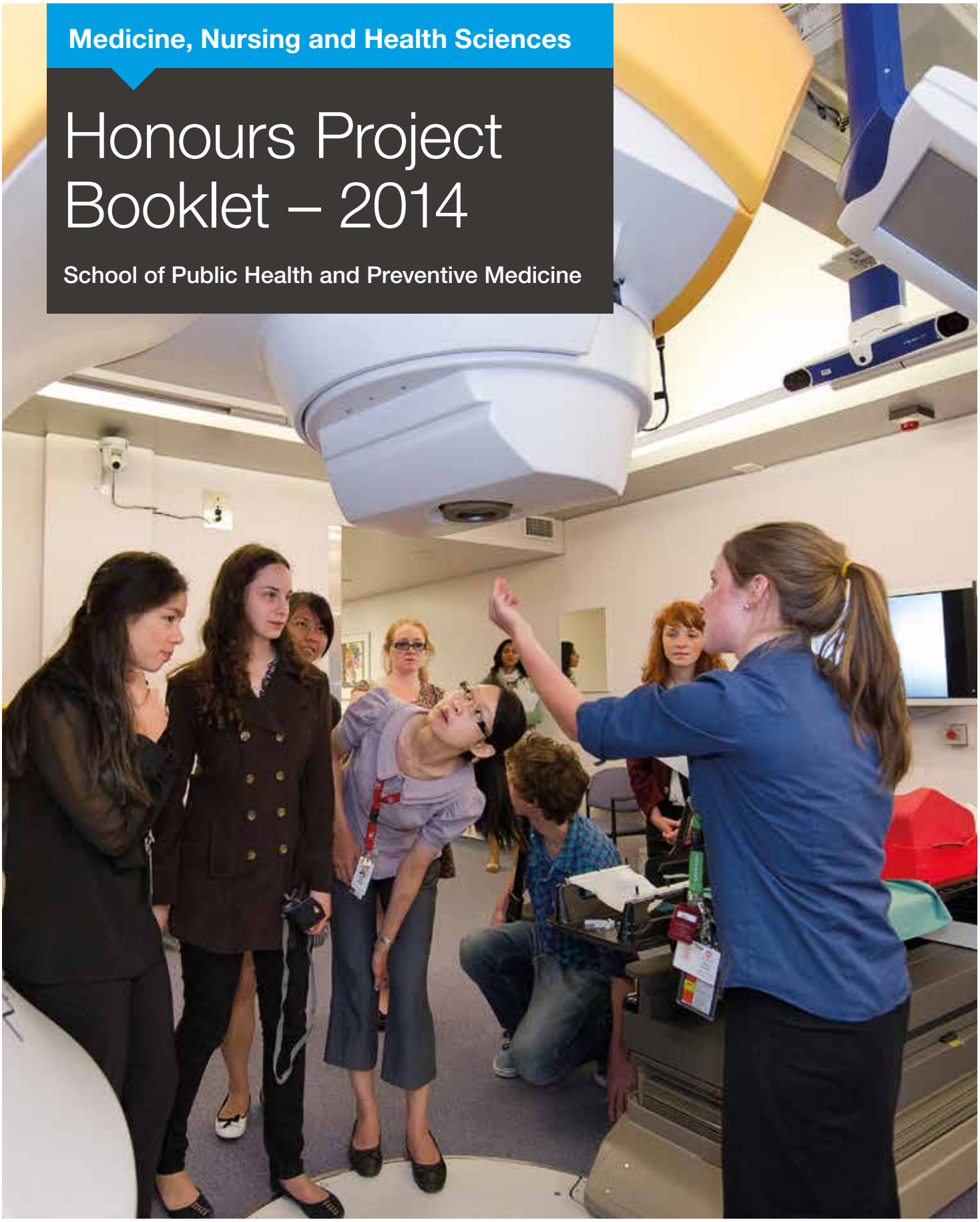
MONASH University

M8 Alliance

Medicine, Nursing and Health Sciences

Honours Project Booklet – 2014

School of Public Health and Preventive Medicine



Burnet Institute
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HEART & DIABETES INSTITUTE

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Table of Contents

Introduction

The School of Publication Health and Preventive Medicine (SPHPM) is the second biggest School within the Faculty of Medicine, Nursing and Health Sciences at Monash University. The School provides a strong research environment with millions of dollars in research funding. The SPHPM is well known nationally and internationally for providing leadership in understanding, advancement, education and practical application of the discipline of public health issues and practices thereby improving health outcomes for the Australian community.

The SPHPM principal expertise lies in epidemiology (including clinical epidemiology), biostatistics, health economics, large scale clinical data-management and health services research.

Our Honours program offers a career path into many areas of public health and clinical research. The School runs three Honours Streams.

- The Bachelor of Medical Science (BMedSc) (http://www.med.monash.edu.au/bmedsci/)
- The Bachelor of Biomedical Science (BBiomedSc) (http://www.med.monash.edu.au/biomed/honours/)
- The Bachelor of Health Science (http:// http://www.med.monash.edu.au/sphpm/honours/bhs.html)

More information about the individual programs and the application process can be found on the websites above

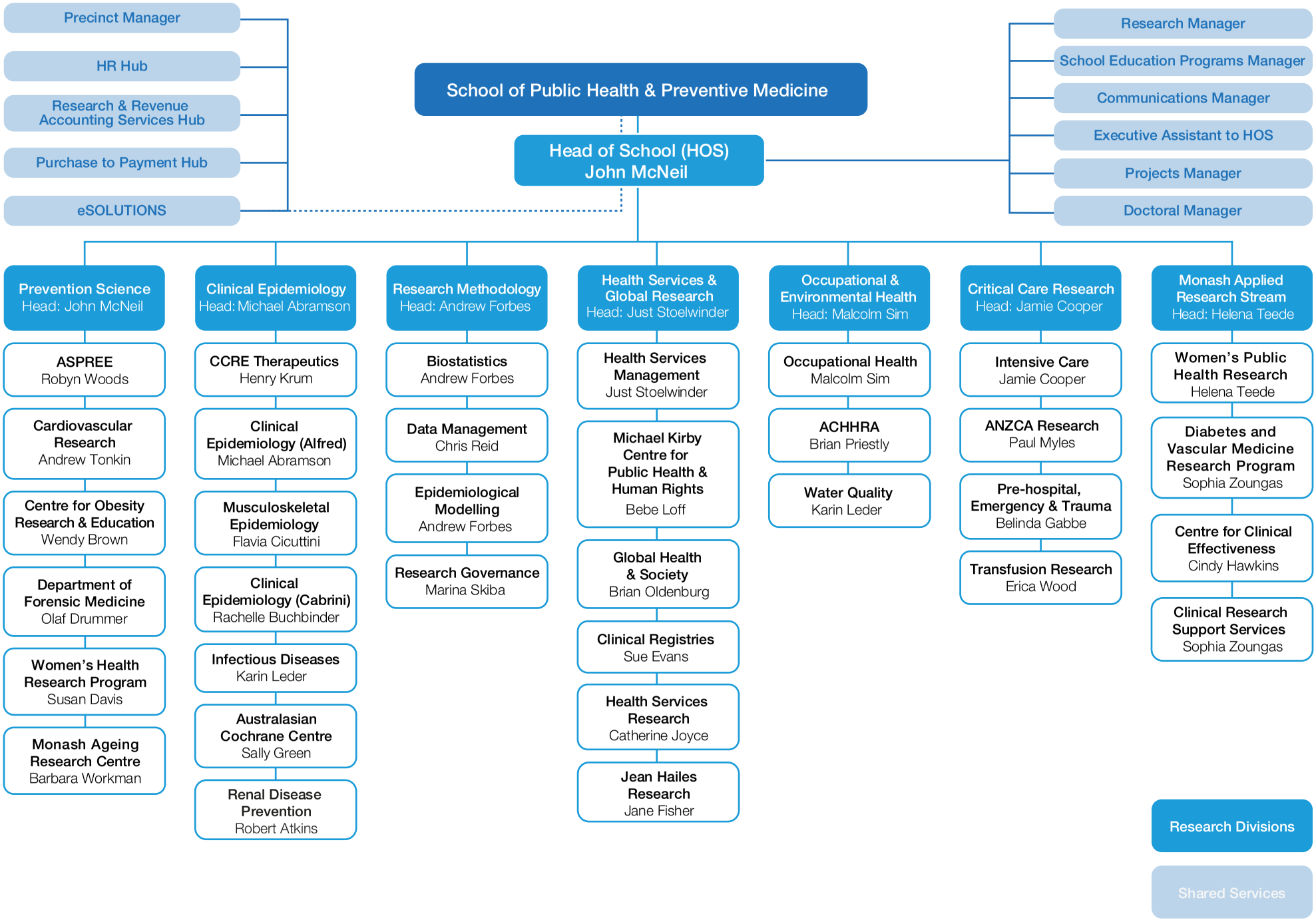
Honours Coordinators for the individual steams are:

- Bachelor of Medical Science (BMedSc) and Bachelor of Biomedical Science (BBioMedSc): Associate Professor Allen Cheng (Room 5.328, Level 5, Alfred Centre, Commercial Road, Prahran, 990 30259, allen.cheng@monash.edu; and Dr Jay Illesinghe (Room 5.327, Level 5, Alfred Centre, Commercial Road, Prahran, 9903029)
- Bachelor of Health Science: Dr Charles Livingstone, (Level 3, Burnet Building, Commercial Road Prahran, Charles.Livingstone@monash.edu, 990 31679)

We look forward to seeing you in the Honours Course next year. For any further queries please don't hesitate to contact us.

Associate Professor Allen Cheng

Dr Jay Illesinghe


Precinct Manager
HR Hub
Research & Revenue Accounting Services Hub
Purchase to Payment Hub
eSOLUTIONS
School of Public Health & Preventive Medicine
Head of School (HOS) John McNeil
Research Manager
School Education Programs Manager
Communications Manager
Executive Assistant to HOS
Projects Manager
Doctoral Manager
Prevention Science Head: John McNeil
ASPREE Robyn Woods
Cardiovascular Research Andrew Tonkin
Centre for Obesity Research & Education Wendy Brown
Department of Forensic Medicine Olaf Drummer
Women's Health Research Program Susan Davis
Monash Ageing Research Centre Barbara Workman
Clinical Epidemiology Head: Michael Abramson
CCRE Therapeutics Henry Krum
Clinical Epidemiology (Alfred) Michael Abramson
Musculoskeletal Epidemiology Flavia Cicuttini
Clinical Epidemiology (Cabrini) Rachelle Buchbinder
Infectious Diseases Karin Leder
Australasian Cochrane Centre Sally Green
Renal Disease Prevention Robert Atkins
Research Methodology Head: Andrew Forbes
Biostatistics Andrew Forbes
Data Management Chris Reid
Epidemiological Modelling Andrew Forbes
Research Governance Marina Skiba
Health Services & Global Research Head: Just Stoelwinder
Health Services Management Just Stoelwinder
Michael Kirby Centre for Public Health & Human Rights Bebe Loff
Global Health & Society Brian Oldenburg
Clinical Registries Sue Evans
Health Services Research Catherine Joyce
Jean Hailes Research Jane Fisher
Occupational & Environmental Health Head: Malcolm Sim
Occupational Health Malcolm Sim
ACHHRA Brian Priestly
Water Quality Karin Leder
Critical Care Research Head: Jamie Cooper
Intensive Care Jamie Cooper
ANZCA Research Paul Myles
Pre-hospital, Emergency & Trauma Belinda Gabbe
Transfusion Research Erica Wood
Monash Applied Research Stream Head: Helena Teede
Women's Public Health Research Helena Teede
Diabetes and Vascular Medicine Research Program Sophia Zoungas
Centre for Clinical Effectiveness Cindy Hawkins
Clinical Research Support Services Sophia Zoungas
Research Divisions
Shared Services

Prevention Science Division

Dr John Wentworth

Centre for Obesity Research and Education (CORE)

The Centre for Obesity Research and Education (CORE) is dedicated to understanding and optimally managing the chronic disease of obesity and measuring the effects of weight loss on health, quality of life and survival (Mission Statement 2011). It is an international leader in the study of bariatric surgery.

Project Title: Long-term diabetes outcome following substantial weight loss

Supervisor: Dr John Wentworth

Contact Email: wentworth@wehi.edu.au

Project description:

Gastric band surgery delivers better short-term diabetes outcomes than best medical care. However, it is unclear how durable these benefits are, particularly in people with long-standing diabetes. To address this, the student will collate long-term (>5 year) outcome data of a cohort of obese people with long-standing diabetes. The findings will clarify the impact of gastric band surgery in this important patient group.

Methodological approach:

The student will collate baseline and follow-up data from our clinic database, the patients and their general practitioner. Data will be analysed by regression analysis and simple t-tests to determine long-term changes in clinical and biochemical parameters.

Project Location:

Alfred Centre and Centre for Bariatric Surgery, Glen Iris

Dr Jennifer L Pilgrim

Department of Forensic Medicine (DFM)

The Department of Forensic Medicine (DFM) is the only university department in Australia to be set up in parallel with a forensic medical service facility. It operates as both a publicly funded institution and as an academic unit. This unique arrangement has contributed more to forensic medicine and the allied forensic sciences than any other facility in this country. Many of our staff members are world leaders in their disciplines and this has contributed to an international reputation for excellence.

Project Title: Drug-related death in children and adolescents

Supervisors: Dr Jennifer L Pilgrim and Professor Olaf H Drummer

Contact Email: jennifer.pilgrim@monash.edu

Project description:

The use of prescription drugs is on the rise. Research now shows that more people die from prescription drug overdoses than motor vehicle accidents in Australia. In the USA, there has been a 90% increase in drug-deaths amongst adolescents in the past decade. Anecdotal reports indicate that this may also be an increasing concern in Australia.

This project aims to investigate the involvement of drugs in death occurring in children and adolescents, including cases of intentional overdose and accidental drug toxicity. This is a descriptive epidemiological study which aims to identify potential risk factors in this vulnerable population in order to determine strategies for death prevention and the safer use of drugs.

Methodological approach:

A retrospective cohort study will be conducted using the National Coronial Information System to identify and analyse cases of relevance. These cases will be individually assessed based on the autopsy and toxicology results, and the circumstances and coronial findings relating to the death. The results will then be statistically analysed and compared to determine the involvement of drugs in each death and to elucidate potential risk factors for these occurrences. By establishing the risk factors and trends in this cohort, opportunities for death prevention can be identified.

Project Location:

Department of Forensic Medicine, at the Victorian Institute of Forensic Medicine, Southbank

Professor Susan Davis

Professor Robin Bell

Women's Health Research Program

The Women's Health Research Program undertakes research that leads directly to disease prevention, improved clinical care and better health outcomes for women in the community.

Project Title: The impact of anti-androgen treatment on cognition in young women with polycystic ovary syndrome: a pilot study

Supervisors: Professor Susan Davis and Professor Robin Bell

Contact Email: susan.davis@monash.edu

Project description:

Polycystic ovarian syndrome PCOS is a common hormonal disorder amongst young women and an important cause of infertility. It can be characterized by androgenic features including excessive facial and body hair, thin scalp hair and acne. The treatment of PCOS can include the use of anti-androgen medication.

Previous studies of cognitive function by our group have shown that the administration of testosterone to post-menopausal women to achieve blood levels of total testosterone seen in young women is associated with an improvement in verbal memory as assessed using a computer-based cognitive battery called CogState. We are interested to use a pilot study of young women being treated with anti-androgen medication for PCOS to assess the impact of this treatment on their cognitive function. This would be an unblinded cross-over study in which the women would act as their own controls.

Methodological approach:

Unblinded cross-over study of cognitive function in young women with PCOS being treated with an anti-androgen

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Professor Barbara Workman

Monash Ageing Research Centre

The research activities of MONARC are directed towards providing fundamental new knowledge and understanding into diseases associated with ageing and neurological disorders.

Project Title: Maximising Cognitive Abilities: A counseling intervention for people with mild cognitive impairment and their supporters

Supervisors: Dr Bridget Regan and Professor Barbara Workman

Contact Email: Bridget.Regan@monash.edu

Project description:

Our research team is interested in finding ways to help people who have problems with their thinking and memory such as those with mild cognitive impairment or early dementia. In conjunction with Alzheimer's Australia we are conducting a trial of a face to face counseling intervention. The aim is to assist people to function and remain engaged in our community for as long as possible.

We are keen to find an Honours student to assist us to evaluate the quality and consistency of the counselling provided, as well as acceptability of the program to clients and their supporters. We are also potentially interested in counsellors' perceptions of the strengths and weaknesses of the counselling program

Methodological approach:

Observational and qualitative methodologies including systematic observations of counselling sessions, and face-to-face semi-structured interviews and thematic analysis. The student will also have access to the project data and may be able to relate some of their measures to project outcomes such as client uptake of strategies and improvement in mood/quality of life.

Project Location:

Monash Ageing Research Centre (MONARC) - Kingston Centre, Cheltenham

Project Title: Long term effects of deep brain surgery on disability, motor function and quality of life for people with Parkinson's disease

Supervisors: Mary Danoudis

Contact Email: mary.danoudis@southernhealth.org.au

Project description:

As part of the Kingston Centre's Movement Disorders Program for people with Parkinson's disease who undergo deep brain stimulator surgery (DBS) to improve their function, testing is performed prior to surgery then at intervals up to 12 months after surgery. The testing, which includes measuring disability, mobility and quality of life, is conducted at the Kingston Centre Clinical Research Centre for Movement Disorders and Gait (CRCMDG).

There has been greater use of DBS surgery both in Australia and internationally. There is increasing evidence for the benefits of DBS in the first 12 months after surgery however the longer term effects on function, mobility and quality of life remain unclear. A small number of studies suggest that there is a decline in function by 2 years after DBS surgery, the reasons for which are unknown.

We plan to investigate the long term outcomes resulting from DBS surgery by testing at 2 years and up to 5 years after surgery.

The results from this study will assist in the understanding of the effects of stimulation on the neural mechanisms associated with PD.

Methodological approach:

People who had DBS surgery and have been tested at the CRCMDG will be invited to participate. They will be included if their stimulators are still in situ and active. They will be excluded if they have dementia or any health condition other than PD that is interfering significantly with their mobility. They will be tested in two conditions – with their stimulators turned ON then OFF. If they are on short acting PD medications, an additional 2 conditions will be tested -ON and OFF medications.

Quantitative methods will be used to test disability, mobility and health related quality of life. The Unified Parkinson's disease Rating Scale and Hoehn and Yahr staging tool will be used to measure disability; walking will be measured using an electronic walkway system; and the Parkinson's disease Questionnaire-39 will be used to health related measure quality of life.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Project Location:

Monash Ageing Research Centre (MONARC) - Kingston Centre, Cheltenham,

Ms Basia Diug

Dr Judy Lowthian

Prevention Science Unit

Looks into preventing disease, which is a challenging area of medical science. There are many unanswered questions about the right balance between community-based programs and a targeted approach to those at high risk of disease.

Project Title: Improving patient safety through improved warfarin management and education

Supervisors: Ms Basia Diug and Dr Judy Lowthian

Contact Email: Basia.diug@monash.edu

Project description:

Warfarin is a commonly used anticoagulant that is effectively prescribed for the prophylaxis and prevention of stroke. Nevertheless, warfarin has a narrow therapeutic index and necessitates requisite close monitoring, daily adherence and dose management. As a result, it remains a major cause of adverse events.

Medication related errors are responsible for 10-20% of all medically related adverse events and are common in both a community and hospital setting. In Australia, 2-4% of all hospital admissions are due to adverse drug events with an annual cost of approximately $350 million. Patients on long-term medications such as warfarin are particularly at risk of increased adverse events and hospital admissions. Poor patient education has been identified as an area that places patients at increased risk of bleeding and stroke.

Improving management of patients on long term therapies is important in the light of novel oral anticoagulants and our ageing population.

Methodological approach:

This project will involve sub-analysis of a completed case-control study of patient's warfarin knowledge and understanding, factors affecting compliance, and previous warfarin patient education.

This work is unique as the data has not been analyzed previously

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Centre

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Project Title: Medication complexity, polypharmacy and management of patients on long term therapies

Supervisors: Ms Basia Diug and Professor Michael Dooley

Contact Emails: Basia.diug@monash.edu

Project description:

Medications play an important role in a patient's daily health care and outcomes. Both adherence and concordance to medication schedules and regimen has been identified as complex in patients on long term chronic therapies. Adequate management in patients who are ageing or taking complex and multiple medications at one time can be complex.

Warfarin has been used clinically for over 70 years. However, recently three novel oral anticoagulants have been developed as alternatives in clinical practice. These new anticoagulants promise improved efficacy with decreased adverse effects. The place of warfarin and the newer novel oral anticoagulants in this setting remains controversial and widely debated. We aim to investigate whether the choice of anticoagulant affects the patient's medication complexity and how it effects management of these chronic therapies that are primarily self-administered in the community-based setting.

Methodological approach:

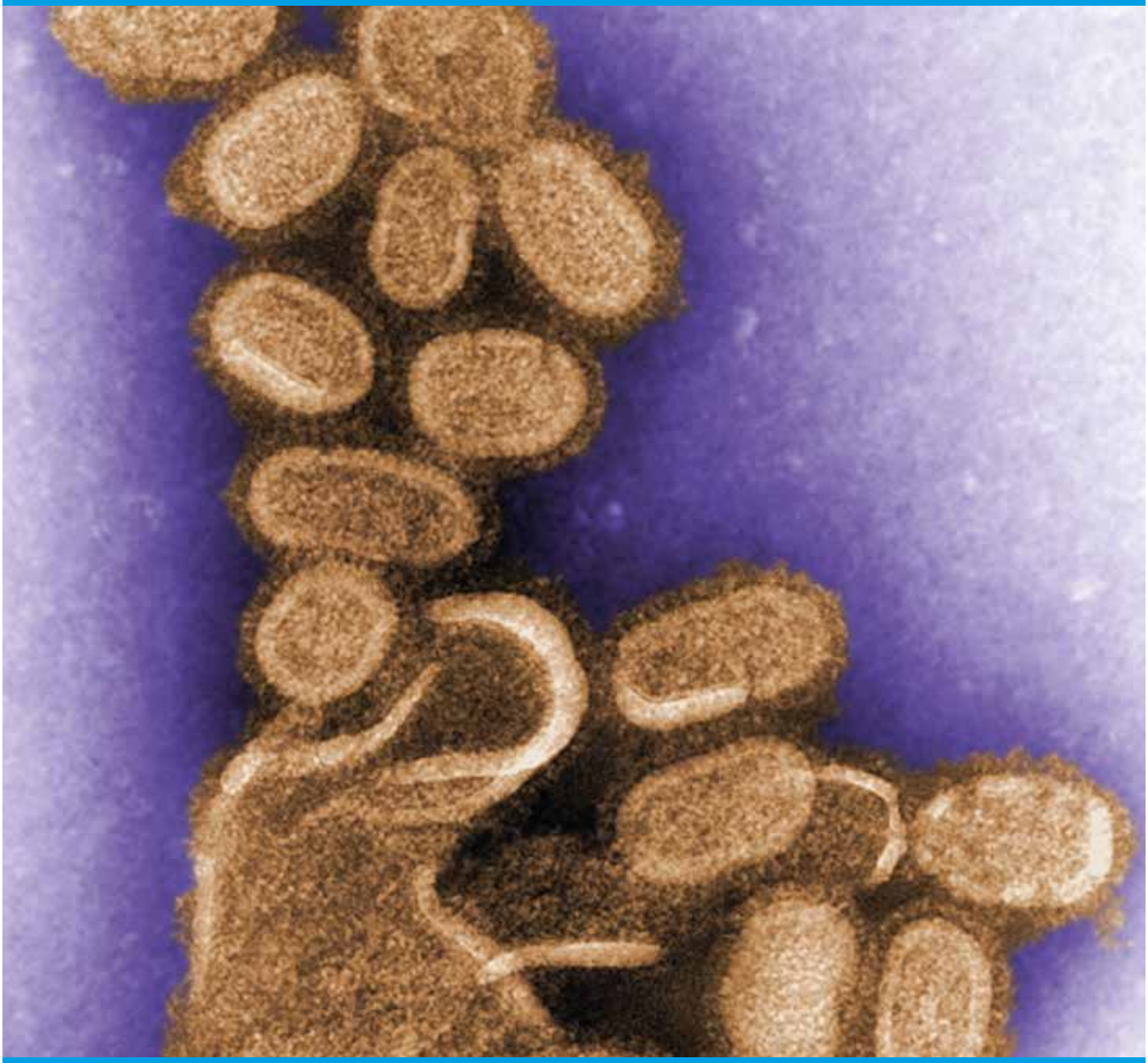
This project will involve sub-analysis of a completed case-control study of 486 patients. Using anticoagulant therapies as a case study this work will use the medication complexity Index to quantify the range of complexity in groups of cases and controls. The aim will be to calculate the change in medication complexity in this group of patients when the long term medication anticoagulant changes.

This work is unique as the data has not been analyzed previously and builds on work previously published in the *International journal of Stroke*.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Clinical Epidemiology Division



Associate Professor Bing Wang

Professor Henry Krum

Professor Christopher Reid

Dr Alice Owen

Centre of Cardiovascular Research and Education (CCRE) in Therapeutics

Project Title: Investigation of Renal Denervation in diabetic heart disease

Supervisors: Dr Andrew Kompa, Associate Professor Bing Wang and Professor Henry Krum

Contact Emails: andrew.kompa@monash.edu

Project description:

Numerous cardiovascular diseases are linked to hypertension and diabetes.

Renal DeNervation (RDN) is a minimally invasive clinical procedure used in the treatment of refractory hypertension. Patients commonly treated have uncontrolled blood pressure despite taking maximal doses of several anti-hypertensive medications.

Reduction of efferent renal sympathetic activity by RDN has demonstrated effective blood pressure control and maintenance in patients for more than 3 years after the denervation. Furthermore a pilot sub-study of these patients suggests a beneficial effect on glycemic control. The understanding and mechanisms involved in the effects of reduced sympathetic activity are unknown and will be the main focus of the project.

To understand these mechanisms we have established an animal model of diabetic heart disease and demonstrated improved blood pressure and glycemic outcomes.

Specifically the aim of this project will focus on the question: what are the mechanisms that may explain the functional changes we see in an animal model of diabetic heart disease after RDN.

This project has the capacity to be extended into a PhD project examining other cardiovascular diseases.

Methodological approach:

This project although primarily laboratory based has a specific clinical focus that can be directly translated from the bench to the bedside.

The student will be trained in all procedures relevant to the project. This may involve some additional animal surgery, and will involve histology/immunohistochemistry, as well as gene expression and protein assays of tissue samples by PCR and western blot/ELISA. The student will perform the experiments under supervision, collect and analyse the data using quantitative methodology.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center some work may be undertaken at St Vincent's Hospital campus.

Project Title: Novel therapies for the treatment of cardiorenal syndrome

Supervisors: Dr Andrew Kompa, Dr Bing Wang and Professor Henry Krum

Contact Emails: andrew.kompa@monash.edu

Project description:

Cardiorenal syndrome (CRS) is a condition characterized by kidney and heart failure where failure of one organ worsens the function of the other thus further accelerating the progressive failure of both. Current treatment options are similar to that observed in the treatment of chronic heart failure (CHF)and chronic kidney disease (CKD), namely ACE inhibition.

In recent years studies have highlighted the effect of uremic toxins (UT) that accumulate in the setting of CKD. Many of these are removed by dialysis while other cannot due to their high protein binding capacity. Indoxyl sulphate is one of many protein-bound UT that accelerates CKD progression via its profibrotic effects in the kidney as well as its detrimental effects on the heart and blood vessels.

Clinical and animal studies have demonstrated removal of these UT with a carbonic oral adsorbent (AST-120), binding their precursors in the gut, prevents them entering the circulation. This treatment has resulted in improved survival, and functional outcomes, and reduced pathological consequences such as inflammation, fibrosis, and generation of free radicals.

We have developed a novel model of CRS whereby heart disease is further complicated by CKD resulting in an acceleration of cardiac dysfunction and increased cardiac and renal fibrosis.

This project will examine the role of UT AST-120 in the absence and presence of ACE inhibition. Changes in function and pathophysiology will be examined as well as investigations into the responsible mechanisms.

This project is suitable for a PhD candidate, however aspects can be adapted for an Honours project.

Methodological approach:

This project is primarily laboratory based, however, has direct clinical implications for the treatment of CRS.

The student will be trained in all procedures relevant to the project. This may involve some animal surgery, histology/immunohistochemistry, as well as gene expression and protein assays of tissue samples by PCR and western blot/ELISA. The student will perform the experiments under supervision, collect and analyse the data using quantitative methodology.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and St Vincent's Hospital campus Fitzroy.

Project Title: Combination therapy of neprilysin and angiotensin receptor inhibition for cardiorenal syndrome

Supervisors: Associate Professor Bing Wang, Dr Andrew Kompa and Professor Henry Krum

Contact Emails: bing.wang@monash.edu

Project description:

Despite major recent advances in prevention, diagnosis and treatment, heart failure (HF) continues to present a substantial challenge to global public health. Current pharmacotherapies include blockade of the renin-angiotensin-aldosterone system (RAAS) with angiotensin-converting enzyme inhibitors (ACEi), angiotensin receptor (ATR) blockers (ARB), and mineralcorticoid receptor antagonists (MRA). These drug classes often fall short of providing sustained and robust long-term improvement of morbidity and mortality, perhaps due to difficulty to achieve target doses of these drugs in some patients. The natriuretic peptides (NPs), are a family of RAAS-inhibiting, natriuretic, diuretic and vasodilatory peptides that also possess anti-fibrotic, anti-proliferative and anti-hypertrophic actions. NPs are metabolized by the ectoenzyme neprilysin (NEP), hence, NEP inhibition (NEPi) increases NP activity. Increasing recognition of the multifactorial pathogenesis of HF paved the way for attempts to simultaneously block RAAS and enhance NPs. A decade ago combined ACEi/NEPi (vasopetidase inhibitors) suggested superior efficacy in HF compared to sole ACEi but increased frequency of adverse events discouraged further development. Since then, dual acting angiotensin receptor neprilysin inhibitors (ARNi) have been developed that seek to concomitantly exploit RAAS blockade with augmentation of NPs salutary actions, and are currently being tested in clinical trials. A novel strategy combining the angiotensin receptor blocker (ARB) Valsartan (VAL) with a neprilysin inhibitor (NEPi) to augment beneficial natriuretic peptide activity has produced superior antihypertensive effects in patients with resistant hypertension compared to VAL alone. In this project, we will investigate the effects of combined ARB and NEPi on cardiac hypertrophy, cardiac and renal fibrosis as well as mechanisms involved both in vitro and in vivo.

Methodological approach:

This project is primarily laboratory based with specific clinical focus that can be directly translated from the bench to the bedside.

The student will be trained in all procedures relevant to the project. Particularly, the methodologies related to gene expression and protein assays of cell and tissue samples by real time PCR, Western blot and ELISA. This may involve some additional animal surgery, and will involve histology/immunohistochemistry. The student will perform the experiments under supervision, collect and analyze the data using quantitative methodology.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center, some work may be undertaken at St Vincent's Hospital campus.

Project Title: Direct cardiac and renal effects of uremic toxins and mechanisms studies

Supervisors: Associate Professor Bing Wang, Dr Andrew Kompa and Professor Henry Krum

Contact Emails: bing.wang@monash.edu

Project description:

Cardiorenal syndrome is a condition in which a complex interrelationship between cardiac dysfunction and renal dysfunction exists. Despite advances in treatment of both cardiovascular and kidney disease, cardiorenal syndrome remains a major global health problem. Characteristic of the pathophysiology of cardiorenal syndrome is bidirectional crosstalk; mediators/substances activated by the disease state of one organ can play a role in worsening dysfunction of the other, by exerting their biologically harmful effects, leading to the progression of the syndrome. Accumulation of uremic toxins is a hallmark of renal excretory dysfunction. Removal of some toxins by conventional dialysis is particularly problematic due to their high protein binding. We

have demonstrated that protein-bound uremic toxins may play an important role in progression of cardiovascular disease in the setting of chronic kidney disease. The highly protein-bound uremic toxin, indoxyl sulfate has emerged as a potent toxin adversely affecting both the kidney and heart. Direct cardiac effects of this toxin have been recently demonstrated both in vitro and in vivo. Specifically, potent fibrogenic and pro-hypertrophic as well as oxidative stress-inducing effects appear to play a central role in both renal and cardiac pathology. However, the effects of other protein bound uremic toxins such as p-cresol sulfate and m-cresol sulfate have not been investigated. The mechanisms underlying uremic toxin-induced cardiorenal fibrosis will be investigated in vitro with cultured cardiac and kidney cells. Novel therapies including blockade of uremic toxin uptake and inhibition of pathways that their activated will also be studied.

Methodological approach:

This project is primarily laboratory based, however, has direct clinical implications for the treatment of CRS.

The student will be trained in all procedures relevant to the project. Particularly, the methodologies related to gene expression and protein assays of cell and tissue samples by real time PCR, Western blot and ELISA. This may involve some additional animal surgery, and will involve histology/immunohistochemistry. The student will perform the experiments under supervision, collect and analyze the data using quantitative methodology.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center, some work may be undertaken at St Vincent's Hospital campus.

Project Title: Sleep and lifestyle risk factors for cardiovascular disease in elderly hypertensive Australians

Supervisors: Dr Alice Owen and Professor Christopher Reid

Contact Email: alice.owen@monash.edu

Project description:

Sleep is critical to health and wellbeing, and quality and quantity of sleep have been reported to be associated with both hypertension and mortality. U-shaped associations between sleep duration and prevalence of hypertension have been noted in some older cohorts, but other studies have suggested that this association might be blunted in the elderly. The relationship between sleep and blood pressure in the elderly remains unclear.

This project aims to characterize sleep quality and duration in a cohort of elderly Australians with long-standing hypertension, and also determine whether associations exist between sleep, blood pressure control, sex and other risk factors for cardiovascular disease in this population.

Methodological approach:

This project uses existing data collected in a follow-up survey administered to 1835 participants in the Second Australian National Blood Pressure Study (ANBP2).

As this cohort have been followed for almost 15 years and have extensively recorded histories of blood pressure control and cardiovascular risk factors, they represent a unique population in whom to examine the relationship between hypertension, sex, age and sleep quality and quantity in the elderly.

This project will involve undertaking a comprehensive literature review of sleep quality and quantity and blood pressure in the elderly. This will be followed by cross-sectional analysis using quantitative methods and examination of the associations using regression models in either SPSS or Stata statistical software.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Professor Michael Abramson

Dr Rosalie Aroni

Associate Professor Dragan Ilic

The Clinical Epidemiology Unit – The Alfred

The Clinical Epidemiology Unit at the Alfred focuses on respiratory diseases and on the health effects of mobile phones.

Project Title: Lung attacks, flare-ups or exacerbations?

Supervisors: Professor Michael Abramson and Dr Rosalie Aroni

Contact Email: michael.abramson@monash.edu

Project description:

Chronic Obstructive Pulmonary Disease (COPD) is a major cause of death and disability in Australia and internationally. COPD includes conditions such as chronic bronchitis, emphysema and some forms of chronic asthma. The Burden of Obstructive Lung Disease (BOLD) study which was recently undertaken in our School and elsewhere around Australia estimated that 7.5% of the population over 40 have clinically significant COPD. However there is much less data about acute exacerbations, which is how most patients present.

Research Question: Should acute exacerbations of COPD be described as, “flare-ups”, “lung attacks” or some other term?

Rationale: The findings will guide future messages to consumers by the Lung Foundation of Australia.

Methodological approach:

The project will utilize a mixed methods design. An honours student undertaking this project will be given access to quantitative data from the BOLD study and descriptive data on hospital admissions and deaths from COPD. He/she would be expected to undertake qualitative research by conducting in depth interviews with COPD patients in hospital wards, outpatient clinics and general practices. Clinical data will be extracted from medical records. In addition, patients will complete the COPD Assessment Tool (www.catestonline.org) Selected carers and health professionals would also be interviewed. Descriptive statistical analysis of the quantitative data and thematic analysis of the interview data will be undertaken. All data sets will also be examined using triangulation methods. This project provides an opportunity to learn both quantitative and qualitative research methods as well as how to make sense of complementary and competing data in a mixed methods study.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

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Project Title: 360° Multisource feedback in medicine

Supervisor: Associate Professor Dragan Ilic

Contact Email: dragan.ilic@monash.edu

Project description:

Peer assessment has been utilised in higher education as a method of stimulating student participation in educational activities, improving teamwork and individual performance. Multisource feedback, also known as 360° assessment or 360° feedback, is a recent novel extension of the peer assessment model. Use of 360° assessment has predominately been used in the health sector to provide feedback to new graduate clinicians in the work-place environment with the aim of guiding the learning, clinical practice and professional behaviours. In this setting, feedback is sourced from peers, patients and clinical assessors. A 2012 systematic review identified that 360° feedback has a positive effect on clinical practice; yet there is limited evidence on its merits as a medical education tool. The aim of this study is to assess the effectiveness of implementing the 360° model in an undergraduate MBBS program. Specific aims include:

1. Identification of patterns of assessment accuracy across multiple sources (i.e. self, peer and lecturer feedback); and

2. Exploration of student perceptions, barriers and enablers to 360° assessment.

Methodological approach:

This study will adopt a mixed methods approach – utilizing quantitative methodologies in investigating aim 1, and qualitative studies when undertaking aim 2 of the project. MBBS students undertaking a clinical task (e.g. MCR) will be recruited. Feedback on student performance will be collected from 4 sources (self, peer, patient, assessor) and analysed using inferential statistics. MBBS students will also be recruited to participate in up to 5 focus groups (consisting of 6-8 students each) to provide a qualitative assessment of the 360° assessment.

Project Location: Department of Epidemiology and Preventive Medicine, Alfred Center

Professor Flavia Cicuttini

Associate Professor Anita Wluka

Musculoskeletal Epidemiology Unit

The Musculoskeletal Epidemiology Unit focuses on developing novel approaches to treat and prevent musculoskeletal diseases, particularly osteoarthritis (OA).

A $5000 scholarship (of Dr Natalie Almond Scholarship) will be awarded to one BMedSci student every year. The scholarship is in Honour of Dr Natalie Almond who died in a car accident in Jan 2013.

Project Title: The effect of body composition and physical activity on hip structure in a community-based population without clinical hip osteoarthritis

Supervisors: Dr Yuanyuan Wang and Professor Flavia Cicuttini

Contact Emails: yuanyuan.wang@monash.edu, flavia.cicuttini@monash.edu

Project Description:

Hip osteoarthritis (OA) is a major cause of pain and disability with no treatment that affects progression of disease. The prevalence of hip OA is expected to increase given the ageing of the population and the current obesity epidemic. To date, most research has focused on treating the resulting pain and disability. In order to reduce the burden of OA, identifying modifiable risk factors in the normal population, which have implications for the prevention of hip OA, is important. How obesity and physical activity affect the risk of hip OA has not been well understood.

This study aims to examine the associations between body composition (muscle mass and fat mass) and physical activity over 15 years with hip structure assessed using magnetic resonance imaging (MRI), in order to identify strategies to protect the hip joint and prevent the onset of hip OA.

Methodology:

This study was a cross-sectional study. 214 asymptomatic participants, with no significant trauma or known arthritis, were recruited from the Melbourne Collaborative Cohort Study. Weight, body mass index, body composition, and physical activity were measured in 1990-4, 1995-8 and 2003-5. Each participant underwent a hip MRI during 2009-2010. Weight, physical activity, and occupational history were obtained at the time of hip MRI. Hip cartilage volume, hip bone shape and the presence of bone marrow lesions were assessed from MRI using validated methods. Analyses of hip structure associated with body composition and physical activity will be performed using linear/logistic regression, adjusting for confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: The role of lifestyle factors on knee structure in a community-based population: a longitudinal study

Supervisors: Dr Yuanyuan Wang and Professor Flavia Cicuttini

Contact Emails: yuanyuan.wang@monash.edu, flavia.cicuttini@monash.edu

Project description:

Knee osteoarthritis (OA) is a major cause of pain and disability and accounts for approximately 90% of knee replacements. The prevalence of knee OA is expected to increase given the ageing and obesity epidemic of the population. To date, most research has focused on treating the resulting pain and disability. However, in order to reduce the burden of OA, identifying modifiable risk factors in the normal population is important.

This study aims to identify lifestyle factors (diet, physical activity and body composition) that affect knee cartilage and bone in asymptomatic subjects without clinical knee OA, thereby identifying potential targets for the prevention of knee OA. This will be done by utilizing an existing cohort, the Melbourne Collaborative Cohort Study (MCCS), with over 15 years of prospectively collected risk factor data, and recently developed methodology for measuring articular cartilage volume that our group has pioneered.

Methodological approach

This study was a longitudinal cohort study over 2 years. 297 asymptomatic participants, with no significant trauma or known arthritis, were recruited from the MCCS. There was 15 year of prospectively collected data already available as part of the MCCS regarding detailed dietary intake, weight, body mass index, body composition, and physical activity. Each participant underwent a knee magnetic resonance imaging (MRI) during 2003-2004 and 2 years later.

Physical dysfunction (the Western Ontario and McMaster Universities Osteoarthritis Index), physical activity, body composition, and past and current occupational history were collected at the time of MRI. Changes in knee cartilage volume, cartilage defects and bone marrow lesions over 2 years were assessed from MRI using validated methods. Analyses of the change in cartilage volume, cartilage defects and bone marrow lesions associated with lifestyle factors will be performed using linear/logistic regression, adjusting for confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: Obesity and knee joint health

Supervisors: Associate Professor Anita Wluka and Professor Flavia Cicuttini

Contact Emails: anita.wluka@monash.edu, flavia.cicuttini@monash.edu

Project description

Osteoarthritis (OA) is the most common form of arthritis and leading cause of disability. Obesity is the strongest modifiable risk factor for OA. Being overweight increases the risk of developing the disease with weight loss being shown to decrease pain and increase function. Obesity is also associated with the progression of the disease. There is some evidence to suggest that obesity may lead to the increased risk of OA via biomechanical mechanisms. The biomechanical theory concludes that increased weight leads to increased loading on the joint and cartilage damage and degradation. There is also emerging evidence that the biomechanical effect of obesity on the risk of knee OA may be modified by muscle mass. Muscles play an important role acting as shock absorbers and also stabilizing the knee. Biomechanical mechanisms are likely to be good targets for preventative strategies. Due to the obesity epidemic now faced by western society, combined with an aging population will ultimately result in a greater prevalence of OA and burden on society. Research into understanding the precise relationship and mechanisms by which obesity is related to OA are imperative.

This study aims to examine the relationship between obesity, body composition and knee alignment and changes in knee structure indicative of OA development. The effect of weight loss will also be examined by following a group of individuals undergoing laparoscopic gastric banding surgery and comparing changes in knee structures to obese individuals who are not.

Methodological approach:

This study was a longitudinal cohort study over 2 years. 250 men and women aged 25-60 years were recruited through local media. Weight and body composition (fat mass and muscle mass) using DEXA were obtained for each subject. Each participant had a knee magnetic resonance imaging in 2005-2008 and 2 years later. Changes in knee cartilage volume, cartilage defects and bone marrow lesions over 2 years were assessed from MRI using validated methods. Analyses of the change in cartilage volume, cartilage defects and bone marrow lesions associated with obesity, body composition and knee alignment will be performed using linear/logistic regression, adjusting for confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: What is the role of body composition (obesity) in the development of musculoskeletal pain and disability?

Supervisors: Dr Donna Urquhart, Professor Flavia Cicuttini and Associate Professor Anita Wluka

Contact Emails: Donna.Urquhart@monash.edu, flavia.cicuttini@monash.edu, anita.wluka@monash.edu

Project Description

Musculoskeletal conditions are a major public health problem and obesity is in epidemic proportions. It has been hypothesised that greater body weight may result in greater demands on the joints of spine and lower limbs leading to structural degeneration and pain. However, current evidence indicates that body weight is only a weak risk factor for musculoskeletal pain, particularly low back pain. Moreover, measures of body weight do not take into account an individual's body composition, that is their fat and muscle mass, and previous work suggests that fat and muscle mass have differential effects on pain.

The aim of this study is to determine the role of body composition, in particular fat mass and lean tissue mass, in the development of low back, knee and foot pain and disability.

Methodological approach

This study was a longitudinal cohort study. Men and women aged 25-60 years were recruited through local media. Body composition (fat mass and muscle mass) was assessed using DEXA. Low back, knee and foot pain and disability were assessed using questionnaires at 2 time points.

Analyses of development of musculoskeletal pain and disability associated with body composition will be performed using logistic regression, adjusting for confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: Does the structure of the spine matter in low back pain?

Supervisors: Dr Donna Urquhart and Professor Flavia Cicuttini

Contact Emails: Donna.Urquhart@monash.edu, flavia.cicuttini@monash.edu;

Project description:

Low back pain is a major public health problem worldwide, resulting in significant disability and financial costs. No one factor has been found to be a significant cause of low back pain. It has been hypothesised that changes to the structure of spine may lead to the development of low back pain. However, the results to date are conflicting. Obesity is in epidemic proportions in western society. It has been hypothesised that the additional body weight with obesity may accelerate degeneration of the spine. However, no study has compared the structure of the spine between obese and non-obese individuals.

The aim of this study is to examine whether there is a relationship between structural features of the spine and low back pain, and whether this differs between obese and non-obese individuals.

Methodological approach:

This study was a cross-sectional study. Men and women aged 25-60 years were recruited through local media. Low back pain and disability were assessed using questionnaires. Each participant had a spine magnetic resonance imaging and spine structure was measured using validated methods.

Analyses of low back pain and disability associated with spine structure will be performed using linear/logistic regression, adjusting for confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project title: MRI investigation of spinal and abdominal muscles in low back pain

Supervisors: Dr Donna Urquhart and Professor Flavia Cicuttini

Contact Emails: Donna.Urquhart@monash.edu, flavia.cicuttini@monash.edu;

Project description:

There is evidence to indicate that changes to the spinal and abdominal muscles are associated with the development of chronic low back pain. Even though obesity is in epidemic proportions and it has been hypothesised that the additional body weight with obesity may result in changes to the spine and its surrounding structures, no study has compared the spinal and abdominal muscles between obese and non-obese individuals.

This study aims to examine whether there is a relationship between the size and quality of the paraspinal and abdominal muscles and low back pain, and whether this differs between obese and non-obese individuals.

Methodological approach:

This study was a cross-sectional study. Men and women aged 25-60 years were recruited through local media. Low back pain and disability were assessed using questionnaires. Each participant had a spine magnetic resonance imaging and spinal and abdominal muscles were measured using validated methods.

Analyses of low back pain and disability associated with spinal and abdominal muscles will be performed using linear/logistic regression, adjusting for confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Project title: Muscle size and strength and the early structural changes of knee Osteoarthritis

Supervisors: Associate Professor Anita Wluka, Professor Flavia Cicuttini and Dr Yuanyuan Wang

Contact Emails: anita.wluka@monash.edu, flavia.cicuttini@monash.edu, yuanyuan.wang@monash.edu

Project description:

Knee osteoarthritis is a major public health problem. It has been suggested that quadriceps muscle strength has a protective effect against developing this condition and its structural progression. How knee strength relates to the development of the early structural changes of osteoarthritis in a young to middle aged asymptomatic population is not known. This is important as quadriceps strength is potentially modifiable, and so may be important in the prevention and treatment of knee OA.

This study aims to examine whether quadriceps muscle strength and cross sectional area relate to the early structural changes of knee OA, and their evolution over 2 years.

Methodological approach:

This study will utilise data from a community based study of women, from the Geelong Osteoporosis study. This study has data on 160 women, aged 20 – 62, who were recruited from the electoral roll, to be representative of the Australian female population. The aim of this study is to examine whether 2 measures of quadriceps function (strength and cross sectional area) relate to knee structural changes and their evolution over 2 years.

The right knee of all women was imaged using Magnetic Resonance Imaging at 2 time points, 2 years apart. Quadriceps strength was measured at baseline. From the MRI images, quadriceps cross sectional area will be measured. Measures of knee structure at baseline and 2 years later have been made using validated methods.

Analyses relating measures of knee strength to knee structure will be performed using linear/logistic regression, adjusting for potential confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project title: Change in knee bone size in healthy women and the relationship to the early structural changes of knee Osteoarthritis

Supervisors: Associate Professor Anita Wluka, Professor Flavia Cicuttini and Dr Yuanyuan Wang

Contact Emails: anita.wluka@monash.edu, flavia.cicuttini@monash.edu, yuanyuan.wang@monash.edu

Project description:

Knee osteoarthritis is a major public health problem. The role of bone, integral to the pathogenesis of knee OA, is receiving increasing attention as bone changes have been related to change in knee symptoms and disease progression. This is of particular importance, as bone metabolism may be a useful target for affecting this disease, in contrast to cartilage, which is less metabolically active. The relationship between bone health and change in knee structure in a healthy population is unknown.

This study aims to characterise change in knee structure in a healthy younger asymptomatic population of women, and identify how this relates to factors affecting bone health.

Methodological approach:

This study will utilise data from a community based study of women, from the Geelong Osteoporosis study. This study has data on 160 women, aged 20 – 62, who were recruited from the electoral roll, to be representative of the Australian female population. The aim of this study is to examine how the change in knee structural changes over 2 years relates to factors affecting bone health.

The right knee of all women was imaged using Magnetic Resonance Imaging at 2 time points, 2 years apart. From the MRI images, measures of knee structure at baseline and 2 years later have been made using validated methods. Measures of bone health have been made at baseline, including bone mineral density.

Analyses relating change in knee structure to risk factors for bone health will be performed using linear/logistic regression, adjusting for potential confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Project title: Bone health and back pain

Supervisors: Associate Professor Anita Wluka, Dr Donna Urquhart and Professor Flavia Cicuttini

Contact Emails: anita.wluka@monash.edu; Donna.Urquhart@monash.edu; and flavia.cicuttini@monash.edu

Project description:

Low back pain is a major public health problem worldwide, resulting in significant disability and financial costs. No one factor has found to be a significant cause of low back pain. Whilst psychosocial factors are important, there is increasing interest in how back structure relates to back pain. As bones form much of the back structure, bone health may be important. Whilst the layman believes that bone health, in particular osteoporosis, may contribute to back pain, this has not been examined in a community based population.

This study aims to examine whether factors relating to bone health, such as bone mineral density and markers of bone metabolism, are related to low back pain.

Methodological approach:

This study will utilise data from a community based study of men, the Geelong Osteoporosis study. This study has nearly 1000 participants, aged 20 – 85, who were recruited from the electoral roll, to be representative of the Australian population. The aim of the main study is to characterise factors associated with bone health in an Australian population.

Measures of bone health include calcium intake, bone mineral density, serum markers of bone metabolism and muscle strength using validated methods. Back pain has been measured using validated questionnaires.

Analyses of low back pain and markers of bone health will be performed using linear/logistic regression, adjusting for confounders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Professor Rachelle Buchbinder

Monash Department of Clinical Epidemiology – Cabrini Institute

The focus of the Department of Clinical Epidemiology is to perform high quality clinical research with an emphasis on answering clinically important questions that can be translated into better quality patient care and outcomes.

Project Title: Understanding the health literacy of patients attending Cabrini Health

Supervisor: Professor Rachelle Buchbinder

Contact Email: rachelle.buchbinder@monash.edu

Project description:

The World Health Organisation describes health literacy as "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health'.

While suboptimal health literacy has been found to be associated with poorer health outcomes, existing measures provide little insight into identifying ways of improving an individual's health literacy and/or identifying ways for services to accommodate people with different health literacy needs. We have developed a new multidimensional health literacy profile, the 'Health Literacy Questionnaire' (HLQ) that has been designed to identify important gaps in an individual's health literacy and/or the quality of an organisation's provision of health and social services. We hypothesise that this tool will be helpful in identifying potential interventions to improve an individual's health literacy and/or an organisation's ability to respond appropriately to the needs of individuals with varying levels of health literacy.

The aim of this project will be to apply the HLQ to a broad range of patients attending Cabrini Health to determine their ability to understand, engage with, and use health information and health services, as well as their perception of the quality of Cabrini Health's provision of healthcare services. A secondary aim will be to determine whether there is any association with level of health literacy and medium-term health outcomes (to 12 months) including complications occurring during hospitalisation and readmission rates.

Methodological approach:

We will perform a mailed survey of 3000 people who have been discharged from Cabrini Hospital, Malvern after inpatient care. In addition, for those patients who consent, we will access their medical records to extract demographic information, reason/s for admission, medical history, any complications arising in hospital, discharge date and subsequent readmission/s over a 12-month period.

This project is unique in that no other hospital has yet surveyed their patients using the HLQ. The data that is obtained will be valuable in considering what interventions could be undertaken at an individual and at an organisational level to improve the patient experience and their outcomes.

Project Location:

Monash Department of Clinical Epidemiology, Cabrini Hospital

Project Title: Complementary medicine use in people with inflammatory arthritis

Supervisor: Professor Rachelle Buchbinder

Contact Email: rachelle.buchbinder@monash.edu

Project description:

The Australian Rheumatology Association Database (ARAD) is a voluntary national registry, established in 2003, that collects longitudinal health outcomes data from Australian patients with inflammatory arthritis treated with biological disease modifying anti-rheumatic drugs (bDMARDs) as well as a control group not receiving biological therapy. Since its inception almost 5000 patients have enrolled in ARAD with 79% of rheumatologists from around the country contributing patients.

ARAD has been used to answer clinically important questions such as whether or not there is an increased risk of malignancy associated with taking bDMARDs and most recently we established an increased risk of herpes zoster infection (BMedSci project of Julian Segan 2012). All ARAD participants complete detailed entry and six-monthly follow-up questionnaires (paper-based or online). These data include details of all medications, both prescribed by a doctor and others.

This project will examine the use of complementary therapy in patients with inflammatory arthritis and determine whether differences exist between those currently taking and not taking bDMARDs. It will also compare disease and patient characteristics and outcomes of people who do and do not take complementary therapy to determine whether complementary therapy improves quality of life and reduces need for analgesia and non-steroidal anti-inflammatory drugs in usual care. It will also carefully ascertain whether there are any harms associated with complementary medicine use in this patient population.

Methodological approach:

A cohort study design will be used to investigate these questions using data in ARAD. In addition, a survey of current ARAD participants will be undertaken to explore this area in more depth and qualitative interviews may also be included depending upon results of the first phase of this project.

While there are several national registries collecting longitudinal health outcomes data from patients with inflammatory arthritis treated with bDMARDs, complementary medicine use in this population has not been explored to date.

Project Location:

Monash Department of Clinical Epidemiology, Cabrini Hospital

Associate Professor Allen Cheng

Associate Professor Karin Leder

Dr Robert Hall

Infectious Diseases Epidemiology Unit

The research of the Infectious Disease Epidemiology Unit covers a broad range of topics. These include the burden of communicable diseases, vaccination, modelling of infectious diseases, traveller/ immigrant health and communicable disease surveillance. The Unit is also involved in studies of specific infectious diseases (such as nosocomial infections, influenza and measles) that represent important problems in clinical practice and in the development of national and international management guidelines.

Project Title: The effectiveness of a registry for asplenic and hyposplenic patients in preventing overwhelming post-splenectomy sepsis

Supervisors: Associate Professor Allen Cheng and Associate Professor Karin Leder

Contact Email: allen.cheng@monash.edu

Project description:

Patients with impaired splenic function are at risk of serious bacterial infections (overwhelming post-splenectomy sepsis; OPSI). Measures to reduce OPSI include patient education (including an emergency plan), prophylactic antibiotics, and vaccination. We have previously demonstrated high compliance with preventative measures in patients on the Victorian Spleen Registry.

Aims

To quantify the risk of post-splenectomy sepsis in registrants on the VSR, and compare this to the risk prior to registration.

Methodological approach:

Data are available from the Victorian Spleen Registry on patients who have had a splenectomy. OPSI will be defined from patient self report as a serious infection requiring hospitalisation for intravenous antibiotics and intravenous fluids. The rate of OPSI following registration will be compared to the rate prior to registration using poisson regression. The cost effectiveness of the VSR will be estimated from the annual running costs and the costs of OPSI. A preliminary analysis suggests that the risk of OPSI is reduced by around 80% in patients on the VSR.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

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Project Title: 20 years of National Notifiable Disease Surveillance data: what does it tell us?

Supervisors: Associate Professor Karin Leder, Associate Professor Allen Cheng and Dr Robert Hall

Contact Email: karin.leder@moansh.edu

Project description:

State Public Health Acts list approximately 60 diseases that must be reported to state/territory public health departments at the time of diagnosis by a doctor or laboratory. After removing names and other identifying information, these records are transferred to the National Notifiable Diseases Surveillance System (NNDSS) which is operated under the auspices of a collaboration of state and national communicable disease control authorities (the Communicable Diseases Network of Australia, CDNA). The NNDSS now contains approximately 2.5 million records of infectious disease notifications made over a 20-year period.

Methodological approach:

This project will involve looking at the 20-year NNDSS data, focusing on specific diseases and describing their occurrence by location, demographics and time. Data may also be linked to other information resources, such as vaccine uptake and climatic events, to help highlight and explain notification events of interest

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

Project Title: Knowledge, attitudes and practices of health risks associated with VFR travel among international students in Melbourne

Supervisor: Associate Professor Karin Leder

Contact Email: karin.leder@moansh.edu

Project description:

VFR travellers (travellers going home to visit friends and relatives) have been recognized as a high-risk group. They generally have lower rates of consultation for pre-travel advice as well as higher risks during their trips than other types of travellers. Multiple reasons have been postulated, including lack of awareness of travel-associated risks, cultural and financial barriers to seeking and following pre-travel medical advice, and last-minute travel preparations.

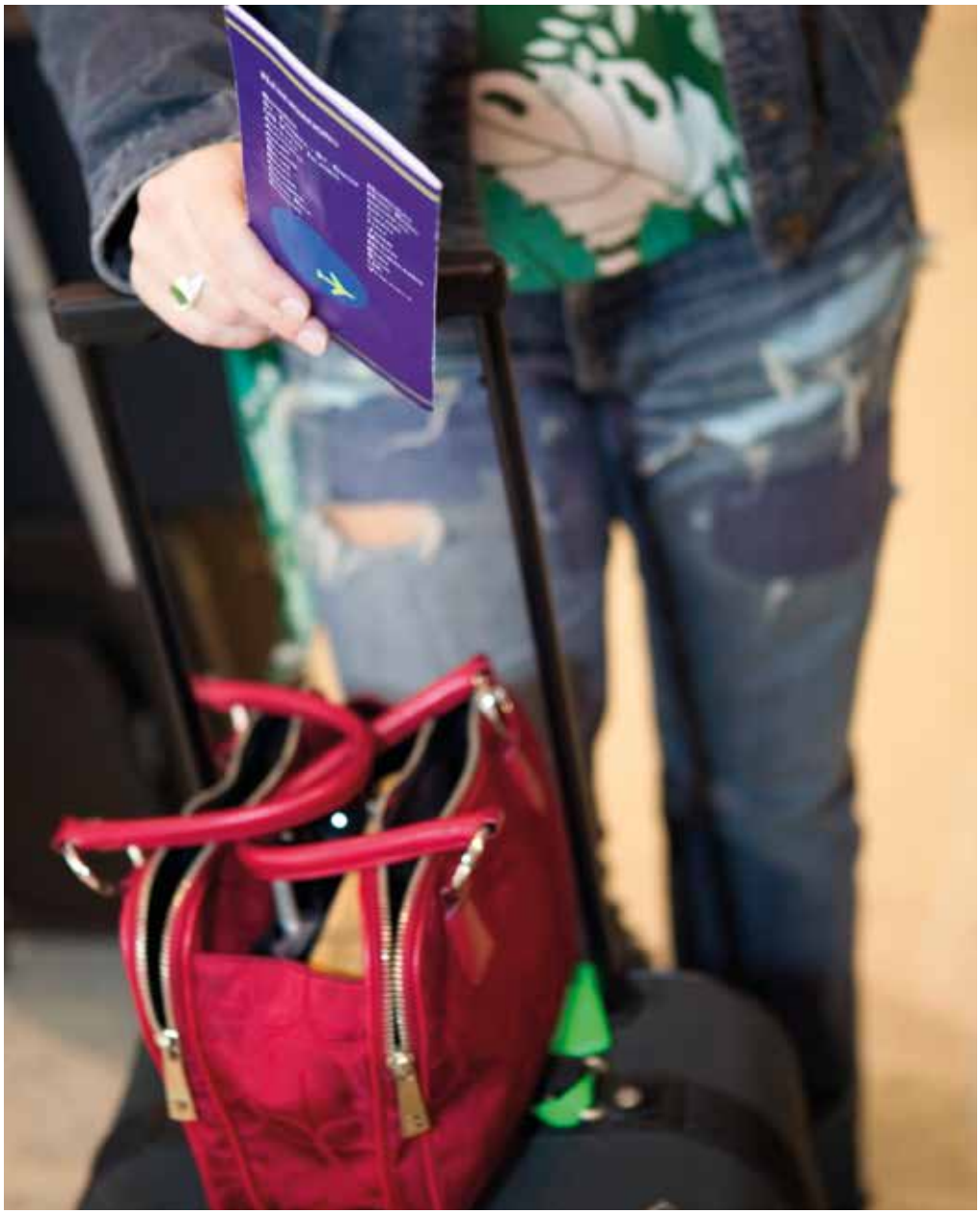
This project will be an extension to work done in 2012 when pre-travel information specifically targeted at international students was developed and disseminated. It will gauge knowledge, attitudes and practice to travel-risks among overseas-born students studying at Monash University.

Methodological approach:

This project will involve conducting postal and/or internet surveys to collect information on risk perception and attitudes towards optimal modes of communication among overseas-born students, and compare results to attitudes and knowledge among Australian-born students.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center



The Australasian Cochrane Centre

The Australasian Cochrane Centre coordinates the activities of the Cochrane Collaboration in Australia and in the wider Asia-Pacific region in partnership with its branches in Korea, New Zealand, Singapore and Thailand. It provides training and support to authors of Cochrane reviews, works with policy makers, advocates on behalf of the Collaboration regionally, and promotes the use and uptake of The Cochrane Library.

Project Title: The quality of reports of randomised trials undertaken in Australia

Supervisors: Dr Joanne McKenzie and Mr Matthew Page

Contact Email: joanne.mckenzie@monash.edu

Project description:

Aim: To assess the quality of reports of randomised trials undertaken by researchers affiliated with Australian institutions.

Rationale: A properly conducted randomised trial provides the most reliable method for measuring the effectiveness of a clinical intervention (e.g. if garlic is effective for preventing or treating the common cold; or if melatonin is effective for the prevention and treatment of jet lag). Individual trials, and systematic reviews of trials (that summarise the evidence across trials), are used to inform which medicines and medical devices should be funded, and to inform treatment options for patients. However, the benefits of the randomised trial design are only realised when the trial is appropriately reported. There is a large body of research suggesting that the reporting of many trials is inadequate, but this has not been investigated specifically in Australia. This study is important because it will provide a benchmark for how well randomised trials by Australian researchers are reported. This will inform future research investigating how reporting of randomised trials can be improved, if the quality of reporting is found to be poor.

Methodological approach:

A sampling frame of randomised trials undertaken by researchers affiliated with Australian institutions will be created (using filters in the PubMed database). A sample of trials will be randomly selected from the sampling frame.

The quality of reporting of each trial will be assessed using the CONSORT statement (Moher BMJ 2010). The CONSORT statement provides a checklist of items that should be reported about the trial's design, conduct, analysis, and interpretation.

Summary statistics will be used to quantify the reporting of each item on the checklist. Associations between quality of reporting and clinical area (e.g. pharmacological versus non-pharmacological) and journal characteristics (e.g. whether the journal endorses the CONSORT statement or not) will be estimated using regression models.

Project Location:

Australasian Cochrane Centre, Alfred Center

Project Title: How well do systematic reviews summarise the trustworthiness of the findings from randomised trials?

Supervisors: Dr Joanne McKenzie and Mr Matthew Page

Contact Emails: joanne.mckenzie@monash.edu

Project description:

Aim: To examine how well the trustworthiness of findings from randomised trials are summarised in systematic reviews.

Rationale: Randomised trials are considered the most reliable method for measuring the effectiveness of an intervention (e.g. if garlic is effective for preventing or treating the common cold; or if melatonin is effective for the prevention and treatment of jet lag). However, the benefits of this design are only realised when the methods underpinning the design are properly implemented (e.g. patients being blind to which drug they are receiving). If a randomised trial has design flaws, then the results from the trial may be less trustworthy. For example, design flaws may lead to overestimating the benefit of the intervention. This overestimation is known as bias. In systematic reviews (which summarise the evidence across trials), authors assess the potential for (or risk of) bias for each of the included trials. The results of the randomised trials are then summarised, taking into consideration the risk of bias of the included trials. For example, if all the included trials were deemed to be at a high risk of bias, then we would be less likely to trust the results of those trials. It is important to examine whether the trustworthiness of randomised trial results are accurately summarised in systematic reviews.

Methodological approach:

A sample of systematic reviews will be randomly selected from those published in 2013 on the Cochrane Database of Systematic Reviews.

The selected systematic reviews will be retrieved, and examined. The following data will be extracted from the systematic reviews:(i) the risk of bias assessment of the included randomised trials, and (ii) how the results have been summarised in the summary of findings table (a table included in Cochrane reviews that provides key information about the quality of evidence).

Summary statistics and confidence intervals will be calculated. Associations between the risk of bias assessment and summary of findings assessment will be estimated using regression models.

Project Location:

Australasian Cochrane Centre, Alfred Center

Health Services and Global Research Division

Clinical Registries

Clinical registries collect a small amount of key information about people treated in hospitals for conditions such as trauma, cancer and heart disease. The information is collected in an identical fashion from each participating clinician and hospital. Outcomes of treatment are also measured in a systematic fashion and analysed statistically to allow different units and clinicians to compare the success of their treatment.

Project Title: Impact of lymph node sampling and lymph node dissection in surgical resection on clinical outcomes in early stage non-small cell lung cancer (NSCLC)

Supervisors: Associate Professor Silvana Marasco (Cardiothoracic Surgery) and Dr R Stirling (Allergy Immunology and Respiratory Medicine)

Contact Email: r.stirling@alfred.org.au

Project description:

NSCLC is the fourth most common cancer in Victorians and is the leading cause of cancer mortality in Victoria. Treatment outcomes in NSCLC are largely determined by the adequacy of initial evaluation, diagnosis and staging followed by the application of appropriate treatment. Early stage NSCLC is amenable to surgical resection with very favourable early survival.

Surgical approach and resection in NSCLC may be affected by numerous factors including tumour type, staging, tumour location and comorbidity. Pathological staging achieved by evaluation of resected tissue in combination with lymph node sampling and pathological evaluation helps confirm adequacy of preoperative clinical staging. Lymph node dissection however may improve therapeutic impact of resection and positively impact outcomes including progression free survival and overall survival. A clinical evaluation of surgical approach in NSCLC may help refine surgical strategy in resection of NSCLC and help improve outcomes in this disease.

Methodological approach:

The Victorian Lung Cancer registry (VLCR) is a repository of clinical data describing the presentation, diagnosis and staging of all new lung cancers diagnosed in a selection of Victorian hospitals. Data is currently being independently collected by local collectors and entered in to a central repository. This data is being used to inform cancer clinicians of the effectiveness and quality of their activities in the delivery of cancer care. This database and the cardiothoracic surgical database are to be interrogated by the researcher with the specific intent of identifying the assessment, procedural approach and outcome of surgical management in early stage lung cancer. This project provides a novel means of integration of these data sources to describe crucial outcomes in definitive surgical treatment of lung cancer.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Project Title: The use of mutation specific testing in the treatment of non small cell lung cancer: barriers and uptake.

Supervisors: Dr R Stirling (Allergy Immunology and Respiratory Medicine and Dr A Haydon (Medical Oncology)

Contact Email: r.stirling@alfred.org.au

Project description:

Survival in advanced NSCLC in those with good performance status and when treated with conventional chemotherapy remains poor. Mutation analysis has suggested that a number of specific mutations in driver genes may predispose to NSCLC and suggests that mutation directed therapies may have some therapeutic advantage.

Novel therapeutic agents have been identified that may improve survival in those with EGFR mutations treated with erlotinib and in those with ALK transformations treated with crizotinib. The prevalence of EGFR mutations in NSCLC is 2-26% and of ALK translocation / gene amplification is 2-60%.

The potential utility of these agents in our population is unknown.

The ability to provide these therapies is dependent on the phenotypic and genotypic characterisation of NSCLC patients. Factors that need to be identified prior to the potential treatment of such patients include:

1. Accurate disease staging and diagnosis.
2. Availability of an appropriate tissue specimen for histological diagnosis.
3. Histological / immunohistochemical diagnosis from tissue specimen.
4. Availability of tissue / blood for EGFR mutation / ALK transformation analysis.
5. Availability of mutation specific agents for therapy.

The number of patients that may potentially benefit from such therapies in our population is unknown. The barriers to availability of novel mutation directed therapies is unknown. The Victorian Lung Cancer Registry provides a unique opportunity to identify and describe the phenotype, assessment and management of NSCLC.

The use of specific mutation directed therapies may provide survival benefit to Australian patients with advanced NSCLC.

Methodological approach:

The Victorian Lung Cancer registry (VLCR) is a repository of clinical data describing the presentation, diagnosis and staging of all new lung cancers diagnosed in a selection of Victorian hospitals. Data is currently being independently collected by local collectors and entered in to a central repository. This data is being used to inform cancer clinicians of the effectiveness and quality of their activities in the delivery of cancer care. This database is to be interrogated by the researcher with the specific intent of identifying subjects in whom mutation analysis should be performed, to confirm the outcomes of mutation analysis and the subsequent impact on treatment selection and ultimately patient survival.

The researcher will be required to collect mutation analysis results for Registry participants from two test centres.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Professor Brian Oldenburg

Associate Professor Renzaho

Global Health and Society Unit

Global Health and Society Unit conducts diverse research education and research programs in Australia and internationally. Major areas of expertise are relevant to an improved understanding of the promotion of health and wellbeing, the prevention and control of non-communicable conditions, migration and health, addictive behaviours, health equity and social disadvantage, as well as other related global health issues. Many of the unit's research, training and capacity building projects are undertaken in low and middle income countries.

Project Title: Kerala Diabetes Prevention Program (K-DPP)

Supervisor: Professor Brian Oldenburg

Contact Email: Brian.Oldenburg@monash.edu

Project description:

The Kerala Diabetes Prevention Program is a cluster randomised control trial of a group-based lifestyle intervention for people at high risk of developing type 2 diabetes.

The study is being conducted in collaboration with Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala, India. In this study there are 30 control clusters and 30 intervention clusters, each consisting of between 12-17 participants.

Research aims:

To implement and evaluate the K-DPP and its impact on T2DM incidence at 24 months compared with a standard care control group.

To identify individual-, household-, and neighbourhood-level factors likely to affect the wider uptake and operationalisation of K-DPP in India and other developing countries in the future.

To estimate the population health impact and cost-effectiveness of screening and intervention in reducing the incidence of T2DM in a developing country with a very high prevalence of T2DM.

The specific research aims for this honours project will be refined based on the student's interests and the current status of the study.

Methodological approach:

60 polling booths from Neyyattinkara Taluk (or sub-district) of Kerala State have been randomly selected. Participants are screened using the Indian Diabetes Risk Score to determine whether they are at 'high risk' of T2DM. If they are determined to be eligible (IDRS of ≥60) participants are invited to attend a mobile clinic in their local area. At the clinic bio-impedance and anthropometric measurements are taken as well as fasting and post-glucose challenge bloods. In addition a series of questionnaires are administered. Following this, the intervention polling booths commence a series of 12 peer support sessions focusing on lifestyle behavioural change which are facilitated by trained peer leaders.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project title: The ADVENT (Anxiety and Depression and heart rate Variability in cardiac patients: Evaluating the impact of negative emotions on function after Twenty four months)

Supervisor: Dr John Oldroyd

Contact Email: john.oldroyd@monash.edu

Project description:

Rationale: Co-morbid depression and anxiety in acute coronary syndrome (ACS) pose a significant burden on patients, their families and the Australian healthcare system. Despite this, there has been limited success in improving health outcomes in this co-morbid patient population using current treatment approaches. An improved understanding of the inter-relationships among symptoms of anxiety and depression in post-ACS patients will lead to the development and delivery of more effective pharmacological, psychological and behavioural interventions.

Aim: The ADVENT study is a prospective cohort study which aims to investigate the association of psychosocial and biological factors and symptoms of depression and anxiety in post-ACS patients at 12- and 24-months.

Research questions: In ACS patients, the study will examine:

(1) The role of cognitive and somatic symptoms of depression and anxiety as predictors of health-related quality of life;

(2) The association of these symptoms with long-term vocational functioning and use of healthcare services; and

(3) The role of heart rate variability -a psychophysiological biomarker - as a moderator of these associations.

Opportunities exist for exploration and analysis of a range of topics the data set at baseline, including:

- Baseline characteristics of all ACS participants
- Whether a linear, cross-sectional relationship exists between depressive symptomatology and glycaemic control (assessed by fasting plasma glucose, HbA1C) at baseline

Methodological approach:

Recruitment is being undertaken at Southern Health hospital network over an 18-month period. The student will be required to undertake all forms of data collection including clinical measurements, heart rate variability and measures of depression, anxiety, sleep, worry and quality of life via computer-assisted telephone interviews. The student will have an opportunity to be trained in collecting clinical measurements (blood pressure, height, weight and waist circumference) and in using the World Health Organisation – Composite International Diagnostic Interview (WHO-CIDI). The CIDI is a comprehensive, fully-structured interview designed to be used by trained lay interviewers for the assessment of mental disorders according to the definitions and criteria of ICD-10 and DSM-IV. The student will also have an opportunity to be trained in taking Heart Rate Variability measurements via ECG recordings using PowerLab software. Data collection occurs at baseline, 12 and 24 months follow-up. All follow-up measurements are undertaken at Monash University, Clayton.

Project Location:

Monash Applied Research Stream, Monash Medical Centre, 43-52 Kanooka Grove, Clayton, VIC

Project Title: The impact of acculturation on obesity among African migrant youth

Supervisor: Associate Professor Renzaho

Contact Email: andre.renzaho@monash.edu

Project description:

African migrants gain weight rapidly following migration. However it is hypothesized that acculturation is an independent risk factor for obesity among newly arrived migrants

Aim: To assess whether the risk of obesity varies according by to the level of acculturation.

Research questions:

Test the psychometric properties of the Acculturation, Habits, and Interests Multicultural Scale and assess its relationship with BMI among 12-17 year old migrant youth.

Methodological approach:

Cross-sectional data have been collected and funded by VicHealth. Measured BMI and acculturation data were obtained (N=145 households)

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

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Project Title: Balancing work and family responsibility and its impact on health: Evidence for the Household, Income and Labour Dynamics in Australia (HILDA)

Supervisor: Associate Professor Renzaho

Contact Email: andre.renzaho@monash.edu

Project description:

Rationale: Balancing work and family is integral to working life, and has an impact on individual's and family life and wellbeing.

Aim: To assess the relationship between balancing work and family and health using data from the Evidence for the Household, Income and Labour Dynamics in Australia (HILDA).

Research questions:

To describe correlationship of work and family balance

To examine whether imbalance between work and family increases the risk of obesity and obesity-related chronic diseases

Methodological approach:

Longitudinal data were obtained from the nationally representative Household, Income and Labour Dynamics in Australia panel survey. However this analysis will be based on Wave 8 only. Data were obtained on self- reported BMI. Chronic diseases included in the current study followed the Australian National Public Health Partnership's classification. Study participants were asked the following question: 'Have you ever been told by a doctor or nurse that you have any of the following long-term health conditions? Please only include those conditions that have lasted or are likely to last for six months or more', with responses including depression/anxiety, type 2 diabetes, cancers, heart disease, circulatory diseases, emphysema and asthma.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

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Project Title: The Healthy Migrant Families Initiative Project: are there intergenerational issues?

Supervisor: Associate Professor Renzaho

Contact Email: andre.renzaho@monash.edu

Project description:

Prior to migration, obesity is culturally constructed and there is a tendency for preference for large body sizes. After migration, parents continue to hold pre-migration ideals and expect children and adolescents to put on weight. However, following migration children and adolescents learn quickly that the thin body ideal is the norm in their new host environment, hence leading to family conflict and making the design of obesity prevention program challenging

Aim: To assess factors that will facilitate the development of a successful obesity prevention program for African migrants from an intergenerational perspective.

Research questions:

What are the intergenerational factors to take into account when developing obesity prevention programs? How can obesity prevention programs be made culturally competent?

Methodological approach:

An exploratory qualitative study that involves face-to-face interviews with bilingual workers, focus group discussions with parents and field notes.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Dr Sara Holton

Professor Jane Fisher

Dr Karin Hammarberg

Dr Karen Wynter

Jean Hailes Research Unit

The Jean Hailes Research Unit (JHRU) in the School of Public Health and Preventive Medicine is an innovative formal partnership between a community-based knowledge translation and clinical service.

The current JHRU program addresses the links between women's reproductive health and mental health from adolescence to midlife, particularly related to fertility, infertility, pregnancy, birth and the postpartum period, and chronic non-communicable conditions.

Project Title: The psychosocial factors related to contraceptive nonuse among contemporary women and men of reproductive age in Australia

Supervisors: Dr Sara Holton and Professor Jane Fisher

Contact Email: sara.holton@monash.edu

Project description:

Australia still has high rates of unintended pregnancy and abortions compared to other developed countries.

Modern oral contraceptives first became available to married and later unmarried Australian women about 50 years ago and were thought to have initiated the era of the 'planned' and 'wanted' pregnancy and the end of the 'unplanned' pregnancy. Subsequent surveys of contraceptive use, pregnancy intention, pregnancy outcome, and ideas about family formation have found that this has not been realized.

Unintended pregnancy carries substantial public costs including increased health service use and reduced economic participation, and is experienced in individual lives, contributing to disappointed life goals, altered social and family relationships, the burden of stigma, and compromised physical and mental health. The goal of this research is to reduce the public and personal costs of suboptimal fertility management by providing knowledge regarding the nonuse of contraception. This evidence will improve national reproductive and sexual health promotion strategies. The consequence will be increased likelihood that pregnancies are intended and reproductive hopes realised.

The aim of this study is to: Identify the psychosocial factors related to contraceptive nonuser among contemporary women and men of reproductive age in Australia

Methodological approach:

Existing quantitative data from the ARC Linkage Project (LP100200432) Understanding fertility management in contemporary Australia will be analysed.

Data from the anonymous, study specific, population based survey used in the Project will provide evidence on the prevalence, nature, and distribution of knowledge, beliefs, cultural values, attitudes, and practices relevant to contraceptive nonuse in a representative sample of women and men of reproductive age who were randomly selected from the Australian Electoral Roll by the Australian Electoral Commission.

In particular, the individual knowledge, attitudes, and values; interpersonal skills; autonomy; gender stereotypes about responsibilities for contraception and fertility decision-making; social position; and the wider context of prevailing social attitudes, quality of education, culture, religious beliefs, media reporting, and prescriber habits regarding contraceptive use will be analysed.

Project Location:

Jean Hailes Research Unit, The Alfred Centre, 99 Commercial Road, Melbourne

Project title: Are plans in late pregnancy about return to paid employment after the birth of a first child realised? Evidence from the Parental Age and Transition to Parenthood Australia (PATPA) study

Supervisor: Dr Karin Hammarberg

Contact Email: karin.hammarberg@monash.edu

Project description:

Little is known about the factors that influence women's return to paid employment after the birth of their first child and whether their expectations in pregnancy regarding return to paid work are realised. In Australia and other high-income countries the age of childbearing and use of assisted reproductive technology (ART) to conceive are increasing. The Parental Age and Transition to Parenthood Australia (PATPA) study recruited >500 women in late pregnancy, half of whom had conceived with ART, in Victoria and NSW. The study was funded by grants from the Australian Research Council (ARC), IVF Australia and Melbourne IVF and aimed to provide contemporary Australian evidence of first-time mothers' experience of pregnancy and transition to motherhood. This longitudinal study investigated physical health; psychological wellbeing; and work, family and social considerations in late pregnancy and four and 18 months after the birth of the first baby. Data were collected through interviews and questionnaires.

In late pregnancy, women in this study were asked about if and when they planned to return to paid employment after the birth. This part of the project aims to identify the factors that influence women's return to paid employment after the birth of their first child in the context of the contemporary trends to have children later in life and increasing use of ART to conceive.

Methodological approach:

Existing data will be examined using quantitative methods to determine: whether plans in late pregnancy about postnatal workforce participation are realised; the associations between maternal age, mode of conception, socio-economic circumstances, physical and mental health, breastfeeding, social support and access to childcare and resumption of paid work in the first 18 months after the birth; and women's degree of satisfaction with their level of employment and childcare arrangements.

Project Location:

Jean Hailes Research Unit, School of Public Health and Preventive Medicine, Alfred Centre

Project Title: Is partner contribution to household and infant care tasks related to maternal mood and perception of intimate partner relationship? Evidence from a community cohort of first-time mothers in Victoria.

Supervisor: Dr Karen Wynter

Contact Email: karen.wynter@monash.edu

Project description:

In the transition to parenthood, the greater burden of the unpaid workload of household tasks and infant care is usually carried by women. Maternal mood is thought to be associated with how this workload is shared, as well as how relationships with intimate partners are experienced. To date, however, there is limited evidence about the nature of these associations.

This project will involve secondary analysis of data obtained in a study of first-time mothers in seven Local Government Areas in Victoria who completed computer-assisted telephone interviews at approximately 4 and 26 weeks postpartum. Complete follow-up data is available for 364 women and their partners; half of the couples participated with their partners in a brief psycho-educational intervention which addressed adjustments in the intimate partner relationship after the birth of a first baby. The follow-up data includes participant and partner estimates of what percentage of specific household and infant care tasks each member of the couple currently contributes. Validated measures were used to assess experience of intimate partner relationship and postnatal depression symptoms.

The aim of this sub-study will be to analyse and report data on contribution to household and infant care tasks, and establish whether the extent to which partners contribute to these tasks is significantly and independently associated with postnatal depression symptoms and perception of quality of intimate partner relationship in first-time mothers at 26 weeks postpartum.

Methodological approach:

This is secondary analysis of an existing dataset. Quantitative methods will be used to analyse the data:

Descriptive analysis will include summary data on women's reported contribution to a variety of common household and infant care tasks.

Statistical significance testing will be required to determine whether these data differ for those women who attended the intervention and those who did not, controlling for other relevant factors.

Linear regression models will be constructed to determine whether workload sharing is independently associated with quality of intimate partner relationship and postnatal depression symptoms, while controlling for other relevant factors.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Occupational and Environmental Health Division

Dr Geza Benke

Professor Michael Abramson

Associate Professor Peter Smith

Monash Centre for Occupational and Environmental Health (MonCOEH)

The Monash Centre for Occupational and Environmental Health (MonCOEH) is one of Australia's leading research and education centres in this field. With expertise in a diverse range of epidemiological studies, MonCOEH's research focuses on the role and impact of workplace and environmental hazards.

Project Title: Further validation of exposure assessment to radiofrequency radiation from mobile phones in young people

Supervisor: Dr Geza Benke and Professor Michael Abramson

Contact Email: geza.benke@monash.edu

Project description:

Radiofrequency (RF) radiation exposure is now widespread in Australian homes and cities. There have been concerns about possible adverse health effects such as brain tumors or changes in cognitive function. The World Health Organization (WHO) has said that further research with children and adolescents is a high priority. However for the research to be meaningful, good RF exposure data are essential.

Aim: To validate self-reported exposure data from questionnaires against measured RF exposure from modified dose phones in adolescents.

Methodological approach:

This project will involve recruiting a representative sample of adolescents aged 13 to 18 years old. Participants will complete a questionnaire based on the Mobi-Kids study. Those using a smart phone will install an app that measures the number and duration of calls and laterality (side of the head on which the handset is used). At another time, they will be offered a hardware modified phone that also measures the number and duration of calls, laterality, as well as power output. The student will analyse these data to assess agreement between questionnaires and phones, as well as agreement between software and hardware modified phones.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: Understanding individual, workplace and system level influences on return to work in a changing Australian labour market

Supervisor: Associate Professor Peter Smith

Contact Email: Peter.Smith@Monash.edu

Project description:

The objective of this research project is to identify the relationship between occupational, workplace, health care provider and individual level factors on disability, recovery expectations, self-efficacy to return to work (RTW), and actual RTW and work productivity over a 12 month period among workers compensation claimants in Victoria. In particular we want to identify differences in the return to work process for older versus younger workers and for claimants with mental versus musculoskeletal injuries. To achieve these objectives we will collect information on aspects of the RTW process which may be potentially important, but have not been included in other RTW studies to date, and combine this information with administrative compensation claim data.

This will involve collecting a variety of information from a sample of approximately 900 workers' compensation claimants and three time points over a 12-month period.

Methodological approach:

This is a quantitative research study using primary data collection, linked to administrative workers' compensation data. The tasks undertaken as part of this project will include participating in data collection, participating in project co-ordination tasks (e.g. database management, recruitment). We have an active Program Governance Committee associated with this project, which will provide opportunities for interaction with non-academic stakeholders, such as policy makers and other organisations.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Dr Martine Dennekamp

Dr Anjali Haikerwal

Dr Helen Kelsall

Project Title: Health effects of smoke from planned burns

Supervisors: Dr Martine Dennekamp and Dr Anjali Haikerwal

Contact Email: martine.dennekamp@monash.edu

Project description:

Planned burning is an important part of fire management designed to reduce the risk posed by bushfires. The number and area of planned burns will increase in the future, but little is known about the health effects of the smoke from those burns. This project will address this gap in knowledge.

The study will be conducted during the 2014 autumn season, when planned burns are taking place. Study participants will be recruited from areas targeted for planned burns. A screening questionnaire will collect health and demographic data. Daily symptoms, medication use and health service utilisation will be recorded by participants in a daily diary. Every morning and evening the participants will measure their lung function. In addition the following investigations will be conducted before, during and after the burns: (1) Lung inflammation test: exhaled nitric oxide (eNO); (2) Blood pressure; (3) Heart rate variability using 24 hour electrocardiography; and (4) Blood markers of inflammation and coagulation. The honours student on this project will be responsible for the Lung inflammation test.

The aim of this study is to investigate the effects on respiratory health from exposure to smoke emitted from planned burns in Victoria.

The results of this study will allow for targeted evidence based advice to the clinicians, policy makers and members of the community.

Methodological approach:

This honours project sits within the larger project on the health effects of planned burns (as described above).

The student will be part of the research team, and will join the team for the field measurements. He/she will do the exhaled nitric oxide (eNO) test, which measures airway inflammation. The measurements will be done before, during and after the burns. The test is an easy test for the participants and involves exhaling into a monitor. In addition to collecting and downloading the test results, the student will analyse, interpret and report these data.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

Project Title: Noise exposure and risk of Noise Induced Hearing Loss (NIHL) in apprentices

Supervisor: Dr Geza Benke

Contact Email: geza.benke@monash.edu

Project description:

Our previous research of occupational hearing loss claims data indicates that noise control programs, including the wearing/use of hearing protection, may be inadequate. This qualitative study will investigate the factors that influence the understanding of NIHL and involvement in noise control programs, including the use of Hearing Protection Devices (HPDs), amongst building and construction apprentices in a TAFE college.

There is a need for more information regarding perception of the effects of noise, hearing preservation, barriers and enablers to involvement in noise control programs and value of hearing to best target future quantitative research that will describe the current work situation. Intervention studies can then also be conducted based on sound principles that would enable improved objective outcomes to be assessed.

AIMs:

Determination of key themes related to hearing loss and noise control programs from focus groups of apprentices

Comparison of findings for apprentices with those of management

Determine the factors that influence the wearing of hearing protectors amongst apprentices.

Methodological approach:

This project will involve recruiting building and construction apprentices into focus groups in a TAFE college to undertake a qualitative investigation into their knowledge and attitudes to occupational noise in the workplace. Some employers of the apprentices will be later asked to complete a questionnaire on occupational noise control in their workplace following the focus group meetings. The focus group discussions will be recorded and analyzed for the development of themes that will inform future research.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

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Project Title: Cardiovascular and diabetes risk factors in 500,000 participants in the WorkHealth program

Supervisor: Dr Helen Kelsall

Contact Email: helen.kelsall@monash.edu

Project description:

Cardiovascular disease (CVD) and diabetes are two National Health priority areas. In the Victorian WorkHealth Check Program, over 500,000 participants have undertaken a voluntary, free health check by a trained provider. Participants completed a questionnaire including lifestyle factors (fruit and vegetable intake, physical activity, smoking, alcohol use) and medical conditions. Waist circumference, blood pressure, random blood glucose and cholesterol were measured. Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK) and Absolute Cardiovascular Risk Assessment scores were calculated. MonCOEH undertook an evaluation of the WorkHealth program. Analysis to date indicates that elevated CVD and diabetes risk scores are common in Victorian workers, some subgroups are at increased risk, and there is variation across geographic areas.

The aim of this project is to further assess CVD or diabetes in relation to risk factors based on analysis of this data. The specific research question of interest to form the basis of the project will be discussed with and developed by the student, and in the context of ongoing research.

Methodological approach:

The methodological approach will be quantitative and involve undertaking analysis of an existing dataset collected from 500,000 WorkHealth checks. To develop the project the student will need to read and summarise relevant literature, and develop an analysis plan, under supervision. Ethics approval has been granted for this Study.

This project will provide valuable information about risk factors for CVD or diabetes in the workplace. The workplace could provide a location for targeting interventions to reduce CVD and diabetes risk in all workers as diseases of national priority. The research project will be publishable and could be written up by the student for submission as a peer review publication.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

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Project Title: Physical and psychological health of Australian veterans of the 1991 Gulf War – a follow up study 20 years since the Gulf War

Supervisor: Dr Helen Kelsall

Contact Email: helen.kelsall@monash.edu

Project description:

During the 1990/1991 Gulf War, Australia deployed 1871 Defence Force personnel to the Gulf region as part of a multinational response. The health effects of Gulf War deployment has created scientific and public interest internationally.

The aim of this project is to compare an aspect of the health of Australian Gulf War veterans and a military comparison group whose physical and psychological health we first studied in 2000-02 and in 2010-12. In both phases of the longitudinal study, data was collected from participants on a range of physical and psychological health outcomes.

A health outcome of interest to form the basis of the project will be discussed with the student, in the context of the ongoing research.

The potential research question will be to investigate, for that health outcome, the current health of veterans, as well as the persistence or resolution of the condition since the 2000-02 study, in comparison with the military comparison group, and possible risk factors.

Methodological approach:

The methodological approach will be quantitative and involve undertaking analysis of an existing dataset of physical and psychological health data. To develop the project the student will need to read and summarise relevant literature, and develop an analysis plan under supervision. Ethics approval has been obtained for this Study.

The 2010-12 study is the longest period of follow up of Gulf War veterans to date worldwide, and will be of national and international interest. The research project will be publishable and could be written up by the student for submission as a peer review publication.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

Associate Professor Karin Leder

Dr Martha Sinclair

Dr Joanne O'Toole

Water Quality Unit

Members of the Infectious Disease Epidemiology Unit working within the Water Quality Unit are involved in research on water quality and public health. They also study the impact of environmental conditions on infectious diseases. There is a particular focus on assessing and managing the health impacts of microbial pathogens in conventional water supplies and alternative water sources such as rainwater, greywater, and recycled water.

Project Title: Household usage and perception of water in Melbourne

Supervisors: Associate Professor Karin Leder, Dr Martha Sinclair and Dr Joanne O'Toole

Contact Email: karin.leder@moansh.edu

Project description:

With changing water costs, fluctuations in restrictions and planned amendments to water guidelines, this project will explore how water is currently used around the house, including use of alternate water sources (greywater, rainwater), reasons why people choose to use (or not to use) these alternative water sources, and how much water (other than for drinking) people estimate they are exposed to, as well as perceptions of water quality and safety.

Methodological approach:

This project will involve conducting telephone, postal and/or internet surveys to collect information on water usage and perceptions of water quality by Melbourne householders

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center

Critical Care Research Division

Lisa Higgins

Emma Ridley

Dr Carol Hodgson

The Australian and New Zealand Intensive Care Research Centre (ANZIC-RC)

The Australian and New Zealand Intensive Care Research Centre (ANZIC-RC) is a bi-national intensive care clinical research methods centre. The ANZIC-RC assists with the design, funding and execution of clinical trials.

Project Title: Patient blood management in critical illness and trauma

Supervisor: Lisa Higgins

Contact Email: Lisa.higgins@monash.edu

Project description:

There are a number of research questions that may assist with decreasing blood product requirements in patients with critical illness and trauma.

These research questions are currently being addressed as part of a program of research and include:

- The role of pre-hospital tranexamic acid in decreasing long term poor outcomes in trauma patients.
- Administration of IV iron in ICU patients and the requirement for red blood cell transfusions.
- The use of frozen platelets in cardiac surgery.
- The role of fibrinogen in reducing bleeding and transfusion requirements in trauma patients.

Methodological approach:

A systematic review of interventions to reduce blood product requirements in critically ill and trauma patients will be performed. A systematic review attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: Nutrition therapy in adult patients requiring ECMO in Australia and New Zealand

Supervisor: Emma Ridley

Contact Email: Email:Emma.ridley@monash.edu

Project description:

Patients with heart and/or lung failure are some of the sickest patients in our hospital systems. In severe cases they often need long periods of specialist care in Intensive Care Units (ICU) in Australia and New Zealand. Extracorporeal Membrane Oxygenation (ECMO) is an extremely specialised and costly form of life support, only being utilised when a patient is close to death, as a last resort to save their life. This form of life support has been used for many years in babies and children but is relatively new for adults. Whilst there is evidence emerging of the positive effects of ECMO in adults, there is a lot that is unknown and further research is required.

Another essential therapy that assists patients in their recovery from illness is the provision of artificial nutrition. Until recently nutrition was under-emphasised in the critically ill, however, it has now become clear that targeted nutrition can positively affect a person's outcome and is vital during long periods of intensive care hospitalisation.

There is very limited data on how nutrition affects the outcomes of ECMO patients (positive or negative). We know from limited studies that these patients receive less nutrition than other patients, something that is particularly concerning given that less nutrition leads to a longer hospital stay and has been linked with higher hospital mortality. We also think that adult patients on ECMO need more nutrition as they appear to lose more weight than patients with other illnesses in intensive care; however this has not been confirmed. It is thus essential that we understand the effects of this relatively simple but vital therapy on these very sick patients.

Aim:

(1) describe the current nutrition therapy practices; and

(2) profile the barriers and enablers to successful feeding

in patients requiring VV or VA ECMO whilst ECMO is insitu and for 7 days post ECMO removal.

Methodological approach:

This study is a 12 month prospective, observational study in approximately 10 sites across Australia and New Zealand. It will collect information on the current feeding practices in patients on ECMO and describe the factors that inhibit or allow provision of nutrition so that we can understand the issues that exist, develop strategies to improve delivery of nutrition and determine areas for further research.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: TEAM Pilot: A trial of early activity and mobility in ICU

Supervisor: Dr Carol Hodgson

Contact Email: Carol.hodgson@monash.edu

Project description:

Patients in intensive care (ICU) traditionally receive bed rest as part of the management of their critical illness. It is possible that they develop muscle weakness even after only a few days of mechanical ventilation that may prolong their time in intensive care and in hospital, and delay functional recovery resulting in slower return home and to work. Moreover, it is plausible that failure of recovery of physical performance is a contributing factor to late mortality after critical illness. Weakness may be avoided with simple strategies of early exercise in intensive care.

TEAM is a program focused on research in early mobilisation to improve functional recovery of intensive care unit (ICU) survivors. This includes

(1) reviews and systematic reviews; and

(2) a multi-centre observational study to define standard care funded.

This pilot RCT, is the third component of the TEAM program and its objective is to determine if a phase III RCT of early mobilisation is feasible in ICUs in Australia and New Zealand.

Methodological approach:

Phase 2 randomised controlled trial of early goal directed mobilization vs standard care.

Date will be collected on:

1. Demographic data and baseline characteristics;

2. The level of assistance using standardised criteria;

3. Duration of rehabilitation;

4. Equipment and staff resources; and

5. The highest level of activity.

Data will be collected on paper case report forms entered into a web based system.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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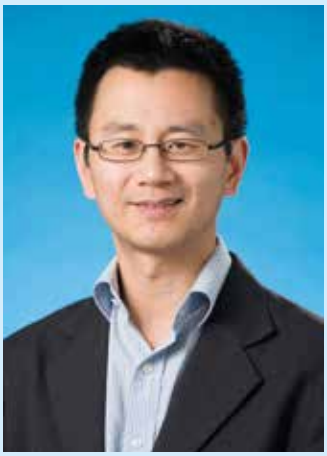
Dr. Judy Lowthian

Dr Cameron Gosling



Associate Professor Allen Cheng

Associate Professor Belinda Gabbe

Pre-hospital, Emergency and Trauma Unit

This unit is responsible for a number of leading clinical quality registries including the Victorian State Trauma Outcomes Registry Monitoring Group (VSTORM), the Victorian Orthopaedic Trauma Outcomes Registry (VOTOR) and the Bi-National Burns Registry (Bi-NBR). These registries play an important role in the health system and involve high-level interaction with senior industry, government, medical specialists and other professional and academic personnel.

Project Title: Out-of-hospital cardiac arrests during sporting activities: descriptive epidemiology, characteristics and outcomes

Supervisors: Associate Professor Karen Smith and Professor Stephen Bernard

Contact Email: karen.smith@monash.edu

Project description:

Out-of-hospital cardiac arrest (OHCA) is a common cause of cardiac death with an incidence in Australia of 148 per 100 000 persons per year. Sudden cardiac arrest in young, competitive athletes has been well characterized. However, these data may not apply to participants in other sporting events who may be an older population with different cardiovascular risk factors and underlying medical conditions. Prior studies have examined cases of cardiac arrest from only one or two events or have lacked detailed information.

This study aims to use data from the Victorian Ambulance Cardiac Arrest Registry to describe cardiac arrests occurring during sporting activities (in particular at sporting venues) in Victoria.

The incidence, clinical profiles, and outcomes of cardiac arrests that occur during sporting activities will be described and compared to other populations in the registry. Factors associated with cardiac arrest survival will be modelled and described.

The study will result in a publication.

Methodological approach:

VACAR

The Victoria Ambulance Cardiac Arrest Registry (VACAR) is a population-based registry containing ambulance data and additional outcome data for all ambulance attended cardiac arrests occurring in Victoria since 1999. Ambulance data is captured from patient care records (now electronic) and operational databases. Discharge data is obtained from hospital records and the state Death Registry.

Cases

Data for cases identified as occurring during a sporting event 2003-2012 will be extracted from VACAR. Additional data will also be drawn from ambulance electronic patient care records for cases from 2008 (when ePCRs were introduced) to allow for some qualitative data extraction for cases.

Statistical analysis

This project is essentially a descriptive epidemiological analysis of cardiac arrest patients during sporting events. Usual descriptive statistics (e. g. means, proportions) will be used to describe patient characteristics such as age, gender, location of arrest, cardiac rhythm on ambulance arrival and ambulance response time). Standard quantitative methods will be used for comparisons between groups (e. g. Fisher's exact test). Some qualitative data will be extracted from PCRs to allow more detailed descriptions of the activity of the patient prior to arrest.

Logistic regression will be used to select independent predictors of dichotomous, dependent variables (i.e. survival to hospital discharge, presenting rhythm,). Factors for inclusion in the logistic regression model will be identified from a univariate analysis. A p-value of less than 0.05 will be regarded as significant.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center or alternatively Ambulance Victoria (Doncaster)

Project Title: What are the health and social outcomes for very old patients discharged home from the Emergency Department?

Supervisor: Dr. Judy Lowthian

Contact Email: Judy.Lowthian@monash.edu

Project description:

Older people use a disproportionate share of the health care budget, and the persistent increase in numbers of older patients presenting for emergency hospital care is a major worldwide concern. The fastest growth is in people aged ≥65 years, representing 18% of all Emergency Department (ED) presentations. An ED visit for an older person is reported to be a sentinel health event that can lead to substantial functional decline and adverse outcomes. Older people present with more complex conditions, consume more resources, have longer ED stays, are more likely to be admitted, have long hospital stays, and a higher rate of re-presentation. This will increase with population ageing. Although social/psychological support is often required following an ED visit, there is little evidence this occurs in a systematic coordinated manner.

The SEED (Safe Elderly Emergency Discharge) study is recruiting 1000 patients aged 65 years and over, who are discharged home from The Alfred within 48 hours of presentation to ED. SEED aims to:

- Develop a tool that predicts whether older patients are at risk of adverse health outcomes, namely functional decline, institutionalisation or death, following an ED visit
- Determine whether current models of emergency care ensure safe discharge and facilitate optimal health outcomes for older patients
- Develop a tailored evidence-based care framework applicable to Australian and international settings

This Honours project will:

(i) Profile the demographic and clinical characteristics of very old people aged 85 years or more who attend ED; and

(ii) determine their health and social outcomes and care needs following ED attendance for up to 6 months. The results will help determine if an ED attendance for a very old person is a sentinel event.

Methodological approach:

This project will involve:

A literature review ; and

Quantitative analysis of data collected for the SEED project. The analysis will examine the indicators for increased dependency and support following a visit to the emergency department by a very old person, aged 85 years or more.

This project will help identify groups of very old patients who are at risk of adverse health and social outcomes following presentation to ED.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: Evaluating the incidence and outcomes of out-of-hospital cardiac arrest (OHCA) by locality and socio-economic status

Supervisor: Dr Lahn Straney and Associate Professor Karen Smith

Contact Email: lahn.straney@monash.edu

Project description:

Sudden cardiac arrest (SCA) is a condition in which the heart suddenly and unexpectedly stops beating. If this happens, blood stops flowing to the brain and other vital organs. SCA usually causes death if it's not treated within minutes. When a SCA occurs outside of hospital it is called out-of-hospital cardiac arrest (OHCA). OHCA is a major public health issue with a high case fatality that exceeds 90% in many communities.

It is known that regional disparities in the incidence of OHCA exist. However it is less clear whether or not there are disparities in the incidence of OHCA across different levels of socio-economic status. Identifying communities at greater risk of OHCA may help to target education campaigns aimed at quickly identifying a cardiac arrest event.

In addition, recent evidence in Victoria suggests that there are regional disparities in survival outcomes. Given this, it seems likely that disparities in survival exist across different strata of socio-economic status (SES).

This project aims to investigate whether there are disparities in the incidence and outcomes of OHCA across different strata of socio-economic status.

Methodological approach:

The Victorian Ambulance Cardiac Arrest Registry (VACAR) contains information from ambulance records dating back to October 1999, for all patients in Victoria who suffer cardiac arrest and have an ambulance attend. The study cohort will consist of cases of adults (aged ≥16 years) who experience an OHCA of presumed cardiac cause, who were attended by Ambulance Victoria paramedics between 2008 and 2013. This is estimated to be approximately 18,000 patient records.

Using this data, the student will link age- sex-standardized rates of OHCA to ABS socio-economic data using the residential postcode of the patient. The student will contrast the crude and adjusted incidence rates over each strata to determine if there are significant differences by socio-economic status. The student will also compare crude survival to hospital, and hospital discharge across the different strata of SES .

No new data collection will be required as this study will rely on a quantitative analysis of existing datasets. Disparities by SES has not been investigated using this data.

Depending on the interests of the student, they may also employ statistical prediction models to determine if any differences in survival outcomes across SES persist after controlling for factors known to influence survival. For example, socio-economic status may be correlated with rurality and thus time to emergency response.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: Risk factors for infection in patients with traumatic orthopaedic fractures

Supervisors: Dr Cameron Gosling and Associate Professor Allen Cheng

Contact Email: cameron.gosling@monash.edu

Project description:

The Victorian Orthopaedic Trauma Outcomes Registry (VOTOR) is a sentinel site registry collecting information about patients admitted for greater than 24 hours with a traumatic fracture to one of four participating hospitals. Most recent orthopaedic studies of risk factors on the development of a post-operative infection have focused on arthroplasties for specific groups of patients with comorbidities, such as diabetes. The outcomes of this study will assist in the identification of patients at risk of developing an in-hospital post-operative infection following surgery for a traumatic orthopaedic injury. The primary aim of the project is to define risk factors for early post-operative infection in patients that have traumatic orthopaedic fractures.

Methodological approach:

A nested case control study will be conducted using patients with a traumatic orthopaedic injury enrolled on the Victorian Orthopaedic Trauma Outcomes Registry (VOTOR) and admitted to the Alfred Hospital. Cases will be patients who are coded as having a post-operative infective wound complication (ICD-10 codes B950 to B970 and T800 to T8903), and controls will be patients with traumatic fractures who underwent a surgical procedure (matched to cases) that do not have a post-operative infective wound complication. Medical records of cases and controls will be examined to confirm case/control status and record risk factors for infection (including mechanism of injury, open/closed fracture status, site of fracture, procedure details, age, comorbidities, blood transfusions, and infection prophylaxis). This study will use existing data from VOTOR (e.g. length of stay, Charlson Comorbidity Index, injury cause) and data collected from the patients' medical records.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

Project Title: Serious intentional self-harm and suicide in Victoria: Incidence and outcomes

Supervisor: Associate Professor Belinda Gabbe

Contact Email: belinda.gabbe@monash.edu

Project description:

Suicide and injuries resulting from intentional self-harm represent a significant public problem. In Victoria, suicide is the leading cause of death, followed by road trauma. While road trauma deaths have reduced significantly over time, the incidence of suicide has remained unchanged. Each year, many patients are admitted to hospital with serious injuries resulting from intentional self-harm incidents, and are at high risk of further self-harm or a completed suicide attempt. This study will investigate the incidence of intentional self-harm resulting in serious injury, and the short and long term outcomes for these people. Risk factors for re-injury, suicide and functional and quality of life outcomes will be investigated. It is anticipated that the findings will improve the measurement of burden of intentional injury, identify groups at risk of poor outcome which can be targeted for early intervention, and guide service delivery for intentional-self harm patients.

Methodological approach:

The population-based Victorian State Trauma Registry (VSTR) will be used to identify all intentional self-harm major trauma patients in Victoria from January 2007 to December 2011. Demographic, injury event, diagnosis, complications, comorbidities, in-hospital outcomes and functional and quality of life outcomes (at 6-months, 12-months and 24-months post-injury) will be extracted from the VSTR. Post-discharge deaths will be identified through the VSTR linkage with the Victorian deaths registry, including the date of death. The National Coroners' Information System (NCIS) database will be used to extract additional data regarding post-discharge deaths to identify self-harm related death. Multivariate survival analysis and regression analyses will be used to identify predictors of outcome. The study will use existing data.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital

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Project Title: Cryoprecipitate use for trauma resuscitation

Supervisor: Associate Professor Biswadev Mitra

Contact Email: b.mitra@monash.edu

Project description:

The most common indication for cryoprecipitate is the replacement of fibrinogen in patients with acquired hypofibrinogenemia and bleeding. The diverse contents of this product have never been fully elucidated, nor has its clinical efficacy been determined in properly designed clinical studies.

The indication of cryoprecipitate during massive haemorrhage has been arbitrarily set at a serum fibrinogen count of <1. However, this indication appears to be poorly followed.

Methodological approach:

Sample: All major trauma patients who presented to The Alfred Emergency & Trauma Centre (E&TC) and underwent an acute blood transfusion between 2006-2012.

Phase 1: Review of literature on indications and effectiveness of cryoprecipitate

Phase 2: Retrospective review of major trauma studying the indication and use of cryoprecipitate

Phase 3: Develop evidence based clinical practice guidelines for cryoprecipitate use during trauma resuscitation

Project Location:

Emergency and Trauma Centre, The Alfred Hospital

Project Title: The Plaster in ED (PIE) study

Supervisors: Associate Professor Biswadev Mitra and Professor Max Esser

Contact Email: b.mitra@monash.edu

Project description:

Poor plaster application technique thereby leading to the loss of reduction in a plaster cast has been considered to be the most important causative factor in delayed fracture healing.

Anecdotally, there is an impression that plasters applied in the emergency department are relatively poor in quality and often need to be revised. There are no reliable and validated objective radiological measurements to differentiate a well-applied plaster cast from a poorly padded and moulded cast. The Cast Index and Padding Index has been proposed with a combination of the two termed the Canterbury Index but are rarely used. The quality of plasters in the clinical setting continues to be judged by subjective clinician opinion.

The aim of this study will be to identify the quality of plasters applied in the ED.

Methodological approach:

Sample: Any patients who had a circumferential plaster or splint applied in the ED and had a planned follow up in the Fracture Clinic will be included. Informed consent to be obtained from patient in ED.

Study design: Prospective observational study using a convenience sample. In Phase 1, the student researcher will recruit patients and follow up in fracture clinic over an 8 week period.

Data will be analysed for common, reversible deficiencies in the practice of plaster application in the ED.

Following analysis, education of ED personnel on plaster application will be repeated with emphasis on pitfalls identified in Phase 1.

In Phase 2, the methodology of Phase 1 will be repeated to identify any improvements in plaster application.

Data: Type of fracture, plaster cast and clinician details will be collected in ED. Orthopaedic opinion of the plaster together with data on the principles of plaster immobilization will be collected in pre-determined abstraction forms.

Project Location:

Emergency and Trauma Centre, The Alfred Hospital and the Fracture Clinic, The Alfred Hospital

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Project Title: Acute Kidney Injury post contrast CT during trauma resuscitation

Supervisors: Dr. Gim Tan and Associate Professor Biswadev Mitra

Contact Email: b.mitra@monash.edu

Project description:

It is believed that the use of intravenous contrast agents for CT scans can cause acute kidney injury. However in recent studies, patients who received intravenous contrast agents and those who didn't had a similar risk of developing acute kidney injury.

This study will aim to determine the association between contrast CT scanning and development of acute kidney injury among major trauma patients.

Methodological approach:

Sample: All major trauma patients who presented to The The Alfred Emergency and Trauma Centre (E&TC) and underwent a CT scan with IV contrast between 2006-2012 will be included.

Study design: Retrospective cohort design. All patients would have had their renal function measured prior to the CT scan. Post scan renal function will be studied to determine the incidence of acute kidney injury.

Other determinants of AKI will also be studies to study factors associated with AKI.

Project Location:

Emergency and Trauma Centre, The Alfred Hospital

Monash Applied Research Stream

Melanie Gibson-Helm

Women's Public Health Research

This unit has a number of programs including healthy lifestyles, obesity, PCOS and reproductive health, indigenous health, menopause and midlife health, evidence synthesis and guidelines, diabetes and cardiovascular disease, and a clinical trials program. Translation of research to a range of stakeholders including researchers, clinicians, consumers and policy makers is fundamental to the activities of this unit.

Project Title: Risk factors for adverse pregnancy outcomes among migrant women of refugee and non-refugee background.

Supervisors: Melanie Gibson-Helm and Dr Jacqueline Boyle

Contact Email: melanie.gibson@monash.edu

Project description:

Maternal origin is emerging as an important contributor to pregnancy outcomes. The profile of risk factors for adverse pregnancy outcomes may differ between migrant women of refugee and non-refugee background. The Women's Public Health Research team at Monash Applied Research Stream has conducted exploratory analysis of Victorian hospital data sets and identified some adverse pregnancy outcomes that are more common in women of refugee background compared to non-refugee migrant women. The next step is to identify whether there are particular risk factors for these outcomes that may be modifiable through targeted strategies to improve engagement in pregnancy care.

Methodological approach:

This retrospective case control study will use existing hospital data sets to develop a profile of risk factors for one or more adverse pregnancy outcomes in migrant women.

Project Location:

Department of Epidemiology and Preventive Medicine, Alfred Center and The Alfred Hospital


Baker IDI
HEART & DIABETES INSTITUTE

Associate Professor Anna Peeters

Dr Kathryn Backholer

Baker IDI

Project Title: Change in psychological distress associated with participation in a pedometer workplace program.

Supervisor: Associate Professor Anna Peeters

Contact Email: anna.peeters@bakeridi.edu.au

Project description:

With the trend of increasing sedentary occupations alongside a growing understanding of the role of environmental settings in chronic disease prevention, the workplace has become a key setting for health promotion programs aimed at increasing physical activity and preventing chronic disease.

One growing area of workplace health promotion programs is pedometer based initiatives. The "Global Corporate Challenge® (GCC®) Evaluation Study" aims to evaluate whether participation in a four month, pedometer-based, low-impact, workplace physical-activity program reduces the risk of diabetes and cardiovascular disease. This study was conducted in a large cohort of Australian adults who were employed across a range of workplace environments, in primarily sedentary positions, and voluntarily enrolled in a workplace program, the GCC®, aimed at enhancing physical activity levels. The study measured a variety of risk-factors (behaviour, anthropometry and pathology) immediately after the intervention (4 months) and in the long term (at 12 months and 18 months).

The aim of this project is to describe "The K10 Symptom Scale" in the sedentary employees and explore how the score changes after participation in the GCC®. "The K10 Symptom Scale" assesses the chance of having a current anxiety or depressive disorder.

Methodological approach:

This project will analyse whether participation in the GCC is associated with an improvement in The K10 Symptom Scale. Data on the 765 GCC Evaluation Study participants will be used. Linear and logistic regression analysis will be used.

Project Location:

Baker IDI, AMREP Campus

Project Title: Increases in waist circumference independent of increases in weight in Australian adults

Supervisors: Associate Professor Anna Peeters and Dr Kathryn Backholer

Contact Email: anna.peeters@bakeridi.edu.au

Project description:

We, and others, have shown that waist circumference in American adults has increased to a greater extent than would be expected from increases in body mass index. This has potential implications for the level of metabolic risk associated with obesity. This relationship has not been explored in Australian adults.

We aim to analyse the relationship between trends in waist circumference and weight in Australian adults between 1995 and 2007.

Methodological approach:

This project will analyse data from the two national health surveys in Australian adults (1995 and 2007), in which weight and waist circumference were recorded by the study investigators. Training in epidemiology, biostatistics and appropriate research supervision will be available. Students will be encouraged to write up a research publication from this project

Project Location:

Baker IDI, AMREP Campus

Project Title: Factors associated with a discordance in changes in weight and waist circumference?

Supervisors: Associate Professor Anna Peeters and Dr Stephanie Tanamas

Contact Email: anna.peeters@bakeridi.edu.au

Project description:

We have preliminary data suggesting that weight gain and increasing waist circumference do not always occur together. We have also demonstrated previously that waist circumference appears to be increasing at a faster rate than weight. As excess waist circumference appears to have greater metabolic consequences than high body mass index it is important to understand factors that preferentially predict increasing waist circumference.

Here we aim to identify sub-populations in which changes in weight and waist circumference are not correlated. We additionally aim to identify preferential predictors of increasing waist circumference.

Methodological approach:

We will use the 4,614 participants of the Australian Diabetes, Obesity and Lifestyle Study who returned to the 12 year follow-up in 2012. The student will perform secondary data analysis, including logistic regression.

Project Location:

Baker IDI, AMREP Campus

Project Title: Health consequences of a combined excess body mass index and waist circumference

Supervisors: Associate Professor Anna Peeters and Dr Stephanie Tanamas

Contact Email: anna.peeters@bakeridi.edu.au

Project description:

The increasing health risks associated with obesity are well known. However, the extent to which a combination of excess body mass index and waist circumference is associated with health risks over and above one anthropometric marker alone is unknown. We aim to analyse the risk of incident diabetes and mortality associated with combinations of excess body mass index and waist circumference.

Methodological approach:

We will use the 11,247 participants of the Australian Diabetes, Obesity and Lifestyle Study who were followed for mortality until 2012. The student will perform secondary data analysis, including logistic regression and Cox regression analysis.

Project Location:

Baker IDI, AMREP Campus

Burnet Institute

Medical Research. Practical Action.

Professor Paul Dietze

Professor Margaret Hellard

Dr Freya Fowkes

Burnet Institute

Project Title: Mapping trajectories of methamphetamine and other drug use among an established Melbourne-based cohort

Supervisors: Professor Paul Dietze, Dr Mark Stoové, Mr Brendan Quinn

Contact Email: pauld@burnet.edu.au

Project description:

The Burnet Institute recently established and followed a cohort of methamphetamine users for 12 months to examine a range of related issues including barriers to treatment entry for methamphetamine dependence. The 'UnMET Study' recruited and interviewed 255 regular, Melbourne-based methamphetamine users in 2010 with follow-up in 2011. A distinct sub-group of the sample reported that their methamphetamine use was not 'problematic'/harmful enough to warrant utilisation of professional support.

The primary aim of the proposed project will be to examine trajectories of methamphetamine and other drug use, involvement in risk behaviours and experience of related harms among this group. This will enable investigations of the characteristics of methamphetamine users who are more likely to progress to more harmful patterns of use (in addition to those who are likely to reduce/cease heavy use patterns). Given increasing use of methamphetamine among Australia's general and sentinel drug-using populations, this timely research will be valuable for informing targeted early intervention and harm reduction initiatives.

Methodological approach:

This project will undertake quantitative secondary data analysis (including both cross-sectional and longitudinal methods) to investigate trajectories of methamphetamine and other drug use, involvement in risk behaviors and experience of harms among the established cohort. There will also be the opportunity to conduct in-depth interviews with select cohort members for collecting valuable qualitative data to support and provide context to any quantitative findings.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Understanding risky single occasion drinking and links to harms in a cohort of young Melbournians

Supervisors: Professor Paul Dietze, Professor Michael Livingston, Mr Sarah Callinan

Contact Email: pauld@burnet.edu.au

Project description:

Young Australians frequently engage in Risky single occasion drinking (RSOD). This drinking pattern is associated with a variety of harms including increased risk of accidents, exposure to violence and risky sex. Most research on RSOD has focused on normative drinking behaviors within the past year rather than on the specific circumstances of RSOD.

The aim of this study is to examine specific occasions of RSOD by young people to understand the specifics of drinking contexts and links to harms.

Methodological approach:

The proposed study involves analysis of quantitative data collected through the Young Risky Drinkers (YRD) study. The YRD is a representative sample of 802 young high-risk drinkers recruited across metropolitan Melbourne using Computer Assisted Telephone Interviewing (CATI) during 2012. Specific questions were asked about their most recent episode of high risk drinking. The cohort is being followed up in 2013 with a similar questionnaire.

Analysis will be undertaken to characterize risky drinking occasions and use findings from these analyses at baseline to examine whether these predict subsequent experiences of harm. Findings from the project will present a unique picture of RSOD.

Project Location:

Burnet Institute, Centre for Population Health.

Project Title: Street drinking in Footscray

Supervisors: Professor Paul Dietze and Dr Peter Higgs

Contact Email: pauld@burnet.edu.au

Project description:

Public alcohol consumption is a major issue in many local communities. The Footscray Central Business District has been identified as a site in the City of Maribyrnong with public drinking issues, with pockets of drinkers identified across different parts of the CBD.

Methodological approach:

This study will involve structured observation of the Footscray CBD along with in-depth interviews with public drinkers about their experiences of drinking and choices of drinking locations.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Alcohol health promotion using mobile phones

Supervisors: Dr Megan Lim, Professor Paul Dietze and Dr Rebecca Jenkinson

Contact Email: lim@burnet.edu.au

Project description: Binge drinking is a serious and common problem among Australian youth. Novel methods of health promotion are urgently needed to address this problem.

This project is a scoping study investigating the potential uses of and acceptability of various health promotion approaches to binge drinking, including mobile phone SMS and smart phone apps.

Methodological approach:

The project will involve a mixed methods approach working with young people. The project will begin by scoping and evaluating existing health promotion interventions using smart phones. Studies will include quantitative methods - for example, online surveys and analysis of existing data. Qualitative methods including focus groups and in-depth interviews with young people will also be applied.

The project could lead to or include the development of a smart phone app and testing of health promotion messages to be sent via SMS.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Why do some people with hepatitis C continue to drink?

Supervisors: Professor Margaret Hellard and Dr Peter Higgs

Contact Email: peterh@burnet.edu.au

Project description:

Alcohol use is the strongest known modifiable determinant of Hepatitis C Virus (HCV) disease progression. Alcohol consumption has been found to raise the viral load and accelerate hepatic fibrosis in the context of HCV infection, and heavy alcohol consumption is a risk factor for premature death from HCV. Moreover, as well as impacting on liver disease progression, heavy alcohol use may influence the likelihood of successful HCV treatment.

Methodological approach:

The proposed project involves in-depth interviews with up to 25 consenting participants living with HCV from the Melbourne Injecting Cohort Study (MIX). Interviews will address:

- alcohol use and other related exposures and outcomes, including participants' alcohol consumption prior to and after HCV diagnosis;
- any medical advice regarding alcohol consumption they may have received;
- advice from peers with HCV regarding alcohol consumption;
- perception of alcohol consumption practices amongst peers with HCV;
- participants' understanding of the relationship between alcohol-related and injecting drug use-related behaviours;
- clinical symptoms and other effects of HCV on relationships; and self-perception; and
- current self-management strategies for living with HCV

Project Location:

Burnet Institute, Centre for Population Health

Project Title: The persistence of risk among people who inject drugs

Supervisors: Professor Paul Dietze, Dr Peter Higgs, Ms Danielle Horyniak

Contact Email: pauld@burnet.edu.au

Project description:

The prevalence of risk behaviours such as sharing of injecting equipment among people who inject drugs (PWID) has been well described in the Australian context. However, little is known about transitions in risk behaviours among PWID over time and whether Australian PWID moderate their behaviours in response to their changing circumstances.

Methodological approach:

In this study data from the Melbourne Injecting Drug User Cohort Study (MIX) will be examined to determine the extent to which risk behaviours change over time in the cohort and what impact any changes have on key health outcomes such as blood borne virus transmission.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Risk environments and injecting drug use – the impact of Closed-circuit television (CCTV)

Supervisors: Professor Paul Dietze, Dr Mark Stoove and Ms Danielle Horyniak

Contact Email: pauld@burnet.edu.au

Project description:

The risks associated with injecting drug use are determined by complex interactions between individual behaviours, drug using networks, socio-political influences, legislative responses and service provision. These factors combine to create an overall risk environment for people who inject drugs that mediate blood borne virus transmission, overdose risk, the frequency of drug use and other injecting drug related outcomes.

This project offers an opportunity to examine risk environments for injecting drug use from a public health, epidemiological and/or policy perspective, in the context of the introduction of CCTV monitoring systems in key locations.

Methodological approach:

Depending on the epistemological approach, this study will involve a combination of document review, media analysis, secondary data analysis, and primary quantitative and qualitative data collection from people who inject drugs and other key stakeholders.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Mapping public injecting drug use in urban Melbourne

Supervisors: Professor Paul Dietze, Dr Peter Higgs and Ms Rebecca Winter

Contact Email: pauld@burnet.edu.

Project description:

The risks associated with injecting drug use are determined by interactions between individual injecting behaviours and the 'environment' (e.g., physical, social, legislative) in which injecting occurs.

Methodological approach:

Using a mixed methods approach, this project will undertake ethnographic mapping and quantitative secondary data analysis to document aspects of public injecting drug use in inner urban Melbourne. The ethnographic mapping exercise will involve neighbourhood-level observational research to examine sites of public injecting, levels of public injecting and document associated injecting practices and potential risks.

Additional secondary data analysis will be undertaken to examine indicators of the impacts of public injecting, such as fatal and non-fatal overdose and impacts on public amenity.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Needle and Syringe Program coverage in Melbourne

Supervisors: Paul Dietze, Peter Higgs and Campbell Aitken

Contact Email: pauld@burnet.edu.au

Project description:

Background and rationale: The provision of clean needles and syringes and other injecting equipment to people who inject drugs (PWID) is the cornerstone of prevention strategies aimed at reducing the incidence of blood borne viruses such as hepatitis C and HIV. Australia is a world leader in Needle and Syringe Programs (NSP) with programs running for almost 30 years. However, coverage remains incomplete and the incidence of hepatitis C in particular remains stubbornly high.

The aim of this study is to examine NSP coverage in Melbourne.

Methodological approach:

The proposed study involves analysis of quantitative data on NSP coverage collected through two key data sources:

(1) the survey of PWID collected through the Illicit Drug Reporting System; and

(2) survey data obtained through the Melbourne Injecting Drug User Cohort Study (MIX).

The student will be required to collect some interview data as part of these studies and will analyse these and other data already collected as part of the studies.

There has been no equivalent study of NSP coverage in Melbourne and longitudinal analysis of MIX data on coverage will be internationally unique .

Project Location:

Burnet Institute, as well as fieldwork sites around Melbourne.

Project Title: Low income as a barrier to Opioid Substitution Therapy

Supervisors: Dr Peter Higgs and Professor Paul Dietze

Contact Email: peterh@burnet.edu.au

Project description:

People who inject drugs (PWID) often report low levels of income, with many reporting weekly incomes of less than $250. PWID on opioid substation therapy (OST) commonly describe an adverse impact from pharmacy dispensing fees for accessing OST. These fees are typically around $5 per dose, or $35 per week – for many a significant proportion of weekly income, especially after necessary expenditures (rent, food, etc.) are deducted.

Methodological approach:

This project would involve analysis of data from the Suboxone (a national year-long examination of a particular OST formulation, with a number of cross-sectional arms investigating the health domains of PWID and practices of prescribing pharmacists) and MIX studies (a Melbourne-based prospective cohort study running since 2008 with over 700 PWID as participants), examining the dispensing practice/cost for differing pharmacies, and personal in-depth interviews with PWID to further illicit the impact of dispensing costs and the extent that low income is a barrier to substitution therapy

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Investigating the acquisition and maintenance of immunity to malaria in infants and pregnant women

Supervisors: Dr Freya Fowkes and Dr James Beeson

Contact Emails: fowkes@burnet.edu.au

Project description:

Immunity to infectious diseases during pregnancy remains an intriguing area, with immunologic and physiologic changes during pregnancy rendering pregnant women to be more susceptible to, and more severely affected by, infectious diseases. Malaria is one of the most important pathogens in pregnancy and world-wide it is estimated that 50 million women living in malaria endemic areas become pregnant. Despite acquiring substantial pre-existing blood-stage immunity pregnant women typically develop higher parasite densities compared to non-pregnant adults, placental infection and associated complications. Very little is known about antibody acquisition, maintenance and boosting during or after gestation. Furthermore little is known about maternal transfer of antibodies and subsequent maternal antibody decay and infant antibody acquisition in infants born in malaria endemic areas.

Methodological approach:

We have samples from several established longitudinal cohorts of pregnant women and infants that can address questions of antibody acquisition and maintenance through antibody assays and epidemiological analyses. Findings will help us understand how immunity develops and is maintained against infectious diseases.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Immunity, drug efficacy and the spread of anti-malarial drug resistance

Supervisors: Dr Freya Fowkes and Dr James Beeson

Contact Emails: fowkes@burnet.edu.au

Project description:

Malaria caused by Plasmodium falciparum remains a major cause of morbidity and mortality globally. It is now extremely alarming that resistance to the first-line treatment for falciparum malaria, artemisinin-based combination therapy (ACT), has recently been reported in Asia. The assessment of antimalarial resistance is severely impeded by the presence of host immunity to malaria in patients living in malaria endemic regions. Naturally acquired blood-stage immunity increases the probability of parasite clearance independently of the drugs used, and regardless of their antimalarial resistance. However, the precise immunological targets and mechanisms which enhance antimalarial drug efficacy are unclear.

The overall objective of this project is to identify and quantify immunological biomarkers that determine ACT therapeutic efficacy in a malaria endemic area of Thailand, both in the context of clinical disease and malaria transmission.

Methodological approach:

Laboratory techniques will include ELISA and functional antibody assays. Findings will help assess to what extent immunity in populations can mask the presence of drug resistance and are vital for monitoring the global spread of drug resistance.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Identifying antigen targets of the acquired immune response during severe malaria

Supervisors: Dr Freya Fowkes and Dr James Beeson

Contact Email: fowkes@burnet.edu.au

Project description:

Malaria caused by Plasmodium falciparum is a leading cause of mortality and morbidity globally, particularly among young children. After repeated exposure, individuals develop effective immunity that controls blood-stage parasitaemia, thereby reducing clinical symptoms and life-threatening complications. Antibodies are important mediators of this acquired immunity. The demonstration that naturally acquired antibodies are associated with protection from malaria is one of the criteria used to objectively prioritize malaria antigens for malaria vaccine development.

Methodological approach:

We have recently completed a case-control study of severe malaria in children living on the North coast of Papua New Guinea. Cases were identified at Madang hospital and were defined as having severe malaria according to the World Health Organization criteria. Each case of severe malaria was matched to a healthy community control. Blood samples were taken from cases at the time of hospital admission and when the patient had recovered. For controls, samples were taken at the time of enrolment into the study.

We would like to determine levels of antibodies to a range of malaria antigens by Enzyme-linked immunosorbent assay (ELISA), flow cytometry and functional antibody assays. The levels of these antibodies will then be related to clinical outcome using statistical analysis, including regression techniques.

These findings will help us understand how immunity contributes to protection from severe malarial disease progression. The findings are valuable for advancing vaccine development by providing evidence supporting certain malaria antigens as targets of protective immunity in humans.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Sex, drugs and rock'n'roll: Young people and risk behaviours in a survey at the Big Day Out music festival

Supervisors: Dr Megan Lim and Professor Margaret Hellard

Contact Email: lim@burnet.edu.au

Project description:

Sexually transmitted infections (STI) are on the rise among young Victorians. Since 2005, we have surveyed over 9,000 people aged between 16 and 29 years of age at Melbourne's Big Day Out about sexual risk behaviour and drug use. Questions have covered participant's sexual histories, condom use, knowledge and perceptions of STIs, and STI testing histories. We ask about alcohol and other drug use, and other risks and behaviours such as diet and exercise, contact with police, mental health, and smoking. The Big Day Out festival also gives us an excellent opportunity to inform this population group about sexual health and behaviour that may place them at risk of sexually transmitted infections. Showbags containing safer sex and other harm reduction information are distributed to survey participants and other Big Day Out patrons

Methodological approach:

In this project the student will manage and organise recruitment of participants at the Big Day Out. They will then use the data collected to investigate patterns of sexual risk behaviours, knowledge, and attitudes. This will involve quantitative analysis of the relationship between variables such as condom use, number of sexual partners, drug and alcohol use, and perceptions of risk. These findings, in the context of current public health measures, will be used to advise on the design of future sexual health promotion campaigns.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: The feasibility of paying people who inject drugs a modest financial incentive to remain free of hepatitis C (HCV) infections

Supervisors: Professor Margaret Hellard, Dr Peter Higgs

Contact Emails: hellard@burnet.edu.au

Project description:

The predominant blood borne virus (BBV) transmitted through injecting drug risk practices in Australia is hepatitis C (HCV) and it leads to substantial morbidity and mortality in people who develop chronic infection. There are currently no vaccines for these infections, and whilst treatments are improving, prevention of transmission in people who inject drugs (PWID) remains vitally important. Various education and behavioural interventions have been trialled but to date no-one has provided a financial incentive to PWID to remain HCV free.

Methodological approach:

This project will explore the feasibility of providing a financial incentive to current PWID who have not been exposed to HCV to remain HCV free. It will also explore what would be considered a reasonable incentive to ensure PWID remain HCV free. A series of focus groups and one on one interviews will be conducted with current PWID, community based organisations representing PWID and relevant government officials

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Barriers to successful reintegration among people with a history of injecting drug use transitioning from prison to the community

Supervisors: Dr Mark Stoove and Ms Rebecca Winter

Contact Email: stoove@burnet.edu.au

Project description:

Although release from prison is a challenging and particularly vulnerable period for people with a history of injecting drug use, this transition also offers opportunity for intervention and support. Broad domains such as accommodation stability, family and social support and continuity of care have been identified as key elements for successful transition to the community in this population. However, we know little about the individual, social and structural barriers associated with these outcomes. This project will explore these relationships to help inform the development and refinement of programs and interventions aimed to enhance successful transitions between prison and the community among people with a history of injecting drug use.

Methodological approach:

This Honours project will involve a targeted epidemiological examination of health and social outcomes among a cohort of people who inject drugs recently released from prison. Individual and structural barriers and facilitators related to successful reintegration outcomes (e.g., avoidance of problematic drug use and recidivism, stable accommodation, accessing drug dependence treatment, supportive social relationships) will be examined. Opportunities will be available to supplement this analysis with qualitative data collected from people who inject drugs with incarceration histories and/or key stakeholders in the sector.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Risk behaviours and HIV among young gay and bisexual men

Supervisors: Ms Carol El Hayek, Dr Megan Lim and Dr Mark Stoove

Contact Emails: lim@burnet.edu.au

Project description:

In recent years, the notification of newly acquired HIV has increased among young gay men in Victoria. Studies have found that gay men in Australia are having anal sex much younger than in the past and do not test for HIV as often as older gay men do. This project will investigate reported sexual and testing behaviours of young Men who have sex with men (MSM) by consolidating and analysing data from various surveillance data sources, with the aim of better understanding what is contributing to the increased detection of HIV in this group.

Methodological approach:

Several ongoing projects conducted by the Burnet Institute collect behavioural data from young gay and bisexual men in Melbourne, such as the Big Day Out study, HIV passive surveillance, the Victorian Primary Care Network for Sentinel Surveillance on BBVs and STIs, HIV prevention social marketing evaluation surveys and associated focus groups.

This Honours project will involve the analysis of selected data interpreted alongside other available behavioural surveillance data such as those collected annually for the Melbourne Gay Periodic Survey. Opportunities will be available to supplement this analysis with new data collected from men who have sex with men and/or key stakeholders in the sector.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Evaluation of a community-based HIV rapid point-of-care service for men who have sex with men (MSM)

Supervisors: Dr Mark Stoove, Dr Alisa Pedrana and Ms Carol El Hayek

Contact Email: stoove@burnet.edu.au

Project description:

In recent years, notifications of HIV have increased among gay men in Victoria. Responses to HIV prevention in Australia have involved both health promotion oriented toward reductions in risk behaviour and promotion of regular HIV testing among those at risk. To address some structural barriers to high frequency HIV testing recent policy and regulatory changes have created the opportunity for the implementation of rapid point-of-care HIV testing in Australia. In response, the Victorian Department of health has funded the Burnet Institute and the Victorian AIDS Council to trial Australia's first community-based HIV rapid testing service targeting men who have sex with men. The primary aim of this service is to increase the frequency of HIV testing in this population and reduce the prevalence of undiagnosed HIV in the community.

Methodological approach:

The Burnet Institute is leading the implementation and evaluation of Victoria's community-based HIV rapid point-of-care service for men who have sex. This Honours project will make use of quantitative and qualitative data collected in this evaluation to address primary and secondary aims of the service. Outcomes of interest will include HIV testing and diagnosis rates, the degree to which the service is attracting key risk populations, and the acceptability of the service for clients, staff and other HIV testing services in Melbourne.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Content analysis of the successful health promotion project “Queer as F**K” delivery sexual health to gay men on Social Networking Sites

Supervisors: Dr Mark Stoove, Ms Alisa Pedrana, Professor Margaret Hellard

Contact Email: stoove@burnet.edu.au

Project description:

Online social networking sites (SNS) such as Facebook have grown rapidly in popularity. The popularity of these sites, along with their interactive functions, offers a novel environment in which to deliver health promotion messages. Over the past four years the Burnet Institute, working with the Victorian AIDS Council, developed the Queer as F**K project that aims to engage with gay males about sexual health and other issues impacting on their life. Queer as F**k is hosted on Facebook and through this project a large amount of online data has been collected, including quantitative online metrics of site activity and user engagement and qualitative/narrative data from user posts.

Methodological approach:

Using a mixed methods analytical approach (quantitative and qualitative), this honours project will monitor and analyse the ongoing ‘Queer as F**k’ health promotion project over seasons 1-7, assessing reach, interactivity and engagement to better understand the nature and potential utility of sexual health promotion to gay men using online social networking mediums. The project has the potential to inform the innovative use of this medium for a range of other health priority areas and risk populations.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Key strategies for engaging users of Social Networking Sites for health promotion

Supervisors: Dr Mark Stoove, Ms Alisa Pedrana, Professor Margaret Hellard

Contact Email: stoove@burnet.edu.au

Project description:

We recently conducted a review of social networking sites (SNS) to assess their use for sexual health promotion purposes. We found that, although many organisations involved in sexual health promotion have begun to use these websites, there has been very little formal study and evaluation of them. We identified a number of organisations that appear to be using SNS more effectively than others but we were unable to further investigate the strategies that these organisations used.

This Honours project will aim to identify strategies for success in this growing area. More specifically, the findings from this study will help us better understand the content, features and approaches that successfully encourage social engagement within a SNS health promotion context

Methodological approach:

Methods will include interviewing organisations with active health promotion activities on SNS and conducting an independent comparative evaluation of these sites. Quantitative and qualitative research will be used and the project will involve novel online recruitment methods

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Trends in STI testing and positivity in priority populations in Australia

Supervisors: Ms Caroline van Gemert and Ms Carol El Hayek

Contact Email: carolinevg@burnet.edu.au

Project description:

In the last decade, communicable disease notification systems have seen a dramatic increase in the number of notifications for chlamydia and several other STIs. Higher prevalence is commonly seen in populations that have higher sexual risk practices (such as men who have sex with men, Aboriginal and Torres Strait Islander People, Sex Workers). It is important to monitor rates of STI testing and positivity in these priority populations, as well as the general population, in order to identify emerging patterns and trends in STI epidemiology.

The Australian Collaboration for Chlamydia and other STI Enhanced Sentinel Surveillance (ACCESS) project is a sentinel surveillance system that monitors STI testing and positivity in a range of priority populations. This project will use existing data collected in the ACCESS project to explore STI testing and positivity in priority population and identify factors which are associated with both testing and positivity.

Methodological approach:

This project will involve quantitative data analysis of data collected through the ACCESS project. Data analysis will involve analysis of data collected through either laboratories or general practices and family planning clinics, and supplemented with behavioural data collected in the Victorian Primary Care Network for Sentinel Surveillance of STIs. Data analysis will involve calculation of testing and positivity rates for a range of STIs and factors associated with these (such as age, gender and other relevant characteristics) in priority populations (including men who have sex with men, Aboriginal and Torres Strait Islander People, Sex Workers).

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Providing testing reports to general practitioners as an intervention to increase chlamydia screening

Supervisors: Dr Megan Lim, Dr Mark Stoove, Ms Caroline van Gemert

Contact Email: lim@burnet.edu.au

Project description:

Chlamydia is the most commonly notified infection in Australia. An important component of chlamydia control is screening and testing; the majority of which occurs in general practice. Encouraging GPs to offer more chlamydia tests to young people is vital.

This is a study to look at the effectiveness of providing GPs with individual testing/positivity reports to examine if such reports change testing behaviour.

Methodological approach:

This study would use a pre-post-test design, looking at number of tests requested in 2012 following receipt of a report presenting the number of chlamydia tests requested in 2011, and the number of positive tests. The study will use data from the Australian Collaboration for Chlamydia Enhanced Sentinel Surveillance (ACCESS).

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Modeling the syphilis epidemic in Victoria

Supervisors: Ms Carol El-Hayek and Dr Emma McBryde

Contact Email: carol@burnet.edu.au

Project description:

In Victoria 80% of infectious syphilis cases are in men who have sex with men (MSM). Mathematical modeling of syphilis transmission in Australian MSM suggests an effective way to reduce syphilis is to increase the frequency of testing and treatment of MSM.

In recent years, we have seen a sustained increase in routine syphilis testing among MSM at high caseload clinics alongside a decline in infectious syphilis incidence.

How much testing needs to occur in Victoria's MSM community to eradicate infectious syphilis?

Methodological approach:

This project will involve the design of a syphilis transmission schema and model for mathematically predicting infection rates. Running the model will require defining input parameters which should be based on an extensive literature review.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: A systematic review of the structural features of injecting networks

Supervisors: Professor Margaret Hellard, Ms Rachel Sacks-Davis, Dr Emma McBryde

Contact Email: hellard@burnet.edu.au

Project description:

Hepatitis C and other blood-borne viruses are transmitted through sharing needles and other injecting equipment. These risk behaviours are embedded in social relationships but there is little known about the types and structures of social relationships in which these behaviours take place. A number of empirical studies have been conducted of injecting networks.

Methodological approach:

This study would involve systematic searches of scientific literature in order to identify published empirical injecting networks, characterising common structural features of injecting networks (if these exist), and describing how these injecting networks differ from other types of contact networks.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Understanding the social structures of relationships between people who inject drugs: a mixed-methods project

Supervisors: Professor Margaret Hellard, Ms Rachel Sacks-Davis, Dr Emma McBryde

Contact Email: hellard@burnet.edu.au

Project description:

We have conducted an empirical study of a drug injecting network and identified a number of social-structural features of that network. Some of these were unexpected: for example, we found that there were many people who reported injecting with two other participants but the two injecting partners did not report injecting with each other (this is surprising because usually there is a high propensity for two people with a friend in common to also be friends).

Methodological approach:

This project would include interviewing networks study participants in more depth about relationships that they have already reported in the past in order to understand some of the structural features. Quantitative methods would be used to identify potential interviewees and describe profiles of people with similar positions in the social network.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Who's talking about whom? An evaluation of techniques used to match individuals who inject drugs who have named each other in a research study

Supervisors: Professor Margaret Hellard, Ms Rachel Sacks-Davis, Dr Emma McBryde

Contact Email: hellard@burnet.edu.au

Project description: The Networks Study aims to understand how hepatitis C is transmitted between people who inject drugs (PWID) by modelling the structure of the injecting network. We have collected five years of social network data from PWID including first names, nicknames and some other characteristics of the people with whom participants inject drugs. A number of links have been made between named injecting partners and study participants but some may have been missed and multiple participants may have named the same partners who have not been recruited into the study.

Methodological approach:

This project aims to identify more matches using:

(a) traditional probabilistic matching techniques; and

(b) a technique that explicitly accounts for whether the participants have other common injecting partners.

What is the influence of the additional matches on the structure of the social network? Is the second technique biased because it assumes social clustering, and what are the implications of this for social network analysis?

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Assessment of antenatal and postnatal care for HIV positive pregnant women in Papua New Guinea

Supervisor: Dr Megan Lim

Contact Email: lim@burnet.edu.au

Project description:

Women in PNG are 80 times more likely to die in childbirth than women in Australia. Furthermore, the prevalence of HIV in PNG is high; around 2% of pregnant women are HIV-positive. There are effective methods for preventing mother to child transmission of HIV (PMTCT), however, in PNG many of these interventions may not be effectively delivered or taken up. The extent to which these interventions are delivered is not well understood, due to poor-quality data collection.

This study will work to improve data collection systems for an antenatal service in the highlands of Papua New Guinea, and determine the level of uptake and effectiveness of important PMTCT interventions

Methodological approach:

The project will involve two phases; database development and data analysis. The first phase will include formative scoping of existing data quality, collection, and use, development of a new data collection system to record PMTCT data, and entry of retrospective data into the new database. The second phase will involve epidemiological analysis to describe the prevalence of HIV risk factors and uptake of protective measures in women attending for antenatal and postnatal care, calculating the incidence of parent to child transmission of HIV, determining the impact of various interventions on reducing parent to child transmission of HIV (for example antiretroviral prophylaxis, feeding practices), and examining factors associated with HIV transmission, infant mortality and other adverse outcomes.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: Understanding sex work in Vanuatu

Supervisors: Ms Caroline van Gemert, Dr Megan Lim and Dr Mark Stoove

Contact Email: carolinevg@burnet.edu.au

Project description:

The prevalence of STIs, particularly chlamydia, in Pacific Island Countries and Territories (PICTs) are among the highest in the world. The asymptomatic nature of many STIs, particularly chlamydia and gonorrhoea, makes their public health control problematic, particularly in settings that have limited access to technologically advanced diagnostic procedures. Populations most vulnerable to STIs in the region include young people, female sex workers (FSW), men who have sex with men (MSM), injecting drug users, seafarers, uniformed services and prisoners, however there is an absence of reliable epidemiological information about these groups. In 2011, the Burnet Institute conducted a study with sex workers and MSM to estimate the prevalence of STIs in these populations, and also to investigate risk behaviours and other characteristics associated with STIs. This project will utilize data collected in the Vanuatu Integrated Bio-Behavioural Survey and conduct a more detailed investigation into sex work in Vanuatu.

Methodological approach:

This project will involve quantitative data analysis of data collected through the Vanuatu IBBS. The primary analysis will involve describing sex work practices in Vanuatu, such as number of partners, level and type of payment, duration of sex work and other sources of income. Analysis will also involve investigating which of these factors is associated with a greater number of transactional sex partners.

Project Location:

Burnet Institute, Centre for Population Health

Project Title: How does binge drinking impact on health-related behaviors among ex-prisoners in Fiji?

Supervisors: Ms Rebecca Winter, Associate Professor Stuart Kinner and Dr Mark Stoove

Contact Email: rwinter@burnet.edu.au

Project description:

Globally, prisoners are known to be a group at high risk of HIV and other sexually transmitted infections (STIs), and following release into the community risky behaviours such as unprotected sex and alcohol and other drug (AOD) use have the potential to spread infection. AOD use is known to be associated with risky sexual practices and poor health outcomes, and alcohol, yaqona and cannabis use are prevalent across Pacific Island Countries and Territories (PICTs). A situation analysis in Fijian prisons showed that prisoners engage in high levels of risk behaviour including unprotected sex, unsterile tattooing and genital modification. Although information about the prevalence of HIV and other STIs among prisoners in Fiji is limited, second generation behavioural surveys have demonstrated a high prevalence of (STIs) among other high-risk groups. Furthermore, although most prisoners return to the community within a relatively short period of time, little is known about patterns of risk behaviour among recently released prisoners in Fiji. This project will investigate how risky AOD use, such as binge drinking, impacts on STI risk behaviours and selected health outcomes pre and/or post-imprisonment.

Methodological approach:

Using an existing longitudinal dataset, this project will involve a targeted epidemiological examination of the patterns of AOD use among a cohort of prisoners/ex-prisoners in Fiji. The student will have the opportunity to examine various health outcomes, including HIV/STI risk behaviours, mental health status and chronic disease and explore the impact of binge alcohol consumption on these.

Project Location:

Burnet Institute, Centre for Population Health

MONASH University

GROUP OF EIGHT

Further information

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