SUMMER STUDENTSHIP PROGRAMME

(Left-Right) Charlotte Legge, Hamish Green, Prof. Sunny Collings (Dean and Head of Campus), Nathanael Lucas, and Josh Chamberlain

Photo: Michael Roberts, UOW Photographic Unit.
INTRODUCTION

Rau Rangatira ma, tena koutou, tena koutou, tena koutou katoa.
Nau mai haere mai Te Whare Wananga o Otago ki Otautahi. Piki mai kaki mai.

Each year the (UOW) University of Otago, Wellington hosts the Summer Studentship Programme, giving undergraduate medical and science students an introduction to research methods in their field of interest.

This booklet is a compilation of the lay reports submitted by student participants in the UOW 2012/2013 Summer Studentship Programme. This year over 58 supervisors and 40 students from the University of Otago, Dunedin, Christchurch, and Wellington campuses as well as students from the University of Auckland and Victoria University took part in the 10 week studentship. These projects took place at a range of venues ranging from Wellington Hospital, Gisborne Hospital, Palmerston North Hospital, MRINZ and various departments at the University of Otago, Wellington.

The main objective of the Summer Studentship programme is to give undergraduate students their first introduction to research. This programme is a great tool and opportunity to encourage and foster future New Zealand researchers. Eligibility for the studentship is open to any undergraduate student at a New Zealand tertiary academic institution.

We are grateful to the many students, supervisors and host departments who have worked together to achieve this cross institution alliance.

Our particular thanks go to all of the sponsors for their financial generosity that contribute to this educational grant for each student. We wish to offer our congratulations to the winners and our thanks to all the students whose fine efforts made the selection process such a difficult one.

These reports are a small reflection of the enormous amount of work and commitment put into the projects by the students, staff, departments and sponsors. We hope that you will enjoy reading the reports and we look forward to your support of the 2013/2014 Summer Studentship Programme.

Dr William Levack
Associate Dean (Research & Postgraduate Research)

Tina Uiese
Summer Studentship Coordinator
SUMMER STUDENTSHIP SPONSORS

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- Associate Professor Philippa Howden-Chapman
- Mr Dick Georgeson
- Sanofi
- RCPA Scholarship in Pathology for Medical Schools
- Gilead Science
SUMMER STUDENTSHP ORAL PRESENTATION FINALISTS

We would like to acknowledge and thank the Wellington Medical Research Foundation Inc. and the School of Medicine & Health Sciences, UOW for the financial contribution towards the Summer Studentship Oral Presentation prize.

The written reports were all evaluated to produce a list of the top four best reports.

The four finalists were:
- Charlotte Legge
- Nathanael Lucas
- Hamish Green
- Josh Chamberlain

This year’s winner was Hamish Green who investigated pathological findings in fatal perinatal asphyxia under the supervision of Associate Professor Dawn Elder and was sponsored by The Surgical Research Trust.

The runner-up was Charlotte Legge under the supervision of Associate Professors Stewart Mann and Peter Larsen. Charlotte investigated the relationship of high sensitivity Troponin T to renal function based on Emergency Department and lab records. The other finalists were Nathaniel Lucas and Josh Chamberlain.

A special thank you to Associate Professor Rob Siebers and Dr William Levack for undertaking the difficult task of assessing the final reports as well as for judging the oral presentations. These reports are a small reflection of the enormous amount of work and commitment put into the projects by the students, staff, departments and sponsors.

We hope that you will enjoy reading them and we look forward to your support of the 2013/2014 programme.

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## Summer Studentship – First Prize Winner

Hamish Green

## Summer Studentship – Runner-Up

Charlotte Legge

## Summer Studentship – Finalists

Nathanael Lucas

Joshua Chamberlain

## Summer Studentship – Other Reports

Nishanthan Ramachandran

Stewart Graham

Alice Ma

Elizabeth Thomas

Caleb Lucas

Jess Yager

Juliet Kane

Ashleigh Parrott

Jamie Andrewes

Jennifer Walker

Ciaran Edwards
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Background: Birth asphyxia occurs when infants are deprived of oxygen at birth. When infants die of birth asphyxia a clinical review of the case may follow which may lead to concerns about malpractice. As well as new lesions, autopsies may reveal older lesions which are thought to develop before birth. This suggests that these infants are not completely normal prior to birth. It is important that these prenatal lesions are understood when these cases are reviewed clinically.

Aim: We aimed to document the demographics and pathology found in infants with birth asphyxia. We compared the relationship between the presence of brain lesions thought to have developed during the pre-natal period, clinical features and acute catastrophic events occurring during labour. We also examined the relationship between the presence of pre-natal brain lesions and placental or umbilical cord pathology in these infants.

Methods: We reviewed autopsy reports from a period of 12 years for infants who died of birth asphyxia. Clinical factors and pathology from 60 cases were analysed. We calculated rates of pre-natal brain lesions and compared these amongst infants with and without acute catastrophic events during labour and in infants with placental or cord pathology.

Results: Forty-eight percent of infants had pre-natal brain lesions. We found that the longer infants survived for, the more likely they were to have developed visible evidence of new brain lesions by the time they died. As expected, infants with clinically detectable brain damage had evidence of new lesions at autopsy. There was no difference in the rate of pre-natal brain lesions in infants experiencing an acute catastrophic event during labour compared to those not experiencing such an event. There was also no significant difference in the rate of pre-natal lesions found in infants with placental or cord pathology compared to those without.

Conclusion: The presence of pre-natal brain lesions found at autopsy in infants with birth asphyxia suggests an injury may have occurred prior to labour. Our findings indicate that there is still much to be understood about the cause of this pathological finding in term infants who have died of asphyxia.
Summer Studentship – Runner-Up

Charlotte Legge

THE RELATIONSHIP OF HIGH-SENSITIVITY TROPOGIN T TO RENAL FUNCTION BASED ON EMERGENCY DEPARTMENT AND LABORATORY RECORDS.

Supervised by:  
Associate Professor Peter Larsen  
Dr. Scott Harding  
Associate Professor Stewart Mann

Sponsor:  
Medicine HoD Research Allowance

Cardiac troponins are heart proteins released into the blood when the heart muscle is damaged, such as during a heart attack, and are routinely measured in patients presenting to the Emergency Department (ED). Currently, changing troponin measurements above a threshold value determined from healthy subjects (99th percentile of the healthy reference population = 14 ng/L) is indicative of a heart attack. However, emerging data suggests that patients with kidney disease often have raised troponin levels in the absence of a heart attack. This often leads to misdiagnosis and subsequently inappropriate admission and treatment of the patient.

The aim of this study was to evaluate the degree to which kidney disease affects troponin concentrations in patients presenting to ED with no other evident cause for raised troponin. We identified 448 patients with no known cause for raised troponin (e.g. heart attack). They were age and gender matched and put into 4 groups based on increasing severity of kidney disease (no kidney disease, mild kidney disease, moderate kidney disease and severe kidney disease).

Overall, 64% of patients with kidney disease had troponin concentrations above the threshold for a heart attack and with increasing severity of kidney disease, troponin values increased. Our results also showed kidney disease was the strongest predictor of elevated troponin out of other recorded comorbidities. This indicates that the current threshold value used for defining heart attack is not appropriate if the patient also has kidney disease. New thresholds that take a patient’s other diseases into consideration are required.
Summer Studentship – Finalists

Nathanael Lucas

Bacteraemia in Neutropenic Cancer Patients: Risk Factors for Specific Isolates

Supervised by: Dr Robert Weinkove
                Dr Michael Humble

Sponsor: The Wellington Medical Research Foundation (Inc)

Fever is often the first sign of infection in patients with low white blood cell counts after chemotherapy – a condition called ‘febrile neutropenia’. Febrile neutropenia can affect 10% of patients after chemotherapy, is life-threatening, and requires urgent antibiotic treatment. Because blood results are not immediately available, all patients initially receive an antibiotic with broad activity against many bacteria. Selecting the best antibiotic for this purpose requires knowledge of the most common infections.

To identify the organisms causing febrile neutropenia we reviewed all 1139 positive febrile neutropenia blood cultures at Wellington Hospital between 1976 and 2012.

Our results show a change in the organisms causing febrile neutropenia over time, skin-associated bacteria predominating most recently. This is likely due to increased use of indwelling lines in the veins, placed to facilitate blood tests and chemotherapy administration. Patients with a prior skin-associated bacterial infection were at high risk of a subsequent one.

We also show that certain cancers are associated with specific organisms. Patients with acute myeloid leukaemia were at increased risk of viridans streptococci, an organism associated with dental decay. Coagulase-negative staphylococci, organisms that live on the skin, were more common in acute lymphoblastic leukaemia. Pseudomonas aeruginosa, which thrives in moist environments, was more common in patients with lymphomas, chronic lymphocytic leukaemia and myelodysplasia.

Our study will help select the best antibiotics for treatment and prevention of infections after chemotherapy. Targeted measures, such as careful dental care in acute myeloid leukaemia and antibiotics against skin bacteria in selected patients, may improve outcomes.
Summer Studentship – Finalists
Joshua Chamberlain

HEPATOCELLULAR CARCINOMA: WHY ARE THERE SURVIVAL DISPARITIES BETWEEN MĀORI AND NON-MĀORI IN NEW ZEALAND?

Supervised by: Associate Professor Diana Sarfati
Dr Jason Gurney

Sponsor: The Cancer Society of New Zealand – Wellington Division Inc

In New Zealand there are significant ethnic disparities in liver cancer incidence and mortality. Hepatitis B infection is an important cause of high rates of liver cancer amongst Māori, but this is changing over time and the causes of high mortality have been less well established. The objectives of this study are to investigate time trends in incidence disparities and possible relationships with risk factors, and to investigate differences in treatment pathways, comorbidity and care which may impact on disparities in survival.

Cohorts of the entire New Zealand population for 1981-86, 1986-91, 1991-96, 1996-2001, and 2001-04 were created and probabilistically linked to cancer registry records to look at trends in incidence by ethnicity over the five cohorts. In addition, a notes review of 97 Maori and 92 non-Maori liver cancer patients in New Zealand’s North Island was conducted.

Liver cancer incidence was higher among Maori for all time periods. The pooled annual rate for Maori males (19.6, 95%CI 17.1-22.1) was four times that of European/Other (4.1, 95%CI 3.8-4.4) and for Maori females (6.1, 95%CI 4.6-7.6) was nearly three times their European/Other counterparts (2.1, 95%CI 1.9-2.3). There were no significant differences in the treatment of Māori and non-Māori patients with primary liver cancer. The prevalence of hepatitis B among Māori patients (56%; 95% CI 45%-67%) was more than double that of non- Māori (27%; 95% CI 19%-36%).

Liver cancer remains an important health problem particularly for Māori men. Efforts to improve coverage of screening for Hepatitis B and surveillance of those with chronic hepatitis should be a priority to immediately address the large inequalities currently found in liver cancer epidemiology.
Summer Studentship – Other Reports

Nishanthan Ramachandran

Review of the Evidence for Effectiveness of Screening Programmes for Congenital Colour Vision Deficiency

Supervised by: Dr Graham A Wilson
Associate Professor Nick Wilson

Sponsor: Mr Dick Georgeson
Wellington Medical Research Foundation Inc

Screening programmes should be established with good quality evidence and be subject to evaluation. This review analysed the literature on colour vision and distance vision screening in school-age children with respect to the established Wilson and Jungner criteria for screening programmes. We found that congenital colour vision deficiency (CCVD), i.e. colour blindness present from birth, has not been shown to increase risk of road traffic crashes and is not a preclusion to driver licensing in most developed countries. The occurrence of CCVD has been used to limit entry into certain occupations; however, the value of screening of school boys concerning occupational preclusion is questionable. Stronger evidence exists indicating no association between CCVD and level of educational achievement. The screening test is a valid one, though the only intervention we identified for CCVD was the availability of specific computer programmes to aid colour perception.

Given that CCVD screening is usually combined with screening for distance vision, we also considered reviews of this intervention. This literature suggests that in countries with low access to health care and in populations where short-sightedness is highly prevalent such screening is probably worthwhile, but this is unlikely to be so in areas with comprehensive healthcare and where the prevalence of short-sightedness is low. In conclusion, the existing evidence is in favour of discontinuing (or not adopting) colour vision screening in all countries and for discontinuing school-age distance vision screening in at least those countries with adequate levels of access to primary health services.
Stewart Graham

DO DHB MATERNITY PROTOCOLS MATCH THE NEW NATIONAL MATERNITY REFFERAL GUIDELINES?

&

REFERENCE TO MĀORI AND PACIFIC ISLAND WOMEN IN MATERNITY PRACTICE/PROTOCOLS ACROSS DHB’S

Supervised by: Dr Jane MacDonald
Associate Professor Bev Lawton

Sponsor: The Maurice & Phyllis Paykel Trust

In New Zealand, pregnant women are usually looked after by a midwife; if a problem arises during pregnancy which is outside of the scope of the carer then the carer should refer their client to a specialist, which is usually an Obstetrician. In early 2012 national guidelines for what conditions referrals are necessary for were released by the Ministry of Health.

Each District Health Board (DHB) has its own set of treatment protocols for guidance in specific situations. We wanted to see if these local treatment protocols match the new referral guidelines, and because Maori/Pacific Islanders and teenagers are at higher risk of serious problems during pregnancy we wanted to see if they are focused on in local protocols. It has been recommended that all DHBs have massive transfusion protocols to deal with large blood loss so the presence of one was checked in each DHB.

I looked at six specific maternity protocols from 14 of the 20 DHBs as the other six did not wish to participate in my study. Protocols were not publically available in these six DHBs. The DHBs didn’t always have the six protocols I was looking for.

Protocols were mostly consistent with the national guidelines but sometimes vague and longwinded, some were unclear and some recommended more care than recommended, which is a positive result. But protocols were often out of date and didn’t focus on Maori/Pacific Islanders except in passing for being higher risk for diabetes; there was no focus on teenagers.
Pathology is central to medicine and pathologists play an important role in diagnosing and monitoring disease. There is a shortage of pathologists in Australasia. The Royal College of Pathologists of Australasia (RCPA) states that 200 more pathologists were needed in Australia to ensure the high quality of patient care that and New Zealand needed another 65 pathologists to bring it to the Australian ratio. Our aim is to identify the factors which influenced registrars to choose or reject pathology and correlate these with prior findings to improve the recruitment of pathology registrars in Australasia.

We devised 2 internet-based questionnaires on Survey Monkey to investigate Australasian registrars’ attitudes towards choosing a career in pathology. Our two populations were non-pathology registrars (n=529) and pathology registrars (n=171) working in Australia and New Zealand. Each survey explored 5 aspects: demographics, career decision making, exposure to pathology during medical school, perception of pathology, views on stereotypes of pathologists and their own perception of pathologists. It consisted of multiple choice, scaled and qualitative responses.

Respondents from both groups agreed with the statement that “pathology is commonly seen as an unfavourable specialty”. The main reason for not choosing pathology was “prefer patient contact” (68%). The main reasons for pathology registrars to choose pathology were the attractive nature of pathology practice (58%) and a good lifestyle (56%).

The pathology course in medical school positively influenced the pathology registrars in choosing their career. The course did not influence non-pathology registrar's career decision making. Non-pathology registrars also considered pathology course at medical school as “boring” and “repetitive”.

Pathology and pathologists were associated with stigma and low prestige. Registrars were discouraged by their friends and family from choosing pathology, stating that they are not "real" doctors and their talents and skills, especially communication skills would be wasted if they chose pathology as their career. Pathology registrars also reported a lack of support.
and respect from colleagues of other specialties. Furthermore, non-pathology registrars thought “pathologists prefer working alone” and “pathology is for people with communication difficulties”. This showed the non-pathology registrars’ incomplete perceptions of pathologists which may have led them to rejecting pathology as a career.

One theme specific to Australasia was that the number of exams and workload required of pathology registrars and their low pass rate caused registrars to have an unfavourable view on pathology.

To improve recruitment to pathology we propose that undergraduate pathology courses should employ enthusiastic and approachable pathologists who convey the patient centred, and communication roles of pathologists. Students should be exposed to the nature of pathologists’ work and their role in patient care to form a correct conception of pathology.

In conclusion, from the survey, it can be acknowledged that changing students’ attitudes and preconceptions of the pathology career, combined with making pathology course more enjoyable are important in addressing the relative shortage of pathologists in Australasia.
Patients coming to hospital for surgery sometimes have low iron levels in their blood. Iron is needed to make haemoglobin, which carries oxygen around the body. When patients lose blood during surgeries like hip and knee joint replacements (orthopaedic surgeries), haemoglobin goes down. There is a risk of anaemia, which makes people tired and take longer to recover from surgery. Some patients are given blood transfusions, using blood from other people, to correct the anaemia, but this is expensive and comes with some risks. If a person is low in iron, giving an iron infusion (a drip) into the blood before surgery could raise haemoglobin levels. The extra iron stays in the body, and helps to rebuild haemoglobin levels after surgery.

This study was to find out if a new programme (based on Australian guidelines to reduce blood transfusions) could be put into place in Palmerston North Hospital. We aimed to find out who would need iron, whether they could get it, and how satisfied patients were with the programme. A four week trial programme was run, looking at these questions.

Overall, the patients most likely to need blood transfusions were the joint replacement patients. This group also had the longest time between having iron levels tested and having surgery. This made them the easiest to treat. A pilot programme will now be set up, targeting orthopaedic patients. Over time, we hope to see blood transfusions reduce through this iron therapy programme.
The project that I completed for the 2012/13 Wellington summer studentship programme focused on symptoms of child Obstructive Sleep Apnoea (OSA). OSA is a common sleep related breathing disorder and can occur in both adults and children. In children many of the presenting symptoms - snoring, poor sleep, daytime tiredness, inattention or hyperactivity are often passed off as ‘children just being children’. However, if left undiagnosed and untreated, OSA can have many consequences ranging from poor school performance to medical complications.

An important part of diagnosing someone with a disease is identifying risk factors that make them more likely to have that disease.

Our aim was to determine if symptoms of childhood OSA are more common in children whose parents have OSA. This in turn would help improve Doctor’s ability to diagnose the condition in children. We assessed children between the ages of 4 and 15 whose parents have OSA and compared these to children whose parents did not have OSA.

We used a questionnaire that parents filled out about their children’s sleep and medical history. This questionnaire asked them 18 questions about 5 groups of common symptoms that are seen in children who have OSA. We compared the results between the two groups and found consistently that the children whose parents have OSA showed more symptoms of childhood OSA than the group whose parents did not have OSA.

Questionnaires can only give us a good indication and cannot say definitively whether a child showing symptoms of childhood OSA has the condition or not. Questionnaires can only show us an association and cannot identify whether there is a genetic or environmental reason why we are seeing the results produced in this study. This research encourages further study with physical examination and diagnostic tests that can provide information around causes and diagnosis to further this project’s findings.

What this study shows is that it is important for clinicians to be aware that children who have parents with OSA are at a greater risk of having OSA symptoms at a young age (4-15 years.) Therefore we encourage doctors to ask about symptoms of OSA in the children of their adult OSA patients.
The Tairawhiti region is an area of New Zealand with relatively high levels of socioeconomic deprivation which impacts on the health of its population. Māori, Pacific peoples and those with lower socioeconomic status experience much higher levels of chronic disease, earlier in life, resulting in poor health and lower life expectancy. This study investigated communication between health and social service providers in relation to care for people with chronic conditions in Tairawhiti. The aim was to examine the existing methods of communication between health and social service providers, as well as to identify areas for improvement. Seventeen interviews were conducted with a variety of individuals involved with different aspects of chronic condition management. The interviews were transcribed and analysed for themes. Two main themes were identified: communication and coordination. Participants in this study described minimal communication and coordination between services. Reported barriers to communication were having trouble getting hold of people, lack of feedback and delays in receiving feedback, especially from the hospital. Minimal inter-agency communication was also related to the fact that the current methods of communication were believed to be an inefficient use of participant’s time. Suggestions for improvement, having a shared clinical record and more face-to-face meetings, were consistent with the literature around improving interagency communication. It was apparent there was a need for further New Zealand research about inter-agency collaboration, in order to inform organisations at all levels of service delivery the importance of investing in communication.
Newtown Union Health Service (NUHS) is a not-for-profit, community-based, healthcare provider to people of high needs and low income. NUHS recently reviewed its fee for service structure. As a result, youth aged 6–17 years who had until then, received free care were charged $10 per doctor consultation.

The aim of this study was to investigate the impact of fee changes on access to service at NUHS for patients aged 6–17 years. The study was commissioned by NUHS to provide an evidence-based approach for future decision-making around fees.

This study used quantitative and qualitative methods. Patient demographic information and utilisation of health care services before and after fee changes were extracted from the NUHS database. Four focus groups, which included 12 people, were conducted. The focus groups were audio-taped, transcribed and analyzed to identify key themes.

After the fee change there was a 15% reduction in the number of 6-17 year olds accessing NUHS and a 14% reduction in the total number of contacts that 6-17 year olds had with NUHS. Focus groups indicated that fees were a major barrier to youth access to NUHS. Other barriers identified were: unavailability of booked appointments, waiting time, lack of communication between a) NUHS and the community and b) NUHS staff and patients, not seeing the same doctor every consultation, the waiting room environment, prescription costs, and transport.

To conclude, consultation fees contribute substantially to the total costs that families face when accessing health care. The current fees are a significant barrier to 6-17 year olds accessing NUHS.
Ashleigh Parrott

**SERUM BICARBONATE AS A BIOMARKER OF REPETITIVE HYPERCAPNIA IN PATIENTS WITH OBSTRUCTIVE SLEEP APNOEA**

**Supervised by:** Associate Professor Alister Neill
Dr Angela Campbell

**Sponsor:** The New Zealand Asthma Foundation

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**Background** Obstructive sleep apnoea (OSA) is a chronic condition that is highly prevalent but many cases remain undiagnosed. A blood biomarker of OSA might offer additional information to current diagnostic measures that are resource intensive. During sleep sufferers of this condition experience repetitive upper airway obstruction and hypoxia (low oxygen levels reaching body tissues). Simultaneous rises in carbon dioxide (CO2) to abnormal levels in the blood, called hypercapnia, are proportional to changes in bicarbonate (HCO3-). We hypothesize that HCO3- in blood measured during morning venepuncture might be elevated and better reflect risk for the development of adverse outcomes of OSA by correlating with repetitive changes in CO2 overnight.

**Methods** Patients with suspected OSA underwent arterial and venous blood sampling following recruitment from Wellington Public Hospital and before undergoing diagnostic testing (polysomnography PSG). Transcutaneous CO2 monitoring was included as an indirect measure of arterial CO2 overnight. Blood sampling one month following treatment initiation is intended with the continuation of recruitment and data collection. Change to biomarker levels will be compared with a traditional diagnostic index, transcutaneous CO2 measures and treatment compliance.

**Results** This preliminary study has established an appropriate methodology for noninvasive monitoring of the surges in hypercapnia that occur overnight. At the completion of the studentship, a total of 13 subjects have consented to the study, six subjects have undergone diagnostic testing and one has completed CPAP initiation. Mean HCO3- levels at baseline (n=12) were not elevated within the normal range. Data collection is continuing to look for any changes following treatment and to increase the sample size.

**Conclusions** With continuation of this study bicarbonate or alternatively carboxyhemoglobin (COHb) in blood may be useful for informing treatment decisions. An ideal biomarker will simplify diagnosis, assist the prioritisation of patients and improve with adequate treatment.
Cerebrovascular carbon dioxide reactivity is a measure of how CO2 alters blood flow in the blood vessels which supply the brain with oxygen and nutrients. Impaired CO2 reactivity is known to be associated with an increased risk of stroke, TIA ‘mini-strokes’ and brain hemorrhage. CO2 reactivity has the potential to be used for assessing how healthy a subject’s brain vasculature is in patients suffering from hypertension, heart failure, carotid artery stenosis and other blood vessel diseases. The ability to accurately measure CO2 reactivity in at risk patients is vital, as it would possibly allow early detection, better treatment and maybe even prevention of cerebrovascular diseases. We sought to find out whether two currently used methods of measuring CO2 reactivity, the classical ‘Rebreathing’ method and a newer technique involving exposure to CO2 enriched air and controlled hyperventilation, provided us with comparable results. At this time we cannot say which method is better, as both have advantages and disadvantages associated with them. The rebreathing method does not require a pressurized gas-canister full of known concentration CO2 but takes longer to perform, can cause the subject to feel claustrophobic and is more difficult to consistently complete. The in-house method is faster and provides a wider range of readings but was found to place more stress on the subject because it requires a period of hyperventilation, causing subjects to feel nauseous. However, while we found that each method provided consistent results in themselves, we found no association in the results given between methods.
Jennifer Walker

NEW ZEALAND RHEUMATOLOGISTS’ OPINIONS AND ATTITUDES TOWARDS COMPLEMENTARY AND ALTERNATIVE MEDICINE

Supervised by: Dr Rebecca Grainger

Sponsor: The Wellington Medical Research Foundation (Inc).

Complementary and Alternative Medicine (CAM) is defined as the diverse group of practices and therapies not considered part of conventional medical practice [1]. People with chronic, painful musculoskeletal conditions have a high prevalence of CAM use. Reports show that some patients do not tell their doctors about their CAM use because of fear of disapproval. This study aimed to assess the attitudes of New Zealand Rheumatologists towards patients’ use of CAM.

Prior to surveying New Zealand Rheumatologists, a systematic review of the current literature was performed, which concluded rheumatologists held variable attitudes towards CAM, depending on the specific type of therapy.

Next all currently practicing New Zealand rheumatologists were invited to participate in an online survey regarding their attitudes towards six common CAM categories, for example Spinal Manipulation or Body work. Respondents were asked about their personal and practice demographics, their familiarity with CAM, their belief in its efficacy and their likelihood of recommending it as a therapy in the context of chronic back and joint pain.

Of the 58 rheumatologists sent the survey, 36 responded (response rate 62%). Meditation practices were perceived to be the most beneficial (72%), followed by acupuncture (61%). Energy medicine was the least familiar, least likely to be recommended and perceived by most respondents to have little benefit.

Overall it was concluded that New Zealand rheumatologists’ hold favourable attitudes towards some CAM therapies but also have reservations regarding others. Further rigorous research is required to determine the efficacy of CAM therapies and allow rheumatologists’ to develop evidence based opinions on their patients’ CAM use.

Ciaran Edwards

RABIES EXPOSURE RISK FACTORS AND RABIES POST EXPOSURE MANAGEMENT RECEIVED BY INTERNATIONAL TRAVELLERS PRESENTING FOR CARE IN NEW ZEALAND

Supervised by:  Dr Jenny Visser
Sponsor: SANOFI
University of Otago Research Committee

363 travellers with a history of potential rabies exposure and management were included in this study. Our data shows that these travellers are typically aged 16-30 years (44.6%), NZ residents (81.1%), who have travelled as tourists (64.5%) or were ‘Visiting Friends and Relatives’ (16.6%). Trips were usually less than 1 month duration (55.3% a median of 28 days). Most exposures occurred in Thailand (31.1%), China (13.2%) or Indonesia (12.3%). Travellers would most likely be potentially exposed to rabies by a dog (59.5%) or monkey (28.7), the injury to be on the lower (50%) or upper limb (43.4%). The majority (89.4%) of all exposures were WHO category III (penetrating bite, scratch with blood or lick to open wound). Travellers are more likely to have received rabies management advice at the pre-travel consultation if they saw a travel medicine specialist (96.1%) compared to a GP (53.3%). Overall, few received rabies Pre Exposure Prophylaxis (16%). 16.7% of travellers travelled overseas without travel insurance. Travelers who received rabies post exposure treatment in the country of exposure most (81%) received vaccine (62.6% on day of exposure), but few received Rabies Immunoglobulin (20.3%) even when indicated. Appropriate post exposure rabies vaccination and RIG administration were high in NZ. In conclusion, there is room for improvement in pre-travel advice on rabies exposure, especially in those travellers being seen by general practitioners. Travellers exposed to rabies are not being managed optimally and according to WHO guidelines in the country of exposure and are at risk of rabies infection.
In response to a survey, medical students suggested that their interest in their course decreased and their stimulation to learn about medicine waned during the 4th year of the program. We were provoked by this data to learn more about what motivates students to learn in this phase of the program and what might either not be fully motivating, or actually de-motivating, some students. In order to do this we conducted one on one interviews with seventeen senior medical students. Interviews were performed either in person, over the phone or by using e-conferencing. The questions were structured to allow flexibility within the interview and get the greatest depth of information possible.

The answers to these questions were collated into five common themes. The core ideas within these themes are as follows. Students were motivated or correspondingly de-motivated by the length of the course, the system of medical training, their life outside of study, the change in their perspectives over the years of the degree and the variance in teachers and teaching methods.

From our interviews it is clear that the current structure of medical education has inherent features which can decrease student motivations. What can the faculty do, if anything, to resolve these problems?
Although the identification and treatment of excessively high average blood pressure dominates clinical management of chronic blood pressure disease, there is growing recognition that elevated blood pressure variability (BPV) across a wide range of timescales is associated with poorer health outcomes (e.g. stroke incidence and post-stroke outcome). These observations indicate that other aspects of blood pressure, such as BPV, are also valuable for population risk stratification. Narrowly focussing on blood pressure, however, neglects the dependence of the brain on perfusion (blood flow) rather than blood pressure per se. Therefore, it is conceivable that cerebral blood flow variability (CFV) underlies the association between BPV and cerebrovascular disease.

The purpose of this study was to examine the inter-individual (population-level) relationships between BPV and CFV under conditions of normal and blunted (calcium channel blockade) cerebrovascular control. Haemodynamic data was recorded under resting conditions from 12 subjects treated with a calcium channel blocker (60 mg oral Nimodipine) and 11 subjects treated with a placebo pill. Using mathematical approaches we derived information about BPV and variability in middle cerebral artery flow velocity (i.e., CFV). The major findings were that spontaneous BPV is positively related to CFV across individuals, and treatment with a calcium channel blocker reduces both BPV and CFV despite some impairment of cerebrovascular control. These findings raise the possibility that CFV may be an explanatory factor in the association between elevated BPV and adverse cerebrovascular outcomes, and support the possibility of using CCB to improve hemodynamic stability under resting conditions.
Luarell King  

THE ROLE OF CULTURE IN PACIFIC SUICIDE PREVENTION

Supervised by:  Ms Nandika Currey  
Sponsor: The Health Research Council

We reviewed literature to find out what young and older Pacific people’s cultural beliefs, and thoughts were on mental health, mental illness and suicide, and what this meant for suicide prevention. In NZ, Pacific people make up 6% of the total population, but are more affected by mental illness and suicide than other groups. For Pacific people, health and wellbeing are inseparable and entwined with cultural beliefs and practices. Traditional Pacific views on mental illness are about spirituality, breach of tapu (sacredness) and disharmony of highly significant relationships. When Pacific people migrate to NZ, it’s believed that pressures like supporting big families and breakdown of social networks can cause self-identity confusion, culture conflicts and mental illness. Suicides in young Pacific people living in NZ have increased; this is believed to be from traditional social structures breaking down, urbanisation and isolation. Pacific culture is layered and shapes how Pacific people perceive and deal with mental health, illness, recovery and suicide. The differences between traditional Pacific culture and NZ-Pacific culture affect how Pacific people view mental illness and suicide. Since young Pacific people have different experiences to Island-born Pacific adults, we need to better understand and include their cultural beliefs and values into suicide prevention activities. Including all Pacific people’s views, including young ones’ is very important if we are to better understand how to support people with mental illness and prevent suicides in NZ.
Anna Marshall
THE NATURE OF CIGARETTE PACKS IN NEW ZEALAND; 2012/13 PACK COLLECTION STUDY

Supervised by: Professor Richard Edwards
Dr George Thomson

Sponsor: ASPIRE 2025

We carried out a collection of discarded cigarette packs to document the nature of tobacco products in New Zealand. With the possible introduction of plain packaging and the goal of a smoke-free Aotearoa in 2025, it is beneficial to understand the current tobacco trade in New Zealand, particularly the packaging and sources of packs. We looked at the proportion of foreign packs, the distribution of graphic health warnings, and colours, brands and descriptors amongst NZ packs. Where appropriate we compared the results with a similar NZ study from 2008/09.

We received 1776 packs suitable for the analysis, collected from around the country. 103 packs of those collected were foreign, most commonly from Australia (38.8%) and China (26.2%). We estimated a $78.5 million loss in tobacco-related tax from this proportion of foreign packs. There was an equal distribution of the graphic health warnings, implying cigarette companies are following regulations (unlike the 2008/09 study). British American Tobacco was the most frequent tobacco company (70.2%) among collected packs, with Pall Mall being their most popular brand (23% of all packs). This is a change from 2008/09 where Holiday was more common (22%). This could be due to Pall Mall becoming cheaper than Holiday. This was supported by evidence that the brands whose share of the packs increased between 2008/09 and 2012/13 were all low cost brands, and those that had decreased were mostly moderate or high cost brands. Colour descriptors (any word or phrase used to describe the cigarettes) were the most commonly used form of descriptors, with an increase in rate since 2008/09. There was also an increased proportion of other descriptors used, such as “distinct”, “original”, and “baseline”, over the last four years.
Hayley Lewis-Pullin

PILOTING A SERVICE INTEGRATION TOOL FOR CHILDREN IN GISBORNE: THE OUTCOME, REFLECTIONS, AND SUGGESTIONS

Supervised by: Professor Tony Dowell
Dr Bruce Duncan
Dr Patrick McHugh

Sponsor: Tairawhiti Complementary & Traditional Therapies Research Trust

Tairawhiti, New Zealand has recorded poor health statistics for children. Previous research shows a need to measure how connected health and social services are, in hopes this will lead to better wellbeing for children in the area. This research pilots a new tool that measures the integration of services, considering how useful the tool is for workers. Also, it lets participants discuss strengths and weakness around the way services currently work with each other.

The tool has a mixture of checkboxes, and open questions so participants can express themselves. It was trialed on 32 different health providers in Gisborne, with ranging backgrounds. The questionanare was acceptable to respondents and prompted discussion and debate about child health issues. Participants wanted more information on the politics, planning and funding of healthcare, and interviews were undertaken with Tairawhiti district health board managers to seek their perspective.

The main things shown by these research were 1) the tool was successful and thought provoking 2) people want ways to communicate that save time and broaden their knowledge 3) people believe health is a complex issue and want to tackle the big picture together.

Further recommendations centre on 1) ensuring that integrated care assessment has policy applications, 2) finding ways for service to communicate in a timely and effective manner 3) creating an online version of the assessment tool. More details can be found in the paper. It is believed that the tool has inspired people to reflect and think of how to improve healthcare.
This study aimed to describe the portrayal of violence, weapons, and antisocial behaviour in music videos. It involved the examination of 861 music videos which had been shown on New Zealand television.

A key finding of the study was that over a third (39%) of these music videos portrayed at least one violence-related variable. More specifically, violence was portrayed in 24%, the presence of any weapon in 13%, any antisocial behaviour (e.g., vandalism) in 11%, any death theme in 9%, any suicidal behaviour in 4%, and any Goth culture theme in 3%.

Violence portrayal was significantly more common in videos in which alcohol was also portrayed (35% of those with alcohol), than when alcohol was not portrayed (21%). This was also the pattern for weapons portrayal at 20% and 11% respectively. A sizeable minority (42%) of videos with violence-related content also portrayed sexual content, of which a fifth (20%) had sexual content and violence-related content present in the same scene.

In conclusion, the portrayal of violence in music videos on New Zealand television is common, along with the portrayal of antisocial behaviour. Furthermore, this portrayal of violence is commonly associated with alcohol portrayal. These portrayals are concerning given the evidence that such exposure is likely to have negative influences on the behaviour of viewers. If society wishes to reduce levels of violence, there is a pressing need to consider approaches to reduce the levels of violence in televised music videos.
Amber-Jane Wood

Factors Influencing Use and Prescribing of Hypnosedative Medications

Supervised by: Dr Joanna MacDonald
Sponsor: The Wellington Medical Research Foundation (Inc)

A shared decision making model was used as the framework for this study, with psychiatric service users and psychiatrists participating in separate focus groups before combining together for a shared focus group.

Discussions were based on their attitudes, motivations and barriers to the use and prescribing of long-term hypnosedatives.

Four key themes were derived from the focus groups; the challenge of sleep disturbance in service users with mental health problems; the conflicts for service users and psychiatrists in trying to manage such problems; alternatives to medication to help with sleep problems; whose problem is it?

Key findings were that both groups demonstrated a lack of faith in alternatives due to limited effectiveness and also a lack of time to explore and persevere with them. This meant motivation was directed towards prescribing hypnosedatives as this appeared the easy option and yields reliable results. There was clear disagreement between the groups on who is responsible for the long-term prescribing, as well as strong questioning from both groups of the evidence base to which the prescribing guidelines are based upon, as this did not match user/professional experiences.

Follow up should involve a critical analysis of the prescribing guidelines as well as exploration of the barriers; lack of knowledge and time constraints, as possible targets of intervention to lessen the long-term prescribing of hypnosedatives.
Rosemary Claridge

General Practitioner Opinion of Weight Management Interventions Including Bariatric Surgery

Supervised by: Ms Lesley Gray
                Dr Maria Stubbe

Sponsor: Wellington Faculty of the Royal New Zealand College of General Practitioners

General Practitioners (GPs) are the first port of call for many New Zealanders when it comes to health care. In New Zealand an increasing proportion of the population are becoming overweight. Over 50% of New Zealanders are now overweight or obese. As GPs are likely to be the people to whom it falls to address these weight issues, it is important to find out their opinion on obesity and the different weight management strategies that are currently available.

This research project involved interviewing a series of twelve GPs in the Wellington region. The GPs were selected from a range of practices to represent Maori, Pacific, rural, urban and different income areas. Transcripts of these interviews were then analysed to identify common themes in opinion among the GPs.

The study found that GPs see themselves as very important in weight management for their patients; however they do not feel that the weight management strategies currently available are likely to be successful. They also felt that lack of patient motivation, and patient inability to follow recommended weight loss plans was a large barrier to weight loss success. This leaves them in a difficult position.

The GPs were also asked about their opinion on weight loss surgery. They felt that weight loss surgery is a very dramatic intervention which should be reserved for special, severe cases. However they did believe that the government should fund more surgery.

We can conclude from this research that GPs feel they are instrumental in weight loss, however they believe dealing with weight issues in their patients is an uphill battle.
How effectively can young people perform dispatcher-instructed cardiopulmonary resuscitation?

Matthew Beard

Supervised by: Dr Andrew Swain
Mr Andrew Dunning

Sponsor: The Heart Foundation New Zealand
The Wellington Medical Research Foundation (Inc)

Survival from out-of-hospital cardiac arrest is improved with bystander cardiopulmonary resuscitation (CPR). Bystander compliance can be increased when CPR instructions are delivered over the phone by the call taker at the Emergency Communications Centre. To date, little is known about a child’s ability to understand the instructions currently adopted in New Zealand. We aimed to assess a child’s ability to effectively apply these directions to an adult resuscitation manikin.

63 children aged 7 – 15 years with no previous training in CPR were placed in a room equipped with a mobile phone and an adult manikin. They called 111, and were automatically diverted to a senior emergency call taker. The call taker delivered resuscitation instructions used in Australasia. Performance was monitored using a laptop connected to the manikin.

Average compression depth increased with age from 8.6 mm to 41.7 mm for 7 and 15 year olds respectively. The recommended rate of 100 compressions per minute was achieved in children aged 10 years and older. Children aged 11 years and older consistently compressed the chest from 31 mm to the recommended target of 50 mm. Only one child could ventilate the manikin by mouth-to-mouth.

This study supports the concept that untrained children should perform compression-only CPR, as do untrained adults in New Zealand. From 11 years of age, untrained children could effectively perform CPR because they compressed the chest at an appropriate rate and a depth approaching 5 cm. A comparison study involving untrained adults is proposed.
Regional simulation studies have been used by hundreds of government entities to quantify the costs of hypothetical development trajectories. The typical scenario planning process compares a trend scenario to one or more alternative scenarios. In the trend scenario, historical development patterns are assumed to continue through the future. This is followed by the formulation of one or more alternative futures that vary with respect to future changes in land use and transportation networks. These scenarios are then assessed for their impacts on variables such as land use, transportation costs, health outcomes, and air emissions, allowing regions to adopt the most desirable growth trajectory.

Within the academic literature, perhaps the most extensively studied relationship is the one between urban form and vehicle emissions. Urban form has been shown to lower transportation energy use in a number of ways; it shortens trip length, makes public and active transport more viable, allows for fewer trips since multiple journeys are combined, and can also make automobile use less appealing. A more recent strand of academic research examines the relationship between health and urban form. Urban form influences health through three primary means: by influencing opportunities for active transport and thus physical activity levels, by influencing time spent driving and thus total activity levels, and by influencing exposure to outdoor urban air pollution. Recently, researchers have also focused attention on the link between growth patterns and climate change. Urban form influences household greenhouse gas emissions and plays a critical role in determining emissions from passenger vehicles.
Effective primary health care should be integrated, equitable, economically efficient and should reduce pressure on urgent and unplanned care facilities. Healthline is a telephone triage system; calls are free from landline or cellphone and are answered by experienced nurses using decision support software. Healthline’s aims include economic efficiency, integration, and equitable access.

We aimed to assess the use of Healthline by groups with high health needs. It was hypothesised that Māori, people living in high levels of deprivation and people living in rural or remote locations would be overrepresented in a sample of Healthline callers—further, that Māori and people living in high levels of deprivation would be more likely to call from cellphones—and that people from high deprivation areas would call about more serious symptoms.

We found that calls to Healthline did increase with deprivation level; non-Māori in the highest level of deprivation were overrepresented but Māori in the highest level of deprivation were under represented. Rural and remote callers were not over represented. Māori, Pacific Island people, and people from high deprivation levels were more likely to call from cellphones, with highest cellphone use by those in the highest level of deprivation. Level of deprivation was not significantly correlated with the seriousness of the complaint.

These results demonstrate Healthline’s contribution to equitable primary health care. Future studies should examine why some high needs groups (especially Māori living in the highest deprivation quintile, but also rural people) do not use Healthline as much as their health needs suggest.
The purpose of this Summer Student Research Project was to develop a database of all of the people infected with Hepatitis B (HBV) in the Capital Coast DHB. The database included demographic data such as age and ethnicity, laboratory data specific to HBV, antiviral treatment data and what kind of care they were receiving in the CCDHB. We also wanted to identify who was lost to follow up. Our main finding was that proportion of people with HBV in the CCDHB region (0.13%) is less than the estimated proportion for HBV for New Zealand (0.9%). We found that in the Hepatitis B population of the CCDHB, there were a higher proportion of males than females and a higher proportion of Asians than other ethnicities. We also found that there are a high proportion of Maori and Pacific Islander’s with HBV. We looked at lab tests results for a marker in the blood called Hepatitis E Antigen (HBeAg). We found that HBeAg positive patients were more likely to be younger, Asian, have a higher viral load and not be cirrhotic. We looked at the complications of cirrhosis, hepatocellular carcinoma (HCC) and liver transplant to see if there were differences for ethnicity and gender. A high proportion of Pacific Islander’s had cirrhosis. Males are more likely than females to develop HCC, and Maori and Pacific Islanders have a higher proportion of HCC than other ethnicities. Potential future research could focus on HBV status of migrants in the CCDHB region, and also look at vaccination uptake rates by ethnic groups to see if there is any variation.
Ashton Kelly
HARMFUL HOUSING CONDITIONS IN CHILDREN ADMITTED TO WELLINGTON HOSPITAL

Supervised by:  Professor Michael Baker
Professor Philippa Howden-Chapman

Sponsor:  NZ Centre for Sustainable Cities Theme

In 2009 New Zealand was ranked 29th out of 30 countries in the OECD for overall child health and safety. Research in child health and safety within New Zealand have shown that a large proportion of hospital admissions for children are preventable through decreasing their exposure to modifiable risk factors. For example it is well established that children living in crowded, cold and damp housing and those that are exposed to second-hand cigarette smoke have an increased risk of suffering from serious childhood diseases. In light of the potential that exists to improve adverse housing conditions, it makes sense to screen children admitted to hospital for exposure to these risk factors.

In this study we administered a questionnaire in a face to face interview with parents/caregivers of all children admitted to Wellington Hospital during a two-week period in July 2012. This questionnaire was designed to assess each child’s exposure to cold, damp and crowded housing and second-hand cigarette smoke. We found that one third of parents had noticed dampness and mould in their house, 50% stated that their house was colder than they preferred during the past month and 20% lived in un-insulated houses. We also found that 20% of children lived in overcrowded houses and 38% were exposed to second-hand cigarette smoke. Maori and Pacific children and those from lower socioeconomic backgrounds were much more likely to be exposed to these risk factors than New Zealand European children and those from higher socioeconomic areas.

This study has shown that a questionnaire-style approach is a relatively simple and fast way to acquire detailed information and that parents/caregivers are willing to spend time on a hospital ward engaged in such an interview. A shortened version of this questionnaire administered to hospitalised children would be an effective way of identifying those with exposure to poor housing conditions and to guide and evaluate strategies implemented to address these risk factors.
Epilepsy is a common condition defined by the occurrence of two or more seizures in an individual. It affects all ages, with the highest incidence in infants. An accurate diagnosis is important for the management of the condition but a diagnosis can require expensive and invasive investigations. The aim of our study was to compare the price of genetic testing with standard investigations into the cause of epilepsy in infants. Five participants with recognised genes were selected from the Wellington Epilepsy Research Group’s database. Their medical records were searched for investigations, admissions and specialist appointments related to their epilepsy. The total cost of investigations into the cause were calculated and compared with the cost of both a next generation sequencing (NGS) genetic panel and the price of individually testing PCDH19 and PRRT2, two common epilepsy genes. We found the present cost of genetic testing was comparable to the total cost of other causative investigations routinely performed in these infants. In these 4 infants the early finding of a recognised gene would have saved an average of $6695.15/per infant of subsequent unnecessary investigations. The costs of genetic testing was small compared to the total public hospital costs of these infants (average $84 402.83). The price of genetic testing is falling and its availability increasing as technology advances. At some point in the future, the cost of genetic testing will decrease enough that testing on day one will be a cost effective way to routinely investigate infants with epilepsy.
Venous Thromboembolism in Association with Antithrombin Deficiency in Wellington

Supervised by: Dr Julia Phillips

Sponsor: Leukaemia and Blood Cancer Foundation of New Zealand

Antithrombin Deficiency is a rare blood disorder that causes affected individuals to form dangerous blood clots, for example after long haul flights. Decisions regarding treatment for people with this disease are difficult because very little research has been published in this area. We examined the clinical data of all 25 people known to have this disease in Wellington, looking for information on any blood clots they developed and how well different treatments worked to prevent blood clots.

Compared to other research in Antithrombin deficient patients, our group had more clots, had them earlier in life, and had more clots associated with risk factors (like flying). Our patients may have had an unexpectedly high rate of clots because we have only diagnosed the most severe patients in Wellington so far. Patients that had received a filter device to prevent clots in the lungs all got clots in the legs, and a treatment to prevent clots in pregnant mothers did not always work. As a result of this study, we recommend against the unnecessary use of filter devices, and promote more aggressive treatment for pregnant mothers. Treatment guidelines for Antithrombin deficient patients should be developed so that patients can be given standardised therapy and results from larger numbers of patients can be compared to gain evidence for different treatments.
Household crowding describes situations in which houses are too small for the number of people who live in them. New Zealand research has shown that household crowding can increase the risk of infectious diseases. Throughout New Zealand’s history, household crowding has been an area of interest and concern to public health workers, governments and the general public.

The overall aim of this project was to review images that could give information about the history of crowding in New Zealand.

Images in the form of art and photography are often used to document aspects of life. Also, publications like newspapers and advertisements are valuable sources of historical information. It was thought that images like these could help to support research about household crowding.

The project involved looking at the quality and amount of images available from local and national image collections. A library of images that related to New Zealand’s housing in general was set up. This could be used in the future for a range of research projects. Next, images that related specifically to household crowding were examined. Common themes from these images were described.

It was found that images looked at were in keeping with other research on crowding in New Zealand which have described an overall decline in rates of household crowding. It was also found that images such as cartoons and newspaper clippings gave interesting information about people’s attitudes towards crowding throughout history, which may be missed in some other types of research.
To choose the best treatment for a patient’s illness, doctors use the results of studies done on different drugs. The doctor should be able to compare the results of these studies to their average patient with the illness. Tiotropium is a drug for Chronic Obstructive Pulmonary Disease (COPD). Studies have been done to show that tiotropium is safe to be used in patients with COPD. This report aimed to see whether these studies could be compared to the average patient, with COPD, seen by doctors.

Publicly available sources of information were reviewed for each study. The description of the population in the study was compared between sources and compared with information provided by the tiotropium manufacturer.

Very few studies correctly reported all the information about their study population and around half the studies directly contradicted the information provided by the manufacturer in their publicly available sources.

Due to the inconsistency in reporting of the information about the study populations, doctors cannot compare these studies to their specific patient with COPD. In particular, the safety of tiotropium in patients with heart or kidney problems is unknown.
Thromboembolism is characterised by a blood clot from a deep vein (Deep Vein Thrombosis (DVT)) breaking off and travelling through the bloodstream potentially becoming blocked in the lung, leading to a pulmonary embolism (PE). There have been limited studies undertaken addressing prolonged sitting at the computer for work and recreational purposes as a risk factor for developing venous thromboembolism (VTE).

To gain more information in this area, we conducted a questionnaire on 200 case participants who had a VTE in the last 6 months and 200 age matched controls that had, had a traumatic upper limb injury in the last 6 months. These patients were asked a series of questions regarding specific VTE risk factors along with work and recreational computer activities.

This report only presents findings for the cases. The most common risk factor for VTE was obesity (36%) followed by medical problems leading to immobility for more than 2 days (30%). 14% of cases reported prolonged seated immobility (sitting for over 10 hours in a 24 hour period AND a minimum 2 hours without getting up), with managers and professionals having the highest rates (21% and 19%, respectively).

This data allows us to compare with the age-matched controls to determine if sitting at the computer for work and recreational use is a significant risk factor for VTE. Until data collection for the controls is complete we are unable to assess the significance of any associations with VTE in the case group.