

2015 RESEARCH REPORT

2013 & 2014 Premier's Health
Service of the Year



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The 2015 Eastern Health Research Report provides a snapshot of the collaborative nature of the organisations 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 300 projects progressing or completed annually.



WELCOME TO THE 2015 EASTERN HEALTH RESEARCH REPORT

EASTERN HEALTH'S MISSION IS **"TO PROVIDE POSITIVE HEALTH EXPERIENCES FOR PEOPLE AND COMMUNITIES IN THE EAST"**. ONE OF THE WAYS WE CAN ACHIEVE THIS IS BY TRANSLATING RESEARCH TO IMPROVE THE DELIVERY OF HEALTHCARE AND MAXIMISE HEALTH OUTCOMES.

The 2015 Eastern Health Research Report provides a snapshot of some of the research activities undertaken across all aspects of healthcare. These activities include collaborative projects within Eastern Health, as well as those with our university partners and other healthcare providers.

Following the implementation of the first *Eastern Health Research Plan* in 2011, research has more and more become embedded in everyday practice. Increasingly, research is no longer solely an individual pursuit but one that is undertaken through partnerships and a multi-disciplinary team approach.

We are looking forward to the release of the *2016-2018 Research Plan* to build on the growing importance of research in clinical care.

Our clinicians are actively involved in clinical studies, clinical trials and translational research. The results of this research are improving patient outcomes and demonstrated through a growing number of publications and presentations at national and international conferences.

This increase in research activity has also meant greater demand for funding from investigators. The Eastern Health Foundation, together with the Office of Research and Ethics, has worked to meet this need.

While there are proposals from governments to increase research funding in the longer term, the Foundation has been able to provide tangible support in the short term. As well as providing organisational support for applications to external agencies, the

Eastern Health Foundation Research Grants Program has increased.

It is very pleasing to note that in 2014 the Foundation awarded more than \$210,000 to Eastern Health researchers, which was comparable to the total amount in the previous three years since the inception of the grants scheme. It is even more exciting that in 2015 the Foundation is on target to award over \$250,000 in grants. This has been made possible by the ongoing support and generosity of Eastern Health's many donors.

The Office of Research and Ethics administers the organisational infrastructure that supports Eastern Health research. This includes provision of good governance for the timely review of ethics applications. In 2014-15, there were 228 new research applications approved. In 2015, the Eastern Health Human Research Ethics Committee was re-certified by the National Health and Medical Research Council for a further three years.

We are indebted to the tireless and diligent efforts of the Eastern Health Human Research Ethics Committee and the Office of Research and Ethics.

In celebrating research outputs, we 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 donations to the Eastern Health Foundation.

It is with great pleasure that we commend the *2015 Eastern Health Research Report* to you. ●



Alan Lilly
Chief Executive
Eastern Health



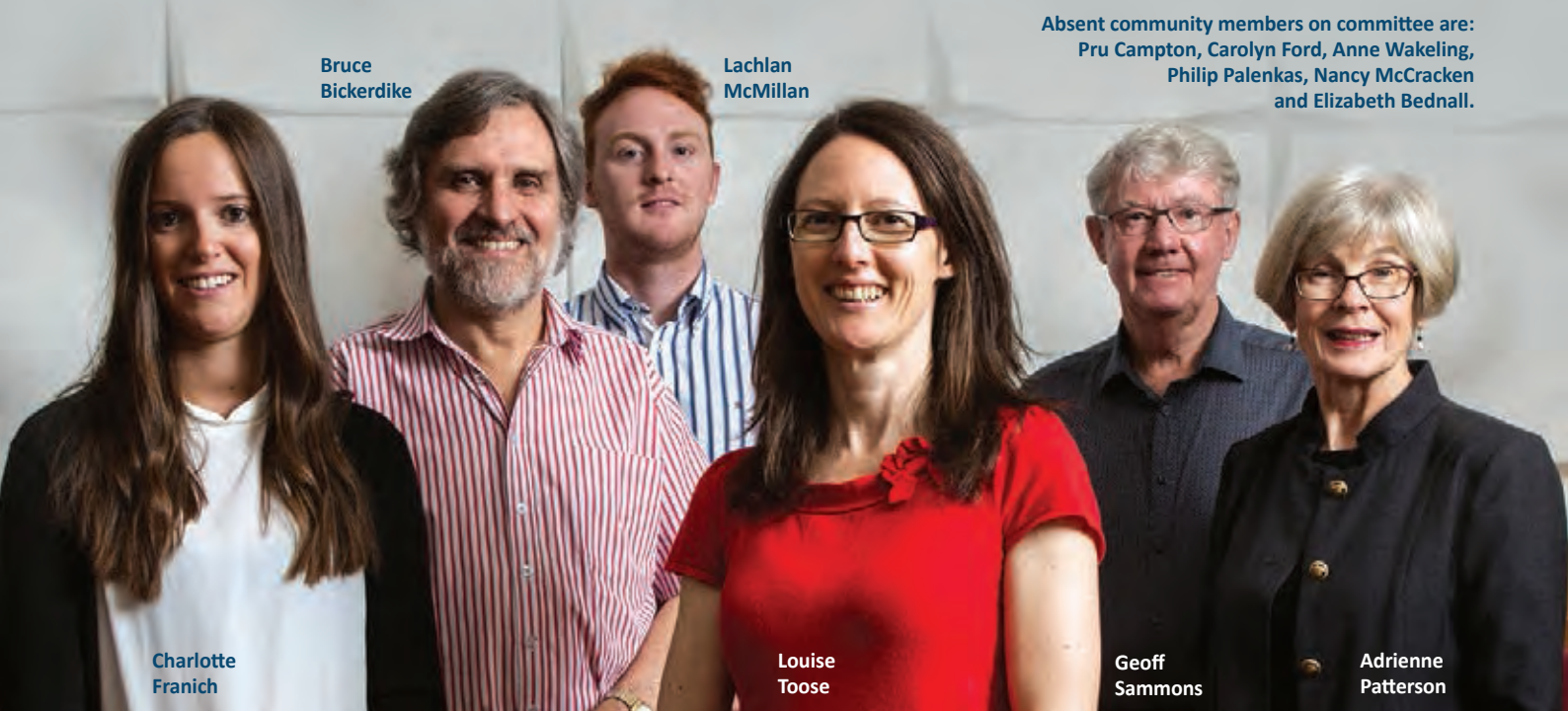
Adjunct Clinical Associate Professor Colin Feekery
Executive Director of
Medical Services & Research
Chief Medical Officer
Eastern Health



Professor David Taylor
Director of Research
& University Relations
Eastern Health

HUMAN RESEARCH ETHICS COMMITTEE — THE VOICE OF QUESTION

THE EASTERN HEALTH HUMAN RESEARCH ETHICS COMMITTEE (HREC) IS CERTIFIED BY THE NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL TO REVIEW AND APPROVE ALL HUMAN RESEARCH AT EASTERN HEALTH.



Bruce
Bickerdike

Lachlan
McMillan

Charlotte
Franich

Louise
Toose

Geoff
Sammons

Adrienne
Patterson

Absent community members on committee are:
Pru Campton, Carolyn Ford, Anne Wakeling,
Philip Palenkas, Nancy McCracken
and Elizabeth Bednall.

***The National Statement on Ethical Conduct in Human Research* prescribes that some HREC members must be drawn from the community and they must be independent of Eastern Health. These membership categories include laypeople, pastoral care counsellors, lawyers and professional carers.**

Eastern Health is delighted to have a group of committed volunteers who readily give up their time to read lengthy agenda papers in preparation for each meeting. The Eastern Health HREC meets on the third Thursday of each month.

Members choose to participate for numerous reasons.

Elizabeth Bednall has previously worked for large telecommunication organisations and understands the need to maintain research and development to provide better outcomes for patients.

“As a lay member of the committee, I try to represent the general public’s view of the ethics of conducting specific research projects,” Elizabeth said.

Furthermore, Elizabeth acknowledges the work done by Chairpersons and the secretariat.

“I have been on many committees but this is the best run I have ever seen,” she said.

Lachlan McMillan joined the committee in 2015 and noted that the role of a lay member struck him as particularly important. He said having a disassociation with medical knowledge allowed lay members to see flaws that may not be immediately obvious to those ensconced in the medical field.

Layman Geoff Sammons acknowledged the range of activities undertaken at Eastern Health.

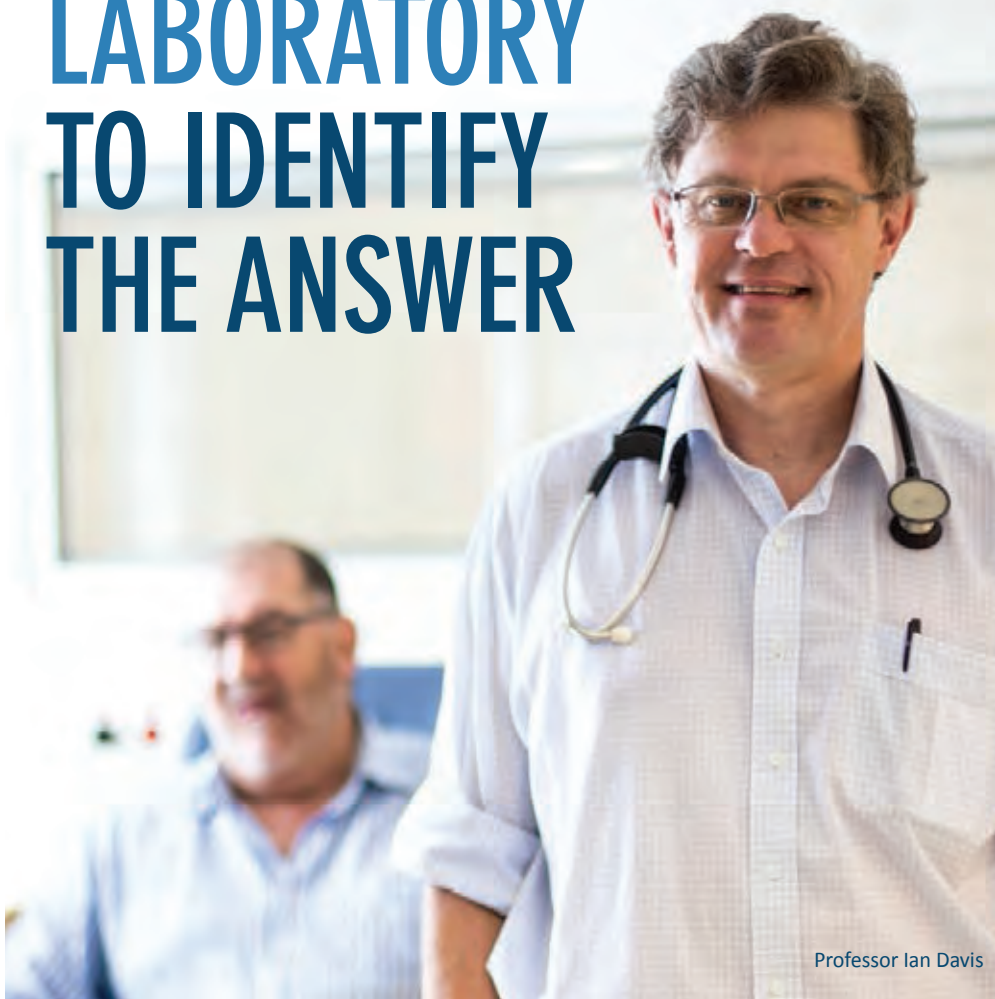
“The projects are interesting and so different to anything else I have been involved with previously,” he said.

Geoff said he really enjoyed the opportunity to assist researchers.

Also new to the committee in 2015 is Nancy McCracken. Following a successful and rewarding career in education, Nancy enjoys the challenge of assessing and making judgments on the impact of research on participants while listening to the viewpoints of a diverse range of experts.

Louise Toose is a practising orthotist and prosthetist with a particular interest in orthopaedics and spinal pain management. Louise finds personal benefit in participating in the HREC as she is able to provide input from the perspective of a consumer as well as developing an understanding of research and learning from other members of the HREC. ●

TAKING IT TO THE LABORATORY TO IDENTIFY THE ANSWER



Professor Ian Davis

IMPROVEMENTS IN MEDICAL TREATMENT AND PATIENT OUTCOMES CAN ONLY HAPPEN WHEN THERE IS GOOD UNDERSTANDING, NOT ONLY OF THE DISEASE AND TREATMENTS AVAILABLE BUT THE PATIENTS AS WELL.

Clinical medicine cannot progress without good science to drive it; and science, no matter how good, is ultimately unhelpful if it does not result in improvements in the human condition.

Recent effective treatments for cancer and other diseases have been developed in the context of careful science in the laboratory and close correlation with patient outcomes. Eastern Health is an important contributor to both the science and the clinic.

UNDERSTANDING THE AGGRESSIVENESS OF AN INDIVIDUAL PATIENT'S CANCER TO HELP GUIDE TREATMENT CHOICE

Prostate cancer is the most commonly diagnosed cancer in Australia ¹. The Eastern Health Clinical School uro-oncology research team's primary scientific research activity focuses on men with prostate cancer and is pursued in the laboratory environment.

Professor Ian Davis, Head of the Eastern Health Clinical School and Uro-Oncology Program Director, and his colleagues are focused on improving their understanding of prostate cancer in an effort to make more accurate diagnoses and select treatments that will have the best chance of success for individual patients.

"We approach our work by looking at the prostate cancer cells, their environment and the effects of the surrounding cells," Prof Davis said.

"We want to understand how the cancer cells have developed abilities to grow uncontrollably and spread to other parts of the body. We do this by isolating prostate cancer cells from human patients who have had their prostates removed. We are able to culture these cells in the laboratory and look at the various factors that influence their growth and survival, and also what makes them change to adapt to different environments."

Research activity to date has included completion of an analysis of the entire prostate cancer genome in comparison to non-cancerous prostate cells from the same patients, in an attempt to identify traits that distinguish cancerous cells from normal ones.

"This will help us understand the aggressiveness of an individual patient's cancer and eventually help guide treatment choices," Prof Davis said.

The team also looks at the behaviour of non-cancerous cells that are interspersed between cancer cells because it is known that they indirectly help cancer cells survive.

Their research has found that the supporting cells of the prostate display molecules on the surface that prevent the prostate cancer from being targeted by the immune system.

"When combined, our studies are helping us move toward more accurate diagnoses and treatment selection for prostate cancer patients," Prof Davis said.

The uro-oncology laboratory team works closely with Eastern Health Cancer Services, Urology and Anatomical Pathology, the Victorian Cancer Biobank, researchers at Monash University and the Olivia Newton-John Cancer Research Institute. The team is also grateful for the support of the Eastern Health Foundation for the provision of resources to help move this invaluable research forward. ●

References:

¹ Cancer Council Australia
<http://www.cancer.org.au/about-cancer/types-of-cancer/prostate-cancer.html>

SPECIALIST GERIATRIC
MEDICINE SERVICES
ARE WIDELY AVAILABLE
THROUGHOUT
EASTERN HEALTH.

Services include defined inpatient geriatric evaluation and management, inpatient geriatric consultation services and a range of ambulatory services in both the hospital and community setting.

Geriatric evaluation and management refers to specialised services targeting older people with multiple medical and functional co-morbidities, who are at highest risk of repeated acute hospital admission and/or prolonged inpatient stays.

The service provides comprehensive evaluation and management, including rehabilitation to restore lost function when this can be achieved, arranging substitution for lost function, or both. The service involves consultation with a specialist geriatrician, multi-disciplinary assessment and provision of a tailored treatment plan to provide the best long-term outcome for the older or frail person and interacts with acute care, sub-acute care, ambulatory care, primary care or GPs, residential care, transitional care and community care.

At Eastern Health, growth in demand for geriatric evaluation and management services is expected to be four per cent a year over the next 10 years. This is a reflection on the region's ageing demographic.

For Eastern Health, understanding the needs of an ageing population is of significant research interest.

UNDERSTANDING THE NEEDS OF AN AGEING POPULATION



DOES COMMUNAL DINING IN A GERIATRIC EVALUATION AND MANAGEMENT POPULATION IMPROVE OUTCOMES IN ACTIVITY, NUTRITION AND PATIENT EXPERIENCE?

This project aims to investigate the potential functional and therapeutic benefits of communal dining in the geriatric setting. According to senior dietitian and project lead Subashini Slater, through this project the team will evaluate whether communal dining improves patient recovery.

“Communal dining is a simple yet effective way for disciplines to work together and provide great care to patients. It can also be a means of providing incidental therapy,

while encouraging better eating habits,” Subashini said.

Over a two-week data collection period, each patient will attend the dining room for lunch on five days and consume lunch at their bedside for five days. Measurements will be taken for each patient on activity levels, energy and protein intake, as well as asking patients about their experience.

“The results for each patient will be compared,” Subashini said.



“Should our findings demonstrate that communal dining does increase functional activity and nutritional intake and enhance the ageing patient’s experience, further work will be undertaken to actively encourage communal dining across Eastern Health’s geriatric evaluation management inpatient services.”

This project is being undertaken by an inter-disciplinary team including dietetics, physiotherapy, occupational therapy and speech pathology, with nursing input also sought in the design of the research project.

THE ANAESTHETISTS’ FOCUS: PERIOPERATIVE FASTING AND THE ELDERLY

Fasting before surgery is necessary to minimise the risk of choking under anaesthesia. According to Eastern Health anaesthetist Dr Aihua Wu, current guidelines recommend two-hour fasting for clear fluids and six to eight hours for solid food.

“Due to advances in medicine, surgical outcomes are now better determined not only by perioperative care safety but also by patients’ comfort,” Dr Wu said. “For some patients, particularly the elderly, excessive fasting may be detrimental, both physiologically and psychologically, which may negatively affect overall wellbeing and impair their recovery.”

Maroondah Hospital’s anaesthetics team is investigating perioperative fasting regimes in an effort to establish a baseline estimate. Another objective is to determine whether different fasting

regimes have been adopted for certain categories of patients, such as diabetic and elderly patients.

“By conducting a retrospective audit of all the operative patients admitted during the period of 1 November 2014 to 28 February 2015, the team has recorded the fasting time, diabetic or non-diabetic and age status of each patient,” Dr Wu said.

“Preliminary data has shown that a high proportion of our patients had either prolonged or excessive fasting. Based on the results, we are making recommendations and implementing local protocols to reduce the incidence of either prolonged or excessive fasting, especially in vulnerable patients such as the elderly.”

A follow-up audit will be conducted once new protocols have been implemented.

CLEAR FLUIDS (HOURS)		SOLID FOOD (HOURS)	
<2	Non-fasting	<6	Non-fasting
2 – 3.99	Good practice	6 – 7.99	Good practice
4 – 5.99	Acceptable	8 – 9.99	Acceptable
6 – 9.99	Prolonged	10 – 15.99	Prolonged
≥10	Excessive	≥16	Excessive

THE GERIATRICIAN AND THE PHARMACIST FOCUS: POLYPHARMACY

Older people are more likely to require multiple medications to treat their health issues. While the use of multiple medications – known as polypharmacy – may improve symptoms, reduce risks and slow disease progression, it is also associated with an increased risk of adverse drug events. Poor drug management imposes substantial costs on the healthcare system. It can be upsetting to patients and even cause death.

According to Professor Peteris Darzins, Director of Geriatric Medicine and Executive Clinical Director of Continuing Care at Eastern Health, it is difficult to provide guidelines because of the range of medication taken by older people.

“There is little high-quality evidence to guide prescribing in older patients, with guidelines generally based on trial results in younger people or in those with few health problems,” Prof Darzins said.

“Decisions to prescribe medications for older adults are usually based on incomplete information regarding

benefits, safety and risks of drug-induced harm. These issues, along with other patient, health service and system factors, result in a disturbingly high occurrence of poor prescribing, inappropriate medication and associated negative health outcomes in our ageing population.”

Through research grants obtained from the Victorian Department of Health and Eastern Health, support has been provided to employ research pharmacist Laura Fanning, who has pilot-tested the linking of electronic health status, prescribing and health outcome databases.

The establishment of an Optimising Medication Use in Geriatric Medicine Advisory Panel is helping to identify polypharmacy improvement opportunities and ensure results are translated into practice.

The panel brings together key stakeholders with diverse expertise from across Eastern Health, Monash University, the Victorian Department of Health and Human Services and Austin Health. ●



Stephanie Tawse, Occupational Therapy Hand Therapist

SUPPORTING THE POST-SURGICAL PATIENT

POST-SURGICAL CARE BEGINS WITH AN UNDERSTANDING OF PRE-OPERATIVE CO-MORBIDITIES, LIKELY RISKS AND POTENTIAL COMPLICATIONS OF SURGERY. THIS IS BEST MANAGED WITH A MULTI-DISCIPLINARY TEAM APPROACH AND THE INVOLVEMENT OF A PERIOPERATIVE MEDICAL LIAISON SERVICE. CARE CONTINUES UNTIL DISCHARGE FROM HOSPITAL AND SOMETIMES, BEYOND THIS.

Excellence in perioperative care is essential in minimising patient morbidity, maximising recovery, optimising service utilisation and driving efficiencies in healthcare costs.

Supporting the patient after surgery involves careful assessment, appropriate intervention and constant review. The extent of care depends on multiple factors, including the type of surgery, pre-existing illness and whether the surgery is an elective or emergency procedure. Goals for post-operative support of surgical patients are to ensure all patients have a good outcome without complications and with effective pain management.

Early mobilisation and return to optimal health is central. In the older post-operative patient, further support, including care packages and rehabilitation, are likely to be considered and early involvement of the perioperative team is integral to this.

Early recognition of nutritional support is important, particularly in those patients who have had abdominal surgery. Recognition and management of psychological stress is also important in some patients.

FOCUSING ON POST-OPERATIVE HAND THERAPY

Eastern Health's occupational therapy (hand therapy) service and the plastic surgery unit have joined forces to trial and evaluate a new post-operative model of care to improve outcomes for patients who have had specific hand surgery, such as carpal tunnel release, trigger finger release and extensor tendon repair procedures.

Occupational Therapy Manager Annette Leong said that in 2014 and 2015, additional plastic surgery theatre sessions were scheduled at Box Hill and Maroondah hospitals so it was "inevitable this surgical growth would have flow-on effects on the already busy outpatient clinics".

"Increased patient numbers in Maroondah Hospital's plastic surgery outpatient clinics were resulting in over-booked clinics, long waiting times, dissatisfied patients and dissatisfied staff," Annette said.

Utilising a prospective non-randomised trial, senior hand therapist Stephanie Tawse managed a study aimed at identifying whether hand therapy-led clinics could improve clinic flow and efficiency and improve patient satisfaction while not adversely affecting functional outcomes.

"Following hand surgery, patients who met selection or inclusion criteria were referred directly to hand therapy-led clinics," Annette said. "The post-operative management of these patients was

co-ordinated independently by the senior hand therapist utilising guidelines approved by the plastic surgeons."

The introduction of the new hand therapy-led clinics reduced average waiting times in the clinic from 84 minutes to just 12 minutes and reduced the average total length of time a patient spent at the initial post-operative appointment by two thirds.

They also found that patients who were referred directly to the clinic were also happier.

"Importantly, there were no adverse functional outcomes and no adverse events among patients attending the new clinic," Annette said.

"Furthermore, in providing a direct pathway to hand therapy and reducing the number of plastic surgery clinic presentations, this model enabled greater access for other patients to outpatient clinics."

The establishment of this model of care has led the way in developing further advanced practice hand therapy roles across Eastern Health. The service is currently exploring direct referral opportunities from the emergency department as part of a collaboratively-funded project with the Department of Health and Human Services and other Victorian health services.

FOCUSING ON PHYSICAL FUNCTION POST HIP AND KNEE REPLACEMENT

It is estimated that 1.8 million Australians suffer from osteoarthritis, the most common type of arthritis in Australia, with hip and knee joints often affected. Five years ago, there were 59,366 knee and hip joint replacements performed in Australia¹. While lower limb joint replacement surgery provides significant pain relief and improvement in function, studies show that patients do not necessarily increase their activity levels post surgery.

Physiotherapist Lyndon Hawke, together with colleagues and the support of Professor Nicholas Taylor, Professor Allied Health Eastern Health and the Eastern Health Allied Health Research Office, are determining whether a six-week orthopaedic exercise group at the Angliss Hospital Community Rehabilitation Centre assists patients in their recovery from lower limb joint replacement surgery.

"Patients who had a total knee replacement or total hip replacement undertook a suite of functionally-objective measures, as recommended by Osteoarthritis Research Society International, at the start of the program," Lyndon said. "An activity questionnaire was completed, with both measures repeated six weeks after the initial assessment and a further six weeks after the exercise group concluded."

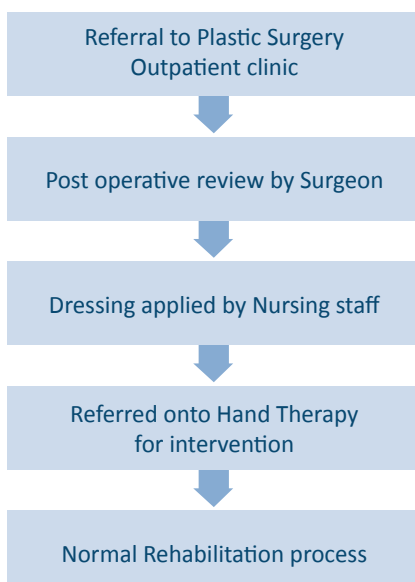
The exercise group consisted of a circuit exercise program that aimed to increase a patient's strength, endurance, range of movement and gait rehabilitation in a functional context.

"A total of 50 patients will be evaluated as part of this study, with data being collected," Lyndon said. "Moving forward, we are interested in using the information from this study to implement specific interventions for the hip and knee replacement population that incorporates known behaviour change strategies." ●

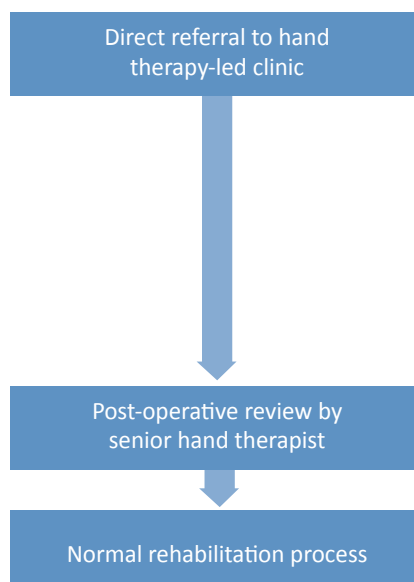
References:

¹ RACGP (The Royal Australian College of General Practitioners) 2007. *Referral for joint replacement: a management guide for health providers*. Melbourne: RACGP.

Traditional service model



Hand therapy-led model



SURVIVING STROKE

STROKE IS A SERIOUS CONDITION THAT AFFECTS ABOUT 50,000 PEOPLE A YEAR IN AUSTRALIA. IT IS A LEADING CAUSE OF DEATH AND AROUND 65 PER CENT OF SURVIVORS REQUIRE ASSISTANCE WITH DAILY ACTIVITIES. EASTERN HEALTH PROVIDES CARE TO MORE THAN 900 PEOPLE WITH SUSPECTED STROKE EACH YEAR.

There are now effective therapies for acute stroke, including “clot-busting” drugs and mechanical removal of clots that cause stroke. These treatments are only effective when applied in the first few hours after a stroke.

Eastern Health’s stroke team attends the emergency department as soon as a patient with suspected stroke is identified. Ambulance crews notify hospitals in advance when they are transporting patients to ensure the team is prepared for the patient’s arrival. Patients undertake a CT scan of the brain to assist diagnosis and the best treatment option.

Eastern Health undertakes a number of clinical trials of new therapies for acute stroke, such as “clot-busting” drugs, and patients are routinely invited to participate in this research. An inpatient stay in the acute stroke unit is usually followed by a period of rehabilitation in hospital or at home.

SWITCHING FOCUS TO VIDEO QUEUES AND AUTOMATED MESSAGING

Allied health professionals working in rehabilitation frequently prescribe home exercise programs. Paper-based programs can be difficult to follow and a growing assortment of paper-based instructions and directions can be overwhelming for patients. This is particularly evident in patients recovering from stroke, and for their carers.

Stroke survivor Robert Pennington undertakes rehabilitation through ipad video prompts



Smart technology is becoming increasingly accessible and it is being adopted in rehabilitation settings for a range of purposes.

Eastern Health’s occupational therapists are investigating whether the introduction of video and automated reminders for stroke patients, using smart technologies, supports greater adherence to prescribed home exercise programs that would have otherwise been provided through paper-based instructions.

Occupational therapist Kellie Emmerson said this project focused on stroke patients receiving rehabilitation for upper limb deficits.

“Our aim has been to determine whether these patients, using smart technology, demonstrate greater compliance to prescribed home exercise programs and better functional outcomes when compared to traditional paper-based exercise prescription,” Kellie said.

The research team, including occupational therapists supported by the Eastern Health Allied Health Research Office and La Trobe University, is conducting a single blind

FOCUSING ON PROGRESSIVE RESISTANCE TRAINING FOLLOWING STROKE – WHEN TO COMMENCE

Progressive Resistance Training (PRT) can improve strength and function in people following a stroke but less is known about whether this intervention is safe and beneficial during the first three months after a stroke.

Eastern Health Community Rehabilitation Program exercise physiologist Karen Salter, together with neurological physiotherapist Amie Musovic and Professor Nicholas Taylor, Professor Allied Health Eastern Health, have been investigating, via a systematic review, the safety and effectiveness of PRT.

Karen said that among those who have suffered a stroke, the first weeks are considered an important time to start rehabilitation to enhance neural function and activity, with movement-based therapies known to be a key component of this.

“PRT is a form of movement therapy that can be very appropriate in the first three months after a stroke – first by addressing the impairment of muscle strength and second, by providing the benefits of early stimulus that early movement provides,” she said.

“To better understand the impact of PRT in the early stages of stroke recovery, we completed an electronic database search and following a review of a selection of studies, we were able to include five trials.

“For the primary outcome, we found only one trial that specifically measured and reported on adverse events and discovered there was no increase in

adverse events, pain or stiffness in the PRT group compared to the comparison group. For secondary outcomes, when we statistically combined the results from different trials we found a high level of evidence that PRT had little or no effect on strength, no significant benefit for upper limb function and mobility after PRT compared with controls.”

The outcome of this systematic review was that more research and well-designed trials are required to determine the safety and benefits of PRT in early stroke rehabilitation.

FOCUSING ON RECOVERY AT HOME

Early Supported Discharge programs provide intensive, multi-disciplinary, community-based rehabilitation to stroke survivors. Much is known about the impact on health service costs and patient outcomes of early supported discharge but little is known about the experience from the stroke survivor’s perspective.

Occupational therapist Lynda Power and her colleague, Dr Mary Kennedy-Jones of La Trobe University’s Department of Occupational Therapy, have undertaken research to better understand the patient’s experience of early supported discharge for stroke survivors.

“We undertook interviews with 10 stroke survivors who completed their rehabilitation with the Early Supported Discharge Program at Eastern Health,” Lynda said.

“Our investigation has confirmed that early discharge with ongoing therapy and support from allied health clinicians allows clients access to meaningful support where recovery can begin.

“Our participants described how early discharge enabled collaboration where interventions were designed specifically for each individual.

“Analysis of the complete data set will determine whether the use of these functions improves adherence to home exercise programs and whether they are associated with improvements in functional outcomes.”

This treatment method involves close collaboration between patients and their families and carers, and occupational therapists to develop and undertake an appropriate home exercise program. Furthermore, it presents exciting opportunities for the future with greater uptake of smart technologies in the fields of stroke and broader rehabilitation.

While community centre-based therapy provides access to other people with similar experiences, instilling a sense of hope, belonging and support. Participants also found it important to note that participation in the Early Supported Discharge Program required the involvement of a strong support network.”

From the data gathered, the program is looking at opportunities to expand its therapy at home service and further develop education resources for families and carers around the support required for early discharge, including health literacy, carer support options and carer burden issues. It will also advocate for the continued provision of home-based therapy in balance with the provision of centre-based care in light of tightening healthcare budgets. ●



THREE EMERGING THEMES ON EARLY SUPPORTED DISCHARGE

1 *Home embodies what I know about me:*

describing how returning home allowed a comparison between pre and post-stroke performance capacity through returning to normal activities.

2 *Therapists and peers – the guides to my recovery:*

with clients articulating how therapists provide the expertise to guide recovery and how camaraderie with peers provides the support to continue on the journey to recovery.

3 *My carer is part of the recovery team:*

reinforcing how carers enabled and facilitated involvement in the program.

randomised controlled trial involving 72 clients. Participants are randomised to receive usual home exercises, either as standard paper-based instructions or as videos recorded on an iPad with automated reminders. Outcome measures include upper limb function, adherence and patient satisfaction.

“While the trial is ongoing with data analysis continuing, initial observations from the first 62 participants suggest that smart technology is feasible and well accepted by patients,” Kellie said.





“Volunteers’ participation in clinical trials is vital to medical research. It is thanks to their time and efforts that others will benefit from safe and effective therapies for a range of illnesses.”

*Professor Chris Gilfillan
Director of Endocrinology
Eastern Health*

EXPOSING THE COMPLEXITIES OF THE ENDOCRINE SYSTEM

THE ENDOCRINE SYSTEM IS THE CHEMICAL SIGNALLING PROGRAM THAT THE BODY’S ORGANS USE TO COMMUNICATE. IN MANY DISEASES, THESE CHEMICAL SIGNALS OR HORMONES ARE DISORDERED.

Endocrine research focuses on describing hormonal abnormalities and ways in which hormone systems can be “rebalanced” back to health. Conditions of the endocrine system are complex and can affect young children through to the ageing population.

Many modern health conditions are based in the endocrine system, particularly diabetes which is where the hormone insulin is either deficient or ineffective. Diabetes prevalence is increasing and

affects up to 20 per cent of patients in Eastern Health’s hospitals.

With a team of medical, nursing and allied health clinicians and pharmacists, the endocrinology program is one of the largest Eastern Health research programs, primarily based at Box Hill and Maroondah hospitals, and works in collaboration with the Eastern Health Clinical School. In addition to a strong research focus on diabetes, other areas of interest include obesity, high cholesterol, bone diseases,

calcium metabolism, thyroid diseases, especially thyroid cancer, and hypertension (high blood pressure).

The endocrinology program supports undergraduate and postgraduate student research activity and has strong partnerships with other acute health services, such as Royal Melbourne Hospital, Alfred Hospital and Monash Medical Centre, community partners, the Victorian Department of Health, The Victorian Cancer Biobank and other laboratory and translational research groups.





Professor Chris Gilfillan, Director of Endocrinology at Eastern Health, says our understanding of the endocrine system has come a long way over the past 20 years.

“The program will continue to focus on research that is designed to address common disorders and ultimately improve the wellbeing of patients through the direct application of study findings.”

BUILDING THE EVIDENCE FOR INTEGRATED CARE FOR ADULTS WITH TYPE 2 DIABETES: A PILOT STUDY

Eastern Health’s endocrinology research team has investigated ways to provide care and education in a patient’s preferred environment. Through the pilot study, *“Building the evidence for integrated care for adults with type 2 diabetes”*, the team looked at the differences in outcomes and patient experience by comparing two models of ambulatory care (care given to a person who is not confined to a hospital/requiring hospital admission but rather in the community or hospital clinic environment) for diabetes in a randomised controlled trial.

The patient experience of care and clinical outcomes were compared between patients attending an acute diabetes outpatient service (in the hospital environment) and a community-based Integrated Diabetes Education and Assessment Service (IDEAS) clinic, based in community health centres.

The study concluded that both settings were effective in improving diabetic control but the patient experience was superior in the community setting. Further funding is being sought to expand the outpatient service to two more community health settings and to extend the study to examine whether the patient’s learning experience is improved.

This study was conducted in collaboration with Carrington Health (previously Whitehorse Community Health Service), Knox Community Health and the Australian Centre for Behavioural Research in Diabetes at Deakin University.

TRANSIENT HYPERCALCAEMIA IN HOSPITALISED ELDERLY PATIENTS: AN ASSOCIATION WITH UNDERLYING HYPERPARATHYROIDISM AND VITAMIN D SUPPLEMENTATION

Dr Florence Gunawan, a registrar working with the endocrinology team, has been investigating why many of Eastern Health’s elderly patients have elevated calcium levels in the blood when admitted to hospital.

Dr Gunawan reviewed 900 elderly patient records and determined that nearly 10 per cent had elevated calcium levels on admission but that this was, in most cases, transient. In a sub-group, further investigation determined that all were due to elevations of the hormone parathyroid and that vitamin D supplementation appeared to increase the risk of this type of presentation.

Dr Gunawan says that what that this study tells us is that hyperparathyroidism is much more common than we previously suspected and that these patients may be at risk of complications, such as renal stones and osteoporosis.

“The next step will be to follow these patients and see whether their elevated calcium levels recur and whether long-term complications do occur.”

SOMATIC MUTATIONS OF FOXE1 IN PAPILLARY THYROID CANCER

FOXE1 is a thyroid developmental transcription factor – a gene that when switched on tells the thyroid cells to behave like thyroid cells.

Large population genetic studies of people with and without thyroid cancer have suggested an association with mutation in the region of DNA containing FOXE1 and recently, a repeating sequence within this gene was found to present risk when elongated.

Working collaboratively with The Hudson Institute at Monash Medical Centre and the Kolling Institute at Royal North Shore Hospital in Sydney, PhD candidate Dr Michael Mond has looked at thyroid cancer specimens collected at Eastern Health and elsewhere. He examined the sequence of this gene in detail and, for the first time, described unique mutations of the gene that are predicted to render the gene and its associated protein inactive.

“This may be part of the explanation why cancerous thyroid cells start to act less and less like thyroid cells as the cancer develops,” Dr Mond said. “In the future it may be possible to target the FOXE1 gene to enhance its activity and make the cancers more susceptible to treatment.”

This work is now published in the journal *Thyroid* and is an example of world-leading research that can be achieved through active collaboration. ●

RESCUING THE DETERIORATING PATIENT

RESEARCH SHOWS THAT EARLY RECOGNITION OF PATIENTS WHOSE CONDITION IS DETERIORATING AND TIMELY INTERVENTION BY DOCTORS AND NURSES WITH EXPERTISE IN MANAGING CRITICALLY ILL PATIENTS SAVES LIVES.

This issue has come to the fore due to an increase in emergency department presentations because of an ageing population and a rise in chronic illnesses. There are also concerns for patients who experience an intensive care unit admission or cardiac arrest because there may be an increased risk of disability, an increased length of stay or in some instances, death if the early warning signs go unnoticed.

For the past two decades Australian health services, including Eastern Health, have been working on systems to ensure that nurses identify patients who are deteriorating before they become critically ill and to alert specialist doctors and nurses working as part of the Medical Emergency Team sooner so they can treat problems such as low oxygen levels and low blood pressure.

Rates of intensive care unit admission or cardiac arrest in ward patients are decreasing as a result of these robust systems. Eastern Health continues to examine its processes to ensure the best care for our community's sickest patients through research that identifies and understands the needs of the deteriorating patient.



"This large study provides evidence that nursing management of patients with complex recovery in PACU was more responsive following the introduction of the PACT."

Dr Maryann Street
Research Fellow

USING SCIENCE TO MAKE PATIENTS SAFER: PREDICTING WHICH PATIENTS ARE AT RISK OF DETERIORATION

Patients who attend the emergency department and then require admission to hospital can be very unwell and many get sicker in the first few days of their hospital stay. Researchers from the Eastern Health – Deakin University Nursing and Midwifery Research Centre have been investigating patient deterioration following hospital admission from the emergency department. They have completed Australia's first study of how patients' clinical state in the emergency department might influence their risk of deterioration once transferred to the wards.

"In a study of almost 2000 patients, we compared patients whose condition deteriorated to the point of requiring an emergency call to the Medical Emergency Team or cardiac arrest team within the first three days of hospital admission with similar patients whose first three days in hospital was uneventful," Professor of Nursing Julie Considine said.

"We found that patients who needed an emergency call were more likely to have had

one or more unstable vital signs at some point during their emergency department care, a higher risk of dying in hospital, more likely to be admitted to the intensive care unit and a longer hospital length of stay.

"The two most important things were very high breathing rates and very low blood pressure at any time while they were in the emergency department. Researchers definitely identified an increased risk of getting sicker during those first three days in hospital."

The research team is using its findings to develop a tool to help doctors and nurses easily identify which patients are at high risk of becoming critically ill during their first three days in hospital.

"For patients it means care is based on their individual needs and for busy nurses, they know more quickly and based on evidence which patients they need to go to first and which patients need more frequent assessment."

DEVELOPING TOOLS TO HELP NURSES RECOGNISE AND RESPOND TO PATIENTS AT RISK OF DETERIORATION

Surgery is an integral part of healthcare. After surgery, patients are primarily cared for by nurses in the Post-Anaesthetic Care Unit (PACU) on a one-to-one basis. Studies have shown that 15 per cent of surgical patients experience at least one complication after surgery. Early detection of complications and adverse events and the subsequent response results in faster patient recovery and minimises long-term consequences.

With the support of funding from the HCF Research Foundation, Dr Maryann Street, a research fellow with the Eastern Health – Deakin University Nursing and Midwifery Research Centre and Eastern Health nursing staff have been investigating whether using a specially-designed nursing assessment tool called the *Post-anaesthetic Care Tool* (PACT) enhanced the recognition and response to patients at risk of clinical deterioration and improved communication of patient information from the PACU nurse to the ward nurse.

"We were also interested in determining the outcomes for patients and whether using the PACT reduced healthcare costs," Dr Street said.

The study was conducted at three Eastern Health hospitals and involved the observation of nursing care before and after the introduction of the PACT. Research nurses observed the way in which more than 1400 patients were assessed when they were recovering from surgery and the communication between nurses in the PACU and nurses who would care for the patient on the ward.

Their findings showed that when nurses used the PACT, they recognised and responded to more patients at risk of deterioration and were more likely to have a medical consultation to express their concern about the patient's recovery.

They also concluded that the care for patients who were in severe pain or had nausea and vomiting after surgery improved, communication between the PACU nurse and ward nurse increased because the PACT enabled information to be transferred quickly and more completely and for patients with complications, using the PACT resulted in better outcomes such as faster recovery and shorter time in hospital.

Furthermore, when comparing costs of any admission to intensive care, the need for further surgery or another hospital admission, they found that after the introduction of the PACT there were only minor differences in costs, meaning that using the PACT was also cost-efficient.

"This large study provides evidence that nursing management of patients with complex recovery needs in the PACU was more responsive following the introduction of the PACT," Dr Street said.

An important aspect of this work was the development of the assessment tool, which required collaboration between all the clinicians who would be responsible for the patient following surgery. The PACT tool is now being used across Eastern Health's hospitals. ●

Liz Webber, Perioperative registered nurse uses the Post-anaesthetic Care Tool



THE TECHNOLOGY SPACE

THE IMPACT OF MODERN MEDICAL TECHNOLOGY ON PATIENT CARE ALLOWS CLINICIANS TO DIAGNOSE AND PRESCRIBE CARE IN A HIGHLY INFORMED WAY. FROM THE DEVELOPMENT OF X-RAY TECHNOLOGY THROUGH TO CT AND MRI EQUIPMENT, TECHNOLOGY HAS AND WILL CONTINUE TO MAKE AN INCREDIBLE IMPACT ON MEDICINE.

MORE IMPORTANTLY, FURTHER DEVELOPMENT AND ADVANCES IN MEDICAL TECHNOLOGY OFFER PATIENTS IMPROVED QUALITY OF LIFE. AT EASTERN HEALTH, RESEARCH TEAMS HAVE BEEN TESTING MEDICAL DEVICES AND INVESTIGATING HOW NEW TECHNOLOGIES CAN SUPPORT SAFE PATIENT CARE.



“Our novel endovascular technology heralds the next generation of endovascular devices that are free from foreign body components such as stents and their attendant complications.”

*Dr Anthony Dear
ECRU Translational Translational Research
Division Director*



Claire Knight, Medical Imaging Technologist and Anna Robertson, Registered Nurse view a patient angiogram

DESIGN AND DEVELOPMENT OF A NEW DEVICE FOR THE TREATMENT OF OCCLUSIVE BLOOD VESSEL DISEASE

Occlusive atherosclerotic blood vessel disease is the most prevalent and costly chronic disease in the western world.

Dr Anthony Dear, Director of the Eastern Clinical Research Unit's Translational Research Division, says coronary or peripheral artery bypass grafting or blood vessel stenting are the current interventional methods used to treat atheroocclusive blood vessel disease, although recurrent blockage or restenosis are very common problems that accompany this treatment strategy.

"Our research in the field of biomaterials uses light-activated nanoparticles to deliver therapeutic agents to reduce bypass graft and stent restenosis," Dr Dear said.

"Our novel endovascular technology heralds the next generation of endovascular devices that are free from foreign body components such as stents and their attendant complications."

The research team is currently seeking support to facilitate the development, manufacture and pre-clinical evaluation of the device termed "Epi-Solve" with a view to rapid commercialisation and clinical implementation of this potentially revolutionary technology.

This ground-breaking work is being undertaken in collaboration with Professor Rob Widdop, Department of Pharmacology at Monash University, Professor Michael GriggHead of Surgery Eastern Health and Professor David Kaye from the Baker Heart and Diabetes Institute.

The Development of a Novel Endovascular Therapy for Occlusive Peripheral Vascular Disease project has been awarded a prestigious National Health and Medical Research Council 2015 Development Grant in support of the projects ongoing advancement



THE IMPACT OF NEW TECHNOLOGY TO REDUCE THE RISK OF A CARDIAC ARREST AFTER A HEART ATTACK

Cardiovascular disease is a major cause of death in Australia, killing one person every 12 minutes. The Heart Foundation estimates that over 350,000 Australians will have a heart attack at some time in their lives. This equates to one heart attack every nine minutes.

A heart attack is a life-threatening event that occurs when a blood vessel supplying the heart muscle is blocked, causing damage to the heart muscle and its function.

According to Louise Roberts, a specialist researcher in the field of cardiology, many heart attack patients are treated with an angiogram and a stent.

"A coronary artery stent is a small metal device that is inserted in the arteries supplying the heart with blood to treat a blockage and establish good blood flow to the heart," Louise said.

The stent acts like a scaffold to reduce the risk of the artery narrowing again. Despite using a stent narrowing reoccurs in 20 to 30 per cent of cases. "Some of this is thought to be due to inadequate positioning of the stent within the arteries," Louise said.

"At Box Hill Hospital, we enrolled heart attack patients into a research project that aimed to assess the reoccurrence of narrowing in the heart artery after stent placement, using a very high-resolution camera to look inside the artery and the stents.

The camera, known as optical coherence tomography or OCT, was used to guide stent selection and optimise positioning in the artery. Six months later, the patients returned for a follow-up procedure with the camera to check for any narrowing of the artery.

"Our investigations to date show the camera has reduced the incidence of narrowing reoccurring at six months, which is a positive outcome." ●

SPECIALIST CLINICS AND THE ROAD TO RECOVERY

EASTERN HEALTH'S AMBULATORY & COMMUNITY SERVICES PROGRAM PROVIDES A VARIETY OF BED, COMMUNITY CENTRE AND HOME-BASED SERVICES. WITH A COMMITMENT TO PROVIDING HIGH-QUALITY, CONSUMER-FOCUSED CARE, THE PROGRAM AIMS TO DELIVER THE RIGHT CARE, IN THE RIGHT PLACE.

IMPROVING ACCESS TO CLINICS AND SUPPORTING CLIENTS TO ENGAGE WITH EASTERN HEALTH IN AN INFORMED MANNER HAVE BEEN PRIORITY RESEARCH FOCUS AREAS FOR THIS PROGRAM.

FOCUSING ON PROVIDING TIMELY ACCESS TO OUTPATIENT SERVICES: STAT – A NEW WAY TO REDUCE WAITING TIME FOR PATIENTS RECEIVING OUTPATIENT SERVICES

Each year, Eastern Health provides more than 73,000 appointments through its ambulatory and community service programs. With such a significant caseload, unavoidable delays can be experienced by patients referred to specialist outpatient and community health clinics, which may cause them to feel alone and anxious or experience difficulty in performing daily living tasks.

Through research undertaken by the Eastern Health Allied Health Research Office, supported by a National Health and Medical Research Council (NHMRC) partnership grant between Eastern Health, La Trobe University and the Victorian Department of Health and Human Services, senior research fellow Dr Katherine Harding and her team

are exploring opportunities to expedite access to outpatient rehabilitation services.

"The aim of our research is to identify whether a new method of assigning appointments, called Specific and Timely Appointments for Triage or STAT, can help reduce the time patients wait for appointments for outpatient services in sub-acute and community health settings," Dr Harding said.

"Unfortunately, delays in receiving care are common in public health services. However, in our pilot project run in the community program, waiting times fell from an average of 17.5 days to 10 days by taking the STAT approach.

"The pilot study showed waiting times for patients who had undergone surgery for joint replacements, fractures and soft tissue injuries fell by more than 40 per cent and they were three times more likely to be seen by a clinician within seven days."

Following the success of the pilot project, an expanded trial of the STAT approach is being rolled out across eight Eastern Health ambulatory and community services.

More than 2600 patients, ranging from children with speech problems to adults with lymphoedema, musculoskeletal disorders and continence problems, will have their appointment assigned through the STAT methodology.

Traditionally clinicians assess a patient's treatment priority over the phone and add them to a waiting list. Under the STAT approach, clinicians aim to give all patients an immediate appointment, at which their treatment needs will be assessed and balanced against the clinicians' existing workload.

Dr Harding said the pilot showed less time was spent managing waiting lists, there were more group treatment sessions and patients whose problems could be easily resolved were treated quicker.

"This large, rigorously conducted trial will provide high-level evidence that there may be a better way for the patient and health service to provide and allocate appointments for our outpatient services," Dr Harding said. "And for Eastern Health, it is hoped that the STAT approach will lead to reduced waiting lists for these services and improvements in patient flow for the whole health service."



Patients like Lucas Wood, pictured here with physiotherapist Claire Edwards, are benefiting from more timely access to services through the STAT project



IMPROVING CHRONIC DISEASE OUTCOMES BY RESPONDING TO CONSUMER IDENTIFIED HEALTH LITERACY NEEDS

Based on the principle that improving patient health literacy* improves health outcomes, Eastern Health's Hospital Admission Risk Program (HARP) has been investigating ways to identify consumers' preferred learning styles and tailoring education to meet individual needs.

It is believed that such an approach will assist in delivering more personalised healthcare as it is delivered in a way that best suits the patient's health literacy capabilities.

According to Julie Evans, Director of Nursing for the Ambulatory & Community Services Program, there is very little evidence-based research on how to improve outcomes for clients with low health literacy.

"We know that experienced clinicians work with clients with low health literacy every day and these clinicians are the best source of evidence for what might work to improve outcomes," Julie said.

The development of an evidence-based toolkit for clinicians, the *"Getting communication right post discharge from the inpatient setting: Assessing patient engagement"* identified ways to improve engagement of consumers with health literacy needs.

The health literacy of 104 clients was assessed between October 2013 and February 2014.

"Overall, health literacy in the sample was low, especially in the areas of appraisal of health information, having sufficient information to manage health, navigating the health system and finding and understanding health information," Julie said.

HARP developed a toolkit of interventions to improve the effectiveness of education provided by its clinicians regarding health service navigation, health service engagement and self-management.

Evaluation of the pilot toolkit has demonstrated improved self-reported

outcomes for clients with chronic disease and increased satisfaction of the workforce in delivering patient-centered care.

"The toolkit increased clinicians' confidence in engaging clients in HARP, promoting self-management as a hospital avoidance strategy and improving client-centered care by allowing the client to take the lead," Julie said. "Importantly, our research told us that only 33 per cent of clients reported that brochures or printed materials were a preferred source of health information and 83 per cent said they preferred to talk through information with their healthcare professional."

Through this research, clinicians have gained an increased understanding of the need to optimise the client's preferred strategies for receiving health information, based on their individual health literacy capabilities. This allowed them to better manage their health without clinicians imposing personal values or beliefs. ●



* Health literacy is how people understand information about health and healthcare and how they apply that information to their lives, use it to make decisions and act on it.

www.safetyandquality.gov.au/our-work/patient-and-consumer-centred-care/health-literacy/



A STATEWIDE TO NATIONAL APPROACH TO MENTAL HEALTH, ALCOHOL AND OTHER DRUG INTERVENTIONS

WHILE THE CLINICAL TREATMENT SIDE OF EASTERN HEALTH'S STATEWIDE SERVICES MIGHT BE WHAT IMMEDIATELY COMES TO MIND WHEN PEOPLE THINK OF TURNING POINT AND SPECTRUM, THEIR HARD-WORKING TEAM OF DEDICATED RESEARCHERS HAS A STRONG REPUTATION ON THE NATIONAL AND INTERNATIONAL STAGE.

For more than 15 years, Spectrum has provided life-changing support for people with Borderline Personality Disorder. However, it also has an active research program that complements its treatment activities. This includes internally-driven projects that assess the effectiveness of treatment, as well as collaborative research with external partners, often involving postgraduate student research.

Likewise, Turning Point's large addiction research program is internationally recognised with an increasing national profile related to mental health, as well as innovative low-cost interventions.

This includes a world-first national surveillance system using ambulance data to monitor emergency department presentations related to alcohol, drugs, mental health and suicide, and the development of online, telephone and SMS interventions that reach vulnerable populations and promote self-help and recovery strategies.



Credit: Ambulance Victoria

A TRUE PICTURE OF THE IMPACT OF SELF-HARM ON EMERGENCY SERVICES

World-first research has revealed Victorian paramedics responded to more than 16,000 self-harm attendances in a single calendar year.

Conducted in conjunction with ambulance services across Australia, Turning Point's "Self Harm and Mental Health-related Ambulance Attendances in Australia" report identified numerous cases involving suicide attempts, accidental overdoses, anxiety, depression and psychosis.

The report took into account ambulance data in Victoria for the 12 months of 2013, with research finding paramedics responded to 16,703 self-harm attendances. That figure includes:

148 suicides	2314 cases of self-injury
6537 suicide attempts	359 cases of self-injury threat
7345 suicidal ideations (suicidal thoughts)	

The number of self-harm attendances in which drugs were involved was also a concern, with alcohol present in 11 per cent of suicides and 33 per cent of suicide attempts.

Turning Point Head of Research and Workforce Development, Associate Professor Belinda Lloyd, said the report presented for the first time robust evidence the extent of mental health-related cases facing paramedics.

"Around 20 per cent of Australian emergency ambulance call-outs are related to self-harm, mental health or substance misuse," A/Prof Lloyd said.

"These figures are striking in terms of the magnitude of mental health problems, suicidal behaviour and overdose which are challenging our health services."

Turning Point Director Professor Dan Lubman said the report highlighted the need for more open discussion about the significant impact of mental health on our community and how to best implement the most effective prevention and treatment responses.

FOCUSING ON CLINICIANS BETTER UNDERSTANDING THEIR CLIENTS: RECOVERY AND BORDERLINE PERSONALITY DISORDER: INSIGHTS FROM CLINICAL PRACTICE (SPECTRUM)

New research conducted by Monash University and Spectrum has highlighted the importance of the therapeutic relationship between clinician and client in recovery from Borderline Personality Disorder (BPD).

The study sought to better understand recovery from BPD by investigating how clinicians' treatment concepts and approaches facilitate recovery.

Clinicians came from a range of backgrounds, including social work, nursing, psychology and psychiatry.

They looked at the value of the Connectedness, Hope, Identity, Meaning, Empowerment (CHIME) model of recovery, which had previously been applied to schizophrenia and bipolar disorder. However, very little is known about recovery from BPD.

An insight from the study was that clinicians perceived the CHIME concept as being problematic in relation to BPD, a complex disorder that requires a more nuanced approach. For example, the concepts of hope, identity and meaning for individuals with BPD, particularly when accompanied by a history of trauma, need to be sensitively considered in ways that extend beyond general models of recovery.

A crucial factor in recovery from BPD is the process of self-discovery – this may not be adequately articulated within the CHIME model.

The clinicians emphasised that the therapeutic relationship between clinician and client is at the heart of positive change for individuals with BPD, requiring treatments to be individually tailored in ways that are aligned, attuned or alongside the patient on their recovery journey.

This research project was a collaboration between Monash University and Spectrum and involved Fiona Donald, a Doctor of Clinical Psychology student, Dr Katherine Lawrence and Dr Cameron Duff from Monash University, Dr Sathya Rao and Dr Jillian Broadbear from Spectrum.



APPROACHING INTERVENTION VIA TELEPHONE

A Turning Point study, in collaboration with Monash and Deakin universities, has revealed that a six-session structured telephone intervention is effective in reducing alcohol use and associated psychological distress in regular, heavy drinkers.

Research found that the feasibility and acceptability of the telephone program was supported by staff and callers, with significant reductions in problematic alcohol use and psychological distress observed. It also found that rates of alcohol dependence dropped by more than 50 per cent.

Turning Point Director Professor Dan Lubman said low rates of treatment-seeking for alcohol use disorders was one of the greatest challenges in devising an effective public health response to the issue.

"Stigma is a significant barrier to seeking help for alcohol problems while structural issues, such as the availability of face-to-face services particularly after hours, also affect whether people seek treatment," Prof Lubman said.

He said telephone helplines, which were available 24 hours a day, offered an effective and efficient approach to delivering treatment for those people unable or unwilling to access face-to-face services.

Prof Lubman said structured interventions for alcohol and other drug issues delivered over the phone complemented existing services, as well as extending their reach.

Alongside Prof Lubman, the research project's co-authors were Professor David Best, Dr Kate Hall, Anna Guthrie, Moses Abbatangelo and Dr Barbara Hunter. The study was funded by the Victorian Department of Health and Human Services and published in *Alcohol Treatment Quarterly*. ●



GETTING THE PRESCRIPTION RIGHT

PRESCRIBING AND DISPENSING MEDICATIONS IS AN INTEGRAL PART OF TREATING PATIENTS IN HOSPITALS. PATIENTS ARE PRESCRIBED MEDICATIONS ON THE INPATIENT MEDICATION CHART OR ELECTRONICALLY AND DISCHARGE PRESCRIPTIONS ARE WRITTEN BEFORE THE PATIENT LEAVES HOSPITAL.

Medications for inpatient use are either dispensed by the hospital pharmacy (average 800 items per day across all Eastern Health pharmacies) or supplied on the wards, enabling more immediate availability. If patients require more or new medications upon discharge, these are dispensed by the hospital pharmacy or the prescription is given to the patient, to be dispensed by their community pharmacy.

It is important that prescribing, dispensing and administering the right drug, right dose and right frequency to the right patient occurs, otherwise the patient may not recover as quickly as possible or they may have symptoms such as unnecessary pain.

Medication errors are the second most frequently reported incidents in public hospitals. Most do not result in patient harm but occasionally, a patient does suffer short-term harm, requiring extra treatment or a longer stay in hospital.

Doctors and pharmacists are responsible for ensuring they keep up to date with medication and disease knowledge. They need to be aware of the resources to consult if they do not know about a particular drug and they should know who to consult to confirm queries about prescriptions. Patients must be informed about any medication error, even if there are no consequences. This process is known as "open disclosure".



"From this project, we have clear evidence that "do not disturb" strategies increased the number of error-free prescriptions and reduced the average number of errors per prescription. This is a great outcome."

Mazdak Zamani
Senior Hospital Pharmacist



Dr Sally Osiurak, wears the “do not disturb” vest when completing prescription paperwork on the ward



EFFECTIVENESS OF “DO NOT DISTURB” STRATEGIES IN REDUCING ERRORS DURING PRESCRIPTION WRITING

In an effort to reduce medication prescribing errors, a number of strategies or interventions have been trialled across health service providers to address the issue of distractions.

Prescribing errors not only impose serious safety risks but also delay hospital discharges. Causes of prescribing errors include time pressures, unfamiliarity of junior medical officers and distractions.

At Eastern Health, the pharmacy and medical teams have been working with staff on two acute medical wards at Maroondah Hospital to determine the effectiveness of two “do not disturb” interventions in reducing prescribing errors.

“At Maroondah Hospital we introduced two interventions. These were the wearing of “do not disturb” vests and the introduction of dedicated work stations for prescription writing,” senior hospital pharmacist Mazdak Zamani said. “It was communicated to all staff that unless it was an emergency, staff wearing the vests were not to be disturbed while completing paperwork or at the dedicated workstation.”

Mazdak said 392 discharge prescriptions were audited over a 10-week period. Ward pharmacists collected data on the number and type of errors and the time taken to correct errors. Feedback from junior medical officers was also collected on the number, length and source of distractions before and after the introduction of the vest and workstation interventions.

“Pre-intervention, about 30 per cent of prescriptions were free from errors,” Mazdak said. “These figures increased post-intervention to almost 50 per cent. The average number of errors per prescription reduced from a high of 1.8 to a low of 1.0 and the median time taken to correct erroneous prescriptions reduced from 15 minutes to five minutes in one ward.

Furthermore, feedback provided from the junior medical officers showed a marked reduction in interruptions with 73 per cent stating they were not interrupted at all or just once during prescribing post-intervention compared to 17 per cent.

“From this project, we have clear evidence that “do not disturb” strategies increased the number of error-free prescriptions and reduced the average number of errors per prescription. This is a great outcome,” Mazdak said.

“Moving forward, Eastern Health is looking to implement “do not disturb” strategies ongoing which will ensure prescribers are protected from distraction when managing medications. Furthermore, use of multiple strategies may also reduce errors in prescription writing.” ●

BUILDING CAPACITY: TODAY'S MEDICAL STUDENTS, TOMORROW'S HEALTHCARE LEADERS

WE CAN LEARN FROM OUR STUDENTS. THEIR INQUIRING MINDS REFRESH OUR OWN AND CHALLENGE US TO STAY CURRENT. THEIR SCRUTINY ENCOURAGES US TO ACHIEVE EXCELLENCE IN EVERYTHING WE DO. TODAY THEY LEARN FROM US; TOMORROW THEY WILL SURPASS US, LEAD US TO AREAS WE CANNOT IMAGINE AND EVENTUALLY, CARE FOR US.



The Eastern Health Clinical School provides excellence in clinical training for medical students from Monash and Deakin universities, as well as elective placements for students from universities around the world.

Professor Ian Davis, Eastern Health Clinical School Director and Professor of Medicine (Oncology), says the school provides many options for students interested in research, with summer scholarships, Bachelor of Medical Science, Masters and PhD opportunities, as well as smaller-scale projects within specific units.

"These students have opportunities for exposure to translational and laboratory research and a grounding in research ethics, governance and good clinical research practice," Prof Davis said. "Many students go on to publish their work, present at local or international conferences and to win prizes."

"We work closely with our colleagues in the universities and other health services, including the broader community, to ensure that teaching and training opportunities for our students are broad and varied and of direct clinical relevance to the community."

SUPPORTING STUDENT RESEARCH: EASTERN HEALTH CLINICAL SCHOOL SUMMER STUDENTSHIP PROGRAM

This four-week school-based program provides opportunities and funding for students to undertake research within various Eastern Health units or clinical school groups.

In 2014, eight third-year medical students were supported to work in oncology, endocrinology, surgery, rheumatology and infectious diseases and undertake investigator-initiated projects by



Junior medical staff Dr Simon Baylis and Dr Rachel Boyd, with Director of Emergency Services at Box Hill Hospital Dr Andrew Maclean and Registrar Dr Camilo Burbano Vesga

STUDENTS THE SUBJECT OF RESEARCH: READINESS FOR WORK PROJECT – GET READY!

Feedback from junior medical staff tells us that a formalised orientation program at the start of workplace placement is highly valued. One way in which Eastern Health's commitment to workplace training and education in the emergency department is manifested is through a structured orientation program for new employees, from which both the trainee and the organisation benefit.

According to Dr Jane Lukins, emergency physician and supervisor of junior doctor training in Box Hill Hospital's emergency department, this supports greater workplace effectiveness, increased staff satisfaction and confidence and a more streamlined transition into the workplace, all of which impact on patient care.

"The orientation program for new doctors is largely paper-based with an e-learning component for training on the IT systems. It also includes a relatively short face-to-face meeting prior to commencement of work on the floor," Dr Lukins said.

"With the evolution of technology we need to explore new opportunities for engagement in the orientation process. Traditional training mechanisms are a relatively inefficient means of orientation which result in information overload and poor retention. Many doctors arrive at the workplace having not read their formal orientation materials and face-to-face orientation draws heavily on senior staff resources to provide orientation in clinical or clinical support time."

The emergency medicine team and the Eastern Health Clinical School have been evaluating the efficacy of a succinct orientation video which is complementary to traditional orientation resources delivered via the hospital's intranet learning portal for medical students before they start their work placement.

"We postulate that online video orientation will improve the engagement of medical staff during orientation," Dr Lukins said. "It may also result in a more positive orientation experience for the doctor and assist them in being more effectively prepared before commencement of their duties." ●

participating in research tasks, including literature reviews, data collection and qualitative research.

Program Director Dr Carmel Pezaro said the data obtained had been used in a number of ways, including the development of research abstracts.

"During the program we ran group activities such as good clinical research practice training, as well as unit-specific activities," she said. "Student engagement in research activity at this stage of their medical studies is vital. It enriches the learning experience of the students, while the educators benefit from the wonderful enthusiasm and inquiring minds of the medical student population."

2014 SUMMER STUDENTSHIP PROGRAM RESEARCH PROJECTS:

- Burden of medication use in patients with inflammatory arthritis
- Assessing the patient care experience in a hospital-in-the-home environment
- Development of a patient feedback tool for medical student consulting skills
- A review of staff tuberculosis screening results and follow-up for future management
- Use of targeted therapies in patients with metastatic renal cancer
- Whipple's disease procedure literature review



BUILDING BETTER PARTNERSHIPS

IN PARTNERSHIP WITH THE OFFICE OF RESEARCH & ETHICS, THE EASTERN HEALTH FOUNDATION IS SUPPORTING THE DEVELOPMENT OF A CULTURE WHERE ETHICAL AND INTEGRATED RESEARCH IS PART OF EVERYDAY PRACTICE.

Director Anne Gribbin said the Foundation worked with donors to encourage investment in research projects that assisted investigators to pursue a research question, find the answer and implement the outcomes when evidence supported us to do so.

One event where donors and researchers come together to signify the importance of their partnership is the Eastern Health Foundation Research Awards.

Established in 2011, Ms Gribbin said the initial focus of the awards was to support

research usually conducted within a single discipline and often by an individual investigator. Today, the focus had shifted to a collaborative approach, bringing together where possible medical, allied health and nursing colleagues, disciplines and departments.

"The opportunity to work with external research agencies such as Monash, La Trobe and Deakin universities and major entities such as the Australian Research Council and National Health and Medical Research Council is also being explored and enthusiastically pursued," Ms Gribbin said.

It was a record year for the Eastern Health Foundation Research Awards in 2015, with \$204,000 raised for nine successful funding applications from a record field of 51 submissions.

"The awards demonstrate that donors increasingly want to fund translational research that transforms the care, treatment and knowledge of patients and across all disciplines," Ms Gribbin said.

"They are interested in short-term research where outcomes are known quickly, as well as longer-term studies."

The nine successful applicants came from a diverse mix of clinical, allied health, nursing and research-intensive disciplines comprising medicine, oncology, endocrinology, orthopaedics, nursing, pharmacy and mental health and incorporated projects that involved emergency, women and children and general surgery departments.

Ms Gribbin said the important research work undertaken by the 2015 applicants, together with all of Eastern Health's clinical, allied health and nursing staff engaged in research activities, demonstrated a developing and healthy culture of continuous improvement.

"Donors are very keen to see how their generosity can make an impact that is enduring, life-changing and ultimately, life-saving." ●

ABOUT EASTERN HEALTH

EASTERN HEALTH IS THE MAJOR PROVIDER OF PUBLIC HEALTH SERVICES IN MELBOURNE'S EASTERN AND OUTER EASTERN SUBURBS. WE SERVE A COMMUNITY OF **750,003*** PEOPLE ACROSS **2816 SQUARE KILOMETRES** – THE LARGEST GEOGRAPHICAL AREA IN VICTORIA.

OUR MISSION IS ***“TO PROVIDE POSITIVE HEALTH EXPERIENCES FOR PEOPLE AND COMMUNITIES IN THE EAST”*** AND WE DO THIS THROUGH A COMPREHENSIVE RANGE OF HIGH-QUALITY ACUTE, SUB-ACUTE, PALLIATIVE CARE, MENTAL HEALTH, DRUG AND ALCOHOL, RESIDENTIAL CARE, COMMUNITY HEALTH AND STATEWIDE SPECIALIST SERVICES.

** as at 2011 Census*



Our patients are diverse in culture (22 per cent originates from countries where English is not the predominant language), age, socio-economic status, population and healthcare needs.



We deliver over 1.17 million episodes of patient care each year and continue to perform record amounts of surgery. In 2014-15, there were 151,810 emergency department presentations (up 5.9 per cent) – that's one person every 3.5 minutes.



We have 8683 staff, 67.9 per cent of whom live within the community we serve –



and an operating budget of \$818 million.



With 1456* beds, Eastern Health operates from 21 locations, including:

- Angliss Hospital in Upper Ferntree Gully
- Box Hill Hospital
- Healesville & District Hospital
- 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 2015. 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.



Copies of the 2015 *Eastern Health Research Report* are available by contacting the Office of Research & Ethics on **9094 9551** or via www.easternhealth.org.au/publications



Current research activity program reports are available online at www.easternhealth.org.au



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🌐 www.easternhealth.org.au

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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

☎ 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

✉ 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

PUBLICATIONS

📄 All of Eastern Health's publications are
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