

St Vincent's Clinic Foundation

Research Grants 2011

For 2011, 20 Research grants were awarded totalling \$740,000.

The Ladies' Committee Sr Mary Bernice Grant - \$100,000

"Macrophage inhibitory cytokine-1: a potential screening test for colonic polyps"

Dr David Brown - Principal Investigator

MIC-1 Blood level for the detection of initial and recurrent colonic polyps.

Macrophage inhibitory cytokine-1 (MIC-1), discovered at St Vincent's Hospital predicts bowel cancer behaviour and rises in the blood with the development of precancerous bowel polyps. Additionally serum MIC-1 level can be used to detect polyp recurrence with greater accuracy than prostate specific antigen blood testing for the detection of prostate cancer. This research will confirm the role of blood MIC-1 levels in predicting the presence of bowel polyps and the prevention of bowel cancer.

Research undertaken at St Vincent's Hospital

Adult Stem Cell Research Grant - \$100,000

"The kynurenine pathway modulates remyelination in multiple sclerosis"

Professor Bruce Brew - Principal Investigator

Tryptophan metabolism in adult stem cells.

This project seeks to optimize stem and precursor cell proliferation and differentiation to facilitate therapeutic transplantation for multiple sclerosis. Our preliminary data allow us to hypothesize that activation of tryptophan metabolism is a key factor explaining the limited ability of stem and precursor cells to proliferate and differentiate into oligodendrocytes. The results will considerably advance the therapeutic use of stem cells in the treatment of multiple sclerosis.

Research undertaken at St Vincent's Centre for Applied Medical Research

Tancred Research Grant - \$50,000

"Zebrafish models of atrial fibrillation"

Associate Professor Diane Fatkin - Principal Investigator

Zebrafish models of human heart rhythm disorders

Atrial fibrillation (AF) is the most common heart rhythm disturbance and a major risk factor for stroke and heart failure. Inherited gene variations in families are an important cause of AF but exactly what these genes are, and the ways in which these changes can alter the heart's electrical activity and promote AF are not well understood. We are proposing to establish techniques to model known and evaluate unknown human AF gene mutations using zebrafish models.

Research undertaken at Victor Chang Cardiac Research Institute

St Vincent's Clinic Foundation

Research Grants 2011

K & A Collins Cancer Grant - \$50,000

"Quality of life outcomes in patients undergoing contemporary techniques for the treatment of localised prostate cancer: A prospective study"

Associate Professor Phillip Stricker - Principal Investigator

Quality of life outcomes in patients undergoing current techniques for the treatment of localised prostate cancer: A prospective study.

This prospective study aims to reveal the effects of prostate cancer treatments on the male quality of life, as current interventions have diverse side effects. We measure how much bother is caused and how satisfied men are, by their treatment. As the first of its kind in Australia, we aim to improve the information patients are provided regarding their cancer treatment. Through improving informed consent, it will help patients to choose a treatment that aligns with their personal health goals.

Research undertaken at St Vincent's Prostate Cancer Centre & Garvan Institute of Medical Research

Di Boyd Cancer Grant - \$30,000

"Novel oncogenic role of miR-10a in acute myeloid leukaemia with mutated Nucleophosmin-1"

Associate Professor Anthony Dodds - Principal Investigator

Identifying the role of a novel RNA gene in the development of acute leukaemia

Recent research in our department has discovered a small gene, microRNA-10a, that may promote the growth and survival of cancer cells in a common type of acute leukaemia among adults called mutated Nucleophosmin-1 AML. We propose to study the mechanisms by which microRNA-10a may cause leukaemia, how it can be used as a diagnostic tool and its suitability as a drug target for new tailored treatments for leukaemia.

Research undertaken at St Vincent's Centre for Applied Medical Research

Froulop Vascular Research Grant - \$30,000

"Further improvement of survival kinase related recovery of donor heart function after hypothermic storage by simultaneous inhibition of endogenous phosphatases"

Professor Peter Macdonald - Principal Investigator

Pharmacological activation of the heart's own survival signalling pathways as a means to improve donor heart function after cold storage

A shortage of donor hearts has forced the consideration of hearts from marginal donors such as those where the hearts have been exposed to an extended cold storage time between organ procurement and re-implementation. The aim of the current project is to maximise recovery of such a model of marginal hearts with agents that activate the heart's own protective signalling pathways. Positive results will suggest an approach that may significantly increase clinical usage of "marginal" hearts and other transplantable organs.

Research undertaken at Victor Chang Cardiac Research Institute

St Vincent's Clinic Foundation

Research Grants 2011

Annual Grant I - \$50,000

"Use of induced pluripotent stem cells from human Trisomy 21 skin fibroblasts to identify defective genes leading to childhood leukaemia"

Professor David Ma - Principal Investigator

Using stem cells reprogrammed from the skin cells of Down syndrome children to uncover the genetic factors causing their leukaemia.

The ability of iPS cell technology to reprogram patient's cells into embryonic like stem cells have created an amazing opportunity to study human disease and to discover disease specific treatment. In this proposal we will, for the first time, use iPS technology to identify the genetic changes that cause leukaemia in children with Down syndrome, who have a high risk of developing this cancer. The success of the research has the potential to cure leukaemia and other cancers.

Research undertaken at St Vincent's Centre for Applied Medical Research

Annual Grant II - \$30,000

"Antigen-specific T-cell immune responses in men with anal squamous intraepithelial lesions (ASIL) due to high-risk human papillomavirus infection - correlation with disease progression and regression"

Professor Andrew Carr - Principal Investigators

Using new blood tests to understand how the immune system helps clear or control pre-cancerous lesions of the anus in gay men.

Infection with human papillomavirus (HPV) cause cervical cancer in women and anal cancer in men and women. Using two new blood tests invented by scientists and doctors at St Vincent's Hospital, we will study the body's immune responses to HPV infection. We then hope to be able to predict which pre-cancerous lesions are more likely to become cancer. A better understanding of our immune responses will also help to design new treatments (such as vaccines) in the future.

Research undertaken at St Vincent's Centre for Applied Medical Research

Annual Grant III - \$30,000

"Fibroscan in HIV mono-infection (FILM) study"

Dr Gail Matthews - Principal Investigator

Assessment of asymptomatic liver disease in HIV positive individuals using Fibroscan.

HIV positive individuals may be at high risk of developing liver disease for multiple reasons. Since scarring of the liver is often asymptomatic it has been previously difficult to identify these patients without performing liver biopsy. New Fibroscan technology is now available that allows non-invasive assessment for liver scarring or fibrosis. This project aims to examine how common significant scarring is in HIV positive individuals with particular risk factors for liver disease using Fibroscan technology.

Research undertaken at St Vincent's Hospital

St Vincent's Clinic Foundation

Research Grants 2011

Annual Grant IV - \$30,000

"Investigation of platelet-derived microparticles in patients receiving antiplatelet therapy"

Dr Joanne Joseph - Principal Investigator

Assessing platelet microparticle release and function following antiplatelet treatment.

Platelets are blood cells that play a crucial role in controlling bleeding, however they also contribute to cardiovascular disease development, placing patients at risk of life-threatening blood clots. Antiplatelet drugs (aspirin and clopidogrel) are commonly used to prevent clotting, however not all patients respond adequately to these agents. We aim to investigate why certain patients may fail to respond to these medications in an attempt to identify factors which may help in further reducing the risk of serious blood clots.

Research undertaken at St Vincent's Centre for Applied Medical Research

Annual Grant V - \$30,000

"Clinical features, prognosis and outcomes of Cardiac Amyloidosis"

Associate Professor Eugene Kotlyar - Principal Investigator

A comparison of different types of Amyloidosis causing heart failure.

Amyloidosis is a disease where normal proteins become toxic, and are deposited in tissues causing organ failure. This study looks at 42 patients with heart failure due to Amyloidosis. The aim is to collect baseline data, work out the exact type of Amyloidosis involved, and to consider how often the disease is passed on genetically. This information will hopefully allow doctors to be better informed about how the disease behaves in the Australian population, and lead to a better care of patients and their families.

Research undertaken at St Vincent's Hospital

Annual Grant VI - \$30,000

"Is MC4R deficiency associated with alterations in sympathetic nervous system and brown adipose tissue activity in humans?"

Dr Jerry Greenfield - Principal Investigator

Is deficiency of MC4R associated with changes in the sympathetic nervous system and activity of brown fat in humans?

We will study humans with and without a genetic form of obesity (MC4R deficiency) to determine the role of the sympathetic nervous system (SNS, which generates the 'fight or flight' response) in controlling body weight. MC4R-deficient humans have lower SNS activity. We propose that MC4R deficiency might cause obesity via reduced activity of brown fat (a specific type of fat that burns energy) and is controlled by SNS activity. Brown fat has only recently been identified in adult humans.

Research undertaken at St Vincent's Hospital

St Vincent's Clinic Foundation

Research Grants 2011

Annual Grant VII - \$30,000

"Candidaemia in Malaysian tertiary care institutions: A pilot study"

Associate Professor Debbie Marriott - Principal Investigator

The yeast Candida isolated from blood in the Malaysian hospital setting: who gets it and how do we treat it?

Recently the nationwide Australian Candidaemia Study collected important data on blood infections with the yeast Candida. The results had a significant positive impact on patient management. Similar data and hence possible advantages are not available in Malaysia. Accordingly a pilot study of Candida in blood of patients in 3 large teaching Malaysian hospitals is proposed. Using simple techniques, laboratories can guide clinicians in the appropriate management of this serious infection with a favourable impact on patient outcome and use of antifungal drugs.

Research undertaken at St Vincent's Hospital & Penang General, Ipoh Hospital/University Hospital, Kuala Lumpur, Malaysia

Equipment for Training/Education Grant - \$30,000

"Endoscopic and equipment upgrade to the St Vincent's Microsurgical Skills Lab"

Dr Nigel Biggs - Principal Investigator

Endoscopic equipment upgrade of the St Vincent's Hospital Microsurgical Skills Lab

The grant will be used for the purposes of providing endoscopic instruments, sinus training models and the installation/integration of recent equipment provided by the Curran Foundation and the Storz Family. The new HD imaging equipment also requires connection to the current video and microscopic setup.

Research undertaken at St Vincent's Hospital

Travelling Fellowship I - \$10,000

The Leukaemia/Bone Marrow Transplant Fellowship - Vancouver, Canada

Dr Adam Bryant

Department of Haematology

Travelling Fellowship II - \$10,000

Cardiac MRI Clinical Fellowship - St Thomas Hospital, London, UK

Dr James Otton

Department of Cardiology

St Vincent's Clinic Foundation

Research Grants 2011

Multi-disciplinary Patient Focussed Grant I - \$25,000

"Improving the care of the elderly through an oral health education program for nursing staff"

Ms Christine Button - Principal Investigator

Australia's population is forecast to become much older in the future with the number of people aged 65 and over expected to double in the next 30 years¹. An aging population equates to increased demands on health care services in Australia and the elderly often present to our acute wards with multiple issues requiring multidisciplinary management. Their frailty can make them much more susceptible to illness and as such it is important that preventative measures are implemented that aim to improve health outcomes for our most vulnerable patients. Nursing staff are often at the front line when it comes to delivering inpatient care. Their responsibilities are numerous and therefore ongoing education is vital in maintaining their expertise, particularly with regards to measures which are essential in preventing further illness.

Oral care has been highlighted as vital in preventing the development of aspiration pneumonia in the elderly²⁻⁵. For the hospitalised patient, the nursing staff are responsible for providing oral care and as such require up dated education with regards to the management of oral health, thereby facilitating positive health outcomes for their patients. Nursing staff also need to be made aware of the multidisciplinary approach required in assessing and managing oral health and the resources available within the hospital, in particular the Oral Health Educator and Speech Pathologist at St Vincent's Hospital in order to meet the specific needs of their patients.

This is a pilot study for the Geriatrics Unit and MAU at St Vincent's Hospital, Darlinghurst. This evaluation study will examine the effectiveness of nursing staff education on the oral health of patients. The study will compare oral health screening scores on a standardised tool of patients admitted under Geriatrics to determine whether there is an improvement in oral health post nursing staff in-service education. The education will be modified into an e-learning tool to facilitate the education of nursing staff hospital wide in the future. The study will utilise a project team which includes a Speech Pathologist, Health Education Officer, Nurses and a Geriatrician. A research paper will be written for publication in a peer reviewed journal. In addition, an abstract and conference presentation will be produced. This may include presentation at local seminars, the Speech Pathology Australia Conference in 2012 and other relevant discipline-specific seminars.

Project undertaken at St Vincent's Hospital

St Vincent's Clinic Foundation

Research Grants 2011

Multi-disciplinary Patient Focussed Grant II - \$25,000

"Improving hand hygiene practice: Identifying behavioural, attitudinal and organisational factors using an error typology framework"

Professor Sandy Middleton - Principal Investigator

This research aims to identify through survey and in-depth interviews, behavioural, attitudinal and organisational factors that facilitate or inhibit hand hygiene best practice across clinical disciplines at St Vincent's Hospital (SVH).

Interventions to improve clinician hand hygiene (HH) best practice have predominantly focused on education and training, or audit and feedback and have been found to be lacking in long-term success. The research evidence base relating to this field is characterised by a lack of rigour with short follow-up periods. Poorly designed research aside, hand hygiene has been addressed primarily as a technical matter amenable to untargeted education rather than one influenced by a complex interdependence of individual and organisational factors. In addition, data on hand hygiene performance-limiting factors at the individual and organisational level nominated by clinical and senior executive staff have not been systematically collected to inform intervention development.

The data obtained from this project will be classified using a 'typology of error' in which errors and procedural lapses are classified as being attributable to one or more of the following categories: violation (conscious failure to adhere to procedures or regulations); procedural (followed procedures with wrong execution); communication (missing or wrong information exchange or misinterpretation); proficiency (error due to lack of knowledge or skill); decision (decision that unnecessarily increases risk).

The study data will inform the development of an intervention (for which separate funding will be sourced) which will be tailored to local conditions and factors identified by study participants. The use of a 'typology of error' and identifying specific local variables that may impact on HH compliance is novel and unique.

Project undertaken at St Vincent's Hospital

Multi-disciplinary Patient Focussed Grant III - \$25,000

"Improving venous thromboembolism (VTE) prophylaxis in medical patients using educational outreach visits. Peer on peer education (PoPE) for better VTE prophylaxis: The PoPE study"

Professor Kim Walker - Principal Investigator

Aim: To improve healthcare professionals' compliance with VTE prevention guidelines in medical patients using educational outreach visits (EOV); To assess clinicians' acceptance and utility of EOVs as an evidence implementation strategy.

The background: VTE is an important patient safety issue resulting in significant mortality, morbidity, and healthcare resource expenditure. Despite a 12 month VTE prevention project we found that only 45% of our medical patients were receiving appropriate prophylaxis.

Design: Before and after study.

Intervention: Educational outreach visits.

Target population: Visiting medical officers admitting >40 medical patients yearly. Nursing staff (RN and EN) on units with a proportion of medical patients >20% of the total patient population.

Study procedure: Nursing and medical staff will receive 30 min visits (140 nursing visits and 70 medical visits) from trained peers outlining the key principles of medical VTE prophylaxis.

Measures: Percentage of medical patients who receive appropriate VTE prophylaxis; clinicians' reported level of acceptance and utility of intervention.

Project undertaken at St Vincent's Private Hospital

Multi-disciplinary Patient Focussed Grant IV - \$25,000

"Decreasing palliative care patients' reports of pain and increasing nurses' complex pain management capabilities: Exploring the potential of 'spaced education' in the specialist palliative care setting."

Professor Jane Phillips - Principal Investigator

This study will investigate whether a 'Spaced Education' program can increase nurses' complex pain management capabilities and decrease Sacred Heart patients' reports of pain. 'Spaced Education' is a novel, evidence based form of online continuing professional development that delivers clinical content questions to participants via regular email. It is an interactive program whereby participants are provided immediate feedback as to whether the answer provided is correct. All incorrect questions are resubmitted to participants at a later date and retired once they have been answered correctly on two occasions. 'Spaced Education' was developed at Harvard University and has been demonstrated to increase health professionals' clinical knowledge, competencies and change practice.

Project undertaken at St Vincent's Hospital