smoking cessation programme, and because there are other population health initiatives being developed in heart disease for this group of patients. This initiative will have a lifestyle component that will necessarily examine smoking issues, and will feed into to the current smoking cessation programme.

**Key result: Enrolments in the smoking cessation programme have increased by 61% after the Global Budget. There are similar increases in uptake among all females and males without a CSC. Uptake among male non-CSC holders is significantly lower.**

We further explored participation in the smoking cessation programme in terms of the NZDep96. As shown above there has been a significant increase in the number of patients using the smoking cessation service. The increase factor is shown by age, sex and NZDep96 in Table 76 below.

Table 76: Changes in smoking cessation participation by NZDep96

NZDep96	CSC			No CSC			NZDep
	Male	Female	Total	Male	Female	Total	
1	2.56	2.17	2.33	2.00	1.72	1.85	1.94
2	1.13	1.91	1.50	2.02	2.46	2.23	1.96
3	1.14	1.39	1.30	1.23	1.05	1.13	1.18
4	2.42	1.82	2.02	1.77	1.82	1.80	1.88
5	1.14	1.90	1.59	1.44	1.31	1.37	1.46
6	1.53	2.05	1.85	1.62	2.11	1.84	1.84
7	1.59	1.43	1.49	1.89	1.86	1.87	1.66
8	1.38	1.74	1.59	1.69	1.57	1.63	1.61
9	1.39	1.72	1.60	1.50	1.65	1.57	1.58
10	1.53	1.43	1.47	1.09	1.00	1.04	1.29
<b>Total</b>	<b>1.48</b>	<b>1.71</b>	<b>1.62</b>	<b>1.62</b>	<b>1.63</b>	<b>1.63</b>	<b>1.62</b>

Participation by sex and NZDep96 is shown in Table 77. Clear patterns are difficult to find in terms of the NZDep96 in this table. In broad terms, a higher percentage of those partaking in the smoking cessation programme are from the more deprived groups and females, which is in line with the targeting described earlier. However, in considering the denominator, we note that smoking rates are generally higher for those with increased deprivation, therefore, there is a larger pool of potential participants in the more deprived groups.

Table 77: Proportion of participants in smoking cessation by sex and NZDep96.

NZDep96	1999			2000			% change male	% change female	% change total
	Male %	Female %	Total	Male %	Female %	Total			
1	2.7	3.4	6.1	3.5	3.7	7.2	+29.6	+8.8	+18.0
2	3.8	3.5	7.2	4.0	4.7	8.8	+5.3	+34.3	+22.2
3	4.3	5.5	9.8	3.1	4.1	7.2	-24.9	-25.5	-26.5
4	4.1	5.4	9.5	4.9	5.8	10.8	+19.5	+7.4	+13.7
5	4.3	5.2	9.5	3.5	5.2	8.7	-18.6	0	-8.4
6	5.7	6.2	12.0	5.6	8.0	13.7	-1.8	+29.0	+14.2
7	3.8	5.1	8.9	4.2	5.1	9.3	+10.5	0	+4.5
8	5.7	7.4	13.1	5.4	7.6	13.0	-5.3	+2.7	-0.8
9	6.6	8.1	14.6	5.9	8.3	14.2	-10.6	+2.5	-2.7
10	3.9	5.4	9.3	3.2	4.2	7.3	-17.9	-22.2	-21.5
<b>Total</b>	<b>44.8</b>	<b>55.2</b>	<b>100.0</b>	<b>43.3</b>	<b>56.7</b>	<b>100.0</b>	<b>-3.3</b>	<b>+2.7</b>	

## SUMMARY AND CONCLUSIONS

The HFA/Pegasus Health Global Budget contract has been developed as a model of primary health care services to test whether this funding model can improve the health status of a defined population. An integral component of this initiative was an independent evaluation. This is a complex initiative that requires a multi-faceted evaluation design. A before and after evaluation design was selected to detect changes attributable to the Global Budget effect in each of the following: service utilisation and costs, patient and provider perceptions of outcome including access, equity, quality and effectiveness. The evaluation design includes both process and summative components to assess the overall performance of the Global Budget in achieving its objectives, and the attributes of this model of funding that contribute to success or failure. Both quantitative and qualitative data collection methods are used. This evaluation framework incorporates the complexities of this initiative, and aims to provide information that will enable health policy makers and purchasers make informed decisions about the effectiveness of the Global Budget funding model for primary health care services.

### Key themes from the evaluation

Key themes from the evaluation include:

- context for the implementation of the Global Budget funding model
- Global Budget funding model
- governance
- stakeholder impact and relationships
- innovation and flexibility
- education and professional development
- culture change and sustainability
- funder and provider relationships.

### Context for the implementation of the Global Budget funding model

- The development of the Global Budget for Pegasus Health occurred in a particular context. The HFA was desirous of finding innovative ways in which to better manage financial risk, and to delegate responsibility for decision making to primary care providers, who are closer to their communities than a national Health Funding Authority.
- The Global Budget enabled Pegasus Health to consider the best ways in which it could allocate resources, to become more population-focused and to be more innovative without continually needing to refer back to the purchaser to approve funding.
- The history and size of the Pegasus Health IPA may have produced unique approaches to the delivery of primary health services for its defined population.
- Pegasus Health has been a leader in development of PHC organisational change, and the implementation of the Global Budget drew on the experience of Pegasus Health as an IPA since the early 1990s.

- The evaluation is taking place during the first year of the functional Global Budget contract operation, and too little time has elapsed for the full impact of the expected results from the Global Budget contract to be realised.
- Pegasus has been developing as an IPA for some years now, and there is a need for this evaluation, to separate out the changes related to the development of Pegasus as an IPA from the impact of the Global Budget. Maintaining and building on the positive features of Pegasus Health pre-Global Budget was a desired outcome of the Global Budget contract, not just achieving new gains.
- It is difficult to separate the development of Pegasus and its services from the Global Budget, and we are closer to evaluating performance against contract in some parts of the evaluation than to evaluating the change from the Global Budget.
- During the contracting and implementation process, the HFA had significant staff turnover, with a subsequent loss of institutional memory.
- The Global Budget Service Plan was intended as a dynamic document to operationalise and specify accountability for the service initiatives under the Global Budget. But the negotiation of the content of the Service Plan was not progressed until towards the end of the contracting process, and was then hastened by the desire to finalise the Global Budget arrangements. Consequently, the Service Plan appears to be a less robust document than the Global Budget financial contract, as acknowledged by the HFA.
- At the time the Global Budget was conceived the political and funding milieu was sympathetic to exploring innovative funding models for PHC.

#### Global Budget funding model

The quantitative data suggest there has been no fundamental change in the *delivery* of primary care services to Pegasus Health patients, although some changes in the scope and range of services occurred during the evaluation period. We believe that any major changes would have been surprising, principally because the way individual member GPs are paid has not changed: fee-for-service has continued, therefore the financial incentives for provision of primary health care at the individual GP level are the same after the introduction of the Global Budget. The funding model used for pharmaceuticals and laboratory services appear to be appropriate. Targeted initiatives (smoking cessation and sexual health services) are in a growth phase, with the targeting mechanisms working efficiently, although we note that both these initiatives were in place prior to the Global Budget. There are ongoing improvements to Pegasus Health information systems, but it is impossible to say that these are a result of the Global Budget although there is evidence they will help Pegasus Health to better monitor group activities.

It is important to note that there are many group activities that were in place before the Global Budget, and that Pegasus Health has been maturing as an organisation since 1993. This has resulted in a lack of distinction pre and post-Global Budget.

With respect to secondary care, evidence regarding cost effectiveness is not clear. At worst, it could be said that Pegasus Health patients are largely responsible for the growth in acute hospital admissions. However, the growth rate in acute admissions is declining, potentially indicating some success in the acute care initiatives. The data relating to ED utilisation provide no clear results during the evaluation period. Individual GPs have been given direct budget control to manage patients requiring care out of their home, and there are indications that GPs use this budget with a good degree of responsibility. There is some evidence that empowering GPs with some

control over out-of-practice care can provide better patient care. We conclude that there has been insufficient time for the secondary care initiatives to show a positive influence on patient outcomes, if utilisation is taken as the outcome of the initiatives. We note that utilisation may be a poor proxy of outcome, but we had no other objective indicator available for analysis. We note too that CHL had its own initiatives running concurrently, and it was not possible to adequately separate the effect of CHL and Pegasus Health initiatives.

The GP survey results provided some further insight into how the Global Budget is directly affecting GPs. We noted in particular that after the introduction of the Global Budget: 84% believe that information for patient care decisions has improved; 94% have more links with colleagues in other practices; 83% have increased awareness of quality issues; 61% have increased skills in clinical areas. Perhaps most significantly, 74% believe that patient care has improved. However, post-Global Budget 94% believe there has been increased paperwork and bureaucracy, although we note that many GPs in New Zealand are feeling under increased pressure from paperwork so this may be a generic issue for all GPs. With regard to payment systems, 44% of GP respondents indicated they did not agree that they were less concerned with the move away from fee for service, while 26% agreed; 30% neither agreed nor disagreed. This may lead to the tentative conclusion that GPs feel more comfortable with the fee-for-service payment system Pegasus Health uses.

We conclude that there is no evidence that the Global Budget is any less cost effective in delivering primary health care to Pegasus Health patients than the previous funding arrangements, and there may be increased benefits to patients in a very broad sense that are not quantifiable yet due to the short evaluation period.

The evaluation team believes there is no quantitative evidence to support discontinuation of the Global Budget for Pegasus Health. Document reviews and personal interviews have provided valuable background information that has also led us to the view that there is no fundamental qualitative evidence to support discontinuation of the Global Budget either. Formalising the diverse and numerous sources of data in the framework of an attributed dollars and cents cost effectiveness model is impossible. This is because the development of Pegasus Health as an organisation was already underway prior to the Global Budget, and equally importantly because the Pegasus Health view of the Global Budget does not always readily support direct attribution of costs to specific work. While this makes evaluation difficult, we agree with Pegasus Health that in many cases it is impossible and inappropriate to separate costs at the micro level. However, it may be appropriate in the future to better consider providing defined evaluation indicators and outcomes in the planning stage of initiatives.

The evaluation team believe the Global Budget is an appropriate funding model for Pegasus Health and the unique situation that Pegasus Health has in primary health delivery in Christchurch. The geographical aspects relating to Pegasus Health should not be understated, as they are a key aspect of how Pegasus Health operates. The management and administration team is in close proximity to all member GPs and secondary providers. There is a high GP membership rate within Christchurch. There would necessarily be some concern about the applicability of the Global Budget model to other IPAs if they were to have a very wide geographical dispersion of doctors and secondary providers. To be able to co-ordinate delivery and initiatives would be very much harder for such organisations, and require micro level initiatives to avoid being just another administrative agency for payments' processing. That said, there might well be other IPAs around the country with broadly similar circumstances to Pegasus Health (i.e., well defined geographical boundary, high membership of GPs within that boundary, limited number of secondary service providers) for whom a Global Budget funding model could well be appropriate.

Pegasus Health has developed a skilled corporate and planning workforce that has a core belief in Pegasus Health as an organisation. As a general observation this is not because of the Global Budget, rather it is a result of the development of Pegasus Health as an organisation over some years. This leads us to conclude that a prerequisite for the applicability of the Global Budget model is a sound and mature underlying organisation infrastructure. Pegasus Health has developed its structure over some time, with Board stability and development of Board skills over time. The Board also maintains an active role in the organisation, actually reading papers and providing sign off.

There were some difficulties with the implementation of secondary care initiatives with particular reference to consultation between the HFA and CHL. We believe it would be incorrect to blame this situation on the Global Budget as a model, and note that communication between Pegasus Health and CHL has, in general, been satisfactory. Earlier tripartite communication between the HFA, CHL and Pegasus Health would have facilitated the development of a more cohesive approach to secondary care initiatives. While Pegasus Health clearly has ownership of the Global Budget, there are indications that further consideration could have been given to other providers for whom the initiatives had a direct impact. Earlier, more effective communication with CHL may have helped to mitigate any feelings of disenfranchisement held by individuals within CHL.

The evaluation team does not believe these difficulties are a fault of the Global Budget, but clearly there are lessons to be learned. The early communication issue cannot be changed now, but there may be ways to improve the unity of purpose between CHL and Pegasus Health. For example, one option is a “ringfence” could be placed around a portion of the Global Budget money for joint primary/secondary initiatives with a shared steering committee of providers from both sectors. Other options that positively align incentives could also be considered, for example, secondary care budget holding arrangements. However, this is a fundamental move away from the concept of the Global Budget as viewed by Pegasus Health. It also brings into question the validity of primary led health care. Potentially, it is an issue for Pegasus Health to acknowledge itself; there is anecdotal reporting of its perceived arrogance to other providers.

If this is the case, then it is a Pegasus Health organisational issue that would require further self-assessment. We still do not believe this is a flaw with the Global Budget. It is a flaw within Pegasus Health in implementing aspects of the Global Budget, which requires internal acknowledgment of a problem. Pegasus Health found frustrations at times in dealing with the secondary providers, but it is not clear if they ever came to realise exactly why some of these problems came about. These types of issues would need to be considered in a more formal manner if other IPAs were to move to a Global Budget model.

The evaluation team were disappointed we were unable to measure the transaction costs of implementing the Global Budget. MoH/HFA indicated they had no idea of the transaction costs and had no way of finding out. There were indications in the Pegasus Health Annual Report of increased legal costs relating to the Global Budget, but these are not quantified. What is clear is that both the MoH/HFA and Pegasus Health expended considerable energy in getting to a working document allowing the implementation of the Global Budget. There is the potential for reduced MoH costs because it would not have individual contracts for each initiative involving separate monitoring and accounting functions, although there are still monitoring functions associated with the Global Budget. In the long run, compliance costs for Pegasus Health may reduce.

The evaluation team reported differing perceptions of the relationship between MoH/HFA and Pegasus Health during the contract negotiations from a variety of

sources. We found there were perceptions of quite unbalanced power structures in that Pegasus Health was believed to wield a disproportionate amount of power during contract negotiations. However, further interviews revealed there was a fundamental degree of trust between Pegasus Health and MoH/HFA. We doubt that without this trust the Global Budget could have been brought to fruition. In many ways this probably reflects the maturity Pegasus Health has as an organisation.

Other key issues related to the Global Budget funding model include:

- The Global Budget has allowed the transition from a savings-based model to an investment-based model. This necessitated a move to risk-taking behaviour with the hope of future payoffs (dividends). Due diligence is a necessary process to go through whenever there is an element of risk. This appears to have been thoroughly applied, particularly with regard to integrated care and acute admissions initiatives. A shift to an investment-based model would have been difficult to achieve without implementation of the Global Budget.
- The single funding stream and ability to make decisions quickly have been pivotal to the shift to an investment-based model.
- There has been insufficient time for the secondary initiatives to show a positive influence on patient outcomes.

#### Governance

- There is a consensus that the Global Budget has led to significant change in the way nurses are involved at policy and planning levels in Pegasus with overall gains to the development of quality approaches.
- Since the Global Budget there appears to be a much stronger involvement of nurses in planning and a greater involvement of nursing at senior level, with a nursing advisor appointment at management level and from 2001, a nurse represented on the Board.
- The Global Budget funding acted as a catalyst to look at Māori health as a priority.
- Prior to the Global Budget, documentation highlighted Māori health-focused initiatives were in a fairly preliminary stage of development.
- The Global Budget has allowed more flexibility and defined public health focus together with flexibility about how they can fund identified services.
- There may be increased benefits to patients in a very broad sense that is not quantifiable due to the short evaluation period.
- The geographical aspects relating to Pegasus Health should not be understated, as they are key aspects of how Pegasus Health operates. For example, the management administration team is in close proximity to all Pegasus Health members, other community-based and secondary health care providers.

#### Stakeholder impact and relationships

- There was a perception that the Global Budget contract has had no impact on hospital clinicians or on changing hospital clinician behaviour. In particular, the ED project has not reached its potential.
- There is a possible tension with other providers regarding contestability, accountability, collaboration and partnership.

- There is a need for more overt and strategic communication/collaboration strategies that represent stakeholders, community providers and community.
- Since the introduction of the Global Budget, patients have noticed changes in service provision.
- In the Pegasus Health instance the Global Budget was held by a primary care organisation. It may, however, be appropriate for other stakeholders to have access to marginal funding for projects of their own – in effect miniature localised Global Budgets.

#### Innovation and flexibility

- The Global Budget has enabled greater flexibility and enabled the development of innovative practice.
- There is an emphasis on teamwork, and increased practice nurse involvement at Pegasus level and practice level.
- With an extension into new service areas both in primary and secondary arenas, there are implications for collaboration, partnerships, accountability and contestability.
- Since the Global Budget there have been changes toward a more collaborative disease management approach for the four disease areas prioritised by Pegasus.
- There has been increased responsiveness to Pegasus patients with these diagnosed health problems.
- Ongoing improvements in Pegasus Health information systems are arguably the result of the Global Budget, and will help in better monitoring groups.
- The built-in flexibility of the Global Budget is clearly a strength where innovation and rapid changes are concerned; however, flexibility may well be a weakness when it comes to establishing clear direction and cohesion.
- The Global Budget changed the scope and focus of the information system development with the extensive parallel development of IT and Decision Support systems. For example, two information projects under development with a strong quality implication have arisen from the Global Budget End User project.
- The Pegasus QualityMark programme pre-dated the Global Budget, but was in the development stage, with the Global Budget providing additional impetus and the opportunity to appoint a GP part time as portfolio manager.
- Pegasus has worked with the Clinical Audit Committee from the 24 hour surgery to anticipate any clinical care under the new Global Budget projects and there are now moves to develop a similar committee with Pegasus.
- There was a great deal of activity in the year after the Global Budget in the development and implementation of projects designed to increase the range of services available to Pegasus Health patients.
- A key change is that the Global Budget funding model has facilitated the ability to innovate and experiment with novel ways of service delivery. For example, the community care projects implemented were as a direct result of Global Budget funding.

- The Global Budget funding model appears to have given greater impetus to access issues, with the ability to rapidly trial and implement innovative forms of service delivery. The programmes implemented have been highly innovative and well received by patients and significantly increased access in terms of availability.
- The utilisation data on existing services indicate improved accessibility in some areas. There has been significant activity in the areas of availability in improving the capacity for Pegasus Health patients to access services. Also, the Global Budget process has served to highlight issues of access. Themes relating to access and barriers to access have appeared as an issue increasingly in documentation around population health since the Global Budget contract was signed.
- The evaluation reported a number of innovations that have occurred since the introduction of the Global Budget, these include:
  - since the introduction of the Global Budget patients have noticed changes in service provision
  - appointment of a Public Health Physician
  - appointment of a Māori Project Manager
  - formal development of Access Strategic reference group
  - since the Global Budget information systems have included such quality initiatives as web-based support for the day-to-day decision of practitioners
  - the community care portfolio launched by Pegasus soon after the Global Budget service plan was finalised to offer GPs and practice nurses more options for looking after their patients in the community
  - communications portfolio development since the Global Budget
  - establishment of the team of six practice facilitators is one of the key mechanisms Pegasus has put in place since the Global Budget to help practices get on board with the community care initiatives and all big changes under the Global Budget
  - formation of Community Advisory Board
  - integrated care programmes consolidated.

#### Education and professional development

- The Global Budget has had a two-fold impact on education programmes:
  - expanded the range of topics addressed
  - extended the small group education programme to practice nurses
- a majority of GPs surveyed agreed or strongly agreed that since the Global Budget their range (52%) and level (61%) of clinical skills had increased
- specific training courses have been set up to meet the need for skill development etc
- the Global Budget has provided extensive opportunities for Pegasus GPs and practice nurses to become involved in professional development directly relevant to the quality of services they are providing
- the introduction of projects/services and philosophical shifts has necessitated education/training.

#### Culture change and sustainability

- The evaluation research is unable to comment on the sustainability of an investment-based model because of short evaluation period.

- There is concern regarding the sustainability of new projects and collaborations initiated or boosted post Global Budget. The sustainability of new projects and new collaborations is yet to be demonstrated.
- There is concern whether sufficient structures and mechanisms have been put in place since the Global Budget to effectively guide the development of new projects and ensure they respond to the identified needs, the existing programmes and partners, and are sustainable.
- The introduction of projects/services and philosophical shifts has necessitated education/training.
- Increased staffing levels have implications for management in all areas: human resources, management structures, strategic planning.
- Issues identified around change management include:
  - dynamic environment
  - keeping directors/members up to date with the play
  - notion of early and late adopters of innovative practices
  - philosophical shift
  - taking on board new ways of working
  - challenge to a big and complex organisation
  - significant increase in staff recruitment and therefore growth of the organisation.
- Aspects of quality have been challenged by the Global Budget contract. These include:
  - the importance of teamwork and team responsibility
  - the incorporation of population health approaches
  - issues on inequality in health status
  - the role of community in relation to Pegasus decision-making.
- Increased staffing levels have implications for management in all areas: human resources, management structures, strategic planning.
- There has been a shift in culture with the employment of the Māori health project manager, learning of waiata, and making provision for karakia.
- There has been a philosophical shift in view of access as it relates to the Pegasus Health organisation since the introduction of the Global Budget.
- There have been structure/process changes but little in the way of addressing inequality in access.
- There has been a philosophical shift in defining those with access difficulties as not just those who are identified patients in a practice who do not attend often, but also concern for those who are not identified patients and who do not access a GP at all (community focus).

#### Funder and provider relationships

In terms of the wider context of the evaluation, the evaluation team have found themselves sometimes in uncertain territory. The way in which the Global Budget has been implemented by Pegasus Health has not been entirely due to the actions of Pegasus, but has been influenced by other players, including the HFA/Ministry of Health. However, the HFA/Ministry also let the contract for the evaluation and was the

body to whom we were accountable in doing the work. Recent writing (Feldman, 1999; Lomas, 2000) had drawn attention to the need for better links between researchers, funders and decision-makers. We endorse this, but draw attention to the model developed in Canada (Lomas, 2000) where a research foundation is placed between researchers and decision-makers. The foundation acts on behalf of the decision-makers and encourages partnerships with researchers. It permits an independent assessment of the research and monitoring and oversight of research programmes without the danger of compromising the research through too close a link between researchers and decision-makers.

In noting this, we report that during the Global Budget project our dual relationship with the HFA/Ministry as both our funder and a key player created few problems for us. This was partly due to the professionalism of the individuals concerned, but also to the general disarray of the funding environment for much of this period. We merely alert both researchers and policy makers to the implication of direct funding of evaluation projects and the need for structures that protect both parties.

## Conclusions

### 1. Clarity of objectives

Pegasus Health has clearly embraced a population approach to primary health care and has devoted resources and expertise to advance this. This is highly innovative and consistent with national policy and international best practice. This is part of its mission and objectives but it will be important to link quality and other expectations to these through a formal process. Tying measures of Pegasus Health effectiveness and quality to population health status indicators, though, is likely to pose problems. There are many non-primary health care variables, both inside and outside the health sector, which will influence these, operating at various population and time scales. The current KPI system permit alternative types of indicators. It is suggested that KPIs be used judiciously, so that population-based quality indicators remain focused on the practice or IPA level and related to enrolled populations and specific interventions, with initiatives beyond these (i.e., those related to the wider community or the non-enrolled) recognised in other ways.

Pegasus Health needs to define its primary objective for carrying out population health and community needs assessment. The primary purpose of health needs assessment is usually to provide much of the evidence for decision-making and to make primary care more strategic, more effective at improving the health of the community (not just health of individuals) by targeting the available resources. The evaluation data from most of the different stakeholder groups point to a persistent lack of clarity in this regard.

### 2. Management systems

Pegasus Health appears to have acknowledged the need for a more integrated and organisation-wide approach to quality management. Over the last year, a more systematic approach to management in general, including strategic and project planning and internal communication, has been developing, which should assist in the management of quality. It is recommended that a formal quality management system be established that is linked to organisational objectives and managed at senior level.

### 3. Pressures on individuals

Despite the obvious enthusiasm, levels of participation and enhanced performance of practitioners, there is a danger that the drive for better quality, more services and wider roles in the health sector, will place excessive pressure on individual GPs. This in part may be an artefact of the period of the evaluation which saw rapid organisational growth and implementation of new services. There are indications that Practice

Nurses, too, experience this pressure. This is a quality issue which will require strategic management, including alternative resource allocation models, if it is not to undermine the considerable individual and organisational achievements already made.

#### 4. Inequity of access

In the year following the introduction of the Global Budget there was little progress in identifying specific barriers to access and sub-groups of Pegasus Health patients vulnerable to these. This requires development of the baseline tools required to better understand the Pegasus Health population in relation to access issues and inform projects to try to address barriers to access. Descriptors of sub-groups of the Pegasus Health population likely to be vulnerable to access barriers need to be able to be matched against health needs and utilisation patterns to determine where access barriers might exist. Socio-economic description of the population using geocoding with the New Zealand Index of Deprivation had begun, but was not yet complete during the evaluation period and ethnicity recording had not been initiated to any great extent. The lack of adequate data means that little definitive can be said about health outcomes or even project impact (utilisation) as it relates to groups likely to experience barriers to access. This evaluation involved geocoding the Pegasus Health population and some overall utilisation data has been related to this.

Adequate description, according to these variables of the denominator Pegasus Health population and of vulnerable groups, and their current access patterns are essential in planning, prioritising and implementing effective strategies. There are a number of projects aimed at addressing barriers to access that are in the conceptual/development stage.

Only one has reached the implementation stage (the Link Nurse project which offers the services of a nurse to help practices link with their hard to reach patients for immunisation), and no results are available. The next steps forward are crucial, and it is vital that these are given a high priority while not undermined by unsustainable time pressures and outcome expectations.

#### 5. Community assessment methodology

Pegasus Health needs to adopt a community assessment methodology within an overarching framework or systematic structure for integrated care and to put in place a mechanism for tracking and monitoring key process, output, impact and outcome indicators. This framework will go a long way to help Pegasus Health demonstrate increasing integration with the overall health system and increasing benefits to consumers. Key process indicators will be those that attest to strengths of the systems and the links that have been put in place to enhance and achieve collaboration.

#### 6. Patient enrolment

An acceptable enrolment scheme should be institutionalised that tracks the discrete enrolled populations for each practice. When patient enrolment procedures are in place, it will be possible to conduct practice-based needs assessments by means of case note analysis, complemented by other methods such as rapid appraisal, key informant interview and community consultation to build a community profile for each practice area.

#### 7. Targeted health services – Māori and Pacific Peoples

Pegasus Health needs to specifically target health services and improve access in areas with high deprivation and high morbidity rates, and especially targeting resources to Māori and Pacific Island communities.

In conclusion, the evaluation team considers that the Global Budget funding model is an appropriate funding model for Pegasus Health given the unique situation that Pegasus Health has in primary care delivery in Christchurch.

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## APPENDIX 1

### Research approach – access

In order to assess the impact of the Global Budget model on access by the Pegasus Health patient population to services provided by Pegasus Health the services and the Pegasus Health population must be defined. The services provided by Pegasus Medical Group will include those described in the Global Budget contract and the Service Plan, and will cover general medical services, immunisation and other preventive health services, sexual health services, pharmaceutical services and laboratory tests.

A longitudinal before and after study design will be employed where the data supports this methodology to assess the impact of the Global Budget funding model on access. Comparisons with other regions were considered but for two reasons it is felt that a longitudinal comparison is preferable:

1. The apparent funding differential between regions.
2. The variation in GP: patient ratios between regions (known to influence utilisation).

We feel it would be impossible to determine which differences reflected these factors as potential confounders and which related to the difference in funding model if we used cross sectional regional comparisons as the primary research design.

To achieve the research aims the research steps will be as follows:

#### Review existing research

A review of the current literature on access issues in primary care looking at physical, cultural and socio-economic barriers, geographic and organisational barriers.

#### Assess the benefit to access anticipated from the Global Budget funding model

This part of the evaluation will be informed by key informant interviews with members of the HFA and Pegasus Medical Group of the anticipated benefits in this area resulting from the Global Budget funding model.

#### Review existing Pegasus documentation and data sources

A review of Pegasus Health policies related to access before and after implementation of the Global Budget contract will be carried out comparing and contrasting these with national policy statements (namely, primary care strategy). This document review will be supplemented with key informant interviews. Particular reference will be made to any initiatives by Pegasus Health to identify barriers to access, as well as patient surveys that may provide previous data on acceptability.

#### Develop a Profile of the Pegasus Patient Population

A profile of the Pegasus population will be described to establish the denominator and proportions of vulnerable populations using currently collected Pegasus data and linking this to other datasets to describe age, sex, socio-economic and ethnic descriptions. Though the different stages of the research programme detailed below we plan to use the following indices to identify subgroups vulnerable to access barriers:

Socio-economically deprived groups – The socio-economic profile will be detailed by geocoding and linking to the New Zealand Deprivation index (Salmond, Crampton and Sutton, 1998) which is well established as the most accurate indicator of deprivation in the New Zealand population.

Māori and minority Ethnic Groups – The evaluation team will assess the robustness of using NMDS ethnicity data to estimate the ethnicity profile of the Pegasus Health population.

Other demographic data – Age and sex profiles will be determined in quantitative analysis by linking through NHI number.

Reference will also be made to the 5-locality profile developed by the HFA (HFA, 1998) where Christchurch has been described divided into five localities based on socio-economic characteristics. All linking will be anonymised and comply with privacy regulations.

Undertake additional research projects

#### **Accessibility**

This aspect of access will be revealed with a quantitative analysis of utilisation data, comparing time periods before and after the implementation of the global funding model and focusing on issues related to access and using utilisation data for consultations, laboratory diagnostics and pharmaceuticals with linking to hospitalisation and referral rates to determine any changing relationships. Data will be extracted from the Pegasus Health databases, the HBL database, the NMDS and CHL and Healthlink South databases and sub-analyses will be performed for vulnerable sub-populations through linking of these datasets to identify vulnerable subgroups as described. Geographical accessibility will also be assessed although the current literature indicates this is a less important factor influencing access in urban populations (McKinlay 1972). This will allow estimation of potential accessibility by investigating the spatial relationship of supply and demand for services with reference to the HFA locality profile (HFA, 1998).

#### **Availability**

This second facet of access, which is closely linked to accessibility, will be evaluated firstly with a broad description of any changes in geographical and temporal access to services. This will be combined with a more focused assessment of new initiatives by Pegasus Health designed to improve access to their services prior to and since the introduction of the Global Budget funding model. These initiatives will include those described in the Pegasus Health Service Plan (26 January 2000) and in the Pegasus Health Change Management Project Plan (15 February 2000). The initiatives will be described and evaluated to see whether any effect has been achieved. This evaluation will use quantitative data where available on these initiatives and seek the views of patients and other stakeholders involved in these projects using qualitative data gathering techniques.

#### **Acceptability**

This concept, related to patients perceptions of access, will be evaluated using qualitative data collection methods with consumers of Pegasus Health services. Focus groups will be held with patients on issues of access to primary care. Vulnerable groups will be purposefully sampled to ensure a range of views from different socio-economic, ethnic, age and gender groups are represented. Themes for these focus groups have been developed to highlight and gain insight into aspects of access raised in the quantitative analysis of before and after utilisation data and the evaluation of new initiatives introduced as well as canvassing views on cultural organisational and financial barriers to primary care.

## Research approach – quality

We see **four** stages in the research process that will be applied with varying emphasis to the aims set out above.

Review existing models and scenarios to establish quality expectations

We have reviewed the current international and local literature into the management of quality in primary care and established the parameters of good practice. This involves two dimensions of quality: the overall quality management system and its operation; and the indicators chosen to measure quality within this.

### **Quality management system and practices**

With respect to quality management systems, this is clear from the literature relating to health and primary health care, that quality is seen as much an attribute of organisations as individual professionals. This organisational approach to quality ensures both clinical and management leadership in quality, and is encapsulated most effectively within clinical governance concepts (Allen, 2000). Sutherland and Dawson (1998: 22) note that clinical governance, by taking an organisational view of quality, gives legitimacy to both manager and clinician involvement. This is explained by one informant: 'clinical governance will make connections between general management areas – strategic planning, strategic positioning, business planning, and so on – and clinical practice' (p. 22). Quality, therefore, becomes one of the management systems alongside others in the organisation, directed and monitored from the governance level and implemented through management or decentralised structures.

### **Quality indicators**

The selection of appropriate primary health care quality indicators, again, can be sourced from the literature (Starfield, 1998; McColl, 1998), from the standards of the RNZCGPs, and the prevailing consensus on evidence-based practice. These might include genuine outcome measures (such as numbers of unwanted pregnancies in relation to subsidised contraceptive advice, or the incidence of vaccine preventable diseases), or equally helpful (Brook and Clearly, 1996) 'process' or 'output' indicators which suggest that good health outcomes are likely to emerge (such as vaccine coverage, proportion of asthmatic patients with asthma action plans, hospitalisation rates for ambulatory care sensitive conditions, or cervical or breast cancer screening rates

Besides indicators for assessing performance of diagnostic and treatment services, equally important are strategies to measure the quality of interpersonal care (Blumenthal, 1996), including attributes most highly valued by patients, such as communication skills, co-ordination of care, the practice environment, etc (Buetow et al. 1995; Wensing et al. 1998).

### **The Global Budget contract**

We expect the Global Budget contract itself to have specific quality requirements which will form part of the expectations.

Reviewing existing Pegasus and other documentation

Pegasus's framework for the development of quality within the organisation, the way in this is managed and the choice of indicators will be reviewed and relevant data, studies and documentation will be evaluated.

We are aware of a significant amount of research and evaluative activity being undertaken by Pegasus and others in relation to the maintenance of quality. We have

access to a range of Pegasus documents which provide useful data for the evaluation and we have also discussed – e.g., aspects of the HFA's Eldercare Canterbury evaluation project with the local project co-ordinator Dr S Keeling. In addition, we are aware of an independent report (Richards, 1999) on the impact of pharmaceutical education in Pegasus and other published research directly relevant to this project

Additional evaluation will be required in relation to the quality issues identified by the RFP (disease management, management of acute demand, integrated care). A review of quality initiatives developed in relation to these programmes will be conducted along with an assessment of participation in the respective programmes by practitioners and where available their acceptance by patients.

Seek supplementary data from key informant and other sources  
Key informant interviews will be sought with Pegasus personnel, including the Chair of Board, Chairs of Clinical Practice Education Committee and Practice Development Committee; General Manager, Education Manager, and leaders of specific projects. Interviews will be sought with HFA representatives.

A short survey of GPs will be undertaken.

Analysis of results in terms of expectations of Global Budget contract

This stage will involve the preparation of a comprehensive report for discussion with Pegasus.

## Research approach – Māori health

Review existing research on the needs of Māori as they relate to primary care services

### **Assess the benefit to Māori anticipated from the Global Budget funding model**

This part of the evaluation will be informed by key informant interviews with members of the HFA and Pegasus Medical Group of the anticipated benefits in this area resulting from the Global Budget funding model.

### **Review existing Pegasus Medical Group documentation**

Searches of documents relating to Pegasus Health policy and initiatives in this area will be used along with key informant interviews. These will be compared with the HFA/Pegasus Health contract and national policy statements. A comparison will be made of initiatives existing before and after the implementation of the Global Budget contract.

### **Undertake additional research projects**

Qualitative data gathering methods including focus group discussions and face-to-face interviews will be used to evaluate the effectiveness of Pegasus Health initiatives before and after the implementation of the Global Budget contract in targeting the needs of Māori. Participants will include key opinion leaders. The proposed evaluation design is sensitive to cultural, social, economic, and individual differences in consumer acceptability of, and accessibility to, primary health care services.

Focus group discussions and face-to-face interviews are:

- generally more suited to Māori who prefer personal communication
- likely to generate more in-depth information than quantitative methods
- more likely to elucidate the intricacies of individual, community, and cultural differences of perception and practice.

Where data is available quantitative analyses will be performed to assess these initiatives; however, in the absence of ethnicity recording the ability to do this may be extremely limited and will be dependent on a detailed review of existing Pegasus Health datasets.

## Research approach – Pacific Peoples' health

Review existing research on the needs of Pacific Peoples as they relate to primary care services

### **Assess the benefit to Pacific Peoples anticipated from the Global Budget funding model**

This part of the evaluation will be informed by key informant interviews with members of the HFA and Pegasus Medical Group of the anticipated benefits in this area resulting from the Global Budget funding model.

### **Review existing Pegasus Medical Group Documentation**

Searches of documents relating to Pegasus Health policy and initiatives in this area will be used along with key informant interviews. These will be compared with the HFA/Pegasus Health contract and national policy statements. A comparison will be made of initiatives existing before and after the implementation of the Global Budget contract.

### **Undertake additional research projects**

Qualitative data gathering methods including focus group discussions and face-to-face interviews will be used to evaluate the effectiveness of Pegasus Health initiatives before and after the implementation of the Global Budget contract in targeting the needs of Pacific Peoples. Participants will include both consumers and key opinion leaders. The proposed evaluation design is sensitive to cultural, social, economic, and individual differences in consumer acceptability of, and accessibility to, primary health care services. Focus group discussions and face-to-face interviews are:

- generally more suited to Pacific Peoples who prefer personal communication
- likely to generate more in-depth information than quantitative methods
- more likely to elucidate the intricacies of individual, community, and cultural differences of perception and practice.

Where data is available quantitative analyses will be performed to assess these initiatives; however, in the absence of ethnicity recording the ability to do this may be extremely limited and will be dependent on a detailed review of existing Pegasus Health datasets.

## Research approach – health status

To document the health status measurement policies in Pegasus Health

Review Pegasus Health policies related to population-based health measurement before and after implementation Global Budget contract, compare and contrast with national policy statements.

To review health status monitoring by Pegasus Health

A review will be conducted of the activities undertaken by Pegasus Health before and after the introduction of the Global Budget to measure and monitor the health status of the population. It is anticipated that Pegasus Health would have undertaken some assessment of mortality and morbidity rates in relation to the major causes of ill health in the region.

To evaluate specific impacts on health status

From Pegasus Health data it may be possible to directly assess the impact of the Global Budget on health status. Pegasus Health may have directly assessed the impact of the Global Budget on health status. The Pegasus Health data may allow the following assessments to be undertaken:

### **Mortality**

Age adjusted mortality rates for the city may be assessed in relation to five socio-economic regions before and after the introduction of the Global Budget. Mortality rates are a basic measure for monitoring changes in the health of a population; however, it is recognised that mortality rates are unlikely to be a sensitive indicator of changes in health status especially in relation to the short timeframe for this evaluation and the limited influence that health services may have on life expectancy. A more sensitive mortality based indicator of changes in health status due to the effects of changes in primary care services may be obtained by assessing the rate of infant mortality before and after the introduction of the budget. In order to have sufficient statistical power the assessment would include the entire city population from one year before compared to one year after the introduction of the budget.

### **Hospital admissions**

The age adjusted rates of both first and repeat medical and psychiatric hospital admissions could be assessed for each of the five socio-economic localities in the Christchurch city one year before and one year after the introduction of the Global Budget. Similar rates for acute admissions could also be described along with data about the average length of stay per admission. Finally, age adjusted rates of acute admission for conditions that are generally considered to be sensitive to the provision of primary care could also be assessed in relation to the five socio-economic localities.

### **Emergency department utilisation**

Age adjusted attendance rates at Christchurch Hospital's ED could be compared for each of the five socio-economic localities before and after the introduction of the Global Budget.

### **General practitioner utilisation**

Age adjusted GP attendance rates could be compared for each of the five socio-economic localities before and after the introduction of the Global Budget.

## Research approach – community health needs assessment

To review existing research

The HFA was charged under the Health and Disability Services Act (1993) with the task of assessing the health care needs of the population. With the dis-establishment of the HFA this responsibility has been transferred to the District Health Boards and embedded in the New Zealand Public Health and Disability Act (2000). Health needs assessment activity in relation to the Christchurch region will be reviewed.

To review Pegasus policies and practices

Pegasus policies related to the provision of health needs assessment will be compared before and after the introduction of the Global Budget. In addition, an assessment will be made of the extent to which health needs assessment practices have changed before and after the development of the Global Budget. Health status information gathering by Pegasus Health may include data on the incidence and prevalence of various conditions in Christchurch along with information about the distribution and utilisation of various services for these conditions.

To review Pegasus performance against targets

Pegasus performance related to health needs assessment targets will be compared before and after the introduction of the Global Budget. This will include an assessment of how well the targets have been met.

## Research approach – funding model

To elicit potential service areas to which the Global Budget can be expanded

Review of literature on funding models to identify potential service areas appropriate for Global Budget funding.

Key informant interviews with GPs, PNs, hospital staff, community healthcare providers, consumer groups, etc., to elicit service potential and gaps, concentrating on continuity of care and integrated care across and between services.

If available, assess patient surveys already conducted by Pegasus, which may indicate gaps in service provision.

To select from the identified potential service areas those where the global funding model can be applied most effectively

Review Pegasus' policies relating to funding GP before and after Global Budget contract implementation; compare and contrast with national policy statements – e.g., *The Future shape of Primary HealthCare* March 2000.

Review and build on the research undertaken on the other specific objectives: to establish the pattern of service areas where the funding model has been most successful, and why.

Apply the pattern established to the potential service areas identified in stage 1. Select for further development those areas that best match the pattern.

## Research approach – cost-benefit

Measuring the costs of patient treatment prior to, and after the introduction of the Global Budget model

We have ascertained that Pegasus Health treats the Global Budget as a single income stream. The cost consequences analysis will be taken from the perspective of the HFA, although it is acknowledged that the patient perspective is also an important dimension and some effort will be devoted to assessing this. The design is a before/after covering the periods 01 January 1999 to 31 December 1999 (before), and 01 January 2000 to 31 December 2000 (after). This is the core analysis period, but we note that this is too short to accurately identify trends in utilisation. Although the Global Budget includes specific contributions, for Elective Services Seeding Funding, Disease Management Seeding and Acute Demand Project Seeding Funding these will not be assessed separately. Pegasus Health considers the Global Budget a single income stream, therefore the total of \$73,527,639 (GST exclusive) will be the subject of the cost benefit analysis.

The cost consequences analysis cannot, and will not, make any comment on the sustainability of the Global Budget model. The limited analysis period makes this impossible. The ongoing nature of any described costs or benefits should not in any way be taken as indicative of any likely future trend unless specifically commented on by the research team. Because of the low inflation climate in New Zealand over the study period, no adjustment will be made for present or future costs.

### Data sources required

The data sources, items 1 to 17, are documented below. They are the ideal requirements; however, as the cost benefit analysis will be based solely on existing data sources it is accepted there may be some differences between the ideal and the actual. All such differences will be noted in the analysis. Many of these data sources will also be required to examine equity issues as required in 6h of the proposal delivery questions. As there are new initiatives as part of the service plan, it may be that there are new data sources created by Pegasus Health for specific components of the service plan. New data sources will be identified and assessed for contribution to the analysis.

Table 78: Data source and cost measurement or factor

Data source	Cost measurement or factor
Patient register	Denominator figure
Patient register with NZDep96 score	Denominator figure
Consultation records	Denominator figure
GMS claims	GMS expenditure
Practice nurse subsidies	Practice nurse subsidy expenditure
Practice nurse pay ex Pegasus Health	Practice nurse Pegasus Health expenditure
Rural premiums	Rural premium expenditure
Immunisation transactions	Immunisation expenditure
Maternity transactions	Maternity expenditure
Pharmaceutical transactions	Pharmaceutical expenditure
Laboratory transactions	Laboratory expenditure
ACC transactions	ACC expenditure
NMDS data	Denominator/numerator figure
Victorian costweights	Hospital inpatient expenditure
Canterbury Health data	Denominator/numerator figure
Canterbury Health costs	A&E, outpatient expenditure
Pegasus Health expenditure admin	Provider admin expenditure
HFA expenditure admin	Funder admin expenditure

## Indicative list of cost measurement descriptives

- Patient register 99 vs 00
- Consulting patients by age, sex, subsidy group 99 vs 00
- Patient register with NZDep96 score 99 vs 00
- Proportion consulting patients/patient register by age, sex, subsidy group 99 vs 00
- GMS expenditure by age, sex, subsidy group 99 vs 00
- Practice nurse subsidy expenditure 99 vs 00
- Practice nurse Pegasus Health expenditure 99 vs 00
- Rural premium expenditure 99 vs 00
- Immunisation expenditure 99 vs 00
- Maternity expenditure 99 vs 00
- Pharmaceutical expenditure 99 vs 00
- Laboratory expenditure 99 vs 00
- ACC expenditure 99 vs 00
- Secondary inpatient contacts ex NMDS by age, sex, ethnicity, subsidy group, DRG, 99 vs 00
- Secondary inpatient expenditure ex NMDS/Victorian costweights by age, sex, ethnicity, subsidy group, DRG, 99 vs 00
- Secondary ED contacts ex CHL by age, sex, subsidy group, triage code, outcome 99 vs 00
- Secondary ED expenditure ex CHL by age, sex, ethnicity, subsidy group, triage code, outcome, 99 vs 00
- Total secondary care generated expenditure 99 vs 00
- Total direct primary care generated expenditure 99 vs 00
- Provider administrative expenditure 99 vs 00
- Funder administrative expenditure 99 vs 00
- Patient costs for GP visits as defined arbitrarily by community services/high user card status 99 vs 00

## Cost interpretation

- A discussion based interpretation of the results of section 1.2 with specific reference to the provision of primary health services and any associated cost implications.
- Discussion based interpretation of the results of section 1.2 with specific reference to secondary care utilisation and cost implications.
- Discussion based interpretation of the results of section 1.2 with specific reference to administrative expenditure generated in the course of day to day Pegasus Health business.
- Discussion based interpretation of the administrative expenditure associated with the negotiation of the Global Budget contract.
- Description of cost changes in treating the Pegasus Health patient population. Exploration of causes of cost change, and their relationship, if any, to the implementation of the Global Budget.
- Description of the cost to patients will be undertaken subject to sufficiently robust data being available to address point 1.2.22 above.

### Benefit analysis and interpretation

Most cost benefit analyses endeavour to estimate the value of resources used by a given programme and compare these with the value of resources the programme may save or create. However, because of the difficulty in valuing resources saved or created in the wider societal context, often cost benefit analyses only measure costs and benefits that are easily measurable in dollar terms. Measurement of costs in dollar terms has been addressed in points 1.2 and 1.3. The first step in measuring the dollar value of benefits is to define what benefits there may be as a result of the Global Budget. All possible benefits should be listed, regardless of whether they may be easily measurable in dollar terms or not. Even if it is not possible to measure their monetary value, it is important to acknowledge that a benefit existed. The nutshell question on benefits could be stated as "What benefits to the Pegasus Health population in terms of health, education and well being; the HFA in terms of the overall health budget; and Pegasus Health in terms of primary care provider standards, development, education and administration are there associated with the Global Budget over and above the situation prior to the Global Budget?".

A portion of the Global Budget costs will be related to providing core primary health care – that is, to say the normal costs of providing GMS payments, pharmaceutical, immunisation, laboratory, maternity and practice nurse subsidies. There are also the usual administrative costs associated with maintaining the smooth running of a large IPA. These costs may be similar to those prior to the introduction of the Global Budget, but are of some interest, particularly in relation to integrated care issues. However, they account for less than the amount provided in the Global Budget. Therefore, it is of substantial interest to find out what benefits are obtained from the money provided under the Global Budget that is not used in providing a core primary health service.

Many of the possible benefits are closely associated with concept of innovation. Each programme contained in the Service Plan dated 26 January 2000 has possible benefits directly attributable to the implementation of the Global Budget. Each of these will be appraised to assess how the Global Budget has contributed to their implementation and to identify the benefits, measurable in dollar terms or not.

One of the areas that is measurable relates to the interface between primary and secondary care. It is generally acknowledged that appropriate and timely access to primary care services can reduce the need for secondary services. In many cases, this results in more cost-effective health care. Given the data sources available, it is possible to calculate the cost of providing secondary care for the Pegasus Health patient population and the cost of providing primary care. In other cases, while there may be no monetary benefit, the intangible benefits to the patient can be considerable. It is not possible to measure intangibles in this analysis; however, where appropriate the likely direction of the intangible benefit will be noted.

### Assessing the degree to which the Global Budget enables innovation in administration

Was there any innovation in administration after the commencement of the Global Budget in July 1999? If so, then:

- what were these innovations?
- were they fully funded from within the Global Budget?
- if not, what portion of the innovation did the Global Budget fund?

Assessing the degree to which the Global Budget enables innovation in the delivery of services

Was there any innovation in the delivery of services after the commencement of the Global Budget? If so then:

- what were these innovations?
- were they fully funded from within the Global Budget?
- if not, what portion of the innovation did the Global Budget fund?

Assessing the degree to which the Global Budget enables innovation in the ability to target local services

- Was there any innovation in the ability to target local services after the commencement of the Global Budget?
- What were these innovations?
- Were they fully funded from within the Global Budget?
- If not, what portion of the innovation did the Global Budget fund?

Assessing the degree to which the Global Budget enables innovation in local responsiveness

- Was there any innovation in local responsiveness after the commencement of the Global Budget?
- What were these innovations?
- Were they fully funded from within the Global Budget?
- If not, what portion of the innovation did the Global Budget fund?

Assessing how the Global Budget fits with national HFA/MoH policy

Define the policies/statements most relevant to the Global Budget in consultation with HFA and MoH personnel.

Describe the “goodness of fit” of the Global Budget to the national HFA/MoH policies defined in 6.1.

## Research approach – equity of funding

- Measurement of public funding of primary care services (GP visit subsidy; pharmaceutical subsidy; laboratory subsidy; maternity subsidy; immunisation subsidy) for patients classified according the NZDep96 scale for the year 1999 and the year 2000.
- Was the funding of health services for the Pegasus Health population “equitable”, as defined by the HFA and Pegasus Health, prior to the introduction of the Global Budget? If not, what areas needed to be addressed to make the funding more equitable?
- Were any areas defined in point 2 actually addressed under the Global Budget?
- Have there been any changes in the public funding of primary care services (GP visit subsidy; pharmaceutical subsidy; laboratory subsidy; maternity subsidy; immunisation subsidy) after the introduction of the Global Budget for patients classified according the NZDep96 scale?
- What level of increased funding has specifically been made available to low income and Māori groups as part of Project 3.1.8: Smoking cessation; Project 3.1.9: Sexual health for under 21 year olds; Project 3.1.15: Hardship fund.

- Have other initiatives been undertaken which provide more equitable funding as a result of work completed in association with other projects? If so, how much funding is involved?
- Is it possible to estimate the appropriate uptake of community services and high user cards? Which groups have lower uptake rates than others? How can these uptake rates be increased if less than (say) 90%?
- Needs analysis. To incorporate the results of the analysis of delivery question 6d “Impact on the ability of Pegasus Health to be responsive to the needs of the community including meeting the targets detailed in the agreed service plan”. Where possible these will be encompassed within the framework of the NZDep96 as the analysis parameter.
- Patient costs. The evaluation of equity requires some indication of patient costs, as they are an important factor in relation to access. The cost consequences analysis will attempt to measure patient costs, and subject to this measurement being sufficiently robust, further analysis by NZDep96 will be undertaken. This analysis will include assessment of the correlation between patient costs and deprivation.

## APPENDIX 2

### Global Budget evaluation: GP perspectives

Since late 1999 Pegasus has managed a Global Budget, and many changes have occurred. We are interested in how these changes have affected GPs in their day-to-day practice. Thinking about your own practice over the last 18 months, since the Global Budget has been in place, to what extent do you agree with the following statements:

(Please tick the appropriate box)

	Strongly agree	Agree	No views either way	Disagree	Strongly disagree
Nurses have taken on more responsibility					
I am under more pressure professionally					
I have become more involved with policy issues					
We now use computers more effectively for patient care					
My range of clinical skills has increased					
It is the IPA's job to help improve access for disadvantaged groups					
Information for patient care decisions has improved					
There has been more paperwork/bureaucracy					
I have had more professional links with colleagues in other practices					
My job satisfaction overall has increased					
I am more involved professionally with other non-Pegasus health providers					
I have more targets to meet set by Pegasus					
I have an increased awareness of quality issues					

(Please tick the appropriate box)

	Strongly agree	Agree	No views either way	Disagree	Strongly disagree
I have increased my level of skill in clinical areas					
Care for my patients has improved					
I refer more of my patients to other services in the community					
I feel 'over-managed'					
I am less concerned about moves away from fee-for-service					
My understanding of Māori and Pacific health issues has improved					
A population approach helps my patients					
I receive appropriate support from my practice facilitator					
It is easier for low income patients to access my services					
The practice 'team' is working much better					
I better understand the importance of relationships with iwi					

**And to finish, just some brief demographic information:**

Number of GPs in your practice/group ..... Number of years in general practice .....

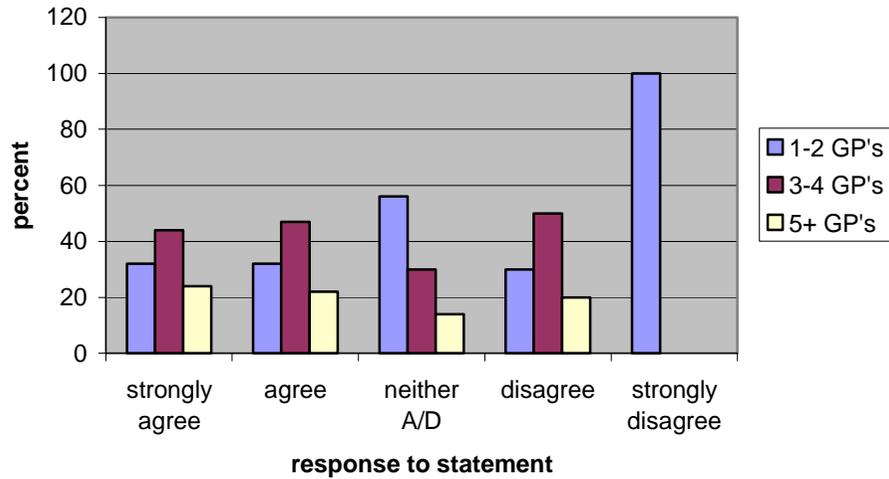
Have you been, or are you now, a member of a Pegasus committee or advisory group? Yes ..... No .....

**Please add any other comments here, or over the page:**

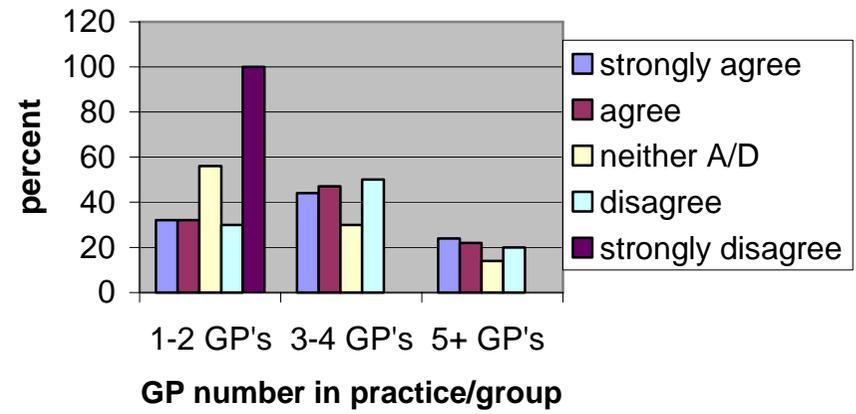
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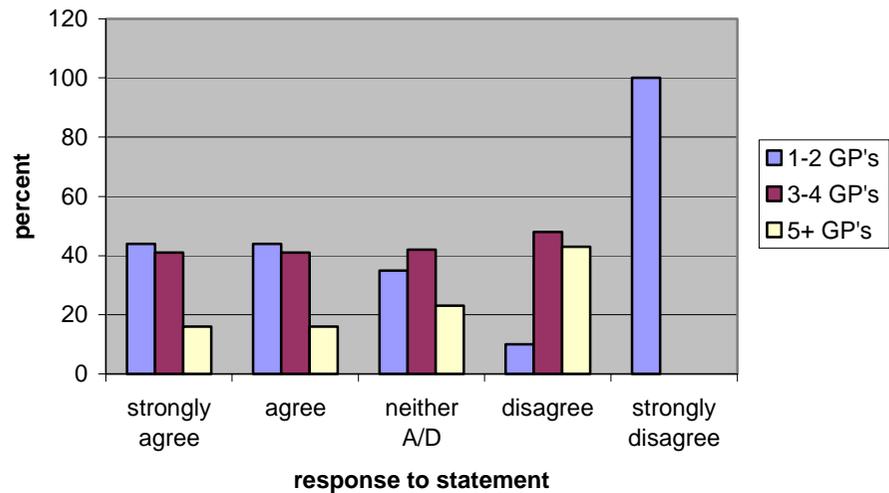
**FIGURE 1a Nurses have taken on more responsibility**



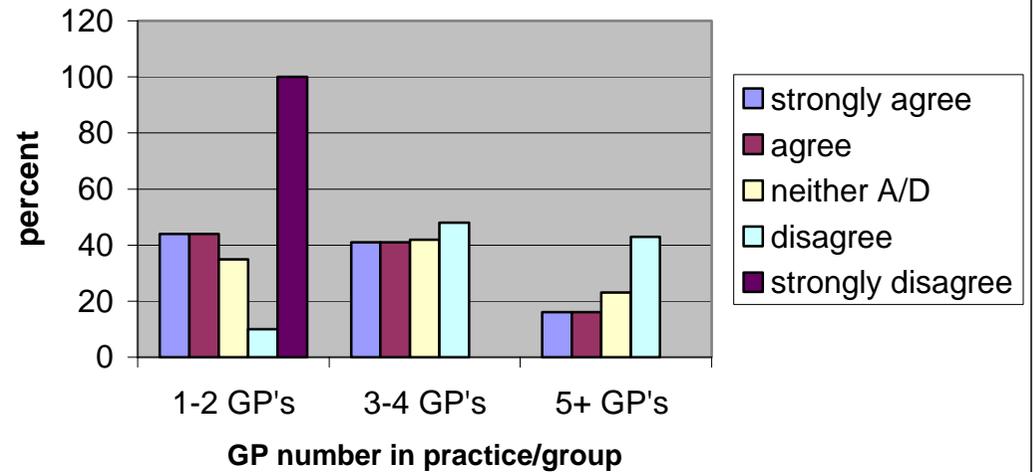
**FIGURE 1b Nurses have taken on more responsibility**



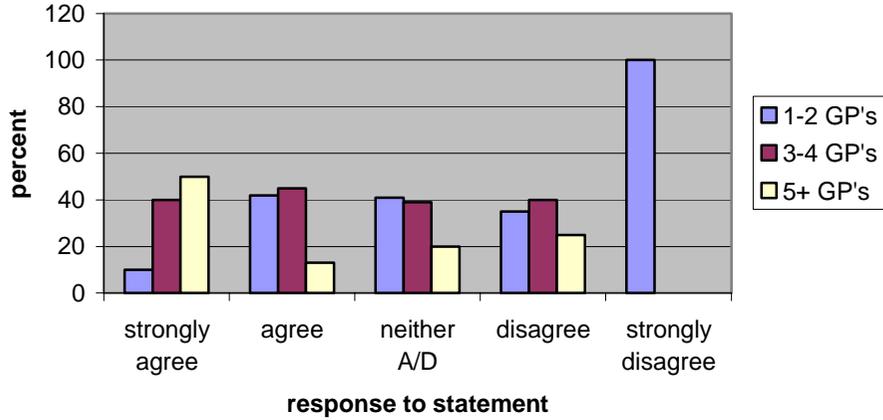
**FIGURE 2a I am under more pressure professionally**



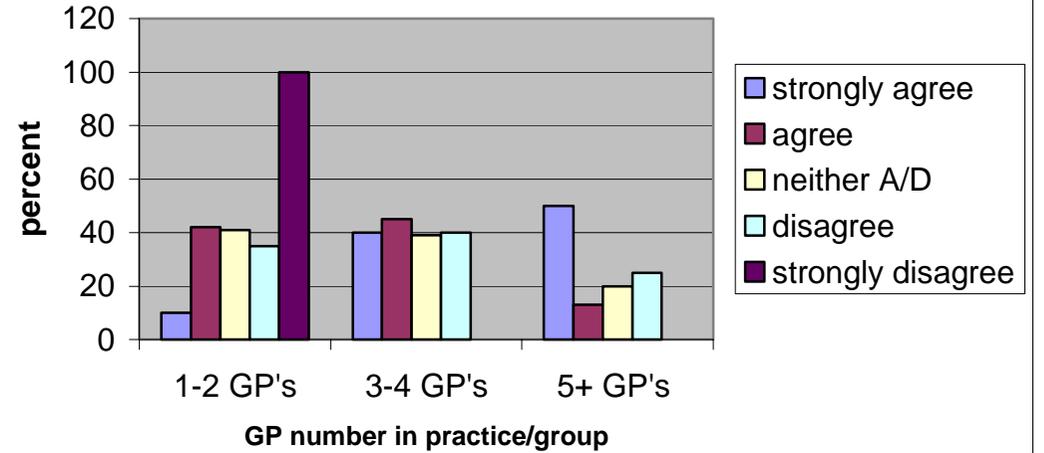
**FIGURE 2b I am under more pressure professionally**



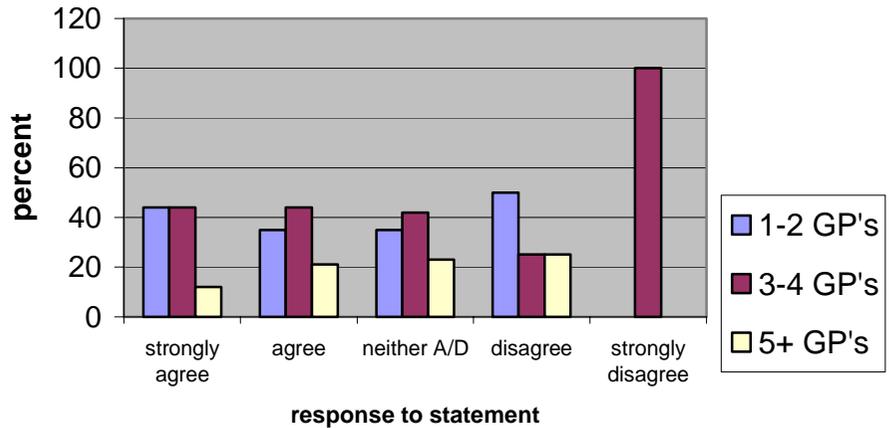
**FIGURE 3a I have become more involved with policy issues**



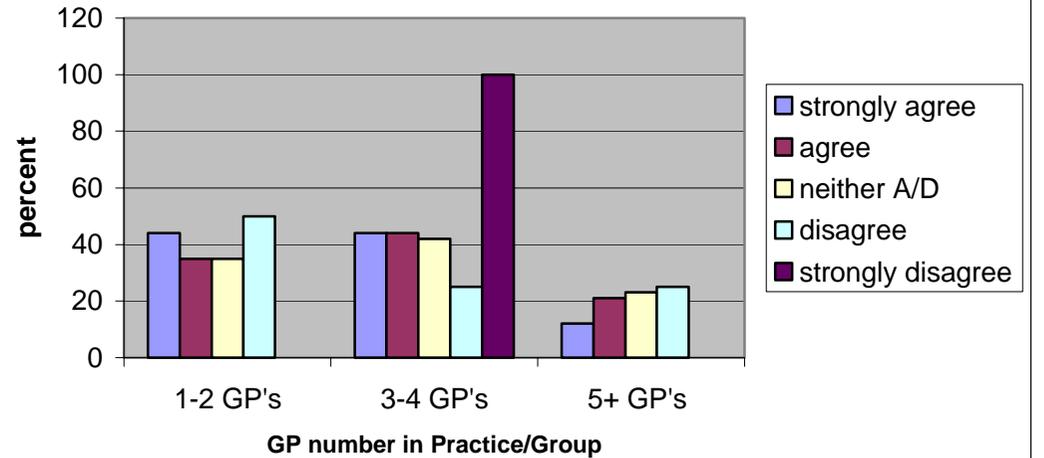
**FIGURE 3b I have become more involved with policy issues**



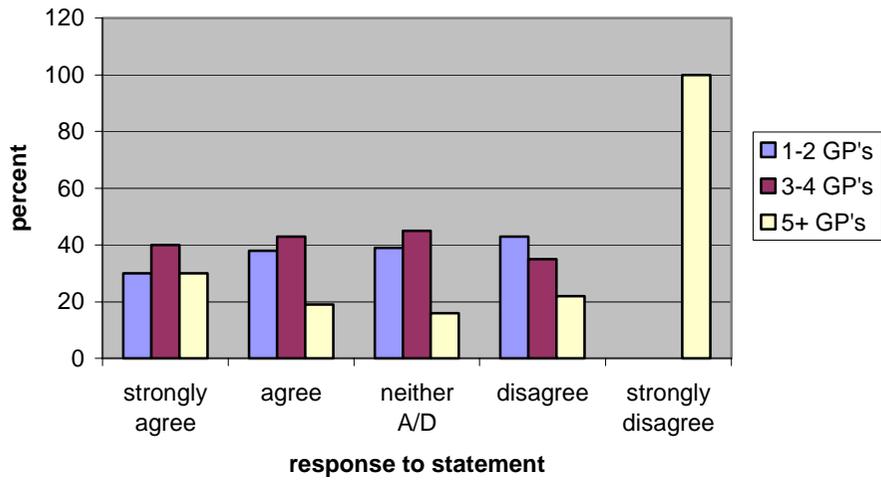
**FIGURE 4a We now use computers more effectively for patient care**



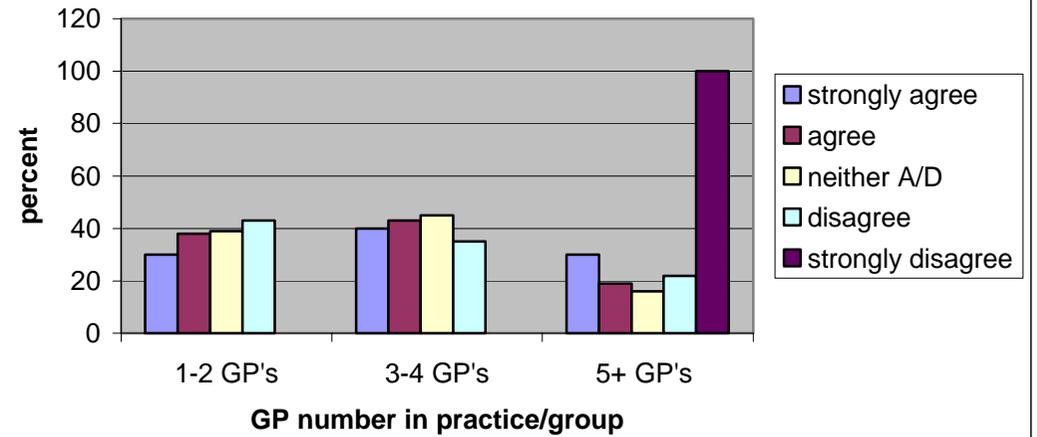
**FIGURE 4b We now use computers more effectively for patient care**



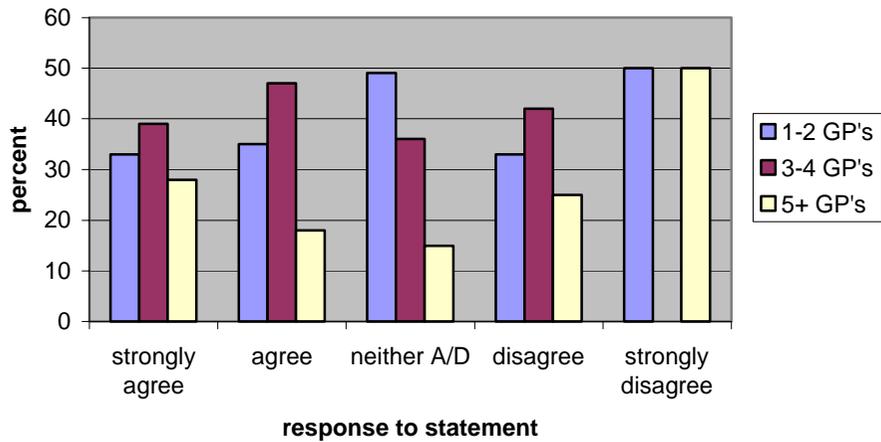
**FIGURE 5a My range of clinical skills has increased**



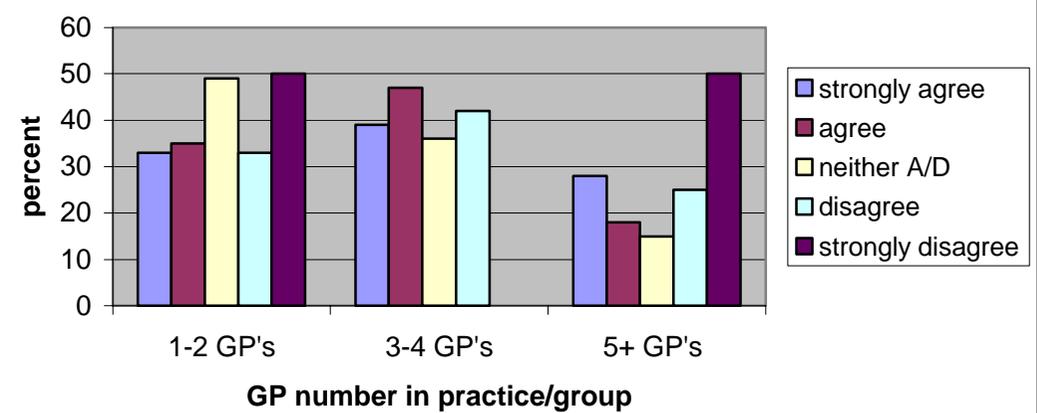
**FIGURE 5b My range of clinical skills has increased**



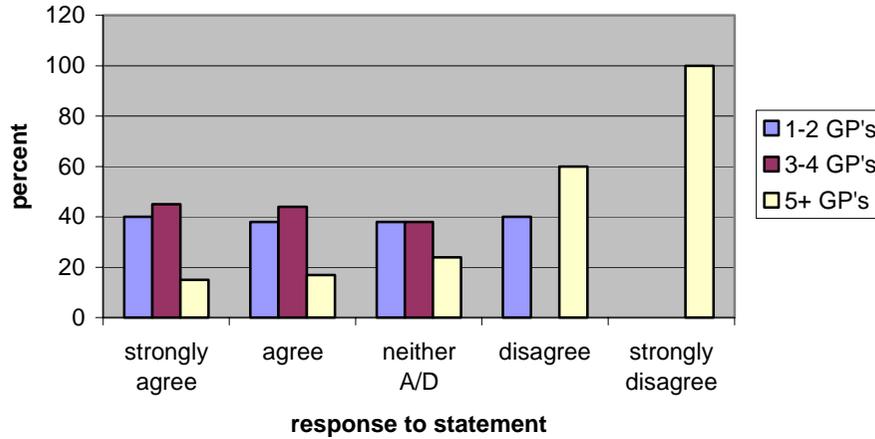
**FIGURE 6a It is the IPA's job to help improve access for disadvantaged groups**



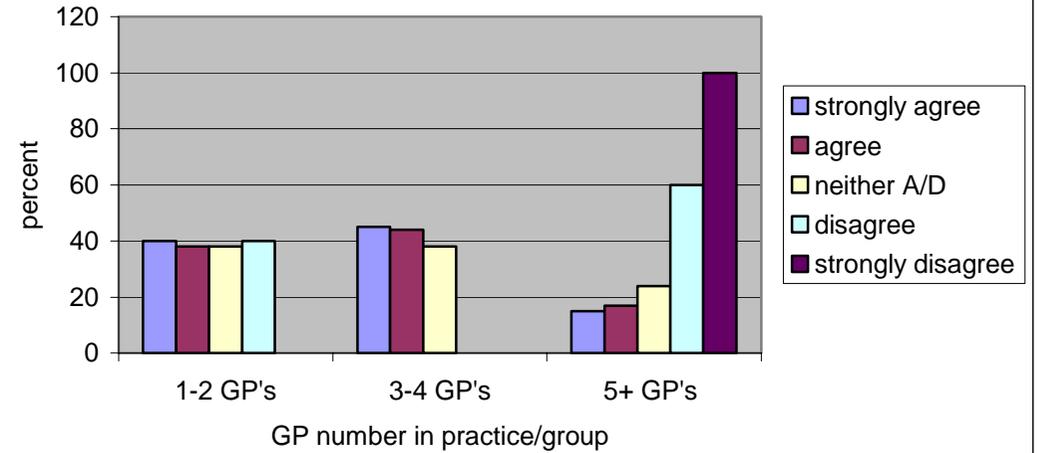
**FIGURE 6b It is the IPA's job to help improve access for disadvantaged groups**



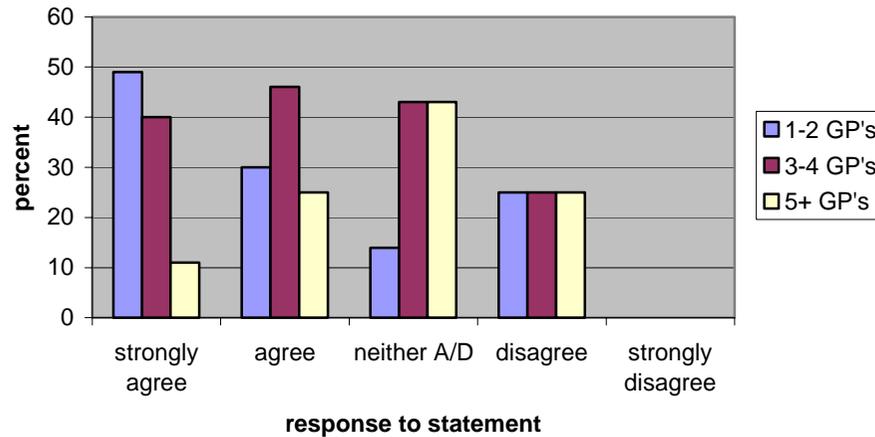
**FIGURE 7a Information for patient care decisions has improved**



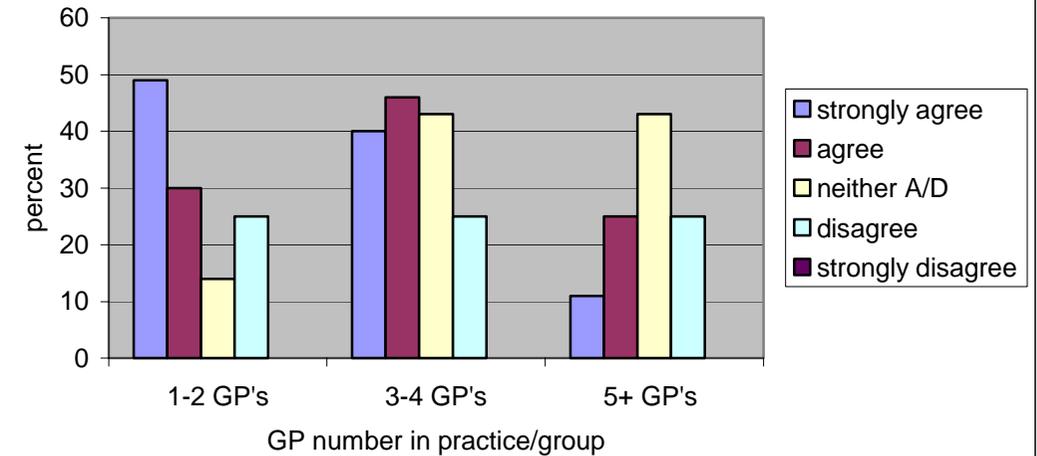
**FIGURE 7b Information for patient care decisions has improved**



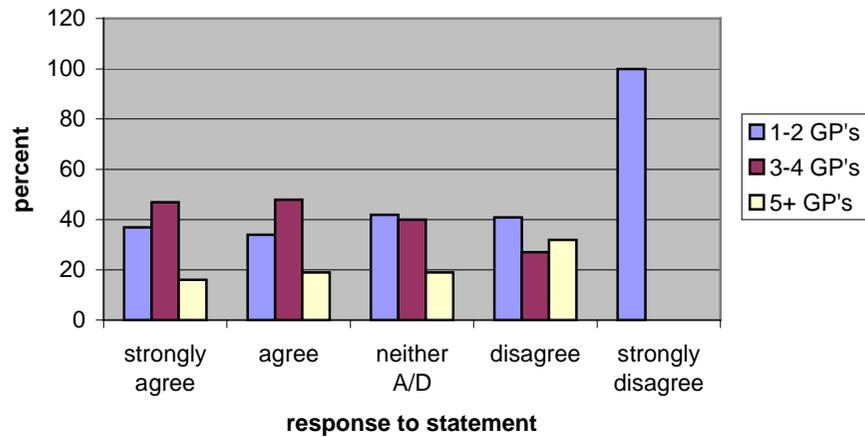
**FIGURE 8a There has been more paperwork/bureaucracy**



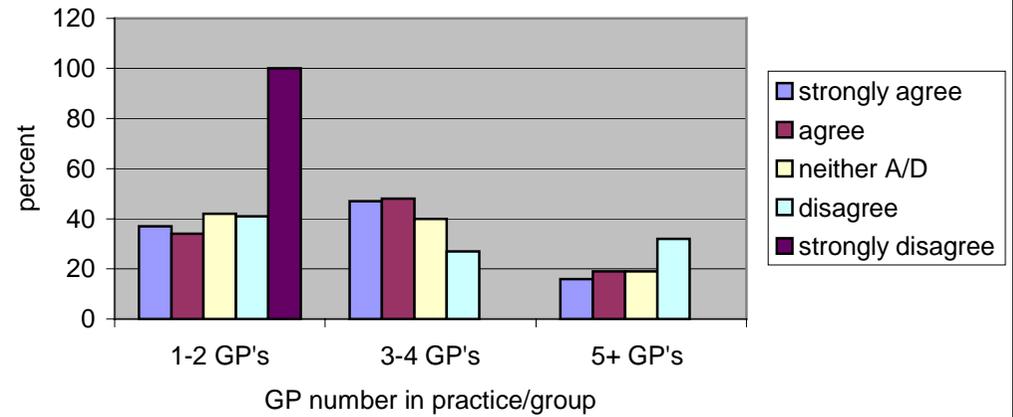
**FIGURE 8b There has been more paperwork/bureaucracy**



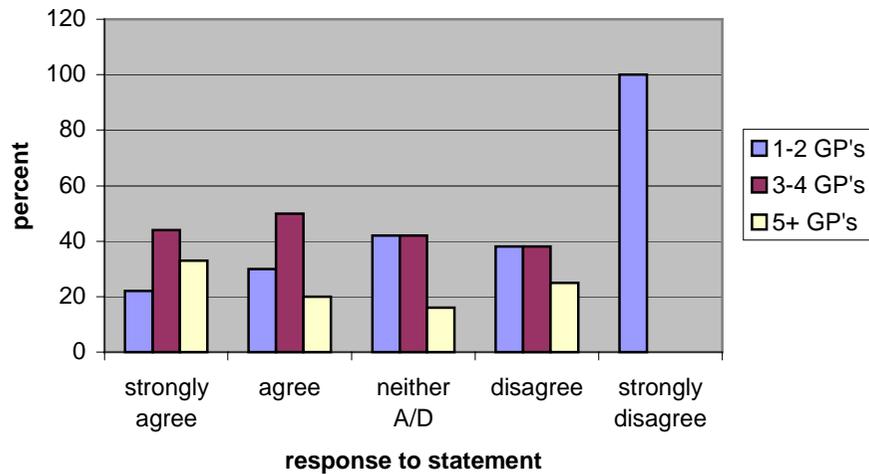
**FIGURE 9a I have had more professional links with colleagues in other practices**



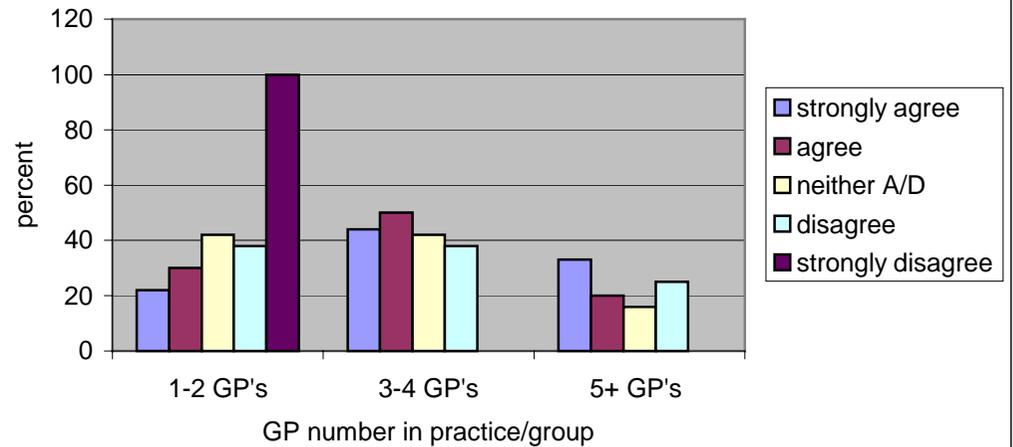
**FIGURE 9b I have had more professional links with colleagues in other practices**



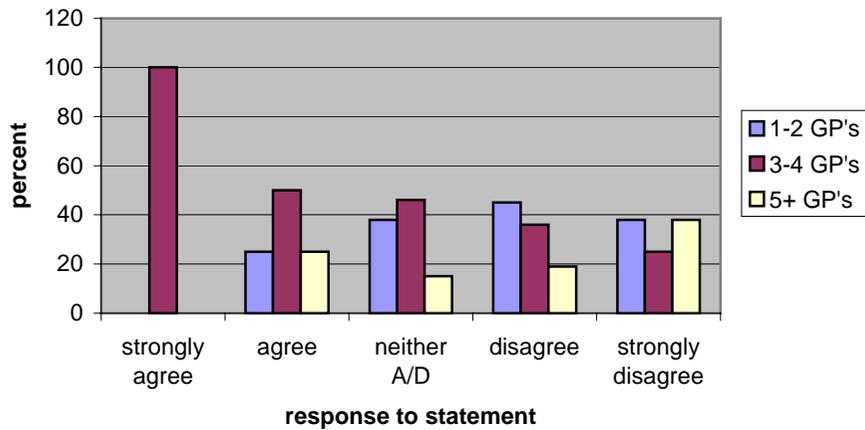
**FIGURE 10a My job satisfaction overall has increased**



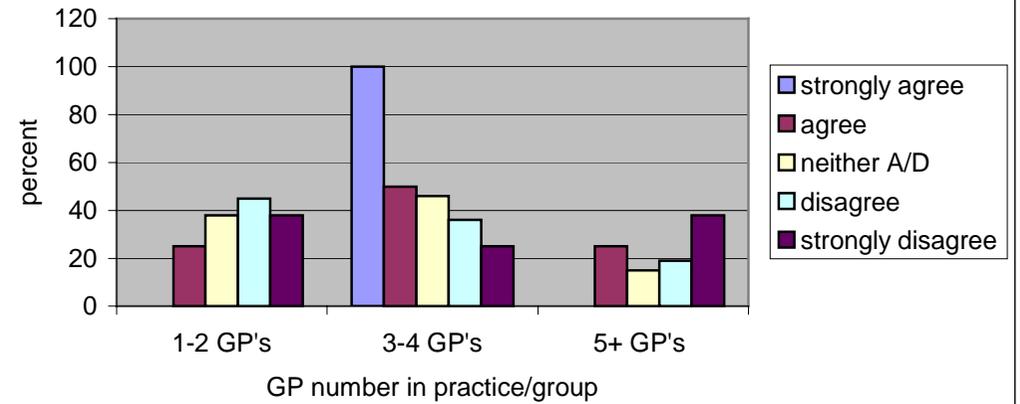
**FIGURE 10b My job satisfaction overall has increased**



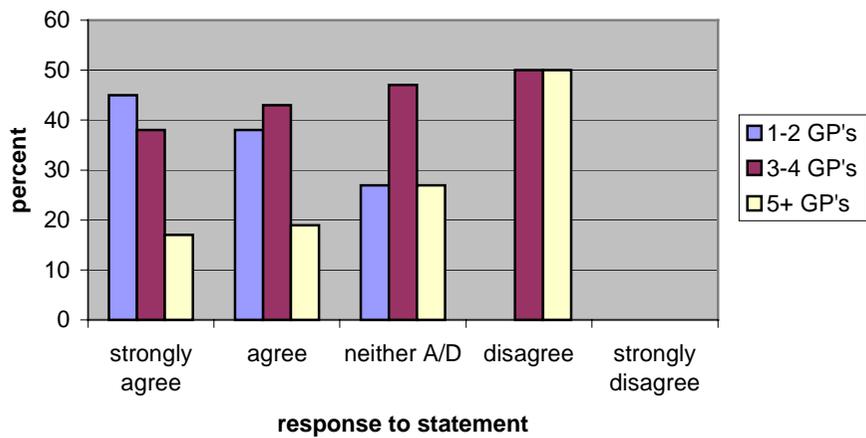
**FIGURE 11a I am more involved professionally with other non-Pegasus health providers**



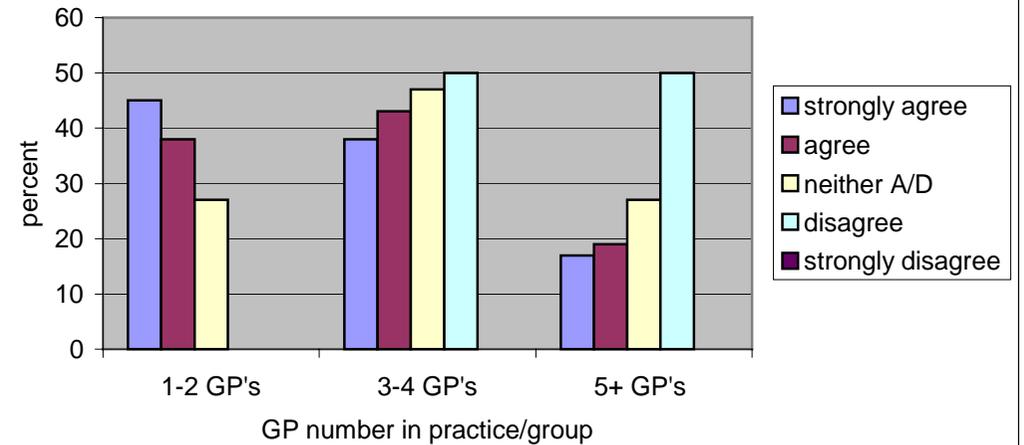
**FIGURE 11b I am more involved professionally with other non\_Pegasus health providers**



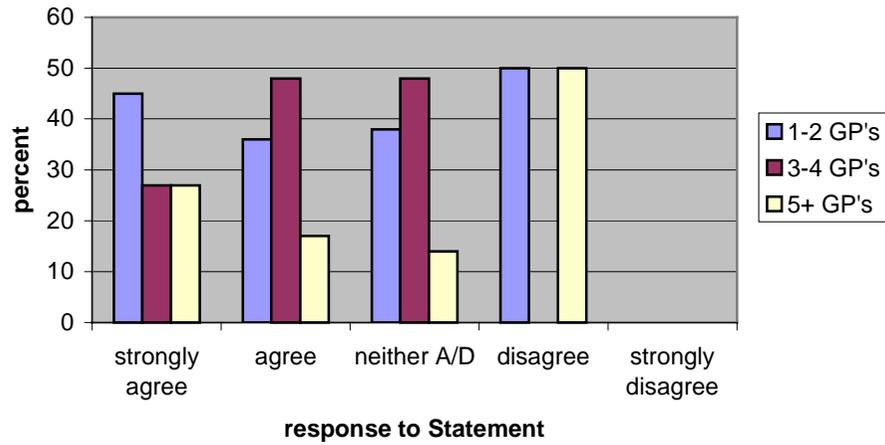
**FIGURE 12a I have more targets to meet set by Pegasus**



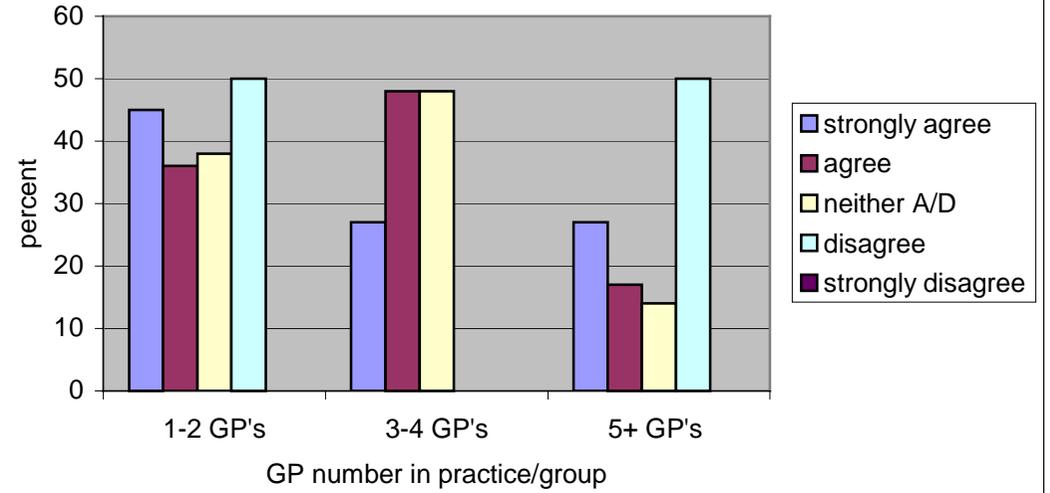
**FIGURE 12b I have more targets to meet set by Pegasus**



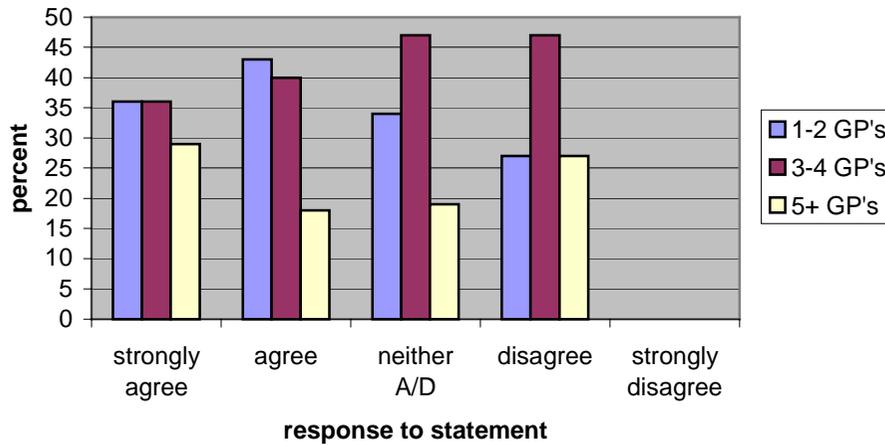
**FIGURE 13a I have an increased awareness of quality issues**



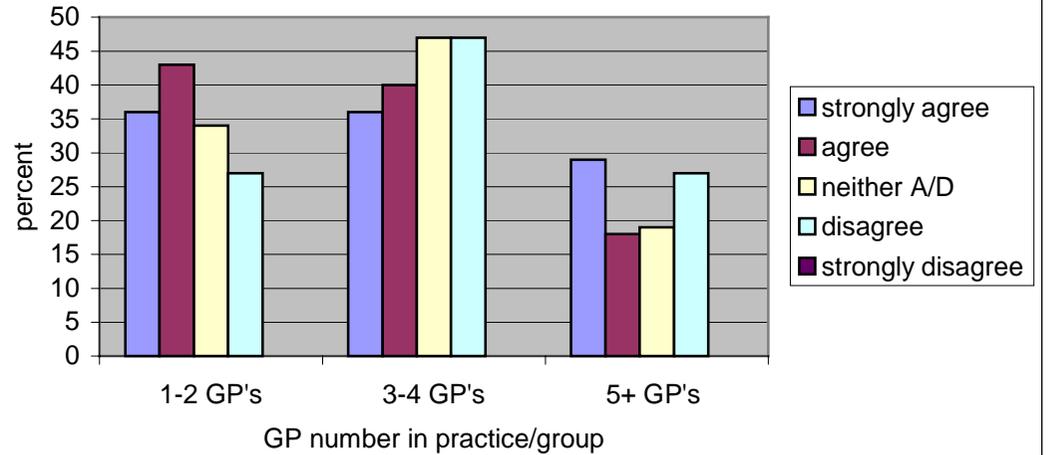
**FIGURE 13b I have an increased awareness of quality issues**



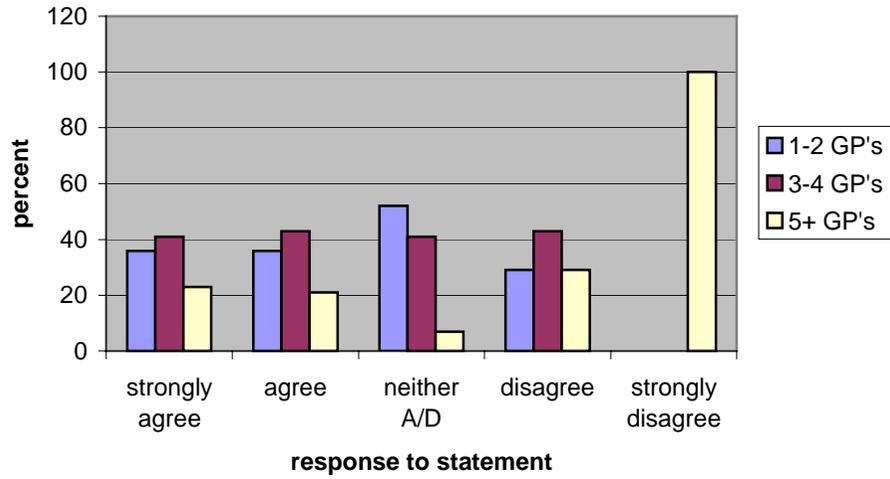
**FIGURE 14a I have increased my level of skill in clinical areas**



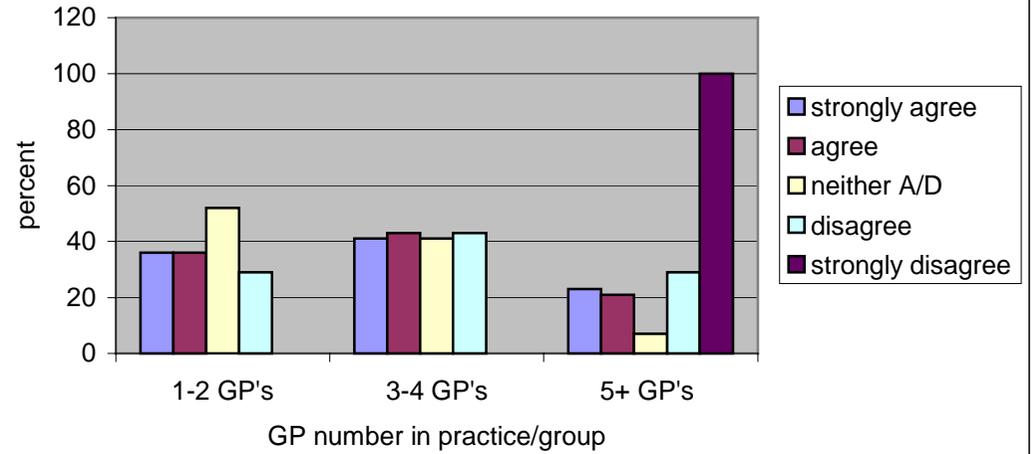
**FIGURE 14b I have increased my level of skill in clinical areas**



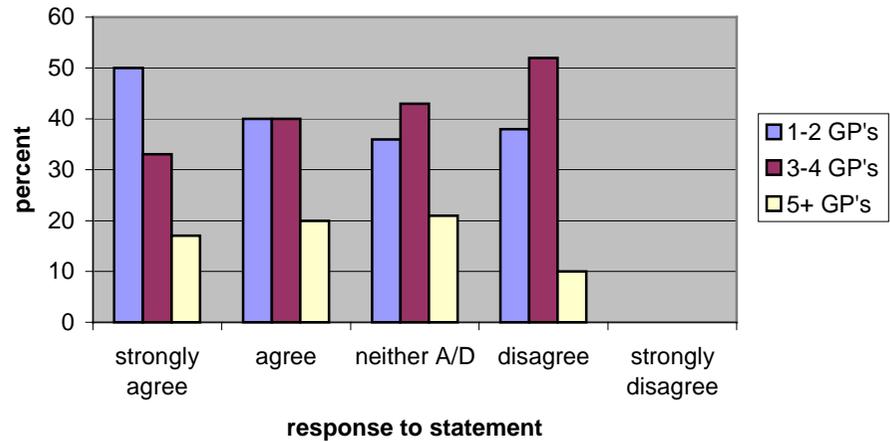
**FIGURE 15a Care for my patients has improved**



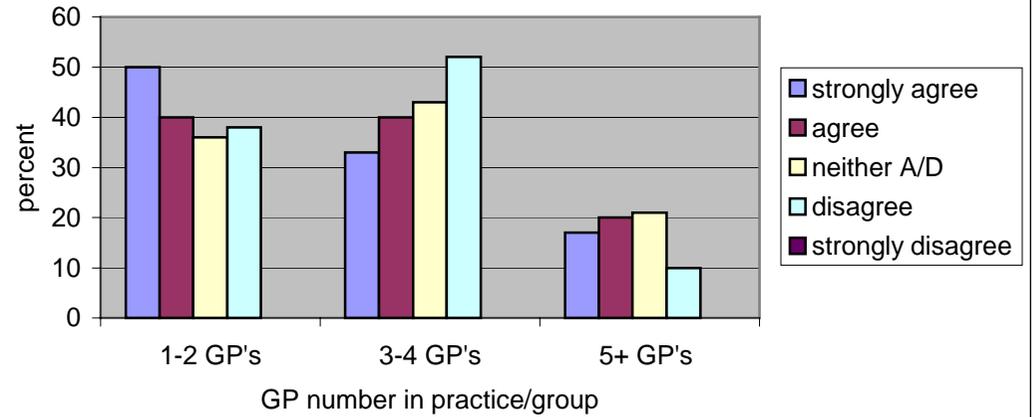
**FIGURE 15b Care for my patients has improved**



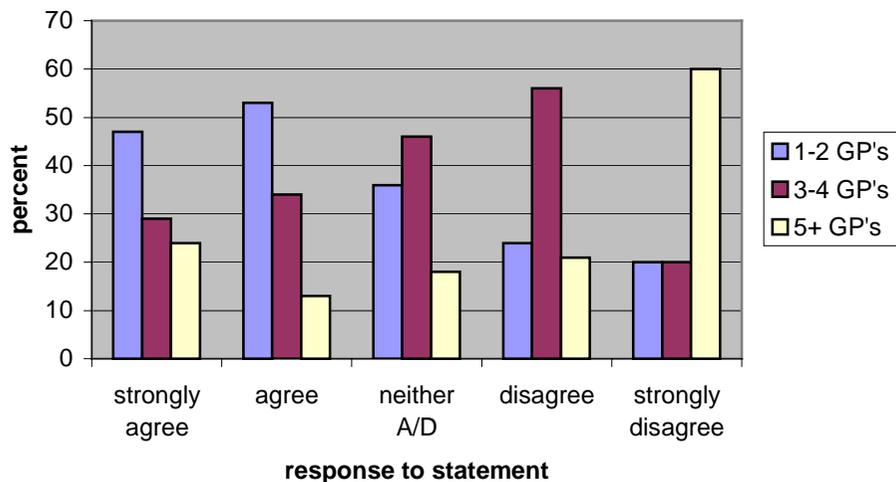
**FIGURE 16a I refer more of my patients to other services in the community**



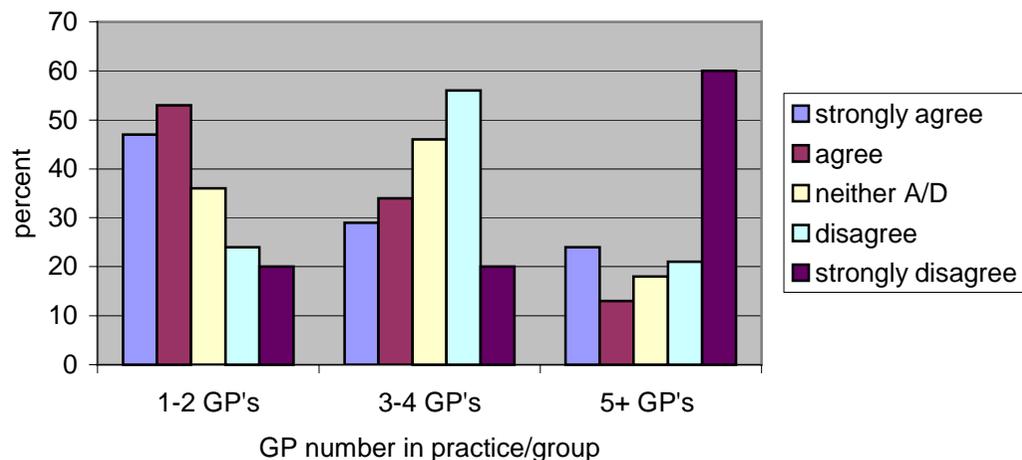
**FIGURE 16b I refer more of my patients to other services in the community**



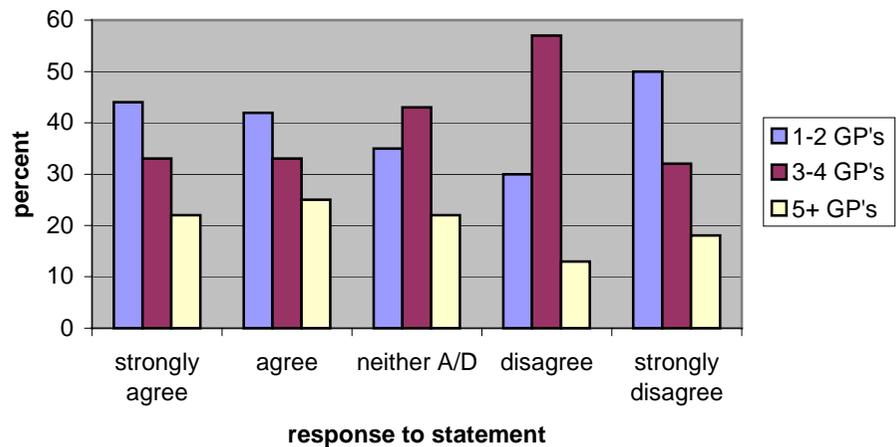
**FIGURE 17a I feel 'over-managed'**



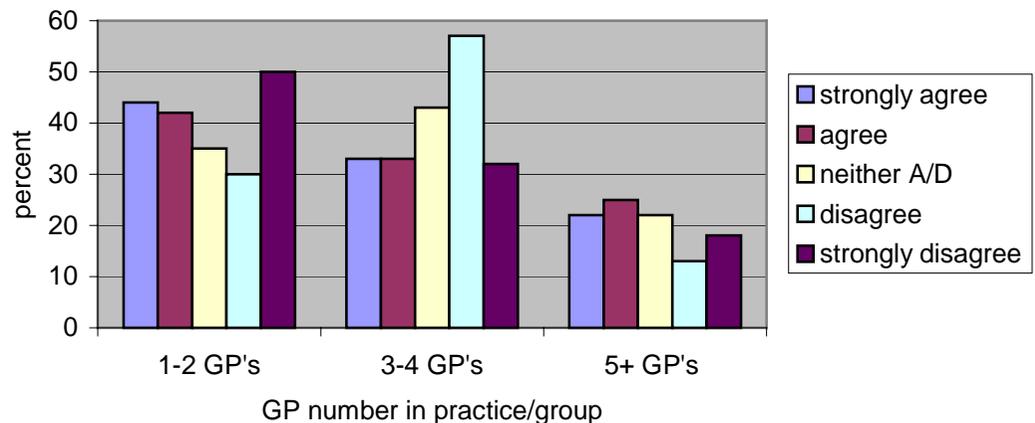
**FIGURE 17b I feel 'over-managed'**



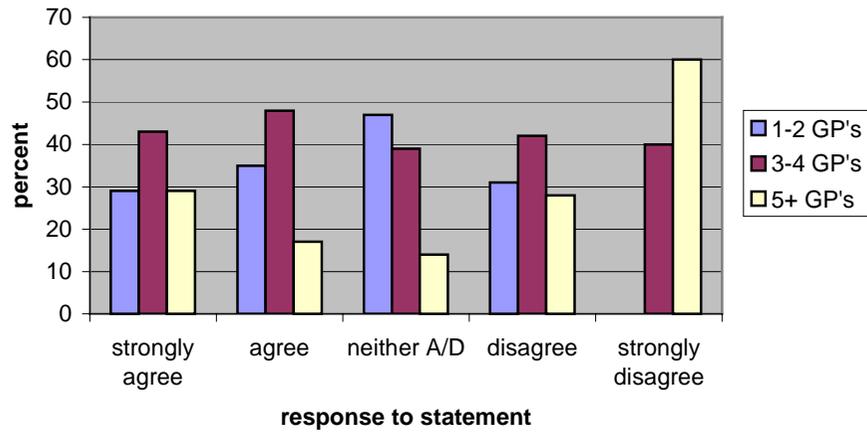
**FIGURE 18a I am less concerned about moves away from fee-for-service**



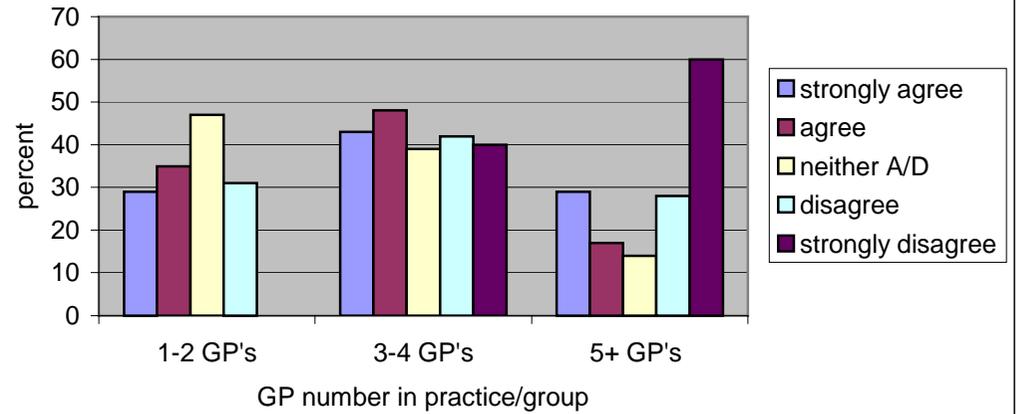
**FIGURE 18b I am less concerned about moves away from fee-for-service**



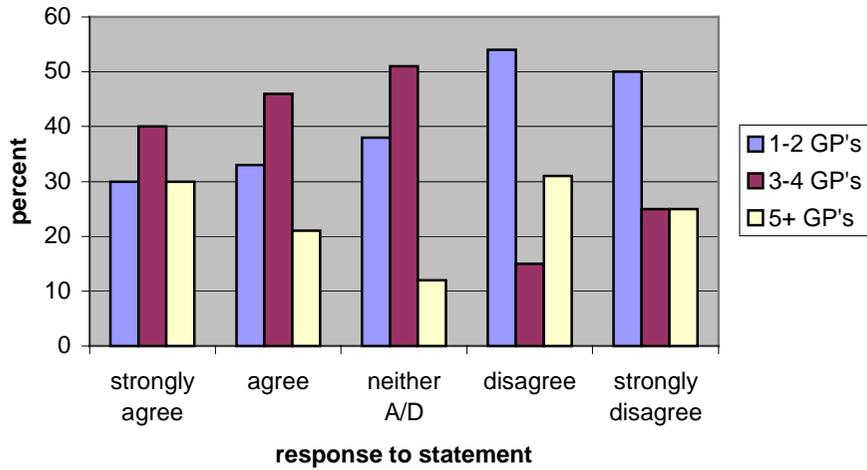
**FIGURE 19a My understanding of Maori and Pacific health issues has improved**



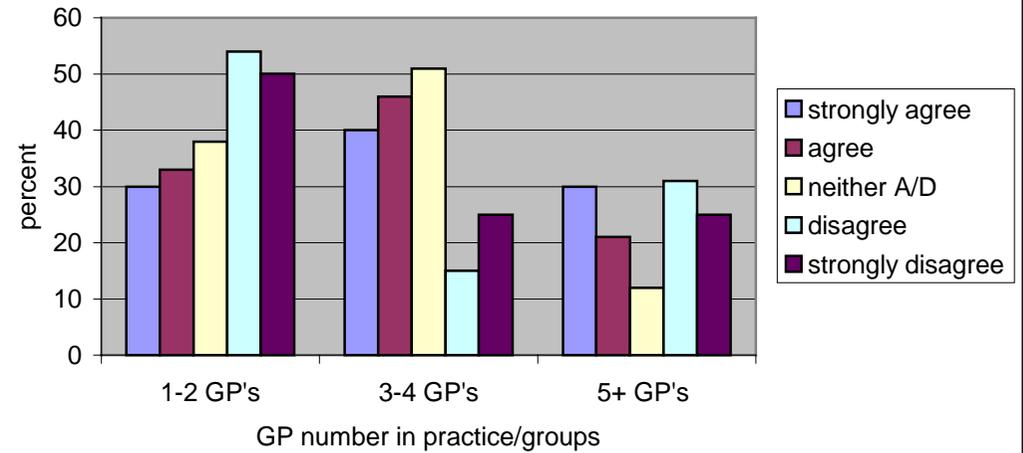
**FIGURE 19b My understanding of Maori and Pacific health issues has improved**



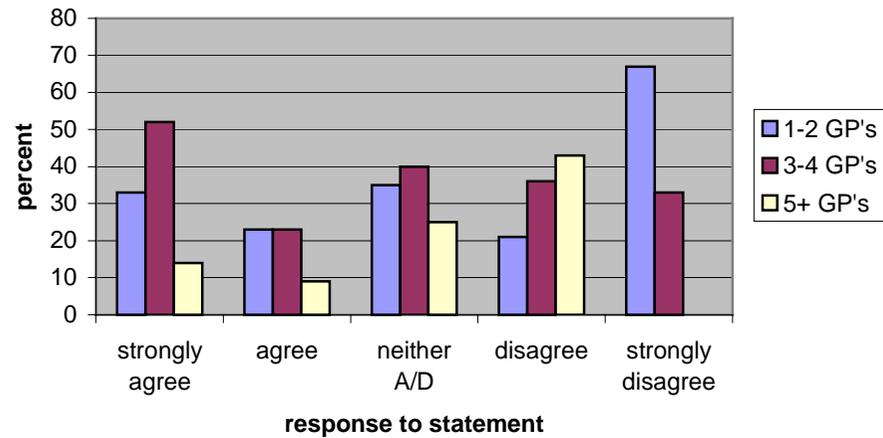
**FIGURE 20a A population approach helps my patients**



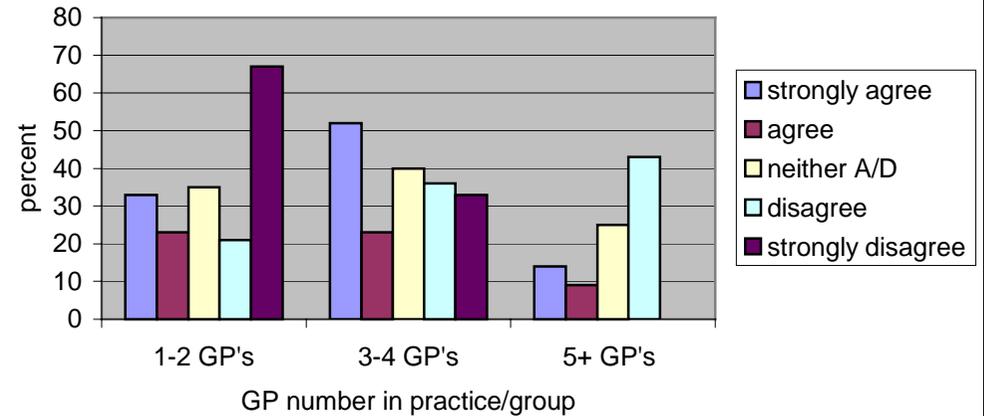
**FIGURE 20b A population approach helps my patients**



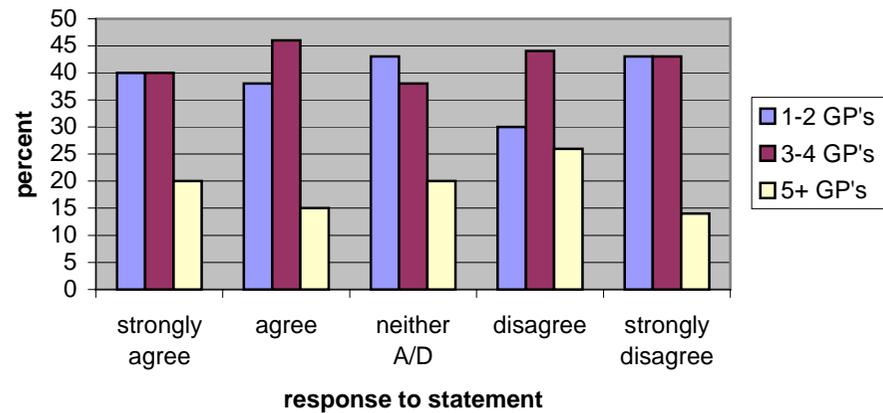
**FIGURE 21a I receive appropriate support from my practice facilitator**



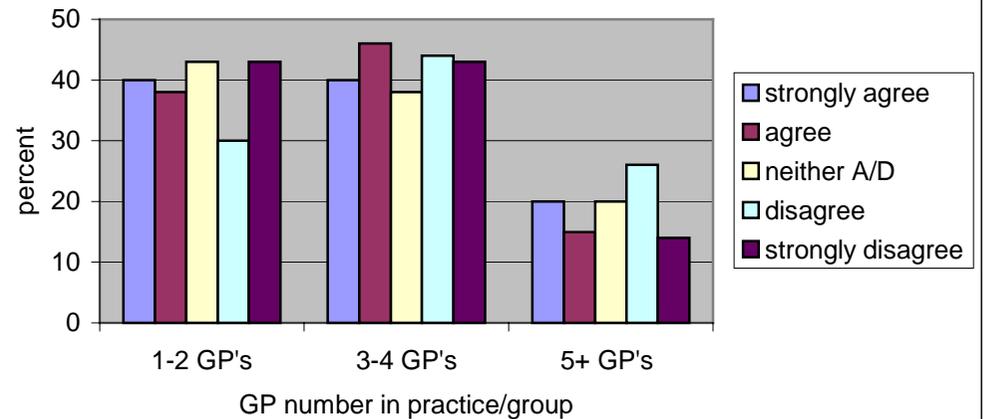
**FIGURE 21b I receive appropriate support from my practice facilitator**



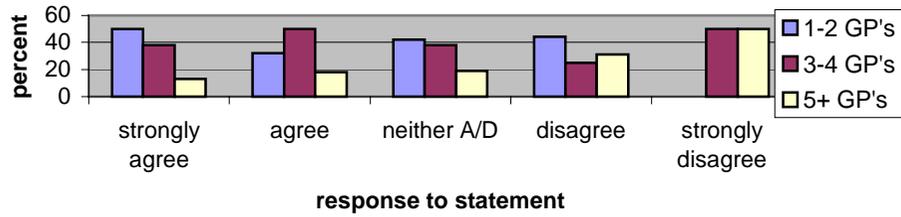
**FIGURE 22a It is easier for low income patients to access my services**



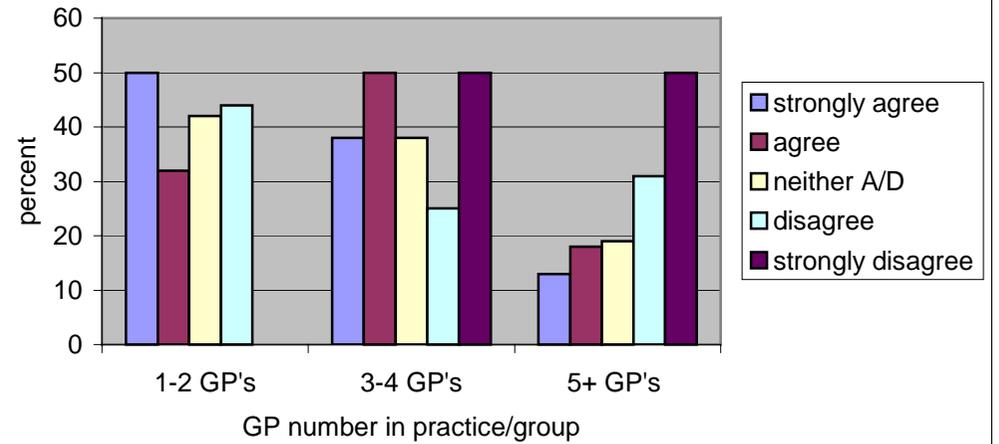
**FIGURE 22b It is easier for low income patients to access my services**



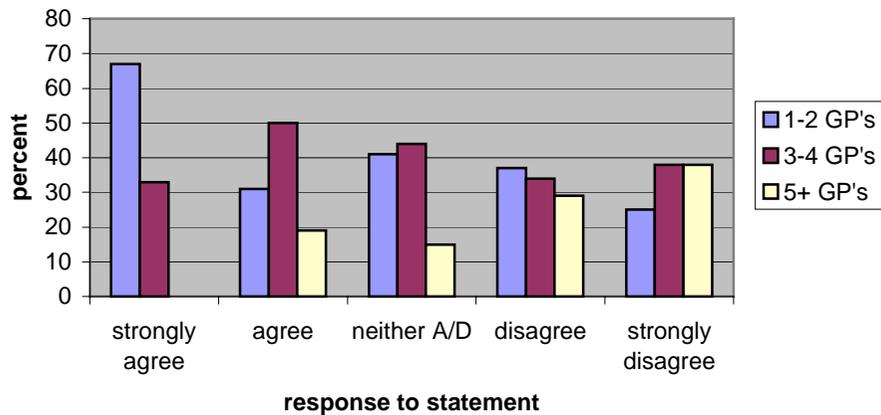
**FIGURE 23a The practice 'team' is working much better**



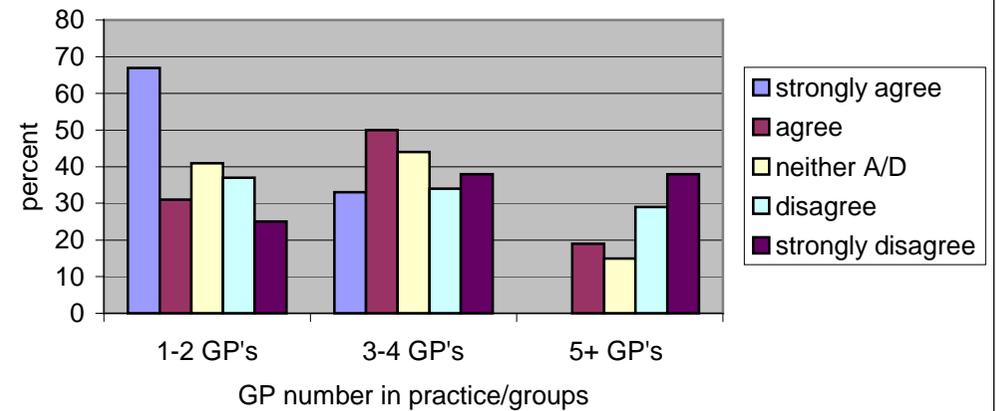
**FIGURE 23b The practice 'team' is working much better**



**FIGURE 24a I better understand the importance of relationships with iwi**



**FIGURE 24b I better understand the importance of relationships with iwi**



## APPENDIX 3

### How will the qualitative aspects fit with the overall research method?

The integration of appropriate qualitative and quantitative methods is based on managerial and economic approaches to evaluation identified by Ovretveit (1998). Professor John Ovretveit is the leading international authority on health services evaluation. He was a Trustbank Visiting Professor in Christchurch in February 2001 and was available to advise the project team.

The proposed evaluation will include both summative (output/outcome) and process components. The summative (output/outcome) evaluation will focus on the overall performance of the Global Budget as a funding model for primary health care services. Important features of the summative (output/outcome) evaluation are the identification of the attributes of the Global Budget model, the process of implementation, the structure and outcome of the Pegasus Health programmes and initiatives that contributed to the success or failure of the Global Budget funding model.

Qualitative research is useful in the exploratory stages of a research project where it can help clarify the issues under investigation, identify gaps and generate questions for further study. For the purposes of this evaluation, qualitative research will be used to help clarify the aims and expectations of the stakeholders with respect to the Pegasus Health/HFA Global Budget contract.

The process evaluation will focus on the process of delivering the initiatives associated with the Global Budget contract. Process evaluation is concerned with documenting and analysing the way the programme is implemented, including the on-going interactive processes between the stakeholders involved in the implementation of the Global Budget funding model. Also, it examines the characteristics of the population being served by Pegasus Health and the degree to which the Global Budget contract operates as expected.

### The relationship between qualitative and quantitative methods

As stated in the report, given the complexity of the Global Budget funding model a mixture of quantitative and qualitative analyses will be used. The choice between qualitative and quantitative research methods will be made on a pragmatic basis. That is, will qualitative or quantitative research methods provide the answers to the question under investigation most effectively and efficiently? So, the decision regarding which research approach to adopt is based upon the contribution that each can make in answering the research question(s) under investigation and therefore to provide results that are relevant to policy makers, health providers, consumers and purchasers of health care.

Qualitative and quantitative research methods are seen complementary whose usefulness depends upon their appropriateness to answer a given research question(s). Professor John McKinlay (1993) described qualitative and quantitative research methods as "mutually enriching partners in a common enterprise". Further, Holman (1993) stated "true understanding in medicine cannot be achieved without adding qualitative to the research arsenal". We are familiar, for example, with the effective use of combined qualitative/quantitative approaches used in research into Total Purchasing Projects and Primary Care Groups in the UK.

Qualitative methods are particularly suitable for answering 'how does this come to happen?' While quantitative methods are suitable for answering 'how many?' 'how much?' and 'how often?' questions. There will be situations where quantitative data is inaccessible or unavailable but the impact of a health service among target groups maybe of considerable importance to policy makers and health purchasers and such information can be collected using qualitative methods.

Qualitative research is useful in providing a rigorous descriptive base which is important in providing policy makers and health purchasers with an understanding of the context in which policies will be implemented. Also, qualitative research may be used to help interpret or enrich the findings from quantitative research. For example, they help explain the exceptions to the results obtained using probabilistic quantitative research methods and hence improve the generalisability of result findings. Finally, while quantitative studies focusing on health outputs/outcomes can establish a link between the 'intervention' and 'output/outcome', they are less able to explain the process by which the intervention was translated into a 'output/outcome'. It is these aspects of the implementation of the Pegasus Health Global Budget contract that qualitative research is best able to describe.

### Clarity re: Pegasus Health Philosophy [from Global Budget Report 2001]

#### Our Commitment to the People of Canterbury

These are challenging and exciting times in health. The government's Primary Health Care Strategy outlines a clear focus for general practice teams, the teams we at Pegasus Health work to support. The pages that follow are a review of the last year, as we shaped our organisation and its services to meet the needs of our community.

As acknowledged in the Primary Health Care Strategy, a strong primary health care system is essential to achieve the aims of the strategy.

At Pegasus, we are committed to ensuring that the health system is improved for the benefit of our patients. We are developing more innovative and smarter solutions that deliver a benefit to the entire health system.

We are firm believers in prevention and health promotion these being just as important as cure. Concepts like enrolment are therefore an integral part of Pegasus Health's strategic direction. We need to better understand the community we serve in order to better meet their needs, both at the individual patient and also at the population level.

We are working to understand and address the causes of poor health status in our community, and to break down many of the traditional barriers in health care. Pegasus Health has a solid commitment to areas including mental health, Maori and Pacific health, immunisation, heart disease, breast screening and smoking cessation.

Our sights remain set on delivering the highest quality health care in a collaborative way, with general practice as a first port of call for treatment or referral. We firmly believe that a good relationship with a family practice team leads to patients getting more effective help earlier, and is a key step towards restoring or maintaining good health.

We are working closely with the Canterbury District Health Board and other providers to make the system work better for patients, and to deliver more value for the funder and the community we serve. The Pegasus Community Advisory Board and the advent of District Health Boards provide patients with more opportunities than ever before to be directly involved in our health system.

Our commitment to Canterbury is to continue to build a primary care system that works for you and that represents excellent value for your money. Through Pegasus family practice teams, we are working with patients to improve their health, keep them well, ensure care is accessible and is easy to get to and to reduce the inequalities between different groups.

We are proud to bring you this, our second Global Budget Report, detailing what we have achieved over the past year and painting a picture of how we see the future of general practice in New Zealand.

As we move into the next phase of our development, we continue to work with our family practice teams to do what we do best – put more care into health care.

## About Pegasus

Pegasus Health is a grouping of 225 family doctors (involving about 60 percent of the active general practitioners in Canterbury). Working alongside these family doctors more than 212 practice nurses are providing care for over 290,000 people of Canterbury – helping to create a healthier community.

Each year, there are over 1,200,000 doctor contacts with Pegasus patients (this figure includes both government subsidised and patient paid consultations). Another perspective is that this represents approximately 23,000 doctor-patient and 15,000 practice nurse-patient contacts per week.

Last year 34,300 childhood immunisations were given (13,000 events), 760,000 laboratory tests ordered and well over 2,500,000 prescriptions subsidised.

### What we do

Pegasus family doctors and practice nurses are working to improve the overall health status of their individual patients, as well as the wider community, with a focus on prevention and health promotion. In the past year, with the advent of our groundbreaking Community Care Project, we have also established a comprehensive system that allows our practices to care for more patients in the community.

Pegasus Community Care services include a Mobile Diagnostic Unit, Observation Unit and additional tools for practices to use with patients.

As well as caring for the sick individual, practice teams now work together to keep the population well.

### How we get the most out of health dollars

Through doctor and nurse education and careful use of resources, including smarter prescribing and testing, we can offer a range of new and subsidised services and community health initiatives.

Our Community Care Project allows unwell people to be cared for safely and effectively in the community, saving unwell patients unnecessary hospital admissions and freeing up hospital beds for ill people.

### Our commitment to an integrated health system

Integration of care (family doctors and practice nurses working closely with other health professionals) is an important part of the Pegasus philosophy. Pegasus Health is working on a number of integrated care projects, covering a broad range of patients and populations, from children through to older people, from refugee to Maori populations.

### How Pegasus Health is funded

Our Global Budget Contract, the only one of its kind in New Zealand, was signed with the funder in November 1999. This contract gives Pegasus much greater responsibility for tracking health problems in the community, and provides us with the flexibility and resources to be responsive to the needs of the Canterbury population so that we can deliver local solutions to local problems.

The Global Budget Contract funds traditional primary care services such as:

- free medical care for young children
- the subsidised medical care of people with a community card and older children

- immunisation for children and flu vaccinations for those in need
- maternity care
- the provision of prescriptions and laboratory tests
- as well as a range of projects that Pegasus had previously established, targeting specific health issues and/or specific sub-groups of the population.

The contract also enables new innovative work in the areas of:

- relieving the pressure of acute medical admissions on hospitals
- helping patients manage their asthma, COPD, diabetes, or heart disease better
- better access to appropriate medical tests for accurate early diagnosis
- working with hospitals to reduce waiting times for surgery, access to diagnostic tests and specialist opinion
- continuing our drive to integrated care – i.e., doctors and nurses working with others across the boundaries of communities, general practices and hospitals for the good of the patient
- rural health.

#### Accountability for spending

Greater responsibility also comes with greater accountability. Pegasus reports to the Canterbury District Health Board regularly during the year. We report to the community on a regular basis, providing them with financial information detailing how we are spending their health dollars, as well as informing them of new projects and developments.

Seven Pegasus family doctors sit on the Pegasus Health Board of Directors; a Nurse Director was appointed in November 2001.

#### Community involvement

The Pegasus Community Advisory Board, which is made up of community representatives with a background and experience in a number of key organisations, provides advice to the Pegasus Health Board about the primary health care needs and priorities of the Christchurch community.

Pegasus is working every day to make Canterbury a healthier place. Our community health initiatives are targeting key areas that concern us all and are helping work towards finding the best possible solutions to these issues.

#### What lies ahead for Pegasus?

Pegasus will continue to be New Zealand leaders in the provision of high quality patient and population focused health care.

We wish to continue to "Manage change in health care with quality solutions".

Our vision is to care for Canterbury patients and improve their health status by:

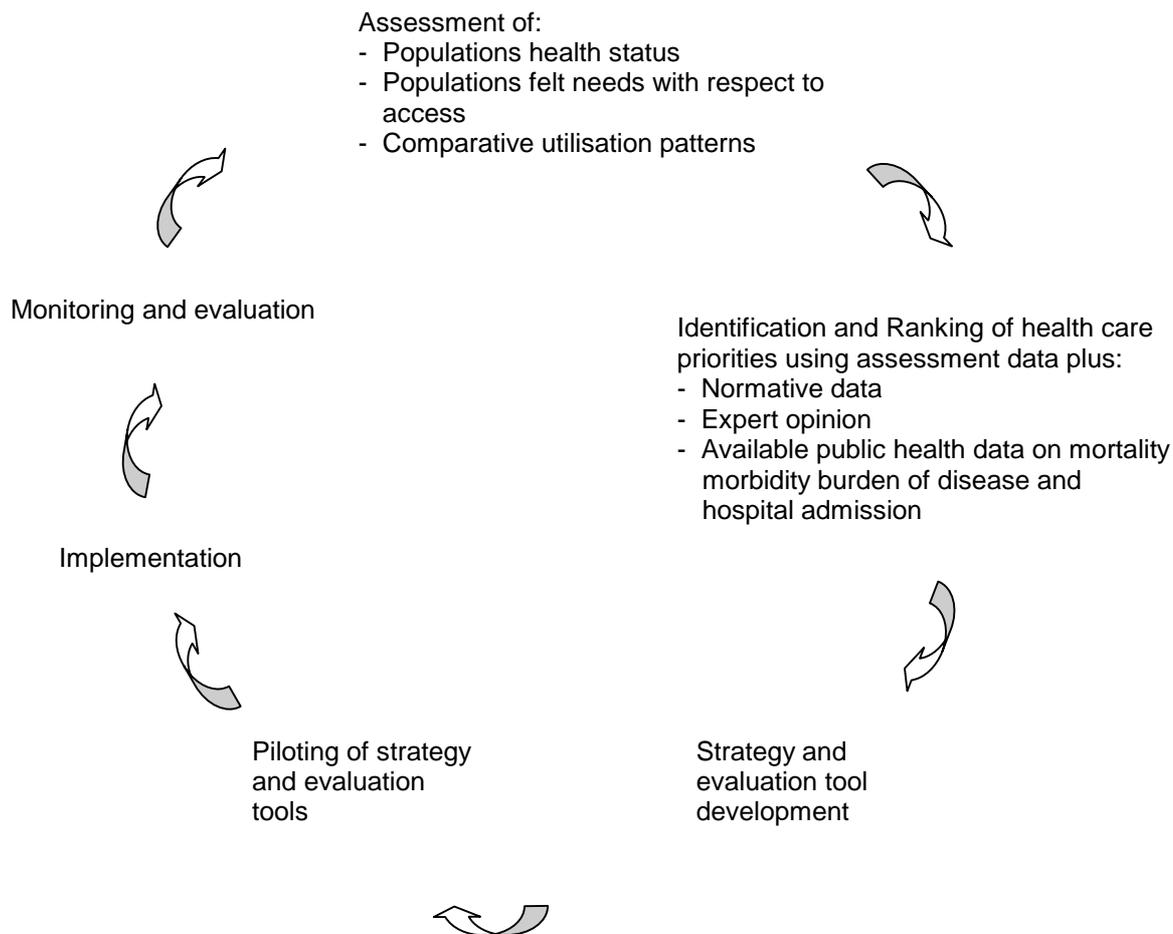
- being the best providers of a comprehensive range of innovative, high quality, health care services which meet the needs of patients, community and funders
- encouraging a patient centred team approach to the delivery of primary and secondary health care
- general practice teams meeting as much of our patients' health care needs as possible, and by assisting patients to access other health services as appropriate
- working effectively with others to provide quality care, and appropriate referral practice and information sharing

- working to address health inequities
- delivering valued services that also enhance the operation of family practice teams
- enabling the implementation and sharing of Pegasus' health care solutions nationally and, where appropriate, Pegasus implementing evidence-based health care solutions developed elsewhere.

# APPENDIX 5

## Model of an effective planning cycle

Model of an effective planning cycle adapted from Murray & Gillam (1997):



## APPENDIX 6

### Conceptual framework for community needs assessment

#### Contractual expectations

The terms of the Global Budget contract between Pegasus Health (PH) and the former Health Funding Authority (HFA) signed in November 1999, Section A4.4, 1.3 specify that “This evaluation will involve an assessment of the model of devolving purchasing to you [Pegasus Health] and will potentially include the following deliverables with recommendations for further development; ... c) the impact on your ability to be responsive to the needs of your community...”.

Furthermore, Section A4.6, 3 states, “We [HFA] agree to support and facilitate through staff involvement the analysis of needs and utilisation of services by your population through access to the National Minimum Data Set (NMDS) and/or HHS data. We accept that this will be fundamental to the measurement of progress against KPIs [Key Performance Indicators]” (PMG-HFA contract, 1999, pgs 77-78).

The primary purpose of the external evaluation regarding these contractual specifications was further defined by the evaluation team in the evaluation framework.

1. To assess the extent to which Pegasus has developed and undertaken population-based needs assessment.
2. To assess the extent to which Pegasus has met the Key Performance Indicators (KPIs) [pertaining to community needs assessment] (NZHTA, 2000).

Once the evaluation process was underway, NZHTA sought further direction from the Ministry of Health regarding the priority areas for evaluation. The reply from MoH listed twenty-two priorities from among the areas to be assessed (Burn, 9/02/01). A number of these were related to community assessment and responsiveness to community, and are reported elsewhere in this document, such as the role and progress of the Māori Advisory Committee, the content and impact of the Māori education courses, and the collection of accurate ethnicity data.

Two of the priority items are partially addressed in this section, 1) refugee health and the cultural co-worker initiative and 2) the implementation of joint projects with the Canterbury District Health Board for managing acute demand. This last priority concerns the Pegasus approach to integrating primary and secondary care since the adoption of the Global Budget. According to the literature, one of the three main arguments in favour of integrated care is the provision of better services to patients through collaborative relationships with consumers themselves and with other service providers. When integration is achieved, general practitioners have a greater understanding of what consumers want, which in turn leads to a broader and more appropriate range of service utilisation and ultimately improved health status (Powell Davies, Harris, Comino et al., 1997, pgs 8 and 35).

A successfully integrated care approach tracks the wants and needs of the community and is responsive to them. Assessing the extent to which Pegasus Health has developed and undertaken population health needs assessment, and has met the community needs performance targets since the Global Budget, will also provide an indication of the progress Pegasus Health has made in becoming a collaborative and integrated model of primary health care.

Assessing and meeting community needs through integrated care  
 The Pegasus Integrated Care portfolio was initiated prior to the Global Budget contract and anticipated the end of a competitive environment and the renewal of relationships between primary and secondary care (PMG Global Report, 2000). According to the literature, there are three major components of integration, 1) the separate parties (individuals or organisations) which are drawn together, 2) the integrating links which join them, and 3) the larger entity or whole which is created by their interactions (Gans and Horton, 1995; Devers et al 1994).

Building relationships and achieving integrated care take time. Those who have worked in this area in Australia have come up with a taxonomy or continuum of collaboration that illustrates the importance of the process and structures necessary for becoming truly integrated.

Table 79: Example of integrated care continuum for older people  
 (Powell Davies et al, 1997, page 11)

Autonomy	GPs and other organisations provide services with no reference to each other. Older people receive only services offered by organisation providing their care. When older people change services, there is no transfer of information from previous care.
Co-operation	Organisations refer patients where necessary but continue to develop and run their services independently. They may support each other against external threats (e.g. changes of policy for the aged care sector) but do not attempt to develop a coherent system of aged care services.
Co-ordination	Organisations improve communication and referral systems and may begin to accept each others patient assessments. They continue to operate independently but organise their services so as to avoid duplication and provide a better mix of services for clients.
Integration	Organisations attempt to provide 'seamless care' through common assessments, communication and referral systems, etc. The full range of services is advertised to the public as a single system of care. Organisations plan together to provide a coherent and comprehensive range of services for older people.

Co-ordination occurs when the parties take specific steps to ensure that their activities fit in with each other, but do not operate as a combined system or network. When the parties co-operate, they support each other to achieve common goals, but do not specifically plan their activities to harmonise with each other. When they begin to operate in an integrated way they work as part of a network or system which enables the parties to achieve more than they could if they were operating independently (Powell Davies et al. 1997).

In some circles this phenomenon is referred to as synergy, a greater interdependence that fosters combined benefits that are greater than the sum of the individual benefits, and in most cases, for the consumer or patient. For example, a shared care programme between midwives and general practitioners could provide antenatal patients with more comprehensive care than if the GPs and midwife work independently.

Powell Davies and colleagues conducted a literature review that identified four main elements that contribute to integration.

1. organisational systems – (common goals, common guidelines) provide a basis for collaborative work, enable shared care planning and case management across services
2. information systems – (medical records, databases) through which information about patient care, community needs and other areas of common concern can be shared
3. communication systems – (formal and informal linkages, referrals, joint projects) - which support effective interactions between GPs and other service providers

4. educational systems – (for providers, patients, community) which support the changes in clinical and other practice that develop in a more integrated system of care (Powell Davies, 1997, page 2) (Centre for General Practice and Integrated Studies, 1999).

Health needs assessment is a fundamental and ongoing component of integrated care. The research conducted in Australia by the Centre for General Practice and Integrated Studies found that integrated care has numerous positive outcomes for patients and the community. These include improved patient care, appropriate management, improved health outcomes, continuity of care, co-ordinated or integrated care, a patient-centred approach, access to GPs knowledge of a patient's medical history, access to wider range of services, more integrated/appropriate care, wider range of services, a greater say in management of one's own health, and increased satisfaction. The key informants included GPs, patients and other services providers.

Several negative aspects of integrated care were noted, such as the opportunity for conflicting information/advice, getting 'lost' in the system, only 'standard' care available, reduced choice of services, sensitive information shared between providers. However, the overwhelming response was in favour of the positives (Centre for GP and IS, 1999).

Advantages to integrated care perceived by former HFA personnel include 1) the opportunity to address the issue of seamless and co-ordinated care, 2) the transfer of political and fiscal risk to provider organisations and providers themselves, 3) the reduction in duplication of services, 4) the prioritisation of services supplied within an integrated care organisation and 5) possibly a greater ability to adhere to the principles of the Treaty of Waitangi by providing Māori greater access to health care in a culturally acceptable manner.

However, there is the potential that the unique care for a Māori by a Māori organisation could be lost in an integrated care organisation and a risk of underfunding the Māori needs (Document 206, Integrated care – delivery systems; local initiatives and delivery systems – the Healthcare Otago experience, August 1998).

#### Population health needs assessment; the context for the new Global Budget

The New Zealand Health and Disability Act, December 2000, provides for District Health Boards whose responsibilities include the requirement to conduct health needs assessment in their districts (MoH, 2000). To help prepare the DHBs to carry out this responsibility, the Ministry of Health recently published two companion documents that provide relevant background information, a literature review and practical guidelines for getting started. According to these Ministry documents, there are a number of different definitions for health needs assessment as well as purposes for their utilisation and methods for collecting, analysing and prioritising needs information. Government has adopted the following definition to best suit the context or conceptual framework for the DHB purchasing process.

Health care needs assessment for the purposes of this report is defined as 'the assessment of the population's capacity to benefit from health care services, prioritised according to effectiveness, including cost-effectiveness, and funded within available resources' (Coster, 2000, page 4).

This definition clearly focuses on a population-based approach and refers to service needs assessment rather than personal needs assessment. Furthermore, the definition's emphasis on 'capacity to benefit from health care services' indicates a particular approach to needs assessment whereby needs are considered to be worth assessing when and if something useful can be done to address them.

In other words, according to this scenario, needs may not 'exist' unless they can be addressed. In some situations, an application of this definition may not accommodate what some models refer to as the unmet needs. According to Stevens and Raftery, knowing the prevalence of health problems and knowing the effectiveness of the interventions available for dealing with the problems are the two most important prerequisites for being able to ascertain a population's ability to benefit from a health care service or programme (Stevens and Raftery, 1997). Therefore, it stands to reason that most needs assessment models will ensure, at the least, that disease and health problem prevalence data and effective interventions are identified, collected, and analysed to inform programme and/or service planning decisions.

The Ministry's document on Health Needs Assessment for New Zealand: An Overview and Guide, clarifies further:

The [needs assessment] process involves collecting data on the population's demand and need for health services. These data are then analysed to look at future needs and the capacity of services to meet these needs....

A health needs assessment can be global or addressed to more specific areas or population groups. For the newly established DHBs the process of health needs assessment will initially involve a global examination of the health care needs of their populations. (Footnote: This global examination is also known as a population needs assessment) (MoH, 2000, page 3).

Often, health needs and community needs assessments of specific areas or populations are conducted so that appropriate interventions can be targeted to the groups with poorest health outcomes. For example, the Murray and Graham report on general practice-based health needs assessment using four different data collection methods in a small postwar council estate of 670 households in central Edinburgh (Murray and Graham, 1995). They used four complementary quantitative and qualitative methods to assess different health needs and to explore potential service provision in the community, in primary care or in secondary care. These methods were a rapid participatory appraisal, a postal survey, an analysis of routinely available area statistics, and a collation of practice held information.

The study concluded that "a coherent, practical, and explicit approach is required to assess needs for community-based, primary, and hospital health care services" (Murray and Graham, 1995, page 1148). The authors reported that the use of different methods provided rich information regarding the overall needs as well as insights into specific problem areas, including areas that are not usually considered 'health' areas such as local transportation, safety of children's play areas, and the need for a neighbourhood supermarket. As far as these authors are concerned, "community involvement in health is important, both as a democratic goal and as a potentially useful means of achieving improvements in health" (Murray and Graham, 1995, page 1148).

Choosing the appropriate needs assessment approach, definition or model depends on the purpose and primary objective. Pegasus Health's Global Budget concept was still being developed at about the same time government was choosing its new health structure and direction with the District Health Boards.

The new Global Budget contract was put in place about the same time the Ministry issued its needs assessment background and literature review, and not long before the overview and guide was disseminated. For Pegasus, the primary objectives for community needs assessment initially appeared to be to identify practice needs and the needs of its service users for the purpose of creating flexible reimbursement schemes and new provider and client services to meet the members' and their

patients' needs. In fact, Pegasus's primary objective for community needs assessment was slightly less clear than this.

Apparently, it is typical for health professional to define needs in terms of services they can provide. The patient perspective of needs is generally different from the general practitioner and often focuses on what would make them happier and healthier, and can be anything from a convenient bus route to the GP practice to a steady income. In general, the primary objective for effective community needs assessment shifts the focus to meeting the needs of patients and deriving benefits for consumers rather than meeting the needs of members and benefiting the GPs.

The primary objective of the model government has adopted for the DHBs is to assess demand and need for health services, including future need, as an important 'part of a package to ensure that the public are explicitly involved in determining the type of, and priorities for, health services that are purchased' (MoH, 2000, page 3). The primary purpose of health needs assessment by the DHBs is to collect, analyse and prioritise information from multiple sources to feed into an on-going decision-making process and planning cycle (MoH, 2000, page 6). The results of the health needs assessment process will provide the support or evidence for DHB purchasing decisions. At least this is the DHB 'paper version' of its health needs assessment model, which is soon to be tested in practice.

In the case of Pegasus, the Global Budget has been officially in place since the signing of the contract in November 1999 and allows Pegasus to make most of its own decisions about purchasing standard or existing services, as well as new services. According to Pegasus the foundations for the Global Budget and some of the actual projects were already underway or in place by the time the contract was signed. Unlike the Canterbury DHB, the Pegasus Global Budget did not begin with a deficit or a requirement to cut its budget. Unlike the prescriptive DHB's guidelines, little detail appears to be available in the Pegasus documentation concerning the way in which the needs assessment data are or will be used in service and programme decisions for patients and non-patients. On the other hand, the Global Budget model in 1999 did not appear to benefit directly from Ministry's specific guidance on health needs assessment as this guidance for DHBs was still 'in-the-making'. Nevertheless, needs assessment models are abundantly available in the literature as well as in practice (Coster, 2000).

Professor Gregor Coster, Division of General Practice and Primary Health Care, University of Auckland, was commissioned by the Ministry of Health to research the literature and develop the background paper for conducting health needs assessments. Coster makes a further distinction between the service-oriented needs assessment models and the disease-oriented or epidemiological models. While the identification of service gaps is the priority for the first model, disease specific information is nevertheless required by both models for effective needs assessment. Coster's research offers a list of tasks and activities the global health needs assessment model of the DHBs should consider, in Table 80. Because the DHB needs assessment model is part of the planning cycle, prioritisation leads to programme and services planning, implementation and includes evaluation to ensure the prioritised needs are being met and to redesign services and programmes, where indicated.

Table 80: Relationship between task and activity in health needs assessment, adopted from Coster, 2000, page 10

Task	Activity
1. setting objectives	Objective setting
2. population characteristics	Data collection
3. Classification of disease and disability	
4. health care services	Data analysis
5. needs analysis	
6. effectiveness	
7. cost-effectiveness	
8. prioritisation	Prioritisation

Coster also cites the five-stage model of Wilkinson and Murray in the UK as a viable health needs assessment approach for primary care (Coster, 2000). An adapted version appears in Table 81. This model, together with the key rationale for an integrated approach to primary health care described above, and the major activities in the right hand column of Table 80, comprise the filter through which the progress made by Pegasus in community needs assessment since the Global Budget has been assessed.

Table 81: A five-stage approach to performing health needs assessment in primary care, Wilkinson and Murray's model, adopted from Coster, 2000, pages 14-18.

Stages	Indicators & outcomes
Stage 1: Collect routine practice information	Demographics, age, sex, ethnicity, address, whanau, telephone, other Disease diagnosis, prevalence of chronic diseases Prescriptions Payments Health promotion & disease prevention Consultation rate, house call rate, other Referrals and follow-up Other PH services, programmes Community diagnostics Local health needs
Stage 2: Collect data from hospitals, community services providers & the census and other national data bases  (type of data: population, mortality, morbidity, health care, community)	Emergency Department Inpatient data Outpatient data Stats NZ NZDep96 Plunket Society National register of births, deaths, marriages New Zealand Cancer Register HFA profiles National mortality rates, MoH National morbidity data, MoH New Zealand Health Information Service ACC Mental Health Commission Medical Council of New Zealand National census, 1966 and 2001
Stage 3: Gain public involvement	Patient interviews Patient surveys Rapid appraisal Focus group discussions Suggestion box Complaints procedures Health forums Key informant networks Community Advisory Board Community consultation Informal discussions Membership on community groups Participation in voluntary organisations Consumer membership on decision-making boards
Stage 4: Undertake a community survey	Self reported health status Perceived needs Satisfaction Illness and wellness experiences
Stage 5: Collate the information	The value of triangulation is the use of multiple and complementary sources and methods of data collection. (Murray and Graham, 1995) Analysis and interpretation should be regular, periodic and on-going. Results should feed into planning process in a systematic and strategic fashion, across all portfolios.

Population-based needs assessment is a relatively new development for New Zealand general practitioners (Malcolm, 1998). However, many practices are quickly developing computerised disease registers that can provide useful information for local health needs analysis at the practice level, while Independent Practitioners' Associations are advancing the development of databases at a more aggregated level (Malcolm, 1998). At the primary care level a population approach to health needs assessment makes sense for a relatively large and active IPA.

Effective needs assessment contributes to measuring the health status of the population. To be most useful, health status measurement should utilise data that are both readily available and frequently updated and analysed. Again, accessing existing health status data sources is extremely useful, such as the Ministry's health status of people in Christchurch in relation to five localities that rank the city's suburbs according to a socio-economic scale using census data and clusters them into equally sized groupings and results from the national health surveys that include self reported use and preferences for health services. Where different measures of health are used as part of a health needs assessment approach, in addition to traditional biomedical indicators of mortality and morbidity, a more accurate description of the health status of the population can be constructed.

## Community needs assessment: detailed document review

## Clinical Practice Education Committee (CPEC)

The 1999 and 2000 Annual Reports were reviewed to identify any changes in identifying and addressing community needs at the project level since the Global Budget was adopted. The following paragraphs provide a summary of the highlights from this review. According to the Global Budget Report 2000, the **Clinical Practice Education Committee** (CPEC) is the 'engine room' of Pegasus, because of the ability of the CPEC projects to impact members' practice behaviours and priorities (Global Budget Report 2000, page 10). CPEC was initiated prior to the Global Budget. One of CPEC's four main educational initiatives is the development and distribution of at least eighty different patient information leaflets available in print or on the computer. The other CPEC initiatives are the small group education, the team of six clinical practice facilitators, and monthly evidence-based educational bulletins.

As with all of the new projects or services, adopting a population health focus under the Global Budget would suggest that the selection, design and content of the educational programmes and information materials would be influenced by results from the community needs assessment. Community involvement would also be sought for example, to pre-test the patient materials and to translate them into appropriate languages. The type of involvement would be based on the identified needs of the vulnerable and/or target audiences. CPEC may be in the process of adopting these type of changes to their approach as a result of the Global Budget, however, these changes are not yet obvious.

What is more clear, since the Global Budget, are the changes toward a more collaborative disease management approach for the four chronic diseases that have been prioritised by Pegasus; chronic obstructive pulmonary disease (COPD), diabetes, asthma, and heart failure. Changes in disease management have involved both CPEC and the Community Care portfolio. Increased responsiveness to Pegasus patients with these diagnosed health problems was clearly identified as an important change by the consumers who participated in the focus group discussions for this evaluation.

## Public Health Physician

Prior to the Global Budget, there were only two Pegasus staff members with a partial population health 'brief', the Immunisation Co-ordinator and the Project Co-ordinator. There was no one on staff, however, with specialised training in public health until the half-time **Public Health** Physician joined Pegasus in mid-2000 and by mid-2001, there were still only two staff with formal training in public health. The use of the term 'population health' was negligible in the 1999 Annual and Budget Report and specific attention to community needs assessment was absent. However, the Chairman stated in the 1999 Annual Report that, "We continue our commitment to an integrated care philosophy in relationships with other health organisations in Christchurch. Pegasus members, both doctors and nurses, have made a great contribution to the process of cultural integration with hospital and community health colleagues". It was unclear what was meant by this statement. In 1999, the initial steps toward working with Ngai Tahu, the Pacific Island communities and other marginalised populations were undertaken but not necessarily at the initiation of Pegasus. From the community informants' perspective, Pegasus' self-assessment of its role in this area may be somewhat exaggerated.

This perception from community informants seems to extend to Pegasus' success claims in the areas of population screening – i.e., immunisation and mammography. Pegasus practices are just beginning to track the casual patients and to search for and find effective ways to reach non-attenders. According to the community informants, partner organisations working for years in family and child health also deserve significant credit for their contributions to the increasing childhood immunisation rates in Christchurch. This accomplishment is not perceived as a Pegasus-led achievement, by any means. Cultural barriers to breast screening for the over-50's persist among Māori, Pacific Islands and migrant women. While the Practice Facilitators have helped Pegasus practices increase the number of women seeking and obtaining this service, it is not clear if Pegasus has responded to the unmet need among women whose health care in general has often neglected. There are similar cultural considerations for the use of nicotine replacement therapy that the PEGS project has promoted as its main approach to smoking cessation. Only when viable structures for community involvement are in place, and community needs assessment data and evidence-based information about appropriate strategies are available, culturally appropriate smoking cessation alternatives can be ensured.

### Integrated Care

The Pegasus **Integrated Care** Portfolio Plan was first submitted for informal Board discussion in May 1999, with the following objectives: 1) 'to set up a data base of community service providers and services which is easily accessible to all GPs, 2) to position general practice in a more central role, 3) to provide individual feedback to members of their utilisation of community nursing services, and 4) to develop a project plan and refine objectives (Annual Report, 1999). The original planning document included sixteen different projects ranging from ACC/Accident Insurance to Elder Care Canterbury, to Secondary care allocation of funds. The document did not attempt to identify linkages between the projects. Each project description simply followed the same outline with a list of bullet points for a set of five core questions.

Almost all of the steps and objectives were process and intermediate measures relevant to either designing and implementing the project and/or to benefiting the practices, the members and the other community providers. Measurement of collaboration and integrated care would typically include indicators for assessing the strength of partnerships, the mapping of community linkages, and the types of committee or team structures. These sorts of measures were not readily apparent in the documentation. None of the measures were stated in terms of their impact or outcome on patient and community health.

Since the Global Budget, the format for project proposals has changed. The proposals are now referred to as Project Briefs. The short documents include a brief background statement, a set of objectives, a short project proposal which is a series of process objectives, the terms of reference for the project scope, a list of key stakeholders, and a summary of potential or actual achievements. However, once again the extent to which measurable objectives are stipulated and projects are integrated or even inter-linked remains unclear and still lacks a cohesive, standard approach for programme planning and evaluation that routinely incorporates a baseline analysis of the situation and need. The process for the review and approval of Project Briefs appears to be the same as it was for the pre-Global Budget 'plans', i.e. submitted to the Board for review, discussion and decision.

### Integrated Care and Other Projects

While the Pegasus commitment to **Integrated Care** precedes the Global Budget, for example in the area of mental health with HealthLink South and the **Access Canterbury** project, this commitment was consolidated and strengthened in 2000. Documentation and reporting on the five Access project teams provide the only evidence of consumer membership on planning and implementation bodies.

HealthLink South has a long tradition of recruiting consumer participation in project development and implementation which provides a role model for Pegasus through their partnership on the Access Canterbury project teams. Consumers now participate on general practitioners' Care Methadone Committee as well, but do not appear to participate on any other Pegasus working group.

**Elder Care Canterbury (ECC)** was also initiated before the Global Budget by community partners and was two years in the planning, 1998 and most of 1999. In early 2000, ECC moved into implementation. According to staff interviews, the biggest effect of ECC has been in the Broken Hip Project. This project has taken a more patient-focused approach and has resulted in vastly improved communication between different sectors of the health care community and with other stakeholders such as Age Concern and Grey Power. Based on reports in some of the documentation and feedback from community informants, Pegasus played a large role in moving the focus of ECC towards primary care and away from the hospital. In recent months the momentum of ECC has slowed, as has Pegasus involvement in ECC, raising general concern about sustainability of new projects and collaborations initiated or boosted post-Global Budget. Moreover, it seems a Pegasus' decision not to participate in the community referral review project, involving a collaboration of other provider organisations, may have precipitated the slow-down of the ECC. Sustainability of the new projects and new collaborations is yet to be demonstrated, both medium and long-term.

The **Child Health Integrated Care Project (CHIC)** under the Integrated Care portfolio had a different history. Collaboration and partnerships in the child wellness area were apparently less successful from the start, as reported in some of the key informant interviews. Pre-Global Budget efforts to integrate district nursing, with other community service providers such as Nurse Maude, Homecare 2000, and Lifelinks had similar results. Some insights into these failures were revealed in the analysis of the key informant interviews as well as in the documentation. Once again this raises the question whether sufficient structures and mechanisms have been put in place since the Global Budget to effectively guide the development of new projects and ensure they respond to the identified needs, the existing programmes and partners and whether or not they are sustainable. A second related question is also raised, whether the appropriate skills and approaches are firmly in place for building on-going relationships with other community provider groups.

Curiously, neither the competing option nor the going alone option is congruent with the integrated care models. The lack of clarity that resonates from this statement and which also seems evident in the new project design process, indicates a certain ambiguity for Pegasus philosophy, structures, and outcomes. While the built-in flexibility of the Global Budget is clearly a strength where innovation and rapid change are concerned, flexibility may well be a weakness when it comes to establishing clear direction and cohesion.

In New Zealand, the competitive model of the health care reforms caused fragmentation and according to many, including Pegasus, resulted in decreased quality of patient care. The **Practice Development** portfolio also focuses on integrated care to help pull the practices together and overcome the problems of fragmentation and isolation. "Our commitment is to fostering and protecting collaborative, comprehensive, continuous and integrated care. It is through these principles that patients will benefit from the best care we can give as a team" (Global Budget Report, 2000, page 16).

The **Community Care** portfolio was launched by Pegasus soon after the Global Budget Service Plan was finalised to offer the general practitioners and practice nurses more options for looking after their patients in the community (Pegasus Health, Winter 2001). The six main projects were designed to help member practices provide

support services for their patients in the community (or at home) in order to reduce waiting time for surgery and outpatient care at hospital and Emergency Department attendance (Global Budget Report, 2000). The six main components of Community Care aim to bring practices closer to their communities by providing more services and by encouraging greater contact between community groups and practices. According to the Global Budget Report, planning for these projects “included analysis of available published evidence, analysis of local and national discharge data and discussions with secondary care” and “Members and practice nurses were consulted in the project teams and during small group rounds” (Global Budget Report, 2000, page 21).

This very brief description of the planning process is one of the few documented indications of the methods Pegasus has used to analyse and prioritise need, determine appropriate evidence-based strategies and design relevant programmes. On the other hand, there were no documents available that provide a summary of a needs analysis for a given project that included for example, Pegasus patient data compared to Christchurch residents, or an annotated bibliography of the evidence reviewed to inform a particular project strategy, or that includes the results of a community consultation.

#### Disease Management

The **Disease Management** framework has developed alongside the Community Care projects and was put in place in mid-2001, and provides one of the best opportunities for Pegasus to become truly responsive to the community. The purpose of the Disease Management framework is to enable greater access and continuity of care for all Pegasus patients diagnosed with one of the four priority chronic diseases. The six projects of the **Community Care** portfolio are meant to be the source for this continuity of care. The Communications portfolio has developed since the Global Budget as a support for the other portfolios. The primary focus of the winter communication campaign for 2001 has been to raise the awareness of the community and Pegasus patients about the four key disease management conditions.

The Disease Management portfolio and the Communications portfolio offer an opportunity for Pegasus to truly collaborate, co-ordinate and integrate, not only internally across the Pegasus portfolios, but also externally with other community providers in order to put in place long-term, sustainable programmes. To date, Pegasus has taken a one-off project approach. This approach is not necessarily strategic nor does it offer long-term outcomes. Co-ordination and integration in primary health care are long-term goals that depend on a long-term commitment to build and maintain internal as well as external linkages and mechanisms.

One of the newest additions to the Community Care portfolio since the Global Budget is the Provider/Community Liaison. This person functions as part of the Community Care Portfolio and was originally recruited “to raise awareness of the Pegasus practices of community groups, what they have to offer and how they can be accessed (not-for-profits as well as other providers), and to raise the profile of the not-for-profits and voluntary groups by producing a credible Service Directory” (Community Liaison, April 2001). The Practice Facilitators often bring back queries from the practices regarding the availability of linkages and/or services in their own community to which the Community Co-ordinator then responds. In addition, they met with the general practice small group rounds where general practitioners asked for tools that would help them manage their patients more safely in the community. It was reportedly from these initial small group meetings that the idea for the Observation Unit was born. The Support Co-ordinator’s position was another new role developed from these small groups as well with the primary role to assist the general practice teams in accessing the new projects, as well as how to quickly access, many of the current community services already available. Now, one full year into the project, the Community Liaison has been able to build her credibility and gain access to a large group of community

providers and organisations, and the Support Co-ordinator has increased credibility with practices and members for helping them access other appropriate services in the community for their patients.

#### Public Health Service Plan

In the recent Review of the Public Health Service Plan, dated 29 June 2001 concerning the population needs analysis activity stipulated in the Service Plan, the anonymous external reviewer wrote: "This is an important area, and notwithstanding, the role of the Canterbury DHB in conducting a needs analysis for its area, there is also a role for Pegasus Health to undertake the activities outlined in Section 3.1.1.1 and have them recognised in the weighting scale" (Review, 29 June, 2001, page 10). In the original Service Plan the needs analysis activity is not included in the KPIs, nor is it scored or weighted.

This recent assessment reaffirms, and in fact strengthens the expectation that Pegasus conduct a proper needs analysis as per the original intent of the Global Budget contract. Yet, until the review was conducted, there was every indication in the available Global Budget documentation that any momentum Pegasus may have initially had in this area early in the contract period had been stalled for quite some time. The documentation rationalises this 'holding pattern' by claiming Pegasus was waiting for clarification of the role of Canterbury DHB in meeting its mandate to carry out community needs assessment (Performance Monitoring Return, 1 July to 31 December, page 12).

## APPENDIX 8

Table 82: Key themes and illustrative comments from Pegasus Health staff and members – community needs assessment

<b>Philosophy, definition of community, culture change</b>	
<b>Staff</b>	<b>Members</b>
<p><b>Philosophy</b></p> <ul style="list-style-type: none"> <li>-Being able to do things instantly.</li> <li>-We're not about creating an empire.</li> <li>-We walk alongside existing organisations.</li> <li>-Socially oriented leadership.</li> <li>-The focus is to hook people back into the GPs/primary care.</li> <li>-Making sure we don't take over.</li> <li>-As a philosophy, population health doesn't just reside in a certain portfolio, it's a philosophy that resides across the organisation.</li> <li>-I think the [increasing partnerships with other organisations] comes about because of the people who are employed here, rather than necessarily a change in the philosophy of the Board or the members. ...They've employed people who...are the vanguard, if you like, of collaboration...</li> </ul> <p><b>Definitions</b></p> <ul style="list-style-type: none"> <li>-'Community' means the providers, Nurse Maude, Health First, Homecare 2000, and the churches.</li> <li>-Certainly from the organisation's point of view, the community is the total population of Christchurch and increasingly the Board documentation refers to Canterbury.</li> <li>-Community as a holistic group of people.</li> <li>-I think we define community quite broadly really. We see the community as the greater Christchurch and probably beginning to think even bigger in terms of Canterbury. It's all the people in the community. It's all the provider groups that provide services in the community, as opposed to the hospital provided services.</li> <li>-What I've always valued about the rural health model is the way the community feels so much ownership for its general practice and the general practice feels responsible for the whole community. We're trying to replicate the good bits without drowning our GPs in the rural pressures ...but create that strong community link ...so there's a bigger view within the practice teams...</li> </ul> <p><b>Culture Change</b></p> <ul style="list-style-type: none"> <li>-The culture change is like a wave, there are outliers on both ends...trying to understand those that are moving faster and what's holding those at the end back.</li> <li>-GPs being exposed to thinking 'outside the square'.</li> <li>-Some members are population focused, few not many.</li> <li>-Culture change is getting a GP to think about the population as opposed to thinking about just the patients. In the broader sense, getting GPs to think about their whole community is the culture change you're looking at so not just nailing your brass plaque on the door and waiting for people to rock up, but actually thinking, 'Who do I serve?, Who's missing out? Where are the gaps?'</li> <li>-There's been a culture change led by the top, but I think it's very slow.</li> <li>-GPs the world over are conservative and the difficult task the Board faces and to a certain extent the whole organisation, is keeping a fairly progressive staff linked in with the GPs who are changing slowly.</li> <li>-It's really hard to establish the link between general practice and health outcomes and health status equality. It's one area where it's really difficult to get culture change.</li> </ul>	<p><b>Definitions</b></p> <ul style="list-style-type: none"> <li>-I think population health is some kind of description of the wellness or illness of the population and we tend to define it in terms of some more severe illnesses...</li> <li>-Population health to me is actually what you know about the population as a whole.</li> <li>-I quite enjoy knocking heads, I say, 'Are you still smoking?' so that's my side of population health.</li> <li>-I guess the other ways we measure that is through things like ethnicity and community card holders and particularly high use card holders.</li> <li>-I guess I see Pegasus' role partly in the population health thing in promoting things, but also in sort of co-ordinating things...promoting to doctors the usefulness of our collecting data, not just saying, 'can you do the ethnicity data' but explaining why ethnicity data is required.</li> <li>-Pegasus have made...good initiatives, they had what was called Smokefree originally, before Government came on with the Quitline and the one for pregnancy.</li> </ul> <p><b>Culture change</b></p> <ul style="list-style-type: none"> <li>-I learned to recognise what I thought was good for people isn't necessarily what they think is good for themselves.</li> <li>-I'm not aware of the culture change, as such.</li> <li>-I'm not sure what the word means. I know I can access certain things for my patients which I couldn't before.</li> <li>-It's a very broad term, it can be used in any way, whether you're looking at Māori or Pakeha, or in general...it's the culture in the community, the expectation is greater.</li> <li>-Nowadays, there's much more team focus, the practice nurse reflected in Pegasus itself. Well the nurses are a very important part of Pegasus, so that's certainly a change and really good change. I like the idea of a team, we now have a social worker, for example...</li> <li>-Things like evaluation of practices...totally new within the last year...excellent feedback.</li> <li>-I think that what has really been going on is something that perhaps some of us have been sort of doing quietly in our practices...saving them from going into hospital...with children we've been well compensated and now we can do it with other patients and keep them out of hospital safely by keeping a close eye on them...by being paid for it.</li> </ul>

Table 82: Key themes and illustrative comments from Pegasus Health staff and members – community needs assessment (*continued*)

<b>Philosophy, definition of community, culture change</b>	
<b>Staff</b>	<b>Members</b>
<p>-Pegasus has shifted as an organisation to recognise they must access the potential in the community, but we, the staff have to keep providing the tools so they [the Board and members] understand.</p> <p>-It is a demonstration of a cultural shift, to get the GPs to buy-into looking at it this way...that we measure the percentage of ALL children who have complete immunisation records and we feed it back to them.</p> <p>-There's such huge potential in the Population Information project, which will be an important part of the culture change.</p> <p>-Another of our aims is to get those people who are chronically ill to actually start doing something more active and that's probably a culture shift that we've managed. It's a culture shift that we've managed with our GPs. It's to do with the population focus, but it's also to do with active management of patients rather than reactive. Rather than waiting for the patient to walk in the door, we're encouraging our GPs to go out and say well, these are the people we've got with COPD, let's get them in.</p>	<p>-I think my problem is remembering that there are other things, other ways I can do things now, so maybe instead of ringing a registrar or sending them home, there is an option...</p>
<b>Needs assessment (i.e. information/data sources, analysis, prioritising)</b>	
<b>Staff</b>	<b>Members</b>
<p><b>Information/data sources and collection</b></p> <p>-Information has been the cornerstone of any work we're doing. We might not have collected the diversity of information from as many sources, but we've always seen information as key in any project in service development and we've broadened where we get the information from and what we're doing with that information.</p> <p>-We're going to try to feedback information about the community and the population to the practices so they are more aware and so they can see their practice profile more...for a practice to say, 'isn't it interesting that my practice has a much higher risk profile around heart disease, than this other practice. That's where we want to be.</p> <p>-We gave the practice teams the information. We gave them all the research so we did a literature search. We pulled some NZHTA documents on acute admissions...plus the analysis of the discharge information from the hospital and said 'ok, here's all the information, what do you think we can do to change this?'</p> <p>...so the information that we collect about individual patients has now been clarified, a coding system has been agree upon and the enrolment procedure is being piloted, in order to facilitate the collection of data. In the broadest sense, they're moving towards a situation where they're able to provide quality data on everybody that is seen.</p> <p>-We're constantly collecting, actually it's built into all of the processes, that we collect feedback from both the providers and the patients, so we keep modifying the project and filling the gaps.</p> <p>-I think Pegasus is doing very well, particularly through the Global Budget, in moving GPs in that direction...as we get better information and can identify the gaps to improve the information to deliver a better serve.</p> <p>-So that was a political decision, that wasn't a decision based on evidence.</p>	<p><b>Information/data sources and collection</b></p> <p>-The problem I've got with the ethnicity data is, you talk to the person who might be an eighth or a sixteenth or a thirty second Māori. Do we record thirty-two different entries?</p> <p>-Our computer only accepts one ethnicity.</p> <p>-You tend to look at yourself as a Kiwi.</p>

Table 82: Key themes and illustrative comments from Pegasus Health staff and members – community needs assessment (*continued*)

<b>Needs assessment (i.e. information/data sources, analysis, prioritising)</b>	
<b>Staff</b>	<b>Members</b>
<p><b>Needs assessment models</b></p> <p>- The kind of approach to evidence-based service delivery was the idea there before the Global Budget. I don't think GPs were not being evidence-based. I think since the Global Budget the process has been tightened up a bit, the communities, whether they be ethno-specific or a particular area or age group, have been more involved so it's more closely approaching what I would consider a quality needs assessment.</p> <p>-The other side to that is that an actual needs assessment is a really complex task that we don't necessarily ...I don't necessarily have the skills and expertise to make happen, but that's not to acknowledge that there's broader skill search needed to bring it forward but we hope that we would bring what we've learned and be able to apply that.</p> <p>-The community consultation...needs to be married closely to the evidence and that's the hard thing. There are still a lot of people out there that think a needs assessment is about going out and asking community what it wants.</p> <p>-The Population Health portfolio, that's needs assessment and accountability, but it's now become a wider organisational approach to project planning and our strategic direction, it's moved well beyond the population health portfolio.</p> <p>-A lot of people have never done a needs assessment. They wouldn't know one if it stood up in their soup, but there some people who do and there's been some good work on it. I think when the contract was drawn up on this, neither the HFA nor the Board knew what needs assessment was and what they wanted.</p> <p>...There was a perception, 'hey, we'll get a public health physician and he or she will just do a need assessment. ...The objectives for the needs assessment were never defined.</p> <p>-A needs assessment or analysis project might reside within Population Health, but is actually an organisational wide issue.</p> <p>-You can't say 'do a needs assessment' from a primary care perspective...unless you're clear about what it is you want to find out and the HFA didn't specify what they wanted and I'm not sure whether the Board really did....They had an idea about what they wanted to know, but they we're quite sure how to do it.</p> <p>-It depends how you define needs assessment. We just met with the DHB and talked about things that need to happen, how we can work together as we obviously have a lot of information we can share and contribute, so we're not exactly sure what that's going to look like and where it's going to go... I believe this organisation owns needs assessment as a philosophy that applies across all of our activities.</p> <p>-We must collaborate with DHB, and we can provide some very valuable information into the overall process and get some valuable information out, but we should not attempt to do this alone...I'm glad that Pegasus now don't feel we don't have to do this on our own... participating in a process, rather than doing it alone...They need to do a resource mapping exercise...is there an appropriate spread of resources? Is there anything we're missing? Is there anything we're duplicating? How does the view of the community fit in? All of that moves forward to a stage of priority setting which Pegasus will be party to, rather than doing it alone. That would fulfill the commitment to the contract. That would be a valuable contribution.</p>	<p><b>Needs assessment models</b></p> <p>-We have a practice visiting doctor [Practice Facilitator] who goes to so many practices explaining all the things that are happening and gets any feedback from us...Yeah, he comes around and explains and takes your concerns ...and we have general meetings every three months. We're talking about our patients.</p> <p>-Isn't it a bit arrogant of the doctors to decide what the needs are?</p> <p>-Don't just ask the members, what the needs are. There's the Community Advisory Board and I think that probably has some place. ... I know there are representatives from all sorts of different things in the community, probably Māori and possibly a Polynesian person as well.</p> <p>-I'm not sure what they [the CAB] can actually do, but I know that things are sort of discussed with them to find out whether they'd be considered to be appropriate or not, but I'm not really aware.</p> <p>-It's something like a telephone survey, ringing people up cold and just asking them about health needs and things like that, may be a way to get a cross section of the population.</p> <p>...Pegasus patients and what they perceive as needs. That sounds a bit far fetched from we GPs, but I'm sure there are organisations that do things like that.</p> <p>-That's a Board function. You have to ask them.</p> <p>-Is there something like the Māori warden out in the community who are not doctors or nurses but who are carers who could actually take on board some of the marae problems or family problems, that sort of middle person ...someone who is respected, who has standing in the community.</p> <p>-If it was funded, they could be nominated from within.</p>

Table 82: Key themes and illustrative comments from Pegasus Health staff and members – community needs assessment (*continued*)

<b>Needs assessment (i.e. information/data sources, analysis, prioritising)</b>	
<b>Staff</b>	<b>Members</b>
<p>- It's about identifying need in your own practice and anyone who wants to work more closely with the community.</p> <p>-You really need to do is look at the whole system and we as a staff help to try and educate GPs about that kind of thing, you know, try and get to think more systematically about how they go about approaching that...issues like evaluation...like how do you systematically collect information that is going to inform moving forward...</p> <p>-For Winter Planning project, the careworkers were asked to identify the vulnerable people. We're only hitting the people on the books...not the ones we don't know about.</p> <p>-I was discussing with Age Concern the other day, what we're trying to help patients understand what they ought to expect from the general practice. ... We've come it from a perspective of 'we've made all the projects work', now we're lifting the patients' expectations, to expect that level of service. (as opposed to asking the patients, asking the community what they want or need)</p> <p>-Just another piece of the process...this kind of needs assessment view, as we go through, we analyse the information, from the hospital, then we feed it back to the groups like the paediatric team, the cardio respiratory team and say, well this is what's happening, what more can we do?</p> <p>-All of the projects have a, in a loose term, a needs assessment approach, if you want to call it that. That is to say, the information is looked at about the population or a section of the population, it is analysed and then priorities fall out of that analysis, where are the gaps? What are the issues? I'm told ... as part of the collection of information, I'm told ...the community is listened to a lot more.</p> <p>-So you might being fair with all the practices ...we're offering you (all practices) more benefits, but are you really identifying the areas of need? We are moving toward that, working with the GIS system and looking at deprivation scores, but the benefits of membership are not socio-economically stratified according to practices yet.</p>	
<b>Needs assessment (i.e. information/data sources, analysis, prioritising)</b>	
<b>Staff</b>	<b>Members</b>
<p><b>Prioritisation</b></p> <p>-A lot of that prioritisation is about sensitivity to the national directions, national evidence and international evidence.</p> <p>-But we don't have a conscious process ...where everything is collated...One of the filters through which the prioritisation needs to happen is how can general practice make an impact to this health outcome.</p> <p>-You can see at every service and project that we've applied principles of needs assessment, information and analysis, prioritisation, community engagement and collaboration to varying degrees, but these principles are very central to how we function as an organisation...it's almost like second nature.</p> <p>-Yes, it's usually staff and members, so there'll be a Project Manager who will work with the practice identified, sometimes the Practice Facilitator, ...so they'd look at what's happening, around say, collecting ethnicity information.</p>	<p><b>Prioritisation</b></p> <p>-One of the difficulties I have is that some of these services [i.e. taxi vouchers, dentures] like going to the patient's home or getting the patient transport to surgery, but I mean is there someone in Pegasus who's sort of saying what the priority for the money is? I mean are we going a bit over the top with some things and with other things, like varicose veins that are ulcerating are being left for months and months. Here we're giving transport on the spot, but on the other hand, there's been no support given to things that you know are chronic kind of issues.</p>

Table 82: Key themes and illustrative comments from Pegasus Health staff and members – community needs assessment (*continued*)

<b>Needs assessment (i.e. information/data sources, analysis, prioritising)</b>	
<b>Staff</b>	<b>Members</b>
<p>- There are other community groups, some of which are quite specific around identifying where communities perceive their needs to be, i.e. Māori, Pacific Island, ethnic communities, elderly, youth, women, etc. All these groups have their own representation ... Pegasus now want to see what's out there and work with the groups that are already there....We are not in the game of saying 'let's collect a group of people together and make our own representative group. We look to see what's there already...rather than try to establish it our selves.</p> <p>- I have suggested to the Board there are ways of prioritising and you can look at a range of issues, whether they be the cost of treatment, morbidity, mortality and we rank these.</p> <p>-The Pegasus process is looking more at the NZ Health Strategy...</p>	
<b>Co-ordination and linkages with community, responsiveness to communities</b>	
<b>Staff</b>	<b>Members</b>
<p><b>Co-ordination and linkages</b></p> <p>-Pegasus has targeted many organisations and then we've commented that the size and complexity makes it difficult to form linkages. It's difficult, but not impossible. We're taking a multi-pronged approach where we've links, like with the Chair or General Manager, right through, an involvement in various project development</p> <p>-Creating the disability information manual with the Disability Information Service who's role is to help the practices link into other community services. Saves the GP time.</p> <p>-Our project is all about keeping people out of hospital.</p> <p>-Some of the professional health organisations are concerned Pegasus is getting too big and it's wanting to take over.</p> <p>-Lyttelton and Project MANA and the local GP practice.</p> <p>-Linking people with the church groups. We now have the Support Co-ordinator and the Community Co-ordinator.</p> <p>-There is an increasingly clear understanding of what a partnership entails. The work with the Pacific Trust Canterbury has shown that there is an increasing degree of engagement and sharing of trust that certainly was not here [before].</p> <p>-Well not community partnership, but partnership with another organisation ...Memorandums of understanding are more carefully drawn up and a lot of that has come directly from the Global Budget.</p> <p>-There is a much more of a sense of 'let's look at how we work together'.</p> <p>-Partnerships are risky, because they exclude other people.</p> <p><b>Community responsiveness, respond to need</b></p> <p>-There are the disease management projects, there's the targets, to target the chronically ill and enrolment, obviously is going to be a key part to actually be a tool, a mechanism to increase that community responsiveness.</p> <p>-Simple things, like organising walking groups to start from the general practice. Just a whole lot of small steps the ultimately make quite a big difference because it changes the milieu, the environment that people work and think in.</p> <p>-We try to make it easier for the practices to expand their care beyond the pure health model into budget advice or stress counselling or just even a home visitor.</p>	<p><b>Co-ordination and linkages</b></p> <p>-Now we have to spend more time at after-hours surgery because there are more people wanted there and that's great for the community...but it puts more pressure on us.</p> <p><b>Community responsiveness, respond to need</b></p> <p>-For those of us who are interested and have that number of patients in their practice...to facilitate possible meetings between people who are held in high esteem with the marae...facilitate the exchange of ideas and see if there's anything else that we can do that they (Māori) would regard highly.</p> <p>-I've got very little experience [accessing other community providers and services]. The couple of times that I have tried to access, say, Māori social workers for problems I deemed to be dealt with better within that community, I've been very disappointed. I mean...I've had to make three approaches before I had a reply.</p>

Table 82: Key themes and illustrative comments from Pegasus Health staff and members – community needs assessment (*continued*)

<b>Co-ordination and linkages with community, responsiveness to communities</b>	
<b>Staff</b>	<b>Members</b>
<p>-So, its' thinking very broadly about caring for the family and making sure that the family doesn't get disrupted or turned upside down because one of them is sick, do we need a taxi?</p> <p>-We couldn't make Meals on Wheels happen in some parts of the city, so we developed a programme of having frozen meals that we could actually take out and then we had to tell people to check to make sure the place had a microwave.</p> <p>-We now have a stock of commodes and walking frames. It's a level of responsiveness to patient need. The GP need is all fixed, signed, sold, done.</p> <p>-...our whole culture is so different, I mean Pacific people view that we don't give them the time. They want more time and I think this could be where we're missing the boat, not so much in terms of whether people come and see general practice, but whether general practice makes a difference. The quality of interaction.</p>	<p>When I got a reply, it was 'we haven't got enough funding, we've only got two workers, we can't see any more, it'll be six months'. I'm sure they are there but they seem terribly under-funded....The experience in our practise.. a lot of our patients could do with having a social worker.</p> <p>-Just in the last few days we received a fax from someone who's setting up a meeting of other services in the community so they can talk to each other, which is great. Initiated by somebody in the community.</p> <p>-I've been involved for 2 or 3 years with Māori health day and we go along. And there's a Māori health and sports day and again Pegasus has a stall.</p>
<b>Co-ordination across portfolios, planning projects</b>	
<b>Staff</b>	<b>Members</b>
<p><b>Planning</b></p> <p>-The Board sets the strategic direction...If you were doing a really comprehensive strategy, you would have a wide range of consultation with community, but we haven't at this stage.</p> <p>-Well, first of all we knew what the outcome was ... to reduce the number of acute admissions to the hospital. This is the context of the Global Budget and how we did that was our choice. We did some work, some focus group work and that was actually internal, so we did it with GPs and practice nurses. (NOTE: this was also considered as a needs assessment activity. But it was about giving the GPs more options for keeping patients out of hospital).</p> <p>-We then used one of the ongoing education rounds...we identified cases that the GPs had admitted to hospital and got them to bring their case notes along to the meeting and then set them with sub-groups.</p> <p>They went through the cases and said what they could have done differently, what would have made the difference for the patient rather than admitting them. Then we did the pilot, \$300 per patient. So we bounced from a pilot project to the next level of sophistication.</p> <p><b>Co-ordination across portfolios</b></p> <p>-Well the rules were you just didn't barge into other people's patches... Community care was over here, Population Health over there, and IT somewhere else.</p> <p>-...so the Directors have input through Project Zero, that deals with the community programmes.</p> <p>-We've each bring with us the links we have with the CAB or the practices or community providers and various projects into that strategic planning process, the knowledge of everything we've learned along the way.</p> <p>-Part of the problem is often ...they feel they have to deliver [a project] across the whole membership, that they can't offer something to one GP without offering it to everybody.</p>	

Table 82: Key themes and illustrative comments from Pegasus Health staff and members – community needs assessment (*continued*)

<b>Community and consumer involvement</b>	
<b>Staff</b>	<b>Members</b>
<p>-The Board are representatives of GPs and they need to consider how they feel GPs will react to what they do and therefore they have not, don't have a community member on the Board as yet, and that's because they feel that GPs would not accept it. There are two approaches, either you move people along more slowly, you show the benefits to the membership or you lose a few and say 'well, if you don't like it, you can leave'.</p> <p>-The ideal would be a degree of general practice involvement in the Board...maybe slightly less than 50%, that nurses would be represented and that there would be a reasonably large community component. I would be happy if the Chair of the Community Advisory Board became a voting member of the Board of Pegasus...It might be viewed from the outside as tokenism, but it's the next step in the right direction.</p>	<p>-We're trying to set up a group of GPs to go on Tuesday, for example, to do a session on the marae itself and it's received pretty lukewarm support by Pegasus. We think that would be a really excellent project for Pegasus. We're going right into the marae to treat those people at a pretty reasonable cost, as far as I can gather. And the alternative is to go to the new clinic, where they don't get continuity, whereas, at least if they go to the marae doctor they can hopefully stick with general practice.</p> <p>-We have a free practice in a sense that no patients have to pay, providing they have the community service card...We reckon about 30-40% of our patients are Māori or Polynesian.</p> <p>...The only way I see that working is if the doctor is the same ethnicity. I know Pegasus are taking this on board...but nobody has made sure that I'm ethnically safe...I mean you know, it never crossed my mind. I treat everybody the same and probably offend people and I wouldn't know how I had done it.</p> <p>-I think a lot of my Māori patients would say that they are Kiwis...But after the cultural awareness session we had, now when I see Māori patients I ask them where they are from... I've been really quite amazed how they respond to that. And maybe that's what we should be doing more of.</p> <p>-Change has got to come from within the Māori themselves. They're getting the money. They have the mana. They're getting their position together...That's surely got to come from within.</p>

## APPENDIX 9

### Glossary

**Access**<sup>40</sup> Ability of people to reach or use health care services. Barriers to access can be: (1) a person's locality, income or knowledge of services available; or (2) by the acceptability or availability of existing services.

**Accreditation** Formal process by which an authorized body assesses and recognizes an organization, a program, a group, or an individual as complying with established standards or criteria.

**Acute admission** An unplanned admission on the day of presentation at the admitting healthcare facility. Admission may have been from the Emergency or Outpatient Departments of the healthcare facility.

**Acute disease** A disease having a rapid onset and lasting for a short time, such as fewer than 30 days (e.g., cold or flu).

**Ambulatory care** Medical care provided to a patient without hospitalization, generally in an office or clinic.

**Annual Plans** Operational plans covering a 12-month period.

**Aotearoa** 'Land of the Long White Cloud' more commonly used by North Island Māori as the indigenous word for New Zealand.

**Appropriateness of care** A performance dimension evaluating whether the health benefits expected from a medical intervention exceed the expected health risks by a sufficient margin that the intervention is worth doing.

**Arranged admission** A planned admission where:

- the admission date is less than seven days after the date the decision was made by the specialist that this admission was necessary
- the admission relates to normal obstetric cases, 37 to 42 weeks gestation, delivered during the event.

**Audit** The verification of performance against predetermined standards or contracts by a process of inspections, interviews and appraisal of documentation.

**Avoidable or preventable hospitalisation or mortality** Hospitalisation or death due to causes which could have been avoided by preventive or therapeutic programmes.

**Capitation** A system of payment for health services where the health plan or provider is paid a fixed fee for each enrollee and is responsible for providing services for that fee.

**Caregiver (voluntary caregiver)** A voluntary caregiver or carer is a person, usually a family member, who looks after a person with a disability or health problem, and who is unpaid.

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<sup>40</sup> The glossary was compiled primarily from the document: **The New Zealand Health Strategy, Ministry of Health, 2001.**

**Case mix** Refers to the distribution of patients by categories such as age, gender, disease, severity of illness, etc; case mix factors are often cited as reasons for differences in health care spending.

**Chronic disease** A disease or illness that lasts a long time, such as months or years (e.g., asthma or high blood pressure).

**Communicable diseases** Diseases capable of being passed from one person to another.

**Community** A collective of people identified by their common values and mutual concern for the development and wellbeing of their group or geographical area.

**Complementary care** Health care provided by non-registered practitioners.

**Conceptual framework** Provides structure to the study of a problem by organizing the factors that may contribute to the problem.

**Consultation** The process of seeking the views of individuals or groups. These include both providers and health service users.

**Copayment** A form of patient cost-sharing in which a fixed sum or percentage of the bill is paid by the insured person for each health service.

**Culturally appropriate services** Services responsive to, and respectful of, the history, traditions and cultural values of the different ethnic groups in our society.

**Culturally effective services** Services that are both culturally appropriate and clinically effective.

**Demographic characteristics** Characteristics that describe a person or population, such as age, gender, ethnicity, income, and education.

**Determinants of health** The range of personal, social, economic and environmental factors that determine the health status of individuals or populations.

**Diagnosis code** A numerical system for classifying diseases, conditions, and injuries (e.g., International Classification of Diseases, Ninth Revision [ICD-9-CM] codes).

**Diagnosis related groups (DRGs)** A method for classifying patients by the expected resources to be utilized in treating them. Used to formulate the reimbursement rate made to hospitals under the Prospective Payment System.

**Disability** Incapacity caused by congenital state, injury or age-related condition expected to last six months or more. A disability may or may not be associated with the need for assistance.

**Disease** Disorder or pathology that affects health.

**Disparity (or deprivation)** Socio-economic or health inequality or difference relative to the local community or wider society to which an individual, family or group belongs.

**District Health Boards** District Health Boards are organisations being established to protect, promote and improve the health and independence of a geographically defined population. Each District Health Board will fund, provide or ensure the provision of services for its population.

**Effectiveness** Degree to which a health care intervention achieves desired outcomes under usual care conditions. Consideration of cost is not required.

**Efficacy** The degree to which the intervention has been shown to achieve the desired effect, result, or objective under ideal circumstances (e.g., application of treatment in an experimental study).

**Enrolment data** Data on enrolled subscribers of a defined population, such as IPA; the data contain information such as the name of the patient, and enrolment date.

**Environment** Physical surroundings and conditions.

**Epidemiology** The scientific study of the distribution of disease.

**Equity (in health)** Equity means fairness.

**Evaluation** Assessment against a standard. Evaluations can assess both the process (of establishing a programme to deliver an outcome) and outcomes (ultimate objectives).

**Evidence-based practice** Clinical decision-making based on a systematic review of the scientific evidence of the risks, benefits and costs of alternative forms of diagnosis or treatment.

**Fee-for-service (FFS) funding** A method of paying GPs and other health care providers for each service or encounter (for example, a doctor's surgery's visit).

**Focus group** A method for generating information or testing how people will respond to a message/product. A small number of individuals are brought together in a group and, under the leadership of a facilitator, asked to express their opinions on some topic.

**Functional status** A measure of an individual's ability to perform various physical, mental, and social activities (e.g., Activities of Daily Living).

**Funding agreement** This is the agreement the Crown enters into with any person or entity under which the person or entity agrees to provide or arrange the provision of services in return for payment. For District Health Boards, this will include the District Health Board Annual Plan, funding schedules and the District Health Board Statement of Intent.

**Goal** A high level strategic statement.

**Hapu** Sub-tribe.

**Health care delivery system** A term that refers to all the facilities and services, along with methods for financing them, through which health care is provided.

**Health education** Providing information and teaching people how to behave safely and in a manner that promotes and maintains their health.

**Health gain (loss)** Health gain (loss) is a way to express improved (deterioration in) health outcomes. It can be used to measure: (1) the improvement (or deterioration) in population health status; or (2) the degree to which the level of health of a population has changed in response to a policy or other intervention.

**Health information** Health information, in relation to an identifiable individual, means information:

- about the health of that individual, including that individual's medical history
- about any disabilities that individual has, or has had
- about any health services or disability services that are being provided, or have been provided, to that individual
- provided by that individual in connection with the donation, by that individual, of any body part, or any bodily substance, of that individual.

**Health needs** This can be either: (1) what an individual requires to achieve or maintain health; or (2) an estimation of the programmes required to improve the health of populations.

**Health needs assessment** A process designed to establish the health requirements of a particular population.

**Health outcomes** A change in the health status of an individual, group or population which is attributable to a planned programme or series of programmes, regardless of whether such a programme was intended to change health status.

**Health policy** A formal statement or procedure within institutions (notably government) that defines priorities and the parameters for action.

**Health promotion** Health promotion is the process of enabling people to increase control over, and to improve, their health. It is a comprehensive social and political process.

**Health status** A description and/or measurement of the health of an individual or population.

**Health target** A change in the health status of a population that can be reasonably expected within a defined time period.

**Health workforce** Providers of health care services such as doctors, nurses, physiotherapists or health promoters.

**Incidence** The number of new cases or deaths that occur in a given period in a specified population.

**Incidence rate** The fraction of a population that is newly diagnosed with a condition within a specified timeframe.

**Independent practice association (IPA)** A name for an organisation that comprises General Practitioners in solo or small group practices. The GPs maintain their own practices but agree to the conditions of membership for the IPA.

**Informed consent** A medico-legal doctrine that holds providers responsible for ensuring health service users or patients understand the risks and benefits of a procedure or medicine before it is administered.

**Injury** Either: (1) unintentional injuries (damage to the body resulting from unplanned events such as road accidents, workplace accidents or accidents in the home); or (2) intentional injuries (resulting from assault, suicide etc).

**Intersectoral collaboration** Projects involving various sectors of society including central and local government agencies (health, education, welfare and so on), community organisations (IHC, CCS, Māori Women's Welfare League, etc) and the private sector.

**Intervention** A programme or series of programmes.

**Iwi Tribe.**

**Lifestyle** Lifestyle is a way of living based on identifiable patterns of behaviour based on an individual's choice, influenced by the individual's personal characteristics, their social interactions, and socio-economic and environmental factors.

**Mana** Integrity, prestige, jurisdiction, authority.

**Monitoring** The performance and analysis of routine measurements, aimed at detecting changes.

**Morbidity** Illness.

**Mortality** Death.

**Objective** Objectives state what is to be achieved and cover the range of desired outcomes to achieve a goal.

**Pacific Peoples** Terms used to describe people living in New Zealand who have migrated from the Pacific Islands or who identify with the Pacific Islands because of ancestry or heritage, vary considerably (e.g., Pacific Island, Pacific Nations person, Polynesian Pacific Islander, etc). There is no officially sanctioned term to describe this group of people. Since 1994, the Ministry of Pacific Island Affairs has used the term "**Pacific Peoples**" to describe this group. The term "**Pacific Peoples**" does not refer to a single ethnicity, nationality or culture. The term is one of convenience used to encompass a diverse range of peoples from the South Pacific region. Hence, the use of "Peoples" rather than "People" for the purposes of this document. For consistency, "**Pacific**" or "**Pacific Peoples**" is used throughout this document. Pacific Peoples refers to Samoan, Cook Islands, Tongan, Tokelauan, Niuean, I-Kirabati, Solomon Islands, Fijian, and others who identify their ethnic heritage to the Pacific Islands.

**Partnership** The relationship of good faith, mutual respect and understanding and shared decision-making between the Crown and Māori.

**Performance indicator** A measure that shows the degree to which a strategy has been achieved.

**Population** The entire group of people, facilities, or items that meet a condition; for example, all people who reside in a defined geographic area (e.g., residents of Christchurch City or share a commonality (e.g., ethnic origin).

**Population-based funding** Population-based funding involves using a formula to allocate each District Health Board a fair share of the available resources so that each Board has an equal opportunity to meet the health and disability needs of its population.

**Population health** The health of groups, families and communities. Populations may be defined by locality, biological criteria such as age or gender, social criteria such as socio-economic status, or cultural criteria such as whānau.

**Population health outcomes** Used to describe a change in the health status of a population due to a planned programme or series of programmes, regardless of whether such programmes were intended to change health status.

**Population health status** The level of health experienced by a population at a given time. This may be measured by separately identifying patterns of death and illness in a population or by means of one or more measures.

**Prevalence** The number of instances of a disease or other condition in a population at a given period in time.

**Preventive care** Care designed to prevent disease or injury from occurring.

**Primary health care** Primary health care means essential health care based on practical, scientifically sound, culturally appropriate and socially acceptable methods. It is universally accessible to people in their communities, involves community participation, is integral to, and a central function of, the country's health system, and is the first level of contact with the health system.

**Principle** A fundamental basis for action.

**Programme** A programme is a group of activities directed towards achieving defined objectives and targets.

**Programme evaluation** The assessment of policies, materials, personnel, performance, quality of practice or services and other inputs and implementation experiences.

**Prospective payment system (PPS)** The pricing system whereby payments are made based on classifying patients by DRGs.

**Provider** An organisation or individual providing health and disability services.

**Public health** The science and art of promoting health, preventing disease and prolonging life through organised efforts of society.

**Public health approaches** The goals of public health are to focus on the determinants of health, build strategic alliances and implement comprehensive programmes to promote public health.

**Public health services** Goods, services or facilities provided for the purpose of improving or promoting public health.

**Quality assessment** Measurement and analysis of the quality of care provided to groups or individuals.

**Quality assurance** Formal process of implementing quality assessment and quality improvement in programmes to assure people that professional activities have been performed adequately.

**Rangatahi** Used in health to define Māori youth in the 15 – 24 age range.

**Rate** In epidemiology, a rate is the frequency with which a health event occurs in a defined population. The components of the rate are the number of deaths (numerator), the population at risk (denominator) and the specified time in which the events occurred. All rates are ratios, calculated by dividing the numerator by the denominator.

**Regulation** The act of enforcing policies, rules or laws.

**Risk adjustment** A way to “correct” for differences in patient characteristics that may influence the outcome of care, independent from medical treatment. The process uses severity-of-illness measures such as age, gender, and presence of comorbid conditions to adjust a patient's risk of mortality or morbidity.

**Risk behaviour** Specific forms of behaviour which are proven to be associated with increased susceptibility to a specific injury, disease or ill health.

**Risk factor** An aspect of personal behaviour or lifestyle, an environmental exposure, or an inborn or inherited characteristic that is associated with an increased risk of a person developing a disease.

**Sample** A subgroup drawn from a larger population that can be used to construct estimates of events in the whole population. The size of the sample is usually denoted as “n.”

**Secondary care** Specialist care that is typically provided in a hospital setting.

**Socio-economic disadvantage** A relative lack of financial and material means experienced by a group in society which may limit their access to opportunities and resources that are available to the wider society.

**Strategic plans** Plans produced by District Health Boards and the Ministry of Health that will outline the strategic direction over a five to 10-year period.

**Strategy** A course of action to achieve targets.

**Tamariki** Children can be used to include young people who have not yet reached adulthood. In this document, tamariki refers to children up to and including 14 years of age.

**Target** A specific and measurable aim relating to an objective.

**Tertiary care** Very specialised care often only provided in a small number of locations.

**Tikanga** Customary practice, rule.

**Treaty of Waitangi** New Zealand’s founding document. It establishes the relationship between the Crown and Māori as tangata whenua (first peoples) and requires both the Crown and Māori to act reasonably towards each other and with utmost good faith.

**Waiting list** A planned admission where the admission date is seven days or more after the date the decision was made by the specialist that this admission was necessary

**Whānau** Family

**Whare tapa whā** The four cornerstones of a house.

**Well-child/Tamariki ora services** Term used to describe all activities that promote health and prevent disease that are undertaken in the primary care setting for children and their families and whānau.

**Wellness** A dimension of health beyond the absence of disease or infirmity, including social, emotional and spiritual aspects of health.

## Bibliography

During the course of the evaluation process many hundreds of documents were gathered for use by the team. These included articles from publicly available published sources (general medical literature, newspapers, Internet websites), as well as many unpublished internal documents from Pegasus Health and the Ministry of Health (internal reports, correspondence, memoranda and minutes of meetings). Practical difficulties with citing these internal and unpublished items, and inability to provide ongoing access to them have restricted the following bibliography to the more readily available items from the resources collected on primary health care. Website locations are correct to September 2002.

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### Community needs assessment; vignettes of work with community service providers

#### Rowley Resource Centre – Hillmorton

One of the initial successes was being able to work with the Rowley Resource Centre in Hillmorton. The local General Practitioner runs a free, weekly, lunchtime clinic. She was approached to see if Pegasus Health would help run a "health day". The Community Project Manager met with a small working group of interested people who identified a number of health needs in their community as follows:

Cost of Doctors visits.

Cost of prescription.

Cost of cream to rid their children of nits.

Lack of knowledge on how to use their asthma "puffers and wuffers" (Patients had been shown by the Doctor how to use their applicators, but had not retained all the information and were either not using them or using them incorrectly).

Overweight and lack of exercise.

Throughout the planning stage, Pegasus staff acted as a resource person, supplying contacts and assisting with sourcing free equipment for the day. The turnout on the day was rather disappointing, however, the community organisers were very happy with the outcome and reminded Pegasus that it takes a long time to establish credibility in the community. As a result of Pegasus involvement, a respiratory and diabetes educational session is run on alternate months. Pegasus has also responded to a request to provide CPR training for a number of young mums. The community organiser is aware of the Pegasus Hardship Fund and is able to encourage her clients to ask about its use if they have issues around finances. If she knows people who have questions relating to health issues she can contact Pegasus.

#### Working Planning project

This initiative was initiated for the winter season 2001. It is important to recognise that networking, building credibility and planning were happening during the timeframe for the Global Budget evaluation. The Winter Planning project was led by the DHB who were looking for a solution to manage the expected winter bed crisis in the public hospitals. Representatives from the hospitals, primary care, community providers and age concern met regularly to discuss strategies of dealing with the winter hospital influx. Flu vaccination, the use of pneumovax and ways of raising the public awareness was discussed and plans were implemented.

The community providers identified a number of their clients that they believed to be socially at risk. In the past, this knowledge would have been shared with the general Practice team but as it was not directly dealing with the physical health of the patient, little would have been done. With the working-together philosophy, Pegasus was able to financially assist the providers to screen the clients whom they felt were most socially at risk. Often with assistance from Age Concern, the therapy unit and/or an extra home visit by the practice nurse or Doctor, the patient was provided with increased safety in their home.

For example, one elderly lady was identified as not using her bath, which had been adapted, because it cost too much to heat the hot water. She sat in her cold bathroom with a bowl of water balanced on a board on her knee. She had an unprotected bar heater on the floor by her feet.

In this case, Pegasus paid for a wall heater and Age Concern installed it. Age Concern assisted her with her power account in the short-term, and a referral was made to the Therapy Unit. Unfortunately, this lady was not entitled to further help as the bathroom problems were considered maintenance issues, not house modifications.

#### Deep Wells Trust

##### **(a programme for the over-40 year olds to help them return to work)**

Again, this project falls outside the Global Budget evaluation timeframe, but it is one that provides an example of collaboration and working together. Sid Bradley, chairperson of the DHB, was invited by staff at the Deep Wells Trust to participate in the evaluation of one of their programmes. He was impressed by what he heard from the participants. He contacted Paul McCormack, Chairperson of Pegasus Health, and suggested that a member of Pegasus Health look for ways of working with this Trust. The Community Project Manager became involved and also evaluated a programme.

The emotional level at which many of the Trust's participants were functioning was very low and it was important that they improve their self esteem before they could begin to make informed decisions as to job or health changes. Even the energy to make a commitment to take a walk twenty minutes a day was beyond many of them, when they first entered the programme.

Pegasus Health has now become a member of Push Play with Active Christchurch, a programme that promotes regular exercise. All of these organisations, including Pegasus, have the same goals of increasing physical activity within our population. Using the Hardship fund and working with the general practitioners and Sports Canterbury, Pegasus have been able to support some of these clients into different forms of activity which should improve the physical well being. Staff members now walk 30 minutes a day at lunchtime with their clients. It's a win-win situation for everyone.

According to the Pegasus Global Budget Report 2000, the key to integrated care is "relationship building...for better communication and more effective ways of working for primary and secondary providers" (page 18). At the end of 2000, more than thirty-five Pegasus members were involved in twenty-five projects as part of the Integrated Care portfolio, compared to sixteen Integrated Care projects in 1999. On the face of it, this growth seemed to equate with success. Nonetheless, Pegasus staff raised the following question post- Global Budget.

*"We need to consider whether the integrated approach is best for each project, whether we should be competing, or whether we should be 'going alone'".*