

Programme - Tuesday 18th November 2008

8.30 am – 9.00 am	Welcome (Ground Floor)
9.00 am – 9.10 am	Opening Address <i>Prof Geoffrey White</i>
9.10 am – 9.20 am	Introductory Remarks <i>Prof Philip Hill</i>
9.20 am – 10.00 am	Establishing an international health program from Australasia - Personal reflections <i>Prof Kim Mulholland</i>
10.00 am – 10.15 am	Infectious Diseases – Chair: Prof Philip Hill Invasive bacterial infections among children in Nepal <i>Prof David R Murdoch, et al</i>
10.15 am – 10.45 am	Morning Tea
10.45 am – 11.00 am	The seasonality and movement of influenza viruses in the Asia- Pacific <i>Dr Lance Jennings</i>
11.05 am – 11.20 am	Border control for small island nations to prevent or delay pandemic influenza <i>Assoc Prof M G Baker & Dr N Wilson</i>
11.25 am – 11.40 am	Tuberculosis research in Bandung Indonesia: A new centre for tuberculosis research <i>Merrin Rutherford & Prof Philip C Hill</i>
11.45 am – 12.00 pm	Barriers to appropriate antibiotic use in Samoa <i>Prof Pauline Norris</i>
12.05 pm – 12.20 pm	Health Policy/Related – Chair: Prof Philip Nel The good (and bad) of regarding health as a global public good <i>Prof Philip Nel</i>
12.25 pm – 12.40 pm	Urban poverty, squatting and environmental stress in Fiji <i>Dr Jenny Bryant-Tokalau</i>
12.45 pm – 1.00 pm	The limits of state intervention in sex-selective abortion: The case of China <i>Assoc Prof Jing-Bao Nie</i>

1.00 pm – 2.00 pm	Lunch
2.00 pm – 2.15 pm	Basic Science – Chair: Prof Andrew Mercer Quality of medicines in South Africa: Perceptions versus reality <i>Aarti Patel, et al</i>
2.20 pm - 2.35 pm	Issues with running RCTs in developing countries <i>Assoc Prof Peter Herbison</i>
2.40 pm – 2.55 pm	Insights from the control of chronic mycobacterial disease in deer of relevance to the management of human disease <i>Prof Frank Griffin</i>
3.00 pm – 3.15 pm	Energy metabolism of slow-replicating <i>mycobacterium smegmatis</i> <i>Dr Michael Berney & Assoc Prof Gregory M Cook</i>
3.20 pm – 3.35 pm	The good, the bad, and the ugly: Reminiscing with parents and adolescent's socioemotional health <i>Assoc Prof Elaine Reese</i>
3.40 pm – 3.55 pm	Resolution of cervical dysplasia is associated with T-cell proliferative responses to human papillomavirus type 16 E2 <i>Dr Merylyn H Hibma, et al</i>
3.55 pm – 4.20 pm	Afternoon Tea
4.20 pm – 4.35 pm	Health Economics Health aid and governance in developing countries <i>Prof David Fielding</i>
4.40 pm – 4.55 pm	The international migration of physicians <i>Dr Rick Audas & Tracey Norrish</i>
5.00 pm – 5.15 pm	Which institutions are good for your health? <i>Assoc Prof Stephen Knowles & Prof P. Dorian Owen</i>
5.30 pm – 7.00 pm	McAuley Oration, Hutton Theatre, Otago Museum The evaluation of life saving bacterial vaccines in West Africa- the <i>H. influenzae</i> and <i>S. pneumoniae</i> story <i>Prof Richard Adegbola</i>
7.30 pm	Conference Dinner - High Tide Restaurant, 29 Kitchener St

Programme - Wednesday 19th November

8.45 am – 9.00 am	Non-Communicable Diseases – <i>Chairs: Prof Robert Beaglehole, Prof Jim Mann</i> Global NCD Issues <i>Prof Robert Beaglehole</i> <i>Prof Jim Mann</i>
9.00 am – 9.15 am	Ngati and healthy: 2-year results from a community diabetes prevention intervention <i>Dr Kirsten Coppel</i>
9.20 am – 9.35 am	Influences on health-seeking behaviours among patients with type 2 diabetes in Dar es Saalam <i>Lucy Nguma, et al</i>
9.40 am – 9.55 am	Health and disease in prehistoric Pacific Island skeletal remains <i>Dr Hallie Buckley</i>
10.00 am – 10.15 am	HPV vaccination in the Pacific <i>Assoc Prof Brian Cox</i>
10.20 am – 10.35 am	Serum 25-hydroxyvitamin D concentration of indigenous-fijian and fijian-indian women <i>Christina M Heere, et al</i>
10.35 am – 11.00 am	Morning Tea
11.00 am – 11.15 am	Food-based strategies to combat micronutrient malnutrition in developing countries (DCs) <i>Prof Rosalind S Gibson, et al</i>
11.20 am – 11.35 am	Why may health programmes and projects not be as successful as planned? <i>Dr Susan Heydon</i>
11.35 am – 12.00 pm	Closing
12.00 pm – 1.00 pm	Lunch

The international migration of medical doctors

R. Audas¹ and T. Norrish¹

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Global migration of Medical Doctors contributes to doctor shortages in developing and developed countries. Increasingly, developed countries are relying on international medical graduates from developing nations, further contributing to Medical Doctor shortages in 'source' countries. At a national level, Medical Doctor shortages result in significant problems in rural areas where it is difficult to fill gaps. At a global level, these shortages can have devastating health consequences in developing nations where doctor numbers are inadequate to provide even the most basic of care. Shortfalls in the staffing complement cause disruptions in the continuity of care and result in added pressures for allied health professionals who, if available, are called upon to fill the gaps in primary care. Questions arise as to who is responsible for current shortages in Medical Doctor supply, and how this problem can be addressed in the future to avoid further contributing to global inequalities in access to healthcare services.

Our current project is using administrative data and information publically available on websites to map Medical Doctor migration to and from six English speaking countries: Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States. Preliminary web searches have been carried out to identify existing statistics relating to medical education, use of international medical graduates, and current shortages in Medical Doctor supply in these countries. These initial findings will help direct a larger study of the international mobility of Medical Doctors. Specific elements of this will include: a student survey of career intentions of House Surgeons, currently being carried out as a Trainee Intern project; a PhD thesis using mixed methodology to investigate the impact of Medical Doctor mobility on inequalities in access to healthcare services; and mapping of Medical Doctor mobility in regard to 'source' country and region of registration in 'recipient' country, based on Medical Doctor registration files in the six countries mentioned above.

Border control for small island nations to prevent or delay pandemic influenza

M.G. Baker¹ and N. Wilson¹

¹University of Otago, Wellington

Background

Island nations are planning various strategies to prevent the arrival of pandemic influenza. The existing evidence base for these interventions is generally weak.

Method

We undertook 2 studies: (i) A modelling study to determine the likely impact of reducing travel volumes to small islands on the risk of pandemic influenza arriving. (ii) A modelling study using available epidemiological parameters to estimate the likely effectiveness of quarantine as a border control measure.

Results

The results for the travel volume study indicate that for the 17 Pacific Island countries studied, only six would have over a 50% probability of escaping a relatively "mild" pandemic (ie, for $R_0=1.5$) even when imposing very tight travel volume reductions of 99% throughout the course of the global pandemic. For more severe pandemics ($R_0=2.25$ or higher) only four of these countries would have more than a 50% probability of escape.

The results for the quarantine study indicate that 95% and 99% effectiveness in preventing the release of infectious individuals into the community could be achieved with quarantine periods of longer than 4.7 and 8.6 days, respectively. Sensitivity analysis revealed that quarantine for 5.7 days, combined with using rapid diagnostic testing, could prevent secondary transmissions caused by the release of infectious individuals for a plausible range of prevalence at the source country (up to 10%) and the number of incoming travellers (up to 8000 individuals).

Conclusions

The travel volume reduction results suggest that most Pacific island nations will need to plan for multiple additional interventions (eg, screening and quarantine) if they are going to prevent the arrival of pandemic influenza. Quarantine at the border of island nations is likely to substantially contribute to preventing the arrival of pandemic influenza (or at least delaying the arrival date) and rapid diagnostic testing could make this a more feasible intervention.

Urban poverty, squatting and environmental stress in Fiji

Jenny Bryant-Tokalau

Senior Lecturer and Co-ordinator of Pacific Studies
Te Tumu (School of Maori, Pacific and Indigenous Studies)
University of Otago

Life for the urban poor is becoming increasingly difficult throughout the Pacific. Despite a great deal of emphasis on modern development, large donor projects, and apparent concern for the poor by governments and donors, living conditions are not significantly improving. In Fiji where squatting accounts for a growing proportion of urban dwellers, the possibility of the introduction of the *Qoliqoli Act 2006*, intended to return coastal land and traditional fisheries to indigenous owners, may lead to even more complex urban problems, including those associated with over crowding and a lack of access to urban services such as water and sanitation.

Health and disease in the prehistoric Pacific Islands

Hallie Buckley

University of Otago

The study of health and disease in human skeletal remains from prehistoric sites, or bioarchaeology, can inform us of the antiquity and evolution of diseases in modern populations. This paper presents the findings of a multi-disciplinary study of Lapita-associated human skeletons from Vanuatu and Papua New Guinea and discusses aspects of health and disease which may have influenced the success of early settlement in the Pacific Islands.

Energy metabolism of slow-replicating *Mycobacterium smegmatis*

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The energy metabolism of slow-replicating mycobacteria is not well understood and is a potential source for identifying new drug targets. We have established a continuous culture system for the fast-growing *Mycobacterium smegmatis* to study metabolism at low growth rate under different nutritional and environmental conditions. A global gene expression study of slow-growing (doubling time of 70 h) versus fast-growing (4 h) *M. smegmatis* under aerobic and hypoxic conditions revealed that most enzymes of the respiratory chain are tightly coupled to growth rate and not to dissolved oxygen concentration. In contrast, *M. smegmatis* genes homologous to the DosR regulon of *M. tuberculosis* did not exhibit growth rate-dependent expression. Our data demonstrates that *M. smegmatis* and *M. tuberculosis* share a similar expression pattern of genes involved in energy metabolism when the bacteria experience a downshift in growth rate and under hypoxia. Alternative pathways for the recycling of reducing equivalents under these conditions will be discussed.

Ngati and healthy: 2-year results from a community diabetes prevention intervention

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Background and Aims

About half of adults living in the predominantly Maori community on the East Coast north of Gisborne were found to have a glucose metabolism disorder or insulin resistance (IR). This study describes changes in markers and prevalence of glucose metabolism disorders following a 2-year community intervention aimed at reducing IR prevalence in this high risk community.

Methods

Surveys were undertaken before and 2 years after implementation of a community developed and led diabetes prevention programme. Proportions and means were calculated and compared by sex and age groups: 25-49 years and 50+ years. A process evaluation contributed to interpretation of results.

Results

Response rates were around 50% and demographic characteristics were similar in the 2 surveys. Proportions of both young women and men eating wholemeal or wholegrain bread increased significantly (42.2 to 65.4%; $p=0.002$ and 29.6 to 50.0%; $p=0.045$, respectively). Between 2003 and 2006, more young women reported being more physically active (45.1 to 60.3%; $p=0.044$). IR prevalence decreased for both young women and men, from 38.2 to 25.6% and from 40.7 to 27.5%, respectively. Differences in prevalence of glucose metabolism disorders and IR were statistically significant for young women ($p=0.015$), the group in which a reduction in body weight, body mass index, triglycerides and insulin levels was also observed. The process evaluation described greater participation in community initiatives by women compared with men.

Conclusion

Participation in a 2-year community led diabetes prevention intervention appears to have halted a rise in obesity and diabetes rates with greatest benefit evident in those showing the most marked lifestyle changes.

HPV vaccination in the Pacific

Brian Cox

Hugh Adam Cancer Epidemiology Unit, Department of Preventive and Social Medicine,
University of Otago

The advent of HPV vaccination provides an ideal opportunity for the prevention of cervical cancer in the Pacific. The accessibility of communities and the cost are major obstacles for the provision of this service. The International Agency for Research on Cancer is currently developing advice to governments on the implementation of HPV vaccination and its integration into cervical screening programmes. Where cervical screening provision is low, HPV vaccination can be expected over the long term to have greatest effect on reducing mortality from cervical cancer. The use of the quadrivalent vaccine also produces a considerable reduction in the prevalence of anal warts. The pros and cons of HPV vaccination and its integration into cervical screening in the Pacific will be summarised.

Health aid and governance in developing countries

David Fielding

Department of Economics, University of Otago

Despite anecdotal evidence that the quality of governance in recipient countries affects the allocation of international health aid, there is no quantitative evidence on the magnitude of this effect, or on which dimensions of governance influence donor decisions. We measure health aid flows over 2001-2005 for 87 aid recipients, matching aid data with measures of different dimensions of governance and a range of country-specific economic and health characteristics. Both corruption and political rights, but not civil rights, have a significant impact on aid. The sensitivity of aid to corruption might be explained by a perception that poor institutions make health aid inefficient. However, even when we allow for variations in the level of corruption, political rights still have a significant impact on aid allocation. This suggests that health aid is sometimes used as an incentive to reward political reforms, even though (as we find) such aid is not fungible.

Food-based strategies to combat micronutrient malnutrition in developing countries (DCs).

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The importance of multiple micronutrient deficiencies in DCs is gaining recognition, prompted by disappointing responses from single micronutrient supplements. Further, of concern, is the feasibility of supplementation as a mode of delivery in poor resource settings. Instead, fortification and dietary strategies may be more sustainable options. In a RCT, we investigated whether fortification of a seasoning powder with iron, zinc, iodine, and vitamin A in a school lunch for 31 weeks resulted in changes to micronutrient status, growth, morbidity, and cognitive function of NE Thai school children compared to no fortification. Beneficial effects on biochemical status, morbidity, and visual recall were achieved over a 31week period, highlighting the potential of this micronutrient fortified food vehicle. In a second on-going RCT in Zambia, we are assessing the efficacy of a fortified complementary food to improve micronutrient status of Zambian infants. We have also investigated the efficacy of dietary diversification and modification to enhance the intake and bioavailability of micronutrients for infants and young children from subsistence farming households in rural Malawi. Of the outcomes investigated, improvements were noted in dietary quality, body composition, hemoglobin, and morbidity. However, because fish and not meat was the only affordable animal-source food, increases in heme iron intakes were limited. In contrast, in Mongolia, a country with a cultural heritage of meat-based diets, beef-liver is widely consumed, and is affordable. Consequently, we propose to conduct a 9 mos cluster-RCT in Ulaanbaatar, Mongolia to compare the efficacy of nutrition education plus the addition to home-based complementary foods of daily sachets of: (a) desiccated liver; (b) micronutrient Sprinkles; or (c) placebo on hemoglobin, micronutrient status, growth, morbidity, and motor development. Results will establish whether desiccated liver is economically feasible, culturally appropriate, and as efficacious as Sprinkles for improving micronutrient status, motor development, and reducing morbidity among Mongolian infants.

Insights from the control of chronic mycobacterial disease in deer of relevance to the management of human disease

Frank Griffin

Disease Research Laboratory, University of Otago.

In the last 20 years Johne's disease, caused by infection with *Mycobacterium paratuberculosis*, has emerged as one of the most important bacterial diseases affecting productivity within the New Zealand farmed deer herd. This disease has many pathological features similar to that seen in Crohn's disease in humans. As well as losses from clinical Johne's disease in livestock, subclinical infection results in reduced growth rates of young deer, lower reproductive performance and lighter velvet weights. The importance of this disease has often been overlooked because of the difficulty in obtaining a definitive diagnosis. Traditionally, microbial culture of faecal material or gut tissue has been used to confirm the presence of infection. Whereas distinct strains of *M. paratuberculosis* affect cattle and sheep, the 'bovine' strain is predominant in clinically affected deer. While serodiagnostic techniques have been used to indirectly confirm infection, limitations in both the specificity and sensitivity of immunoassays have restricted their widespread use. The Disease Research Laboratory, University of Otago has recently developed a refined ELISA test that monitors IgG1 antibody (*Paralisa*TM) specific for antigens expressed uniquely by *M. paratuberculosis*. The use of this test in severely infected deer herds can reduce the prevalence of reactors from high (>40%) to low levels (<5%) within 2 years and results in the elimination of clinical disease. The ability to cull clinically affected animals that excrete high numbers of bacteria significantly reduces environmental contamination necessary to contain the spread of infection. As clinically detectable Johne's disease represents a minor proportion of the total number of animals infected within a herd it is important that diagnostic tests also detect subclinically infected animals. Using the *Paralisa* test, it is now possible to implement management systems to electively remove infected deer with a resulting gain in both production and reproduction performance. Use of this test has identified the importance heritable resistance (genotypic) to infection, and how production values (phenotypic), appear to influence susceptibility to disease.

Serum 25-hydroxyvitamin D concentration of indigenous-Fijian and Fijian-Indian women

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Background

Serum 25-hydroxyvitamin D (25OHD) concentrations are lower in Pacific people compared to Caucasians living in New Zealand. However, there is no data on the 25OHD concentrations of Pacific people living in the Pacific Islands. The aim of this study was to assess the vitamin D status of Indigenous and Indian Fijian women living in Fiji by measuring 25OHD concentrations.

Methods

Bloods were collected from the third Fiji National Nutrition Survey and 25OHD concentrations were analysed, using radioimmunoassay, for 511 Fijian women (15-44 y).

Results

The unadjusted mean 25OHD concentration of Fijian women was 76 nmol/L (95% CI: 73, 78). 25OHD was lower in Fijian Indian [69 (66, 73) nmol/L] women compared to Indigenous Fijians [80 (77, 84) nmol/L] ($p < 0.0001$). The mean unadjusted 25OHD was higher in rural than urban women [11 (5, 16) nmol/L] ($p < 0.0001$). Body Mass Index (BMI) and age were not predictors of 25OHD concentrations. Findings were unchanged after adjustment for ethnicity, age, region and BMI. Of Fijian females, 4%, 14%, and 80% had 25OHD concentrations indicative of 25OHD insufficiency using cutoffs of ≤ 37.5 , ≤ 50 and ≤ 80 nmol/L, respectively.

Conclusion

25OHD was high in Fijian women and exceed concentrations reported in Pacific females living in New Zealand. Strategies are needed to improve the vitamin D status of Pacific people living at higher latitudes.

Issues with running RCTs in developing countries

Peter Herbison

Preventive and Social Medicine

Interventions should be tested on those who it is intended they be used on. This is particularly relevant to developing countries as the diseases that have priority, and the method of delivering interventions, are very different in developing as opposed to developed countries. Randomised controlled trials (RCTs) are essential to provide knowledge about which interventions work. Most of the issues with running RCTs are universal, but some are particularly poignant in developing countries.

Most of the issues that have to be solved arise during the planning of the study, such as the choice of comparison treatment and what happens after the trial is finished. Care is needed in this planning as local authorities are sometimes not keen on RCTs because of the behaviour of previous trialists. Despite this RCTs are particularly important in developing countries and it is even more important that they produce results that are directly relevant for health care.

Why may health programmes and projects not be as successful as planned?

S.J. Heydon

School of Pharmacy, University of Otago

Background

All too often we read about what appear to be very worthwhile policies and projects that are not working as intended. Articles and reports discuss issues such as non-compliance, low uptake of services, lack of services or inadequate knowledge and then exhort people to do better, to provide more information, to involve the community and set targets to be achieved. The assumption is that if all of this is done a one-dimensional line of progress will be the result. Does the practice, however, follow the rhetoric of the theory?

Method

An in-depth historical case study of Khunde Hospital in Nepal was undertaken. This doctoral research drew on a range of archival and oral primary sources, as well as participant observation/practice from two years previously spent at Khunde Hospital. Data was analysed through an interpretive framework of 'multiple worlds'.

Results

The community's overall response to the hospital was neither a one-way diffusion of 'modern' medicine, nor a collision with the spirit-suffused belief system of the Sherpa. People used the hospital for some health issues but not others, based on their perception as to whether using the hospital was the effective, appropriate option to take. Over the years, the hospital and community became used to each other in a relationship that was in practice a coexistence of difference. This coexistence also operated within the shifting nature of the international aid scene and was facilitated by Sir Edmund Hillary's particular form of aid and the unique Sherpa world.

Conclusions

The framework of 'multiple worlds' provided a way of more adequately analysing medical encounters at the hospital, the hospital's role in the community and the implementation of an aid project. The research findings also raised questions about current thinking on health policies such as access, knowledge and partnership and further research could evaluate the study's wider applicability.

Resolution of cervical dysplasia is associated with T-cell proliferative responses to human papillomavirus type 16 E2

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The 'high-risk' human papillomaviruses (HPVs) cause persistent infections of the anogenital region that may resolve spontaneously following activation of a protective immune response. The aim of this study was to determine whether cell-mediated immunity (CMI) to the early protein E2 was associated with disease regression and to establish whether E2 CMI and antibodies to L1 virus-like particles (VLPs) were associated markers of immunity to HPV.

Lymphoproliferative responses to histidine-tagged HPV16 E2 and antibody responses to HPV16 VLPs were measured in patients with persistent cervical dysplasia, those whose disease had recently resolved and normal controls. Resolvers had significantly higher E2-specific lymphoproliferative responses when compared with normal controls or persisters, whereas there was no significant difference between the persisters and the normal controls. The T cells stimulated by E2 secreted high levels of gamma interferon (IFN- γ), consistent with a type 1 helper (Th1) phenotype. VLP IgG responses were associated with current or previous HPV infection, but not with disease regression or a lymphoproliferative response to E2. Major histocompatibility complex class I-restricted T cells secreted IFN- γ following stimulation with E1, and E2 peptides were detected more frequently in the persister group.

The data showed that lymphoproliferative responses to E2 with a cytokine profile indicative of Th1 are associated with disease resolution, supporting the development of a therapeutic vaccine that activates this type of response for the treatment of individuals with pre-existing disease.

The seasonality and movement of influenza viruses in the Asia-Pacific

Lance C. Jennings

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The Asia-Pacific region is unique in that it spans a full range of climates, from Northern temperate, through tropical, to Southern temperate. In countries with temperate climates, both the periodicity and the seasonality of influenza virus infections are well established and in these countries influenza is typically a winter disease and there is often a clear peak in activity during the colder (winter) months. In countries in the tropical or subtropical zones influenza activity is either poorly defined or occurs throughout the year with periods of increased activity during the winter and rainy seasons.

The comparison of surveillance data for influenza A/H1, A/H3 and B viruses over multiple years from 10 countries spanning the Asia Pacific climatic regions highlights the wet and dry season periods of increased activity in tropical and subtropical regions as well as the annual variation within each country and geographical variation. Clearly the seasonality of influenza needs to be established for individual countries if appropriate health policy for both the timing of influenza vaccine administration and vaccine composition (Northern or Southern hemisphere) is to be developed.

The importance of the south-east Asian region as a region for the continuing evolution of seasonal influenza virus strains is also being established through the application of the whole genome sequencing technologies and the availability of complete genome sequence data on viruses detected in geographically separated populations. Phylogenetic evidence strongly suggests that the temperate climate countries are seeded seasonally by influenza virus strains which evolve in tropical regions.

Which institutions are good for your health?

Stephen Knowles¹ and P. Dorian Owen¹

¹ University of Otago, Dunedin, New Zealand

A literature has developed over the last decade or so that empirically analyses the effect of institutions on economic development across countries. This has become known as the 'deep-determinants-of-development' literature. Proximate determinants of development are defined as those that appear in the aggregate production function, such as physical and human capital per worker. Deep determinants, by contrast, are the variables that explain differences in the proximate determinants; hence they are the underlying, or deep, determinants of development. Several papers analyse whether institutions or geography is the more important deep determinant of cross-country income differences. Several influential papers conclude that 'institutions rule', in that after controlling for a country's institutional quality, geography appears to have little direct effect on its economic development.

Within this literature it is standard to use income per capita as a proxy for economic development. In addition, the focus is almost exclusively on the role of formal, rather than informal, institutions in explaining cross-country differences in the level of development. Following North (1990), formal institutions can be thought of as written rules and regulations, for example property and contract law, whereas informal institutions include norms, conventions and the level of trust and cooperation within society. This paper extends the existing literature in two ways. Firstly, we focus on life expectancy as an alternative indicator of economic development. Secondly, we examine the role of informal, as well as formal, institutions as a potential deep determinant of development. We use data from the World Values Survey to proxy for informal institutions and the World Bank's 'governance' indices to proxy for formal institutions.

Our empirical results suggest that both formal and informal institutions are statistically significant in explaining cross-country differences in life expectancy. We also find evidence that formal and informal institutions are substitutes for each other. However, geographical factors also help explain cross-country variation in life expectancy.

Invasive bacterial infections among children in Nepal

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The development of efficacious protein-polysaccharide conjugate vaccines against encapsulated bacteria, such as *Streptococcus pneumoniae*, *Haemophilus influenzae* type b (Hib), *Neisseria meningitidis* and *Salmonella* species, provides an opportunity to reduce the burden of invasive bacterial disease in children. There are few epidemiologic data on invasive bacterial infections among children in Nepal. The initial aims of our programme are to provide data to inform the introduction of vaccines against encapsulated bacteria and to establish population-level surveillance for respiratory illness and gastroenteritis among children in Nepal.

Several projects have been recently completed. Over a 21-month period, we investigated 2039 children admitted to hospital with suspected invasive bacterial infections. Some 7% of children had positive blood cultures, with typhoidal salmonellae accounting for most bacteremias in children ≥ 1 year. *S. pneumoniae* caused most bacteraemias in children < 1 year, and was the most commonly identified pathogen in children with meningitis. Pneumonia accounted for half of admissions in children ≥ 2 months. A similar study was conducted on 1086 children attending an outpatient clinic over 2 seasons (monsoon and winter). This study confirmed the huge burden of enteric fever in Kathmandu, with 15% of children having documented bacteraemia with typhoidal salmonellae in the monsoon season. During the winter, 33% of children had infection with influenza B. Unlike among febrile adults in Kathmandu, murine typhus was rare. *H. influenzae* type b caused $< 2\%$ of bacteraemias in both studies. However, a study in Kathmandu indicated similar prevalences of *H. influenzae* type b carriage to those seen in areas where there is a high prevalence of disease.

Planned and ongoing work includes pneumococcal carriage and *H. influenzae* type b immunogenicity studies, population-based surveillance for respiratory illness and gastroenteritis, and intervention trials.

The good (and bad) of regarding health as a global public good

Philip Nel

Department of Politics, University of Otago

For much of the past decade, global health has been conceived of as a 'global-public-good' (GPG) issue. And for good reason, as GPG-thinking allows us to identify and overcome jurisdictional, incentive, and legitimacy gaps in the provision of global health interventions. Recently, critics have questioned the use and usefulness of the GPG approach. This paper reviews the debate and suggests ways in which the GPG approach can be modified constructively.

Influences on health-seeking behaviours among patients with type 2 diabetes in Dar es Saalam Tanzania.

Lucy Nguma^{1,2}, Richard Edwards¹ and Peter Crampton¹

¹ University of Otago, Wellington, New Zealand.

² Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania

Background

Diabetes is an increasing problem in sub-Saharan Africa. About 50% of people with type 2 diabetes mellitus in Tanzania are unaware of their condition and close to 80% of cases are undiagnosed. Delays in health care seeking, diagnosis and low adherence to treatment regimen often lead to poor treatment outcomes.

Aim

To explore influences on health-seeking behaviours among patients with type 2 diabetes in Dar es Saalam Tanzania.

Methods

Data collection was carried out in two diabetes clinics in Dar es Salaam, Tanzania in 2007 using qualitative methods. These included in-depth interviews and with 20 regular and 10 non-regular clinic attenders and their caregivers; 7 health workers; and 6 national health officials. Similarly, eight focus group discussions were carried out with patients and community members. Data analysis was done using Miles and Huberman's logical approach consisting of data reduction, display, conclusion and verification. The paper only presents a sub-set of data focusing on the in-depth interviews with diabetes patients.

Results

Multiple influences on health seeking behaviour were identified, many of which impact on clinical attendance, adherence with treatment programmes, and outcomes. These ranged from lay beliefs and models of disease causation and treatment including use of traditional healers, lack of financial resources for transport to the clinic and purchasing of drugs, to long waiting times and poor availability of drugs at the clinic.

Conclusions

The findings suggest that improving health seeking and adherence with treatment for diabetes will require action to address the environmental and financial barriers to access to health care, consequently enhancing treatment outcomes.

The limits of state intervention in sex-selective abortion: The case of China

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Sex-selective abortion is the major direct cause for the severe imbalance of sex ratio at birth – the phenomenon of over 100 million missing females worldwide and 40 million in China alone. Internationally as well as in China, moral condemnation and legal prohibition constitute the mainstream position on sex-selective abortion. Through integrating the empirical studies and sociological analysis into ethical exploration, this paper first characterises the dominant Chinese approach as state centred and coercion oriented and then reviews the main arguments for and against. After presenting a desperate case in which a rural Chinese woman risked her life to have a son, it discusses eight of the predicaments raised from state intervention in sex-selective abortion: practical ineffectiveness, paying little attention to the costs and resistance involved, simplifying and misrepresenting the key problems to be solved, blaming the victims, appealing to state force, neglecting reproductive liberty, suppressing public discussion, and setting aside the moral and political principles of Daoism and Confucianism. In avoiding a solution worse than the problem itself, there is a need to search for alternative approaches which aim to empower people, especially women, as moral agents, help communities to flourish, and is voluntary in nature.

Barriers to appropriate antibiotic use in Samoa

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Background

Antibiotic resistance is a serious problem worldwide. This is particularly the case in developing countries where high levels of prescribing, and patterns of sub-optimal use frequently lead to high levels of resistance.

Method

Four related studies have been carried out in Samoa:

1. an investigation of the level of antibiotic prescribing and dispensing (using retrospective analysis of prescriptions in hospitals and health centres)
2. an exploration of Samoan peoples' understanding and use of antibiotics using qualitative and quantitative interviews in Samoa and New Zealand
3. an assessment of the prevalence of MRSA (methicillin resistant staphylococcus aureus) in Samoa, from swabs from skin wounds
4. an evaluation of the storage conditions and quality of antibiotics supplied by the public health system in Samoa

All projects also involved consultation and discussion with health professionals in Samoa.

Results

Analysis of prescriptions found very high levels of antibiotic use, and frequent over the counter sales of antibiotics. Study 2 revealed cultural factors leading to erratic patterns of healthcare use, a widespread belief in antibiotics as painkillers, and concern about pneumonia, as leading to high levels of antibiotic use and erratic patterns of use. Consultation during Study 3 suggested that prescribers' concerns both about medicines quality and about resistance to commonly prescribed antibiotics led to concomitant prescribing of several antibiotics. Study 4 confirmed that there are quality problems with some antibiotics in the central store, and that storage conditions during the distribution of medicines to outlying hospitals and health centres also present threats to antibiotic quality.

Conclusions

As in other countries, sub-optimal antibiotic use is caused by a variety of interlocking factors, many of which are not easy to change. Understanding this background is essential for developing strategies to improve antibiotic use.

Quality of medicines in South Africa: Perceptions versus reality

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Background

Current international and national initiatives to improve access to essential medicines tend to focus on rational use, increasing availability and affordability with limited attention to quality of drugs. The increase in both substandard and counterfeit medicines poses a global threat to public health that cannot be ignored, especially in the developing world. This study was undertaken in South Africa to explore the meaning of medicines quality from the perspective of consumers and health providers and comparing their perceptions to the actual quality of selected medicines.

Method

The study took place in three main cities of South Africa: Durban, Johannesburg and Cape Town from 2006 to 2007. Qualitative methods were used to gain familiarity with consumers' and providers' understanding of medicines quality. Twelve focus group discussions were conducted with consumers and fourteen interviews with health providers. *In vitro* analysis was performed on 136 formulations, in Dunedin, on selected medicines to assess their quality.

Results

Consumers and providers described medicines quality in relation to the effect on symptoms. Consumers preferred getting their medicines from the private sector: pharmacies and dispensing doctors. They considered the free and generic medicines supplied by the state sector to be inferior. The use of generics by providers was influenced by prior experience, manufacturers' names and consumers' ability to pay. All 136 formulations passed the tests for identity. Two samples of paracetamol and one amoxicillin sample failed dissolution tests. These samples were generics and sourced from community pharmacies.

Conclusions

The South African government introduced generic medicines as part of its National Medicines Policy to improve access to affordable, quality-assured medicines. Whilst this study concludes that the actual quality of selected medicines is good, implementation of the SA Medicines Policy must address the concerns of consumers and providers to ensure higher uptake of generic medicines.

The good, the bad, and the ugly: Reminiscing with parents and adolescent's socioemotional health

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Adults who tell coherent life stories experience greater well-being, as measured by lower levels of depression and greater life satisfaction. When does this link between life stories and well-being emerge? We conducted two studies with 12-year-olds to assess the emergence of a narrative identity and well-being. Adolescent told life stories on their own and with parents, and were assessed for self-concept and behaviour problems. The overall structure of adolescents' life story was positively linked to their self esteem, although insight into life events was negatively linked to self concept for adolescent girls. For boys and girls, parents' discussion of negative events was positively linked to self concept. We discuss the role that parents continue to play in shaping young adolescents' self concepts.

Tuberculosis research in Bandung Indonesia: A new centre for tuberculosis research

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Since August 2009 the Centre for International Health, University of Otago has been involved in Tuberculosis research in Bandung, West Java. Collaboration with the University of Padjadjaran Health Research Unit, BBKPM – a Tuberculosis out-patients clinic and BLK- the national reference laboratory for West Java is being established. High patient load in BBKPM and quality laboratory facilities in both BLK and BBKPM allow for investigation of a wide range of topics relevant to Tuberculosis prevention, diagnosis and treatment. Confirmed research for 2009 includes the evaluation of the Quantiferon test for the diagnosis of latent tuberculosis infection in children. Sensitivity and specificity of Quantiferon and Mantoux tests will be compared across a gradient of exposure in child contacts of known tuberculosis cases and in healthy community controls. Proposed research includes evaluation of diagnostic tools for MDR-TB and investigation of risk factors for MDR-TB, TB and TB treatment default. Other activities include research capacity building for laboratory and clinical staff and young medical professionals, laboratory external and internal quality control and the development of a database containing isolate, sample and patient data from three sites in Bandung. Development towards an internationally competitive research centre for Tuberculosis is promising and will be launched through the newly established Bandung Tuberculosis Working Group.