EPWORTH
THE UNIVERSITY OF
MELBOURNE
CHAIR OF SURGERY

ANNUAL REPORT

JULY 2013 – JUNE 2014

Professor Richard de Steiger
Epworth Victor Smorgon Chair of Surgery
The University of Melbourne

Chairman Musculoskeletal Clinical Institute
TABLE OF CONTENTS

INTRODUCTION ................................................................................................................................. 3
  Staff .............................................................................................................................................. 3
HIGHLIGHTS ....................................................................................................................................... 3
  Population Health ......................................................................................................................... 3
  Computer Navigation .................................................................................................................. 3
  Epworth Musculoskeletal Research Centre .................................................................................. 4
NEW RESEARCH PROJECTS ............................................................................................................... 4
ONGOING RESEARCH PROJECTS .................................................................................................... 5
COMPLETED RESEARCH PROJECTS .................................................................................................. 5
PUBLICATIONS .................................................................................................................................... 6
  Papers ............................................................................................................................................ 6
  Papers attributed to role as Deputy Director, Australian Orthopaedic Association – National Joint Replacement Registry .................................................................................................................. 7
  Accepted for Publication .............................................................................................................. 7
  Book Chapters ............................................................................................................................. 8
PRESENTATIONS ................................................................................................................................... 8
  Scientific Presentations - International & National ....................................................................... 8
  State Presentations ....................................................................................................................... 9
  Invited Faculty Presentations ....................................................................................................... 10
  Posters ......................................................................................................................................... 10
CONFERENCE ORGANISATION ......................................................................................................... 11
GRANT APPLICATIONS .................................................................................................................... 11
GRANTS AWARDED .......................................................................................................................... 11
TEACHING ......................................................................................................................................... 12
  The University of Melbourne ........................................................................................................... 12
  Monash Medical Students ............................................................................................................. 12
  Teaching - Modules Completed .................................................................................................... 12
  University of Melbourne Scholarly Selective Project .................................................................. 12
ACADEMIC APPOINTMENTS / REVIEW COMMITTEES ................................................................... 13
JOURNAL REVIEWER / EDITORIAL BOARD .................................................................................... 13
INTRODUCTION

In August 2010 Epworth HealthCare and the University of Melbourne established the inaugural Victor Smorgon Chair of Surgery. During the last three years The Department of Surgery has continued to define the objectives and goals for surgical services, ensuring commitment to patient care, teaching, audit and research.

Richard de Steiger M.B.BS.  F.R.A.C.S.  F.A.Orth.A.
Epworth Victor Smorgon Chair of Surgery, The University of Melbourne
Chairman Musculoskeletal Clinical Institute, Epworth HealthCare

STAFF

Diana Royce
Executive Assistant/Researcher

Leah Salmon
Research Assistant

HIGHLIGHTS

POPULATION HEALTH

Professor de Steiger has collaborated with the University of Melbourne Epi Centre in population based studies investigating the lifetime risk of both total hip and total knee joint replacements. This research has demonstrated an increase in lifetime risk for patients undergoing lower limb arthroplasty in Victoria and identified disparities relating to healthcare setting and socio economic status. These studies will have important implications for public health policy.

COMPUTER NAVIGATION

Professor de Steiger has continued his research into the use and evaluation of computer navigation for knee replacement and fixation of traumatic pelvic and acetabular fractures. Computer navigation for fracture surgery results in improved accuracy of the position of the screws. Professor de Steiger has reviewed over 44,000 total knee replacements performed in Australia with data from the Australian Orthopaedic Association National Joint Replacement Registry. This has shown that there is a reduced rate of revision for patients under the ages of 65 when performing total knee replacement with navigation. This work has been presented at two major international orthopaedic meetings this year, in the United States in March and in the United Kingdom in June. The paper has been submitted to Journal of Bone and Joint
Surgery (American) and provisionally accepted for publication. The research on pelvic fracture fixation has been submitted to Injury.

EPWORTH MUSCULOSKELETAL RESEARCH CENTRE

The Epworth Musculoskeletal Research Centre has been registered. The laboratory equipment essential for tissue processing has been purchased through the Epworth Foundation and Professor de Steiger is deeply grateful to Dr Alison Puzey for her generous donation. A research scientist will be employed in conjunction with the University of Melbourne and activity will commence in the second half of 2014. A previous Epworth Research Grant was awarded in 2013 and an NHMRC grant application investigating molecular mechanisms of pain in knee osteoarthritis is pending review.

NEW RESEARCH PROJECTS

- Improving Services and Outcomes for Joint Replacement Patients

  **Project description**

  This is a multicentre national study being conducted by investigators from the Whitlam Orthopaedic Research Centre in Sydney NSW.

  The study aims to investigate the relationship between variation in acute care processes and patient compliance with discharge instructions with patient outcome after primary hip and knee joint replacement surgeries. This study will collect data on 2200 patients from public and private hospitals across Australia. The compliance with key clinical guideline and evidence will be used to describe compliant processes. The results will be used to develop an effective model of care for joint replacement surgery.

  Epworth Richmond has recruited 93 patients in 2013 - 2014

  **Chief Investigator**

  Professor Ian Harris

  **Contributing surgeons at Epworth HealthCare:**

  Professor Richard de Steiger, Mr Justin Hunt, Professor Julian Feller

- Patient participation in postoperative care activities: Improving the patient experience

  Professor Mari Botti, Professor Richard de Steiger, Joanne Mcdonall (PhD Candidate) (Epworth HREC Submitted). Recruitment commenced.
ONGOING RESEARCH PROJECTS

- Developing and validating a new articular cartilage material model
  Dale Robinson, Professor Marcus Pandy & Professor Richard de Steiger. (Epworth HREC 54412)

- DEXA Analysis of Conventional Rigid vs. Elastic Uncemented Acetabular cups
  Professor Richard de Steiger (Principal Investigator), Dermot Collopy, Mark Gillies, Jan Rodda, Harry Tsigaras. (Epworth HREC 56512)

- An Intelligent Risk Detection Solution to Improve Decision Efficiency in the Context of Hip & Knee Interventions
  Professor Nilmini Wickramasinghe ( Responsible Investigator), Professor Richard de Steiger, Dr Jonathan Schaffer (External Research Partner). (Epworth HREC LR08912)

- The investigation of best practices for pain management in joint arthroplasty patients.
  Australian Research Council (ARC) Linkage Grant with Professor Mari Botti

- Patient-specific computational tools for evaluating functional performance of total knee replacements in vivo.
  Australian Research Council (ARC) Linkage Grant with Professor Marcus Pandy – Chair of Mechanical & Biomedical Engineering, The University of Melbourne. (Ethics ID: 1033086)

COMPLETED RESEARCH PROJECTS

- ‘A comprehensive audit on blood transfusion practice in total hip replacement surgery’
  Dr Sam Wong – Paper submitted to ANZ Journal of Surgery

2. B. Gabbe, D.J. Hofstee, M. Esser, A. Bucknill, M.K. Russ, P.A. Cameron, C. Handley, R.N. de Steiger
   Functional and return to work outcomes following major trauma involving severe pelvic ring fracture
   ANZ Journal of Surgery – Epub ahead of print 30 May 2014

   Quantifying the excess cost and resource utilisation for patients with complications associated with elective knee arthroscopy: A retrospective cohort study
   The Knee 2014 March 21 (2) 491-496

4. M. Bohensky, I. Ackerman, R.N. de Steiger, A. Gorelik, C. Brand
   Lifetime risk of total knee replacement and temporal trends in incidence by health care setting, socioeconomic status and geographic location
   Arthritis Care & Research. March 2014, 66 (3) 424-431

   Knee surgery recovery: Post-operative Quality of Recovery Scale comparison of age and complexity of surgery.
   Acta Anaesthesiol Scand. 2014,58 Pg660-667

6. Bohensky M, Ackerman I, de Steiger R, Gorelik A, Brand C.
   Lifetime risk of total hip replacement surgery and temporal trends in utilisation: A population-based analysis.

7. B.J. Gabbe, M. Esser, A. Bucknill, M.K Russ, D-J. Hofstee, P.A. Cameron, S. Handley, R.N. de Steiger
   The Imaging and classification of severe pelvic ring fractures: Experiences from two Level 1 Trauma Centres.
   J Bone Joint Surg. (Br) 2013, 95 (10): 1396

8. F.H. Moghimi, R.N. de Steiger, J. Schaffer and N. Wickramasinghe
PAPERS ATTRIBUTED TO ROLE AS DEPUTY DIRECTOR, AUSTRALIAN ORTHOPAEDIC ASSOCIATION – NATIONAL JOINT REPLACEMENT REGISTRY


ACCEPTED FOR PUBLICATION


SUBMITTED FOR PUBLICATION

1. R.N. de Steiger, Yen-Liang Liu, S.E. Graves *The Outcome of Computer navigation for Total Knee Arthroplasty* Journal Bone & Joint Surgery (Am) 2014 June


1. N. Wickramasinghe, H. Moghimi, P. Haddad, R.N. de Steiger, J. Schaffer
   Leveraging Key Aspects of Collaborative Techniques to Assist Clinical Decision Making: The Case of Total Hip and Knee Arthroplasty

**BOOK CHAPTERS**

The Hip: Preservation, Replacement and Revision.

**PRESENTATIONS**

**SCIENTIFIC PRESENTATIONS - INTERNATIONAL & NATIONAL**

2014

- **3rd International Congress of Arthroplasty Registries (ISAR). Boston.** 31 May - 2 June
  1) The outcome of revising a Hip Resurfacing Arthroplasty
  2) How Registry ID’s outlier Prostheses
  3) Database management

- **European Federation of National Associations of Orthopaedics & Traumatology (EFORT).** June
  1) The outcome of computer navigation for primary knee arthroplasty
  2) The outcome of Cross-Linked and non Cross-Linked Polyethylene in Primary Total Knee Replacement.
  3) The outcome of Cross-Linked and non Cross-Linked Polyethylene in Primary Conventional Total Hip Replacement
  4) How does the surgeon influence the results of joint replacement?
  5) Identification of Prosthesis Outliers and Implications
● **Australian Arthroplasty Society, Annual Scientific Meeting, Freemantle** 21-25 May
  1) **NJRR Update: Learning Curves and New Prostheses**
  2) **Comparison of Corail and Taperloc Stems to ‘look-a-like’ Copies**

● **Combined ANZCA Annual Scientific Meeting & RACS Annual Scientific Congress Singapore.** 5-9 May
  1) **How Registries Improve Quality of Care**
  2) **Registries – How they can change clinical practice (Plenary Session)**

● **American Academy of Orthopaedic Surgeons (AAOS)** 11-15 Mar
  1) **The Outcome of Computer Navigation for primary Knee Arthroplasty**
  2) **The Outcome of Cross Linked & Standard Polyethylene in Primary total Knee Replacement**

---

2013

● **Australian Orthopaedic Association, Annual Scientific Meeting, Darwin** October
  1) **Registry Update: Arthroplasty for fractured neck of femur.**
  2) **Registry Update: Outcomes of Hip Arthroplasty**
  3) **The outcome of computer navigation for primary knee replacement**
  4) **Dilemma in revision hip and knee arthroplasty**

● **51st Annual Girdlestone Orthopaedic Society Meeting. Torbay – England** September
  1) **How the Registry Identifies Outliers**

● **10th Computer Assisted Orthopaedic Surgery (CAOS) Asia Pacific Meeting Cairns** July
  1) **The Value of CAS for Pelvic Trauma**
  2) **Computer Navigation for TKR**
  3) **How has CAS changed in the last 15 years**

● **Sesamoid meeting** July
  1) **Case Conference Presentation**

---

**STATE PRESENTATIONS**

● **AOA Victorian ASM** 28 Feb – Mar
  1) ‘**How the Registry Identifies Outlier Prostheses**’
invited faculty presentations

2014

- **5th Annual Current Concepts in Knee Joint Replacement.**
  Taiwanese Knee Association - Taipei  
  1) *Patella Resurfacing in TKA: Rationale. Technique*  
  2) *CR vs PS Knee: What the Registry Says*  
  3) *Patient Dissatisfaction following TKA: A growing concern*  
  4) *Highly X-Linked Poly: To the Infinity- What’s New & What’s the News?*  
  5) *The outcome of computer navigation for total knee arthroplasty in 44,000 cases*

- **Centre of Research Excellence in Patient Safety (CREPS).**  
  1) *How Registries Improve Quality of Care*

2013

- **Epworth HealthCare – Twilight Hip Seminar**  
  1) *Surgical management of complex elective hip surgery*

- **Royal Childrens Hospital – Symposium: How to treat residual Perthes**  
  2) *Perthes management in the Adult*

- **Mathys: Innovations, Technology & Trends Forum (Syd)**  
  1) *Monobloc cups – the right solution?*  
  2) *Changing approach and implant at the same time – good or bad?*

posters

2013

- **Australian Orthopaedic Association, Annual Scientific Meeting (Darwin)**  
  ‘*Lifetime risk of total knee replacement.*’  
  de Steiger R.N., Bohensky M., Ackerman I., Gorelik A., Brand C
CONFERENCE ORGANISATION

Professor Richard de Steiger was a member of the Executive Organisation Committee

- Combined ANZCA Annual Scientific Meeting & RACS Annual Scientific Congress
  Singapore

GRANT APPLICATIONS

NHMRC Grant Applications

- **GRANT APP1078507**
  ‘Arthroplasty Surgical Antibiotic Prophylaxis Study’
  Prof P Choong, A/Prof C. Marshall, A/Prof K Buising, Dr M Dowsey, Prof R Crawford,
  Prof de Steiger

- **GRANT APP1085240**
  ‘Towards a rational strategy for osteoarthritis therapy’
  Prof J Hamilton, Dr A Cook, Prof R de Steiger

- **GRANT APP1083497**
  ‘The Red Amber Green (RAG) Study’
  Prof P Choong, Dr M Dowsey, Dr M Nikpour, Prof D Howie, Prof R de Steiger

GRANTS AWARDED

2014 Epworth Research Institute

$41,692 Grant

- ‘The Role for predicative Analytics to Leverage healthcare’
TEACHING

THE UNIVERSITY OF MELBOURNE

Number of Students – 8 weekly

Aug - Nov

MONASH MEDICAL STUDENTS

Number of Students – 6 weekly

Feb - Nov

TEACHING - MODULES COMPLETED

Teaching Modules updated

- Pre-operative surgical care
- Upper Limb Peripheral Nerve Examination

UNIVERSITY OF MELBOURNE SCHOLARLY SELECTIVE PROJECT

- ‘The Measurement of Acetabular Cup position in Total Hip Replacement’.
  University of Melbourne Scholarly Selective Student 2014.
ACADEMIC APPOINTMENTS / REVIEW COMMITTEES

- Definitive Surgical Trauma Care (DSTC)
- Department of Health & Aging - Hip Prostheses Clinical Advisory Group (HPCAG)
- Australian Orthopaedic Association – National Joint Replacement Registry (AOA-NJRR)
- Victorian / Tasmanian Regional Training Committee (VTRTC)
- Medical Undergraduate Medical Subcommittee (MUTS)
- Melbourne University Faculty Advisory Council _ Faculty of Medicine, Dentistry & Health Sciences`
- International Society Arthroplasty Registers (ISAR) Executive
- Epworth Anti-Microbial Stewardship (AMS) Steering Committee
- Epworth Theatre Improvement Program Steering Committee
- Teaching Hospital Steering Committee (THSC)

JOURNAL REVIEWER / EDITORIAL BOARD

- ANZ Journal of Surgery
- ACTA Orthopaedica
- Journal of Orthopaedic Surgery