

RBWH

TWENTY

20

RESEARCH REPORT

Metro North
Health



Queensland
Government

**SURGICAL AND
PERI-OPERATIVE SERVICES**

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Surgical and Perioperative Services



Dr Barry O'Loughlin
Director of Surgery
Surgical and Perioperative Services

The service line provides a broad range of secondary and tertiary surgical and perioperative services to the people of Metro North Hospital and Health Service District, and wider Queensland. This is integrated with an established commitment to clinical research and quality improvement.

2020 was of course the year of the Covid 19 pandemic. In spite of periodic disruption to normal business, research activity was maintained at a high level by many Departments within the service line, and significant funding grants were obtained by clinician researchers.

In addition to traditional links with research partners the RBWH Foundation, University of Queensland, Queensland University of Technology, Griffith University, UQCCR and QIMR Berghofer, newer partnerships flourished with the Jamieson Trauma Institute and the Herston Biofabrication Institute. Each is headed up by a surgeon, Professor Michael Schuetz (Orthopaedic Surgery) and Dr Michael Wagels (Plastic and Reconstructive Surgery) respectively, both of whom hold clinical appointments with Surgery and Perioperative Services.

Some highlights in research in 2020 were:

Staff of the department of Anaesthesia and Perioperative medicine published more than 50 scientific papers.

Dr Andrew Stevenson, senior Visiting Surgeon in Colorectal Surgery was awarded a full Professorship by the University of Queensland in recognition of his academic contribution to his speciality.

A 2020 Metro North grant matched by Department of Surgery supported the appointment of a Research Coordinator for General Surgery, Burns and Trauma.

RBWH Healthcare Symposium – a session of presentations from a multidisciplinary team (JTI, Orthopaedic Surgery, Plastic and Reconstructive Surgery and Infectious Diseases), on Implant Related Infection – the Science and Clinical implications.

RBWH Foundation Researcher Support Award highly commended – Dr Matthew Roberts, Staff specialist, Department of Urology.

In late 2020 Anglo American donated \$1 million to the RBWH Foundation for burns and trauma care. This was in recognition of the care provided by the Professor Stuart Pegg Burns Unit to miners injured at the Grosvenor Mine. The funds supported RBWH Foundation Research Fellowships and projects at the Herston Biofabrication Institute, Queensland Skin Culture Centre and in psychological support for burn injured patients.

Department of Anaesthesia and Perioperative Medicine

The year that was 2020 was an incredibly challenging one for everyone, which makes the efforts of all those we work with, very impressive. When the impact of Covid-19 restrictions began, our usual research processes were modified or put on hold. Despite all the challenges, the Department of Anaesthesia & Perioperative Medicine have produced high level research with over 30 peer-reviewed publications, 3 book chapters and continue to have a strong focus on investigator lead research to improve anaesthesia outcomes for our patients.

We would like to acknowledge the amazing efforts of all researchers and highlight a few achievements in research for 2020. **Dr Julie Lee** and authorship team was awarded Best Paper for the International Journal of Obstetric Anaesthesia 2020 for the article, *Baseline parameters for rotational thromboelastometry (ROTEM®) in health pregnant women: A comparison of labouring women and non-labouring women in Australia*. We are proud to announce that **A/Prof Victoria Eley** was awarded a Clinician Research Fellowship with MNHHS.

With many new research opportunities in our forecast for 2021, our aim of research in the Department of Anaesthesia & Perioperative Medicine is to advance optimal anaesthesia care for patients based on world class, research based clinical practice.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Julie Lee	Best paper 2020	International journal of obstetric anaesthesia
Victoria Eley	Metro North Clinical Research Scholarship	
Kerstin Wyssusek	2020 QuARRIES Award Winner- consumer focus	2020 QuARRIES Awards
Kate McCrossin	'2021 Healthcare Improvement Fellowship Award'	
Andre van Zundert	Editor's Choice: Best article of the month	Anesthesiology Sept 2020
Andre van Zundert	Editor's choice: work presented on cover British journal of Anaesthesia – Dec 2020	British journal of Anaesthesia – Dec 2020

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Christine Woods, Nathan Peters	Research Interest Group in Anaesthesia	Ultrasound-guided placement of difficult peripheral intravenous cannulation after-hours: The Night-time DIVA Project	Capital Grant Round: RBWH PPTF Education/Training & Research	\$17,400	2020
Julie Lee	RIGA/Anaesthetic Department	ROTEM® and platelet function in pre-eclampsia obstetric patients	HOW Collaborative HSANZ Clinical Fellowship Award October 2019	\$60,000	2019-2020
Julie Lee	RIGA/Anaesthetic Department	ROTEM® and platelet function in pre-eclampsia obstetric patients	HOW Collaborative HSANZ Clinical Fellowship Award October 2019	\$60,000	2019-2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Victoria Eley	RIGA/Anaesthetic Department	Do pre-delivery antibiotics affect the neonatal microbiome and immune system? Intravenous Cefazolin v Placebo before elective caesarean section: RCT Feasibility Study	Children's Hospital Foundation	\$50,000	2020- 2022
Angela Tognolini	RIGA/Anaesthetic Department	Intraoperative lignocaine infusions: Development of an optimised infusion dosing regimen for obese patients	RBWH & Foundation Scholarship	\$44,977.62	2019-2020
Michelle Roets	RIGA/ Anaesthetic Department	Intraoperative cell salvage as an alternative to allogeneic blood transfusion, comparing usage potential and cost effectiveness	RBWH & Foundation Scholarship grant	\$44,977.62	2019-2022

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Victoria Eley	Rebecca Christensen, Helen Barrett, Michael Stowasser, Matthew Smith, Andre van Zundert	A validation study of blood pressure readings from the ClearSite finger- cuff compared with invasive blood pressure readings in pregnant women undergoing elective caesarean section, who have arms which don't suit regular arm cuffs	15	15
Kerstin Wyssusek	Paul Gray, Sandra Concha Balmey, Andre van Zundert, Christine Woods, Heather Reynolds	A cross-sectional study of the relationship between iron deficiency anaemia and chronic pain in patients presenting to a multidisciplinary pain centre in a tertiary referral teaching hospital	82	82
Victoria Eley, Adrian Chin	Anita Pelecanos, George Hopkins, Moe Thuzar, Severine Navarro, Michael Stowasser	In patients presenting for bariatric surgery with a BMI >35 kg/m ² , what is the diagnostic accuracy of arm conicity in identifying >10mmHg error between invasive radial arterial blood pressure monitoring and automated non-invasive blood pressure monitoring?	18	26
Adrian Chin	Victoria Eley, David Belavy, Angela Tognolini, Anita Pelecanos, Christine Woods	A prospective, observational study of anaesthesia healthcare workers' interactions with COVID-19 positive patients and the occupational risk factors associated with contracting COVID-19	9	9
Andrew Souness, Angela Tognolini, Dwane Jackson	David Taylor, Craig Harris, Rachel Esler, Nicholas Black, Kerstin Wyssusek	Near-infrared spectroscopy (NIRS) monitoring for early detection of lower limb ischaemia in pelvic exenteration surgery	1	1

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Andrew Souness, Angela Tognolini, Dwane Jackson	David Taylor, Craig Harris, Rachel Esler, Nicholas Black, Kerstin Wyssusek	Utility of non-invasive and continuous total haemoglobin (SpHb) monitoring in pelvic exenteration surgery	10	10
Christopher Futter, George Pang	Mark Trembath, Kerstin Wyssusek	Use of 3D printed models for training anaesthetists in magnetic ultrasound guided thoracic epidural catheter placement	0	0
Angela Tognolini, Anthony Hodge, Victoria Eley	Adrian Chin, David Belavy, Elizabeth Martin, Christine Woods	Prospective observational study of the anaesthetic and perioperative management of patients with confirmed or suspected coronavirus disease 2019 (COVID-19)	9	9
Nathan Peters	Sandali De Alwis, Joanna Yu, Daniel Waters, Christine Woods	A retrospective clinical audit investigating the prevalence of Difficult Peripheral Intravenous Access (DIVA) for patients at the RBWH	121	121

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Trisha Peel	Prof Peter Choong, Prof Allen Cheng, Prof David Paterson , A/Prof Kirsty Buising, A/Prof Michelle Dowsey, Prof Ross Crawford, Prof Richard de Steiger, Dr Tim Spelman, Prof Philip Clarke, Dr An Duy Tran, Prof Ben Howden, Dr Peter Rehfish, Dr Robert Molnar, Dr Victoria Eley Site PI for RBWH	Multicentre Randomised Double-Blind Placebo Controlled Trial of Combination Vancomycin and Cefazolin Surgical Antibiotic Prophylaxis	38	43
David Liu	Michael Reade, Jason Pincus, Elizabeth Hallt, Alanna Platz, Melissa Lassig-smith, Christine Woods, Kymberley Herbst, Alain Humblet	A randomised, double-blind, single-centre, placebo-controlled trial of low-dose clonidine infusion to enhance sleep in post-operative patients in the High Dependency Unit	45	86
Alvin Obed, Christopher Futter	Paul Schlosser, Penelope Sanderson, Christine Woods, Kerstin Wyssusek	The use of Head-Mounted Displays to detect patient deterioration in a simulated trauma setting	7	7
Kerstin Wyssusek	Sandra Concha Blamey, Hannah Reynolds, Makarla Stead, Christine Woods, Carl Lisec, Susan Petrie, Alison Mudge, Sharon Neilson	Acute Surgery PErioperative Collaboration Team Quality Improvement Program. The ASPECT QI	293	293

Research Publications

Journal Articles

1. **Barach P, van Zundert A.** Addressing medication harm head on. A look at best medication safety practices. *Omnia Health* 2020;15(4):30-33
2. **Ceglowski P, Lehane K, Chow C, Pelecanos A, Tognolini A, Eley VA.** Arm dimensions of patients with obesity and their experiences with blood pressure measurement: an observational study. *Obesity* 2020; 28: 718-723
3. Chawla G, Casey P, Harrocks A, McLellan E, **Eley VA.** A survey of anaesthetists' experience and perspectives of perioperative anaphylaxis at an Australian tertiary hospital. *Acta Anaesthesiologica Belgica* 2020 (In Press)
4. Chow C, Ceglowski P, Lehane K, Pelecanos A, Wren K, **Eley VA.** Upper limb dimensions in adults presenting for elective surgery – implications for blood pressure measurement. *BMC Anesthesiology* 2020 (In Press)
5. **Christopher Chow, Peter Ceglowski, Katie Lehane, Anita Pelecanos, Kellie Wren, Victoria Eley.** Upper limb dimensions in adults presenting for elective surgery- implications for blood pressure measurement. *BMC Anesthesiology* BANE-D-19-00845R2.2020.Apr.4doi:10.1186/s12871-020-00994-z
6. Dean MM, Obeysekera MP, Tran TV, Sturgess D, **Wyssusek K, van Zundert A,** Gordon KG, Da Silva D, Punnasseril J, Tung J-P, Flower RL, **Roets M.** Autologous intraoperative cell salvage ameliorates suppression of transfusion-related monocyte and dendritic cell inflammatory responses. *J Immunol* May 1, 2020, 204 (1 Supplement) 220.31. https://www.jimmunol.org/content/204/1_Supplement/220.31
7. **Eley VA, Christensen R, Ryan R, Jackson D, Parker SL, Smith M, van Zundert AA, Wallis SC, Lipman J, Roberts JA.** Prophylactic Cefazolin Dosing in Women with Body Mass Index >35kg.m⁻² Undergoing Cesarean Delivery: A Pharmacokinetic Study of Plasma and Interstitial Fluid. *Anesth Analg* 2020 April 1. doi:10.1213/ANE.0000000000004766
8. Endlich Y, **Lee J,** Culwick M. Difficult and failed intubation – in the first 4000 incidents reported to WebAIRS. *Anaesth Intensive Care* 2020;48(6):477-87. <https://doi.org/10.1177/0310057x20957657>
9. **Hade, AD.** Estimating the risk of an anaesthetist acquiring COVID-19 by anaesthetising an asymptomatic patient. *Anaesthesia and Intensive Care* (2020): 0310057X20937316
10. **Hodge A,** Rapchuk IL, Gurunathan U. Postoperative Pain Management and the Incidence of Ipsilateral Shoulder Pain After Thoracic Surgery at a Australian Tertiary-Care Hospital: A Prospective Audit. *Journal of Cardiothoracic and Vascular Anesthesia* 2020 <https://doi.org/10.1053/j.jvca.2020.07.078>
11. **Lawrence S,** Malacova E, Reutens D Sturgess DJ. Increased maternal body mass index is associated with prolonged anaesthetic and surgical times for caesarean delivery but is partially offset by clinician seniority and established epidural analgesia. *Aust N Z J Obstet Gynaecol* 2020; 1-9. DOI: 10.1111/ajo.13277
12. **Lee J, Eley VA, Wyssusek KH, Coonan E, Way M, Cohen J, Rowell J, van Zundert AA.** Baseline Parameters for Rotational Thromboelastometry (ROTEM) in Healthy Women Undergoing Elective Caesarean Delivery: A Prospective Observational Study in Australia. *Obstet Anesth Digest*.40(1):21, March 2020
13. **Lee J, Eley V, Wyssusek K, Kimble R, Way M, Cohen J, van Zundert A.** The influence of obesity on coagulation in healthy term pregnancy as assessed by rotational thromboelastometry (ROTEM®). *Aust N Z J Obstet Gynaecol* 2020;60(2):1-6. <https://doi.org/10.1111/ajo.13141>
14. **Lee J, Wyssusek K, Kimble R, Way M, van Zundert A, Cohen J, Coonan E, Rowell J, Eley V.** Baseline parameters for rotational thromboelastometry (ROTEM®) in health pregnant women: A comparison of labouring women and non-labouring women in Australia. *Int J Obstet Anesth* 2020;41:7-13. <https://doi.org/10.1016/j.ijoa.2019.10.003> - **voted The Best IJOA Paper for 2020**
15. **Lee J, Eley V, Wyssusek K, Kimble R, Way M, Cohen J, van Zundert A.** The influence of obesity on coagulation in healthy term pregnancy as assessed by rotational thromboelastometry (ROTEM®). *Aust N Z J Obstet Gynaecol* 2020;60(2):1-6. <https://doi.org/10.1111/ajo.13141>
16. **Lee J.** How COVID-19 has impacted public and private practice. *Australian Anaesthetist* Sept 2020: 36-38

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17. Lim MJ, Tan CW, Tan HS, Sultana R, **Eley VA**, Sng BL. Correlation of patient characteristics with arm and finger measurements in Asian parturients: a preliminary study. *BMC Anesthesiology* 2020 (In Press)
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18. **Pang G, Futter C, Pincus J, Dhanani J, Laupland KB**. Development and testing of a low cost simulation manikin for extracorporeal cardiopulmonary resuscitation (ECPR) using 3-dimensional printing. *Resuscitation*.2020 Feb 8 doi:10.1016/j.resuscitation.2020.01.032
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19. Paterson N, Lee-Archer P, Shirley A, **Lee J**. Pediatric liver transplantation in Australia and New Zealand: The case for a collaborative anesthetic database. *Pediatr Anesth* 2020 (accepted Nov 2020). <https://doi.org/10.1111/pan.14088>
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20. Peyton P, Hendrickx J, Grouls R, **van Zundert A**, De Wolf A. End-tidal to Arterial Gradients and Alveolar Deasapce for Anesthetic Agents. *Anesthesiology* 2020; 133:534–47
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21. Punnasseril J, **Roets M, van Zundert A**. **Covid-19**: Medical student, PhD candidate and researcher views. *Med J Aus - InSight*: 2020;25 - Published online 29.06.2020
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22. **Roets M**, Sturgess DJ, Obeysekera MP, Tran TV, **Wyssusek K**, Punnasseril J, **da Silva D, van Zundert A**, Perros A, Tung JP, Flower R, Dean M. Intraoperative Cell Salvage as an Alternative to Allogenic (Donated) Blood Transfusion: A Prospective Observational Evaluation of the Immune Response Profile. *SAGE* 2020; 29:1-15. DOI: 10.1177/0963689720966265
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23. **Roets, M**. Project and scholarship grant project completion: Does transfusion related Immune modulation occur following Intraoperative cell salvage? A pilot study. *ANZCA Bulletin*, Summer 2020, page 51
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24. Schults JA, **Woods C**, Cooke M, Kleidon T, Marsh n, Ray-Barruel G, Rickard CM. Healthcare practitioner perspectives and experiences regarding vascular access device data: An exploratory study. *International Journal of Healthcare Management*. Jan 2020, doi.org/10.1080/20479700.2020.1721750
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25. **Van Zundert A, Nethathe G**. Association of Chorioamnionitis and its Duration with Adverse maternal Outcomes by Mode of Delivery: A Cohort Study (Venkatesh KK et al). *Obstet Anesth Digest* 2020;40:31
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26. **Van Zundert A, Nethathe G**. Obstetric neuraxial anesthesia at low platelet counts in the context of immune thrombocytopenia: a systematic review and meta-analysis (Bailey LJ et al). *Obstet Anesth Digest* 2020;40
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27. **Van Zundert AAJ, Wyssusek KH, Pelecanos A, Roets M, Kumar CM**. A prospective randomised comparison of airway seal using the novel vision-guided insertion of LMA-Supreme and LMA-Protector. *J Clin Monit Comput*.2020;34:285-294
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28. **Van Zundert AAJ, Kumar CM, Van Zundert TCRV, Gatt SP, Pandit JJ**. The case for a 3rd generation supraglottic airway device facilitating direct vision placement. *J Clin Monit Comput*. 2020 Jun 15:1-8. doi: 10.1007/s10877-020-00537-4
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29. **Wyssusek K, Eames G, Peters N, Lee J**. Department of anaesthesia preparedness for COVID-19 pandemic readiness: a medication preservation toolkit. *Br J Anaesth* 2020;125(3): e332-334. Published online 2020 May 31. doi: 10.1016/j.bja.2020.05.027
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30. **Wyssusek K, Eames G, Peters N, Lee J**. Anaesthesia preparedness for COVID-19 pandemic readiness: a medication preservation strategy. *Br J Anaesth* 2020;125
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31. **Wyssusek K**, Keys M, Laycock B, Avudainayagam A, Pun K, Hansrajh S, **van Zundert A**. The volume of recyclable polyethylene terephthalate plastic in operating rooms - A one-month prospective audit. *Am J Surg*. 2020 Jun 4:S0002-9610(20)30267-1. doi: 10.1016/j.amjsurg
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32. Pattuloo C, Suckling B, Taylor S, Thomson J, **Collins G**, Hall L, Donovan P. Developing and piloting an adaptable oxycodone quality improvement strategy: steps towards opioid stewardship. *Australian Health Review*. Accepted 20 Oct 2020. <https://doi.org/10.1071/AH20262>
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Book Chapters / Letters

1. **Tua C, Gatt D, Borg N, Chandra S, van Zundert A.** Chapter 52 of the book: Opioid Therapy for Pain: A practical clinical guide. Eds: Mary Cardosa & Alex Sia. 2020
2. **Barach P, van Zundert AAJ.** How to Become a Successful Researcher. In: 'WHO Guidance on Research Methods for Health Emergency and Disaster Risk Management', Clarke M, Murray V, Chan E, Abrahams J, O'Sullivan T.(eds).2020
3. **Meeusen V, Gatt SP, Barach P, van Zundert AAJ,** Chapter 10:'Occupational Wellbeing, Fatigue, Resilience, Burnout and Job satisfaction of Surgical Teams',in: American Handbook of Perioperative and Procedural Patient Safety,Elsevier,USA,2020
4. **Peters N.** Letter to the Editor: Different minimum requirements fir transducer cleaning and disinfection between the Australian Standard and the ASUM/ACIPC joint guideline, Dec 2020. <https://doi.org/10.1002/ajum.12208>
5. **McCrossin K.** Opinion Piece. COVID-19's silver lining: ending presenteeism in medicine | InSight

Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

1. **Roets M.** Intraoperative Cell Salvage and Virtual Reality. The 4th RBWH Perioperative Patient Blood Management, Education Centre, RBWH, Brisbane. Workshop facilitator and presenter: 14 Feb 2020
2. **V. Eley.** AMAQ JDC On-Demand – a career in Anaesthesia. 27/06/2020
3. **Julie Lee,** The 4th Perioperative Patient Blood Management Symposium 15/2/20. Postpartum haemorrhage and ROTEM®
4. **Julie Lee** Australian and New Zealand College of Anaesthetists Perioperative Medicine Special Interest Group Virtual Meeting, October 2020. Where now? Adding value in obstetric care
5. **V. Eley** Australian and New Zealand College of Anaesthetists Perioperative Medicine Special Interest Group Virtual Meeting, October 2020. Where now? Adding value in obstetric care
6. **Julie Lee** Australian Medical Association Queensland (AMAQ) JDC On-Demand – a career in Anaesthesia 27.06.2020
7. **Van Zundert A.** Anaphylaxis and anaesthesia. Fiona Stanley Hospital, Perth, WA. February 2020
8. **Van Zundert A.** Local anaesthetic toxicity in anaesthesia. Fiona Stanley Hospital, Perth, WA. February 2020
9. **Van Zundert A.** Research in Anaesthesia - Pitfalls and Tips – RBWH – February 2020
10. **Van Zundert A.** Predatory and Hijacking publishers – How to avoid them? – PAH, Brisbane. 27.07.2020
11. **Van Zundert A.** Predatory and Hijacking publishers – How to avoid them? – RBWH, Brisbane. 05.08.2020
12. **Van Zundert A.** Predatory and Hijacking publishers – How to avoid them? – Cairns & Hinterland Hospital, Cairns 22.10.2020
13. **Van Zundert A.** Vision-guided insertion of supraglottic airway devices – Cairns & Hinterland Hospital, Cairns, 22.10.2020
14. **Van Zundert A.** COVID-19 PANDEMIC: Lessons learned and the new normal as I see it. Asian & Oceanic Society of Regional Anaesthesia and Pain Medicine (AOSRA-PM) & Academy of Regional Anaesthesia of India (AORA), India – 24.10.2020
15. **Van Zundert A.** Workshop: Ultrasound-guided regional anaesthesia blocks of upper and lower extremities and trunk blocks – RBWH, Brisbane - 05.11.2020
16. **Peyton PJ,** Hendrickx J, Grouls RJE, Van Zundert A, De Wolf A. Euroanaesthesia 28-30 November 2020

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17. **Van Zundert A.** - Swinburne University, Melbourne & University of Melbourne, Australia. The 2020 IEEE/WIC/ACM International Joint Conference on Web Intelligence and Intelligent Agent Technology (WI-IAT'20) – ACADEMIC MATTERS 14-17 December 2020. Keynote lecture 16.12.2020: Is there life after COVID-19? – Lessons learnt from COVID-19 and the new normal as I see it
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Oral Presentations

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1. **Lee J.** Post-partum haemorrhage and ROTEM. The 4th The 4th Royal Brisbane and Women's Hospital Perioperative Patient Blood Management Symposium. February 2020

 2. **Roets M.** Intraoperative cell salvage. The 4th Royal Brisbane and Women's Hospital Perioperative Patient Blood Management Symposium. February 2020

 3. **Roets M.** Intraoperative Cell Salvage and Virtual Reality. The 4th Royal Brisbane and Women's Hospital Perioperative Patient Blood Management Symposium. February 2020

 4. **Roets M.** International Society of Blood Transfusion. ISBT's Live Journal Club seminars. Vox Sanguinis, <https://onlinelibrary.wiley.com/doi/10.1111/vox.12824>. May 2020

 5. **Eley, V.** ASA Queensland Part 3 Course. Brisbane, November 2020. Getting into research

 6. **Lee J, Eley V, Wyssusek K,** Kimble R, Way M, **Cohen J, Van Zundert A.** The influence of gestational diabetes mellitus on coagulation in healthy term pregnancy as assessed by rotational thromboelastography. The Inaugural Herston Health Precinct Symposium 2020. 7-11 December 2020

 7. **Peyton PJ,** Alveolar-arterial gradients and alveolar deadspace for anaesthetic agents
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Poster Presentations

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1. Herston Health Precinct Symposium 12/2020, Brisbane: **Lee J, Eley V, Wyssusek K, Way M, Cohen J, van Zundert A.** The influence of gestational diabetes mellitus on coagulation in healthy term pregnancy as assessed by rotational thromboelastometry (ROTEM®)

 2. Herston Health Precinct Symposium 12/2020, Brisbane: **Khoo A, Woods C, Eley VA.** Correct Cuff Selection in Obese Patients

 3. Herston Healthcare Symposium December 2020. **Eley VA, Christensen R, Guy L, Wyssusek K, Pelecanos A, Dodd B, Stowasser M, van Zundert A.** Continuous non-invasive blood pressure versus invasive arterial pressure measurements: testing equivalence in obese patients during bariatric surgery

 4. Herston Healthcare Symposium December 2020. **Taylor K, Reynolds H, Concha Blamey S, Lisec C, Petrie S, Neilson S, Woods C, Wright G, Mudge A, Wyssusek K.** What is your ASPECT? Pre-implementation data analysis from the Acute Surgery Perioperative Collaboration (ASPECT) Team's innovative model of care

 5. QuARRIES Awards MNHHS November 2020. **Wyssusek K, Town C, Woods C,** Norton R. Patient Reported Outcomes of Iron Infusions at the RBWH
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Department of General Surgery

Selected highlights from within the Department

Unit 1 Breast Endocrine

One of the most notable highlights for our unit has been the achievement of securing funding to resume our pilot study investigating the diagnostic role of PET MRI in identifying axillary metastatic disease in high risk breast cancer patients. This study has now recruited half the required number of patients. The next step will be a clinical trial at a larger scale.

We have also been key contributors to other innovative studies such as Q-Improve which is to investigate the genetic signatures of tumours and its relation to response and adverse reactions to neoadjuvant chemotherapy.

During this year we have also coordinated and now have approval to take part in an international phase 1 clinical trial that investigates on novel techniques to identify HER-2 positive lymph nodes of patients with HER 2 positive breast cancer. This study has the potential to develop theranostic techniques to treat this specific type of breast cancer in the axilla.

Unit 2 Hepato-Pancreatic-Biliary

Success in securing research funding from Wesley Medical Research for research into diagnostics / theranostics of pancreatic cancer. Wide research scope as demonstrated with an impressive publication output in 2020.

Unit 3 Colorectal

The Colorectal Research Unit (CRU) experienced a busy and productive 2020, with an increase in research output including peer reviewed publications, securing research funding and attracting new collaborations, focusing on translational research. As the CRU continues to expand, it looks forward to launching new and innovative research projects in 2021. The unit supervises four PhD candidates with two planned submissions in 2021.

Unit 1: Breast and Endocrine

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Eugenia Ip, Kowsi Murugappan, Jack Savage. Use of one step nucleic acid amplification in the management of axilla in breast cancer	RBWH General Surgery Research Award 2020	General Surgery Visiting Professor Education Week, 2020

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Ben Green	Yao Huang, Kowsi Murugappan, Owen Ung, Eugenia Ip	Outcomes and time to adjuvant therapy in patients undergoing immediate implant based breast reconstruction surgery	NA	NA
Kowsi Murugappan	Ben Green, Owen Ung	PETAL: Evaluation of the accuracy of 18F-FDG PET-MRI scan in detecting regional lymph node disease in breast cancer: a pilot study	7	7
Clem Wong	Ben Green, Owen Ung	3D printing of nipple for breast reconstruction	NA	NA
Kowsi Murugappan	Eugenia Ip, Jack Savage	Use of one step nucleic acid amplification in the management of axilla in breast cancer	NA	NA

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Sunil Lakhani	Kowsi Murugappan, Owen Ung, Ben Green, Po-Ling Inglis, Pete Simpson, Amy McCart Reed	Q-IMPROVE: Implementation of precision oncology in breast cancer	6	6
Sunil Lakhani (Pathology QLD)	Dr Ben Green, Prof Owen Ung	BoNSAI: Improving treatments for Brain metastases through Advanced Imaging	NA	NA

Research Publications

Journal Articles

- Eugenia Ip, Owen Ung.** A Novel Breast-Conserving Surgical Technique in the Management of Phyllodes Tumours of the Breast. World J Surg. 2020 44 (12): 4149
- David J Pinato, Anu Vallipuram, Joanne S Evans, **Clement Wong**, Hua Zhang, Matthew Brown, Roberto E Dina, Pritesh Trivedi, Ayse U Akarca, Teresa Marafioti, Francesco A Mauri, Rohini Sharma. Neuroendocrinology 2020 (Online Feb 25)
- Hollands M, Chadbunchachai,W, Prasertcharoensuk S, Samankatiwat, N,Watters D,Owen **Ung O**, Korin S, Bhothisuwan K One hundred up: the Weary Dunlop Boonpong Scholarship ANZ J Surg 90 (2020) 211–214

Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

1. **Eugenia Ip.** Use of one step nucleic acid amplification in the management of axilla in breast cancer. RBWH General Surgery Research Award 2020

2. **Owen Ung.** What can we Learn from the SNAC Trial? Hong Kong Society of Surgeons Annual Scientific Meeting. Sept 2020

3. **Owen Ung.** Reliable Markers of Node Positivity for Breast Cancer Hong Kong Society of Surgeons Annual Scientific Meeting. Sept 2020

4. **Owen Ung.** Risk Management for Inherited Breast Cancer. University of Malaya. Webinar for Clinicians. Oct 2020

5. **Owen Ung.** How To Overcome Challenges In Breast Surgery: Global Collaboration Matters. Breast Surgery International (Webinar). June 2020

6. **Owen Ung.** Physician Wellness and Coping with Stress, Poor Outcomes and Patient Complaints. Asian Association of Endocrine Surgeons Meeting – Melbourne March 2020

Unit 2: Hepatobiliary / Pancreatic

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Nicholas O'Rourke, David Cavallucci , David Wong	HPB Unit	Exploring the role of PSMA PET scans in diagnosis of HCC	Wesley Medical Research Cancer Grant 2020	\$48,000	2020-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
David Cavallucci	Nick O'Rourke, Will McGahan	A retrospective review of the patterns of care in patients with pancreatic cancer in the Metro North Health District	NA	NA
Matt Burge	Nick O'Rourke, David Cavallucci, Will McGahan	Does SUV max of a primary tumour on FDG-PET correlate with distant metastases and early recurrence in peri-ampullary malignancies?	NA	NA
Nick O'Rourke	Pattabathula K, Waters PS, Hwang J, Bettington M, Singh M, Bryant R, Cavallucci D	Diagnostic and therapeutic considerations in biopsy-proven Type 2 autoimmune pancreatitis (AIP): Comparative analysis with biopsy proven Type 1 AIP	NA	NA
McMahon M	Waters PS, O'Rourke, C, Lewin J, Cavallucci DJ, Bryant RD, O'Rourke N	Outcomes of Transcystic Bile duct exploration	NA	NA
Nathanson A	Waters PS, Patterson-Browne S, Cavallucci DJ, Bryant RD, O'Rourke N	Minimally invasive management of impacted bile duct stones	NA	NA
O'Rourke N	Bishoy M, Lewin J, Waters PS, Singh M, Cavallucci D, Bryant R,	Surgical management and outcomes of Acinar Cell Carcinoma of the pancreas	NA	NA
Mirza W	Keogh C, Waters PS, Cavallucci DJ, Bryant RD, O'Rourke N	Laparoscopic dorsal approach in major hepatectomy – expanding the horizon of resection	NA	NA
Swinson B	Waters PS, Weber L, Cavallucci DJ, O'Rourke N, Bryant RD	Portal vein thrombosis after laparoscopic splenectomy: Analysis of risk factors.	NA	NA
Smith S	Waters PS, Mirza W, Keogh C, Lipman J, Cavallucci DJ, O'Rourke N, Bryant RD	Re-expansion pulmonary oedema and Takotsubo cardiomyopathy – a rare complication of giant hepatic cyst drainage	NA	NA

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Phillip Townsend (GCUH); Karl Bagraith (GCUH);	Matthew Roberts, Martin Batstone, David Mitchell, Kevin Lah, Guy Sheahan, William McGahan, Ben Swinson	COVIDSurg – Cancer Study, Hepatobiliary arm		
International Collaborative	P Waters, Weber, Kelly Conneely, Smooth, McGilavary, N O'Rourke, R Bryant, D Cavallucci	Multicentre study to assess the applicability of Fong criteria in contemporary times in minimally invasive liver resection	NA	NA

Research Publications

Journal Articles

- Barry A, Apisarnthanarax S, O'Kane GM, Sapisochin G, Beecroft R, Salem R, Yoon SM, Lim YS, Bridgewater J, Davidson B, Scorsetti M, Solbiati L, Diehl A, Schuffenegger PM, Sham JG, **Cavallucci D**, Galvin Z, Dawson LA, Hawkins M, Management of primary hepatic malignancies during the COVID-19 pandemic: recommendations for risk mitigation from a multidisciplinary perspective *Lancet Gastroenterol Hepatol*. 2020; 5(8):765-775
- Z Morise, L Aldrighetti, G Belli, F Ratti, A Belli, D Cherqui, M Tanabe, G Wakabayashi, ILLS-Tokyo Collaborator group. Laparoscopic repeat liver resection for hepatocellular carcinoma: a multicentre propensity score-based study *Br J Surg* 2020 107(7):889-895
- Nick O'Rourke**, Barbour A, Samra J. The AGITG GAP Study: A Phase II study of perioperative gemcitabine and Nab-Paclitaxel for resectable pancreas cancer. *Ann Surg Oncol* 2020 27(7):2506-2515
- Nick O'Rourke, Chung P, Swinson B**, Massive splenic cyst in pregnancy: a case report, *BMC Pregnancy Childbirth* 2020 6(20):273
- Nick O'Rourke**, Serafini *et al* The Patenting and Technological Trends in Hernia Implants (2008-2018). *Tissue Eng Part B Rev* 2020 May 13
- Richard Bryant, David Cavallucci, Nick O'Rourke, McKay B**. Large size and haemorrhage are not contradictions to laparoscopic resection of hepatocellular adenoma. *ANZ J Surg* 2020 90(6):1099-1103
- Kwan B, Waters P, Olive E, Nathanson A, Bain R, Bryant R, O'Rourke N, Cavallucci D**. Haemobilia due to ruptured right hepatic artery pseudoaneurysm secondary to Mirizzi syndrome with simultaneous cholecystoduodenal fistula. *ANZ J Surg* 2020 90(6):1099-1103
- Pattabathula K, Waters PS**, Hwang J, Bettington M, Singh M, **Bryant R, Cavallucci D, O'Rourke N**. Diagnostic and therapeutic considerations in biopsy proven type II (idiopathic duct centric pancreatitis) autoimmune pancreatitis: a comparative analysis to biopsy proven type I. *J Gastrointestinal Surgery*(submitted)
- Wang X, Teh CSC, Ishizawa T, Aoki T, **Cavallucci D**, Lee SY, Panganiban KM, Perini MV, Shah SR, Wang H, Xu Y, Suh KS, Kokudo N. Consensus Guidelines for the Use of Fluorescence Imaging in Hepatobiliary Surgery. *Ann Surg*. 2020 Dec 18; Publish Ahead of Print. doi: 10.1097/SLA.0000000000004718. Online ahead of print. PMID: 33351457
- Thiruchelvam N, **Cavallucci D**, Chiow AKH. Does the laparoscopic approach for liver resections for colorectal liver metastasis truly confer improved survival outcomes? *Hepatobiliary Surg Nutr*. 2020 Dec;9(6):805-808. doi: 10.21037/hbsn-20-464. PMID: 33299841
- Barbour AP, Samra JS, Haghghi KS, Donoghoe MW, **Burge M**, Harris MT, Chua YJ, Mitchell J, **O'Rourke N**, Chan H, Gebiski VJ, Gananadha S, Croagh DG, Kench JG, Goldstein D; Australasian Gastro-Intestinal Trials Group (AGITG) GAP investigators. The AGITG GAP Study: A Phase II Study of Perioperative Gemcitabine and Nab-Paclitaxel for Resectable Pancreas Cancer. *Ann Surg Oncol*. 2020 Jul;27(7):2506-2515. doi: 10.1245/s10434-020-08205-2. Epub 2020 Jan 29. PMID: 31997125

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12. Brough D, Quinn S, Bartley PB, **Cavallucci D**, O'Rourke N. Primary aortoenteric fistula: a case of delayed diagnosis. *ANZ J Surg.* 2020 Mar;90(3):383-384. doi: 10.1111/ans.15159. Epub 2019 May 8. PMID: 31069930

 13. Lee SW, Davidson CJ, Kia Y, Devereaux B, Godinho S, Appleyard M, **O'Rourke N**, Chandrasegaram MD. Recurrent pancreatitis in the setting of gallbladder agenesis, ansa pancreatica, Santorinicoele and eventual intraductal papillary mucinous neoplasia (IPMN). *Ann Hepatobiliary Pancreat Surg.* 2020 Aug 31;24(3):381-387. doi: 10.14701/ahbps.2020.24.3.381. PMID: 32843609

 14. Krenzien F, Schöning W, Brunnbauer P, Benzing C, Öllinger R, Biebl M, Bahra M, Raschzok N, Cherqui D, Geller D, Han HS, Wakabayashi G, Schmelzle M, Pratschke J; study group of the International Laparoscopic Liver Society (ILLS). The ILLS Laparoscopic Liver Surgery Fellow Skills Curriculum. *Ann Surg.* 2020 Nov;272(5):786-792

 15. Lewis CA, de Jersey S, Seymour M, **Hopkins G**, Hickman I, Osland E. Iron, Vitamin B₁₂, Folate and Copper Deficiency After Bariatric Surgery and the Impact on Anaemia: a Systematic Review. *Obes Surg.* 2020 Nov;30(11):4542-4591. doi: 10.1007/s11695-020-04872-y. Epub 2020 Aug 12. PMID: 32785814

 16. Gupta S, Beitner M, Skinner C, **Hopkins G**. Medium-term outcomes of converting laparoscopic adjustable gastric band to Roux-en-Y gastric bypass in patients with body mass index <35 kg/m²: a uniquely Australian perspective. *Surg Obes Relat Dis.* 2020 Apr;16(4):485-491. doi: 10.1016/j.soard.2019.11.015. Epub 2019 Dec 16. PMID: 32093997

 17. Beitner M, **Hopkins G**. Conversion of endoscopic sleeve gastropasty to laparoscopic Roux-en-Y gastric bypass. *Surg Obes Relat Dis.* 2020 Apr;16(4):590-591. doi: 10.1016/j.soard.2019.12.026. Epub 2020 Jan 10 . PMID: 32067875
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Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

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1. **David Cavallucci**; Brisbane Cancer Conference November 2020
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Poster Presentations

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1. **McGahan, W., O'Rourke, N., Cavallucci, D. and Burge, M.**, Standard uptake value of the primary tumour on FDG-PET correlates with the presence of metastasis in pancreatic and peri-ampullary malignancies. IHPBA, Sept 2020, Melbourne, Australia

 2. **McGahan, W., O'Rourke, N., Cavallucci, D. and Burge, M.**, Long term survival and outcomes from surgery in patients who have undergone pre-operative FDG-PET for pancreatic or peri-ampullary cancer. IHPBA, Sept 2020, Melbourne, Australia

 3. **O'Rourke, C, Lewin, J, Waters, PS, Webber, L, Cavallucci, D, Bryant, R, O'Rourke, N**, Long term outcomes of transcystic bile duct explorations. IHPBA, Sept 2020, Melbourne, Australia

 4. **Bishoy, M, Lewin, J, Waters, P.S, Singh, M, Cavallucci, D, Bryant, R, O'Rourke, N**. Surgical management and outcomes of acinar cell carcinoma of the pancreas. IHPBA, Sept 2020, Melbourne, Australia

 5. **McGahan, W., O'Rourke, N., Cavallucci, D. and Burge, M.**, Standard uptake value of the primary tumour on FDG-PET correlates with the presence of metastasis in pancreatic and peri-ampullary malignancies. IHPBA, Sept 2020, Melbourne, Australia
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Unit 3: Colorectal

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Andrew Stevenson	2020 Honorary Fellowship in American Society of Colorectal Surgeons	NA

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
David Clark	Damien Petersen , John Lumley, Tim Slack, Andrew Riddell, Craig Hacking , Jacobus Ungerer	Phase II study of efficacy: A validation of Gastrografin measurement in postsurgical samples following low anterior resection where the rectal tube is flushed with Gastrografin	Wesley Medical Research	\$28,280	2020-2021
David Clark	Graham Radford- Smith , Lisa Simms, Martha Zakrzewski (IBD/ Gut Health Lab QIMRB)	Ileal Pouch Microbiome: Defining a pre-operative microbiological signature that predisposes to anastomotic leak	RBWH Foundation	\$36,300	2020-2021

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
David Clark	Andrew Stevenson , Damien Petersen Andrea Warwick (Redcliffe), John Lumley (Wesley)	Total colectomy for constipation	5	5 (30 identified)
David Clark	Tahleesa Cuda, Declan Maher	Length of bowel resection in surgical management of Crohn's disease	NA	NA
David Clark,	Craig Harris, Damien Petersen, Carina Chow, Tony McGiffin , John Lumley (Wesley)	Long term functional consequences of anastomotic leak after laparoscopic restorative surgery with low pelvic anastomosis	99	99
David Clark	Craig Harris, Damien Petersen, Carina Chow, John Lumley (Wesley), Bree Stephenson (SCUH), Nicholas Lutton (PAH)	Drain fluid amylase as a sensitive biomarker of anastomotic leak in ileal pouch surgery	11	57
David Clark	Andrew Zammit (PAH), Andrew Riddell (Redcliffe), Julie Moore (QCCAT), Danica Cossio (QCCAT)	Management of polyps in Queensland	NA	NA
David Clark	Joanna Yu, David Sidhom	Long term functional outcomes of anastomotic leak after restorative proctectomy and ileal pouch surgery in patients not covered with loop ileostomy	NA	NA

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
David Clark	Graham Radford-Smith , Anton Lord (QIMR), Lisa Simms (QIMR)	Precision medicine for colorectal cancer: defining a pre diagnostic signature	NA	NA
David Clark	NA	Drain Fluid amylase as an early biomarker of anastomotic leak in low colorectal anastomoses	26	57
David Clark	James Nicholson (UK), Ian Mackay	Exploring the relationship between risk taking propensity and surgeon and patient preferences for temporary covering ileostomy	119	119
David Clark	Graham Radford-Smith , Lisa Simms (QIMRB), Martha Zakrzewski (QIMRB)	Ileal pouch microbiome: defining a pre-operative microbiological signature that predisposes to anastomotic leak	7	7
David Clark	John Panizza , Sherri Swee (UQ),	Hospital readmission for dehydration following creation of a diverting loop ileostomy after colorectal surgery	NA	NA
Jennifer Liang	Glen Kennedy ; Yaying Xu (Caboolture), Julie Moore (QCCAT); Danica Cossio (QCCAT); David Thiele (QCCAT)	Management and outcomes of gastrointestinal lymphomas in Queensland	NA	NA
David Clark	Damien Petersen , John Lumley, Tim Slack, Andrew Riddell, Craig Hacking , Jacobus Ungerer	Phase 2 study of efficacy: The validation of Gastrografin measurement in post-surgical samples following low anterior resection where the rectal tube is flushed with Gastrografin	16	16

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
David Clark	Frank Frizelle (NZ), Andrew McCombie (NZ), Craig Harris , Dr David Taylor , Ass. Prof David Clark	10-Ten Study: Quality of life after surgery for recurrent rectal cancer	0	0
David Clark	Cherry Koh, Michael Solomon (RPA), Craig Harris , Dr David Taylor , Ass. Prof David Clark	Localised recurrent rectal cancer QoL study (Phase-III)	0	0
Nicholas Lyon	John Hooper, John Hooper, Andrew Riddell, Simon Puttick, David Clark	The search for new theranostic targets for colorectal cancer	NA	NA
Andrew Maurice	Jason Brown , Mark Smithers, David Clark , Donald Cameron	Multi-centre study: Laparoscopic appendectomy versus antibiotics for radiologically confirmed acute uncomplicated appendicitis	8	8
Andrew Stevenson	Craig Lynch (Melbourne), Stephen Pillinger (Sydney), John Simes (CTC), Kate Wilson (CTC), Claudia Rutherford (Uni Sydney), Rachel Morton (CTC), Darren Tonkin (Adelaide), Stephen Bell (Melbourne)	Robotic versus Laparoscopic Colon: a Randomised trial (RoLaCaRT)	NA	NA

Research Publications

Journal Articles

1. Keane, Celia M.B.Ch.B; Fearnhead, Bissett, Ian M.B.Ch.B... **Stevenson A**; on behalf of the LARS International Collaborative Group. International Consensus Definition of Low Anterior Resection Syndrome Diseases of the Colon & Rectum Volume 63(3), March 2020, p 274-284
2. Cuda, T. J., Riddell, A. D., Liu, C., Whitehall, V. L., Borowsky, J., Wyld, D. K., **Clark D. A.**, . . . **Thomas, P. A.** (2020). PET imaging quantifying (68) Ga-PSMA-11 uptake in metastatic colorectal cancer. J Nucl Med. doi:10.2967/jnumed.119.233312
3. Lauder C, **Clark D** Argument for taTME Ann Laparosc Endosc Surg 2020;5:44 doi: 10.21037/ales.2020.03.10
4. Satish K Warriar, Stephen Bell, Glenn Guest, Alexander Heriot, Joseph Kong, Timothy Eglinton, Julian Hayes, Arend Merrie, **David Clark, Andrew Stevenson** Locoregional recurrences after transanal total mesorectal excision of rectal cancer during the exploration phase BJS 2020 DOI:10.1002/bjs.11753
5. Hompes, R., TaTme Guidance group representing the Escp, i. c. w. A. A. E. E. E. C. C. C. C. J. S. S. S., including **Stevenson A, Clark D**, Swiss, M. I. S. (2020). International expert consensus guidance on indications, implementation and quality measures for Transanal Total Mesorectal Excision (TaTME). Colorectal Dis. doi:10.1111/codi.15147
6. Ming Han Lim, Anton R Lord, Lisa A Simms, Katherine Hannigan, **Aleksandra Edmundson**, Matthew JFX Rickard, Russell Stitz, **David A Clark, Graham L Radford-Smith**. Ileal pouch-anal anastomosis for ulcerative colitis: an Australian institution's experience. Ann Coloproctol, 2020. doi:10.3393/ac.2020.08.26
7. Antonio Caycedo-Marulanda, Kara Nadeau, Chris P. Verschoor, Dana Sands, Antonino Spinelli, Shady Ashamalla, Sunil V. Patel, Francesca Di Candido, Angela Mujukian, Karen Zaghiyan, Grant Stevenson, Albert Wolthuis, **David A. Clark**, Andre D'Hoore, **Andrew Stevenson**, Steven D. Wexner, Exploring the perioperative outcomes of a sample of successful adopters of transanal total mesorectal excision (taTME) during the learning phase, Surgery, 2020
8. **Clark D. A.**, You. E., **Edmundson A.**, Pratap J., Snow T., Solomon M., Coucher J. (2020). Gastrografin can be detected in ex vivo biological specimens by Dual Energy CT scanning. Journal of Medical Imaging and Radiation Oncology doi:10.1111/1754-9485.13071
9. Steve Lau, Joseph Kong, Stephen Bell, Alexander Heriot, **Andrew Stevenson, Jayson Moloney**, Julian Hayes, Arend Merrie, Tim Eglinton, Glenn Guest, **David Clark**, Satish Warriar The oncological outcomes of transanal total mesorectal excision for rectal cancer in early adopters throughout Australia and New Zealand 2020 accepted BJS
10. Stephensen, B. D., Reid, F., Shaikh, S., Carroll, R., Smith, S. R., Pockney, P., & **Stevenson A, Clark D**, on behalf of the PREDICT Study Group collaborators. (2020). C-reactive protein trajectory to predict colorectal anastomotic leak: PREDICT study. British Journal of Surgery, doi:10.1002/bjs.11812
11. Yu, J., **Clark, D.A., Sidhom, D.** et al. (2020). Anastomotic leak does not affect long-term and longitudinal functional outcomes after ileal pouch surgery for ulcerative colitis when managed aggressively. Tech Coloproctol doi.org/10.1007/s10151-020-02331-5
12. **David A Clark**, Bree Stephensen, **Aleksandra Edmundson**, Daniel Steffens, Michael Solomon. Geographical variation in the use of diverting loop ileostomy in Australia and New Zealand Colorectal Surgeons. Ann Coloproctol, 2020. doi:10.3393/ac.2020.09.14.1
13. **Clark, D.A.**, Cuda, T., **Pretorius, C.** et al. Amylase quantification in the terminal Ileum following formation of an Ileostomy. Sci Rep 10, 19368 (2020). doi.org/10.1038/s41598-020-76349-y
14. **Clark, D.A.**, Yeoh E, **Edmundson A, Harris C, Stevenson, A**, Steffens D, Solomon M., A Development study of Drain Fluid Gastrografin as a Biomarker of Anastomotic Leak. Annals Coloproctol, 2021. 0(0): p. 0-0. Doi: 10.3393/ac.2020.12.24
15. Law CK, Brewer K, Brown C, Wilson K, Bailey L, Hague W, Simes JR, **Stevenson A**, Solomon M, Morton RL; Australasian Gastro-Intestinal Trials Group (AGITG) ALaCaRT investigators. Return to work following laparoscopic-assisted resection or open resection for rectal cancer: Findings from ALaCaRT-Australasian Laparoscopic Cancer of the Rectum Trial. Cancer Med. 2020 accepted Dec 6

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16. Cuda TJ, Riddell AD, Liu C, Whitehall VL, **Borowsky J**, Wyld DK, Burge ME, Ahern E, Griffin A, Lyons NJR, Rose SE, **Clark DA, Stevenson A**, Hooper JD, Puttick S, Thomas PA. PET Imaging Quantifying (68)Ga-PSMA-11 Uptake in Metastatic Colorectal Cancer. *J Nucl Med*. 2020 Nov;61(11):1576-1579

 17. Beattie KL, Hill A, Horswill MS, Grove PM, **Stevenson A**. Laparoscopic skills training: the effects of viewing mode (2D vs. 3D) on skill acquisition and transfer. *Surg Endosc*. 2020 Sep 2

 18. Hamilton AER, Chatfield MD, Johnson CS, **Stevenson A**. Totally robotic right hemicolectomy: a multicentre case-matched technical and peri-operative comparison of port placements and da Vinci models. *J Robot Surg*. 2020 Jun;14(3):479-491

 19. **Waters PS**, Cheung FP, Peacock O, Heriot AG, Warriar SK, O'Riordain DS, Pillinger S, Lynch AC, **Stevenson A**. Successful patient-oriented surgical outcomes in robotic vs laparoscopic right hemicolectomy for cancer - a systematic review. *Colorectal Dis*. 2020 May;22(5):488-499

 20. **Waters PS**, Cheung FP, Peacock O, Warriar SK, Heriot AG, O'Riordain DS, Pillinger S, Lynch AC, **Stevenson A**. Reply to Slim *et al*. *Colorectal Dis*. 2020 Apr;22(4):466-467

 21. NJ Curtis, JD Foster, D Miskovic, CSB Brown, PJ Hewett, S Abbott, G Hanna, **A Stevenson**, Nader Francis. Association of Surgical Skill Assessment With Clinical Outcomes in Cancer Surgery. *JAMA Surg*. 2020 Jul 1;155(7):590-598.

 22. R Hompes, M Adamina, F Aigner, S Araujo, A Arezzo, S Ashamalla, including **Stevenson A, Clark D**; part of TaTME Guidance Group..., Reply to Gachabayov *et al*. 'Consensus statement on TaTME: other thoughts'. *Colorectal Disease* 2020 Nov 10

 23. NJ Curtis, **ARL Stevenson**, NK Francis. Assessment of Surgical Skill and Performance Variability—Reply *JAMA surgery* 155 (12), 1175-1176

 24. J. T. Larach; J. Flynn; J. Kong,; **P. S. Waters**; J. J. McCormick D. Murphy; **A. Stevenson**, S. K. Warriar, A. G. Heriot. Robotic colorectal surgery in Australia: evolution over decade. *ANZ J Surgery*. doi.org/10.1111/ans.16554

 25. R. Mizumoto, J. Moloney, **D. Clark**. Palatable head on digital rectal examination: a rare case of uterine incarceration causing obstruction and perforation of an ileal pouch in mid-term pregnancy. *ANZ J Surgery*: published online; 2 Feb2021. <https://doi.org/10.1111/ans.16641>
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Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

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1. **David Clark** “Current approaches to colorectal surgery” Brisbane Cancer Conference, November 2020. Brisbane Convention Centre

 2. **Andrew Stevenson**. “Robotics in colorectal cancer surgery”. Brisbane Convention Centre. November 2020

 3. **Andrew Stevenson**. “Robotic ventral rectopexy” Korean Society of Endoscopic and Laparoscopic Surgeons 2020 & KAROS Virtual Congress, August 2020
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Unit 4: Upper Gastrointestinal & Thoracic

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Kevin Lah	Dr Guy Sheahan, Dr Carl Lisec	Corona Virus Disease Education Outcome (COVIDO) – The feasibility and acceptability of video communication platform in surgical education of medical students	NA	NA
Dr Duc Quang Nguyen	Dr Ben Dodd	Can administration of olive oil reduce chylothorax after oesophagectomy?	10	10
Dr Andrew Maurice	Dr Jason Brown , Mark Smithers, Donald Cameron, A/Prof David Clark	Multi-Centre Study: Laparoscopic Appendectomy versus Antibiotics for Imaging Confirmed Acute Uncomplicated Appendicitis	8	8
Dr David Mitchell	Dr George Hopkins, Dr Robert Finch	Outcomes of weight-loss in patients with OSA	NA	NA
Dr Pat Walsh	Dr George Hopkins, Dr David Mitchell	Endoscopic RAP procedure for reflux post gastric sleeve	NA	NA
Dr David Mitchell	Dr George Hopkins, Dr Robert Finch	Outcomes in RYGB with varying limb lengths	NA	NA
Dr Ben Dodd	Dr Marilla Dickfos, Dr Jennifer Gillespie	CT prediction of linitus plastic gastric cancer RO resection status	NA	NA
Dr Ben Dodd	Dr Kevin Lah	Laparoscopic management of oesophageal perforations	20	20
Dr Ben Dodd	Dr Andrew Maurice, Dr J Punnasseril, Dr S King	Bariatric telehealth patient and clinician satisfaction		84
Dr Ben Dodd	Dr D Nguyen, Dr Robert Finch, Dr Barry O'Loughlin	Incidence, risk factors and management of chyle leak after Oesophagectomy	NA	NA
Dr Ben Dodd	Dr Robert Finch, Dr David Mitchell	Oesophagectomy and double tract reconstruction for OGJ adenocarcinoma	NA	NA
Dr Ben Dodd	Dr George Hopkins	Reflux after revisional single anastomosis gastric bypass		
Dr Tom Crawley-Smith	Dr David Mitchell	Emergency Laparotomy – NELA as a predictor in a tertiary Australian Hospital	NA	NA

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Patrick Walsh	Dr Abdunnasser Lafta, Dr Mehul Lamba, Dr George Hopkins	Assessing the efficacy of a novel endoscopic resection and plication (RAP) technique in managing gastroesophageal disease in post laparoscopic sleeve gastrectomy patients with severe reflux	NA	NA
Dr Phillip Townsend (GCUH); Dr Karl Bagraith (GCUH);	CovidSurg Collaborative Group (International); Dr Matthew Roberts (A/Prof Martin Batstone Surgery); Dr David Mitchell; Dr Kevin Lah Dr Guy Sheahan Dr William McGahan Dr Ben Swinson	Outcomes of elective cancer during the COVID-19 pandemic crisis: an international, multicentre observational cohort study (CovidSurg-Cancer)		
Dr Kirryn Williams	Dr David Mitchell; Dr George Hopkins; Dr Dinithi Samaratunga; Dr Geoffrey Fanning	Peri-operative Screening and Assessment of Sleep-Disordered Breathing in patients undergoing bariatric surgery: a single center experience and recommendation to improve resource allocation and outcomes	NA	NA

Research Publications

Journal Articles

1. Maurice AP, Punnasseril JEJ, King SE, **Dodd BR**. Improving Access to Bariatric Surgery for Rural and Remote Patients: Experiences from a State-Wide Bariatric Telehealth Service in Australia. *Obes Surg*. 2020 Nov;30(11):4401-4410. doi: 10.1007/s11695-020-04804-w. Epub 2020 Jul 2. PMID: 32617921
2. **Duc Nguyen, Robert Finch, Barry O'Loughlin, Benjamin R. Dodd**. Incidence, risk factors and management of chylothorax post-oesophagectomy for oesophageal carcinoma in an Australian institution. *Annals Esophagus* 2020 (3)
3. Maurice A, Miob S, Yakscich L, **Hopkins G, Dodd B**. Revisional bariatric surgery to single anastomosis gastric bypass: A large multi-institution series. *Surgery Obesity Related Diseases* 2021 Published online Jan 2
4. Gupta S, Beitner M, Skinner C, **Hopkins G**. Medium-term outcomes of converting laparoscopic adjustable gastric band to Roux-en-Y gastric bypass in patients with body mass index <35 kg/m²: a uniquely Australian perspective. *Surg Obes Relat Dis*. 2020 Apr;16(4):485-491. doi: 10.1016/j.soard.2019.11.015
5. Beitner M, **Hopkins G**. Conversion of endoscopic sleeve gastroplasty to laparoscopic Roux-en-Y gastric bypass. *Surg Obes Relat Dis*. 2020 Apr;16(4):590-591. doi: 10.1016/j.soard.2019.12.026
6. Lewis CA, de Jersey S, Seymour M, **Hopkins G**, Hickman I, Osland E. Iron, Vitamin B12, Folate and Copper Deficiency After Bariatric Surgery and the Impact on Anaemia: a Systematic Review. *Obes Surg*. 2020 Nov;30(11):4542-4591
7. **Huang YC, Mitchell D**. Multiple concurrent complications of Roux-en-Y gastric bypass with MiniMizer gastric ring-alimentary limb intussusception through slipped ring into pouch, with remnant stomach internal herniation. *J Surg Case Rep*. 2020 Mar 20;2020(3):. eCollection 2020 Mar

Unit 5: Acute Surgical Unit

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
James Baumann	Elizabeth Vujcich	Retrospective analysis of management of Pseudo Obstruction at RBWH	NA	NA

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Kerstin Wyssusek	Sandra Concha Blamey, Hannah Reynolds, Makarla Stead, Christine Woods, Carl Lisek, Susan Petrie, Alison Mudge, Sharon Neilson	Acute Surgery PErioperative Collaboration Team Quality Improvement Program. The ASPECT QI.	NA	NA

Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

1. **Jason Brown.** Webinar: Strategies to manage the abdominal catastrophe. 3M Health Care Academy. Sep 2020

Department of Ophthalmology

Research Publications

Journal Articles

1. Rowland CA, Lee GA, Vincent SJ, Rac KA, **Lee LR**, Shah P. Preliminary findings from the Implementation of a wet macular degeneration patient reported outcome and experience measure. *Cli Exp Vis Eye Res J* 2020;3(1):36-42.
 2. [Orbital Schwannoma-Management and Clinical Outcomes.](#) **Yong KL, Beckman TJ, Cranstoun M, Sullivan TJ.** *Ophthalmic Plast Reconstr Surg.* 2020 Nov/Dec;36(6):590-595. doi: 10.1097/IOP.0000000000001657. PMID: 32282644.
 3. [Vismodegib for periocular basal cell carcinoma: an international multicentre case series.](#) Oliphant H, Laybourne J, Chan K, Haridas A, Edmunds MR, Morris D, Clarke L, Althaus M, Norris P, **Cranstoun M, Sullivan TJ**, Rajak SN. *Eye (Lond).* 2020 Nov;34(11):2076-2081. doi: 10.1038/s41433-020-0778-3. Epub 2020 Jan 29. PMID: 31996838
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Book Chapters

1. **Lee LR**, Rowland C, Chen JC. Lamellar Macular Hole: Ultrastructural analysis, surgical outcomes, and visual prognosis. Chapter 17: 231-240. *Macular Surgery: Current practice and trends.* Springer 2020. ISBN 978-981-15-7642-3 ISBN 978-981-15-7644-7 (eBook) <https://doi.org/10.1007/978-981-15-7644-7>
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Department of Orthopaedic Surgery

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Deniz Erbulut	Kevin Tetsworth, Nick Green , Matt Darguash	Multi-faceted approach to modelling continuously curved lattices to enhance bone in growth	N/A	N/A
Deniz Erbulut	Kevin Tetsworth, Nick Green , Peter Pivonka	“Bringing Balance to the Force”: Structural Optimization and Fracture Fixation - A Finite Element Study and Mechanical Testing	N/A	N/A
Deniz Erbulut	Kevin Tetsworth, Nick Green , Adjunct Prof. Ashsiah Gupta Prof. Yuan Tong Gu	“Base Plate Fixation in Reverse Shoulder Arthroplasty” A Finite Element and A Cadaver Study	N/A	N/A
Deniz Erbulut	Kevin Tetsworth, Nick Green , Cedryck Vaquette	Designing of dental scaffolds using surface modelling and lattice designs: A finite element study	N/A	N/A

Research Publications

Journal Articles

- Aydin AL, Sasani M, **Erbulut DU**, Oktenoglu T, Ozer AF. A new concept of motion preservation surgery of the cervical spine: PEEK rods for the posterior cervical region. *Biomed Mater Eng.* 2020;31(4):235–51
- Foster AL, Moriarty TF, Zalavras C, Morgenstern M, Jaiprakash A, Crawford R, **Tetsworth K**, **Schuetz M** et al. The influence of biomechanical stability on bone healing and fracture-related infection: the legacy of Stephan Perren. *Injury [Internet].* 2020;52(1):43–52
- Hoellwarth JS, **Tetsworth K**, Rozbruch SR, Handal MB, Coughlan A, Al Muderis M. Osseointegration for amputees: Current implants, techniques, and future directions. *JBJs Rev.* 2020;8(3):1–10
- Hoellwarth JS, Tetsworth K, Kendrew J, Kang N V., Van Waes O, Al-Maawi Q, **Tetsworth K** et al. Periprosthetic osseointegration fractures are infrequent and management is familiar. *Bone Jt J.* 2020;102 B(2):162–9
- Hohmann E, Angelo R, Arciero R, Bach BR, Cole B, Cote M, **Tetsworth K**, et al. Degenerative Meniscus Lesions: An Expert Consensus Statement Using the Modified Delphi Technique. *Arthrosc - J Arthrosc Relat Surg [Internet].* 2020;36(2):501–12
- Hohmann E, **Tetsworth K**, Glatt V. Is platelet-rich plasma effective for the treatment of knee osteoarthritis? A systematic review and meta-analysis of level 1 and 2 randomized controlled trials. *Eur J Orthop Surg Traumatol.* 2020;30(6):955–67
- Hohmann E, **Tetsworth K**, Glatt V. Platelet-Rich Plasma Versus Corticosteroids for the Treatment of Plantar Fasciitis: A Systematic Review and Meta-analysis. *Am J Sports Med.* 2020;1–12
- Hohmann E, Glatt V, **Tetsworth K**. What is the optimal timing for bone grafting during staged management of infected non-unions of the tibia? A systematic review and best evidence synthesis. *Injury [Internet].* 2020;51(12):2793–803
- Italia KR, **Green N**, Maharaj J, Launay M, Gupta A. CT evaluation of glenoid joint line restoration with glenoid bone grafting and reverse shoulder arthroplasty in patients with significant glenoid bone loss. *J Shoulder Elb Surg [Internet].* 2020;1–10
- Joukar A, Kiapour A, Elgafy H, **Erbulut DU**, Agarwal AK, Goel VK. Biomechanics of the sacroiliac joint: Surgical treatments. *Int J Spine Surg.* 2020;14(3):355–67
- Keshet D, **Tetsworth K**, Addar A, Bernstein M. Principles of Motorized Internal Lengthening of Long Bones. *Tech Orthop.* 2020;35(3):158–63

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12. Kiapour A, Joukar A, Elgafy H, **Erbulut DU**, Agarwal AK, Goel VK. Biomechanics of the sacroiliac joint: Anatomy, function, biomechanics, sexual dimorphism, and causes of pain. *Int J Spine Surg*. 2020;14:S3–13

 13. Obremskey WT, Metsmakers W, Schlatterer DR, **Tetsworth K**, Egol K, Kates S, et al. Musculoskeletal Infection in Orthopaedic Trauma. *JBJS*. 2020;44:1–9

 14. Paxton NC, Lanaro M, Bo A, Crooks N, Ross MT, **Green N**, **Tetsworth K**, et al. Design tools for patient specific and highly controlled melt electrowritten scaffolds. *J Mech Behav Biomed Mater [Internet]*. 2020;105(January):103695

 15. Randell M, Glatt V, Stabler A, Bussoletti T, E EH, **Tetsworth K**. Anterior Minimally Invasive Plate Osteosynthesis for Humeral Shaft Fractures is Safer than Open Reduction Internal Fixation. *J Orthop Trauma*. 2020; Publish Ahead of Print

 16. Sen C, Akgül T, **Tetsworth K**, Balci H, Yildiz F, Necmettin T. Combined Technique for the Treatment of Infected Nonunions of the Distal Femur With Bone Loss: Short Supracondylar Nail-Augmented Acute Shortening/Lengthening. *J Orthop Trauma*. 2020;34(9):476–81

 17. Van Zyl R, Van Schoor A-N, Du Toit PJ, Suleman FE, Velleman MD, Glatt V, **Tetsworth K** et al. The Association Between Anterior Cruciate Ligament Length and Femoral Epicondylar Width Measured on Preoperative Magnetic Resonance Imaging or Radiograph. *Arthrosc Sport Med Rehabil [Internet]*. 2020;2(1):e23–31
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Conference Presentations – Invited Speaker, Oral and Poster

Poster Presentations

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1. **Erbulut D**, **Green N**, **Tetsworth K**, “Bringing Balance to the Force”: Structural Optimization and Fracture Fixation, Herston Health Precinct Symposium 7-11 December 2020, Herston, RBWH

 2. **Green N**, **Tetsworth K**, Barlow G, Stubican M, Vindenes, Glatt V. Mapping osteochondral injuries of the talar dome associated with tibial pilon fractures. Herston Health Precinct Symposium 7-11 December 2020, Herston, RBWH
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Department of Otolaryngology, Head & Neck (Ear, Nose & Throat)

Our team alongside scientists at QUT were the first in the world to discover an asymptomatic throat cancer using a simple saliva test. The patient was able to be treated with a quick operative procedure and was spared extensive treatment. This discovery, published in *Frontiers in Oncology*, can form the basis for a painless screening test to find these cancers early when they are easier to treat.

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Zhen Yu Liu	2021 RBWH and RBWH Foundation Post Graduate Scholarship	2021 RBWH and RBWH Foundation Grant Awards Ceremony

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Ryan Sommerville	Ashvini Abeysekera	Stump neuroma	60	60
Ryan Sommerville	Ashvini Abeysekera	Histology vs high-resolution MRI margins	12	12
Anders Cervin	Zhen Liu, Kathryn Girling , Diane Maresco Pennisi (UQCCR)	Intranasal Probiotic Rinse for Purulent Chronic Rhinosinusitis	5	5
Anders Cervin	Adam Honeybrook, Kathryn Girling , Tejasri, Flavia Huygens (QUT), Diane Maresco Pennisi(UQCCR)	The sinus microbiome: a comparison between healthy sinus and chronic sinusitis	3	25
James Earnshaw	Cameron Grigg, Zhen Yu Liu, Kathryn Girling	A double blinded trial to assess and validate pilot results of oral propranolol in preventing epistaxis in patients with Hereditary Haemorrhagic Telangiectasia	15	15
Zhen Yu Liu	Sarju Vasani , Chamindie Punyadeera (QUT), Lizbeth Kenny , Rahul Ladwa (PAH)	Human Papillomavirus associated oropharyngeal cancer: a novel salivary modality for monitoring disease response and surveillance	20	75
Zhen Yu Liu	Sarju Vasani , Brett Hughes, Chamindie Punyadeera (QUT)	Organoid cultures in mucosal malignancy	6	6
Anders Cervin	Sandeep Mistry, Kathryn Girling	A phase II, randomised, blinded, sham procedure-controlled, parallel-group trial to evaluate the efficacy, safety and tolerability of LYR-210 in adult subjects with chronic sinusitis	4	4
Jennifer Chen	Ryan Sommerville	A 10-year retrospective analysis of pleomorphic adenomas at a single tertiary centre	350 (total number of patients in audit)	10
Jennifer Chen	Sarju Vasani , CK Lee (QUT)	Artificial intelligence to detect laryngeal cancer	10	10
Nathan Quigley, Sarju Vasani	Ruth Hodgson, Eva Malacova	Systematic Evaluation of Laryngeal and Pharyngeal Investigations for LPR	50	50

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Ryan Sommerville	Craig Winter, Jennifer Gillespie, Woo Sun, Zhen YuLiu	Evaluating the utility of high-resolution MRI in defining cranial nerves in the context of base of skull lesions	0	0
Ryan Sommerville	Charles Lin	Perineural outcome study	67	67
Ryan Sommerville	Charles Lin, Brett Hughes, Paul Thomas, Catherine Barnett (PAH), Chris Oosthuizen, Ashvini Abeysekera , Gishan Ratnayake	CXCR4 and PD-1 expression in head and neck cancer with perineural spread	50	50
David Fielding, Sarju Vasani	Jennifer Chen	Early detection of second primary malignancy in head and neck cancer patients using Low-dose CT Chest and Narrow Band Imaging	15	15

Research Publications

Journal Articles

1. Tang, Kai Dun, **Sarju Vasani**, Touraj Taheri, Laurence J. Walsh, Brett GM Hughes, Lizbeth Kenny, and Chamindie Punyadeera. "An occult HPV-driven oropharyngeal squamous cell carcinoma discovered through a saliva test." *Frontiers in Oncology* 10 (2020): 408
2. Ekanayake Weeramange, Chameera; Tang, Kai Dun; **Vasani, Sarju**; Langton-Lockton, Julian; Kenny, Liz; Punyadeera, Chamindie. (2020). "DNA Methylation Changes in Human Papillomavirus-Driven Head and Neck Cancers." *Cells* 9, no. 6: 1359
3. **Chen, Jennifer; Vasani, Sarju** (2020) "A Novel Presentation of the Acute Airway - Anti IgLON5 disease" *Laryngoscope*. Article DOI: 10.1002/lary.28911
4. Tang, K.D., **Vasani, S.**, Menezes, L., Taheri, T., Walsh, L.J., Hughes, B.G., Frazer, I.H., Kenny, L., Scheper, G.C. and Punyadeera, C., Oral HPV16 DNA as a screening tool to detect early oropharyngeal squamous cell carcinoma. *Cancer Science*

Conference Presentations – Invited Speaker, Oral and Poster

Oral Presentations

1. **Emily Chiang, Sarju Vasani**. Clinically Overt ENE – Interobserver Agreement between Head and Neck Surgeons. Australian Society of Otolaryngology Head and Neck Surgery 2020

The Kenneth G Jamieson Department of Neurosurgery

Throughout 2020, the Kenneth G Jamieson Department of Neurosurgery has continued to foster a collaborative approach to research, working closely with established partners and seeking to develop new relationships both locally and nationally. The department's key collaborators include the department of Medical Imaging within the Royal Brisbane and Women's Hospital (RBWH), the Queensland Institute of Medical Research, The University of Queensland's Centre for Clinical Research, Cancer Care, CSIRO, Speech Pathology Queensland, The Queensland Brain Institute, the Jamieson Trauma Institute and the Herston Biofabrication Institute.

With their partners, Kenneth G Jamieson staff continue to investigate a range of challenging conditions. Through bio-specimen provision RBWH's neurosurgeons continue to play a key role in supporting translational research laboratories in the study of brain cancers and motor neuron disease. They have also actively contributed to research infrastructure support in the development of clinical annotation datasets for brain cancer biobanking. Over the past 12 months neurosurgical staff have made valuable contributions to medical literature, publishing on a broad range of topics including the prevention of DNA repair in glioblastoma, skull base olfactory tumours, penetrating brain and spinal injuries, septic arthritis of the lumbar facet joints, and the importance of ear examinations in the assessment of intracranial subdural empyema.

The Department of Neurosurgery's commitment to increasing research capacity and output is evident through the number of grants awarded over 2020. As named investigators, our staff have been instrumental in securing approximately \$7,000,000 in competitive research funding. Through the Herston Biofabrication Institute, neurosurgeons have received approximately \$4,000,000 to embark on a craniofacial program of research that will trial novel 3D-printed implants and develop complex, high fidelity 3D-printed head models for surgical education and simulation. Other significant projects that funding has been received for include the diagnosis and prediction of outcome for traumatic brain injuries, novel immunotherapeutic options in treating brain metastatic breast cancers, and understanding the relationship between computational fluid dynamics and thin walled regions of intracranial aneurysms.

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Liam Coulthard	Neurosurgery	Investigating the role of complement and peripheral leukocytes in aneurysmal subarachnoid haemorrhage	RBWH Foundation Project Grant	\$45,740	2020-2021
Charles Yates, Liam Coulthard	Neurosurgery	Investigating the profile of complement activation in relation to vasospasm, delayed cerebral ischaemia and aneurysmal subarachnoid haemorrhage outcomes	RBWH Foundation Postgraduate Scholarship	\$46,973	2020-2023
Benjamin Chua, Rosalind Jeffree, Chamindie Punyadeera, Bryan Day, Paul Leo, Juliana Muller Bark, Gunter Hartel	Radiation Oncology; Neurosurgery	The use of non-invasive biomarkers in glioblastoma	RBWH Foundation Project Grant	\$50,000	2020-2021
Roberta Mazzieri, Riccardo Dolcetti, Jodi Saunus , Paul Leo, Sunil Lakhani , Ranjey Thomas, Mark Pinkham, Sarah Olson, Rosalind Jeffree , Katharine Cuff, Natasha Woodward, Po Inglis , Ian Bennett, Lyne Moore, Vicki Shepherd	Pathology; Neurosurgery	New immunotherapeutic options for triple-negative and brain metastatic breast cancer: next-generation cancer vaccines exploiting alternative classes of tumour antigens	National Breast Cancer foundation	\$1,000,000	2020-2023

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Fatima Nasrallah, David Reutens , Shekhar Chandra, James Walsham, Trevor Russell, Sandeep Bhuta, Jason Ross, Craig Winter , Siva Senthuran, Judith Bellapart	Medical imaging. Neurosurgery. Intensive care	PREDICT-TBI - PREdiction and Diagnosis using Imaging and Clinical biomarkers Trial in Traumatic Brain Injury: the value of Magnetic Resonance Imaging	Medical Research Future Fund	\$1,765,000	2020-2024

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Liam Coulthard	Trent Woodruff (UQ), Kevin Laupland (RBWH), Charles Yates (RBWH)	Investigating the PROfile of complement activation in relation to Vasospasm, delayed cerebral ischaemia and aneurysmal Subarachnoid haemorrhage Outcomes. Pro _c VISO study	24	--
Craig Winter	Nicholas Green	Herston Biofabrication Institute: 3D-printed moulds for orbital implants	N/A	N/A
Craig Winter	Nicholas Green	Herston Biofabrication Institute: 3D-printed head model for surgical planning	N/A	N/A
Craig Winter	Mark Allenby, John Clouston , Zhiyong Li, Marita Prior , Emilie Sauret, Maria Woodruff, David Forrestal, Trent Brooks-Richard, Liam Maclachlan	3D Biofabrication of Intracranial Aneurysms to aid endovascular and surgical treatment strategies and improve patient outcome	47	63
Michael Redmond	Hamish Alexander, Liam Maclachlan, David Forrestal	Properties and characteristics of 3-dimensional printed head models used in simulation of neurosurgical procedures: a scoping review	N/A	N/A
Toby Loch-Wilkinson	Liam Maclachlan, Vignesh Raman,	A Systematic Review of Predictive Variables for Surgical Outcomes of Surgical Resection of Benign Peripheral Nerve Tumours	N/A	N/A

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Stephen Williams	Lisa Gillinder, Helen Gooch, Rosalind Jeffree, Jason Papacostas	Fundamental computations in the human brain	3	3
Benjamin Chua	Rosalind Jeffree , Chamindie Punyadeera, Zarnie Lwin , Juliana Müller Bark, Yunxia Wan, Arutha Kulasinghe, Xi Zhang, Kai Tang, Bryan Day (QIMR)	The use of non-invasive biomarkers in glioblastoma: a pilot study	14	20

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Brian Day	Rosalind Jeffree, Zarnie Lwin, Po Inglis, Benjamin Chua , Catherine Bettington	Novel therapies in brain cancer: Glioma Tumour Bank	26	347
Sunil Lakhani	Own Ung , Scott Campbell, Tom Robertson, Rosalind Jeffree	Molecular Pathology and Genetic Sub-Classification of Precancerous and Cancerous Breast Lesions	10	179
Sunil Lakhani	Stephen Rose, Jodi Saunus, Rosalind Jeffree Andrew Scott, Paul Thomas, Lizbeth Kenny	Observational PET/MR imaging study of breast cancer brain metastases to quantify relationships between blood perfusion dynamics and uptake of Pertuzumab	1	4
Lee Reid	Stephen Rose, Alan Coulthard, Rosalind Jeffree, Hamish Alexander, Marita Prior , Jurgen Fripp	Post-surgical diffusion MRI in epilepsy patients for CONSULT	5	11
Alan Coulthard	Rosalind Jeffree, David Reutens, Thomas Robertson	High-field MRI hippocampal sclerosis	4	8
Kevin Chu	Judith Bellapart, Craig Winter, Rosalind Jeffree	Timing of lumbar puncture for the detection of xanthochromia in suspected subarachnoid haemorrhage	8	24
Po-Ling Inglis	Zarnie Lwin , Bryan Day, Rosalind Jeffree, Hui Gan	KB 004: A phase I safety and bioimaging trial of KB004 in patients with glioblastoma	1	2
Zarnie Lwin	Po-Ling Inglis, Rosalind Jeffree, Benjamin Chua, Craig Gedye	MAGMA: The Multi-Arm GlioblastoMa Australasia Trial	2	3
Zarnie Lwin	Po Inglis, Rosalind Jeffree	Ex-Tem: Phase III Trial of Extended Temozolomide in Newly Diagnosed Glioblastoma	3	4
Zarnie Lwin	Po Inglis, Rosalind Jeffree	LUMOS: Low & Intermediate Grade Glioma Umbrella Study of Molecular Guided TherapieS – Pilot Study.	2	2
Fatima Nasrallah	Craig Winter, Stephen Rose, Allan Coulthard , Geoff Osborne, Paul Nichols, Patrick Donnelly, Javier Urriola, Liam Maclachlan , Eduardo Apellaniz, Dana Bradford, Paul Thomas, Katie McMahon, Cliff Pollard, Gary Mitchell , Guido Gonzalez, Ricardo Wenger, Kate Mahady	A Magnetic Resonance Imaging approach to investigate blood brain barrier dysfunction in brain injury and subarachnoid haemorrhage patients as a predictor of patient outcome	11	30

Research Publications

Journal Articles

1. **Stephens S**, Squires L, Campbell R, Davies J, Chaseling R. Multifocal Gorham-Stout disease associated with Chiari I malformation and recurrent aseptic meningitis: Case report and review of literature. *J Clin Neurosci*. 2020 Feb;72:486-492. doi: 10.1016/j.jocn.2019.12.033
2. **Stephens S & Ma N**. Ceiling fan-related head injuries in children: a Queensland neurosurgical experience. *Pediatr Neurosurg*. 2020;55:74-80. doi: 10.1159/000507452
3. Yoon J, Barton MJ, St John JA, Ekberg JAK, Khan A & **Redmond M**. Anterior skull base olfactory tumours, which is what? A case report and review. *J Clin Neurosci*. 2020;81:1-5. doi: 10.1016/j.jocn.2020.09.008
4. Yoon J, O'Bryan CM & **Redmond M**. Intracranial subdural empyema – a mini review. *J Infect Dis*. 2020;3(1):1-5
5. **Jeffree RL**. Current management of cerebral glioma. *Aust J Gen Pract*. 49(4): 194-199. Doi:10.31128/AJGP-09-19-5063
6. Dsouza R, Carolin C, Straube J, Baumgartner U, Kordowski A, Li Y, Stringer B, **Alexander H, Lwin Z, Inglis PL, Jeffree R**, Johns T, Boyd A & Day B. Q-cell glioblastoma resource: proteomics analysis reveals unique cell-states are maintained in 3D culture. *Cells*. 2020;9(2):267. doi: 10.3390/cells9020267
7. Gedye C, Sachchithananthan M, Leonard R, **Jeffree RL**, Buckland ME, Ziegler DS, Graeber MB, Day BW, McDonald KL, Lasocki A, BCBA Consortium & Nowak AK, Driving innovation through collaboration: development of clinical annotation datasets for brain cancer biobanking, *Neurooncol Pract*. 2020;7(1);31–37. doi: 10.1093/nop/npz036
8. Yoon J, **Redmond M**, Efendy J & Kalgutkar. Airbag related penetrating brain injury. *ANZ J Surg*. 2020;90(3):384-385. doi: 10.1111/ans.15157
9. Yoon J, Efendy J & **Redmond M**. Septic arthritis of the lumbar facet joint. Case and literature review. *J Clin Neurosci*. 2020;71:299-303. doi: : 10.1016/j.jocn.2019.11.007
10. Yoon J, Efendy J, Szkandera B & **Redmond M**. Non missile penetrating spinal injury. *J Clin Neurosci*. 2020;67:239-243
11. Lim YC, Ensby KS, Offenhauser C, D'Souza RCJ, Cullen JK, Stringer BW, Quek H, Bruce ZC, Kijas A, Cianfanelli V, Mahboubi B, Smith F, **Jeffree RL**, Wiesmüller L, Wiegmanns AP, Bain A, Lombard FJ, Roberts TL, Khanna KK, Lavin MF, Kim B, Hamerlik P, Johns TG, Coster MJ, Boyd AW, Day BW. Simultaneous targeting of DNA replication and homologous recombination in glioblastoma with a polyether ionophore. *Neuro-Oncology*. 2020;22(2);216-228. doi:10.1093/neuonc/noz159
12. **Raman V**, Iyengar KR, **Alexander H**. Classic type intradural extramedullary ependymoma of the lumbar spine: A new case report of a usual tumour in an unusual location. *J Clin Neurosci*. 2020;78:411-413. Doi: 10.1016/j.jocn.2020.06.001
13. **Liang ES, Mahady K, Coulthard A, Winter C**. Treatment of a middle cerebral artery aneurysm in the setting of Loews-Dietz syndrome: Case report and review of literature. *Radiol Case Rep*. 2020 Oct 30;16(1):48-50. doi: 10.1016/j.radcr.2020.10.012.

Conference Presentations – Invited Speaker, Oral and Poster

Oral Presentations

1. **Michael Schuetz, Constantin Dlaska, Michael Redmond, Matt Masel**. Augmented Reality Demonstration. Herston Health Precinct Symposium 2020. Brisbane, Australia.
2. **Jeffree RL & Colditz MJ**. Laparoscopic ventriculoperitoneal shunt insertion is safe and effective when performed by neurosurgeons alone. Accepted for oral presentation RACS ASM, cancelled due to COVID-19

Professor Stuart Pegg Burns Centre

The Professor Stuart Pegg Burns Centre provides all adult burn care for the state of Queensland. The centre represents the largest burn unit in Australia and New Zealand treating up to 500 inpatient burns in 2020. The centre treats a large proportion of severe burns in Australia, providing an excellent opportunity to take research outcomes and translate them into clinical practice. It is co-located with the Queensland Skin Culture Centre and the Herston Biofabrication Institute (opened June 2020), and has collaborations with The Jamieson Trauma Institute.

Through the use of skin culture, tissue engineering, advanced imaging and virtual reality, the research performed in partnership with the Herston Biofabrication Institute will ensure that burn injured Queenslanders continue to receive world leading treatment.

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Jason Brown	Michelle Donovan, Dr Noah Betar , Prof Steven McPhail (QUT), Dr Zephania Tyack (QUT)	Feasibility, acceptability, cost and sustainability of ablative fractional CO2 laser for the treatment of scars in adolescents and adults post-burn: a longitudinal cohort study (retrospective)	N/A	N/A
Dr Jason Brown	Dr Peter Gillies, Dr Andrew Dalley	Collection of skin tissue from burn wounds in adults. The Queensland Skin Culture Centre (QSCC) Biobank	2	2
Dr Peter Gillies	Prof Ranjeny Thomas (UQ), Dr Andrew Dalley , Dr Danielle Herbert	Manipulating the immune response to epithelial cells	N/A	N/A
Dr Liz Vujcich	Dr Jason Brown, Michelle Donovan, Dr Noah Betar	ELATE - Early versus late ablative CO2 fractional laser treatment evaluation	3	3
Dr Jason Brown	Dr Noah Betar , Prof Peter Maitz (Syd)	Intravenous iron therapy in patients with big burns at the Royal Brisbane and Women's Hospital (retrospective)	N/A	N/A
Dr Jason Brown	Dr Lucas Wheatley, Dr Noah Betar	A prospective, non-controlled evaluation of the synthetic NovoSorb™. Biodegradable Temporising Matrix (BTM) for dermal repair after deep burn injury		40
Dr Kate Swift	Dr Liz Vujcich, Teresa Matthews, Prof Michael Reade	Caravan explosions: a case series of burns patients at the RBWH	N/A	N/A

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Mathilde Desselle, Lucy Holland	Dr Jason Brown, A/Prof Paul Gray, Andrea McKittrick, A/Prof Glen Kennedy , A/Prof Leila Cuttle (QUT), Dr Natalie Bradford (QUT), Prof Patsy Yates (QUT), Prof Raymond Chan (PAH), Roslyn Henney (QCH), Dr Ross Brown (QUT), Dr Selen Turkey (QUT)	PARM-VR: Co-design of an Innovative Virtual Reality Environment as a Pain and Anxiety Augmented Relief Method in Burns Survivors and Adolescents and Young Adults with Cancer	3	3
Dr Jason Brown	Dr Peter Gillies, Dr Abbas Shafiee, Dr Andrew Dalley , Prof Kiarash Khosrotehrani (UQ), Prof Alan Rowan (UQ)	Herston Biofabrication Institute (HBI) Clinical Program: Burns, Skin and Wounds	N/A	N/A

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Andrea McKittrick	Dr Jason Brown, Michelle Donovan, Amber Jones, Dr Liz Vujcich, Sue Laracy, Prof Jenny Strong	Feasibility, acceptability and safety of vacuum therapy on burn scar outcomes. ELEVATE - Early versus late Endermologie® vacuum therapy evaluation.	3	3
Sarah O'Reilly	Prof Jenny Ziviani (UQ), Prof Jenny Strong, Dr Jason Brown	Investigating the use of elastic based tapes for management of hypertrophic scar formation to the upper limb post burn injury	N/A	N/A

Research Publications

Journal Articles

- Huang YC, Vujcich E, Brown J.** Rare case of adhesive large bowel obstruction in acute burn patient: management of open abdomen with ABThera ADVANCE™ open abdomen dressing. *Journal of Surgical Case Reports* 2020; 6: rjaa129
- Swift K, Vujcich E, Matthews T, Reade MC.** Caravan explosions: a case series of burns patients at the RBWH. *ANZ Journal of Surgery.* 2020; doi.org/10.1111/ans.16436
- Shafiee A,** Moradi L, Lim M, **Brown J.** Coronavirus disease 2019: a tissue engineering and regenerative medicine perspective. *Stem Cells Translational Medicine.* 2020; 10: 27-38
- Town C,** Strand H, **Johnson J, Brown J,** Pelecanos A, **Van Zundert A.** Ultrasound-guided fascia iliaca plane block for the treatment of donor site pain in the burn injured patient: a randomised control trial. *J Burns Care Research.* Accepted Jan 2021; doi.org/10.1093/jbcr/irab021

Conference Presentations – Invited Speaker, Oral and Poster

Oral Presentations

- Brown J.** Acute burns work: using antibiotics sparingly to prevent resistance in burns. Community showcase hosted by the RBWH Foundation. Herston Health Precinct Symposium, 2020
- Shafiee A, Gillies P, Dalley A, Brown J.** Biofabrication technologies in skin regeneration and wound care. Herston Biofabrication Institute Clinical Program: Burns, Skin and Wounds. Herston Health Precinct Symposium, 2020

Poster Presentations

- Desselle MR, Holland L, **McKittrick A,** Altizer RA, **Gray P, Brown J.** *Augmenting the Design Box: Virtual Reality pain relief for Australian Adult Burns survivors.* IEEE 8th International Conference on Serious Games and Applications for Health, 2020. (virtual event)

Trauma Service

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Michael Rudd	Kerena Grant, Michael Handy, Jodie Ross, Sarah Pearce, Robyn Charles, Kristy Jackman, Olivia Zheng, Ass. Prof David Douglas (JTI), Jacelle Warren (JTI), Dr Cate Cameron (JTI), Dr Victoria McCreanor (JTI)	Impact of frailty in trauma patients admitted to RBWH Trauma Service	NA	NA
Sarah Weber (PAH)	Prof Julia Crilly (GU, GCUH), Prof Marion Mitchell (GU, PAH), Dr Jamie Ranse (GU, GCUH), Dr Nathan Watkins (GCUH), Ben Mackie (GU, SCHI), Dr Paula Lister (SCUH), Prof Martin Wullschleger (GU, GCUH), Joe Sharpe (Townsville), Michael Handy , Matt Boyd (Oakey)	Reaction of Emergency Services uPON Disasters in Queensland - the RESPOND study	NA	NA

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Bhavik Patel	Dr Michael Rudd , Ass. Prof Cliff Pollard	Management of splenic injuries in Qld: retrospective trend analysis over five years and one-year prospective evaluation of clinical practice guideline implementation	NA	NA

Research Publications

Journal Articles

1. **Williamson F.** Identifying risk factors for suboptimal pelvic binder placement in major trauma. Injury, 2020; 51 (4): 971-977
2. Daniel Bodnar, Lachlan Parker, Stephen Rashford **Michael Rudd.** The Pre-Hospital Initial Fluid Therapy Estimate in Early Nasty Burns (PHIFTEEN B, 15-B) Guideline applied to a retrospective cohort of Intensive Care Unit patients with major burns. Burns Dec 2020 46(8) 1820-28

Conference Presentations – Invited Speaker, Oral and Poster

Oral Presentations

1. **Williamson F.** Daily opiate use in Blunt Chest trauma: The impact of rib fracture displacement, shoulder injury and adjunct therapies. Australasian Trauma Society conference. Oct 2020

Poster Presentations

1. Devlin M, **Williamson F, Handy M,** et al. Performing the tertiary survey: a Comparison of medical officer and trauma nurse (007). Queensland Trauma Symposium, Feb 2019, Brisbane, Australia
2. **Williamson F.** Daily opiate use in Blunt Chest trauma: The impact of rib fracture displacement, shoulder injury and adjunct therapies. Herston Research Symposium, Dec 2020

Department of Urology

This year the Urology Department were delighted to welcome back Dr Matthew Roberts to the department. Matthew joined us as a Staff Specialist, having recently been awarded a Metro North Clinical Research Fellowship. We are excited to see many evolving research projects across a number of clinical topics, including prostate cancer, renal cancers and complex urinary tract infections.

RBWH Urology was activated as the only Queensland site for two national clinical trials in prostate cancer imaging (PRIMARY trial) and survivorship (NAVIGATE) to become a top recruiter for each study. Significant progress was made in establishing national multi-centre trials based from RBWH, including more than \$200,000 in successful research funding. RBWH Urology staff members were authors for more than 40 publications with significant contributions from junior doctors in the unit.

Associate Professor John Yaxley continues his role on the Editorial Board for the Journal of Pathology. Dr Roberts was appointed to the Editorial Board of the British Journal of Urology International (BJUI) in 2020 and was Highly Commended for the Research Support Award at the Metro North Research Excellence Awards

Research Awards and Achievements

Recipient (RBWH staff in bold)	Award	Event
Dr Matthew Roberts	Highly Commended, Research Support Award	2020 Metro North Research Excellence Awards

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Matthew Roberts	A/Prof John Yaxley, Dr Rachel Effeney, Natasha Roberts , Prof Louise Emmett (UNSW, Co-PI), DIPPER steering committee	De-Intensification of Post ProstatEctomy Radiotherapy (DIPPER) incorporating clinical and imaging-based risk stratification		
A/Prof John Yaxley	Prof Frank Gardiner , Dr Kevin Koo (UQ/Xing), Prof Matt Trau (UQ/Xing), Dr Jeffrey Goh , A/Prof Paul Mainwaring (Xing), Prof H Samaratunga (UQ), MF Lavin (UQ), Dr Matthew Roberts	Detection of Clinically Significant Prostate Cancer: a paradigm shift		
Prof Frank Gardiner	Dr Matthew Roberts, A/Prof John Yaxley , A/Prof Kristen Radford (MMRI), A/Prof Michelle Hill (QIMR), Dr Kevin Koo (UQ/Xing), A/Prof Paul Mainwaring (Xing), Prof Matt Trau (UQ/Xing), Dr Jeffrey Goh	ImmunoPro Project: Developing an effective therapeutic vaccine for all prostate cancer patients		
Dr Matthew Roberts	A/Prof John Yaxley, Prof Frank Gardiner, Dr Geoff Coughlin, Dr Rachel Esler, Dr Nigel Duglison, A/Prof Paul Thomas, A/Prof David Pattison, Dr Timothy Wastney , Dr Peter Donato, Dr Andrew Morton, Dr Arsalan Tariq	A retrospective analysis of multiparametric MRI for the detection of prostate cancer		
Dr Matthew Roberts	Dr Geoff Coughlin, A/Prof John Yaxley, Dr Andrew Morton, Dr Amila Siriwardana	Prostate specific membrane Antigen (PSMA) TaRgeted Imaging to guide Optimal Treatment (PATRIOT)		

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Matthew Roberts	A/Prof John Yaxley , Andrew Jiang, A/Prof Paul Thomas , A/Prof David Pattison	PSMA and FDG PET/CT for prostate cancer		
Dr Matthew Roberts	Dr Arsalan Tariq , Dr Adam Pearce , Dr Handoo Rhee (PAH), A/Prof Paul Thomas , A/Prof Dr Samuel Kyle , Dr Andrew Morton	RE-CAP: RENal CAncer characterised by PSMA-PET		
Dr Matthew Roberts	Dr Arsalan Tariq , A/Prof John Yaxley , Dr Amy McCart Reed (UQCCR), A/Prof Ian Vela (PAH)	Urothelial carcinoma and prostate specific membrane antigen (PSMA): cellular, imaging and prognostic implications		
Dr Andrew Morton	Dr Matthew Roberts , Dr Nigel Dunglison , Dr Rachel Esler	Comprehensive analysis and proposed management algorithm of urethral calculi		
Dr Arsalan Tariq	Dr Matthew Roberts , Dr Adam Stewart	Comprehensive analysis of periurethral abscess		
Dr Matthew Roberts	Dr Nishal Patel, Dr Georges Mehawed, Dr Nigel Dunglison , A/Prof Vincent Tse (USyd)	Urosymphyseal fistula: aetiology, clinical features and management		

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Prof Penelope Schofield (Swinburne Uni)	John Yaxley , Matthew Roberts , Frank Gardiner	Navigate: Randomised Controlled Trial of an online treatment decision aid for men with localised prostate cancer and their partners	10	10
Prof Louise Emmett (UNSW)	Matthew Roberts , John Yaxley , Paul Thomas , David Pattison	PRIMARY Trial: Additive diagnostic value of PSMA to mpMRI in the diagnostic setting: Ability to reduce unnecessary prostate biopsies in men being investigated for prostate cancer	21	21
Dr Aneel Bhangu (Uni of Birmingham, COVIDSurg Collaborative)	Matthew Roberts , Adam Pearce , Martin Batstone , David Mitchell , Kevin Lah , Guy Sheahan , William McGahan , Ben Swinson	Outcomes of surgery in COVID-19 infection: international cohort study (CovidSurg) and Outcomes of elective cancer during the COVID-19 pandemic crisis: an international, multicentre observational cohort study (CovidSurg-Cancer)	1 140	1 140

Research Publications

Journal Articles

1. Abdul-Muhsin H, De Lucia N, Singh V, Faraj K, Rose K, Cha S, et al. **Navaratnam A**. Outcome prediction following radical nephroureterectomy for upper tract urothelial carcinoma. *Urol Oncol*. 2020 (in press)
2. Abdul-Muhsin HM, McAdams SB, Syal A, Nuñez-Nateras R, **Navaratnam A**, Moss AA, et al. Robot Assisted Renal Allograft Nephrectomy: Initial Case Series and Description of Technique. *Urology*. 2020 Dec;146:118-124
3. Ali S, Ahn T, Papa N, Perera M, Teloken P, Coughlin G, et al. **Roberts MJ**. Changing trends in surgical management of renal tumours from 2000 to 2016: a nationwide study of Medicare claims data. *ANZ J Surg*. 2020;90(1-2):48-52
4. Chen MY, Franklin A, **Yaxley J**, Gianduzzo T, McBean R, Wong D, et al. Solitary rib lesions showing prostate-specific membrane antigen (PSMA) uptake in pre-treatment staging 68 Ga-PSMA-11 positron emission tomography scans for men with prostate cancer: benign or malignant? *BJU Int*. 2020 Sep;126(3):396-401
5. COVIDSurg Collaborative (**Roberts M**). Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study. *Lancet*. 2020; 396(10243):27-38
6. COVIDSurg Collaborative (**Roberts M, Pearce A**). Delaying surgery for patients with a previous SARS-CoV-2 infection. *Br J Surg*. 2020; 107(12):e601-e602
7. Derin O, Fonseca L, Sanchez-Salas R, **Roberts MJ**. Infectious complications of prostate biopsy: winning battles but not war. *World J Urol*. 2020;38(11):2743-53
8. Donato P, **Morton A, Yaxley J**, Ranasinghe S, Teloken PE, Kyle S, et al. **Esler R, Duglison N, Gardiner RA, Roberts MJ** (68)Ga-PSMA PET/CT better characterises localised prostate cancer after MRI and transperineal prostate biopsy: Is (68)Ga-PSMA PET/CT guided biopsy the future? *Eur J Nucl Med Mol Imaging*. 2020;47(8):1843-51
9. Emmett L, Tang R, Nandurkar R, Hruby G, Roach P, Watts JA, et al. **Roberts MJ**. 3-Year Freedom from Progression After (68)Ga-PSMA PET/CT-Triaged Management in Men with Biochemical Recurrence After Radical Prostatectomy: Results of a Prospective Multicenter Trial. *J Nucl Med*. 2020;61(6):866-72
10. Egevad L, Delahunt B, Bostwick DG, Cheng L, Evans AJ, Gianduzzo T, et al. **Yaxley J**. Prostate cancer grading, time to go back to the future. *BJU Int*. 2020 (in press)
11. Ezure Y, Rico V, Paterson DL, Hall L, Harris PNA, Soriano A, et al. **Roberts MJ**. Efficacy and safety of carbapenems versus new antibiotics for treatment of adult patients with complicated urinary tract infections: A systematic review and meta-analysis. *Open Forum Infect Dis*. (in press)
12. Faraj KS, **Navaratnam AK**, Eversman S, Elias L, Syal A, Tyson MD, et al. Use of treatment pathway improves neoadjuvant chemotherapy use in muscle-invasive bladder cancer. *Int Urol Nephrol*. (in press)
13. Franklin A, Delahunt B, Egevad L, **Yaxley J**, Johannsen S, Gianduzzo T, et al. Prognostic significance of morphological patterns of Gleason grade 5 prostatic adenocarcinoma diagnosed on needle biopsy. *Pathology*. 2020 Dec 29:S0031-3025(20)31008-4
14. Franklin A, Gianduzzo T, **Yaxley J**, Kua B, Coughlin G, Samaratinga H, et al. Use of a trizonal schema to assess targeting accuracy in prostatic fusion biopsy. *BJU Int*. 2020 Sep;126 Suppl 1:6-11
15. Franklin A, Yaxley WJ, Raveenthiran S, Coughlin G, Gianduzzo T, Kua B, et al. **Roberts MJ, Yaxley JW**. Histological comparison between predictive value of preoperative 3-T multiparametric MRI and (68) Ga-PSMA PET/CT scan for pathological outcomes at radical prostatectomy and pelvic lymph node dissection for prostate cancer. *BJU Int*. (in press)
16. Glasbey JC, et al. COVIDSurg Collaborative (**Roberts M, Pearce A**). Elective Cancer Surgery in COVID-19-Free Surgical Pathways During the SARS-CoV-2 Pandemic: An International, Multicenter, Comparative Cohort Study. *J Clin Oncol*. 2021 Jan 1;39(1):66-78
17. Johnson NR, **Roberts MJ**. Frontal sinus fracture management: a systematic review and meta-analysis. *Int J Oral Maxillofac Surg*. 2020 (in press)
18. Joshi A, **Roberts MJ**, Alinezhad S, Williams ED, Vela I. Challenges, applications and future directions of precision medicine in prostate cancer - the role of organoids and patient-derived xenografts. *BJU Int*. 2020;126(1):65-72

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19. Joshi A, **Roberts MJ**, Perera M, Williams E, Rhee H, Pryor D, et al. The clinical efficacy of PSMA PET/MRI in biochemically recurrent prostate cancer compared with standard of care imaging modalities and confirmatory histopathology: results of a single-centre, prospective clinical trial. *Clin Exp Metastasis*. 2020;37(4):551-60

 20. Makary J, Phan K, McClintock G, Doctor M, Habashy D, Heywood S, et al. **Roberts MJ**. Bladder infusion versus standard catheter removal for trial of void: a systematic review and meta-analysis. *World J Urol* (in press)

 21. **McKnoulty M**, Green A, Scott S, **Roberts MJ**, Kothari A. Spontaneous renal fornix rupture in pregnancy and the post partum period: a systematic review of outcomes and management. *BMC Urol*. 2020;20(1):116

 22. **Morton A**, Gordon L, Fowler R, **Esler R**, **Dunlison N**, **Roberts MJ**. Images - Acute urinary retention due to urethral steinstrasse. *Can Urol Assoc J*. (in press)

 23. **Morton A**, Williams M, Perera M, Teloken PE, Donato P, Ranasinghe S, et al. **Yaxley J**, **Roberts MJ** Management of benign prostatic hyperplasia in the 21st century: temporal trends in Australian population-based data. *BJU Int*. 2020;126 Suppl 1:18-26

 24. **Morton A**, Williams M, Perera M, Ranasinghe S, Teloken PE, Williams M, et al. **Roberts MJ**. A National Analysis of Temporal Changes in Prescribing of Testosterone Replacement Therapy Considering Methods of Delivery and Government Regulation. *World J Mens Health*. 2020 (in press)

 25. **Navaratnam A**, Cumsky J, Abdul-Muhsin H, Gagneur J, Shen J, Kosiorek H, et al. Assessment of Polyethylene Glycol Hydrogel Spacer and Its Effect on Rectal Radiation Dose in Prostate Cancer Patients Receiving Proton Beam Radiation Therapy. *Adv Radiat Oncol*. 2019 Sep 5;5(1):92-100

 26. Nevo A, **Navaratnam A**, Andrews P. Prostate cancer and the role of biomarkers. *Abdom Radiol (NY)*. 2020 Jul;45(7):2120-2132

 27. Nouhaud FX, Williams M, Yaxley W, Cho J, Perera M, Thangasamy I, **Esler R**, et al. Robot-assisted orthotopic "W" ileal neobladder in male patients: step-by-step video-illustrated technique and preliminary outcomes. *J Robot Surg*. 2020 Oct;14(5):739-744

 28. Ong XRS, Bagguley D, **Yaxley JW**, Azad AA, Murphy DG, Lawrentschuk N. Understanding the diagnosis of prostate cancer. *Med J Aust*. 2020 Nov;213(9):424-429

 29. Pereira R, Joshi A, **Roberts M**, **Yaxley J**, Vela I. Open retropubic radical prostatectomy. *Transl Androl Urol*. 2020 Dec;9(6):3025-3035

 30. Perera M, Papa N, **Roberts M**, Williams M, Udovicich C, Vela I, et al. Gallium-68 Prostate-specific Membrane Antigen Positron Emission Tomography in Advanced Prostate Cancer-Updated Diagnostic Utility, Sensitivity, Specificity, and Distribution of Prostate-specific Membrane Antigen-avid Lesions: A Systematic Review and Meta-analysis. *Eur Urol*. 2020;77(4):403-17

 31. Perera M, **Roberts MJ**, Klotz L, Higano CS, Papa N, Sengupta S, et al. Intermittent versus continuous androgen deprivation therapy for advanced prostate cancer. *Nat Rev Urol*. 2020;17(8):469-81

 32. **Roberts MJ**, **Macdonald A**, Ranasinghe S, Bennett H, Teloken PE, Harris P, et al. **Paterson D**, **Dunlison N**, **Esler R**, **Gardiner RA**, **Yaxley, J**. Transrectal versus transperineal prostate biopsy under intravenous anaesthesia: a clinical, microbiological and cost analysis of 2048 cases over 11 years at a tertiary institution. *Prostate Cancer Prostatic Dis* (in press)

 33. **Roberts MJ**, **Morton A**, Donato P, **Kyle S**, **Pattison DA**, **Thomas P**, et al. **Esler R**, **Dunlison N**, **Gardiner RA**, **Yaxley, J**. (68)Ga-PSMA PET/CT tumour intensity pre-operatively predicts adverse pathological outcomes and progression-free survival in localised prostate cancer. *Eur J Nucl Med Mol Imaging*. (in press)

 34. **Roberts MJ**, **Morton A**, Donato P, **Kyle S**, **Pattison DA**, **Thomas P**, et al. Correction to: 68Ga-PSMA PET/CT tumour intensity pre-operatively predicts adverse pathological outcomes and progression-free survival in localised prostate cancer. *European journal of nuclear medicine and molecular imaging*. 2020

 35. **Roberts MJ**, Papa N, Perera M, Joshi A, Scott S, Bolton D, et al. **Yaxley J**. Declining use of radical prostatectomy and pelvic lymphadenectomy despite more robotics: National population data over 15 years. *Asia-Pacific journal of clinical oncology*. 2020;16(2):e118-e24

 36. **Roberts MJ**, Williams J, Khadra S, Nalavenkata S, Kam J, McCombie SP, et al. A prospective, matched comparison of ultra-low and standard-dose computed tomography for assessment of renal colic. *BJU Int*. 2020;126 Suppl 1:27-32
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37. Rose KM, **Navaratnam AK**, Faraj KS, Abdul-Muhsin HM, Syal A, Elias L, et al. Comparison of Open and Robot Assisted Radical Nephrectomy With Level I and II Inferior Vena Cava Tumor Thrombus: The Mayo Clinic Experience. *Urology*. 2020 Feb;136:152-157

 38. Samaratunga H, Delahunt B, Srigley JR, Berney DM, Cheng L, Evans A, et al. **Yaxley JW**. Granular necrosis: a distinctive form of cell death in malignant tumours. *Pathology*. 2020 Aug;52(5):507-514

 39. Samaratunga H, Delahunt B, Egevad L, Srigley JR, Billis A, Bostwick DG, et al. **Yaxley JW**. Intraductal carcinoma of the prostate is an aggressive form of invasive carcinoma and should be graded. *Pathology*. 2020 Feb;52(2):192-196

 40. Yaxley WJ, Nouhaud FX, Raveenthiran S, Franklin A, Donato P, Coughlin G, et al. **Roberts M, Yaxley JW**. Histological findings of totally embedded robot assisted laparoscopic radical prostatectomy (RALP) specimens in 1197 men with a negative (low risk) preoperative multiparametric magnetic resonance imaging (mpMRI) prostate lobe and clinical implications. *Prostate Cancer Prostatic Dis*. 2020

 41. Yaxley WJ, Nouhaud F, Raveenthiran S, Franklin A, Donato P, Coughlin G, et al. **Roberts M, Yaxley JW**. Histological findings of totally embedded robot assisted laparoscopic radical prostatectomy (RALP) specimens in 1,197 men with a negative (low risk) preoperative multiparametric magnetic resonance imaging (mpMRI) prostate lobe and clinical implications. *Prostate Cancer Prostatic Dis*. (in press)

 42. Zhong W, **Roberts MJ**, Saad J, Thangasamy IA, Arianayagam R, Sathianathen NJ, et al. A Systematic Review and Meta-Analysis of Pelvic Drain Insertion After Robot-Assisted Radical Prostatectomy. *J Endourol*. 2020;34(4):401-8

 43. Zell MA, Abdul-Muhsin H, **Navaratnam A**, Cumsky J, Girardo M, Cornella J, et al. Holmium laser enucleation of the prostate for very large benign prostatic hyperplasia (≥ 200 cc). *World J Urol* (in press)
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Conference Presentations – Invited Speaker, Oral and Poster

Invited Speaker

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1. **Navaratnam, A**. Robotic Distal Ureterectomy and Ureteric Reimplant with Psoas Hitch & Heineke Mukulicz manourve with use of ICG. 21st Asia-Pacific Prostate Cancer Virtual Conference
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Oral Presentations

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1. **Tariq, A**. Correlation Between Hybrid PSMA PET MRI and Histopathology at Radical Prostatectomy. American Urological Association 115th Annual Scientific Meeting (Abstract accepted, meeting subsequently cancelled)

 2. **Tariq, A**. Safer, better bang for buck: improved efficiency and safety of prostate biopsy for prostate cancer diagnosis using MRI and transperineal biopsy method. Royal Australasian College of Surgeons Annual Academic Surgery Conference, November 5, 2020 (Virtual meeting)

 3. **Tariq, A**. Improved prostate cancer detection and prediction of outcomes using 68Ga PSMA PET/CT: towards non-invasive precision medicine. Royal Australasian College of Surgeons Annual Academic Surgery Conference, November 5, 2020 (Virtual meeting)
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Poster Presentations

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1. **Macdonald A**. Morbidity and cost implications of shifting from routine transrectal ultrasound-guided prostate biopsy to mpMRI triage with selective transperineal prostate biopsy: A 12-year retrospective analysis from a tertiary referral centre. Urological Society of Australia and New Zealand 73rd Annual Scientific Meeting, 7–10th March 2020 (Abstract accepted, meeting subsequently cancelled)

 2. **Morton A**. Short-term outcomes and learning curve of robotic-assisted radical cystectomy: Initial experience from a fellowship-trained robotic surgeon. 18th Urological Association of Asia (UAA) Congress 2020 (Virtual meeting)

 3. **Morton A**. 68Ga PSMA PET/CT better characterizes clinically significant lesions than multiparametric MRI of the prostate: comparison with radical prostatectomy whole gland histopathology. 18th Urological Association of Asia (UAA) Congress 2020 (Virtual meeting)
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4. **Morton A.** Docetaxel use relative to publication of phase III evidence: a national analysis of prescribing trends in Australia. 18th Urological Association of Asia (UAA) Congress 2020 (Virtual meeting)

 5. **Morton A.** Changing etiology, treatment and outcomes of urethral calculi in the 21st century: a systematic review. 18th Urological Association of Asia (UAA) Congress 2020 (Virtual meeting)

 6. **Morton A.** Intraprostatic 68Ga-PSMA PET/CT intensity accurately predicts progression-free survival and adverse pathology in localised prostate cancer. 18th Urological Association of Asia (UAA) Congress 2020 (Virtual meeting)

 7. **Morton A.** Analysis of national trends in the management of benign prostatic hyperplasia in Australia: updated population-based data. Urological Society of Australia and New Zealand 73rd Annual Scientific Meeting, 7–10th March 2020 (Abstract accepted, meeting subsequently cancelled)

 8. **Roberts MJ.** De-Intensification of Post-Prostatectomy Radiotherapy: A survey of clinician opinions. ANZUP 2020 Mini Annual Scientific Meeting, 29–30 November 2020 (Virtual meeting)

 9. **Tariq, A.** Predicting Patient Anxiety During Flexible Cystoscopy: A Single Tertiary Hospital Experience. Urofair 2020 (Virtual meeting)

 10. **Tariq, A.** Prostate Specific Membrane Antigen (PSMA) in Urothelial Cell Carcinoma (UCC): A Systematic Review of the Literature. 40th Congress of the Société Internationale d’Urologie 2020 (Virtual meeting)

 11. **Tariq, A.** Painless penile periurethral polymicrobial abscess causing urinary retention. 40th Congress of the Société Internationale d’Urologie 2020 (Virtual meeting)
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Vascular Surgery Department & Vascular Surgery Research Group at the Herston Biofabrication Institute

In 2020, the Royal Brisbane and Women's Hospital Vascular Surgery Department made significant strides towards becoming a leading, high-production centre for research in our field. The hallmark of this year's achievement was the successful establishment of the Vascular Biofabrication Research Group (VBRG) at the Herston Biofabrication Institute (HBI). Led by clinical leads Dr Jason Jenkins and Dr Nigel Pinto and newly-appointed Senior Research Fellow Dr Christoph Meinert, the VBRG has actively progressed collaborative and strategic relations with university and industry partners, recruited PhD and other higher-degree students and has published a total of three scientific papers in respected peer-review research journals and gave three presentations at Australasian conferences in 2020.

Notably, the VBRG's objectives are centred in the aim of incorporating modern manufacturing techniques in the improvement of the overarching shift towards safer, individualised and robust surgery. The key research programs include:

- Establishment of an advanced surgical training suite incorporating perfused 3D-printed vasculature in a clinically relevant surgical environment
- The development of 3D printed resorbable endovascular devices incorporating biodegradable polymers and graphene
- The development of soft robotic catheters for endovascular surgery
- The development of off-the-shelf tissue-engineered vascular grafts

The Vascular Surgery Department continues its involvement with the Queensland Research Centre for Peripheral Vascular Disease (QRC-PVD) at James Cook University, hosting recruitment at the Royal Brisbane and Women's Hospital as well as involvement in publications. In 2020, the department secured ethics and funding to begin recruitment on an internally designed and executed randomised, controlled clinical interventional trial, the BOLD study, to assess the efficacy of non-invasive techniques to reduce the burden of endoleak, a common complication of endovascular surgery. Further, the department, in conjunction with students of Queensland University of Technology and under supervision of Dr Jenkins and Dr Ogg, developed an iOS/Android application aiming to improve patient education in vascular surgery which is now in our practice. The application is designed for patient access and aims to encourage patient autonomy in optimising their health pre-operatively and enhancing post-operative recovery. The application contains a large variety of educational material including articles, videos and photographs to prepare patients for vascular surgery and familiarise them with associated pre-, peri-, and post-operative procedures. In 2021, a qualitative survey will be performed to assess if and how this application improves familiarity of patients with their pathology and associated clinical procedures.

Research Grants Awarded in 2020

Investigator Names (RBWH staff in bold)	RBWH Departments / Research Groups	Research Project Title	Granting Body	Total Awarded	Year/s
Dr Jason Jenkins, Dr Nigel Pinto	Vascular Biofabrication Research Group at Herston Biofabrication Institute	Advanced manufacturing and simulation of vascular anatomy, novel endovascular devices, medical applications of graphene	Herston Biofabrication Institute	\$1,600,000	2018-2024
Dr Jason Jenkins. Prof Jon Golledge, Prof Paul Norman, Prof Maria Fiatarone Singh, Ass. Prof Anthony Leicht, Ass. Prof Zanfina Ademi	Queensland Research Centre for Peripheral Vascular Disease (QRC-PVD)	Assessment of the efficacy of a brief behaviour intervention designed to improve physical activity in patients with peripheral artery disease	NHMRC Project Grant administered by James Cook University	\$131,257.26	2019-2020
Lisan Mulvey, Dr Jason Jenkins	Queensland Research Centre for Peripheral Vascular Disease (QRC-PVD)		NHMRC		

Current RBWH Department / Research Group Led Research Activity

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Krishna Patabathula, Dr Jason Jenkins	Dr Murray Ogg, Dr Samantha Peden, Dr Nigel Pinto, Dr Peter Donovan, Michelle McGrath	BOLD Trial: A RCT to assess effect of targeted pre- and post-operative blood pressure control on the incidence of type II endoleak after Endovascular Aneurysm Repair (EVAR)	N/A	N/A
Dr Stacie Hodge, Dr Krishna Patabathula	Dr Jason Jenkins, Dr Murray Ogg	Enhancing Your Recovery: Assessing efficacy of an internally designed web/mobile application to improve patient education and clinical outcomes	N/A	N/A
Dr Christoph Meinert	Dr Jason Jenkins, Dr Nigel Pinto, Dr Krishna Pattabathula	Establishment of an advanced surgical training suite incorporating perfused 3D-printed vasculature in a clinically relevant surgical environment	N/A	N/A
Dr Christoph Meinert	Dr Jason Jenkins, Dr Nigel Pinto, Dr Krishna Pattabathula	The development of 3D printed resorbable endovascular devices incorporating biodegradable polymers and graphene	N/A	N/A
Dr Christoph Meinert	Dr Jason Jenkins, Dr Nigel Pinto, Dr Krishna Pattabathula	The development of soft robotic catheters for endovascular surgery	N/A	N/A
Dr Christoph Meinert	Dr Jason Jenkins, Dr Nigel Pinto, Dr Krishna Pattabathula	The development of off-the-shelf tissue-engineered vascular grafts	N/A	N/A
Dr Krishna Pattabathula	Dr Murray Ogg, Dr Jason Jenkins	Contemporary outcomes for Critical Limb Ischaemia: 5-year cohort study	N/A	N/A
Dr Thomas Cavaye, Dr Joshua Tesar	Dr Allan Kruger, Dr Samantha Peden, Dr Krishna Pattabathula, Michelle McGrath	Carotid Body Tumour resection experience, clinical outcomes and genetic evaluation	N/A	N/A
Dr Allan Kruger	Dr Samantha Peden, Dr Krishna Pattabathula, Dr Thomas Cavaye, Dr Joshua Tesar, Michelle McGrath	Open mesenteric revascularisation: A 28-year Australian Experience	N/A	N/A
Matthew Versteeg	Dr Jason Jenkins, Dr Kate Thomas, Teal Derboghossian, Dr Krishna Pattabathula	3-Dimensional modelling of arteriovenous fistulas using tomographic ultrasound	N/A	N/A

Collaborative Research Activity Involving RBWH Department / Research Group

Lead Investigator Name (RBWH staff in bold)	Other Study Investigators (RBWH staff in bold)	Research Project Title	Number of Patients Recruited in 2020	Total number of Patients Recruited
Dr Jason Jenkins	Lisan Mulvey, Matthew Dalley Watkins, Sophie Rowbotham	MERIT	N/A	N/A
Dr Jason Jenkins	Lisan Mulvey, Matthew Dalley Watkins, Sophie Rowbotham	BIP	N/A	N/A
Dr Jason Jenkins	Lisan Mulvey, Matthew Dalley Watkins, Sophie Rowbotham	MAT	N/A	N/A
Dr Jason Jenkins	Lisan Mulvey, Matthew Dalley Watkins, Sophie Rowbotham	FAME-2	N/A	N/A

Research Publications

Journal Articles

- Vigata M, **Meinert C**, Hutmacher DW, Bock N. Hydrogels as drug delivery systems: A review of current characterisation and evaluation techniques. *Pharmaceutics*. 2020
- Elliott J, Jenkins J**. Management of a large ruptured popliteal artery aneurysm involving a combined deployment of a covered stent graft and evacuation of popliteal fossa haematoma. *J Vasc Surg Cases Innov Tech*. 2020
- K Pattabathula, S Peden, J Jenkins, N Pinto**. Concurrent chronic contained rupture of abdominal aortic and popliteal artery aneurysms: a case report and review of the literature. *ANZ J Surg*. 2020
- Golledge J, Pinchbeck J, Rowbotham SE, Yip L, **Jenkins J**, Quigley F, Moxon J. Health-related quality of life amongst people diagnosed with abdominal aortic aneurysm and peripheral artery disease and the effect of fenofibrate. *Scientific Reports*. 2020
- Golledge J, Moxon JV, Rowbotham S, Pinchbeck J, Quigley F, **Jenkins J**. High ankle brachial index predicts high risk of cardiovascular events amongst people with peripheral artery disease. *Plos One*. 2020
- Singh TP, Wong SA, Quigley F, **Jenkins J**, Golledge J. Association of gout with major adverse cardiovascular events and all-cause mortality in patients with peripheral artery disease. *Atherosclerosis*. 2020
- Golledge J, Rowbotham S, Velu R, Quigley F, **Jenkins J**, Bourke M, Bourke B, Thanigaimani S, Chan DC, Watts GF. Association of serum lipoprotein (a) with the requirement for a peripheral artery operation and the incidence of major adverse cardiovascular events in people with peripheral artery disease. *J Am Heart Assoc*. 2020
- Golledge J, Leicht A, Yip L, Rowbotham SE, Pinchbeck J, **Jenkins J**, Clapperton R, Dally-Watkins M, Singh MF, Mavros Y, Noble Y, Haghghi MM, Hollings M, Parmenter BJ, Burton NW. Relationship between disease-specific quality of life measures, physical performance and activity in people with intermittent claudication caused by peripheral artery disease. *Eur J Vasc Endovasc Surg*. 2020
- Moxon JV, Rowbotham SE, Pinchbeck JL, Lazzaroni SM, Morton SK, Moran CS, Quigley F, **Jenkins J**, Reid CM, Cavaye D, Jaeggi R, Golledge J. A randomised controlled trial assessing the effects of peri-operative fenofibrate administration on abdominal aortic aneurysm pathology: Outcomes of the FAME trial. *Eur J Vasc Endovasc Surg*. 2020
- Golledge J, Pinchbeck J, Tomee SM, Rowbotham SE, Singh TP, Moxon JV, **Jenkins J**, Lindeman HJ, Dalman RL, McDonnell L, Fitridge RA, Morris DR. Efficacy of telmisartan to slow growth of small abdominal aortic aneurysms: A randomised clinical trial. *JAMA Cardiol*. 2020
- Nastasi D, Moxon JV, Norman R, Trollope AF, Rowbotham S, Quigley F, **Jenkins J**, Golledge J. The cost effectiveness of intensive low density lipoprotein-cholesterol lowering in people with peripheral artery disease. *J Vasc Surg*. 2020

Conference Presentations – Invited Speaker, Oral and Poster

Oral Presentations

1. **Meinert C, Pattabathula K, Pinto N, Jenkins J.** Shaping the future of medicine: 3D biofabrication in vascular surgery. Herston Health Symposium 2020. Brisbane, QLD AU
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Poster Presentations

1. **Meinert C, Pattabathula K, Pinto N, Jenkins J.** Shaping the future of medicine: 3D biofabrication in vascular surgery. Herston Health Symposium 2020. Brisbane, QLD AU
 2. **Pattabathula K, Hodge S, Ogg M, Jenkins J.** Enhancing your recovery: a mobile application for patients undergoing vascular surgery intervention. Herston Health Symposium 2020. Brisbane, QLD, AU
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