



## Northern Health Small Research Grants Round 21, 2018

Northern Health Foundation together with the NH Small Research Grants program have funded five projects that the Northern Health Research Grant and Scholarship Committee have selected for funding based on the following criteria.

1. Scientific merit of the proposal:
  - i. Understanding of literature
  - ii. Clearly articulated research question
  - iii. Strong rationale for project
  - iv. Sound Methodology and Proposed Analyses
2. Significance of the research question to the Northern Health strategic goals.
3. Potential to increase the contribution of Northern Health research to the wider research community.
4. Potential to build research capacity and expertise within Northern Health.
5. Potential to provide new and emerging researchers with opportunities to initiate their research.
6. Appropriateness of the proposed expenditure.

### Project Recipients and Research Outline:

#### **1. *Laparoscopic Intra-Abdominal Pressure Study: A double blinded randomised controlled trial***

**Name:** Mr Russell Hodgson

**Role:** Specialist HPB & General Surgeon

**Title:** Laparoscopic Intra-Abdominal Pressure Study: A double blinded randomised controlled trial

**Award:** \$5000.00

Laparoscopy (also known as keyhole surgery) is an operative approach that minimises incisions, is preferred aesthetically, and has the potential to decrease post-operative pain and length of hospital stay. It is now the preferred technique for most abdominal operations including for the appendix, gallbladder, bowel, hernia surgery, gynaecological surgery, and obesity surgery.

To perform laparoscopic surgery, a port is placed through the skin into the abdomen and the abdomen is then insufflated (injected) with CO<sub>2</sub> to allow visualisation of the operative field. The CO<sub>2</sub> is maintained

at a set pressure throughout the operation. There is no recommended intra-abdominal pressure setting, and usual pressures in everyday use range between 12 (most common) and 15mmHg with some surgeons and gynaecologists going as high as 20mmHg. This is based on the surgeon's previous training and experience, as there has been little in the way of evidence to guide this decision.

Recent literature has suggested that laparoscopy with higher intra-abdominal pressures may increase post-operative pain, theorised to be because of increased tension of the peritoneum, the highly sensitive inner lining of the abdominal wall<sup>1</sup>. The literature also suggests that some laparoscopic surgery may be performed safely with intra-abdominal pressures as low as 7mmHg<sup>2</sup>.

This study aims to answer the question whether it is beneficial to perform laparoscopy at low intra-abdominal pressure in a laparoscopic cholecystectomy operation (keyhole surgery to remove the gallbladder).

Our hypothesis is that laparoscopic surgery can be performed safely at lower intra-abdominal pressures, and that this leads to lower post-operative pain.

## **2. *Evaluation of RUSON model of assisted patient care***

**Name:** Penny Ramsden

**Role:** Clinical School Coordinator - Nursing

**Title:** Evaluation of RUSON model of assisted patient care

**Award:** \$3000.00

The Northern Hospital is piloting a model of health care delivery that includes employing undergraduate Bachelor of Nursing students as part of the nursing team (the RUSON project). This project will evaluate the RUSON model to identify the benefits and challenges of this model to patient care outcomes, satisfaction rates for the RUSONs, nursing staff, and hospital management. Recommendations from this evaluation and research will inform TNH and other health facilities who wish to increase patient care outcomes.

The benefits of this project include better outcomes for patients (e.g. decreased falls risk, better patient satisfaction) and could demonstrate a better financial model for TNH.

## **3. *Improving patient swallowing outcomes by credentialing of staff in Fibreoptic Endoscopic Evaluation of Swallowing (FEES)***

**Name:** Marinda Brooks

**Role:** Senior Speech Pathologist

**Title:** Improving patient swallowing outcomes by credentialing of staff in Fibreoptic Endoscopic Evaluation of Swallowing (FEES)

**Award:** \$4862.62

Oropharyngeal dysphagia describes difficulty with eating and drinking. This benign statement does not reflect the personal, social and economic costs of the condition. Aspiration pneumonia due to dysphagia is a hospital-acquired complication (HAC) due to respiratory complications. Health service organisations

need to ensure systems are in place to prevent aspiration pneumonia through effective clinical assessment and management processes. Due to the multifactorial nature and aetiology of dysphagia as well as the potential associated HAC, it is essential for patients to have access to gold-standard instrumental dysphasia assessments to identify risks and prevent aspiration.

Fibreoptic Endoscopic Evaluation of Swallowing (FEES) is a gold standard objective assessment of dysphagia conducted by Speech Pathologists that has been identified as a work role that enhances patient care (Cimoli & Sweeney, 2012). Northern Health has recently approved the introduction of FEES as a new clinical practice to support best practice in aspiration pneumonia prevention and dysphagia management. FEES is a portable implementation of management for dysphagia and nutrition which can inform discharge planning, positively impact length of stay (LOS), and provide more timely access for patients to procedures that may reduce patient anxiety.

#### ***4. Effect of metabolic syndrome on clinical and health service outcomes for people with osteoarthritis***

**Name:** Edmund Leahy

**Role:** Senior Clinician Physiotherapist

**Title:** Effect of metabolic syndrome on clinical and health service outcomes for people with osteoarthritis

**Award:** \$4999.00

One quarter of the world's adults have a combination of three or more specific risk factors, collectively known as metabolic syndrome, making them twice as likely to develop cardiovascular disease and five times more likely to develop diabetes than adults without metabolic syndrome. They also have double the healthcare utilisation and costs of people without metabolic syndrome.

The prevalence of metabolic syndrome is almost doubled in people with osteoarthritis. This is hypothesised to be due to common low-grade systemic inflammation present in both conditions. People with osteoarthritis are 70% more likely to die from cardiovascular disease, therefore, it is likely there is some interplay between metabolic syndrome and osteoarthritis, however, we do not understand the impact of metabolic syndrome on outcomes for people with osteoarthritis. Preliminary research indicates it may be associated with higher severity of symptoms and reduced lower limb function but the effect on global functioning and health service outcomes are unknown.

The Proactive Intervention and Medical assessment in the Elderly (PRIME) service runs at Craighieburn Health Service to manage 'at risk' people with osteoarthritis on the waitlist for hip or knee replacement surgery. To improve our understanding of the effects of metabolic syndrome on outcomes for people with osteoarthritis, this project will retrospectively analyse data from the PRIME service to determine if a diagnosis of metabolic syndrome adversely affects clinical and health service outcomes for people with osteoarthritis undergoing joint replacement surgery.

## **5. *Negative Pressure Wound Therapy for Emergency Laparotomy - A Randomised Controlled Trial***

**Name:** Mr Neil Strugnell

**Role:** Associate Director of General Surgery; Consultant General Surgeon

**Title:** Negative Pressure Wound Therapy for Emergency Laparotomy - A Randomised Controlled Trial

**Award:** \$4300.00

Laparotomy wounds in the emergency setting carry a risk of infection and prolonged healing. Negative pressure wound therapy (NPWT) may reduce infection risk and reduce wound breakdown by removing excess fluid and infectious material from the wound. Prevena™ Incision Management System is a type of NPWT that has been approved for use in Australia to treat incisional wounds.

The proposed randomised controlled trial (RCT) will randomise 50 patients to either the Prevena dressing or standard dressing after emergency laparotomy at The Northern Hospital. The duration of the Prevena dressing is 7 days, or until discharge from hospital and the duration of follow-up after surgery is 30 days.

The primary outcome is incidence of wound infection within 30 days from surgery. Secondary outcomes include wound appearance, length of stay in hospital and other post-operative complications.