Epworth Research Institute is advancing health care through clinical research.

We foster a vibrant research culture that values high quality, clinically-relevant research that translates into better outcomes for our patients and those around the world.

Epworth aims to provide all patients with the opportunity to participate in our research program.
Medical research considers our duty to the patients of today and to the patients of tomorrow, by constantly striving to improve care, overcome disease and advance the health of our community.

At Epworth Healthcare, we are supporting our clinicians to question current practices, to conceptualise new options, to investigate alternative practices and to establish the benefits of each therapy for each patient – making Epworth unique by including research as part of our core business linking it to clinical care.

Over the past 12 months the Epworth Research Institute has continued to develop as a dynamic and forward-looking organisation, with an impressive list of achievements. Our vision of becoming a nationally and internationally recognised research institute within an academic health centre, participating in high quality, clinically-relevant health related research is being advanced rapidly across Epworth campuses.

Our mission to ensure that all patients accessing health services at Epworth have the opportunity to participate in high quality research programs is reflected in the increasing number of research participants, and the broad spectrum of research projects underway.

It is with much excitement that we present the latest update of our progress, our second Epworth Research Institute Research Report.

This year we have seen major advances in several key areas.

• The Epworth Research Institute Grants were awarded for the second year, with 25 applicants from a wide variety of clinical areas and disciplines competing for a total pool of $150,000 that was distributed to seven successful grant recipients.

• The 2012 Epworth Research Week was held at Epworth Richmond in June, with a poster display showcasing 38 projects underway across the organisation. A series of sessions highlighted presentations from local experts, including Professor Paul Myles from the Alfred Hospital and Professor John McNeil from Monash University, a medical statistics workshop by our biostatistician Sean McGuigan, and a benefactors’ information session to update our donors on recent research achievements.

• The week culminated in the Epworth Research Institute Dinner, attended by staff, researchers, collaborators and sponsors, with a fascinating presentation from Professor Robert Wood from the Centre for Ethical Leadership at the University of Melbourne on our ethical responsibilities from the personal to societal levels.

• Research governance processes have been extensively reviewed and updated in line with current requirements, establishing Epworth at the forefront of practice to ensure our patients, staff and clinicians are protected at all times.

• Research activity has expanded across all 11 Clinical Institutes, with increasing multi-disciplinary projects linking medical, nursing and allied health staff.

• External collaboration with local and national research bodies has increased, as highlighted by our ongoing participation in the World Health Organisation Hi5 project on medication reconciliation under the guidance of the Australian Commission for Safety and Quality in Health Care.

• Epworth is also one of eight founding organisations of the Monash Partners Academic Health Science Centre that aims to link bench to bedside research with translation of findings into health care and improved patient outcomes.

Throughout the year, our research activities and projects have engaged the Epworth community in realising our research aspirations.


We would like to thank all those who have participated and supported the ongoing growth of Epworth research, including medical, nursing, allied health and support staff, our partner collaborating organisations, our patients and our donors. We hope that you will find inspiration in the projects highlighted in our report.

Dr Philip Williams
Chairman, Epworth Research Institute
Dr Megan Robertson
Executive Director, Research

The Clinical Trials and Research Centre (CTRC) team is the hub of research at Epworth, and comprises the Executive Director Research, Research and Business Manager, six clinical research coordinators, a biostatistician and a research/administration assistant.

The CTRC is the first point of contact for both clinician investigators and sponsors wanting to consider a research project at Epworth. Behind the CTRC is a team of highly skilled health professionals that specialise in coordinating and managing all phases of the clinical research lifecycle in a wide variety of therapeutic areas.

The CTRC staff manage all aspects of a clinical program including study design and advice, statistical analysis and reporting, preparation and approval of ethics applications and amendments, patient screening and recruitment, data collection, archiving and study evaluation. At all stages of the process, from contract negotiation to study completion, the CTRC staff work closely with their partners allowing the clinical program to progress quickly, safely and cost-effectively.

CTRC research staff provide an invaluable and important role for research investigators and research participants. Understanding and responding quickly to the needs of the research participants as they progress through a study is essential for keeping patients informed and in optimal health throughout their research journey.

The CTRC clinical research coordinators manage a large portfolio of clinical device and pharmaceutical trials across the cardiology, oncology, neurology, dermatology, critical care and rheumatology disciplines. Over the past 12 months, the team has provided significant support to new and existing researchers and clinicians, assessed many new sponsored trials (with approximately 50 per cent progressing to acceptance and implementation) and undertaken three antimicrobial audit cycles across three of the Epworth sites.

Research governance is a critical element of research, and all research staff remain at the forefront of research knowledge and skills, through research specific, and more general governance education and training, such as good clinical practice and safe transport of infectious substances. Research policies and operating procedures have been written and disseminated so that Epworth staff are aware of the research governance structures that support research activities across the seven clinical hospital sites.

The CTRC staff also implement Epworth Research Institute activities such as Research Week, research breakfasts and the ERI annual research funding round. A key initiative during the period has been the commencement of an assessment and evaluation process of clinical trials management systems, so that studies can be managed more effectively and efficiently through a secure, centralised, multifunctional software system. It is hoped that a new system will be selected and implemented during the first quarter of 2013.
Epworth Monash Rehabilitation Medicine Unit (EMReM)

The Epworth Monash Rehabilitation Medicine Unit delivers world-class rehabilitation research that can be applied quickly and effectively to improve clinical programs, so that people recovering from injury or illness can maximise their quality of life, physical mobility and cognitive development.

Professor John Olver is the Victor Smorgon Chair of Rehabilitation Medicine at Monash University, and Director of Rehabilitation at Epworth. Professor Olver is supervising six PhD candidates across rehabilitation medicine, physiotherapy and speech therapy, is concurrently involved in seven additional large research projects, and works with a broad group of national and international collaborators. In May 2012, Professor Olver led the organisation of the 7th World Congress of Neurorehabilitation held in Melbourne with over 1,800 delegates from 55 countries attending.

RESEARCH SNAPSHOT
Phase III, multi-centre, double-blind prospective randomised placebo-controlled study assessing the efficacy and safety of Dysport used for the treatment of lower limb spasticity in adult subjects with hemiparesis due to stroke or traumatic brain injury

In collaboration with Ipsen Pty Ltd, EMReM and Epworth are studying Dysport, a botulinum toxin injected into muscles, commonly used in spasticity to reduce muscle tension and pain and increase range of movement.

This important international study aims to compare changes in muscle tone, walking speed and clinical assessment of treatment response for placebo versus Dysport. Epworth Rehabilitation at Richmond, Camberwell and Brighton are all involved in study recruitment.

EMReM involvement has provided an opportunity to develop international partnerships to facilitate real changes to clinical practice, and to build an evidence base around treatment of muscle spasticity disorders. Through this study, EMReM has gained invaluable experience and anticipates further international research collaborations that will provide evidence for improved clinical practice.

Epworth Deakin Centre for Clinical Nursing Research

The Epworth Deakin Centre for Clinical Nursing Research is a joint initiative between Deakin University and Epworth. It conducts clinical research focused on developing an evidence base to enhance quality and safety in the delivery of clinical care, examine the impact of new technologies on health outcomes, and develop creative strategies to improve outcomes. The Centre focuses on health service evaluation and translation of evidence into practice.

Professor Mari Botti is the Epworth Deakin Chair of Nursing and Director of the Centre. She currently has 16 active research projects, and supervises seven PhD candidates and five Master of Nursing students.

RESEARCH SNAPSHOT
Translation of evidence into pain management practices in acute care environments

A major focus of the worldwide drive to improve the quality and safety of health care is the standardisation of care processes to ensure patients receive care based on best available evidence. Pain management after surgery is an area where the quality of care is highly variable. In Australia, 40 per cent of patients experience significant pain – and hence, unnecessary suffering – and pain is one of the main adverse outcomes after surgery.

In partnership with clinicians, the aim of the project is to develop, implement and evaluate an improved method of treating pain after orthopaedic surgery.

Two patient surveys have been conducted to identify the current effectiveness of pain management, variability of prescriptions for pain relieving medications, and the appropriateness of medication administration practices. This information has been used to develop a clinical decision support system for managing post-operative pain that is based on best available evidence.

The next step is to implement the decision support system in practice to determine if this improves pain outcomes for patients. This methodology for changing and improving practice will be tested in sites external to Epworth to assess external applicability. If successful, the approach will be applied to other post-operative contexts to improve the post-surgical experience of Epworth patients.
Epworth Victor Smorgon Chair of Surgery

Professor Richard de Steiger is the Epworth Victor Smorgon Chair of Surgery, The University of Melbourne. Professor de Steiger is an orthopaedic surgeon with a special interest in hip and knee joint replacement and the management of adult hip disorders. He is also Chairman of Epworth’s Musculoskeletal Clinical Institute.

This year Professor de Steiger has concentrated on developing a Musculoskeletal Research Centre to coordinate tissue collection from patients with osteo and rheumatoid arthritis, and to further develop links between the other Institutes in research projects.

Professor de Steiger is undertaking his PhD involving a critical appraisal of how the Australian National Joint Replacement Registry improves quality of care.

RESEARCH SNAPSHOT

Anterior cruciate ligament national registry pilot study

Rupture of the anterior cruciate ligament (ACL) is a serious injury, and most frequently occurs in younger people involved in sport. Australia has one of the highest rates of ACL reconstruction, with acute care costing approximately $75 million per annum. Surgeons who perform ACL reconstructive surgery believe that functional status post surgery should be the principal outcome measure, and this can be achieved by asking patients a number of specific questions.

The Australian Orthopaedic Association has instituted a pilot study to determine whether an Australian ACL Registry is feasible. The aim is to collect important information on patients undergoing an ACL reconstruction. This pilot study has involved nine Australian hospitals. Associate Professor Julian Feller has led Epworth’s contribution to this study.

Data captured in this study include operative details of the ACL surgery and patient-derived data pre-operatively, and at six and 12 months post surgery.

Epworth commenced recruiting patients in November 2011. Australia wide, 512 patients have consented to the study, of which Epworth Richmond has contributed 238 patients. Data on surgical technique and patient outcomes is expected by January 2014 and will provide important information for consideration of a National ACL Registry.

RESEARCH SNAPSHOT

Assessment of acute vertigo with the GN Otometrics ICS Impulse device

Acute vertigo is a common condition affecting more than 20 per cent of the population, and accurate early diagnosis can translate to earlier treatment and resolution of the disabling symptoms. To assist in earlier diagnosis, a portable vestibular function testing device has been developed.

The GN Otometrics ICS Impulse device enables quantitative recording of the vestibulo-ocular reflex, a complex clinical sign involving eye movements when following a stationary object from a moving base, such as reading a street sign from a moving car. Detection of impairment of the reflex on one side is vital for accurate diagnosis of viral labyrinthitis, the most common cause of acute vertigo in patients presenting to the Epworth Emergency Department.

The device is currently being tested in patients presenting with acute vertigo to assist in correct diagnosis in the Emergency Department setting. If proven effective, this device may have important implications for the diagnosis and subsequent management of patients presenting with distressing vertigo.

Epworth Victor Smorgon Chair of Medicine

Professor Richard Gerraty is the Epworth Victor Smorgon Chair of Medicine, Monash University. He is a consultant neurologist and is prominent in stroke management research and outcomes.

As part of his academic program, Professor Gerraty has established the weekly Grand Rounds sessions at Epworth Richmond, which discuss and promote the use of current research to guide evidence based management. His goal is to increase stroke and neurology research at Epworth, including participating in important investigator-initiated multi-centre studies, and developing new collaborations across Epworth sites.

He is currently involved in several stroke studies exploring the increased utilisation of thrombolysis in acute stroke presentation, initial management of stroke patients in the Emergency Department setting, and blood pressure control for stroke prevention.
Monash-Epworth Rehabilitation Research Centre

The Monash Epworth Rehabilitation Research Centre conducts internationally renowned research into rehabilitation programs to maximise functional, psychological and social outcomes for patients with injury following trauma. The Centre was established in 2000 under the leadership of Professor Jennie Ponsford, who currently supervises two PhD candidates and 11 Doctor of Psychology in Clinical Neuropsychology students.

The Centre aims to undertake trauma rehabilitation research in a clinical context, and translate research findings into effective rehabilitation programs to improve the quality of life for trauma survivors. Professor Ponsford and her team have over 13 active research projects underway, and collaborate locally, nationally and internationally with other trauma research groups.

RESEARCH SNAPSHOT
The Longitudinal Head Injury Outcome Study

Traumatic brain injury is the leading cause of acquired disability in young people. The Longitudinal Head Injury Outcome Project, which has been conducted at Epworth since 1995, has helped define the complex chronic problems of patients following traumatic brain injury.

All patients admitted to Epworth Rehabilitation with head injuries are invited to attend a follow-up clinic at 1, 2, 3, 5, 10 and 20 years post-injury, where they are interviewed by a rehabilitation physician and provide comprehensive information regarding their level of mobility, functional independence, living situation, relationship status, vocational activities, neurological, cognitive, behavioural and emotional problems experienced, and drug and alcohol use.

This is one of the largest, longest running and most comprehensive databases of its kind worldwide and findings have been published in over 50 international peer-reviewed journal articles, and in over 100 national and international conference presentations.

This project has been largely funded by the Transport Accident Commission since the study commenced.

RESEARCH SNAPSHOT
Professor of Health Information Management

The appointment of Professor Nilmini Wickramasinghe as the inaugural Epworth Chair of Health Information Management in July 2011 was made through collaboration between Epworth and RMIT University.

Professor Wickramasinghe allocates two days a week to Epworth and has devoted the past 12 months to defining and developing relevant health informatics research projects within the Epworth environment.

Shortly after her appointment, an Epworth Cleveland Fellow in Health Informatics was appointed, further building the links between Epworth and the Cleveland Clinic in important clinical and organisational areas.

RESEARCH SNAPSHOT
Better communication for better health care

As health care costs rise exponentially, it becomes a strategic imperative for health care organisations to examine all areas of their delivery, identify those which are inefficient or ineffective, and work to design and develop solutions that provide superior health care and support a health care proposition of excellence in access, quality and value.

Moreover, given the current emphasis on identifying meaningful use of technology in health care, it becomes important to develop appropriate technology solutions that comply with this requirement. One area of health care delivery where this is particularly relevant is when looking at health care disparities, of which a key example relates to access to language services in health care or more specifically supporting limited English proficient (LEP) patients.

Professor Wickramasinghe, together with her US-based colleagues Ray Arias and Jeff Willigus, is currently investigating the possibility of an online real time cloud-based technology solution to facilitate language translation and thereby enhance health care workflow. Together with Northwestern Memorial Hospital in Chicago, they have run pilot projects focusing on English-Spanish/Spanish-English to establish proof of concept for this groundbreaking and innovative approach.
CLINICAL INSTITUTES: INTEGRATING CARE AND RESEARCH

Epworth’s Clinical Institute structure is based around disease processes rather than the more traditional medical craft groups, and operates across all Epworth sites. It is intended to strengthen cross-disciplinary research among clinicians from varying backgrounds. The eleven institutes are active in undergraduate teaching, postgraduate training, clinical audit, professional development and collegiate activities as well as clinical research. This year saw the appointment of Dr Stephen Vaughan to the Chair of the Cancer Services Clinical Institute. Dr Vaughan is a senior medical oncologist with experience in both the public and private sector. He is keen to pursue new activities as well as clinical research.

During the past 12 months there has been an increased level of research activity across the Clinical Institutes, strongly supported by Clinical Trials and Research Centre staff and the ERI biostatistician. This important relationship will continue to increase the number and quality of research projects undertaken by clinicians, and drive multidisciplinary research within Epworth and across academic research partners.

The inappropriate use and overuse of antimicrobials (antibiotics) is believed to have contributed to the worldwide problem of escalating antimicrobial resistance in human bacterial pathogens. Bacterial antimicrobial resistance has been identified as one of the five major threats to humankind by the World Health Organisation. It is estimated that between 19–59 per cent of hospitalised patients are on antimicrobial therapy at any one time, and that 40–50 per cent of antimicrobial regimens prescribed in hospitals may be considered inappropriate. Antimicrobial stewardship works towards optimising antibiotic usage, through antimicrobial selection, dose, route and duration of therapy. The aim is to ensure the best clinical outcome for the treatment or prevention of an infection, whilst minimising unintended consequences such as the emergence of antimicrobial resistance and adverse events for patients. International studies have shown that health care facilities that adopt antimicrobial stewardship programs (ASPs) have been effective in curtailing resistance amongst local pathogens and improving care of patients, as well as delivering cost-efficient care.

Epworth Richmond is a major partner of the National Health and Medical Research Partnership Project looking to establish effective antimicrobial stewardship programs in Australian hospitals. Dr Megan Robertson is one of the Chief Investigators for the grant, and in late 2011, Mr Merino Cotta was appointed as the primary research fellow to assess the needs and determine key factors in developing an ASP model for private hospitals, specifically Epworth Richmond. The Epworth Richmond ASP project is the first of its kind in the Asia-Pacific region, and for many studies that form part of this project, a world-first in the private hospital sector. One example is a study investigating the appropriateness of antimicrobial prescribing. The study involves conducting a series of hospital-wide point prevalence surveys in each quarter of 2012. There have been two point prevalence surveys at Epworth Richmond, with a total of 884 patients and 368 antimicrobial orders reviewed. Point prevalence surveys have also been completed at Epworth Eastern and Epworth Freemasons. Final results assessing appropriateness will be collated and analysed after the final two surveys in 2012.

Another key study conducted during 2012 examined the attitudes and perceptions of Epworth medical and surgical staff, nursing staff and pharmacists towards antimicrobial resistance and use. A qualitative study exploring key differences between the private and public hospital systems will be conducted at Epworth Richmond prior to the end of 2012. It is envisaged that a model will be proposed in early 2013, and implemented shortly after. Epworth’s Antimicrobial Stewardship Committee will engage all stakeholders at Epworth Richmond during the next few months in what should be an exciting time for antimicrobial stewardship at Epworth and more broadly in the Australian private hospital sector.

IN PRIV ATE HEALTH CARE

LEADING ANTIMICROBIAL STEWARDSHIP IN PRIVATE HEALTH CARE

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In 2010/11, the inaugural Epworth Research Institute Grants were awarded to eight research projects at Epworth. Below, the grant recipients outline the progress of these projects as at the end of 2011/12.

ERI Grant 2010/11: $48,805
Strength training following traumatic brain injury
Principal Investigator: Dr Gavin Williams
Strength training is a major part of the rehabilitation programs provided to patients with neurological conditions, such as stroke or brain injury. The rationale for strength training is to improve a patient’s ability to generate muscle force so they can become more independent in daily activities. The aim of this project is to evaluate the task specificity of the rehabilitation programs provided to patients with neurological conditions, such as stroke or brain injury. The aim of this project is to evaluate the task specificity of the strength training programs provided to patients with neurological conditions, such as stroke or brain injury. The aim of this project is to evaluate the task specificity of the rehabilitation programs provided to patients with neurological conditions, such as stroke or brain injury.

ERI Grant 2010/11: $10,000
Skin temperature as an objective outcome measure for acute skin and soft tissue infection
Principal Investigator: Dr Michael Montalto
Skin and soft tissue infection (SSTI) is a common cause of illness. Despite this, there are few simple, objective ways to measure the severity and progress of the illness. The use of skin surface temperature may be an objective method for measuring the severity and the response to treatment of SSTI.

ERI Grant 2010/11: $7,500
Management of severe vitamin D deficiency in pregnancy
Principal Investigator: Dr Stephen Cole
This study is evaluating whether current international guidelines are effective in reaching vitamin D sufficiency over the course of pregnancy in women who are severely vitamin D deficient. Vitamin D deficiency is implicated in a range of important pregnancy outcomes for both mothers and babies.

Overall this analysis demonstrated that there was little evidence that the use of DIAM™ interspinous spacer provides additional benefit to patients compared to standard surgical intervention. An abstract was presented at the Spine Society Annual Meeting in April 2012. In addition an abstract and poster were accepted for Epworth Research Week in June 2012.

ERI Grant 2010/11: $7,000
Patient outcomes following dynamic intraspinous stabilisation
Principal Investigator: Mr Paul D’Urso
This observational study included three patient groups: a retrospective cohort using DIAM for dynamic intraspinous stabilisation, a prospective cohort using DIAM, and a control cohort who had non-DIAM treatments for degenerative spinal conditions. Descriptive case series data were produced for the three patient cohorts based on age, gender, diagnostic category and WorkCover status.

The difference between the affected and unaffected limb was 3.4°C (95% CI 3.0°C–3.9°C) at day 1 and 2.1°C (95% CI 1.7°C–2.6°C) on the last day, a difference of 1.3°C (95% CI 0.7°C–1.9°C).

So far recruitment is approximately 30 per cent complete, with the study expected to be completed in mid-2013.

ERI Grant 2010/11: $10,002.50
Measuring outcomes in hip and knee arthroplasty rehabilitation: developing and validating a tool based on the International Classification of Functioning, Disability and Health comprehensive score set for osteoarthritis
Principal Investigator: Dr Jen Maria Alviar
This study aims to develop and validate an outcome assessment tool for patients undergoing rehabilitation following joint replacement using the International Classification of Functioning, Disability and Health (ICF) core set for osteoarthritis as a starting point.

Existing patient-reported outcome instruments in arthroplasty rehabilitation do not fully address relevant areas of participation and environment, and they do not exhibit optimal measurement attributes for this purpose.

Application of the ICF core set in 316 individuals with osteoarthritis undergoing hip and knee joint replacement demonstrates that it can be utilised in the development of a clinical measure of function after modifying the categories and qualifiers. However, further investigations are needed in areas of targeting and instrument construction.

Data collection and data analysis have been completed, with three papers published in the Journal of Rehabilitation Medicine and presented in various local and international conferences. A thesis document is also being finalised.

The study, which looks at vitamin D levels in mothers and babies, has received a favourable response from both obstetricians and pregnant women.

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**Patient participation in acute cancer care: an international pilot study**

Principal Investigator: Emma Cohen

This is a research program that investigates patient participation in symptom management in acute cancer care.

The researchers have been liaising with Deakin University to develop a secure online survey to facilitate data collection. The online program will enable data to be entered directly into an iPad and exported into data management software SPSS. The development of the online survey is close to completion.

The study will commence in November 2012 and continue for 12 months. All doctors (medical oncologists, radiation oncologists and haematologists) with admitting privileges to the Oncology ward at Epworth Richmond have been contacted to inform them of the study. The oncology Nurse Unit Manager has been informed of the study and two in-service sessions with nursing staff have been conducted.

**Spontaneous nystagmus in the diagnosis of vertigo in the emergency department**

Principal Investigator: Davor Pavlin-Premrl

Acute vertigo is a common condition affecting more than 20 per cent of people, and has a differential diagnosis ranging from benign self-limiting pathologies to potentially fatal brain stem stroke. Accurate, early diagnosis and time-critical treatment can translate to earlier symptom relief, shorter hospital stay and earlier return to work. This study aims to measure the diagnostic accuracy of MRI plus a structured physical examination supplemented by close up eye movement video recording to determine if this can improve diagnostic accuracy in patients with acute vertigo, leading to effective treatment and more rapid resolution of symptoms.

The vestibular study recruited 28 patients and an abstract was presented at the Neuro-otology Society of Australasia in November 2011 and at the 13th Asian Oceanian Congress of Neurology in June 2012. The main paper from this study has been submitted to the Journal of Neurology, Neurosurgery and Psychiatry.

**Clinical and MRI study of transient ischaemic attack**

Principal Investigator: Monica Hatch

Transient ischaemic attacks (TIAs) are a risk factor for subsequent stroke, with some studies putting the risk of stroke at 30 per cent within seven days of a TIA. This study will aim to see how many patients with a TIA have ongoing symptoms or signs after the stated conclusion of the TIA, and whether this accounts for the high rate of acute strokes on early MRIs, and also the proportion of apparent recurrent strokes on later MRIs.

The TIA study encountered logistical issues in recruitment, but a pilot project is planned in preparation for a Melbourne-based multi-centre study. An abstract was presented at the Annual Scientific Meeting of the Stroke Society of Australasia, Adelaide, in September 2011.
PROMOTING RESEARCH

It is essential for research knowledge and outcomes to be translated into clinical practice and effectively communicated to all health care providers. Providing health professionals with the skills needed to undertake good clinical research studies is a key function of the Epworth Research Institute.

Research Week

The second annual Epworth Research Week was held from 4–8 June 2012, and delivered a series of high quality, innovative research presentations and a large research poster display at Epworth Richmond auditorium and corridors.

The novice researcher prize was awarded to Mr Menino Cotta for his poster entitled ‘Mobility following TBI: relationship to Dr Gavin Williams for his research for the second year running was presented at Epworth Richmond auditorium and corridors.

The established research poster award was delivered to Dr Gavin Williams for his research for the second year running was presented at Epworth Richmond auditorium and corridors.

Exceptional presentations and workshops were delivered during the week, and attracted record numbers of participants.

Presentations included:
- Aspin, antibiotics and cardiac surgery
- Professor Paul Myles
- Improving outcomes of hip and knee replacements with a population based joint replacement registry
- Professor Richard de Steiger
- Nursing research to inform clinical care, quality and risk management
- Professor Mari Botti
- 100 years of Aspin and its use in prevention
- Professor John McNeil
- Ethical leadership in medical research: where does it begin and where does it end?
- Professor Robert Wood
- Operative fixation of fractured ribs in flail chest injury
- Associate Professor Silvana Marasco
- Clots in cardiology: Epworth’s contribution to international multi-centre trials
- Associate Professor Ron Dick

Two workshops were also well received:
- Medical statistics made easy
- Mr Sean McGuigan

How to win research grants
- Ms Jo Garner

Research Week sponsors

Epworth Research Institute acknowledges the generosity of the following sponsors who contributed to an outstandingly successful 2012 Research Week.
- Abbott Vascular
- Air Liquide
- Amgen Australia
- Covidien
- EBOS Healthcare
- Lima Orthopaedics Australia Pty Ltd
- Mayo Healthcare Pty Ltd
- Synthes
- Private Donor (anonymous)

2012 research funding awards

Congratulations to the following recipients of Epworth Research Institute funding grants for 2012.

Major grants up to $50,000
- Professor Julian Feller $50,000
- ‘Factors influencing long-term outcome of anterior cruciate ligament reconstruction.’
- Ms Alicia Dymowski $49,949
- ‘To investigate the efficacy of longer term use of MP combined with individualised APT-3 training in a seven week drug trial.’
- Professor Rodney Sinclair $20,000
- ‘New targets for basal cell carcinoma.’

Small grants < $10,000
- Ms Clare Lumley $9,920
- ‘Redesign of the nursing care delivery system: developing an implementation framework.’
- Ms Bianca Fedele $6,251
- ‘Investigating the nature of the circadian sleep wake cycle and sleep architecture in patients in post-traumatic amnesia following traumatic brain injury: a pilot study.’
- Dr Nathan Johns $4,900
- ‘Rehabilitation following total knee replacement to improve cardiovascular fitness, function and quality of life in the elderly: a pilot study.’
- Ms Bridget Hill $2,880

Research breakfast meetings

Epworth Research Institute hosts regular research breakfast meetings to showcase the latest research conducted at Epworth. Since early 2012, the research breakfasts at Epworth Richmond were also teleconferenced to Epworth Eastern and Epworth Freemasons.

In May, Epworth Eastern hosted its first research breakfast, which was well attended and viewed by staff and visiting medical officers across the three acute Epworth hospital sites.

During the past twelve months the ERI research breakfast forums have attracted and engaged a large number of health professionals on topics including:
- ‘Anterior cruciate ligament reconstruction: are we getting too clever?’
- ‘Traumatic brain injury in older adults: does age matter?’
- ‘Active surveillance in the management of low risk localised prostate cancer’
- ‘Arterial coronary bypass grafts for everyone?’
- ‘Laparoscopic management of urinary tract trauma is feasible in many circumstances: a multi-institution perspective’
- ‘Patient outcomes after open and minimally invasive surgery for localised prostate cancer’
- ‘TBStrong: a trial of task specific strength training to improve mobility following TBI’
- ‘Exploring medication safety: examples of research around NSQHS Standard 4’
- ‘Non-melanoma skin cancer in Australia’
- ‘Transient ischaemic attack diagnosis.’

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- ‘Exploring medication safety: examples of research around NSQHS Standard 4’
- ‘Non-melanoma skin cancer in Australia’
- ‘Transient ischaemic attack diagnosis.’
BIOSTATISTICIAN SUPPORTS RESEARCH DESIGN AND ANALYSIS

In 2012, Epworth appointed biostatistician, Sean McGuigan, to design and support research efforts and provide high quality advice and assistance with data capture and management, study design, statistical analysis and interpretation. Other activities include assisting researchers with their Epworth Research Institute grant applications, and involvement with Epworth's Clinical Audit, Innovation & Reform Group.

Sean is a member of the Editorial Board of the recently-established Clinical & Translational Immunology journal and Adjunct Senior Research Fellow in the Department of Epidemiology & Preventive Medicine, Monash University.

Major ongoing tasks include the design and analysis of Professor Mari Botti’s longitudinal study of patient outcomes after surgery for prostate cancer; Dr Jane Fitzpatrick’s randomised trial of the effectiveness of platelet-rich plasma injections in gluteal tendinopathy; and Dr Gavin Williams’ randomised trial of strength and balance training following traumatic brain injury.

Data management is a perennial issue for researchers, particularly when relying on paper records and spreadsheets, as they can present major deficiencies. Sean has introduced an easy-to-use data entry/database package – EpiData – for Epworth researchers, and offers instruction and support in its use.

Sean is commencing statistical tutorial groups for Epworth clinicians and researchers, to provide an overview of important considerations with medical research design, without the need for a high level of statistical or mathematical knowledge.

Many clinical studies fail due to lack of proper planning and ERI believes having a biostatistician involved in the design stage will mitigate against this.

CLINICIAN-LED RESEARCH

Health professionals advancing care

The majority of research projects undertaken at Epworth are independently driven by health professionals with a passion for research and improving treatment and care for their patients. This investigator-led research is funded primarily through government, philanthropic trusts and donors, and is strongly supported and resourced by Epworth.

Nearly 120 investigator-led research projects are active across a significant number of clinical disciplines, including oncology, cardiology, psychology, dermatology, neurology, orthopaedics and anaesthetics. The following is a snapshot of some of these projects.

Post-operative injectate spread and block efficacy with continuous interscalene catheters following shoulder surgery.

Principal Investigator: Dr John Cormack

Continuous interscalene blockade is the current gold standard for analgesia following painful shoulder surgery. This study aims to correlate the ultrasound appearance of local anaesthesia injectate with the effectiveness of analgesia and nerve blockade for the first 24 hours post-operatively. Predicting the effectiveness of the blockade will be a useful future tool for individualising patient management overnight, and facilitating early discharge where appropriate. Conversely, a poor correlation will lead to a lower reliance upon ultrasound as a predictive tool for block effectiveness in the future.

TBStrong: A trial of task specific strength training to improve mobility following traumatic brain injury

Principal Investigator: Dr Gavin Williams

Dr Gavin Williams is a successful recipient of the prestigious 2012 NHMRC Early Career Fellowship funding round, and shares his time as a Neurological Physiotherapist at Epworth Richmond and Postdoctoral Research Fellow at the University of Melbourne.

Traumatic brain injury (TBI) can occur at any time in life, however the effects of TBI are particularly catastrophic in young adults, who may be dependent on a lifetime of care unless they are able to significantly increase their mobility and functionality. The TBStrong trial has recently commenced within the TBI unit at Epworth, and is a randomised controlled trial that will compare task-specific strength training with usual care.

The aim of the study is to explore whether task-specific strength training leads to better mobility outcomes.

Factors influencing outcomes following anterior cruciate ligament reconstruction

Principal Investigator: Associate Professor Julian Feller

Anterior cruciate ligament (ACL) rupture is a common and debilitating knee injury that affects young active people in particular. It can cause significant disability in terms of loss of function and secondary effects of cartilage damage leading to osteoarthrits.

This project will evaluate a large number of people undergoing reconstructive surgery for a torn ACL. The aim is to determine which factors have the greatest influence on three separate outcomes: return to activity following surgery; rupture of the reconstructed ACL or of the ACL in the other knee, and the subsequent development of osteoarthritis in the operated knee.

Funding has been secured for the first 100 of a total of 600 patients who will be recruited for this study. Participants will be followed for 10 years. However, data from this discrete subset of 100 patients will be analysed after two years follow-up with regard to return to sport and re-injury.
Over the next 12 months, Epworth Research Institute will continue its rapid growth, broadening both the spectrum of projects undertaken and the participation of patients and clinicians in research activities.

The Epworth Research Institute corpus aims to have $10 million invested within five years to fund the ongoing support of health-related research across Epworth through the annual Epworth Research Institute Grants. This initiative ensures that we build strongly on our own internal research programs, with the aim of funding early-stage projects that can subsequently compete for external funding opportunities.

The strength of medical research in Australia provides excellent opportunities to collaborate on important research projects both locally and nationally, and Epworth clinicians – including our six professors – are keen to further explore links with other researchers and research institutes.

To attract high quality studies and collaborative projects, we have appointed Ms Xenia Sango as our first Research Business Development Manager. Ms Sango will actively engage with potential research partners, including major pharma and contract research organisations, to ensure that Epworth is gaining access to the best commercial and collaborative studies available that fit with our clinical profile.

To improve research activity planning, governance and financial monitoring, Epworth is investing in a state-of-the-art computer-based clinical trials management system. This will enable our research staff to plan participant visits, track study progress according to preset timelines, and ensure that all aspects of trial management are seamlessly integrated across research, governance and financial requirements.

We look forward to reporting the outcomes of these important initiatives in our next Research Report.
During 2011/12 the Human Research Ethics Committee (HREC) – led by Reverend Professor Norman Young until his retirement, and then more recently by Reverend Professor Christiaan Mostert – continued its overview and support of research at Epworth. The Committee has developed a productive and responsive relationship with Epworth researchers, providing advice, assistance and encouragement.

Four main principles underpin the National Statement of Ethical Conduct in Human Research:

- respect
- research merit and integrity
- justice
- beneficence.

The HREC meets monthly to consider the ethical probity and methodological integrity of each research study to be undertaken across Epworth. Principal Investigators are invited to the meetings to present their study to the Committee members, who ask questions and provide advice to the researchers regarding ethical issues.

Over the past 12 months, the Low and Negligible Risk Sub-committee of the HREC chaired by Professor Mari Botti has provided rapid assessment and approval for low-risk research studies and provided significant guidance and advice for emerging research investigators.

The Committee aims to uphold the high standards of ethical research practice expected in the ever-changing health care environment, and to respond rapidly to continuing developments within health care, biomedicine and technology.

With the continued focus and advancement of teaching and research across Epworth sites, the HREC processes have continued to mature, enabling broader strategic and ethical issues to be dealt with ethically and responsibly, and ensuring those with diminished or no autonomy are empowered and protected.
## Research Projects 2011/12

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<td>Ms Bridget Hill</td>
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<td>Development of guidelines for return to driving following traumatic brain injury</td>
<td>Ms Pamela Ross</td>
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<td>DIA3010: efficacy, safety and tolerability of Canagliflozin compared with placebo in the treatment of older subjects with type 2 diabetes mellitus inadequately controlled on glucose lowering therapy</td>
<td>Dr Ian Fraser</td>
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<td>Does physical ability influence the activity levels of people with traumatic brain injury when they are discharged from hospital?</td>
<td>Dr Gavin Williams</td>
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<td>Effectiveness of a randomised controlled trial of a running program in neurological rehabilitation</td>
<td>Ms Michelle Kennedy</td>
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<td>Effects of age on outcome from mild traumatic brain injury</td>
<td>Professor Glynda Kinsella</td>
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<td>Efficacy and safety of Dysport used for the treatment of lower limb spasticity in adult subjects with hemiparesis due to stroke or traumatic brain injury</td>
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<td>Associate Professor Declan Murphy</td>
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<td>Accurate diagnosis in acute vertigo</td>
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<td>Attitudes to obesity in cardiac rehabilitation health professionals</td>
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<td>Audit of elective joint replacement and hip fracture rehabilitation outcomes</td>
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<td>Australasian maternity outcomes surveillance system (AMOSS)</td>
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<td>Australian Cardiac Procedure Registry (ACPR)</td>
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<td>Australian sessile colonic polypectomy audit</td>
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<td>Biomarkers in prostate cancer: utility in prognostication</td>
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<td>Blastogenesis defects and assisted reproductive technologies: a case control study</td>
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<td>CABERET: Carboplatin and Bevacizumab in recurrent glioblastoma multiforme (GBM)</td>
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<td>CADISS: carotid artery dissection trial</td>
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<td>Care coordination to support cancer patients undergoing adjuvant chemotherapy: a pilot study</td>
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<td>Dr Megan Robertson</td>
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<td>Gynaecological cancers data management project</td>
<td>Dr David Hansen, Associate Professor Robert Rome</td>
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<td>Have you SCAND Mme? To prevent harm in older emergency medical admissions to acute hospitals</td>
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<td>Hospital survey on patient safety</td>
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<td>ICARUSS: Integrated care for the reduction of secondary stroke</td>
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<td>Impact of a multifamily group intervention in family function, community integration and emotional adjustment following traumatic brain injury</td>
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<td>Interprofessional communication and team climate in complex clinical handover situations: issues for patient safety in the private sector</td>
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<td>Long-term safety and efficacy of repeated treatment of Dysport intramuscular injection in the treatment of lower limb spasticity in adult subjects with spastic hemiparesis due to stroke or traumatic brain injury</td>
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Retrospective QA review of patients who have received silicate substituted calcium phosphate Actifuse™ as a bone graft in a variety of orthopaedic procedures | Mr Timothy Whitehead
Safer Roads to Recovery: assessing readiness for driving after traumatic brain injury | Dr J Charlton, Dr Rene Stolwyk, Professor Jennie Ponsford
Safety and effectiveness of IV to oral 6-day Oxazolidinone compared to IV to oral 10-day comparator for the treatment of acute bacterial skin & skin structure infections (ABSSSI) | Professor Rod Sinclair
Safety, efficacy, pharmacokinetics and pharmacodynamics of ASKP1240 in subjects with moderate to severe plaque psoriasis | Professor Richard Gerraty
Sexuality following traumatic brain injury | Professor Rod Sinclair
Six-pack falls prevention project to minimise falls in patients whilst in hospital | Dr Anna Barker
SMILE: safety, efficacy and pharmacokinetics of recombinant human soluble Fc-gamma receptor IIb (SM101) for intravenous application in the treatment of systemic lupus erythematosus (SLE) | Dr Ian Fraser
Start-Prepare: stroke thrombolysis trial | Professor Amanda Thrift
T3 Trial. Triage, treatment & transfer of patients with stroke in emergency departments | Dr S Middleton
Three-dimensional motion analysis of mobility following traumatic brain injury | Dr Gavin Williams
TIPS: changing the health system to increase the adoption of ‘clot busters’ in stroke treatment | Professor Richard Gerraty
Tissue specific regulation of cortisol via 11β hydroxysteroid dehydrogenase 1 and the metabolic syndrome | Dr Christina Jang
Translation of evidence into pain management practices in acute care environments | Professor Mari Botti
TyN Lapatinib and Vinorelbine in women with previously treated HER2Neu-positive metastatic breast cancer. | Dr Rick de Boer
Video-oculographic detection and evolution of vestibular physical signs in vestibular neuritis | Professor Richard Gerraty
PUBLICATIONS 2011/12

Effectiveness of pain management

Fear of re-injury in people who
Thirty day outcome and quality of
Study group ENGAGE investigators
Pol RA, Zeebregts CJ, van
Webster KE, Santamaria LJ,
and Exercise
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biomechanics after anterior
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<th>PUBLICATIONS 2011/12 CONTINUED</th>
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<tr>
<td><strong>Ewpoth Posters and Presentation Abstracts 2011/12</strong></td>
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<td>2. <strong>Alviar MJ.</strong> Do patient reported outcomes in hip and knee arthroplasty rehabilitation have robust measurement attributes? Australian and New Zealand Spinal Cord Society and Australasian Faculty of Rehabilitation Medicine ASM, Brisbane, 13–16 Sept 2011.</td>
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<td>10. <strong>Cher L.</strong> Medical management of brain tumours: therapeutic progress. 7th World Congress for NeuroRehabilitation, Melbourne, 17–19 May 2012.</td>
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<td>14. <strong>De Boer R.</strong> Predictive assays – will these become routine? 8th Scientific Meeting of Australasian Society for Breast Disease, Melbourne 6–8 Oct 2011.</td>
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<td>20. <strong>Feller JA.</strong> Single bundle ACL reconstruction can provide satisfactory control of tibial rotation. 9th FOSMA and 22nd Chinese Arthroscopy Conference, Shanghai, China.</td>
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<td>21. <strong>Feller JA.</strong> The significance and methods of changing the anchor points in ACL reconstruction. 9th FOSMA and 22nd Chinese Arthroscopy Conference, Shanghai, China.</td>
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<td>25. <strong>Ardern CL, Taylor NF, Feller JA, Webster KE.</strong> Return to sport outcomes at 2 to 7 years following ACL reconstruction. Biannual Meeting of the Anterior Cruciate Ligament Study Group, Jackson Hole, USA.</td>
</tr>
</tbody>
</table>
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