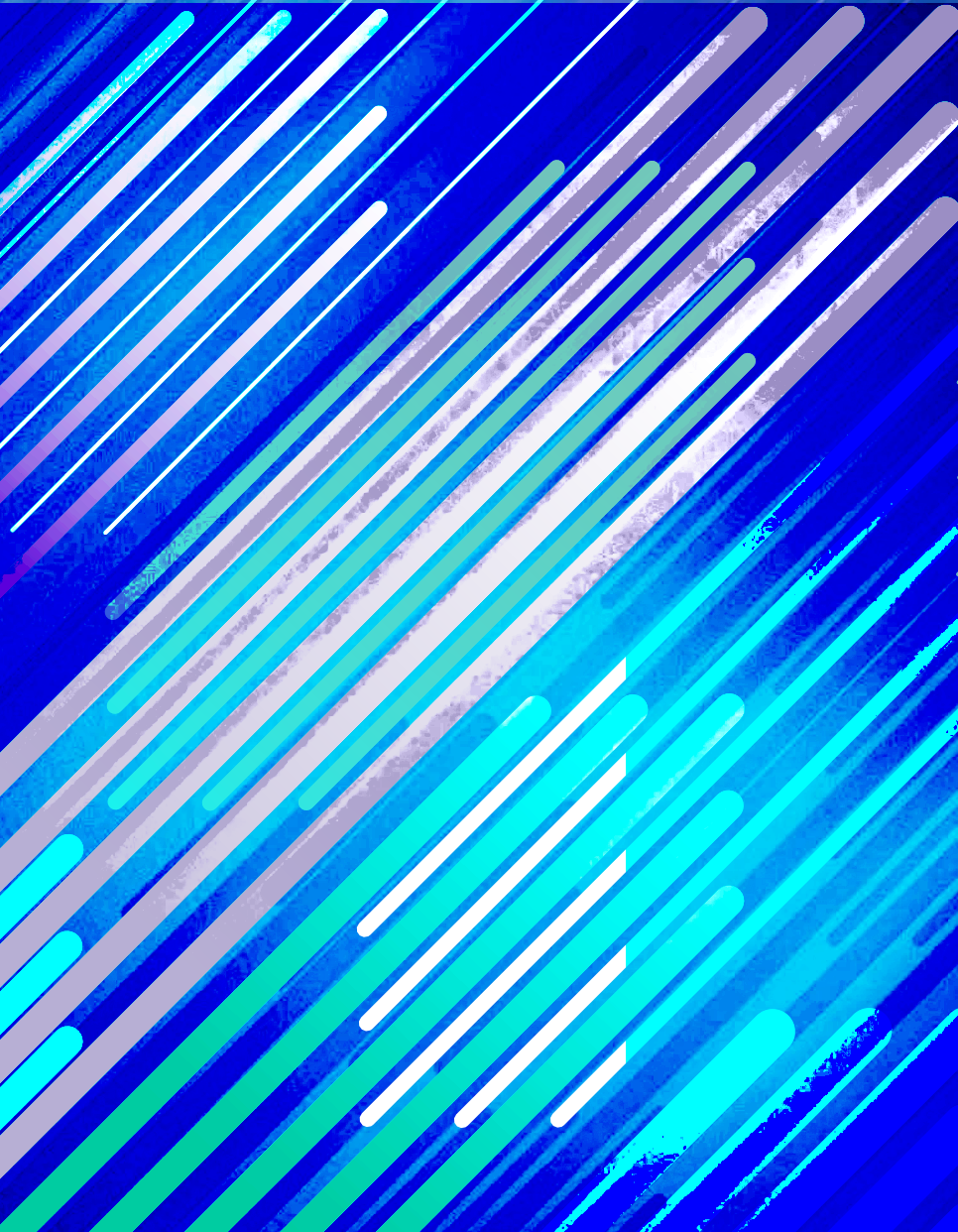


easternhealth

# RESEARCH REPORT 2017





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About Eastern Health



*The 2017 Eastern Health Research Report provides a snapshot of the collaborative nature of the organisation's research activities with university partners, community service providers and private industry. At any one time over 500 staff may be participating in research across Eastern Health with more than 400 projects progressing or completed annually.*

# Welcome



**Adjunct Professor David Plunkett**  
Chief Executive



**Adjunct Clinical Associate Professor Colin Feekery**  
Executive Director Research,  
Chief Medical Officer and  
Chief Medical Information Officer



**Professor David Taylor**  
Director of Research and  
University Relations

**In 2017, Eastern Health launched its new *Strategic Plan 2017-2022*, which includes a strong focus on research and innovation. This plan will guide Eastern Health through the current and future challenges of a growing and ageing population, a rapidly-changing digital environment and a financial responsibility to live within our means.**

One of the four strategic initiatives is “leading in research and innovation”. This is part of our aspiration to become an organisation that is renowned for research, striving for performance excellence and translates research evidence into enhanced care.

The *2017 Eastern Health Research Report* highlights our progress and achievements as we engage in research that improves healthcare delivery and maximises health outcomes. It provides snapshots of some of the research activities across all aspects of our health service. These activities include collaborations with university partners and other healthcare providers.

As we continue to embed research as part of everyday practice, we have enjoyed an increase in partnerships and multi-disciplinary team approaches. A number of projects showcased in this report demonstrate successful collaborations.

Our clinicians are actively involved in clinical studies, clinical trials and translational research that are improving patient outcomes. Much of this work has been acknowledged in numerous publications and presentations at national and international conferences.

Eastern Health Foundation and the Office of Research and Ethics continue to work together to meet increasing demand for research funding.

Thanks to the ongoing generosity of Eastern Health benefactors, the Foundation awarded more than \$280,000 to Eastern Health research projects in 2017, with \$500,000 earmarked for projects in 2018. This takes the total of research grants awarded since the program started in 2012 to \$1.45 million. *See story on page 26.*

The Office of Research and Ethics administers the organisational infrastructure that supports Eastern Health research. In addition to providing administrative support to the Eastern Health Human Research Ethics Committee, it also provides governance for the timely review of ethics applications.

We would like to acknowledge the tireless and diligent efforts of the Eastern Health Human Research Ethics Committee and the Office of Research and Ethics, as well as the many staff who have dedicated their time and expertise to research during the past 12 months.

In celebrating research outputs, we also gratefully acknowledge the contribution of granting bodies such as the National Health and Medical Research Council, Australian Research Council, trusts and philanthropic agencies, as well as the many donations to the Eastern Health Foundation.

It is with great pride that we commend the *2017 Eastern Health Research Report* to you.





# Eastern Health and Monash University enjoy unique relationship

Monash University's Eastern Clinical Research Unit (ECRU) is part of the Eastern Health Clinical School. Eastern Health and Monash University have shared agreements that mean ECRU is the vehicle Eastern Health uses to undertake clinical trials.







*“ECRU is an outstanding example of what can be achieved when a health service and university have a strong partnership.”*

– Prof Ian Davis

All units involved in ECRU use similar systems for clinical trial co-ordination, with ECRU providing centralised services for administration, finance, ethics submissions, human resources and links across the units.

“Most health services run clinical trials but these are usually done in the context of specific clinical units, using staff employed by the health service, and usually with little scope for co-operation, sharing of resources and the ability to learn from each other,” Ian Davis, Professor of Medicine and Head of the Eastern Health Clinical School, said.

“Our model is different. We work together, we use consistent processes and resources, we share our experiences, we support underfunded research and we ensure that research is part of the lifeblood of everyday work at Eastern Health.”

This model also sets aside resources to support research that would otherwise not be done. Examples include “investigator-initiated” trials and trials funded by competitive grants.

“These often address very important clinical questions but do not come with the funding normally linked to industry-sponsored trials. As a result, these trials often cannot be done easily at other health services, if at all,” Prof Davis said.

“Our model means that we are not only self-sustaining but we can support these other clinical and research imperatives, while producing clinical research data of the highest quality.”

Prof Davis is a medical oncologist leading several clinical trials in the busy oncology unit.

“ECRU is an outstanding example of what can be achieved when a health service and university have a strong partnership,” he said. “Our model supports a very broad range of research and allows us to manage the peaks and troughs of clinical trial activity more effectively. Other organisations are trying to emulate what we have achieved.”

ECRU works closely with Eastern Health’s Office of Research and Ethics. Strong links also exist with other groups, including contract research organisations, where ECRU is a preferred provider and one of Australia’s best performing groups.

“ECRU, working within Eastern Health, plans to expand its activities,” Prof Davis said. “At the moment, most trials are done within the context of specialty medicine units. Some trials are now taking place in surgical specialties, women’s health, paediatrics and emergency and intensive care medicine.”

*Yvonne Chan, Acting Manager of ECRU Oncology and  
Andrew Mant, ECRU’s Medical Oncology Research Fellow*

## On the horizon

Recent appointments, such as Shomik Sengupta as Professor of Surgery and Claire Johnson as the Vivian Bullwinkel Chair of Palliative Care Nursing, Monash University, and Clinical Lead End of Life Care, together with Eastern Health’s plan to support research into suicide prevention through its Searchlight Dinner fundraising initiative, will open up new areas of clinical research and productive partnerships.

### DID YOU KNOW?



*There are more than*

**500**  
projects

progressing across Eastern Health with



**180**  
new applications  
approved in 2016-17



*There are over*

**120**  
active clinical trials

underway at Eastern Health with



*more than*

**10,000**  
participants  
targeted





# Understanding thunderstorm asthma

On November 21, 2016, Melbourne experienced an epidemic of “thunderstorm asthma” which led to a widespread health emergency with thousands of people affected, including nine deaths.

Although previously described in the literature, the risk factors and natural history of thunderstorm asthma remain incompletely understood.

Following the epidemic, Eastern Health conducted research to provide clinical follow-up for those patients who presented to our three emergency departments during the thunderstorm asthma event and to assess their symptoms and asthma history.

All presentations with respiratory symptoms on November 21 and 22 were reviewed, and a standardised questionnaire was developed to interview patients over the phone between December 14 and 21.

“We used the questionnaire to review asthma diagnosis, undiagnosed asthma symptoms and rhinitis severity, as well as persistence of symptoms, preventer usage, asthma control, action plan and healthcare

utilisation,” Prof Frank Thien, Eastern Health’s Director of Respiratory Medicine, said.

The team identified 344 patients and of those, 222 were contactable by telephone and completed the phone survey.

“The age of these patients ranged from seven months to 87 years, with 59 per cent male. The mean age of the patients interviewed was 32,” Prof Thien said.

Prior to the thunderstorm, 43 per cent of these patients had been diagnosed with asthma, of which 68 per cent (29 per cent of the whole cohort) had suffered asthma symptoms within the past year. Of those with current asthma, 63 per cent were taking preventers less than three days a week and 57 per cent were not well controlled prior to the thunderstorm.

Less than half the patients who presented during the epidemic had an asthma action plan and 45 per cent implemented it.

While the majority (57 per cent) of patients did not have a previous diagnosis of asthma, a significant proportion (51 per cent) had symptoms suggestive of asthma.

“This research shows that improved asthma education with increased preventer usage, asthma action plan ownership and implementation may help reduce thunderstorm asthma presentations in patients with current asthma,” Prof Thien said.

“It also suggests that better recognition of undiagnosed asthma and treatment of rhinitis may reduce the severity and numbers presenting to emergency departments during a thunderstorm asthma event.”

The survey found that a month after the event, 45 per cent of patients had persistent symptoms, with 90 per cent requiring regular medications.

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*“This research shows that improved asthma education with increased preventer usage, asthma action plan ownership and implementation may help reduce thunderstorm asthma presentations in patients with current asthma.”*

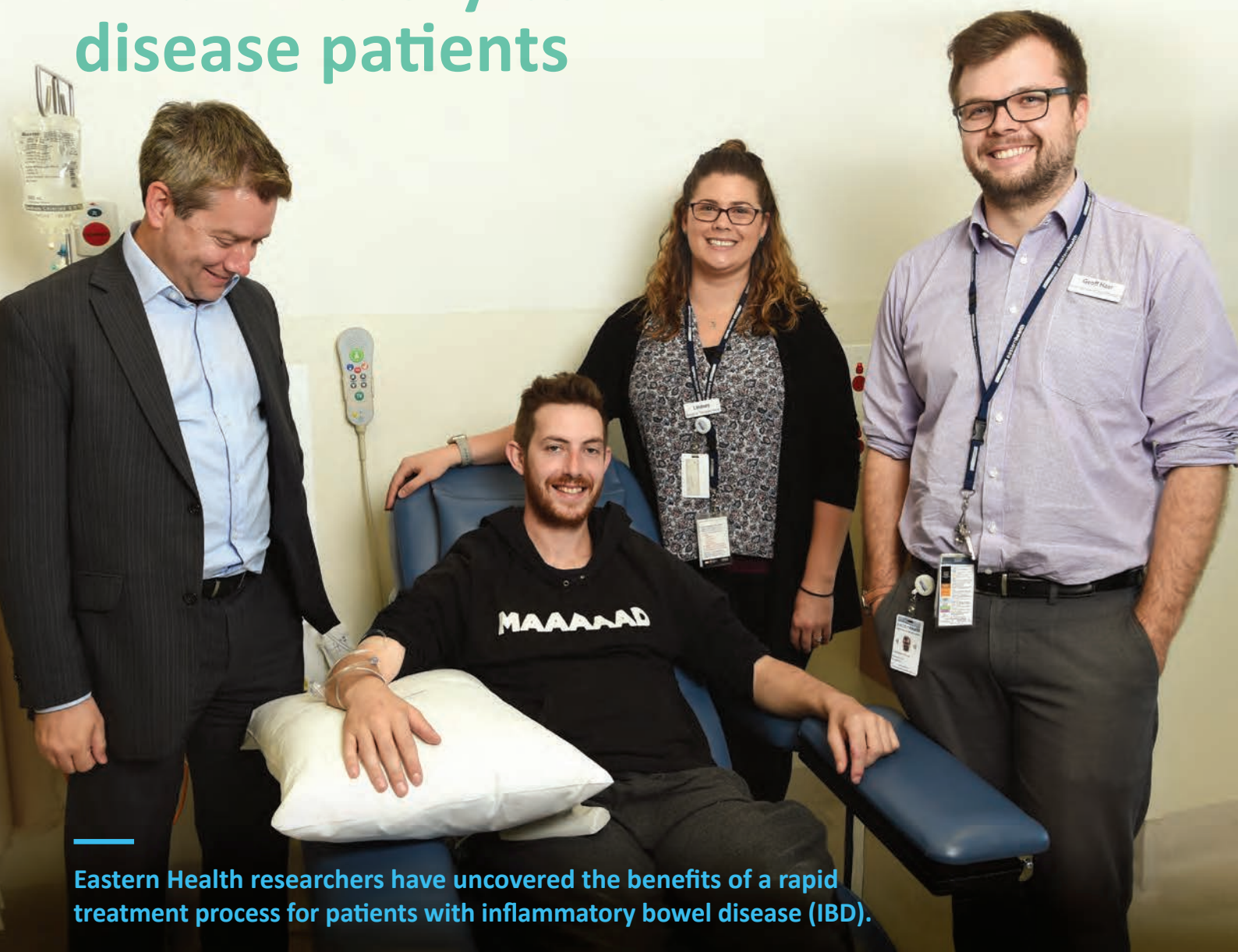
— Prof Frank Thien





# Positive outcomes for inflammatory bowel disease patients

Daniel Van Langenberg, Head of IBD and Gastroenterology; patient Jordan Scott; Lindsay Kidd, Biological Therapies Nurse and Geoff Harr, Senior Gastroenterologist are pictured in the Day Oncology and Medical Unit at Box Hill Hospital.



**Eastern Health researchers have uncovered the benefits of a rapid treatment process for patients with inflammatory bowel disease (IBD).**

Australia has one of the highest rates of IBD in the world. Affecting up to one in 250 Australians, the prevalence and severity of IBD continues to increase<sup>1</sup> and up to one third of patients with complex, severe IBD requires long-term treatment with biological agents including infliximab (IFX).

"IFX is administered intravenously, generally over one to two hours every six to eight weeks," Dr Daniel van Langenberg, Head of Eastern Health's Inflammatory Bowel Disease Service, said. "Attending regular hospital appointments for infusions impacts the quality of life for these patients because it disturbs their employment, family and social obligations."

At Eastern Health, there has been an annual increase in the number of IFX infusions, leading to significant capacity, resource and cost issues. In response, the

organisation is one of only a few centres worldwide that has introduced a rapid IFX maintenance protocol over 30 minutes.

"We recently completed a retrospective audit of all 1461 rapid (30 minute) IFX infusions from July 2014 to March 2017, comparing the safety, cost and resource implications of these to 2194 previous standard (1-2 hour) infusions performed between 2005 and 2014," Dr Van Langenberg said.

"We found that the rapid IFX infusion protocol delivered a median reduction in needle-to-departure time from 108 to 50 minutes, equating to a cost saving of \$84,344 (54 per cent) at Eastern Health since the rapid protocol started in 2014."

There were no severe IFX reactions with rapid infusions. Of the eight patients who

had IFX reactions on rapid infusions (rate 0.55 per cent per infusion), all were of mild severity.

"In fact, we identified a trend towards a greater risk of reactions with the standard infusions compared with rapid infusions," Dr Van Langenberg said.

"Rapid infliximab infusions have been demonstrated to be safe, convenient and cost effective – a win-win for all concerned. Our next step is to assess patient satisfaction and quality of life to further assist the implementation of innovative, flexible, patient-centred and cost-effective approaches, including IFX infusions in the home, workplace, after hours and at weekends."

<sup>1</sup> Wilson, J., et al., *High incidence of inflammatory bowel disease in Australia: a prospective population-based Australian incidence study.* Inflamm Bowel Dis, 2010. 16(9): p. 1550-6



# Electronic records enhance medication research

Since 2009, Eastern Health has undertaken work to implement and build capacity for an extended electronic medical record (EMR), which went “live” at Box Hill Hospital in October 2017.



*Elizabeth Cousins is one of the many patients benefitting from improvements in clinical care due to research and advances in electronic medication management. She is pictured with registered nurse, Michelle Odea, who works on Ward 9.1 at Box Hill Hospital.*

Professor Peteris Darzins, Director of Geriatric Medicine and Executive Clinical Director of Aged Medicine, and Laura Fanning, Pharmacy Research Co-ordinator and PhD candidate, have identified that ready access to EMR data could support pharmacoepidemiological research.

“Pharmacoepidemiological studies using routine healthcare data play an important role in providing information about the risks and benefits of medications across diverse settings, particularly for older people as there is less evidence to support prescribing,” Ms Fanning said.

“The aims of our research have been multi-fold. We investigated the feasibility of linking medication data from the EMR to administrative diagnosis data.

We also aimed to validate data quality to understand data accuracy and data strengths and limitations.”

To meet their aims, studies were undertaken with targeted clinical questions.

“We have been investigating anti-coagulation (blood thinners) in atrial fibrillation (AF), which is a common, age-related abnormal heartbeat. Oral anti-coagulation (OAC) can mitigate stroke risk for patients with AF but must be carefully prescribed and managed to reduce bleeding risk,” Ms Fanning said.

Warfarin has been the only OAC available since the 1950s. Recently, three direct oral anti-coagulants or DOACs (apixaban, dabigatran and rivaroxaban) have been approved for use.

DOAC availability has resulted in changes in stroke prophylaxis prescriptions.

“For the 7048 patients we studied, our data shows that an increasing number is being prescribed OAC. In particular, patients aged 75 and over are increasingly receiving anti-coagulation to mitigate stroke risk.”

Prof Darzins and Ms Fanning partnered with Associate Professor Simon Bell and Dr Jenni Ilomaki from the Centre for Medicine Use and Safety at Monash University to conduct their research.

In 2017, they published a study that investigated how the evidence from the landmark DOAC trials was representative of Eastern Health patients with AF.







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*“We linked electronic data to undertake the analyses. For the 4734 patients included in the study, the results demonstrated that 60.5 per cent, 52.6 per cent and 35.8 per cent of patients would have been eligible for the apixaban, dabigatran and rivaroxaban clinical trials, respectively.”*

– Laura Fanning

### Glossary

#### Electronic medical record (EMR)

An EMR is a comprehensive electronic patient record which is up to date, easy to read and accessible instantly by the patient’s healthcare team

#### Atrial fibrillation

A type of abnormal heart rhythm (arrhythmia) in which the heartbeat is irregular, too fast or too slow

#### Anti-coagulants

Medicines that help prevent blood clots

#### Warfarin, apixaban, dabigatran and rivaroxaban

Anti-coagulants (blood thinners) reduce the formation of blood clots. They are used to treat or prevent blood clots in veins or arteries, which can reduce the risk of stroke, heart attack or other serious conditions

“We linked electronic data to undertake the analyses. For the 4734 patients included in the study, the results demonstrated that 60.5 per cent, 52.6 per cent and 35.8 per cent of patients would have been eligible for the apixaban, dabigatran and rivaroxaban clinical trials, respectively,” Ms Fanning said.

The findings presented do not challenge the importance of conducting trials to establish the efficacies of new therapies. Instead, the results highlighted a well-recognised problem with the translation of trial results to “real world” patients and demonstrated the magnitude of an evidence-practice gap.

In an effort to close this gap, post marketing clinical studies or “real world” studies play an important role in increasing the evidence base. Results from real world studies provide information about the

safety and effectiveness of medications in naturalistic settings because they are inherently more inclusive.

“We anticipate that we will be able to undertake our own outcomes for a variety of clinical questions with the rapid growth of medication data from the EMR. This will enable us to understand benefits and risks for patient groups in which medications are not trialled or there is limited evidence,” Ms Fanning said.

The team also undertook a data validation study examining the quality of discharge prescription data. The results indicate EMR discharge prescription data is a valid and accurate source of medication information. The data accurately predicts intended patient exposure to medications at the time of hospital discharge.

“The use of EMR data and data linkage has been feasible, although there have been some challenges,” Ms Fanning said. “Difficulties with data extraction, uncertainty regarding validity and coverage of datasets, and enriching datasets to include important variables for linkage and analysis are some of the obstacles our team has encountered.

“We have worked through the challenges with persistence and determination, and engaged important internal and external stakeholders to make this type of research possible and promising.”

*\* Electronic Medications Management, which is part of the extended EMR, was successfully rolled out at Peter James Centre, Wantirna Health, Angliss Hospital and Box Hospital in 2016-17.*



# Eastern Health – Deakin University Nursing and Midwifery Centre

The Eastern Health – Deakin University Nursing and Midwifery Centre celebrated many achievements in 2016-17, with research projects contributing to a better understanding of why patients are readmitted to hospital and the factors leading to frequent emergency department attendances.



## UNPLANNED HOSPITAL READMISSIONS

Led by Professor Julie Considine, a team of Eastern Health doctors, nurses, researchers and executives examined the factors associated with unplanned hospital readmission within 28 days of acute care discharge at Eastern Health.

They found that the unplanned readmission rate was 7.4 per cent, with one in 10 patients who were readmitted, returning within one day. The factors associated with increased risk of unplanned readmission were older age (over 65), co-morbidities and chronic disease. The risk of unplanned readmission also increased if the original hospital admission was an emergency, affected by complications, or was greater than two days' duration.

Frequent hospital admissions or emergency department attendances were also related to increased risk of unplanned hospital readmission. Current work is focusing on a more detailed understanding of patients who were readmitted within one day of discharge to inform targeted strategies to help keep people at home after leaving hospital.



## EXAMINING FREQUENT ED VISITS

Another study focused on older people over 65 who have frequent emergency department visits (four or more in a year).

Led by Dr Maryann Street, with Debra Berry and Professor Julie Considine, the study found that five per cent of older people were frequent attendees, accounting for 16.9 per cent of the 32,282 visits by older people to Eastern Health emergency departments in 2013-14.

“Older, frequent attendees were more likely to be male, aged 75-84 years, arrive by ambulance, be classified as higher urgency on arrival, have chronic illness and a preferred language other than English,” Dr Street said.

“Frequent attendees stayed longer in the emergency department, were more likely to be admitted to hospital and have a longer hospital stay. They were also more than twice as likely to die during the hospital admission.”

Current work is focusing on understanding the profile and clinical needs of very frequent emergency department attendees (eight or more visits per year) to determine whether services other than the emergency department can play a role in ensuring these patients are safe and receive the best possible care.



*Peter Jatczac is one of the many people over 65 that present to Eastern Health's emergency departments. He is pictured with Linda Van Duynhoven, a nurse at Maroondah Hospital's emergency department.*





“

*“Older, frequent attendees were more likely to be male, aged 75-84 years, arrive by ambulance, be classified as higher urgency on arrival, have chronic illness and a preferred language other than English.”*

– Dr Maryann Street



There are currently eight Eastern Health nurses undertaking Honours, Masters and Doctoral studies under the supervision and guidance of Eastern Health – Deakin University Nursing and Midwifery Centre researchers.

## DID YOU KNOW?



There are more than

**450**  
staff

involved in research projects from a number of different clinical areas and departments across Eastern Health



The Eastern Health Office of Research and Ethics received

**185**  
applications

for research projects in 2016-17



Eastern Health Foundation invested

**\$280,000**

into research projects in 2016-17





# Surgical research continues to shine

**Research into surgical procedures and processes has continued to make excellent progress during the past 12 months, with Eastern Health's Surgical Research Group achieving great success in a number of areas.**

Convened by Sean Mackay and Adrian Fox, the group also includes Salena Ward and Mary Ann Johnson. The four consultants manage the day-to-day supervision of projects undertaken by registrars and residents.

The upper gastrointestinal and hepatobiliary unit also has a research fellow each year, who will enrol for an Master of Science degree, supervised by Dr Mackay and Professor Ian Davis, who is Head of the Eastern Health Clinical School.

"This year we have had three papers submitted at national meetings, one poster presented and another paper and poster accepted for the Australia and New Zealand Gastric Oesophageal Surgery Association meeting later this year," Dr Mackay, Senior Lecturer, Eastern Health Clinical School, said.

"We have a lot of exciting projects underway which will significantly contribute to improved patient outcomes for surgical patients, not only at Eastern Health but in the wider community," Dr Mackay said.

Current projects include Research Fellow Dr Yahya Al-Habal's study of the novel technique of script-concordance testing for general surgical trainees, Clinical Research Fellow Dr Sheryn Cheah's thesis on the relationship between the vascular endothelial brush border and metabolic syndrome, and previous Research Fellow Dr Andrew Hardley's thesis on the safety and utility of balloon sphincteroplasty.

"It is an exciting time to be part of surgical research and we continue to encourage staff across Eastern Health to make contact with us if there is a project they would like to pursue."



*Four projects also featured in peer-reviewed journals:*

**The effect of BMI on clexane dosage:**

*Haematology Reports*

**Victorian oesophagectomy mortality rates:**

*ANZ Journal of Surgery*

**Obturator hernia (case report):**

*International Journal of Surgery Case Reports*

**Dieulafoy lesion of gallbladder:**

*International Journal of Surgery Case Reports*

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*“We have a lot of exciting projects underway which will significantly contribute to improved patient outcomes for surgical patients, not only at Eastern Health but in the wider community.”*

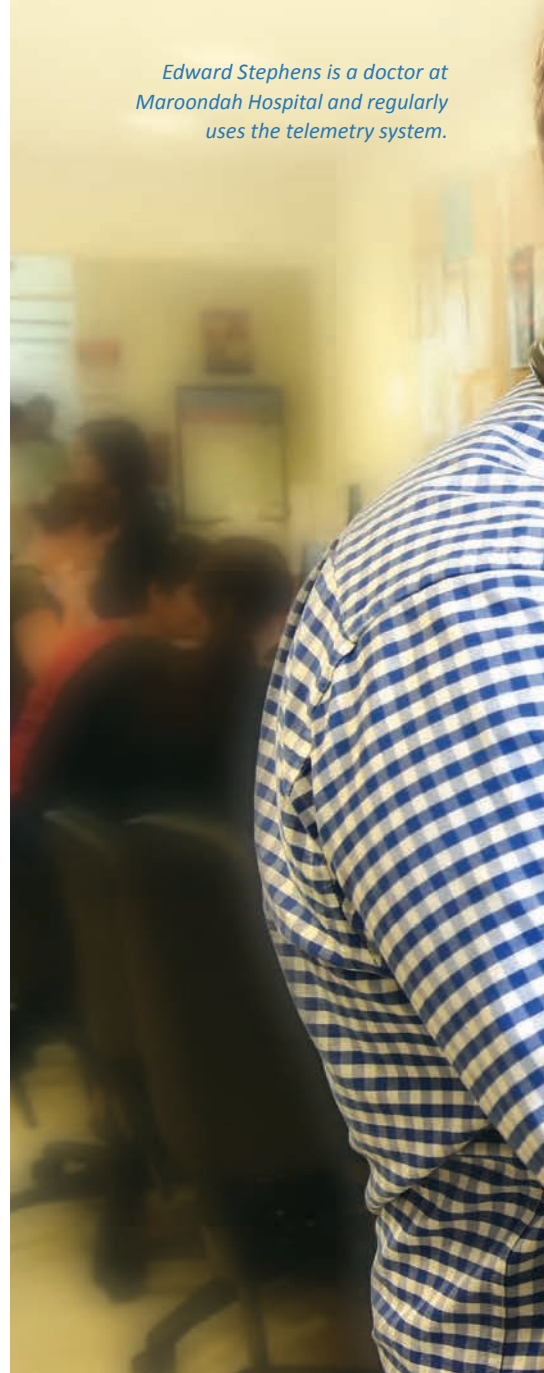
– Dr Sean Mackay

”

*“The study found that telemetry stewardship in general medical units resulted in a significant reduction in unnecessary monitoring.”*

– Dr Sheital Chand

*Edward Stephens is a doctor at Maroondah Hospital and regularly uses the telemetry system.*





# Telemetry stewardship streamlines care

Telemetry is a vital tool for monitoring heart rhythm. Maroonah Hospital often relies on general medical registrars to make decisions about the use of this tool.

When used incorrectly, telemetry can lead to delays in bed access, resulting in longer hospital stays.

“Inappropriate use of telemetry is likely due to the potential lack of experience and seniority of the medical registrars who approve its use,” lead researcher Dr Sheital Chand said.

“To address this, we developed a form using the American Heart Association guidelines to help educate our junior registrars about the appropriate use of telemetry units. As a follow-up, we introduced a stewardship program to monitor compliance and use in the general medicine department.”

Written guidelines, as well as a twice daily independent senior clinician review to assess the need for ongoing monitoring, were introduced. A prospective audit was conducted on patients who received telemetry with stewardship over a three-month period. Data was compared with an historical cohort who had received telemetry prior to the introduction of stewardship.

Data was collected from 101 patients, with the most common criterion for telemetry being syncope (fainting) or falls without loss of consciousness. Significant findings, defined as a new cardiac rhythm from baseline ECG or history, were rarely identified.

The majority of cases (83 per cent) demonstrated compliance with the stewardship recommendations and the telemetry form was accurately completed for 94 per cent of patients.

Comparative data showed that the average time saved from unnecessary cardiac monitoring was five hours and the average duration of telemetry was reduced from 1.9 days to 1.2 days. The average length of stay was unchanged between the two groups.

“The study found that telemetry stewardship in general medical units resulted in a significant reduction in unnecessary monitoring. While direct cost benefits are small, stewardship has the potential to improve patient access and flow within hospitals – which leads to a more positive patient experience.”





# Allied health research

*Derry Ashton completed his rehabilitation at Wantirna Health and has since moved on to participate in ongoing exercise at a regular gym. He is pictured with Amy Dennett Eastern Health Physiotherapist and La Trobe University PhD candidate.*

**Eastern Health's Allied Health Clinical Research Office was established as a joint initiative between Eastern Health and La Trobe University, and is led by Professor Nicholas Taylor, Dr Katherine Harding and Dr Judi Porter.**

Research activities receive direction from the Allied Health Research Committee. With representatives from programs, allied health disciplines and research-active clinicians, the committee aims to promote, support and complete clinical research.

Since its inception with a single professorial appointment in 2007, the Allied Health Clinical Research Office has grown to become an active participant in research, fostering collaborations between local and international universities, and attracting two National Health and Medical Research Council grants.

*Highlights during the past 12 months included:*



**38**  
publications

and



**36**  
conference  
presentations

The Allied Health Research Forum 2017 featured guest speaker, Professor Christine Bigby, the Director of the Living with Disability Research Centre and Chair Academic Board, School of Allied Health at La Trobe University.

Professor Bigby shared her work on policy issues, program effectiveness and front line practice that supports quality of life outcomes for people with intellectual disability.

The forum also featured a "3-minute project" competition which provided allied health clinicians with an opportunity to present a snapshot of their work.

A quarterly newsletter and Twitter feed (@EH\_Research) was also established to promote allied health research within Eastern Health and to the broader community.



## Outstanding work recognised

Imogen Clark was awarded a PhD for her work on the role of music therapy to increase participation in older adults attending cardiac rehabilitation. Imogen's outstanding thesis received the Nancy Millis Medal at La Trobe University.





# Improving rehabilitation outcomes

## PHYSICAL ACTIVITY LINKED TO IMPROVED OUTCOMES FOR CANCER SURVIVORS

As the first public health service to offer oncology rehabilitation in Australia, Eastern Health is also leading the way in research that investigates the benefits for cancer patients.

“Cancer survivors who are more physically active have a greater chance of survival and less risk of cancer recurrence. Interventions that promote physical activity improve quality of life, reduce the side effects of treatment, improve mood, strength and fitness,” Amy Dennett, Eastern Health Physiotherapist and La Trobe University PhD candidate, said.

“Our research aims to identify how active people are, factors that influence their activity level and whether we can improve physical activity through rehabilitation and motivational interviewing.”

Funded by the Eastern Health Foundation and La Trobe University, the study is also investigating the experiences of participants who complete the oncology rehabilitation program to identify how the service can be improved.

With help from Professor Nicholas Taylor, the study found that walking capacity was the strongest predictor of physical activity levels in cancer survivors entering rehabilitation.

“We have completed an observational study that measured how active cancer survivors were upon commencement of the program and the factors associated with this,” Ms Dennett said.

“We found that only eight per cent of people were able to achieve the recommended physical activity levels and that factors such as walking capacity were more important than cancer-related factors, such as type of treatment, in determining how active people are.”

By establishing the factors that contribute to the level of activity, the team can better design oncology rehabilitation programs to suit the patients’ needs.

“This gives us the potential to improve cancer survivors’ quality of life and most importantly improve their disease outcomes, such as survival and recurrence,” Ms Dennett said.

A qualitative study about the patient experience has also been completed, with participants reporting that rehabilitation helps them “return to normal” by increasing their confidence, motivation and social support.

“We are now conducting a randomised controlled trial to determine the benefits of motivational phone calls in addition to standard rehabilitation.”

## IMPROVED OUTCOMES FOR PATIENTS WITH HIP FRACTURES

La Trobe University PhD candidate Kylee Lockwood has investigated the rate of hospital readmission after a hip fracture and found that one in three patients was readmitted within 12 months. The research is funded by the Eastern Health Foundation and La Trobe University.

“Patients with lower levels of mobility had twice the odds of being readmitted to hospital compared to those who were able to walk independently,” Ms Lockwood said.

“As part of this hip fracture project, we recruited 76 participants for a randomised controlled trial to compare the outcomes of patients who receive pre-discharge home visits with a group that received hospital discharge planning alone.”

The research aims to improve rehabilitation outcomes for people recovering from hip fractures by determining the most appropriate discharge plans following their hospital stay.

### What is allied health?

Allied health clinicians are an integral part of the healthcare team, providing support with diagnosis, recovery and quality of life. They work with others to ensure and increase a person’s independence, self-care and mobility, with a focus on reducing the risk of complications in chronic conditions or after injury or illness.

They work across areas such as dietetics, language services, neuropsychology, clinical psychology, health psychology, occupational therapy, physiotherapy, podiatry, social work, speech pathology and spiritual care.

Allied health services are provided at each Eastern Health site and within each clinical program, working in emergency departments, acute, sub-acute and mental health inpatient services, community rehabilitation, community health, specialist (outpatient) clinics and in the home.

# Shift, work, play

**Research has found links between shift work and negative physical and mental health outcomes in nurses and midwives, including an increased incidence of depression and risky alcohol use.**

Funded by the Movember Foundation, the Turning Point study titled “Shift, Work, Play” has significantly expanded this area of research and provided an insight into the loneliness and isolation faced by male shift workers. The project undertook a survey across Eastern Health, with male shift workers reporting significantly higher levels of psychological stress compared to men who did not work those shifts.

The research was led by Professor Dan Lubman, Dr Michael Savic, Nyssa Fergusson and Dr Rowan Ogeil. They found that 40 per cent of male shift workers rated their overall health as only fair or poor, with these rates almost double those reported across the wider Eastern Health community.

The survey involved 1812 Eastern Health staff, including 594 shift workers. Male shift workers who completed the survey were predominantly nurses (64 per cent), ranging in age from 24-62 years.

Impacts on the wellbeing of shift workers included poor sleep and diet, including the use of alcohol to cope with the demands of shift work. Shift workers also reported reduced opportunities for social engagement, which can impact on relationships with family and friends, stress and lowered self-esteem.

According to the research, male shift workers reported that shift work affected their ability to participate in physical activity. Nearly 60 per cent of men found it difficult to exercise because they did not have time or were too tired.

Diet was also an issue, with over 75 per cent eating less than two serves of vegetables and 80 per cent eating less than two serves of fruit while at work.

In taking a closer look at how shift work affects men’s ability to participate in physical activity and their overall wellbeing, common themes emerged including fatigue and exhaustion, not being able to commit to weekly activities or groups and not having classes available at times which were suitable for shift workers.

The study found that male shift workers would consider a group-based physical activity program as an effective way to overcome some of the demands associated with shift work by not only facilitating social connection but also mitigating some of the negative physical and mental health demands.





Maroondah Hospital Theatre Manager Jarrod Kimberley and his colleagues Mitchell Gardiner (Theatre Technician), Julian Martino (Clinical Nurse Specialist) and Ernesto Jr Nisperos (Registered Nurse) have all experienced the challenges of shift work.

The investigators hope to use these results to create a program that tackles sleep, diet and exercise, and are seeking future funding to trial this at Eastern Health.

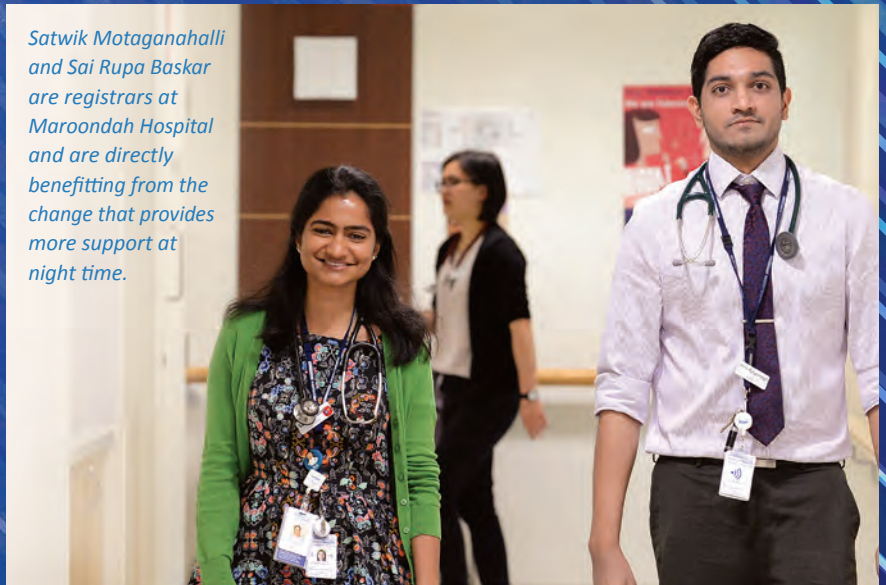
“It was noted that the intervention needs to be non-medical in nature to counter any presumption that the program is only for those who cannot cope. It needs to cater to men of different athletic ability, be at a convenient time for shift workers and involve friendly competition that appeals to men,” Dr Rowan Ogeil, National Health and Medical Research Council Early Career Fellow, Eastern Health Clinical School, said.

 For more information about Turning Point, visit [www.turningpoint.org.au](http://www.turningpoint.org.au)



## Better balance for night registrars

Satwik Motaganahalli and Sai Rupa Baskar are registrars at Maroondah Hospital and are directly benefitting from the change that provides more support at night time.



Night medical registrars are now working more efficiently and reviewing patients more quickly, thanks to a study that identified the benefits of staggered shifts.

“Significant increases in the workload of lone night medical registrars has led to delays in patient reviews and increased risk of adverse outcomes during the past few years,” Dr Harsh Thakkar, Senior Medical Registrar, said.

“We know that many lone night medical registrars have high workloads and low job satisfaction. We have tried to improve this by rearranging the shift times of our afternoon admitting registrars to provide a few extra hours of support to the night medical registrar.”

Prospective data was collected over a six-month period. The first three months included the standard admitting registrar shifts of 1.30pm to 10pm.

The second three months involved the introduction of a staggered shift for one registrar from 3.30pm to midnight, which introduced a three-hour overlap with the night registrar, who worked from 9pm to 8am.

The study recorded the number of admissions, pending admissions, referrals from the emergency department, ward reviews and Medical Emergency Team calls or codes. Data from weekends and public holidays was not included.

“Results of the study showed a significant reduction in night registrar workload and a trend towards reduced MET calls and codes. The introduction of the overlapping shift means that collaboration between medical staff has led to more timely review of patients, improving their care and increasing the job satisfaction of our staff.”

“

*“Results of the study showed a significant reduction in night registrar workload and a trend towards reduced MET calls and codes.”*

– Dr Harsh Thakkar





# Early palliative care for lung cancer patients

Research shows that early palliative care for patients with metastatic lung cancer leads to significant improvement in mood, overall quality of life, less aggressive therapy and increased survival.

Eastern Health Palliative Services receives more than 2100 referrals each year, many with advanced lung cancer. The team provides advice on symptom management, end of life care and complex discharge planning.

“Our experience suggested some patients were referred late in their illness despite the known advantages of early referral,” Dr David Kenner, Eastern Health Consultant Physician in Palliative Medicine, said.

A one-year retrospective study was conducted to establish a baseline palliative care referral rate for all admitted lung cancer patients. Demographics, cancer type, brief symptom profile and the outcomes of referred and non-referred patients were investigated.

“We postulated that referrals may not always occur, resulting in missed opportunities in patients proven to benefit from early palliative care,” Dr Kenner said.

Admitted patients with stage three or four lung cancer were included in the study. Patients with any diagnosis of lung cancer were identified and earlier stage disease excluded. Multiple admissions were treated as separate datasets, Clinical Patient Folder (known as CPF) was used to capture admission episode



and the medical record was reviewed. Significant symptoms were recorded, if documented in the file, and severity of pain or dyspnoea was also noted.

“We identified 157 inpatients with lung cancer and 264 admission episodes. More than one third of admission episodes did not result in referral to palliative care. Despite pain and dyspnoea predicting referral, these symptoms were present in non-referred patients. In fact, 52 per cent of admissions presented with pain and eight per cent of episodes with severe symptoms,” Dr Kenner said. Overall survival in both patient groups was poor, with 15 per cent of admissions associated with death.

Referred patients had the shortest overall survival, with 41 per cent dying during admission or within one month.

Non-referred patients also fared poorly, with half surviving six months or less, 15 per cent between six and 12 months, and 28 per cent alive at the end of the study period.

Service referral was strongly associated with previous contact with the palliative care service and overall mortality, with significant associations with pain, shortness of breath, anxiety and depression. There was no association with disease stage or the presence of other symptoms.





Caroline McClosky, Kerrie Penrose and Essy Shergis are all part of the nursing team in Wantirna Health's palliative care ward.



"This study provides evidence that patients with advanced lung cancer admitted to our hospitals are accessing palliative care services relatively late during the course of their disease and some not at all. Previous contact with specialist palliative care services, as an inpatient or outpatient, is the strongest predictor of referral to our service, more so than symptoms or estimated prognosis."

Study findings are being used to enhance palliative care service provision to enable earlier referral for lung cancer patients, with the option of introducing an outpatient facility within palliative care currently being considered.

## Spotlight on palliative care

Eastern Health is pleased to welcome Professor Claire Johnson to the role of Vivian Bullwinkel Chair of Palliative Care Nursing, Monash University, and Clinical Lead End of Life Care.

According to the Victorian Department of Health and Human Services, demand for palliative and end of life care is expected to increase by five per cent every year. With this anticipated demand, Prof Johnson's appointment represents an exciting opportunity to enhance the evidence base and improve patient outcomes related to palliative and end of life care.

Eastern Health is well placed to be at the forefront of palliative and end of life care. Our palliative care service is one of the busiest in Victoria with a 32-bed ward at Wantirna Health and a palliative care team that provides consultation within all Eastern Health hospitals. In addition to this, we also offer undergraduate and postgraduate palliative care training.

Prof Johnson, who was a member of the University of Western Australia's Cancer and Palliative Care Research Evaluation Unit prior to joining Eastern Health, will

explore models of care, educate healthcare providers and engage the community in conversations around end of life care. More importantly, she will spearhead research that will transform the way staff support palliative care patients.

Prof Johnson is already in the early stages of planning research, developing networks and meeting with potential funding bodies. "I am driven to support people at the end of their life. In fact, I believe we have a duty to provide better, if not the best, options in this area of healthcare," she said.


Prof Johnson's appointment is the result of a generous philanthropic community of individuals, businesses and organisations who raised funds towards her appointment. This includes Box Hill RSL and the Australia Macau Business Council, as well as funds raised from Eastern Health's inaugural Searchlight Dinner in 2016.

The Vivian Bullwinkel Chair of Palliative Care Nursing, Monash University, and Clinical Lead End of Life Care is named in honour of Second World War nurse Vivian Bullwinkel. Vivian was a skilled and innovative nurse, who was a distinguished member of Australia's military; a courageous and inspiring leader of people and a woman who performed remarkable deeds during and after the war for the frail, the aged, the dying, the disadvantaged and the forgotten.



L-R: Professor Christina Mitchell (Monash University), Adjunct Professor David Plunkett (Eastern Health Chief Executive), Mr Tony Bowden (Box Hill RSL President), Professor Claire Johnson, Mr Matt Sharp (Eastern Health Executive Director of Clinical Operations) and Ms Anne Gribbin (former Eastern Health Foundation Director) with a portrait of Vivian Bullwinkel.





*Turning Point's MAKINGtheLINK program is assisting teenagers to help their peers, as well as support themselves to seek professional help for mental health and substance use issues.*

# MAKINGtheLINK

## benefits for adolescents

**A sample of 2447 Year 9 students has revealed Turning Point's MAKINGtheLINK program is helping to equip teenagers with the skills they need to help their peers, as well as support themselves to seek professional help for mental health and substance use issues.**

The health promotion program has been developed over a decade, with input from teachers, researchers and clinicians from Turning Point and Monash University. It aims to teach adolescents how to identify mental health and/or substance use issues in their peers and overcome barriers to accessing professional help.

"Adolescence is a critical period for the development of mental illness, yet we know there are multiple barriers that prevent young people from seeking professional help, meaning they are more likely to turn to their friends rather than health professionals," Professor Dan Lubman, Turning Point's Executive Clinical Director, said.

In a rigorous evaluation of the program, 22 secondary schools from across Victoria took part in a cluster randomised controlled trial,

funded by the National Health and Medical Research Council. Schools were randomly allocated to receive the intervention or form a waitlist control group. All students completed a self-report questionnaire at four separate time points – baseline, at six weeks, six months and 12 months post-intervention.

"The survey incorporated a range of standardised measures that assessed help-seeking behaviours, attitudes and intentions. Analyses revealed that those Year 9 students who received the intervention were more likely to seek professional help for mental health problems over the subsequent year," Prof Lubman said.

"Results also demonstrated sustained improvements in the help-seeking attitudes and beliefs of young people who received the intervention, as well as improved confidence to support a peer."

Based on the findings and feedback from participating schools, Turning Point is now adapting the program to ensure it remains relevant to its young audience.

"This has involved the establishment of a National Reference Group, comprising of a diverse range of experts, including academics, clinicians and field workers in the education, psychology, youth wellbeing, gender equity, CALD and ATSI fields," Prof Lubman said.

"Our long-standing relationship with many Victorian high schools continues to inform how we make the program more accessible and relevant."

The program is highly sought by schools and was recently awarded a National Alcohol and Drug Foundation Excellence and Innovation Award in the Prevention and Education category.







“

*“Results also demonstrated sustained improvements in the help-seeking attitudes and beliefs of young people who received the intervention, as well as improved confidence to support a peer.”*

– Prof Dan Lubman

### Glossary

#### CALD

Culturally and linguistically diverse

#### ATSI

Aboriginal and Torres Strait Islander



*Aisling Malone, Senior Psychologist; Naomi Hall, Access Clinician; Ivy Dang, Access Clinician and Peter Jenkins, Clinical Director are all part of the Child and Youth Mental Health Service at Eastern Health.*

## Power of data helps vulnerable young people

Parents seeking support for their child's severe mental health issues now have access to more appropriate care after a research project helped reshape Eastern Health's Child and Youth Mental Health Service (CYMHS).

With a waitlist hovering above 150 for many years, and more than 3000 people contacting the service each year, with multiple calls from families, young people, schools, general practitioners, child protection and private practitioners – the service undertook a significant overhaul to help streamline the process and better meet the needs of its clients.

“Our previous approach led to unclear wait times, mixed messages about referral options and inefficiencies in the management of our waitlists, treatment and discharge processes,” Dr Peter Brann, Director of Research and Evaluation, Eastern Health CYMHS, said.

The team introduced the Initial Consultation and Treatment in Recovery model, which aimed to minimise inefficiencies, match assessment and treatment capacity with accessibility and achieve significant improvements in patient flow.

“For many years we have routinely collected data about who receives what services, from whom and with what effect. This research allowed us to review patient improvement,

dosage of treatment required and the availability of our key resource – staff,” Dr Brann said.

“A major revision to patient access was piloted for three months and indicated that the model of care could accurately predict the number of young people who could be effectively supported.”

Comparison of the pre and post-implementation revealed that despite Eastern Health CYMHS clients being in the top quartile for severity among peer organisations across Australia, symptom and functioning improvements were maintained, treatment duration was shorter and the waitlist was eliminated.

“This work has led to parents knowing the best option for their child during the initial call to the service. If further support from CYMHS is required, an initial consultation is immediately scheduled or a specific time is nominated for a follow-up call,” Dr Brann said.

“It means we can instantly confirm difficulties and strengths, avoiding the dreaded telephone tag, and giving parents the information and confidence to determine the next steps for their child's treatment.”

Patient preferences and needs determine the extent of treatment, with outcomes collected to further monitor the service's processes.





# Mental health link to problem gambling

**A Turning Point study has found high rates of problem gambling among patients attending mental health services.**

*Results of the study found that if patients identified themselves as a gambler, they had a one in two chance of experiencing gambling-related harm.*

The three-year project was funded by the Victorian Responsible Gambling Foundation (VRGF) and involved a successful collaboration between researchers at Turning Point, Deakin University and Monash University. In one study component, they surveyed over 800 patients attending mental health services across Victoria to determine rates of gambling participation and gambling-related harm.

“It is understood that individuals with mental health disorders have a greater vulnerability to addictive disorders. There is also evidence to suggest that for patients with mental health issues, gambling problems can complicate the presentation, compromise treatment engagement and support and exacerbate psychosocial disadvantage,” Dr Victoria Manning, Turning Point Senior Research Fellow, said.

Their findings indicated that despite patients having lower rates of gambling participation relative to the general adult population (41.6 per cent versus 61 per cent), they were three times

as likely to be identified as a “moderate risk” gambler and eight times as likely to be identified as a “problem gambler”.

“These results show that if patients identified themselves as a gambler, they had a one in two chance of experiencing gambling-related harm. Overall, one in five (21.9 per cent) patients reported gambling-related harm and patients with drug use disorders, psychosis and bipolar disorder were the most likely to be experiencing harms from gambling,” Dr Manning said.

The study also examined 11 problem gambling screening tools within the mental health population and demonstrated that a single-item screen could identify 96 per cent of patients experiencing gambling problems.

Launched in July 2017, the study report has already led to a number of organisations committing to embed routine screening for problem gambling into their service, while funding to upskill the mental health workforce in gambling assessment and treatment is being considered by the VRGF.



*Victoria Manning is a Senior Research Fellow at Turning Point*





“

*“Overall, one in five (21.9 per cent) patients reported gambling-related harm and patients with drug use disorders, psychosis and bipolar disorder were the most likely to be experiencing harms from gambling.”*

— Dr Victoria Manning

## DID YOU KNOW?



There are

79

staff members

at Eastern Health completing a PhD or Masters Degree



12

nursing staff

PhD: 8

Masters: 4



15

allied health staff

PhD: 10

Masters: 5



52

medical staff

PhD: 13

Masters: 39



# Pharmacy takes lead role in research

Eastern Health's pharmacy department plays an integral role in optimising the safe use of medications across inpatient and outpatient settings.

*"The role pharmacy plays in clinical trials has come a long way from purely a supply role to now providing advice on protocol design, patient dosing and ethical and randomisation issues."*

— Laura Fanning

In 2017, the department demonstrated its commitment to research by appointing Laura Fanning to co-ordinate and build its research capacity.

"We have been involved in a range of research projects and clinical trials that have allowed us to optimise service delivery, resulting in positive impacts across Eastern Health," Ms Fanning said.

Pharmacy currently supports 120 clinical trials across 12 specialty areas. About 80 per cent of these are sponsored by pharmaceutical companies and the remainder are Eastern Health investigator driven or collaborative studies.

"The role pharmacy plays in clinical trials has come a long way from purely a supply role to now providing advice on protocol design, patient dosing and ethical and randomisation issues. Pharmacy makes a significant contribution to clinical trials at Eastern Health, which builds on the department's involvement in research overall," Ms Fanning said.

A range of practice-based research projects were conducted during 2017, including:

## IDENTIFICATION OF PATIENTS WITH COMPLEX MEDICATION NEEDS

Increasing patient throughput and complexity is a challenge for many hospital pharmacy departments to deliver timely and high-impact care to all inpatients.

In an effort to deliver high-quality, safe care, targeting patients with complex medication needs could be an appropriate method for allocating clinical pharmacy resources. However, the challenge for pharmacists lies in the direct ability to identify patients most at risk of adverse drug events. As a result, a "high needs" criteria was developed to identify patients with complex medication needs throughout the admission continuum.

"Several research projects have been undertaken to validate the high needs criteria. This is important work because it allows us to identify patients who could benefit most from clinical pharmacy input," Ms Fanning said.

Point prevalence data indicates that up to 80 per cent of Eastern Health patients are "high needs".

A retrospective cohort study also investigated the frequency of unplanned readmissions within 30 days for high and low needs patient groups. It included 6568 patients and found that the unplanned readmission rate for high needs patients was almost double that of patients with low needs.

"These studies demonstrate the potential benefit of identifying high needs patients and targeting clinical pharmacy

services accordingly in an effort to reduce medication-related unplanned readmissions. Further, this work supports changes for safe and alternate care discharge pathways for low needs patients."

Following these initial studies, a current trial of the high needs criteria in clinical practice was implemented.

## REDUCING WAITS AND WASTES

Maroondah Hospital's pharmacy dispensary has achieved a 30 per cent reduction in prescription processing times for outpatient and discharge prescriptions.

A lean methodology\* approach was employed, which assessed "waits and wastes" within dispensary processes for prescriptions. A workflow process map was developed and evaluated by staff for the perceived causes of delays. The dispensary workspace was reorganised and standardised according to lean methodology principles and prescription work streams and staff roles were modified. Processing times were also evaluated before and after the dispensary changes.

"This initiative demonstrates how evaluation of our processes can have benefits, not only for our staff but also for our patients," Lauren Lawlor, Associate Program Director of Pharmacy, Maroondah Hospital and Aseptic Services, said.

\* Lean methodology is an approach that systematically seeks to achieve small, incremental changes in processes in order to improve efficiency and quality.







## INTERDISCIPLINARY COLLABORATIONS

Eastern Health's pharmacy teams have partnered with a range of clinicians to improve processes and achieve better outcomes for patients. The examples below provide a snapshot of recent achievements in interdisciplinary collaborations.

- Credentialed pharmacists participated in a new model of care where they obtained a medication history for patients admitted to the Eastern Health general medicine program and subsequently charted pre-admission medications and venous thromboembolism (VTE) prophylaxis after discussion with the admitting medical registrar. Preliminary results from this collaborative project with the Department of Health and Human Services and Alfred Health show a reduction in medication error rates from 18.5 per cent to 0.65 per cent for all pre-admission medications. The number of patients with at least one error also reduced from 62.5 per cent to 5.25 per cent when pharmacists charted pre-admission medications.

Given the significant reduction in medication errors from early collaboration in care, the Medication Management Expert Advisory Committee recently endorsed a continuation of this model of care to maintain the quality improvement initiative, aligned with the principles of National Safety and Quality Health Standards, Standard 4 (Medication Safety) and Standard 6 (Clinical handover).

- Senior clinical pharmacist Anne Gouloupoulos partnered with the infectious diseases and emergency departments to explore the attitudes and beliefs of emergency clinicians towards antimicrobial stewardship. Twenty-two Australian clinicians participated in semi-structured interviews. It was found that emergency department clinicians were aware of antimicrobial resistance and perceived injudicious antimicrobial use to be a problem. Clinicians highlighted diagnosis uncertainty, time and resources, reliance on previous experience and limited access to expert opinion as barriers to judicious antimicrobial use.

- Senior theatre pharmacist Galahad Gu led an audit of perioperative non-steroidal anti-inflammatory drug (NSAID) use, in collaboration with the anaesthetics department. The study demonstrated that NSAIDs were under-utilised before surgery. Increasing age, male gender and higher American Society of Anesthesiologists (ASA) scores were associated with NSAID under-utilisation. This demonstrates that further education is required to safely increase NSAID utilisation before surgery, which has the potential to decrease reliance on opioids, which could reduce the prevalence of opioid-related harm.
- Pharmacy intern Ruby Arter conducted an inpatient point prevalence study of the appropriateness of pharmacological VTE prophylaxis. The study found that 72 per cent of pharmacological prophylaxis prescriptions were aligned with the existing Eastern Health Practice Guideline. As a result, the Eastern Health VTE Working Group has developed initiatives to optimise evidence-based prescribing, including guideline revision.



# Encouraging research across Eastern Health

In our pursuit of “Great care, everywhere, every time”, Eastern Health also strives to be a centre of research excellence.

With the generous support of philanthropists, Eastern Health Foundation and the Office of Research and Ethics, we are proud to award a number of research grants to our staff each year.

Launched in 2012 and just shy of \$1 million at the end of 2017, the Eastern Health Foundation Research Grants program encourages staff to investigate the most effective methods of care and treatment, maximise patient wellbeing and improve our practices, policies and quality of care.

The depth and breadth of research conducted through this program extends across all aspects of healthcare, including surgery, aged care, emergency, drug and alcohol, oncology and mental health.

Philanthropic individuals, businesses and community groups provide seed funding, ongoing financial support and significant donations so our researchers can focus on improving patient care. Their generosity means they are better able to understand diseases, discover treatments and explore medical practices that can have immediate benefits to patients.



For more information about how to invest in our research program, visit [www.easternhealth.org.au/foundation](http://www.easternhealth.org.au/foundation) or call the Eastern Health Foundation on 03 9895 4608.

## Keeping a watch on cardiac patients



When Dr Andrew Teh, Jinthin Sajeev and Louise Roberts received an Eastern Health Foundation Research Grant in 2017, they began investigating whether smart watches could provide doctors with accurate data on a cardiac patient's heart rate, fitness and health.

To date, their research suggests that smart watches are not as accurate

as medical grade equipment however, technology is progressing at a faster rate than healthcare and in time, their findings may be quite different.

“Our role is to find a solution to a clinical problem and translate it into clinical practice to improve patient outcomes,” Cardiologist Dr Teh said. “Without funding from caring people in the community, it would be impossible to do this research.”

*Dr Andrew Teh uses a smart watch to track cardiac patient's heart rate, fitness and health.*





# About Eastern Health

Eastern Health is one of Melbourne's largest metropolitan public health services. There are 773,992\* people across 2816 square kilometres who live in our catchment and depend on us for their public healthcare needs – the largest geographical area in Victoria.

We provide a range of emergency, medical and general healthcare services, including maternity, palliative care, mental health, drug and alcohol, residential care, community health and statewide specialist services to people and communities that are diverse in culture, age, socio-economic status, population and healthcare needs.

\*Victoria in Future 2015



**We have**

**9437**  
employees

**63%**

of whom live within the community we serve



**About**

**1 in 4**  
patients

admitted to our hospitals (26 per cent) originates from a country where English is not the predominant language. The top five countries are China, Greece, India, Italy and the Netherlands.



The proportion of people in our catchment aged 60 and over continues to increase. **Our catchment has over 20 per cent more people in the over 60 age group than the other areas of metropolitan Melbourne.**



**We delivered over**

**1.2 million**  
episodes of patient care

in 2016-17 and continued to perform record amounts of elective surgery



**In 2016-17, there were**

**157,532**  
emergency department presentations

**- up 5.7%**

– that's one person every 3.2 minutes



**With**

**1514\***  
beds,

**Eastern Health operates from**

**21 locations**

**including:**

- Angliss Hospital in Upper Ferntree Gully
- Box Hill Hospital
- Healesville Hospital and Yarra Valley Health
- Maroondah Hospital in Ringwood East
- Peter James Centre in Burwood East
- Wantirna Health
- Yarra Ranges Health in Lilydale
- Turning Point (Statewide Service)
- Spectrum (Statewide Service); and
- Four residential aged care facilities in Mooroolbark, Healesville, Upper Ferntree Gully and Burwood East.

\* As at 30 June 2017. Bed numbers are subject to change depending on activity and demand.



## OUR RESEARCH COMMITMENT

Eastern Health is committed to building a culture of research and ensuring that research is embedded in everyday clinical practice. Eastern Health contributes to local, national and international research activities.

This document provides selected snapshots that reflect the high-calibre research, commitment and strength of research programs across Eastern Health.



Hard copies of the 2017 Eastern Health Research Report are available by contacting the Office of Research and Ethics by emailing [ethics@easternhealth.org.au](mailto:ethics@easternhealth.org.au) or download an electronic version at [www.easternhealth.org.au/publications](http://www.easternhealth.org.au/publications)



Current research activity program reports are available online at [www.easternhealth.org.au](http://www.easternhealth.org.au)





# easternhealth

## LOCATION

5 Arnold Street, Box Hill  
Victoria 3128

## POSTAL ADDRESS

PO Box 94, Box Hill  
Victoria 3128

## GENERAL INQUIRIES

1300 342 255  
[www.easternhealth.org.au](http://www.easternhealth.org.au)

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131 450

## FEEDBACK

Eastern Health values feedback and uses it to continuously improve the services we provide.

*There are a number of ways to provide your feedback:*

Fill in our online feedback form at [www.easternhealth.org.au](http://www.easternhealth.org.au)

Contact one of our Patient Relations Advisers on 1800 327 837. Patient Relations Advisers are available Monday to Friday from 9am to 5pm

Send an email to [feedback@easternhealth.org.au](mailto:feedback@easternhealth.org.au)

Write to us at:  
The Centre for Patient Experience  
Wantirna Health  
251 Mountain Highway  
Wantirna South, Victoria 3152

Via the Patient Opinion website at [www.patientopinion.org.au](http://www.patientopinion.org.au)

## PUBLICATIONS

All of Eastern Health's publications are available electronically via our website at [www.easternhealth.org.au](http://www.easternhealth.org.au)

## EASTERN HEALTH FOUNDATION

03 9895 4608

[fundraising@easternhealth.org.au](mailto:fundraising@easternhealth.org.au)

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