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The 2016 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.

EASTERN HEALTH'S MISSION IS TO PROVIDE POSITIVE HEALTH EXPERIENCES FOR PEOPLE AND COMMUNITIES IN THE EAST. THE 2016 EASTERN HEALTH RESEARCH REPORT DEMONSTRATES THAT RESEARCH AT EASTERN HEALTH IS BEING TRANSLATED TO IMPROVE HEALTHCARE DELIVERY AND MAXIMISE HEALTH OUTCOMES.

The report provides snapshots of some of the research activities across all aspects of our health service. These activities include collaborations on projects with university partners and other healthcare providers.

Eastern Health continues to build on its research plan which seeks to embed research into everyday practice. Increasingly, research is no longer an individual pursuit but rather one that is undertaken in partnerships, with a multi-disciplinary team approach. This is a reflection of the holistic way that healthcare is delivered. A number of the research projects showcased in this report demonstrate such successful collaborations.

Eastern Health clinicians are increasingly involved in clinical studies, clinical trials and translational research. This is evidenced by the steady growth in the number of publications and presentations at national and international conferences.

The implementation of an electronic medical record in 2017 will further enhance every clinician's capacity to utilise large and immediately available datasets. We therefore anticipate an even steeper growth in Eastern Health's research output in the coming years.

However, an increase in research activity has meant a greater demand for research funding. The Eastern Health Foundation and the Office of Research and Ethics have worked together to meet this need. While there are proposals from governments to increase research funding in the longer term, the Eastern Health Foundation has provided tangible support in the short term.

As well as providing organisational support for applications to external agencies, in 2015 the Eastern Health Foundation Research Grants Program awarded more than \$260,000 to Eastern Health research projects. It is even more exciting to note that in 2016, the Foundation is on target to award an even greater amount of funds. This is due to the ongoing generosity of benefactors.

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.

In celebrating our research outputs, we gratefully acknowledge the contribution of granting bodies such as the National Health and Medical Research Council, the Australian Research Council and other trusts and philanthropic agencies.

We also warmly acknowledge those individuals and local organisations who so generously donated to the Eastern Health Foundation. Finally, we must not overlook the tireless and diligent efforts of our researchers, the Eastern Health Human Research Ethics Committee and the Office of Research and Ethics.

We commend the **2016 Eastern Health Research Report** to you.



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ADJUNCT PROFESSOR
DAVID PLUNKETT
CHIEF EXECUTIVE

ADJUNCT CLINICAL
ASSOCIATE PROFESSOR
COLIN FEEKERY

Lucy

EXECUTIVE DIRECTOR OF MEDICAL SERVICES & RESEARCH CHIEF MEDICAL OFFICER

pf Lu.

PROFESSOR DAVID TAYLOR
DIRECTOR OF RESEARCH &
UNIVERSITY RELATIONS



is Professor of Medicine and Head of the Eastern Health Clinical School.

He said Monash University and Eastern Health had several agreements and memoranda of understanding.

"One outcome of this is that ECRU is the facility through which Eastern Health undertakes clinical trials. This allows clarification of governance, management, finance and other issues, and ensures that Eastern Health is able to meet its obligations when it agrees to take on a clinical trial," Prof Davis said.

across a range of internal medicine disciplines, including endocrinology, oncology, haematology, respiratory medicine, nephrology, neurosciences, gastroenterology, hepatology, cardiology, dermatology and rheumatology.

Recently, some surgical trials have also been undertaken and ECRU is planning to move into other areas, including paediatrics and women's health.

Prof Davis said ECRU regularly provided excellent accrual to its trials with

Eastern Health, is a preferred site for the contract research organisation Quintiles.

"ECRU provides central administrative support, including management of trial finances and close liaison with the Eastern Health Human Research Ethics Committee and Office of Research and Ethics," he said.

"ECRU also provides an excellent model of a partnership between the health service and academia, to the benefit of both organisations and ultimately, for our patients."





The Eastern Health – Deakin University Nursing and Midwifery Centre has celebrated many achievements throughout 2015-16.

Professor Julie Considine led Australia's first multi-site study of the relationship between abnormalities in vital signs (such as blood pressure, heart rate, respiration) during emergency department care and later, clinical deterioration after being admitted to a ward.

The EmERGE (Emergency Evaluation of Risk Groups Entering hospital) study showed a clear relationship between hypotension (low blood pressure) and tachypnoea (fast respiratory rate) in the emergency department and the need for medical emergency team review during the first three days of hospital admission.

The results of this study have been published in the following journals: *European Journal of Emergency Medicine, Journal of Advanced Nursing and Critical Care* and *Resuscitation*.

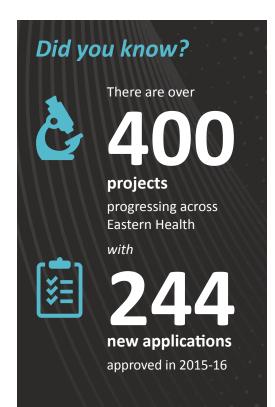
Dr Maryann Street completed the first Australian study of the predictors for older people remaining longer in the emergency department.

In this study of almost 34,000 emergency department attendances by patients aged 65 and over, Dr Street and her colleagues were able to identify the factors that increased the risk of staying in the emergency department for more than four hours.

The next stage of this research will be to work with emergency department clinicians to develop targeted approaches to streamline the patient journey for older people attending the emergency department.

Dr Lisa Kuhn was awarded a highly prestigious Alfred – Deakin Postdoctoral Fellowship to enable her to continue building her research program in acute coronary syndrome and in particular, the assessment and management of women with acute cardiac conditions.

There are also a number of other research projects in progress, including those by 12 Eastern Health nurses undertaking Honours, Masters and Doctoral studies under the supervision and guidance of Eastern Health – Deakin University Nursing and Midwifery Centre researchers.





AND LA TROBE UNIVERSITY, AND IS LED BY PROFESSOR **NICHOLAS TAYLOR AND** DR KATHERINE HARDING.

Prof Taylor said research activities received direction from the Allied **Health Research Committee.** With representatives from programs, allied health disciplines and "research-active clinicians", the committee aimed to promote, support and do clinical research.

As part of this emphasis on research promotion and training, senior research fellow Dr Judi Porter was appointed to work with the Allied Health Clinical Research Office to increase the capability and capacity of allied health staff across all programs to undertake collaborative translational research.



MAJOR PROJECTS

One of the major projects, titled "Improving access for ambulatory and community services", is funded by the National Health and Medical Research Council and led by Dr Katherine Harding, with assistance from project officers David Snowdon and Annie Lewis.

"The project aims to test whether a new approach to access and triage, known as STAT (specific and timely assessments for triage) can reduce waiting times in a range of ambulatory and community services," Dr Harding said.

Another major project is "Improving outcomes after rehabilitation", a collaborative program supported by the

Eastern Health Foundation and La Trobe University. Led by Professor Nicholas Taylor with assistance from project officers Anne Thompson and Melissa Reed, the research aims to improve rehabilitation outcomes for people recovering from hip fractures and for cancer survivors attending oncology rehabilitation.

A third significant piece of work, which is a systematic review on "The organisational benefits of a strong research culture", was commissioned by the Victorian Department of Health and Human Services Chief Allied Health Officer and completed and published by Dr Harding, Lauren Lynch, Dr Judi Porter and Prof Taylor.





As well as conducting research, the Allied Health Clinical Research Office has an important role in research promotion and training.

A major feature in 2016 was the Allied Health Research Forum at Wantirna Health which featured guest speaker, Professor Catherine Itsiopoulos, and a "3-minute project" competition in which allied health clinicians presented their work.

Allied health research is also promoted both within Eastern Health and externally, with a quarterly newsletter and Twitter account, @EH Research.



STEPPING INTO RESEARCH

Research training opportunities included the Allied Health Research Training Program called *Stepping into Research* that introduces clinicians to research by completing a systematic review.

From the 49 allied health clinicians who have completed *Stepping into Research* during the past six years, there were 22 academic publications, 21 conference presentations and five PhD enrolments. The research office also provides individual advice and research support for allied health clinicians looking to undertake research, as well as supervision to higher-degree research students.

Highlights during the past year have included 37 publications and 65 conference presentations. Tash Brusco graduated with

a PhD for her research on providing additional allied health services for inpatient rehabilitation and Jorja Collins graduated with a PhD exploring malnutrition in the sub-acute setting.

Since its inception with a single professorial appointment in 2007, the Allied Health Clinical Research Office has grown to become a hive of research activity, employing multiple researchers and project officers, fostering collaborations between local and international universities, and attracting more than \$1 million in research grant funding during the past two years.

We look forward to the next stage in this exciting journey.



IMMEDIATE ATTENTION: Nurse researcher Jo-Anne McShane has studied why people attend emergency departments.

UNDERSTANDING EMERGENCY DEPARTMENT DEMAND

WHEN PEOPLE BECOME ILL
OR HAVE AN ACCIDENT, THEY
NEED TO MAKE AN IMPORTANT
DECISION ABOUT WHERE THEY
SHOULD GO FOR HEALTHCARE.

SHOULD I MAKE AN APPOINTMENT WITH A GENERAL PRACTITIONER?

SHOULD I CALL THE NURSE ON-CALL SERVICE?

OR IS IT SERIOUS ENOUGH THAT I NEED TO VISIT A HOSPITAL EMERGENCY DEPARTMENT?

Box Hill Hospital has looked into why patients choose to attend the emergency department and what factors they considered when deciding to go to an emergency department.

The project, led by nurse researcher Jo-Anne McShane, followed a 16 per cent increase in attendances over a 12-month period in 2015-16 compared with 2014-15.

A survey of 200 patients studied what factors they considered when deciding to attend the emergency department.

It found that one in two patients were willing to wait even if the emergency department was crowded.

The research also found that:



strongly believed a hospital provided great care for their condition



found it convenient to have all services in one place



were close to the hospital when the decision was made. More broadly, when asked about their general perceptions and attitudes towards emergency department services:



strongly agreed they had the convenience of all facilities in one place, while



believed that hospital doctors and nurses could provide specialist care.

In addition, respondents were asked about their attitudes towards emergency departments when it came to urgency. The study found that:



believed that people should only come to a hospital emergency department if their illness is urgent or life threatening



believed that coming to the hospital for non-urgent illnesses was a misuse of the system.

Ms McShane said people continued to hold hospital emergency departments in high regard.

"The results of this project show that patients attend the emergency department because they believe their condition is serious and urgent enough to warrant emergency care."

ENHANCING CARE FOR PATIENTS

Obtaining information about a patient is important. In many healthcare settings, such as specialist consultations or pre-operative assessment areas, patients provide written information before they are seen by a doctor, typically while they are waiting to be seen.

Box Hill Hospital Emergency Department Registrar Dr Sarah Green said this form of information gathering was seen as an adjunct to conventional verbal discussion and had a range of potential benefits.

"To investigate whether this form of information gathering may be useful in the emergency department setting, a questionnaire was developed for patients waiting to see a doctor in a busy metropolitan emergency department," Dr Green said.

"The questionnaire was a purposedesigned one-page form that captured the patient's top priorities and aspects of medical history.

"We assessed whether this improved information gathering and overall care, as perceived by both the patients and clinicians."

A total of 440 feedback forms were received. It was found that:



felt the questionnaire improved satisfaction with their visit



recommended that the questionnaire be used for all emergency department patients

A total of 34 clinicians – doctors and nurse practitioners – were also surveyed. It was found that:



recommended ongoing use of the questionnaire



felt they became aware of something they would not have from conventional history taking



believed the questionnaire improved communication and rapport

PATIENT FEEDBACK

Despite 50 per cent of patients expressing improved satisfaction and recommending the questionnaire be used, patients provided a diverse range of feedback on the questionnaire, including:



"I was happy to fill in the questionnaire but I was still required to give the same information orally to different doctors and nurses, so it seemed redundant."



• "Ask even more questions to understand the person's problems. Say approximately 25."



"When you're in pain, the last thing you want to do is a written questionnaire."

Dr Green said the study suggested that a self-administered questionnaire was a simple intervention that had a number of potential benefits to patients and clinicians.

She said a longer implementation period would be required to examine this further.



Timely emergency care

Providing timely and clinicallyappropriate care is a key priority for Eastern Health's emergency departments at Box Hill Hospital, Angliss Hospital and Maroondah Hospital.

We have systems in place to provide assessment, investigations and treatment to patients on arrival, including during peak periods. This ensures patients are seen in order of clinical urgency.

For example, a patient who has an immediately life-threatening condition such as a heart attack will be seen sooner than a patient who may have a less urgent condition such as a sprained ankle.

THE HEART OF THE MATTER

WHEN ANGELINA CAMPBELL CAME TO EASTERN HEALTH'S OSTEOARTHRITIS (OA) HIP AND KNEE SERVICE WITH A VERY SORE KNEE THAT WAS LIMITING HER ABILITY TO WALK, X-RAYS REVEALED SHE WAS SUFFERING FROM "BONE ON BONE" AND A DIAGNOSIS OF SEVERE KNEE OSTEOARTHRITIS WAS MADE.

According to Eastern Health and La Trobe University PhD candidate Jason Wallis, joint replacement surgery or physiotherapy can help reduce the pain for people with OA and improve their walking ability.

However, Mr Wallis said the bigger problem for Angelina was her decline in physical activity compared with someone who did not have OA.

"Someone with OA could be at greater risk of cardiovascular disease compared to someone without OA," he said. "In Angelina's case, these concerns were confirmed by further assessment showing her cholesterol levels, waist circumference and body mass index were above the healthy marker, indicating increased cardiovascular risk."

Mr Wallis said this highlighted an important question about managing patients with osteoarthritis:

How much walking will not exacerbate their pain but still ultimately reduce their risk of heart attack?

A preliminary study found people with severe knee OA tolerated 70 minutes of physical activity per week – equivalent to 10 minutes a day, without increasing their knee pain. But was this enough to improve cardiovascular health?

In a randomised controlled trial of nearly 50 patients with severe knee OA, half the group was prescribed 70 minutes of walking in the community with support from a physiotherapist, while the other half received usual care only.

The walking group reduced its waist circumference by five centimetres and an increase in their time spent walking per day by 18 minutes. This was achieved without increasing pain levels in the affected knee.

Arguably the most important finding was that the walking group was six times more likely to lower its systolic blood pressure to a healthy level.

Mr Wallis said previous studies had indicated that older people who did as little as 15 minutes a day of walking had a 14 per cent reduced risk of dying and a three-year longer life expectancy than people who were not physically active.

"So, the heart of the matter is, for people with severe knee OA, 70 minutes a week may just be enough to make meaningful differences to cardiovascular heath," Mr Wallis said.

COLLABORATION

Mr Wallis' research team included orthopaedic surgeon Mr Parminder Singh, rheumatologist Dr Chris Fong and Professor of Allied Health Nicholas Taylor, as well as researchers from La Trobe University and Victoria University.

All patients were recruited from Eastern Health's Osteoarthritis Hip and Knee Service. The project was supported by a grant from the sport exercise and rehabilitation research focus area at La Trobe University.



RECOVERY PATH: Physiotherapist and PhD candidate Jason Wallis takes patient



THERAPY HOPE FOR STROKE PATIENTS

Constraint Induced Movement Therapy might be one way to increase therapy options for stroke-affected patients.

In Australia, stroke affects approximately 50,000 people per year. Of those people, about 65 per cent will be left with difficulties using their arm. This can affect everyday activities such as getting dressed, writing or making a cup of tea.

However, one treatment that may support stroke survivors is Constraint Induced Movement Therapy, which promotes use of the affected arm by constraining use of the non-affected or "good" arm.

Occupational therapists Cathryn Baldwin, Katherine Harding, Kat Pope, Lynda Power and Amy Wilkinson from the Community Rehabilitation Program investigated whether this type of treatment had greater effects for patients compared to usual therapy.

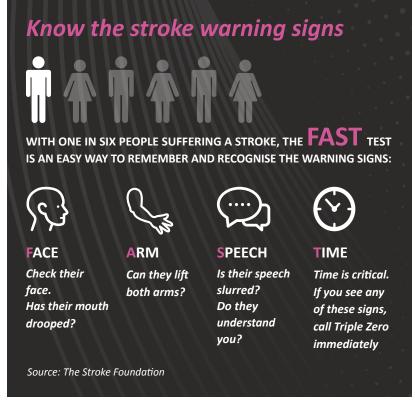
"In this research, stroke survivors who had been discharged and were living at home were randomly assigned to either usual care or the Constraint Induced Movement Therapy, " Ms Baldwin said.

"Those participating in Constraint Induced Movement Therapy wore an oven mitt on their "good" arm during the day to stop them from using it. This forced them to try to do everyday activities with their affected arm."

While analysis is still underway, initial results showed there was no difference in the way a patient's affected arm recovered. However, some patients who use the Constraint Induced Movement Therapy said they used their "affected" arm more in everyday tasks after the study had finished.

"One patient reported he might go back to wearing the oven mitt because it forced him to use his affected arm. He felt it really helped his affected arm to get better," Ms Baldwin said.

Researchers were pleased to learn that this treatment could be used successfully in outpatient rehabilitation because previous trials had focused mainly on using the therapy in intensive inpatient treatment settings. However, they also reported the treatment was only suitable for people with particular types of stroke-related disabilities and not everyone liked the idea of taking their "good" arm out of action.



TREATMENT CONNECTION: WEB-BASED TECHNOLOGY AND MULTIPLE SCLEROSIS

WEB-BASED TECHNOLOGY COULD HOLD THE KEY TO IMPROVED TREATMENT FOR PEOPLE AFFECTED BY MULTIPLE SCLEROSIS (MS).

More than 23,000 people across Australia are affected by MS, with the number of new cases increasing each year. Symptoms include motor control issues such as muscle spasms and weakness, sensory disturbances, visual changes, loss of balance, bladder dysfunction and cognitive impairments.

Eastern Health MS Service research co-ordinator Daniel Merlo said many of the symptoms could be monitored in the clinic. However, the subtle and complex nature of cognitive impairments meant routine assessment and monitoring in the clinic setting was a challenge.

"Cognition changes are common in MS patients, with up to 65 per cent of patients being cognitively impaired to some extent," Mr Merlo said. "This cognitive impairment is thought to be a significant contributor to reduced quality of life in people with MS and can contribute to difficulties in performing the activities of daily living."

Mr Merlo said objective assessment of early cognitive changes was a priority in the management of MS because early detection of deterioration might provide guidance in treatment decisions and reduce the future impact of cognitive impairment.

To combat this, the Eastern Health MS Service is implementing clinic and home-based cognitive monitoring web-based technology.

MS Service Director Professor Helmut Butzkueven, Associate Professor David Darby, Dr Anneke van der Walt, Jodi Haartsen and Mr Merlo are part of the team leading this initiative.

"Through collaborations with behavioural neurologists, bioinformatics and software development experts, we have developed a set of tests that are self-administered, easy to use, repeatable and can be performed on any internet-connected device," Mr Merlo said.

"Importantly, we have shown that these tools can detect very early changes in areas of cognition such as processing speed and working memory."

At this stage, results have been promising with a positive patient response. The tests have demonstrated sensitivity to cognitive changes and are well accepted by patients.

Prof Butzkueven said patients selfmonitoring MS over time would lead to better treatment decisions and empower doctors and people with MS.



"We are concentrating this selfmonitoring effort on cognition because we believe this system will detect changes early and lead to better prevention of cognitive change through early treatment change intervention," he said.

The results from monitoring cognition in MS clinics directly benefit patients by informing clinical decisions and providing information on cognitive trajectories over time.

"We plan to link this data with MSBase - a database dedicated to collecting longitudinal disease data on 35,000 MS patients worldwide. This will enable us to explore large links with factors such as demographics and therapy use, which may be associated with cognitive decline in MS patients," Mr Merlo said.

The research is currently being conducted in MS clinics at Box Hill Hospital and Royal Melbourne Hospital, with plans to expand to other clinics across Australia.

IMPROVING ASSSESSMENT AND TREATMENT

New research could hold the key to better assessment and treatment for a type of vertigo, enhancing falls prevention strategies for patients who are a high falls risk.

Senior physiotherapist Lyndon Hawke has completed a study at the Angliss Hospital Community Rehabilitation Centre on the prevalence of Benign Paroxysmal Positional Vertigo (BPPV).

BPPV is a type of vertigo or dizziness that is caused when calcium crystal particles enter the semi-circular canals of the vestibular apparatus in the inner ear.

"The semi-circular canals are important for balance and head orientation." Mr Hawke said.

"On head movement, the particles float in the semi-circular canal fluid and may stimulate feelings of vertigo, nausea and imbalance. It's not a pleasant feeling."

BPPV has been linked to an increased risk of falls, especially in older people.

Mr Hawke said previous studies indicated around 10 per cent of the general population had BPPV at one time in their lives. However, the evidence demonstrated that this percentage increased dramatically when looking specifically at people who were dizzy or feeling unsteady.

"In my study of people who were already imbalanced, 52 per cent tested positive for BPPV. My hypothesis is that BPPV can be a significant cause of imbalance and falls," he said.

Mr Hawke said he had one patient who only fell when she turned to the left.

"It turned out she had BPPV in her left ear. When the BPPV was fixed, she experienced less falls," Mr Hawke said.

BPPV can be easily treated with a series of head movements known as particle repositioning manoeuvres, which are very effective at managing BPPV.

Mr Hawke said he hoped his research highlighted the importance of assessing and treating BPPV, especially in people who were unsteady on their feet.

"If BPPV is a cause of the patient's unsteadiness, it can be effectively treated, thus leading to a reduced risk of imbalance and falls. My research demonstrates that therapists should consider BPPV when managing clients who have balance issues."

RETHINKING SCANS FOR SUSPECTED PULMONARY EMBOLISM

EASTERN HEALTH'S EMERGENCY DEPARTMENTS HAVE CONDUCTED RESEARCH AIMED AT AVOIDING UNNECESSARY TESTS FOR PATIENTS SUSPECTED OF HAVING A PULMONARY EMBOLISM.



- Dr Paul Buntine

the number of scans we are performing

and increasing the positive yield rate."

DIFFERENT APPROACH: Box Hill
Hospital Emergency Department
Clinical Director Associate Professor
Debbie Leach and Emergency
Physician Dr Paul Buntine are
investigating ways to avoid tests
for pulmonary embolism.

A pulmonary embolism is a blood clot that has travelled to the lung. In serious cases, it can be fatal.

Box Hill Hospital Emergency Department Clinical Director Associate Professor Debbie Leach said testing a patient for a suspected pulmonary embolism often involved some form of lung scan.

"The test most commonly used is a type of CT (computed tomography) scan called a CTPA (computed tomography pulmonary angiogram)," A/Prof Leach said. "However, it is not without risk because there is radiation exposure and the injection of intravenous dye (contrast). In addition, it can be dangerous for patients with kidney damage or disease.

"The other form of scan is a nuclear medicine scan or VQ (ventilation-perfusion) scan. However, that has been found to be not as useful for patients with a known lung disease such as chronic emphysema."

Emergency Physician Dr Paul Buntine said emergency departments had developed processes to ensure they were more informed when deciding whether patients should undergo testing and to achieve a better balance between benefit and risk.

"In our intervention we have combined a couple of useful decision rules to develop a pathway of care to help clinicians decide when to order a CT or VQ scan. Our tool is a form that is generated automatically whenever an electronic request for CTPA is made," Dr Buntine said.

The results so far have been encouraging. Interim results for a six-month period from October 2015 found a combined 36 per cent reduction in CTPA and VQ scanning, with a 17 per cent yield rate (the number of scans that actually diagnosed a pulmonary embolism). The number of pulmonary embolisms discovered during this period was almost identical to the same period in the previous year (37 to 38).

"These results suggest the introduction of this initiative is significantly reducing the number of scans we are performing and increasing the positive yield rate," Dr Buntine said. "Formal data analysis, including calculation of the pre-implementation yield rate at all three Eastern Health emergency departments will be performed at the completion of the study."

Dr Buntine said that by reducing the need for tests and their side effects, it could mean shorter hospital stays for patients. In addition, identification rates of pulmonary embolisms could still be maintained.

"If we are more judicious in the number of scans performed, the proportion of scans where pulmonary embolism is detected will increase."



New research has recommended a screening tool to help identify consumers who have been affected by domestic violence.

In Victoria, one in three women will experience family violence. Domestic violence is also the leading cause of death, disability and illness among women aged 15 to 44 (Department of Health, Domestic Violence Practice Guidelines 2013).

Domestic violence is also associated with anxiety, depression, post-traumatic stress disorder, substantial abuse and suicide.

Women and Children's Program Social Worker Katherine Maywood recently looked at how health services can better respond to domestic violence incidents.

Ms Maywood conducted an assessment of current screening measures and responses to disclosures of domestic violence across the Women and Children's Program at Angliss Hospital.

The assessment included a survey of staff, with questions relating to how they ask women about their safety, what barriers there are to asking women about domestic violence and how participants respond to disclosures of domestic violence.

Ms Maywood found that 51 per cent of survey participants said they worked with women experiencing family violence on a weekly to monthly basis. Staff also raised concerns about not wanting to upset the woman and feeling unsure about how to manage a disclosure.

Ms Maywood recommended a screening tool as being most helpful when identifying domestic violence.

"In addition, targeted training, routine screening at point of admission, clear policies and procedures, provision of contact details for support services and 24-hour social worker availability are all things that should be strongly considered," she said.

While a screening tool was still to be developed, Ms Maywood said education sessions, including a forum on White Ribbon Day, were important steps forward.

She said research had demonstrated that healthcare providers could play a key role in assisting women experiencing violence. When women sought medical attention for abuse-related injuries, in many cases it was only a doctor or nurse the woman felt comfortable talking to about their partner's violence.

"Improvements to current practice are essential to ensure women are asked about violence and that safe and appropriate responses and interventions are provided," Ms Maywood said.

Planning is underway for future Eastern Health research initiatives, including one that will explore the confidence of allied health staff to identify and manage family violence through conversations that arise during the provision of care across all settings.

THE WRITE STUFF

BEING IN HOSPITAL CAN
BE A CONFUSING EXPERIENCE
FOR PATIENTS AND THEIR
CARERS WITH A RANGE OF
UNFAMILIAR PROCEDURES
AND PROCESSES.
PRODUCED BY MEDICAL
PROFESSIONALS AND
OFTEN TARGETED AT OTHER
MEDICAL PROFESSIONALS,
DISCHARGE SUMMARIES
ARE AMONG THE FORMS
THEY MAY HAVE DIFFICULTY
UNDERSTANDING.

Dr Vikas Wadhwa from Maroondah Hospital's General Medicine Program said if patients did not fully understand the nature of their hospitalisation, there was the potential for poor treatment compliance and missed follow-up appointments.

Maroondah Hospital's General Medicine team has been looking at a simple and easily understood patient-centred discharge form that would become an integral part of the discharge practice of medical professionals.

"Collaboration between patients and medical professionals to complete the patient-centred discharge form is expected to enhance the patients' understanding regarding their hospitalisation and improve the patient experience," Dr Wadhwa said.

Dr Boon Shih Sie, who is a member of the General Medicine team, said a combination of individualised written and verbal information could improve patients' comprehension and alleviate their concerns when returning home.



A written patient-centred discharge form was developed and implemented as part of the discharge process for general medicine patients at Maroondah Hospital. The form was completed upon discharge by the team's medical registrar who spent an estimated one to two minutes with the patient explaining and completing the form, with minimal technical jargon and in words the patient or carer could understand.

Three major domains of the form are:

- 1: Diagnosis
- 2: In-hospital treatment



RESULTS

When it came to diagnosis, in-hospital treatment and in particular, post-discharge instructions, the study found improvements among patients who received the form compared to those who did not.

Of those who received the form, 92 per cent stated they understood their discharge plan, compared with 62 per cent of those who did not receive the form.

Furthermore, of those who received the form, 91 per cent stated the form improved their understanding of care and 89 per cent said they were better able to remember the information provided.



Dr Sie was pleased the patient-centred discharge summary form had markedly improved patients' understanding of their admission diagnosis, management and future plans.

Eastern Health has commenced a rollout of the form across its General Medicine units for all patients, including those at residential care facilities.

Dr Wadhwa said the patient-centred discharge summary form provided an important medium for better communication with patients and improved patient experience.

"It may also have the potential to reduce healthcare costs and enhance patient wellbeing by improving adherence to treatment and ensuring appropriate follow-up."





MEETING THE INFORMATION NEEDS OF PATIENTS

A person who is diagnosed with breast cancer can experience a range of emotions. In what can be a time of significant emotional distress, health literacy has an important part to play in ensuring patients and their loved ones have a clear understanding of what the diagnosis means and the path that lies ahead.

Dr Bianca Devitt undertook a study that examined the health literacy and information needs of breast cancer patients at the time of diagnosis.

Health literacy describes the ability to access, understand, appraise and use information to make decisions about health.

"People with a new diagnosis of breast cancer are presented with a large volume of information that they are often required to process quickly to make decisions about treatment," Dr Devitt said.

"These decisions and this information processing often occur within the context of significant emotional distress."

A survey of around 70 patients found that 81 per cent of respondents wanted detailed information relating to their diagnosis and treatment.

"Interviewed participants wanted accurate information about prognosis and the rationale and benefits of each treatment. Specific information needs should also be differed according to age," Dr Devitt said.

She said the research found that treating doctors were the primary source of information and breast care nurses were valued for their ability to simplify medical information, provide practical advice and reassurance.

"Overall, participants trusted written information but reported it often did not meet their specific needs or the volume of information made it difficult to navigate," Dr Devitt said.

She said there was a strong preference for detailed information about breast cancer and its treatments, adjunct to clinical consultation. However, the form of this information and its provision may need to vary in response to patient preferences and health literacy.

"Further research is warranted to explore the benefits of tailored written information based on a patient's health literacy and information needs."

Maroondah Breast Cancer Centre

Breast cancer research at Eastern Health is set to receive a boost with planning underway for the Maroondah Breast Cancer Centre.

Research will benefit with comprehensive facilities for clinical and translational research; maximising opportunities for patients to participate in trials and receive cutting-edge treatments.





PUTTING PATIENTS FIRST -THE IDEAS **EXPERIENCE**

As part of its commitment to providing a great patient experience, Eastern Health is working with its community health partners to conduct qualitative research into the experience of patients attending our community diabetes clinics.

Following a randomised controlled study in 2014 that demonstrated a patient preference for community-based diabetes services, Eastern Health and its partners embarked on a series of focused interviews with clients attending IDEAS – Integrated Diabetes Education and Assessment Services. These services involve staff from both Eastern Health and community health providers jointly managing patients.

"These are clinics run in community health settings that involve the allied health service provided by community health. with the expertise of an endocrinologist and a registrar from Eastern Health," explained Professor Chris Gilfillan, Clinical Professor, Eastern Health Clinical School, Monash University and Eastern Health Clinical Director Endocrinology.

"Currently, our partners are EACH and Carrington Health but there is interest to expand the program."

Previous research has indicated patients in IDEAS had an increased perception of the quality of care, with this current study now recruiting and hoping to expand knowledge of the patient experience.

"We are performing structured interviews with clients from the IDEAS clinics who have had at least three visits," Prof Gilfillan said. "We are exploring the impact of the service on levels of stress, feelings of control, and self-efficacy; as well as satisfaction with the service and how it can improve."

The work is funded by the Outer East Primary Care Partnership and involves many of Eastern Health's community partners.

Prof Gilfillan said the concept behind community diabetes clinics was to run a service that was more patient focused, accessible and less threatening than the acute hospital clinics.

"The focus is on education of the patient and empowering lifestyle change without compromising the optimal use of medical therapies."



AN AUDIT TO DETECT THE PREVALENCE OF COGNITIVE IMPAIRMENT AND DELIRIUM HAS HIGHLIGHTED ITS SIGNIFICANCE AT EASTERN HEALTH.



Delirium is a complex medical syndrome manifested as an acute, fluctuating state of confusion and disordered thinking.

Penelope Casey, a PhD candidate at Monash University and Clinical Nurse Educator at Eastern Health, said the elderly, particularly those with cognitive impairment (CI) and any person ill enough to require admission to hospital, was at risk of developing a delirium.

"The consequences of delirium can be dire, including a worsening cognitive decline, increased risk of falls, pressure injuries, post-hospital institutionalisation and death," Mrs Casey said.



THE PROBLEM

Mrs Casey said under-reporting of delirium had long been suspected: routine coding data in 2015-16 averaged 1.35 per cent per month compared with an expected 10 to 31 per cent.

"Without knowing the actual number of patients affected, designing strategies for better care and allocating resources was problematic," she said. "A method to capture the true prevalence of delirium was urgently required."



FINDING A SOLUTION

An audit across five Eastern Health hospitals was conducted in July and August 2016.

Over a two-week period, 30 trained auditors assessed 567 eligible and consenting bed-admitted adult inpatients in medical, surgical and specialty medicine wards. CI was detected in 43 per cent and delirium in 16 per cent of patients – rates never before identified.

"This research highlights an urgent need for strategies to routinely detect delirium to enable early intervention and better patient outcomes," Mrs Casey said.





This project was overseen by the Cognitive Impairment and Delirium Working Party, a multi-disciplinary group that steered the initiative's development and reported to the Cognition, Mobility and Continence Expert Advisory Committee, and the research team, a collaboration between Eastern Health and Monash University.

Working closely with Language Services also ensured culturally and linguistically diverse patients, often excluded from such studies, were included. A planned communication strategy with the nurse unit managers at each site ensured engagement and support for the project throughout the audit period.

Financial support was provided by the Eastern Health Foundation, the Practice Development Unit and Geriatricians' Special Purpose Fund.

As well as Mrs Casey, the research team for this project included:

Melinda Webb-St Mart (Clinical Lead Cognition, Mobility and Continence), Eastern Health; Professor Peteris Darzins, Professor of Geriatric Medicine, Monash University and Director of Geriatric Medicine and Executive Clinical Director of Continuing Care, Eastern Health; Cathryn Baldwin, Associate Director, Quality, Planning and Innovation (Continuing Care), Eastern Health; Kath Riddell, Deputy Chief Nursing and Midwifery Officer, Director of Practice Development, Eastern Health; and Professor Wendy Cross, Associate Dean, Nursing and Allied Health, Faculty of Medicine, Nursing and Health Sciences, Monash University.

UNDERSTANDING DELIRIUM

WHAT IS DELIRIUM?

Delirium is a serious condition that occurs when a person has a sudden onset of confusion and may become either very agitated or quiet and drowsy. It might last for a few days or persist for longer. It is often due to an underlying physical illness.

HOW COMMON IS IT?

Delirium affects close to one-fifth of older people admitted to hospital and almost one-half of the residents in aged care facilities will experience a delirium at some stage.

WHAT ARE THE SYMPTOMS?

People with delirium may:

- Be different from their normal selves
- Seem confused, forgetful and unable to pay attention
- Be either very agitated, withdrawn or drowsy
- Be unsure of the time of day or where they are
- Have changes to their sleeping habits, such as staying awake at night and being drowsy during the day
- Feel fearful, upset, irritable, angry or sad
- See things that are not there but that seem very real to them
- Lose control of their bladder or bowel.

HOW IS IT TREATED?

A medical team can do a thorough assessment to look for and treat the cause of the delirium. Treatment also includes reducing the risk of complications, such as falls, and lessening symptoms.

Source: Delirium [Brochure]. (2013). NSW: General Practice NSW, NSW Agency for Clinical Innovation and the Clinical Excellence Commission.



Led by Spectrum Director Associate
Professor Sathya Rao and Senior
Research Fellow Dr Jillian Broadbear,
the multi-tiered investigation is being
conducted in collaboration with Eastern
Health's emergency departments (Box Hill,
Maroondah and Angliss hospitals, led
by Dr Joe Rotella), Turning Point (with
Dr Belinda Lloyd and Dr Sharon Matthews)
and the Coroner's Court (with Dr Lyndal
Bugeja and Dr Jeremy Dwyer).

The aim of this research is to help uncover the impact of BPD on these community services. The research is partly funded by a philanthropic grant from the Eastern Health Foundation.

Dr Broadbear said although emergency department utilisation for people with BPD was often high, little was known about the representation of BPD in annual service use (ambulance attendances, emergency department visits and Coroner's Court involvement).

By conducting this research, Dr Broadbear said Spectrum intended to shine a light on an issue that needed urgent attention.

"BPD encompasses difficulties in relation to intense emotional distress, interpersonal conflict, impulsive and often self-destructive behaviour," she said. "It is surprisingly under-emphasised when it comes to mental health education and resourcing.

"This is despite BPD having similar prevalence to schizophrenia and bipolar disorder, with symptoms that may be life-long and lead to early death through self-harming behaviours or suicide."

Dr Broadbear said the first important step was to identify the impact that this serious and persistent had on important public health services.

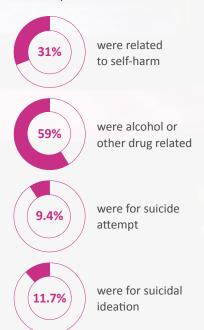
WHAT WE KNOW SO FAR

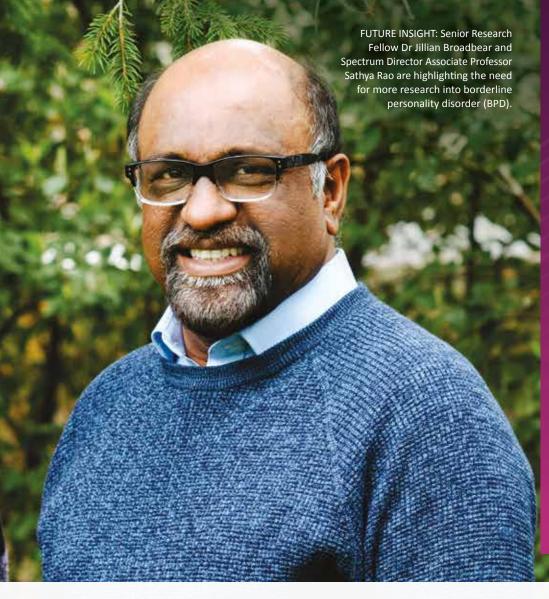
There is considerable concern that the needs of patients with personality disorders in emergency departments might not be adequately met in the busy environment, resulting in repeated visits and escalation in severity of presentation.

Eastern Health recorded a total of 157,532 presentations at its three emergency departments from July 2015 to June 2016. A preliminary audit suggests at least five per cent of emergency department presentations were patients with BPD. A more detailed descriptive analysis is currently underway.

Research conducted in conjunction with Turning Point found that between January 2012 and May 2016 there were 10,309 ambulance call-outs that noted "personality disorder" or BPD, representing 3.5 per cent of all call-outs in Victoria during this period.

Of the total 300,562 attendances coded over this period:





Understanding BPD

The National Health and Medical Research Council estimates that one in every 100 Australian adults has borderline personality disorder (BPD), with women making up around 75 per cent of those diagnosed.

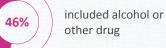
BPD symptoms often emerge during adolescence, however untreated symptoms can continue to cause suffering into old age.

People living with BPD can experience intense and painful emotions, relationship issues, impulsive and destructive behaviour, and a fragile sense of self. They may have also experienced trauma in their life.

Spectrum Director Associate Professor Sathya Rao said it was important to better inform people about BPD, and to highlight how services such as Spectrum could assist in recovery.

However, of the 10,309 records that mentioned personality disorder (including BPD):









These numbers suggest that personality disorder is over-represented in attendances for self-harm and suicide-related call-outs.

The true extent of serious self-harming behaviours requiring coronial investigation is unknown. Dr Broadbear said researchers were systematically quantifying this information with help from the Coroner's Court of Victoria.

"We will use Victorian Suicide Registry data to identify and examine suicides where there was a diagnosed or suspected personality disorder," Dr Broadbear said.

"We will then assess the frequency with which self-harm, suicidal ideation, suicidal threats and attempted suicide - all of which feature prominently in severe (borderline) personality disorder – are mentioned in these coroner's reports. Understanding patterns of behaviour and service use may provide impetus for interventions that can avert some deaths in the future."

LOOKING FORWARD

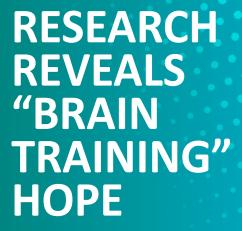
Dr Broadbear said that once the extent of emergency service utilisation was better understood, we would have a much clearer picture of the suffering and harm that might arise from having a diagnosis of personality disorder.

"Doing so will accelerate efforts to improve awareness, funding and resources, with a goal of improving the diagnosis and care of patients with personality disorder in emergency settings," she said.

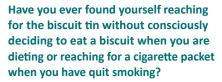
"Our long-term vision is that earlier diagnosis and access to appropriate treatment will reduce the future need for emergency and coronial services."



NEW STUDY: "Brain training" has brought encouraging results to addiction treatment, according to Dr Victoria Manning.



NEW TURNING POINT RESEARCH SUGGESTS "BRAIN TRAINING" COULD BE THE KEY TO IMPROVED TREATMENT OUTCOMES FOR ALCOHOL-DEPENDENT CLIENTS.



These common behaviours can be explained by an automatic action tendency towards stimuli that the brain finds rewarding. Previous studies have indicated that the propensity for alcohol relapse could be partly explained by an overactive, automatic motivational drive towards alcohol-related cues in one's environment – known as "approach bias".

However, a trial of computerised cognitive bias modification (CBM) training conducted by Turning Point, Monash University and Deakin University, and just published in the journal Alcoholism: Clinical and Experimental Research has provided some encouraging results.

In a study of 83 alcohol-dependent patients undergoing inpatient withdrawal, patients were randomly assigned to receive either four consecutive days of CBM where they were implicitly trained to make avoidance movements in response to images of alcoholic beverages and approach movements in response to pictures of non-alcoholic beverages using a joystick, or to a control condition where they responded to neutral stimuli.

The study found that 75 per cent of those who received CBM remained abstinent two weeks after discharge, compared with only 45 per cent of those who received the control condition. It is thought that training reduces the automatic tendency to move towards alcohol stimuli and instead, trains the individual to avoid it.

Project Lead Dr Victoria Manning said this was the first ever trial of CBM during acute alcohol withdrawal, a time of major neuroplasticity when the brain repairs and reorganises itself.

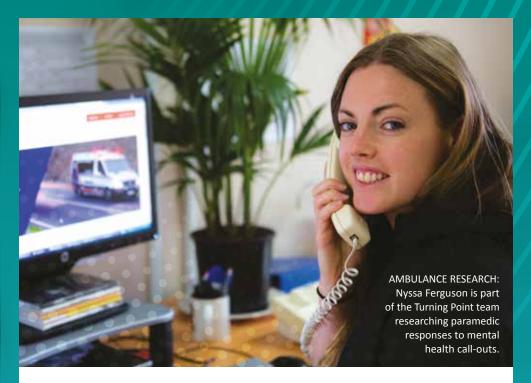
"These findings suggest CBM could be a promising low-cost, easy to implement treatment approach to reduce short-term relapse," she said.

Dr Manning said that while psychological interventions aimed to enhance cognitive control, we also needed to find effective interventions that targeted automatic processes, largely outside of conscious control, that maintained addictive behaviours.

"This is particularly important because we know that patients often relapse within the first few days or weeks of being discharged from withdrawal treatment."

"If we are able to assist services to support men in times of crisis and link them with relevant supports in the community, we have the opportunity to make a big difference in helping men recover."

- A/Prof Belinda Lloyd



BEYOND THE EMERGENCY: ADDRESSING MEN'S MENTAL HEALTH

In partnership with ambulance services across the country and funding from the Movember Foundation and beyondblue, **Turning Point is undertaking pioneering** research into paramedic responses to mental health call-outs.

Associate Professor Belinda Lloyd said Turning Point was using ambulance data to learn when and why men contacted ambulance services and what happened after that initial contact.

Turning Point is also conducting a national survey of paramedics, speaking with them and male patients across Australia about their experiences with mental health call-outs.

"This research will inform the development of a training and support program that paramedics can draw upon when responding to a mental health call-out," researcher Dr Michael Savic said. Researchers and ambulance personnel acknowledge that the project is timely. "We know that one in five call-outs are mental health-related," A/Prof Lloyd said.

"If we are able to assist services to support men in times of crisis and link them with relevant supports in the community, we have the opportunity to make a big difference in helping men recover."



(f) For more information about the project, visit www.turningpoint.org.au



For mental health support, call beyondblue on 1300 224 636



GENEROUS SUPPORT PUT INTO PRACTICE

THANKS TO THE
CONSIDERABLE SUPPORT OF
INDIVIDUALS, COMMUNITY
GROUPS AND BUSINESSES,
THE OFFICE OF RESEARCH AND
ETHICS AND EASTERN HEALTH
FOUNDATION PROUDLY
AWARDS RESEARCH GRANTS
TO EASTERN HEALTH STAFF.

Presented annually since 2012, the Eastern Health Foundation Research Grants Program encourages Eastern Health staff to investigate the most effective methods of care and treatment, with the aim of maximising patient wellbeing, as well as improving practices, policies and quality of care.

The grants support research across a range of services, including medicine, aged care, drug and alcohol, emergency, nursing and midwifery, mental health, oncology and pharmacy.

Eastern Health Foundation Director Anne Gribbin said donor funding for research was over and above the organisation's core funding for healthcare.

"The amazing support of individuals, the community and organisations enables us to undertake valuable research and strive to meet our goals of providing great healthcare and great patient experiences," Ms Gribbin said.

The practical implications of research grant funding cannot be underestimated.

For example, proceeds from Box Hill Golf Club's Charity Golf Day provided funding for Dr Tze Ern Cheng and surgeon Mr Parminder Singh to compare two surgical reconstruction techniques for hip joints.

"Once we received the grant, I was able to confidently set aside time to pursue this research and dedicate myself to the project," Dr Cheng said.

"Grant funding provided by Box Hill Golf Club enabled us to recruit a research position and fund a database. We were able to complete this project and present meaningful results."

Adjunct Clinical Associate Professor Colin Feekery, who is the Executive Director of Medical Services and Research, said Eastern Health's vision for research was to carefully look at the illnesses patients suffered and the treatments offered to them.

"Hospital-based research is an investment in all our futures and of those yet to be born"



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.

* Source: Victoria in Future 2015



We have **9056 employees**, **67 per cent** of whom live within the community we serve.



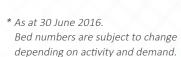
About **one in three patients** admitted to our hospitals (30 per cent) originates from a country where English is not the predominant language. The top five countries are China, Italy, Greece, India and the Netherlands.



The proportion of people in our catchment aged 80 and over continues to increase. Our catchment has over 20 per cent more people in the over 80 age group than the other areas of metropolitan Melbourne.



We deliver over **1.17 million episodes of patient care** each year and continue to perform record amounts of surgery.





With **1423*** beds, Eastern Health operates from **21** locations, including:

- Angliss Hospital in Upper Ferntree Gully
- Box Hill Hospital
- Healesville Hospital
- Maroondah Hospital in Ringwood East
- Peter James Centre in Burwood East
- Wantrina 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.



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 2016 Eastern Health Research Report are available by contacting the Office of Research and Ethics on 9094 9551 or download an electronic version at www.easternhealth.org.au/publications





In 2015-16, there were **157,532 emergency department presentations** – up 3.8 per cent – that's one person every 3.4 minutes.



LOCATION



5 Arnold Street, Box Hill, Victoria

POSTAL ADDRESS

PO Box 94, Box Hill, Victoria 3128

GENERAL INQUIRIES



1300 342 255



www.easternhealth.org.au

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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



Send an email to feedback@easternhealth.org.au



Wia the Patient Opinion website at www.patientopinion.org.au

PUBLICATIONS

All of Eastern Health's publications are available electronically via our website at www.easternhealth.org.au













