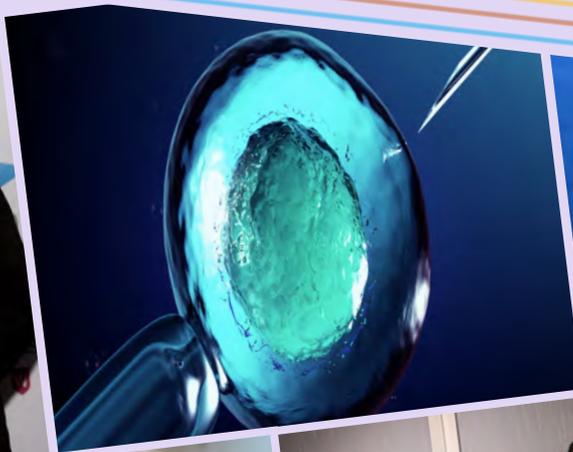


South Western Sydney Local Health District

Research Annual Report

July 2019 - June 2020



*transforming your
experience*





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December 2020

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ABOUT SWSLHD RESEARCH

Message from the SWSLHD Board Chair and Chief Executive



Chief Executive Dr Amanda Larkin and District Board Chair Mr Sam Haddad

Health research is flourishing in south western Sydney and we are proud of the commitment of our staff to enhancing patient care through their quest for discovery and innovation. Our teams reacted swiftly to COVID-19, quickly adapting their research to the new health frontiers of the pandemic. At the same time, our important research and clinical trials continued to improve the models of care and health outcomes for the people of south western Sydney and beyond. The dedication of our researchers is inspiring, particularly during a year of unprecedented change and challenges. Their outstanding work is establishing South Western Sydney Local Health District as a national and international leader in health and medical research.

We are incredibly proud of our District's response to COVID-19 with research and innovation a top priority during this period. A COVID-19 Clinical Trials Network was established to ensure we were able to quickly begin specialised research relating to the coronavirus. Our COVID-19 Advisory Board provided expert guidance on the 21 COVID-19 research projects now underway. Our existing research is also continuing in a COVID-safe environment.

We are excited to see the progress of our \$3 billion hospital redevelopment projects across the District and their focus on research and education. The District is a foundational partner in the development of the Macarthur Health Research Centre, one of three centres proposed in the coming years to drive research in the region's most pressing health conditions. We are working with our major research partner, the Ingham Institute for Applied

Medical Research, and our university partners, Western Sydney University and the University of NSW, on these projects. Planning is also underway on the Liverpool Education Research Hub, which will significantly expand the size of the Ingham Institute. The third centre is planned to be included in the \$1 billion new Bankstown-Lidcombe Hospital.

Our commitment to research, innovation and education is a major foundation of the District's Strategic Plan 2018-2022. We have adjusted the plan's strategic objectives to reflect our focus on the new priorities of health, including telehealth and virtual care. Since the start of the pandemic in March, the District has provided more than 10,000 telehealth consultations – an incredible effort. The District's Research Strategy 2023 is also driving our research to enhance our care and improve the health of our community. A key focus of the plan is ensuring we attract, retain and nurture emerging and expert researchers in all disciplines. The District's Research and Teaching Committee, led by Board Member Dr David Abi-Hanna, is also working to build our reputation for research excellence and attract world-class researchers.

The District's prestigious academic unit program is continuing to make significant steps to embed research into clinical practice. Our units are conducting research into children's mental health, maintaining foot health in high risk patients, women's and maternal health and treatments for patients with inflammatory bowel disease. We are proud we are the only District in NSW to invest in academic units, which build our reputation as a research leader and promote our culture of continuous learning.

Finally, we thank our staff, research partners, community members and consumer representatives for their fantastic support of research and innovation in south western Sydney. We are humbled and inspired by their ideas, commitment and dedication. We look forward to the District's outstanding health research transforming patient care well into the future and achieving our vision of "leading care, healthier communities".

Message from the SWSLHD Director of Research



Professor Les Bokey
SWSLHD Director of Research

Collaboration, teamwork and innovation have guided South Western Sydney Local Health District's response to research during the COVID-19 pandemic. I commend the Research Directorate and our staff for their exceptional work and focus on research and discovery during the challenges of the pandemic. The creation of the COVID-19 Clinical Trials Network and COVID-19 Advisory Board have ensured we were able to quickly initiate research in critical areas, including telehealth, remote sensing and virtual care. The knowledge we have gained is already becoming embedded into our clinical practice. Every day I am impressed by our staff's dedication to research and innovation, which will transform patient care well into the future.

I would like to acknowledge the outstanding leadership and vision of Professor Jeremy Wilson who retired as the District's Human Research Ethics Committee (HREC) Chairperson in January. In his eight years in the role, Professor Wilson significantly raised the profile of health research in south western Sydney. He supported the process for National Health and Medical Research Council accreditation of the District and recognition of our specific expertise in research involving culturally and linguistically diverse populations. On behalf of the Directorate, I thank Professor Wilson for his commitment to research and his contribution to our academic life. In February the HREC welcomed Professor Murray Killingsworth to serve as its new Chairperson and I look

forward to continuing our work to further develop research and innovation. Professor Killingsworth is a leader in the research of cell biology of chronic inflammatory processes in retinal disease, renal disease and cancer and brings his extensive experience and knowledge to the role.

In September 2019 we appointed Ms Megan Ford to the newly created position of Executive Director of Clinical Trials for the District and the Ingham Institute for Applied Medical Research. In the past financial year, 41 departments were involved in clinical trials with 420 trials under way across the District – a wonderful achievement. There are 21 projects relating to COVID-19, including research into an armband device using cloud technology to monitor the vital signs of people with COVID-19 recovering at home.

I am delighted to welcome Professor Mark Parsons, who has been appointed as the University of NSW Professor of Medicine and Neurology. Professor Parsons is internationally acknowledged as a leader in stroke medicine and most recently held the Professorial Chair of Neurology at the University of Melbourne and the Directorship of the Department of Neurology at Royal Melbourne Hospital. Previously, he was the Director of Stroke at John Hunter Hospital and Professor of Neurology at the University of Newcastle. His research team will be based at the Ingham Institute for Applied Medical Research and in the Department of Neurology at Liverpool Hospital.

Our partnership with the Ingham Institute for Applied Medical Research continues to thrive and enhance our reputation as a leader in health research. One of the major achievements of the year was the establishment of the Centre for Robotics in Health Technologies at the institute. The institute will be significantly expanded in the new Liverpool Education Research Hub, part of the \$740 million Liverpool Health and Academic Precinct redevelopment. The "One Institute - Three Medical Research Centres" model of research also include the development of research centres at Campbelltown Hospital and the new Bankstown-Lidcombe Hospital. Exciting times are ahead for our researchers!

PARTNERS WITH INDUSTRY

The South Western Sydney Local Health District is fortunate to have formed many successful partnerships with industry and to receive support from a variety of different organisations and businesses, both in Australia and internationally. Even during the unprecedented challenges of 2020, successful partnerships have been achieved with major companies and numerous relationship agreements with industry have been established. This success highlights the commitment of the District and industry partners to work collaboratively towards building more healthy and educated communities in south western Sydney. Examples of these partnerships include Hitachi, Deloitte Consulting, Device Technologies, PricewaterhouseCoopers, and General Electric. The District also works closely with the CSIRO and with various start-up firms. These partnerships have achieved accomplishments in many different areas, such as clinical robotic technology, neuroscience and stroke, and COVID-19 monitoring for patients who require isolation at home. The District has established the Commercialisation Advisory Group, a joint initiative with the Ingham Institute of Applied Medical Research, to support the many technology innovations and start-up businesses

in the District. This will provide an avenue to identify and support high-potential candidates suitable for referral to our commercial partners.

The Liverpool Innovation Precinct (LIP) and the Campbelltown Health & Education Precinct (CHEP) are reimagining how health, education and research is undertaken individually and collaboratively to drive innovation in SWSLHD. In building these precincts, the District's partners include councils, higher education providers, the Ingham Institute for Applied Medical Research and other organisations. Building on current strengths, the precincts will deliver primary and specialist health care, translational research, and higher education. They will also leverage their positions as hubs for healthcare-related advanced manufacturing. This will be driven by strong collaboration with industry, supported and enabled by digital technologies. The LIP has been included in the final 20 global innovation precincts to be supported by the Global Institute on Innovation Districts (GIID). This partnership with GIID will also provide easy access to an international network for additional support and collaboration opportunities.



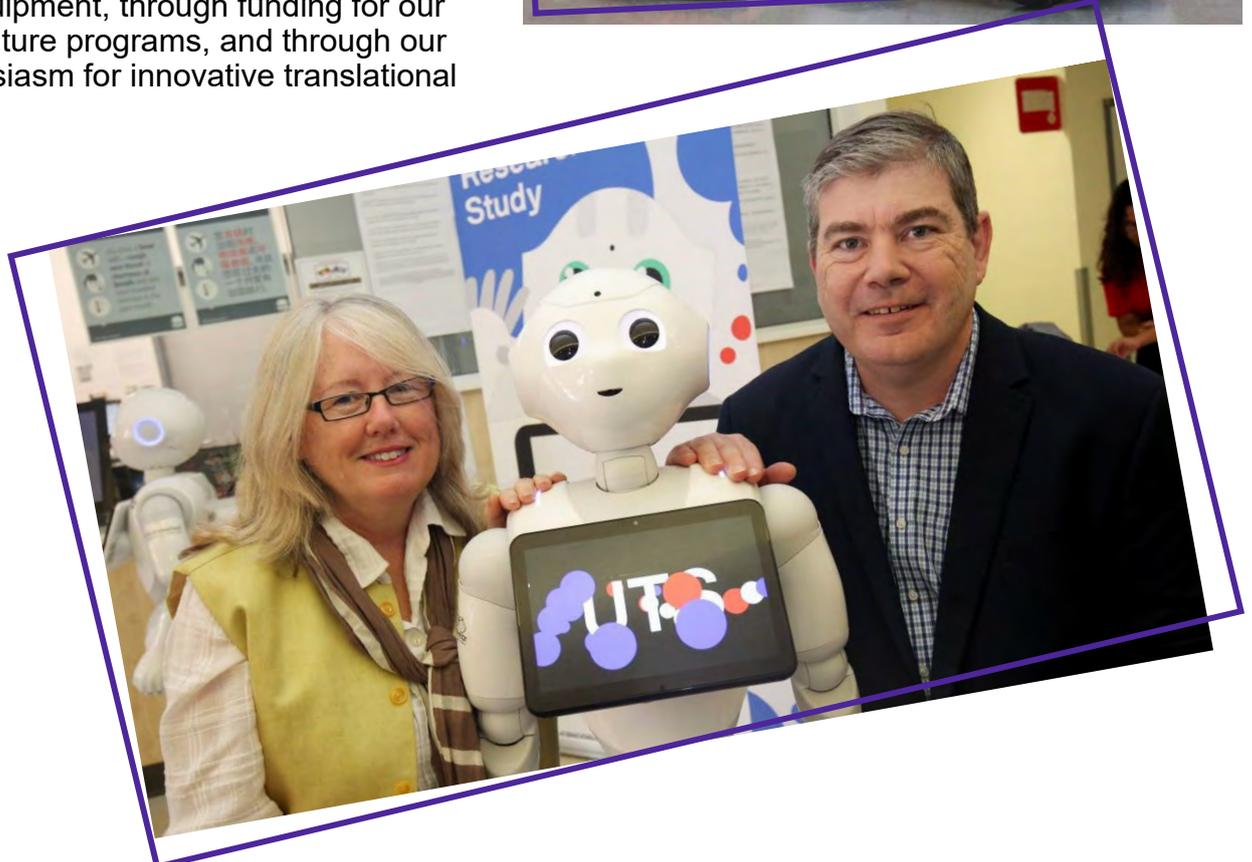
ABOUT SWSLHD RESEARCH

One example of the innovative partnerships between the District, higher education and industry can be seen with the trial of the Pepper social robot in Fairfield Hospital. The robot greets visitors and patients and helps them find their way around the Hospital. It can understand over 100 languages and displays routes to locations in the hospital on an adjoining screen. The trial is the result of a collaboration between the District's Clinical Innovation and Business Unit and the University of Technology Sydney's Magic Lab.

The District continues to work collaboratively with TATA Consulting Services (TCS), who has supported our project teams in developing apps for the Neonatal Intensive Care Unit and Special Care Nursery. We also maintain ongoing international partnerships with Samsung SDS and Wellysis from South Korea.

The District participates in clinical education programs in the Asia Pacific region. These have further strengthened our global presence in the health care industry and been an opportunity to share knowledge, expertise and resources in a wider environment.

The ongoing support from our partners has helped the District to achieve improvements in health care delivery through access to advanced equipment, through funding for our current and future programs, and through our shared enthusiasm for innovative translational research.



BestSTART-SW: Children, Young People & Families Health Research Translation Unit

BestSTART-SW is an academic unit in which world-class clinicians, researchers and policymakers work together with families, children and youth to create a centre of excellence in child-health translational research to improve the health of children and families in south western Sydney. The academic unit has a particular focus on serving culturally and linguistically diverse communities and ensuring that their research priorities are informed by the views of local children and families.

In 2019-2020 BestSTART researchers established Growing Healthy Kids, which is investigating the most effective ways to help children in south western Sydney who are struggling with obesity. Researchers are also working on an autism surveillance project which aims to enable primary care providers to diagnose developmental problems in childhood earlier, and to inform clinical practice by improving the process of childhood check-ups and health assessments. A number of studies are in progress relating to problems in child speech development. A pilot study - "Healthy Wealthy Families", has commenced which provides financial counselling coupled with health service delivery in south western Sydney.

BestSTART researchers collaborate with a range of universities, community and research organisations, including the University of New



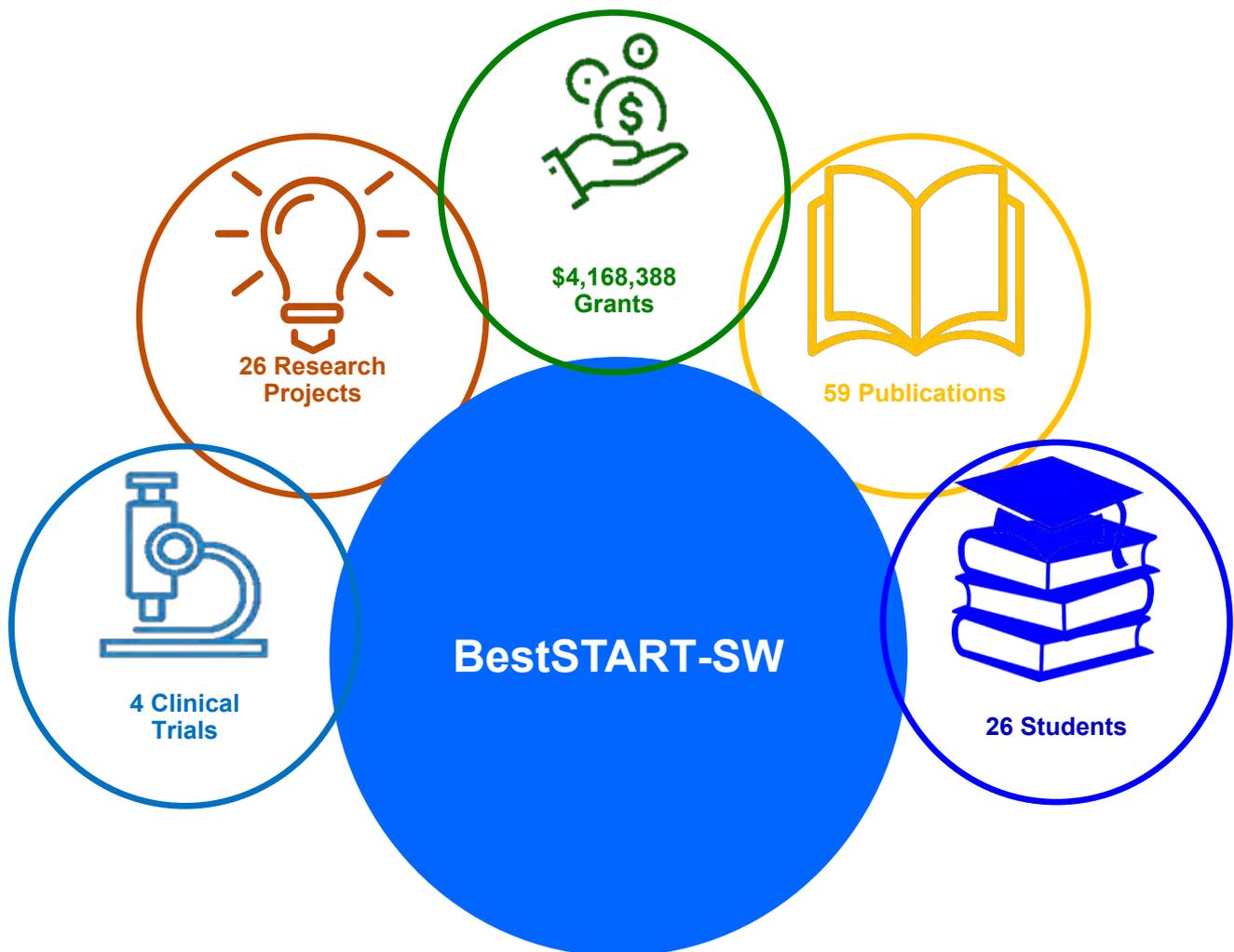
South Wales, Western Sydney University, the University of Wollongong, the University of Newcastle, Karitane, Cerebral Palsy Alliance, Autism Awareness Australia, Refugee Health, the George Institute, 3DN (Department of Developmental Disability Neuropsychiatry), Fairfield City Council, and the Sydney Children's Hospital Network.

The academic unit's research is of great importance to the south west Sydney community and the value of their work has been recognised by academic, government and philanthropic funders.



Key Publications Include:

- Chando, S, Craig, JC, Burgess, L, Sherriff, S, Purcell, A, Gunasekera, H, Banks, S, Smith, N, Banks, E & Woolfenden, S 2020, 'Developmental risk among Aboriginal children living in urban areas in Australia: The Study of Environment on Aboriginal Resilience and Child Health (SEARCH)', *BMC Pediatrics*, vol. 20, no. 13
- Miller, HM, Young, C, Nixon, J, Talbot-McDonnell, M, Cutmore, M, Tong, A, Craig, JC & Woolfenden, S 2020, 'Parents' and carers' views on factors contributing to the health and wellbeing of urban Aboriginal children', *Australian and New Zealand Journal of Public Health*, vol. 44, no. 4, pp. 265-270, first published 08 June
- McInnis, P, Kohlhoff, J, & Eapen, V 2020, 'Real-world outcomes of PCIT for children at risk of autism or developmental delay, *Journal of Child and Family Studies*, vol. 29, no. 6, pp. 1701-1711
- Edwards, K, Rimes, T, Smith, R, Fernandez, R, Stephenson, L, Son, J, Sarkozy, V, Perkins, D, Eapen, V & Woolfenden, S 2020, 'Improving Access to Early Childhood Developmental Surveillance for Children from Culturally and Linguistically Diverse (CALD) Background', *International Journal of Integrated Care*, vol. 20, no. 3
- Silove, D, Mohsin, M, Klein, L, De Jesus Tam, N, Dadds, M, Eapen, V, Tol WA, da Costa, Z, Savio, E, Soares, R, Steel, Z & Rees, SJ 2020, 'Longitudinal path analysis of depressive symptoms and functioning among women of child-rearing age in post conflict Timor-Leste', *BMJ Global Health*, vol. 5, no. 3, <http://dx.doi.org/10.1136/bmjgh-2019-002039>



Gut and the Microbiome: Role in Health and Disease

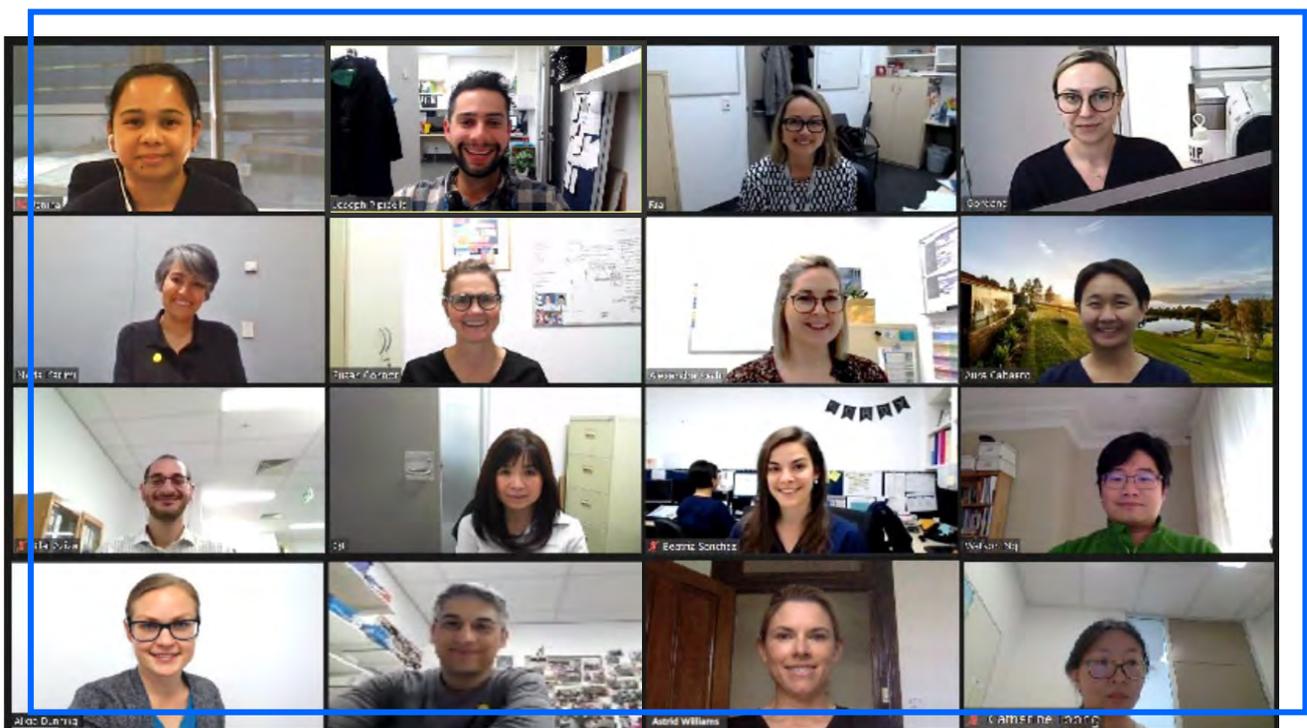
Medical researchers continue to discover more about the role of the gut in the development of diseases. The Gut and the Microbiome academic unit has expanded their research and involvement in collaborative projects over 2019-2020.

An important research priority for the academic unit is to improve models of care for patients with chronic gastroenterological diseases such as inflammatory bowel disease (IBD), Crohn's disease and ulcerative colitis. The academic unit is testing new clinical management software called Crohn's Colitis Care (CCCare), which enables clinicians to access and update a patient's symptoms, medications, management plan, imaging and pathology results in a single online cloud-based portal. Patients can also access information and reminders about the management of their condition through CCCare and the portal has been found to improve patient-clinician communication. CCCare has received very strong support from patients during the initial rollout of the software for IBD patients at Liverpool Hospital, and the academic unit plans to broaden use of CCCare across SWSLHD.

The other major research focus for the academic unit is its expanding program of clinical trials: investigator-initiated trials, as well as those in partnership with the pharmaceutical industry. As

of mid-2020, six investigator-initiated clinical trials have been completed, while eight trials are in progress and a further six will begin in the next year. A number of these trials have focused on treatment optimisation using therapeutic drug monitoring (TDM) of infliximab. TDM is the monitoring of medication levels at timed intervals to maintain a constant concentration of medication in the patient's blood. This means that clinicians can ensure that the medication remains at the safest and most effective concentration for the patient. Researchers in the academic unit have also demonstrated that the use TDM for infliximab is cost effective, as it makes the most efficient use of an expensive medication, potentially saving hundreds of dollars per infliximab patient.

In 2019-2020, the academic unit expanded their collaborative partnerships, working with two communications professionals, a health economist, and an implementation science expert to improve the translational outcomes of their projects. The academic unit works in close collaboration with patient advocacy groups such as Crohn's and Colitis Australia. They have also employed a new clinical trial coordinator and research manager to increase the team's capacity to participate in clinical trials and collaborate with other research groups.

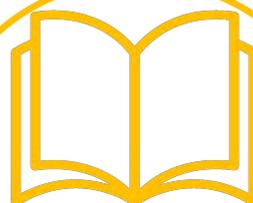


Key Publications Include:

- Wu, Y, Lin, B, Thilakanathan, C, Lehmann, P, Xuan, W, Mohsen, W, Toong, C, Williams, AJ, Ng, W & Connor, S 2019, 'Therapeutic drug monitoring in Inflammatory Bowel Disease reduces unnecessary use of infliximab with substantial associated cost-savings'. *Internal Medicine Journal*, doi:10.1111/imj.14644
- Haifer, C, Kelly, CR, Paramsothy, S, Andresen, D, Papanicolas, LE, McKew, GL, Borody, TJ, Kamm, M, Costello, SP, Andrews, JM, Begun, J, Chan, HT, Connor, S, Ghaly, S, Johnson, PDR, Lemberg, DA, Paramsothy, R, Redmond, A, Sheorey, H, van der Poorten, D & Leong, RW 2020, 'Australian consensus statements for the regulation, production and use of faecal microbiota transplantation in clinical practice', *Gut*, vol. 69, no. 5, pp. 801-810



\$186,007
Grants



14 Publications

**Gut and the
Microbiome**

South West Limb Preservation and Woundcare

The goal of the academic unit is to find more effective ways to preserve people's limbs and mobility through better wound care. One of the major ways in which people can lose the use of their limbs, even requiring amputation, is through complications from diabetes. Diabetics are particularly at risk of injury as high levels of blood sugar can damage the nerves and blood vessels in the legs and feet. This can mean that people don't heal quickly if they hurt themselves, and are at risk of ongoing infection and gangrene.

Academic unit researchers are studying a number of treatments to improve the care of patients with wounds and injuries. In collaboration with podiatry clinicians, they are investigating which type of antibiotics are most effective for diabetic foot infections. Some diabetic infections are resistant to antibiotics, and academic unit researchers are also exploring new interventions to prevent these infections arising.

Researchers from the academic unit are using their expertise to improve health care systems. Lead researcher Dr Matthew Malone is reviewing current inpatient management of diabetic foot disease to improve patient care across South Western Sydney. Dr Malone is a co-chair for the NSW Health's Leading Better Value Care review of wound care practices, and works with the group to change the delivery of health care for people with wounds.

Limb Preservation and Wound Care researchers have improved patient care through training non-

vascular clinicians to perform lower extremity circulation testing. Prior to this, patients would often need to wait over 4 weeks to obtain an ultrasound test of leg circulation. Academic unit researchers partnered with community nurses, vascular surgeons and the District's Risk and Policy Unit to produce an evidence-based protocol for nursing and allied health staff to test leg circulation, providing more timely and efficient patient care. In 2020, the academic unit has also rapidly implemented virtual care (telemedicine) services for high risk foot patients in response to the COVID-19 pandemic, providing earlier access to consultations and better clinical outcomes.

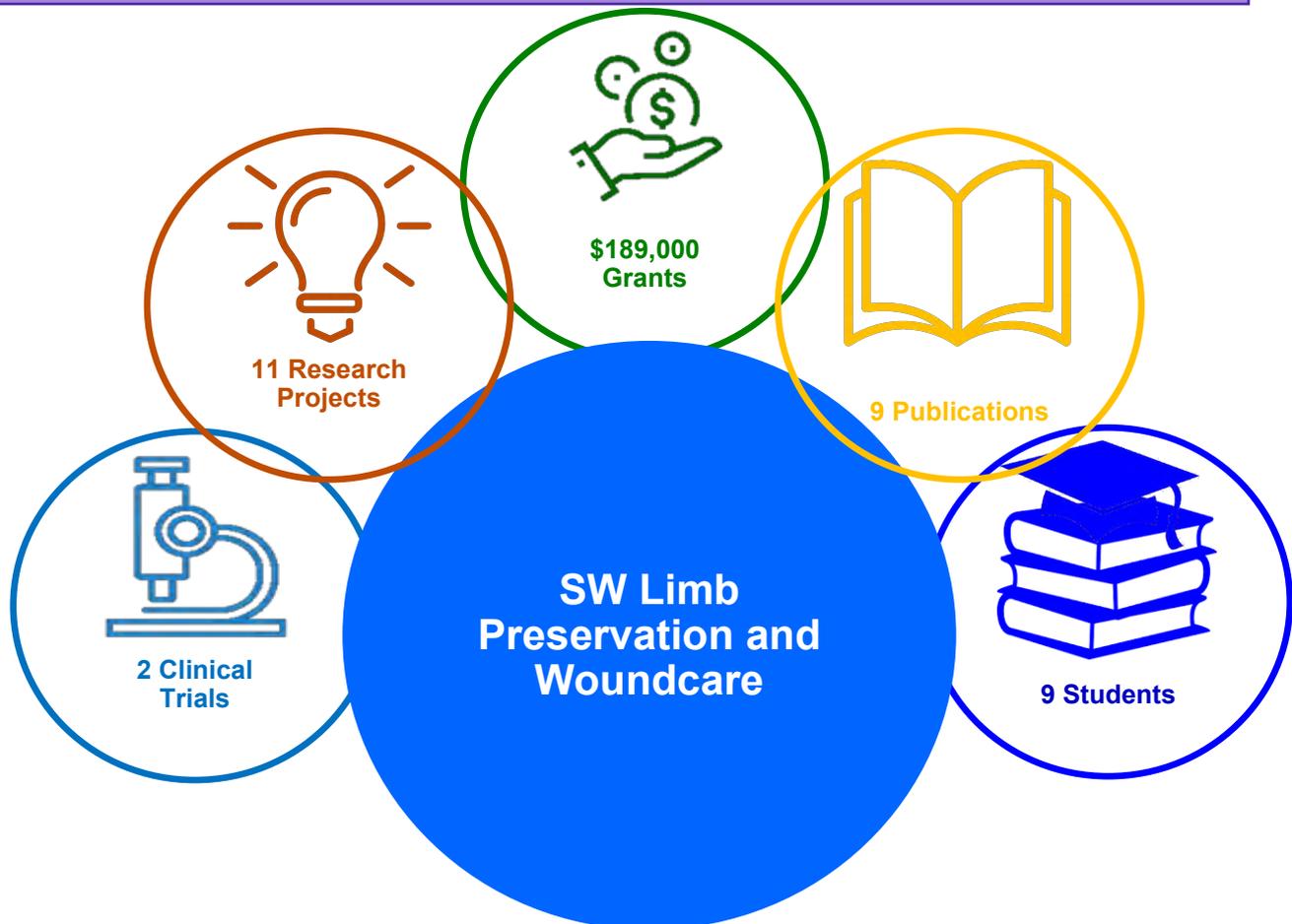
Limb preservation and wound care researchers working in the Liverpool Hospital High Risk Foot Service have recently achieved national recognition as a Centre of Excellence. The Centre of Excellence accreditation was received from the National Association of Diabetes Centres and provides external recognition of the quality of research and clinical care against benchmarked standards.

The academic unit collaborates with research organisations locally, nationally and internationally, including the University of Texas (USA), Fiona Stanley Hospital (WA), Western Sydney University, Royal Perth Hospital, Sunshine Coast Hospital and Health Service, Blacktown Hospital, the National Association of Diabetes Centres and the Garvan Institute.



Key Publications Include:

- Travis, J, Malone, M, Hu, Honghua & Baten, A 2020, 'The microbiome of diabetic foot ulcers: A comparison of swab and tissue biopsy wound sampling techniques using 16S rRNA gene sequencing', *BMC Microbiology*, vol. 20, no. 163
- Lipsky, BA, Senneville, E, Abbas, ZG, Aragon-Sanchez, J, Diggle, M, Embil, JM, Kono, S, Lavery, LA, Malone, M, van Asten, SA, Urbancic-Rovan, V, & Peters, EJG 2020, 'Guidelines on the diagnosis and treatment of foot infection in persons with diabetes (IWGDF 2019 update)', *Diabetes Metabolism Research and Reviews*, vol. 36, no. S1, e3280
- Senneville, E, Lipsky, BA, Abbas, ZG, Aragon-Sanchez, J, Diggle, J, Embil, JM, Kono, S, Lavery, LA, Malone, M, van Asten, SA, Urbancic-Rovan, V & Peters, EJG 2020, 'Diagnosis of infection in the foot in diabetes: a systematic review', *Diabetes Metabolism Research and Reviews*, vol. 36, no. S1, e3281
- Peters, EJG, Lipsky, BA, Senneville, E, Abbas, ZG, Aragon-Sanchez, J, Diggle, J, Embil, JM, Kono, S, Lavery, LA, Malone, M, Urbancic-Rovan, V & van Asten, SA 2020, 'Interventions in the management of infection in the foot in diabetes, a systematic review', *Diabetes Metabolism Research and Reviews*, vol. 36, no. S1, e3282
- Schwarzer, S, James, GA, Goeres, D, Bjarnsholt, T, Vickery, K, Percival, SL, Stoodley, P, Schultz, G, Jensen, SO & Malone, M 2019, 'The efficacy of topical agents used in wounds for managing chronic biofilm infections: A systematic review', *Journal of Infection*, <https://doi.org/10.1016/j.jinf.2019.12.017>
- Boulton, AJM, Armstrong, DG, Hardman, MJ, Malone, M, Embil, JM, Attinger, CE, Lipsky, BA, Aragón-Sánchez, J, Li, HK, Schultz, G & Kirsner, RS 2020, 'Diagnosis and Management of Diabetic Foot Infections', *American Diabetes Association*, January, <https://doi.org/10.2337/db2020-01>





WHITU

WOMENS HEALTH INITIATIVE TRANSLATIONAL UNIT

The Women's Health Initiative Translational Unit (WHITU) is an academic unit focusing on women's and maternal health research. The overarching objective of WHITU is to create an internationally recognised women's health centre, which is guided by evidence as well as women's lived experiences in a culturally respectful way. The academic unit aims to maximise women's health by providing transformative care at all stages of life. WHITU provides a multidimensional individualised approach which is underpinned by models of care that are translatable and relevant to all communities. WHITU's programs are scientifically tested to ensure that they are effective, affordable, sustainable, and deliver improved outcomes for women, their children and their communities.

One focus on the academic unit is on understanding and preventing preeclampsia. Preeclampsia is a dangerous complication during pregnancy in which the woman experiences high blood pressure and damage to organs such as the liver or the kidneys. Researchers are studying how aspirin can reduce the risk of preeclampsia, and how to use aspirin most effectively in clinical practice. They also completed an evaluation of a test for preeclampsia to assess whether this test

is useful in clinical practice. This evaluation provided evidence to support the state-wide usage of this test.

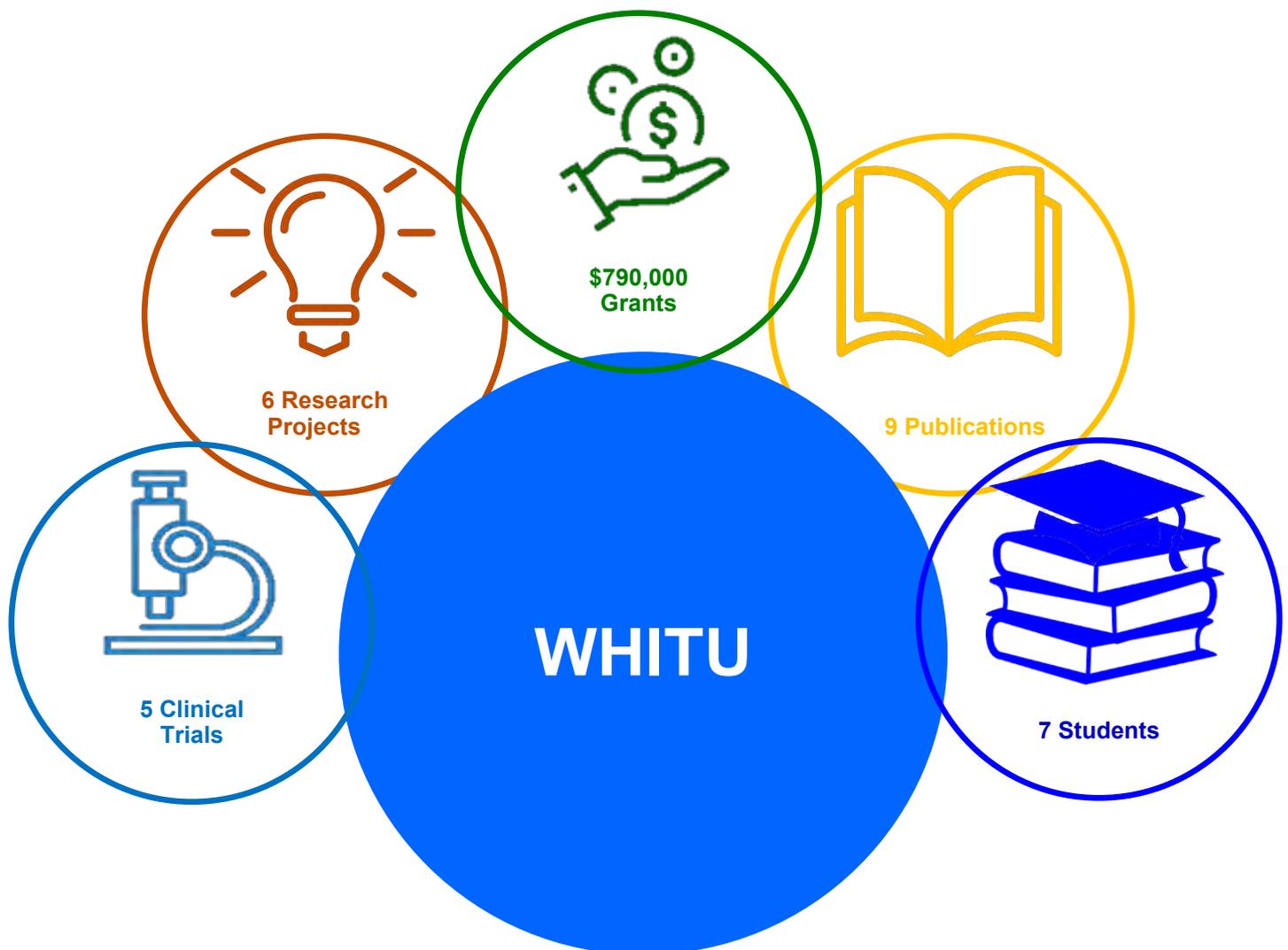
Academic unit researchers have also developed policy guidelines and patient information sheets which enable better management of hyperemesis. Hyperemesis is a pregnancy complication which involves extreme nausea, vomiting, dehydration and weight loss. The implementation of these policy guidelines has empowered women to more effectively self-manage hyperemesis and has reduced the number of admissions to the Emergency Department.

WHITU researchers are currently leading a variety of clinical trials. These include investigating how to address iron deficiency in pregnancy, and testing whether a new app can help women identify risks to their pregnancy and seek earlier referral to antenatal services. Researchers will also soon begin testing a new treatment for intrahepatic cholestasis of pregnancy, a liver condition associated with a higher risk of stillbirth. WHITU has become a go-to maternity clinical trials group given its reach across the District.



Key Publications Include:

- Xu, B, Shanmugalingam, R, Chau, K, Makris, A & Hennessy, A 2020, 'Galectin-1 related modulation of trophoblast endothelial interactions by integrins $\alpha 1$ and $\beta 1$ ', *Reproductive Sciences*, vol. 27, no. 5, pp. 1097-1109
- Shanmugalingam, R, Wang, XS, Motum, P, Fulcher, I, Lee, G, Kumar, R, Hennessy, A & Makris A 2020, 'Clinical influence of non-adherence with prophylactic aspirin in preventing preeclampsia in high-risk pregnancies: A multi-centre prospective, observational, cohort study', *Hypertension*, vol. 75, no. 4, pp. 1125-1132
- Chau, K, Xu, B, Hennessy, A & Makris, A 2020, 'Effect of placental growth factor on trophoblast-endothelial cell interactions in vitro', *Reproductive Sciences*, vol. 27, no. 6, pp. 1285-1292
- Chau, K, Bobek, G, Xu, B, Stait-Gardner, T, Price, W, Hennessy, A & Makris, A 2020, 'Effect of placental growth factor in models of experimental pre-eclampsia and trophoblast invasion', *Clin Exp Pharmacol Physiol*, vol. 47, no. 1, pp. 49-59
- Xu, B, Makris, A, Liu CC & Hennessy, A 2020, 'Calcium deficient placental growth restriction is mediated by an increase in non-invasive integrin $\alpha 5$ and $\beta 4$ phenotype', *Pregnancy Hypertension*, vol. 19, pp. 138-142
- Shanmugalingam, R, Mengesha, Z, Notaras, S, Liamputtong, P, Fulcher, I, Lee, G, Kumar, R, Hennessy, A & Makris, A 2020, 'Factors that influence adherence to aspirin therapy in the prevention of preeclampsia amongst high-risk pregnant women: A mixed method analysis', *PLoS One*, vol. 15, no. 2, e0229622



Ethics and Research Governance

The District's Human Research Ethics Committee (HREC) is committed to protecting participants involved in all research, ensuring that all studies are carried out in an ethical manner and meet standards of scientific merit and integrity. At the beginning of 2020, the HREC welcomed its new Chairperson, Professor Murray Killingsworth. Professor Killingsworth is a principal scientist at the Electron Microscopy Laboratory for NSW Health Pathology and has extensive experience in pathology and laboratory research.

The HREC is supported by the District's Research Directorate. The Research Directorate provides support to researchers and coordinates the HREC including; reviewing draft protocols prior to submission, conducting all research governance reviews, and coordinating, reviewing and processing all ethics applications and amendment submissions.

Over the last eighteen months, the Research Directorate has implemented the state-wide Research Ethics and Governance Information System (REGIS) to its full capacity for all ethics and governance submissions. The

Research Directorate has developed and provided training to researchers via fortnightly webinars to assist with the transition to the new REGIS system.

From July 2019 – June 2020, SWSLHD Research Directorate reviewed 90-95% of all ethics applications within the 60 day benchmark and 92-100 per cent of all governance applications within the 30 day benchmark set by NSW Health.

Due to COVID-19, the Research Directorate has had to implement a number of changes to streamline and assist researchers in the review of urgent COVID-19 research. Processes implemented included; coordinating and organising weekly HREC meetings for COVID-19 related submissions; 24 hour turnaround times for feedback to researchers post meetings, 24 hour turnaround times for governance reviews and same day turn around for urgent amendments. Up until July 2020 the HREC received and reviewed 16 COVID-19 ethics applications and the Research Directorate received and reviewed 21 COVID-19 governance applications.

Ethics Approval (All Research Types)

Application Volume		Performance			
Total # of applications		% Reviewed <60 days		% Reviewed <45 days	
Jul - Dec 2019	Jan - Jun 2020	Jul - Dec 2019	Jan - Jun 2020	Jul - Dec 2019	Jan - Jun 2020
44	41	95%	90%	86%	76%

SSA Approval (All Research Types)

Total # of applications		% Authorised <30 days		% Authorised <15 days	
86	85	92%	100%	88%	87%



Clinical Trials Support

Ethics Approval (Clinical Trials)

Application Volume		Performance			
Total # of applications		% Reviewed <60 days		% Reviewed <45 days	
Jul - Dec 2019	Jan - Jun 2020	Jul - Dec 2019	Jan - Jun 2020	Jul - Dec 2019	Jan - Jun 2020
13	16	92%	88%	85%	75%

SSA Approval (Clinical Trials)

Total # of applications		% Authorised <30 days		% Authorised <15 days	
41	37	88%	100%	85%	81%

Clinical trials are an integral part of medical care. They are necessary to test which interventions work best to manage or cure medical conditions. In south western Sydney, there has been a 32 per cent increase in clinical trials in 2019-2020.

SWSLHD is committed to supporting clinical trials and has adopted a centralised and streamlined approach. There is now a single application for research governance across all sites in South Western Sydney. A new Executive Director and Clinical Trials Fellow have joined the Clinical Trials Support Unit. New digital technologies have been implemented, in line with the District's Research Strategy, and these innovations are providing substantial efficiencies. This support has expedited new clinical trials and reduced administrative burdens on the participants and staff.

The success of the District's support for clinical trials is evident. In 2019-2020, eight new departments have commenced clinical trials. A total of 40 departments are conducting approximately 450 clinical trials across

Bankstown-Lidcombe, Bowral, Braeside, Campbelltown, Fairfield and Liverpool Hospitals. This includes 21 active clinical trials related to COVID-19.

The Clinical Trials Support Unit in south western Sydney has completed a review of all standard operating procedures and the Unit is continuing to evaluate and improve its processes. Multiple departments have provided input in the finalisation of the plans for the Clinical Trials Unit in the new development at Liverpool.

Liverpool Hospital was selected for and has participated in the NSW Health and Medical Research Phase I Unit Accreditation Pilot.

The District's Clinical Trials Manager, Kelsey Dobell-Brown, received the Ingham Institute of Applied Medical Research Award for Excellence in Teaching. The Award recognises Ms Dobell-Brown's achievements in facilitating the establishment of the Clinical Trials Support Unit and providing ongoing support to clinical trials across south western Sydney.



COVID-19 Impact

COVID-19 is a highly contagious respiratory and vascular disease, often transmitted through the air in crowded or unventilated spaces. As of November 2020, the COVID-19 pandemic has caused over 1.2 million deaths worldwide and has resulted in large-scale social and economic disruption. Governments and local authorities have taken numerous actions to prevent the spread of COVID-19 in south western Sydney, including enforcing social distancing measures, preventing large social gatherings, and encouraging social and work activities to occur remotely where possible.

Researchers and clinicians in the District have been pro-active in continuing to provide high-quality patient care and produce valuable research in the context of a rapidly changing pandemic. They have adapted their services and studies so that they are compatible with social distancing requirements and ensure the safety of patients and participants. They are also producing innovative research measuring the impact of the pandemic on the south western Sydney community, and evaluating how the District can provide more effective health care services into the future.

Researchers in the District have undertaken rapid qualitative assessments of the impact of COVID-19 in Aboriginal communities in Campbelltown and other areas of NSW. Their data will be used to help prevent the transmission of COVID-19 in Aboriginal communities and to provide context-specific knowledge to improve health services. Researchers in the BestSTART Academic Unit have investigated the impact of the COVID-19 pandemic on families of children living with neurodevelopmental disabilities. Allied Health researchers are evaluating the rapid implementation of telehealth services across the District during 2020, and studying the effectiveness of telehealth services in diverse communities. Oral Health researchers are developing a Remote Dentistry Model of Care to provide clinical assessments of patients who cannot attend in-person appointments. Population health researchers have investigated the impact of COVID-19 on informal, marginal and short-term accommodation, and the consequences of these COVID-19 impacts on health outcomes.



COVID-19 Impact

Investigator Initiated Studies

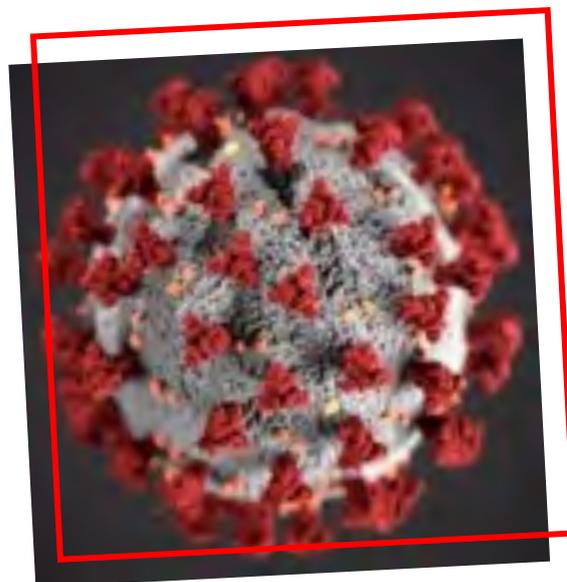
The District's dedicated clinical trials support unit has been highly resilient in adapting to the challenges of the COVID-19 pandemic. As of October 2020, there are 21 studies related to COVID-19 taking place throughout south western Sydney.

Professor Josephine Chow and her co-investigators are assessing the feasibility of an armband device for high-risk patients who are undergoing home isolation. The Biofourmis Everion armband monitors and records vital signs such as skin temperature, heart rate and respiration rate without the need for clinicians to take these measurements in-person. The armband enables clinicians to monitor patients' physiological changes and rapidly provide triaged additional care if necessary. The data collected by the armband has the potential to provide valuable information about the progression and spread of COVID-19 across the community.

Clinicians in the District are building data registries to improve patient care and to provide a basis for future COVID-19 research. Associate Professor Paul Middleton and his co-investigators are linking a variety of data sets together to form a COVID-19 Clinical Quality Registry. The Registry combines routinely collected administrative and demographic patient information with medical records and pathology and radiology data. This enables researchers to build a more detailed picture of the clinical outcomes of COVID-19 patients over the longer term, as well as better understanding the effects of the pandemic on health systems.

Women's health researchers are also developing a data registry about the effects of COVID-19 on pregnancy. Data registries facilitate the District's participation in national and international COVID-19 clinical trials.

The clinical trials support unit have quickly adapted their practices in response to COVID-19. They have developed strategies to monitor clinical trial participants remotely where in-person visits are not possible, to collect blood samples and perform intravenous infusion in alternative facilities where hospitals cannot be used, and to enable clinical trial sponsors to remotely monitor data to reduce the need for in-person site visits. These strategies means that valuable medical research can continue safely throughout the pandemic.



AWARDS AND SCHOLARSHIPS

ALLIED HEALTH

- **Katrina Tosi (Primary & Community Health Speech Pathology) and team** – awarded the South West Sydney Research Collaborative Achievement Award in 2019 for their project “Help, my toddler’s not talking! Evaluating the feasibility of the Toddler Communication Assessment Protocol”.



- **Minh Pham and Katrina Sing** – 2019 NSW Health Awards – awarded the People’s Choice Award at the 2019 NSW Health Awards in the Keeping people healthy category for “Aunty Roma’s: An Aboriginal and Torres Strait Islander specific falls prevention program”.



CANCER

- **Natalie Collier** Outstanding trainee research requirement submission. FRO Bourne and Langland's Prize. Auckland, New Zealand.
- **Josip Juresic, Jarrad Begg, et al.** Evaluation of the Accuracy of Fraxion Stereotactic Immobilisation System for Intracranial Stereotactic Radiotherapy. Best Poster. Elekta Users Group Sydney, Australia
- **Suzanne Lydiard.** Broadening the horizon of radiotherapy: Atrial Fibrillation Stereotactic Arrhythmic Radioblation on an MRI-Linac. Best Oral Presenter. Elekta: Auckland, New Zealand.
- **Iliana Peters** Application of 16-bit scans for Delineation of High Density Objects and Implementation in Treatment Planning. Best

Oral Presentation Award. EPSM Conference 2019

- **Afaf Girgis and Allan Smith.** Australia's first Prostate Cancer Combined Clinic. Collaboration - Working as a Team SWSLHD: Liverpool, Sydney, Australia.



CLINICAL TRIALS

- **Kelsey Dobell-Brown.** Excellence in Teaching Award. Ingham Institute Sydney, Australia.



DRUG HEALTH SERVICES



- **Hiramanek Z,** awarded the Transforming Your Experience Board Award for clinical excellence.

GASTROENTEROLOGY, GASTROINTESTINAL SURGERY, LIVER, HEAD AND NECK & UROLOGY

- **Gaszynski R, Gray A, Chan DL, Merrett N.** Fast-track ambulatory abscess pathway: an



AWARDS AND SCHOLARSHIPS

MENTAL HEALTH

- **Phillipa Hay** 2020 Senior Research Award of the Royal Australian and New Zealand College of Psychiatrists.



- **Phillipa Hay.** 2019 Western Sydney Vice Chancellor Excellence Award in Excellence in Research Interdisciplinary Team Award to the DOMTRU team lead by Professor Simmons and with Freya MacMillan, Milan Piya, Kate McBride; Carolyn Ee, Tinashe Dune, Levi Osuagwu, Frances Henshaw, Kathy Tannous, Donald McNeill, & Deann Gilliver.
- **Valsamma Eapen** UNSW Disability Innovation Institute Research Funding Award.



NURSING AND MIDWIFERY

- Best oral presentation “From Touch to Sound to Lighting Stimuli: The use of a sensory programme in an acute hospital setting to manage agitation in elderly patients”; Camden & Campbelltown Hospital Inaugural Research Forum 2020.

ORAL HEALTH

- COHORT project winner of 2019 South Western Sydney Local Health District Quality Awards-under the category - Keeping People Healthy.



- **Prakash Poudel** awarded the Vice Chancellor Award in Excellence in Engagement and Sustainability from Western Sydney University for his PhD research project.



POPULATION HEALTH

- **Evelyne de Leeuw** Lady Mary Fairfax Distinguished Researcher.



CONGRATULATIONS
TO ALL

2020 Health Beyond Research & Innovation

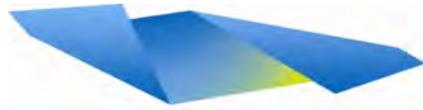
Due to the COVID-19 pandemic, the organising committee of the 2020 Health Beyond Research and Innovation Showcase made the difficult decision to cancel the 2020 event.

The decision was made with the best interests of our patients, staff and community at heart.

The committee thanked staff from the District, the Ingham Institute for Applied Medical Research and our university partners who spent many hours planning the showcase.

The District is committed to showcasing the great work that south western Sydney researchers are doing and will continue to do so into the future





Ingham Institute Applied Medical Research

The Ingham Institute for Applied Medical Research is a not-for-profit organisation which explores new medical approaches across cancer, clinical sciences, injury and rehabilitation, population and health services, and mental health research. The Institute works in partnership with the South Western Sydney Local Health District, the University of New South Wales Sydney, Western Sydney University, and the local community. It currently has over 360 staff and 40 research groups, and coordinates up to 300 clinical trials across the South Western Sydney region. The Ingham Institute also hosts the Clinical Skills and Simulation Centre, which is managed by UNSW Sydney. This Centre is a state-of-the-art facility that operates as a training and collaboration hub for clinical teams, students and researchers.

Medical research at the Ingham Institute involves many innovative technological platforms. The Institute has developed Australia's first correlative microscopy facility, which makes use of advanced technology to better visualise and understand human disease. It also hosts the Australian MRI-Linac device, which combines a magnetic resonance imaging (MRI) scanner and a radiotherapy linear accelerator (Linac) into a single system, giving clinicians a real-time look at cancer cells. The Institute has built on its extensive research in robotics by forming the Centre for Robotics and Health Technology. This Centre includes research into remote sensing and monitoring, remote intervention, machine learning and AI, and virtual technologies for telehealth and teaching.

The Ingham Institute hosts the Centre for Oncology Education Research Translation (CONCERT) biobank, which collects biological samples, such as tissue and blood, from people who have been diagnosed with cancer. The biobank facilitates research into the genetic, lifestyle and environmental factors linked to cancer. The Institute is also home to the Circulating Tumour Cell facility, which uses specialised technology to measure the presence of single

cancer cells in blood samples. This enables researchers to identify why specific cells spread, and means that clinicians can commence immediate treatment when the cancer is at an early stage.

Founded by the community and for the community, the Ingham Institute provides opportunities for their supporters to learn about and experience research which directly targets health concerns in south western Sydney. The Ingham Institute coordinates the Youth Engagement in Active Health (YEAH) work experience program for high school students in years 9 to 12 looking towards a future in STEM (Science, Technology, Engineering and Mathematics). The Ingham Institute's Mothers, Children and Healthy Connections program joins together newly arrived mothers and their families to health professionals and researchers. The BestSTART SW program involves local high school students into research in order to develop early intervention strategies and programs for young children.

Community involvement and programs at the Ingham Institute play an integral role in forging long-lasting relationships and connections. Research at the Ingham Institute is conducted on behalf of, and for the community, making community involvement fundamental to ensuring research output is of the highest quality and relevance.





SOUTH WEST SYDNEY RESEARCH

South West Sydney Research (SWSR) is a broad collaboration between health, research and education organisations in south western Sydney who work together to improve individual and community health and wellbeing. SWSR leads and strengthens multidisciplinary collaborations, with a particular focus on connecting large and smaller organisations for mutual benefit. SWSR also encourages a culture of research in health organisations and throughout health practice by communicating the value and impact of research with frontline clinicians and our diverse communities.

During 2019-2020, the SWSR Small Grant Scheme funded three new grants, worth a total of \$60,000, to address the needs of marginalised local communities. Dr Chun Wah Michael Tam from the District was awarded a grant to improve communication between Arabic-speaking people and their doctors in the Fairfield Hospital Emergency Department. Dr Clarice Tang from Western Sydney University won a grant to explore the perception of pulmonary rehabilitation (PR) among people with chronic obstructive pulmonary disease from the Vietnamese, Mandarin and Arabic-

speaking cultural groups. The aim of Dr Tang's project is to enable the co-design of more culturally responsive PR programs. Dr Bernadette Brady, from the District and Western Sydney University, was awarded a grant to explore strategies for addressing the cultural and social needs of local culturally and linguistically diverse communities through the use of a cultural navigator or 'natural helper' program.

In recognition of their outstanding program of collaborative research, Ms Katrina Tosi and colleagues from the District's Primary and Community Health were awarded the SWSR Collaborative Achievement Award 2019. For the third year, SWSR participated in the 2020 Franklin Women Mentoring Program by supporting two mentor-mentee pairs.

They are committed to building local research capacity and partnerships through the provision of targeted research funding and awards, the promotion of career development opportunities (including mentoring), as well as easy access to health and medical research resources and information.





UNSW SYDNEY

The University of New South Wales Sydney continues to have a strong presence in south western Sydney, through the Clinical School and partnerships with the Local Health District, the Ingham Institute for Applied Medical Research, Maridulu Budyari Gumal (Sydney Partnership for Health, Education, Research and Enterprise – SPHERE) and a broad range of research groups.

More than 30 UNSW Sydney academics are based in South Western Sydney and over 350 SWSLHD staff hold conjoint appointments with the university. In 2019, these individuals published more than 420 original research papers and over 610 publications and conference abstracts.

The number of postgraduate students enrolled at the South Western Sydney Clinical School has continued to grow, with more than 70 PhD and Masters by Research students. In addition, 40 medical students undertook independent learning projects in south western Sydney and four honours scholarships were awarded to attract high calibre students to undertake their projects in the south west.

The University continued to make a significant investment in research during the last twelve months. This has included contributing more than \$1m to new equipment, research support

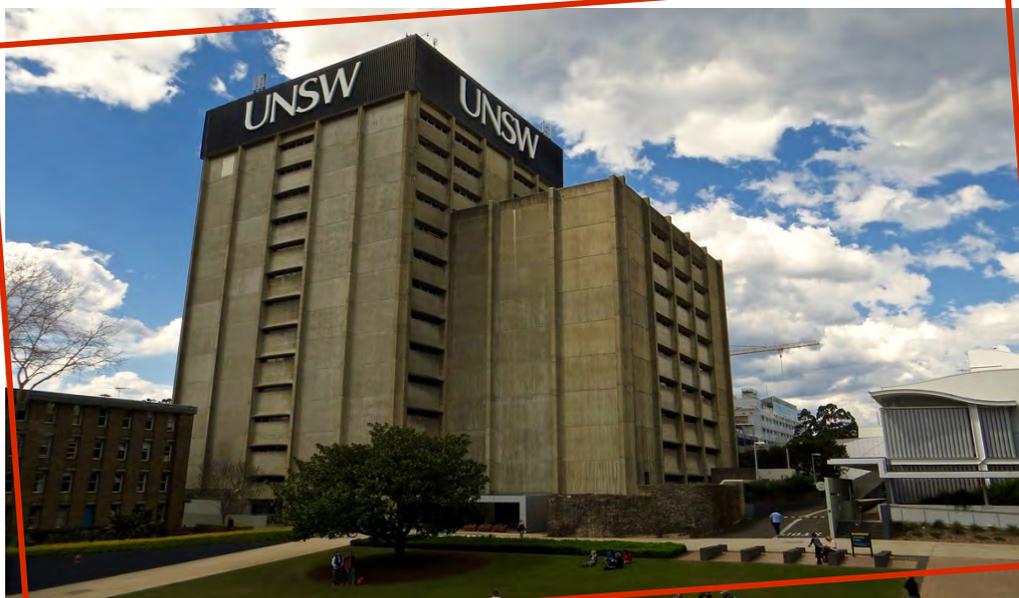
staff and database support at the Ingham Institute.

A number of UNSW Sydney academic and conjoint staff were acknowledged for their efforts in the past 12 months. These include Professor Evelyne de Leeuw, who received the Lady Mary Fairfax Distinguished Researcher Award. Along with his colleagues, Dr Tim Churches won CovidR, an international competition assessing contributions to modelling the COVID-19 pandemic.

The School also conferred several research awards:

- Distinguished Research Prize: Professor Evelyne de Leeuw
- Research Excellence by an Early Career Researcher Prize: Dr Michael Jameson
- Outstanding Contribution by a Higher Degree Research Candidate Prize: Dr Tony Pang
- Research Excellence by a Conjoint: Associate Professor Lois Holloway
- Excellence in Postgraduate Supervision: Scientia Professor Guy Marks.

UNSW Sydney is proud to be involved in the District's Academic Units and looks forward to working closely with the District to expand the research efforts of the south west.





WESTERN SYDNEY UNIVERSITY

The School of Medicine at Western Sydney University (WSU) works closely with all hospitals in the District. In 2019-2020, academic staff received a total of \$7.5 million in grants, published 68 articles in peer-reviewed journals and supervised 18 PhD students.

Anatomical pathology researchers have continued to make progress on biomarker studies in the areas of colorectal, breast, prostate and head and neck cancers. Pathology researchers collaborate internationally, including with the University of Toronto, Duke University Graduate Medical School in Singapore, and MD Anderson Medical Centre, University of Texas.

The Colorectal Unit at Liverpool Hospital has published the results of an anatomically based surgical technique for resection of colon cancer and has demonstrated a significant improvement in long term survival.

Plans are well underway for the Robotics and Health Technology stream, which includes several research and development arms including; surgical robotics, remote sensing devices, and virtual reality and artificial intelligence in teaching, training and learning.

The Microbiology and Infectious Diseases Unit has been involved in several ongoing research

projects, including harnessing genomics to monitor *Campylobacter* outbreaks in the food-industry, the microbiome and studying the role of biofilms in hidradenitis suppurativa.

The Medical Oncology teams received funding to establish the Irene and Arnold Vitocco Cancer Research Project focussing on colorectal cancer, the role of the immune system in cancer treatment, and improving responses to immunotherapy. Researchers were awarded an NHMRC grant to use cutting edge proteomic microscopy to study circulating tumour cells from prostate cancer patients.

The Cancer and Inflammation team have commenced a prospective clinical trial with the goal of personalising treatment for cancer patients. The clinical trial will assess a broad range of biomarkers to help predict which lung and genitourinary cancer patients will respond to immunotherapy. This project will recruit patients from Liverpool and Campbelltown Hospitals.

The Obstetrics and Gynaecology Unit have continued to focus on improving the evaluation of pelvic floor dysfunction and also to better understand the pathophysiology, prevention and treatment of pelvic floor dysfunction.





UNIVERSITY OF WOLLONGONG AUSTRALIA

The University of Wollongong is committed to the south western Sydney region and opened a campus in the Liverpool city centre in 2017. The University of Wollongong hosts the Western Sydney Nursing Education and Research Centre (WeSNER), with around 470 undergraduate and 420 postgraduate nursing students. WeSNER opened in 2020 and focuses on person-centred models of care, and aims to increase the health care and research capacity of South Western Sydney.

Academics from the University of Wollongong collaborate with Liverpool Hospital and the Ingham Institute for Applied Medical Research on a range of research projects. The University of Wollongong is a partner on the Centre for Oncology Education and Research Translation (CONCERT) grant, which aims to facilitate long-term translational cancer research by improving the quantity and quality of information available to clinicians and researchers. Associate Professor Nadia Solowij has been working with the Ingham Institute and Liverpool Hospital to investigate the ways in which compounds in cannabis plant matter can affect the brain. A/ Prof Solowji's research uses brain imaging to examine how some cannabis compounds can

be harmful to the brain, while others may help protect against injury.

University of Wollongong researchers based in south western Sydney are leading research into improving services for elderly patients. Dr Kaye Rolls from the University of Wollongong's School of Nursing is leading a study investigating delirium in hospitalised elders (DECODER). The aim of this research is to better understand the role of clinical decision-making processes used by clinical staff when they are caring for elderly patients at risk of or with delirium in acute care facilities.

University of Wollongong academics in south western Sydney are also leading research into the effects of diet and nutrition on health outcomes. Professor Eleanor Beck from the School of Medicine is investigating how diet can affect the microbiome and the likelihood of developing metabolic diseases such as non-alcoholic fatty liver disease (NAFLD). The project aims help develop nutritional therapies to treat NAFLD. Preventative health researchers are also working on strategies to more effectively promote physical activity and healthy eating among children, with the aim of preventing childhood obesity.





Maridulu Budyari Gumal

Working together for good health and wellbeing

Sydney Partnership for Health,
Education, Research and Enterprise
(SPHERE)

Maridulu Budyari Gumal is an Aboriginal name meaning 'working together for good health and well being'. The name was given by the Dharug people, and represents the organisation's goal to promote collaboration to improve research and health care for the benefit of everyone. Maridulu Budyari Gumal is a partnership joining together 14 health organisations and is also known as the Sydney Partnership for Health, Education, Research and Enterprise (SPHERE). Their close relationship with south western Sydney was further strengthened when South Western Sydney Local Health District Chief Executive Amanda Larkin became the Chair of the SPHERE Council. Ms Larkin noted that "SPHERE is making great progress integrating best practice research to deliver better healthcare to the people of south western and south eastern Sydney and beyond."

Maridulu Budyari Gumal coordinates 16 interdisciplinary Clinical Academic Groups (CAG) in a range of research areas with significant representation and leadership from the District's clinician researchers. During 2019-2020, these groups have achieved success in translating health research into clinical impact.

Their achievements include:

- The Aboriginal Health and Wellbeing CAG has created a new model of cultural proficiency that has been used to engage with community and evaluate projects by third parties. It has also implemented a dementia preparedness initiative across five Aboriginal communities throughout NSW.
- The Age and Ageing CAG has developed new procedures so that carers and patients are now the central focus for new research. It has also introduced a new model of frailty evaluation into general practice.
- The Cancer CAG received \$50m in funding for the Australian Genomic Cancer Medicine Program and developed new blood assays for brain cancer.
- The Diabetes, Obesity and Metabolic Disease

CAG has disseminated actionable information about metabolic control to over 3600 people at 48 Pacific churches across the Sydney basin. It has also provided training and information to over 500 general practices and pharmacists about pregnancy and contraception for patients with diabetes.

- The Early Life Determinants of Health CAG has standardised the model of care for feeding clinics across NSW and supplied instructional videos via the website childfeeding.org. The CAG has also empowered over 60 GP practices in Sydney and Melbourne to enhance early detection of developmental problems.
- The Frontiers Technology CAG commenced a study to enhance physiological and psychological measurement on a smartphone app for cardiovascular patients. It has also united a community of clinicians, researchers, and engineers with a shared interest in convergent technologies.
- The Healthy Urban Environments CAG has been developing interventions for policymakers to ensure that urban development is healthy development. It is also working on mapping the public health implications of new health precincts in NSW.
- The Musculoskeletal CAG has piloted an education and consumer awareness campaign on osteoporosis. This has led to a major grant to expand this campaign across the state. The CAG has also developed an educational campaign on lower back pain, which has been disseminated through social media.
- The Respiratory, Sleep, Environmental and Occupational Health CAG has established a ward-based non-invasive ventilation service and education program for advanced trainees. It has also assessed the health impact of sleep disruption in hospitalised patients.

Bankstown-Lidcombe Hospital

The Bankstown-Lidcombe Hospital provides a wide range of medical and surgical services to the local community. In 2019-2020, the Research Committee has expanded so that they can better represent and support the wide range of research activities at Bankstown-Lidcombe hospital. A Co-Chair, a representative from the Ingham Institute of Applied Medical Research, the Executive Director of Clinical Trials, and a Junior Medical Officer have all recently joined the committee.

The research committee is in the process of developing an Annual Grants Scheme at Bankstown-Lidcombe Hospital and strengthening links with universities, the Ingham Institute and other sites in SWSLHD. The Annual Grants Scheme will develop research capacity towards building a Research hub in conjunction with the re-development of Bankstown-Lidcombe Hospital.

The committee has organised for four sessions a year in the hospital grand rounds schedule to be dedicated to research in clinical practice sessions. In these sessions, academics discuss their research journey, including challenges that

they have faced and solutions that they have discovered. A further goal of these sessions is to facilitate interdepartmental discussion and collaboration. Sessions may be used for applicants to deliver presentations as part of the competitive process of applying for the grants scheme, and also for presentation of results from work that has been funded by the grants scheme.

In 2019-2020, the Committee has consulted widely on facilitating research in the Bankstown region. The Chair and a Board Member from St. George and Sutherland Medical Research Foundation have provided advice on developing a funding body for research. The Committee has also developed ongoing links and initiatives with the chairs of the research committees at Fairfield and Campbelltown. The Committee plans to approach local businesses and the community to build partnerships on the basis of alignment of interest between academic capabilities and community needs.



Bowral & District Hospital

Bowral & District Hospital has been serving the local community since its founding in 1889. It is located in the Southern Highlands, close to the historic towns of Mittagong, Moss Vale and Berrima. The Hospital is currently undergoing a \$50 million redevelopment, which includes a new building for clinical services and upgraded infrastructure.

The Bowral & District Hospital Research Committee is dedicated to integrating research into clinical services. The Committee includes a broad and multidisciplinary range of researchers with strong representation from the Executive Leadership team. A particular strength of the Committee is its focus on nursing research, with three projects from Bowral & District Hospital highlighted at the 2019 South Western Sydney Local Health District's Nursing and Midwifery Showcase.

As with the other facilities, the Bowral Research Committee is working closely with the Research Directorate to investigate ways in which the different strategic areas of the District's Research Strategy can be implemented across all disciplines at Bowral.

Bowral & District Hospital partners with external organisations in large scale research projects. In February 2020, the Hospital began partnering with the Illawarra Shoalhaven Local Health District and the NSW Agency for Clinical Innovation on RAPID: Revamping the admission process to inpatient departments. RAPID is a collection of projects evaluating health system changes aimed at reducing waiting time in the Emergency Department.



Camden and Campbelltown Hospitals

The Camden & Campbelltown Research Committee consists of representatives from medicine, surgery, nursing, pharmacy, allied health, Western Sydney University (WSU), the hospital executive, the District's Research Directorate and the community. The Committee recently sought expressions of interest for new members and five new committee members have been appointed. The committee also



welcomed a new chairperson, Dr Annette Tognela, and thanked the outgoing chairperson Professor David Simmons for his contributions to research in Camden and Campbelltown. A key feature of the committee is the inclusion of two community representatives to provide insight into community values and perspectives. The committee's primary aim is to develop strategies to promote and support a vibrant research culture at Camden and Campbelltown Hospitals including implementing the District's Research Strategy.

In February 2020, the committee held its inaugural Research Forum. The Forum was well attended and provided a showcase for the breadth of research being undertaken at the Hospitals. It highlighted the impressive achievements of the areas eminent clinical researchers and provided an opportunity to promote potential future collaborations. In particular, it emphasised the strong links and close collaboration between the Hospitals and WSU. The collaboration between the committee and WSU is further enhanced through the Clinical Academic Groups, which have presented at committee meetings during the year.

The Camden and Campbelltown Operational Research Plan 2018-2020 has been under review in 2020. Key achievements have been the incorporation of research awareness into staff orientation, availability of local research mentors and the inclusion of human resources staff and finance representation at committee meetings. The streamlined quality improvement application process has seen a number of projects submitted with some selected for the District's Quality Awards. A key focus for the next 12 to 18 months will be providing input into the operational aspects of the new Macarthur Medical Research Centre which is to be built on the Campbelltown Hospital site. The Macarthur Medical Research Centre will continue and deepen the close partnerships between SWS LHD, WSU, UNSW, and the Ingham Institute for Applied Medical Research.



Fairfield Hospital

Fairfield Hospital provides a range of health services in one of the most multicultural and diverse communities in Australia. Seven out of ten people living in Fairfield were born outside Australia and eight out of ten speak a language other than English at home.

Fairfield staff are committed to research informing and improving clinical practice. One particular focus of Fairfield's clinical and research expertise is in elective orthopaedic surgery. The Whitlam Orthopaedic Research Centre is based in Fairfield and is affiliated with the Ingham Institute for Applied Medical Research. Their staff, led by Professor Ian Harris and Dr Justine Naylor, work on topics such as improving outcomes after hip and knee surgery, assessing the evidence base for surgical practice, and how to best provide pain relief after orthopaedic trauma. Fairfield also hosts the Hand Centre, a specialised service for clinical care and research on traumatic injuries, arthritis and occupational overuse conditions involving the hands.

The Fairfield Hospital Research and Innovation Committee is chaired by Dr Harry Doan and

aims to increase the research capacity of Fairfield staff. One priority for the Fairfield Research Committee is to improve communication about the research projects currently being undertaken at Fairfield and strengthen research partnerships with other sites within the District. In 2019-2020 the research committee membership has been revamped, with two new co-chairpersons. The committee also now includes two Clinical Nursing Consultants, who have strengthened the support for the nursing and midwifery research at Fairfield.

The Fairfield Research Committee has been working with the hospital library to provide drop-in and training sessions to assist clinicians to perform systematic reviews of medical research. The library is supporting Fairfield researchers by regularly highlighting their achievements in library publications, and providing easy access to research advice and grant information. The Committee also promotes research through the Fairfield hospital library's "Research Connections" publication.



Liverpool Hospital

Liverpool Hospital is the second largest hospital in New South Wales and is the major health service in south western Sydney. It hosts a variety of educational and medical research programs and is the state-wide leader in providing services such as critical care, neonatal intensive care and brain injury rehabilitation. The Liverpool Research Committee consists of a range of stakeholders in research and clinical trials, including representation from the hospital executive, nursing, allied health, and medicine, along with the Ingham Institute, the District's Research Directorate, SPHERE, UNSW Sydney, Western Sydney University and Sydney University.

During 2019-2020, the Liverpool Research Committee worked with the South Western Sydney Clinical School at UNSW to encourage the further engagement of culturally and linguistically diverse (CALD) participants in research and clinical trials across south western Sydney. A seeding grants program was established with the aim of enabling existing research projects to explore strategies for the recruitment and engagement of CALD

populations. The program also gathered information on the cost and effectiveness of these strategies so that they can be considered by future researchers when developing and costing their study designs. A total of 14 applications were received across a range of disciplines. The two projects initially funded by this program are led by Dr Bernadette Brady (for a trial which seeks to increase physical activity among patients in the District) and Dr Robba Rai (Study to develop strategies to recruit to MRI radiotherapy clinical trials).

The Liverpool Research Committee works to ensure that researchers have access to facilities, and that their achievements are widely recognised. In partnership with the universities, the committee is making a range of new computer facilities available across sites to enable students and local researchers to access statistical software and RedCap. The committee also ensures that the Liverpool Grand Rounds program includes a number of sessions highlighting research achievements throughout the year.



Aboriginal Health

There are approximately 20,000 residents of south western Sydney who identify as being of Aboriginal or Torres Strait Islander background.

The South Western Sydney Local Health District partners with Aboriginal organisations and aims to provide care which is culturally sensitive and responsive to the health needs of Aboriginal and Torres Strait Islander communities.



In partnership with Western Sydney University Aboriginal Health researchers investigated how to provide better care to Aboriginal patients with chronic and complex conditions and whether this improved care can reduce the chance that a patient will need to be readmitted to hospital.

Aboriginal mothers and children are at greater risk of experiencing poor oral health than non-Indigenous Australians, and are less likely to access preventative dental services. South western Sydney researchers have partnered with Aboriginal Health workers to develop oral health education resources for pregnant Aboriginal women. Aboriginal Health researchers are also developing culturally appropriate models of care to improve access to dental care for mothers and children.

Researchers are evaluating whether positively focused preventative health programs could reduce the risk of sexually transmitted infections among Aboriginal young people. Many current sexual health programs are felt to particularly emphasise risky and negative behaviours in sexual relationships. Together with the University of New South Wales, south western Sydney researchers are studying how Aboriginal young people develop positive and healthy sexual relationships, and how successful aspects of existing programs can be identified and extended.

Aboriginal Health Services have built a range of research collaborations, including with the Nepean Blue Mountains Local Health District, the NSW Ministry of Health, Western Sydney University, and the University of New South Wales.



Binya Wiyangara

ANTENATAL CLINIC



Binya Wiyangara is
and med



Aged Care and Rehabilitation is a multidisciplinary research area, including work in genetics and molecular biology, research into health services and assistive technology, and injury prevention.

The South Western Sydney Local Health District has a rapidly aging population. Current projections suggest that in 2016-2031, the number of people aged over 65 living in the District will increase by 80%. Aging increases the

risk of some health conditions, including osteoporosis and neurodegenerative diseases such as Alzheimer's disease.

District researchers are investigating ways to improve health care for elderly hospitalised patients with delirium. Delirium is a condition involving disturbances in attention, cognition and consciousness and can raise the risk of other adverse events. Researchers have found that admitted patients who have had one incident of delirium were 4 times more likely to have a fall in hospital than non-delirious patients. This research will assist clinicians to make changes to hospital settings to reduce the risk of falls among delirious patients.

Aged care and rehabilitation researchers are also investigating strategies to prevent osteoporosis. They have found that a diet rich in fish oil can reduce the risk of age-related bone loss by preventing the expansion of marrow adipose tissue. Their finding suggests that treatments which block marrow adipose tissue expansion through nutrition or medication may have the potential to prevent and treat osteoporosis.



Key Publications Include:

- Liu, Y, Chan, DKY, Thalamuthu, A, Wen, W, Jiang, J, Paradise, M, Lee, T, Crawford, J, Wong, M, Xu, Y, Poljak, A, Pickford, R, Sachdev, P & Braidy, N 2020, 'Plasma lipidomic biomarker analysis reveals distinct lipid changes in vascular dementia', *Comput Struct Biotechnol J*, vol. 18, pp. 1613-1624
- Pryor, W, Harte, C, Ishii, Y, Kohler, F & Smith, F 2019, 'Integrating a new prosthetics and orthotics workforce: Lessons from an evaluation of the Nippon Foundation's investments in South East Asia. Global perspectives on assistive technology: proceedings of the GReAT Consultation', *Geneva: World Health Organization*, vol A, pp. 366-383
- Kneebone, II & Chan, DKY 2020, 'Fatigue and the older stroke patient', in R Harwood & SK Munshi (eds), *Stroke in the Older Patient*, Oxford University Press, UK, pp. 321-330



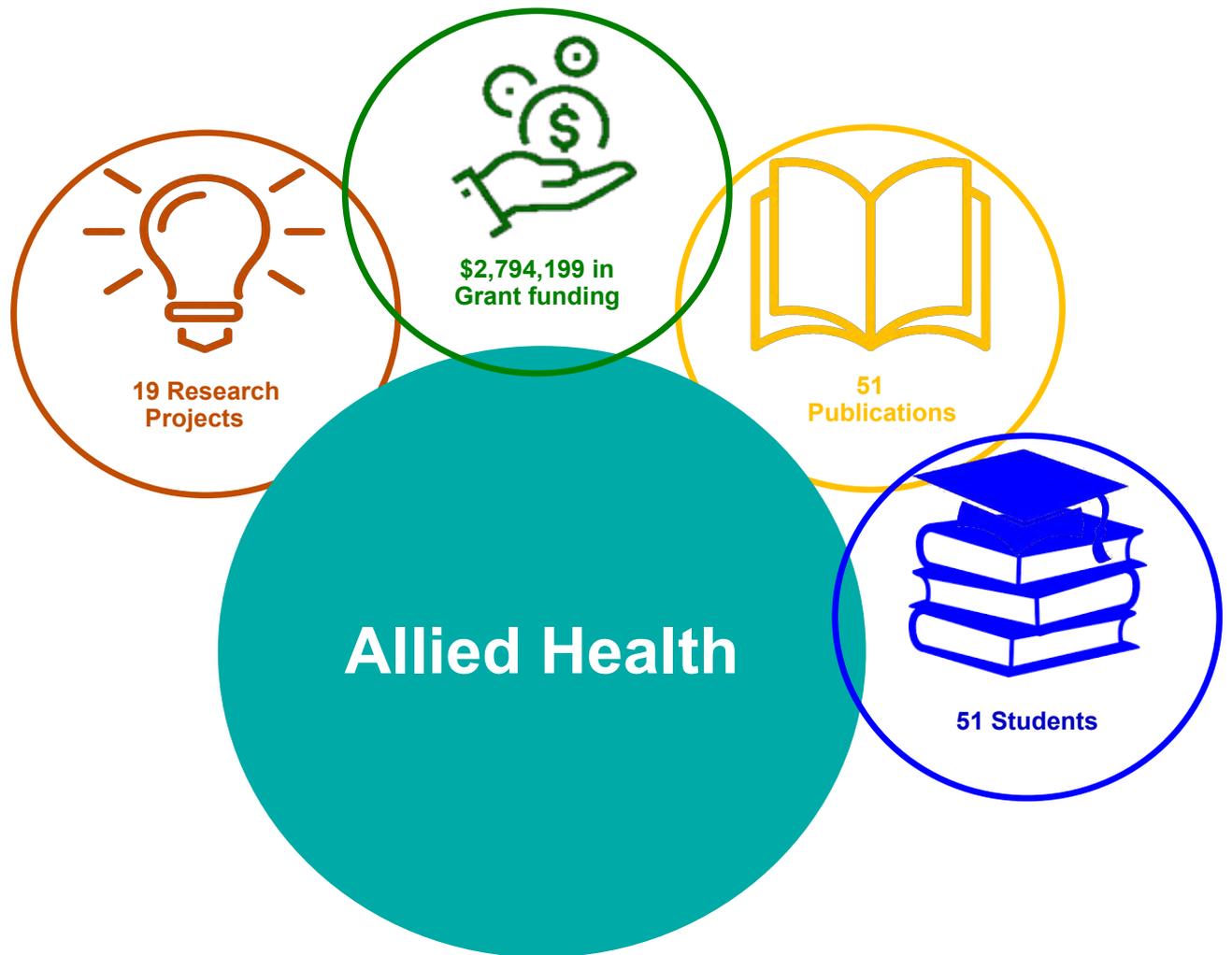
In 2019-2020, aged care and rehabilitation researchers have presented their work at national and international conferences. Professor Daniel Chan was invited as a keynote speaker by the Chinese Society of Gerontology and the Chinese Gerontology Centre. Professor Chan also gave a plenary address to the SPHERE conference in August 2019 entitled 'Successes and failures in aged care – what have we learned and where do we need to go?'

In November 2019, Professor Friedbert Kohler was invited to give the keynote address to the annual meeting of the British Association of

Chartered Physiotherapists in Amputee Rehabilitation.

Aged Care and Rehabilitation researchers in south western Sydney have a wide range of local, national and international collaborative partners, including the World Health Organization, Johns Hopkins Medicine, Beijing Geriatric Hospital, Griffith University, the Nossal Institute for Global Health, and Maridulu Budyari Gumal.

Aged care and rehabilitation researchers currently supervise 3 PhD students.



Allied Health clinicians work in a variety of areas, including physiotherapy, podiatry, speech pathology, dietetics and occupational therapy.

Allied Health researchers have won a \$2.3 million from the National Disability Insurance Scheme to improve the capacity of health care workers to meet the needs of people with communication disabilities. This grant will enable District researchers to develop and evaluate an educational intervention to improve the skills of healthcare workers across the state, including in regional and rural locations and those serving diverse communities.

Allied health researchers have also been successful in winning grants for a range of other projects. Dr Bernadette Brady and her colleagues were awarded \$300,000 from SPHERE for a research project fostering sustainable partnerships with culturally and linguistically diverse community members. Elizabeth Conroy and her colleagues received \$100,000 from the NSW Office of Responsible Gaming. A multi-site research project is

underway which aims to find out what proportion of people who present to hospital with substance use or psychiatric problems are also addicted to gambling. The researchers will also assess to what extent hospital staff are aware of and open to assessing gambling addiction problems.

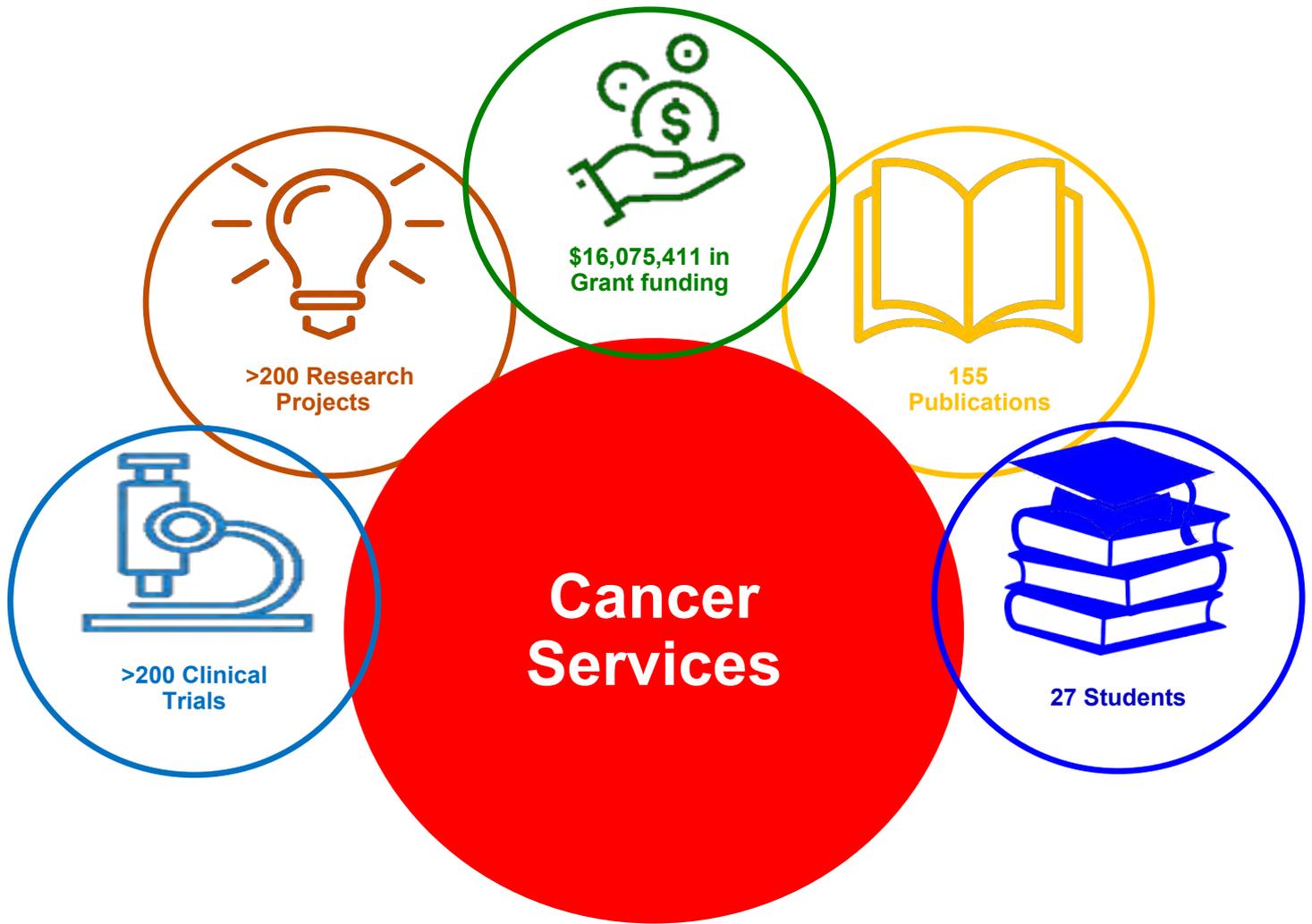
District researchers Minh Pham and Katrina Sing were the 2019 winners of the NSW Health's People's Choice Award for their work in preventing falls in the Aboriginal and Torres Strait Islander community. The team worked with the Aboriginal Chronic Care program to develop culturally appropriate interventions to address the risks of frailty and falls among older Aboriginal people. Their program resulted in a 75% reduction in the frequency of falls and substantially improved physical activity levels in this group. By reducing the risk of falls and hospitalisations, this research can improve the quality of life for many Aboriginal and Torres Strait Islander older people in south western Sydney.

Key Publications Include:

- Cabrera, N, Moffitt, G, Jairam, R, Barton, G 2020, 'An intensive form of trauma focused cognitive behaviour therapy in an acute adolescent inpatient unit: An uncontrolled open trial', *Clinical Child Psychology and Psychiatry*, vol. 25, no. 4, pp. 790–800
- Naylor, J, Mills, K, Pocovi, N, Dennis, S, Hackett, D & Brady, B, Lewin, AM, Adie, S & Xuan, E 2019, 'Patient factors associated with weight gain and weight loss after knee or hip arthroplasty', *Obesity Research & Clinical Practice*, vol. 13, no. 4, pp. 371-7
- Milne, S, Campbell, L & Cottier, C 2020, 'Accurate assessment of functional abilities in pre-schoolers for diagnostic and funding purposes: A comparison of the Vineland-3 and the PEDI-CAT', *Australian Occupational Therapy Journal*, vol. 67, no. 1, pp. 31-8
- Hassett, L, van den Berg, M, Lindley, RI, Crotty, M, McCluskey, A, van der Ploeg, HP, Smith, ST, Schurr, K, Howard, K, Hackett, ML, Killington, M, Bongers, B, Togher, L, Treacy, D, Dorsch, S, Wong, S, Scrivener, K, Chagpar, S, Weber, H, Pinheiro, M, Heritier, S & Sherrington C 2020, 'Digitally enabled aged care and neurological rehabilitation to enhance outcomes with activity and mobility using technology (AMOUNT) in Australia: A randomised controlled trial', *PLOS Medicine*: published February 18, <https://doi.org/10.1371/journal.pmed.1003029>
- Malone, M, Schwarzer, S, Radzieta, M, Jeffries, T, Walsh, A, Dickson H, Micali, G & Jensen, S 2019, 'Effect on total microbial load and community composition with two versus six-week topical Cadexomer Iodine for treating chronic biofilm infections in Diabetic Foot



RESEARCH HIGHLIGHTS



There is a large and multidisciplinary variety of cancer researchers working in south west Sydney, reflecting the complex nature of the field. Their research topics include haematology, radiotherapy, and psycho-oncology, as well as traditional Chinese medicine, palliative care and health services research.

Cancer researchers have received \$1.9 million from the National Health and Medical Research Council (NHMRC) for clinical trials studying the most effective medications to reduce cancer-related pain for patients who cannot take opioids. They have also received \$400,000 from the NHMRC for research to provide higher quality care for cancer patients from culturally and linguistically diverse backgrounds. With funding from the SPHERE Palliative Care Clinical Academic Group, researchers are also working on how to provide a higher standard of care for patients with inoperable, malignant bowel obstructions.

Researchers at the Ingham Institute are working towards the first clinical trial for the MRI-Linac program. This program is testing a new piece of technology, which combines a magnetic

resonance imaging and a radiotherapy linear accelerator into a single machine. This innovative research has the potential to improve the effectiveness of radiation therapy for cancer patients.

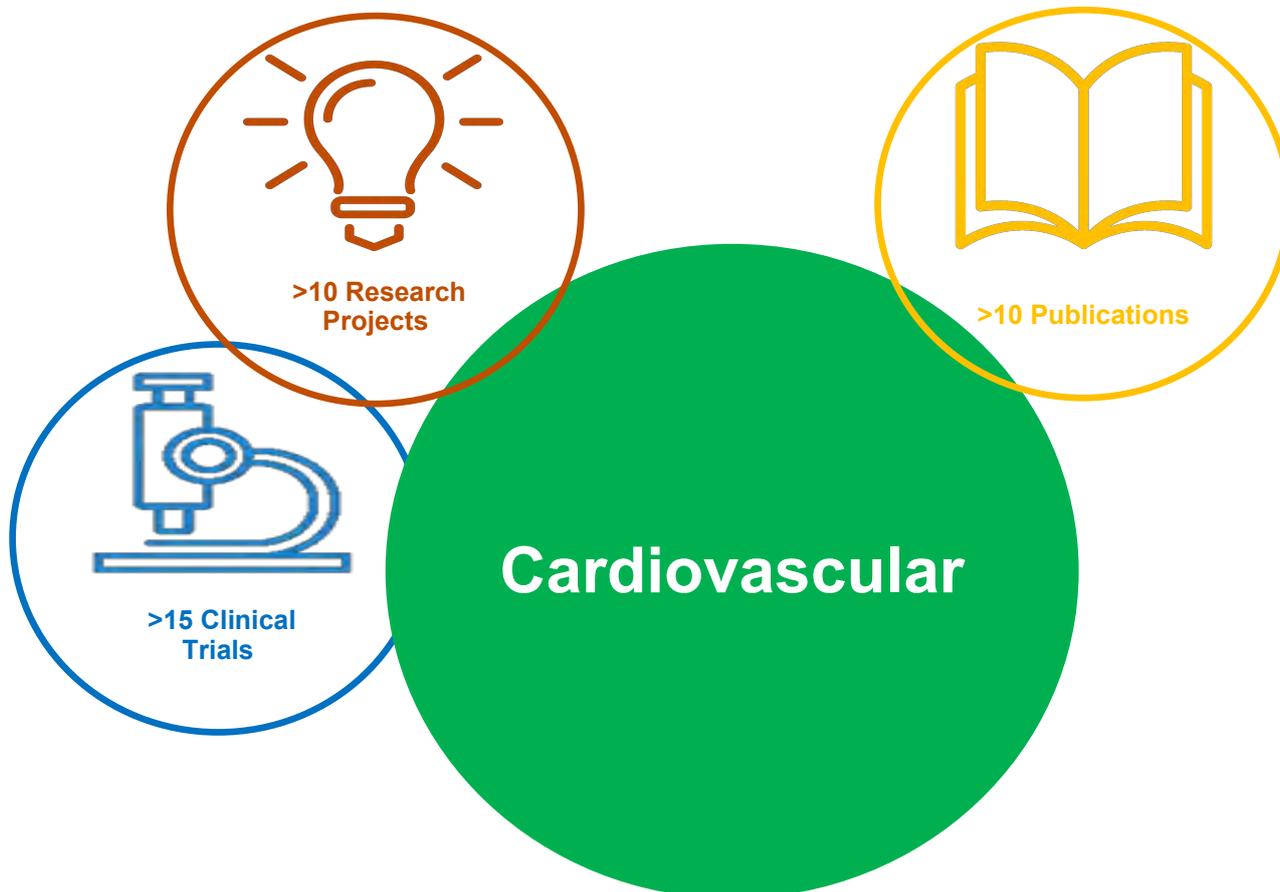
Cancer researchers have been recognised for their many achievements in 2019-2020. Marra Jai Aghajani was awarded the prize for Higher Degree Student of the Year at the University of New South Wales for her PhD research about personalised treatment for patients with thyroid cancer. Dr Ben Smith was chosen as the Early Career Researcher of the Year by the Ingham Institute. Dr Sathira Perera was invited to give an annual oration by the College of Community Physicians of Sri Lanka in recognition of his outstanding public health policy research.

Researchers from the Cancer Clinical Stream have also been invited to present at international conferences. Associate Professor Lois Holloway gave a presentation at the 2019 ESTRO meets Asia conference in Singapore on magnetic resonance guidance in radiotherapy. Dr Ashwin Unnikrishnan and his colleagues presented their research at the 2019 ASH annual meeting in Orlando, Florida.

Key Publications Include:

- Amgarth-Duff, I, Hosie, A, Caplan, G & Agar, M 2020, 'Toward best practice methods for delirium biomarker studies: An international modified Delphi study', *International Journal of Geriatric Psychiatry*, vol. 35, no. 7, pp. 737-748
- Currow, DC, Agar, MR & Phillips, JL 2020, 'Role of Hospice Care at the End of Life for People With Cancer', *Journal of Clinical Oncology*, vol. 38, no. 9, pp. 937-943
- Girgis, A 2020, 'The role of self-management in cancer survivorship care', *Lancet Oncology*, vol. 21, no. 1, pp. 8-9
- Johnson, MJ, Sbizzera, I, Fairhurst, C, Fazekas, B, Agar, M, Ekstrom, M, Currow, DC 2019, 'No excess harms from sustained-release morphine: a randomised placebo-controlled trial in chronic breathlessness'. *BMJ Support Palliative Care* 10.1136/bmjspcare-2019-002009
- Lee, SY, Fisher, J, Wand, APF, Milisen, K, Detroyer, E, Sockalingam, S, Agar, M, Hosie, A & Teodorczuk, A 2020, 'Developing delirium best practice: a systematic review of education interventions for healthcare professionals working in inpatient settings'. *European Geriatric Medicine*, vol. 11, no. 1, pp. 1-32





The Cardiovascular Clinical Stream provides a broad range of medical services, including cardiology, renal medicine and vascular surgery.

Researchers in the Cardiovascular Clinical Stream in SWSLHD are involved in several multi-centre studies both in Australia and internationally. The FAME 3 study is an international clinical trial which tests whether percutaneous coronary intervention provides better outcomes than other treatments for patients with multi-vessel coronary artery disease. This study shows great promise in providing minimally invasive therapy for patients who would have otherwise required open heart surgery. Liverpool and Bankstown-Lidcombe Hospitals are both involved in this trial, and the District is the top centre for patient recruitment to this study in Australia and New Zealand.

Our District's researchers are also participating in the Colchicine in patients with acute coronary Syndromes (COPS) study. This Australian clinical trial tests whether the medication Colchicine, in addition to standard medical therapies, improves the outcomes of patients with presenting with acute heart attacks. Colchicine has been in existence for a long time,

and is a low-cost, off-patent medication. This study has real potential to change clinical practice and is likely to be included in future medical treatment guidelines. The results of this study were presented as a late breaking trial at the European Society of Cardiology Annual Congress, which is the largest meeting of cardiovascular researchers in the world. It was simultaneously published in the high-impact academic journal Circulation.

Cardiovascular researchers in SWSLHD are an integral part in the Cardiac and Vascular Health Clinical Academic Group in the Sydney Partnership for Health, Education, Research and Enterprise (SPHERE), which was formed in 2019.

Researchers in South Western Sydney are working on interdisciplinary projects to investigate risk factors for cardiovascular disease. Dr James Otton was awarded a SPHERE Fellowship Grant of \$300,000 to study whether COVID-19 has important long-term impacts on the cardiovascular system. Dr Angela Makris was awarded a grant of \$750,000 for research into whether preeclampsia (a dangerous condition in pregnancy) is an independent risk factor for cardiovascular

Key Publications Include:

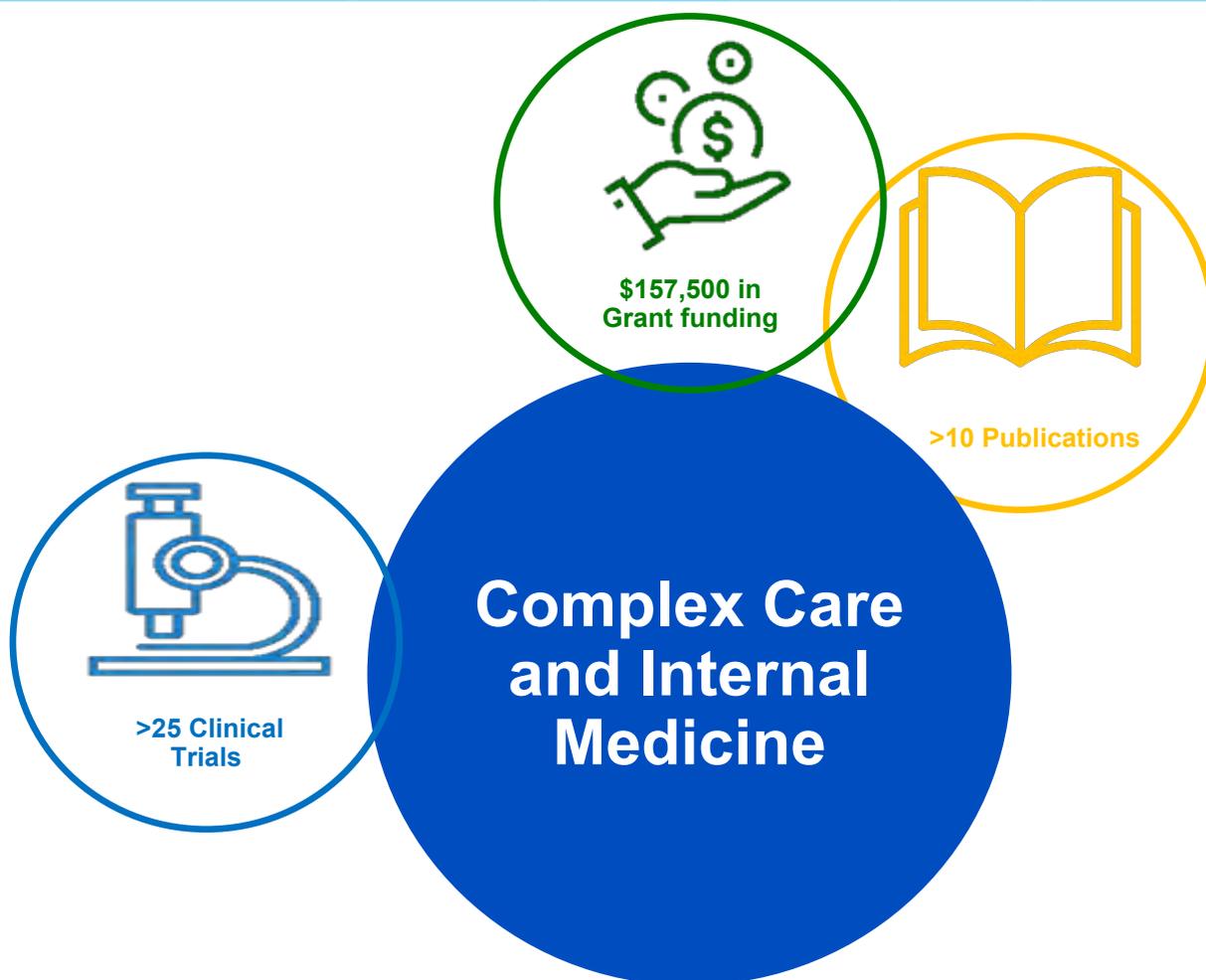
- Sorrentino S, Nguyen P, Salerno N, Polimeni A, Sabatino J, Makris A, Hennessy A, Giustino G, Spaccarotella C, Mongiardo A, De Rosa S, Juergens C, Indolfi C. (2020). Standard Versus Ultrasound-Guided Cannulation of the Femoral Artery in Patients Undergoing Invasive Procedures: A Meta-Analysis of Randomized Controlled Trials. *Journal of Clinical Medicine* 9(3): 677
- Burgess SN, Juergens CP, French JK. (2020). Complete Revascularization with Multivessel PCI for Myocardial Infarction. *The New England Journal of Medicine* 382: 1570
- Tong DC, Quinn S, Nasis A, Hiew C, Roberts-Thomson P, Adams H, Sriamameswaran R, Htun NM, Wilson W, Stub D, van Gaal W, Howes L, Collins N, Yong AS, Bhindi R, Whitbourn R, Lee A, Hengel C, Asrress K, Freeman M, Amerena J, Wilson A, Layland J. (2020). Colchicine in Patients with Acute Coronary Syndrome: The Australian COPS Randomized Clinical Trial. *Circulation*
- P Ghaly, G Schlaphoff, J Crozier, M Ahmad. (2020). Upper limb Phlegmasia Cerulea Dolens treated with single-session suction thrombectomy: A case report. *J Surg Case R*
- Faisal Rahman, John W. McEvoy, Toshiaki Ohkuma, Michel Marre, Pavel Hamet, Stephen Harrap, Giuseppe Mancina, Anthony Rodgers, Elizabeth Selvin, Bryan Williams, Paul Muntner et al. (2019). Effects of Blood Pressure Lowering on Clinical Outcomes According to Baseline Blood Pressure and Cardiovascular Risk in Patients With Type 2 Diabetes Mellitus. *The ADVANCE Trial. Hypertension* 2019(73): 1291-1299

In December 2019, south western Sydney researchers formed the Cardiovascular Research Consumer Advisory Group (CRCAG). This is a consumer-focused forum to provide advice to researchers, feedback on patient education publications, and to help clinical staff to ensure high quality and safety in patient care.

There are currently seven members of the group, all of whom have lived experience of cardiac health care in the District or are the carer of a cardiac patient, and meet bi-monthly.

Cardiovascular researchers partner with a range of academic institutions, including Western Sydney University, the University of New South Wales, the South Australia Health and Medical Research Institute, and the George Institute.





The Complex Care and Internal Medicine clinical group conduct research on neurology, respiratory and sleep medicine, ambulatory care and wound care, with a particular research focus on the diagnosis and management of stroke patients.

A stroke occurs when an artery carrying blood to the brain bursts or is blocked, causing brain cells to die from lack oxygen. Strokes often cause long-lasting and pervasive disability and can be fatal.

South western Sydney researchers are rapidly increasing their participation and leadership of clinical trials. One focus of these clinical trials is to test whether medications that are currently used to treat other conditions can also be used to assist recovery from strokes. The recently completed AFFINITY trial aimed to determine whether fluoxetine, a commonly used antidepressant, was effective in assisting the recovery of stroke patients with limb weakness. The MIDAS2 trial is a telemedicine clinical trial testing whether modafinil, a medication used to treat sleep problems, can be used to treat the extreme fatigue suffered by recovering stroke patients. Clinical trials are also underway to assess whether tenecteplase, which can be used to break down blood clots, produces better outcomes for patients than alternative treatments when

administered within 4.5 hours of an ischemic stroke. Researchers are also currently conducting a study of non-invasive bedside testing that could help clinicians to tell whether patient symptoms are the result of a posterior circulation stroke or of more benign causes.

To support their important work, Complex Care and Internal Medicine researchers have received a number of grants in 2019-2020. Dr Christopher Blair was the recipient of a SPHERE Translational Research Fellowship to develop stroke research projects in SWS LHD. Associate Professor David Heslop and Professor Paul Middleton also received funding from the South Western Sydney Local Health District for complex systems modelling to optimise clinical support services.

In June 2020, the UNSW South Western Sydney Clinical School appointed Professor Mark Parsons as Professor of Medicine and Neurology. Professor Parsons is an international leader in stroke research and brain imaging and will be leading a number of clinical trials at Liverpool, Bankstown-Lidcombe and Campbelltown hospitals. Much of Professor Parsons' research has led to changes in clinical practice, including developing hospital systems for more rapid and accurate treatment of stroke patients.

Key Publications Include:

- McTaggart, RA, Holodinsky, JK, Ospel, JM, Cheung, AK, Manning, NW, Wenderoth, JD, Phan, TG, Beare, R, Lane, K, Haas, RA, Kamal, N, Goyal, M & Jayaraman, MV 2020, 'Leaving no large vessel occlusion stroke behind: reorganizing stroke systems of care to improve timely access to endovascular therapy', *Stroke*, vol. 51, no. 7, pp. 1951-1960
- Blair, C, Cappelen-Smith, C, Cordato, D, Edwards, L, Mitchell, A, Cheung, A, Wenderoth, J & Manning, N 2020, 'Intravenous thrombolysis is associated with better functional outcomes in endovascular thrombectomy patients requiring multiple-passes to achieve reperfusion', *Stroke*, vol. 51, Suppl 1, ATP28
- Lau, FS, Mitchell, A, Cheung, A, Wenderoth, J, Cappelen-Smith, C, Cordato, D, Hodgkinson, S, McDougall, A, Zagami, AS & Manning, NW 2020, 'Use of immediate dual antiplatelet therapy in carotid stenting for tandem occlusion stroke is associated with acceptable symptomatic intracranial haemorrhage rates', *Stroke*, vol. 51, Suppl 1, TMP9
- Campbell, BCV et al. 2020, 'Effect of intravenous tenecteplase dose on cerebral reperfusion before thrombectomy in patients with large vessel occlusion ischemic stroke: the EXTEND-IA TNK part 2 randomized clinical trial', *JAMA*, vol. 323, no. 13, pp. 1257-1265
- Valente, M, Saab, J, Cordato, D, Manning, N & Cappelen-Smith, C 2019, 'The diagnostic utility of routine clot analysis after endovascular thrombectomy in a patient with systemic lupus erythematosus and antiphospholipid syndrome', *Journal of Clinical Neuroscience*, vol. 70, pp. 247-249





The Critical Care Clinical Stream provides medical services for patients with acute and life threatening conditions, including emergency medicine, intensive care and resuscitation.

The District is host to the South Western Emergency Research Institute (SWERI), which is a leading centre of academic research about emergency care.

Researchers have also recently completed the construction of the Multicultural Emergency Medicine (MEME) database, and have begun to publish analyses using this dataset.

During 2019-2020, critical care researchers have planned and implemented the Comprehensive Emergency Dataset for Research, Innovation and Collaboration (CEDRIC) project. CEDRIC uses a new methodology to link large quantities of patient and health service data together. The system allows researchers to perform complex analyses and see patterns of health service usage almost in real time. Research using the CEDRIC system already provided insights into how south western Sydney hospitals can provide high quality care in a more cost-effective

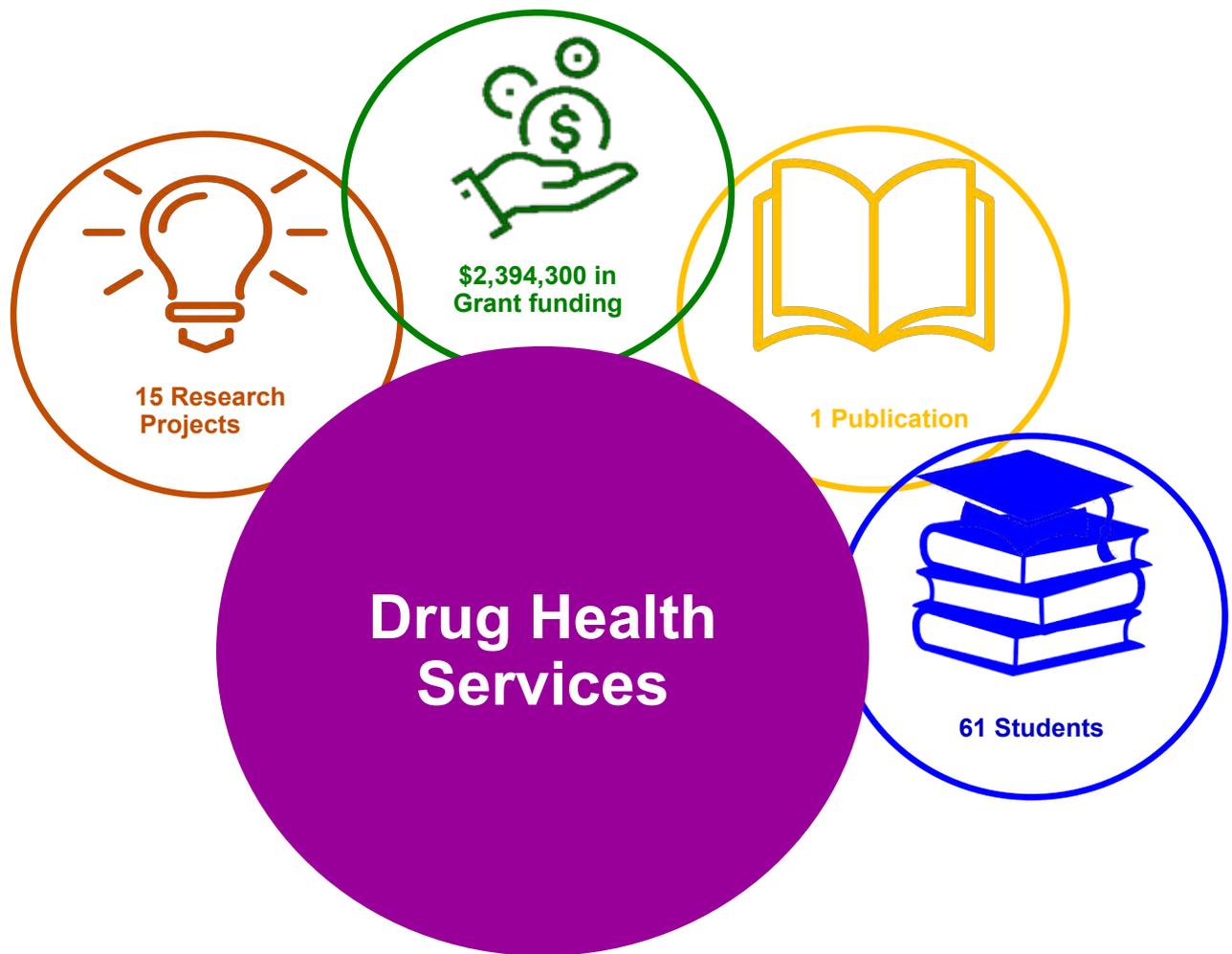
manner. In some cases, the decision has been made to admit a patient from the emergency department to a ward, but there are no inpatient hospital beds available, resulting in delays. When there are delays of this kind, then the patient may have to wait for suitable treatment and clinical errors are more likely to occur. Researchers using the CEDRIC system have found that these delays also result in additional health system costs, with the average additional costs of \$203 per admitted patient per hour. This research has helped suggest ways in which the District can work towards improving health systems and increasing the capacity of health services.

The Clinical Stream collaborates with a range of partners, including the Australian National University, the University of New South Wales, Western Sydney University, the King Saud Bin Abdulaziz University for Health Sciences (Saudi Arabia), the Alliance for Vascular Access Teaching and Research network, the Australia and New Zealand Intensive Care Research Centre, and the New South Wales Ambulance service.

Key Publications Include:

- Butler, E, Møller, MH, Cook, O, Granholm, A, Penketh, J, Rygård, SL, Aneman, A & Perner, A 2019, 'The effect of systemic corticosteroids on the incidence of gastrointestinal bleeding in critically ill adults: a systematic review with meta-analysis', *Intensive Care Medicine*, vol. 45, no. 11, pp. 1540-1549
- Ou, L, Chen, J, Hillman, K, Flabouris, A, Parr, M & Green, M 2020, 'The effectiveness of a standardised rapid response system on the reduction of cardiopulmonary arrests and other adverse events among emergency surgical admissions', *Resuscitation*, vol. 150, pp. 162-169
- Olsen, SL, Søreide, E, Hillman, K & Hansen, BS 2019, 'Succeeding with rapid response systems - a never-ending process: A systematic review of how health-care professionals perceive facilitators and barriers within the limbs of the RRS', *Resuscitation*, vol. 144, pp. 75-90
- Rajamani, A, Huang, S, Subramaniam, A, Thomson, M, Luo, J, Simpson, A, McLean, A, Aneman, A, Madapusi, TV, Lakshmanan, R, Flynn, G, Poojara, L, Gatward, J, Pusapati, R, Howard, A & Odlum, D 2020, 'Evaluating the influence of data collector training for predictive risk of death models: an observational study', *BMJ Quality and Safety*, published online first: 30 March, doi: 10.1136/bmjqs-2020-010965
- Bhonagiri, D, Lander, H, Green, Straney, L, Jones, D & Pilcher, D 2020, 'Reduction of in hospital Cardiac arrest rates in Intensive care equipped NSW hospitals in association with Implementation of Between the Flags Rapid Response System', *Internal Medicine Journal*, first published 04 March, <https://doi.org/10.1111/imj.14812>





Drug Health Services in south western Sydney provide a range of treatments for clients who are experiencing problems with alcohol, tobacco and other drug use.

Many clients of Drug Health Services also suffer from related conditions, including an increased risk of contracting a blood-borne virus, oral health problems and gambling addictions. Researchers in the Clinical Stream study a variety of topics to better understand and meet the needs of these clients. For example, in 2019-2020 researchers completed the ETHOS wave II observational study, which assessed prevalence of current hepatitis C Virus (HCV) infection and HCV

treatment uptake among people who inject drugs and showed that the intervention incorporating on-site point of care HCV RNA testing, liver fibrosis assessment, and linkage to care (ETHOS wave I) resulted a high treatment uptake and decline in HCV prevalence.

Drug Health Services researchers have recently completed a study about the lived experiences of people who consume alcohol heavily and experiences of stigma and discrimination among clients accessing services, in partnership with La Trobe University. The findings from the 'lived experience of alcohol' study have informed a website sharing the personal stories of the people who continue to drink heavily despite the presence of significant alcohol-related health issues. The website aims to inform public discussions of drinking, challenge stigma and promote understanding and support. The findings from the 'lived experience of stigma and discrimination' suggest people who consume alcohol and other drugs often have complex health care needs and encounter obstacles to accessing the care they need and stigma operates to generate low expectations of healthcare and reinforce a low sense of entitlement to quality care they receive.



RESEARCH HIGHLIGHTS

A study to understand the factors in utilisation of drug and alcohol services among the Muslim and Arabic Speaking (MaAS) community has been completed in partnership with Drug Health Services, and Sydney Local Health District. The study found that use of alcohol and other substances in MaAS communities is sometimes strictly prohibited and can be associated with shame, stigma and loss of face within the community. This appeared to be both a contributing factor in the substance use recovery process and a barrier to disclosure and help seeking. However, culturally responsive education campaigns and working in liaison with religious leaders, community champions and consumers could help to reduce stigma. A suggested strategy to facilitate better engagement was to establish bridges between community organisations and mainstream services.

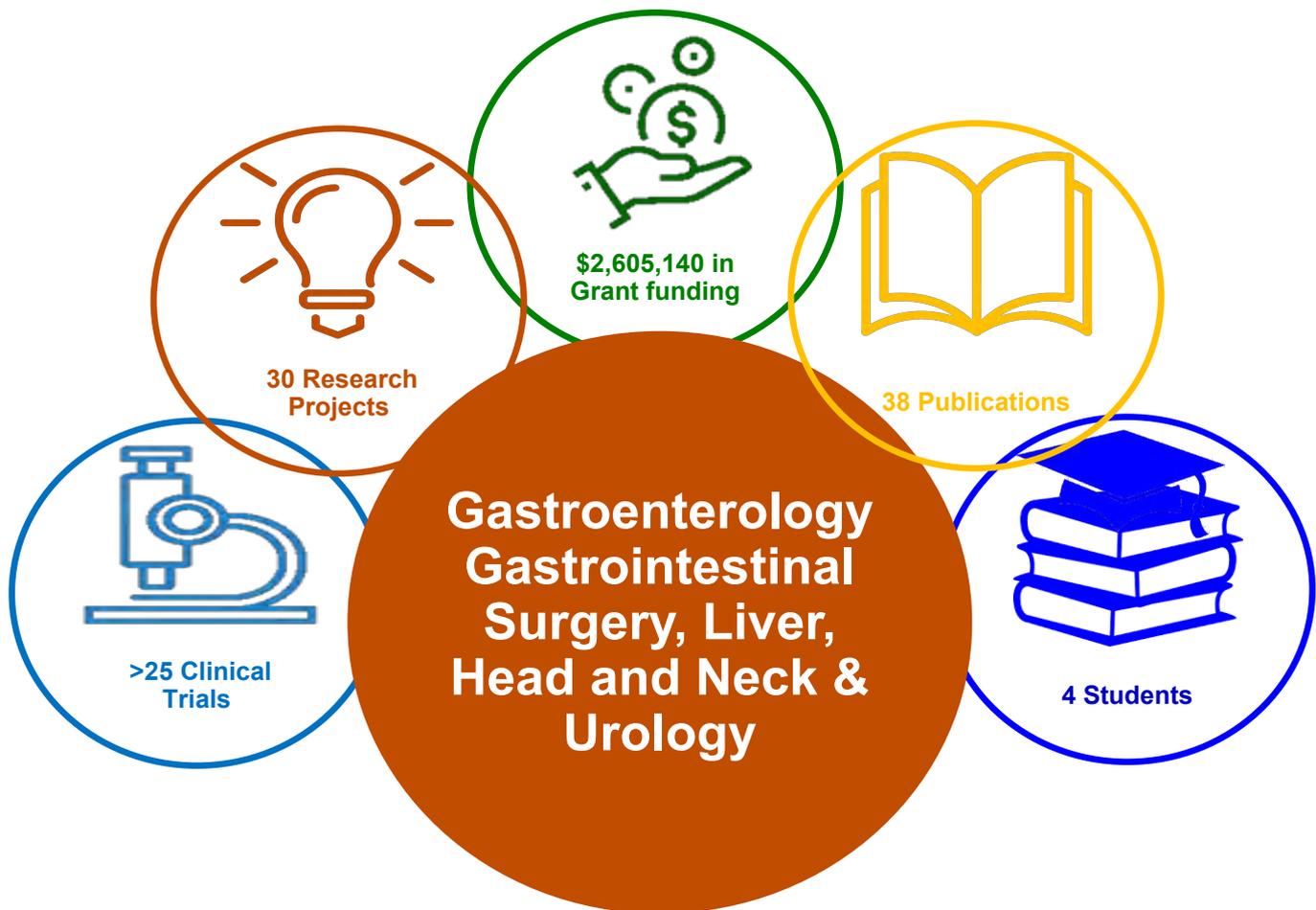
In partnership with researchers from the Hunter New England Local Health District, a study funded by Translational Research Grant Scheme to test whether e-cigarettes can help people in opiate treatment services to quit tobacco cigarettes is also in the progress of



implementation at sites across the District.

Drug Health researchers have formed a variety of partnerships with other organisations. This includes collaborating with the Kirby Institute at the University of New South Wales on Hepatitis C research (ETHOS and TEMPO studies) and with St Vincent's Hospital and the NSW Ministry of Health on a HCV and HIV testing pilot program. Drug Health researchers are also working with Western Sydney University on gambling co-morbidity research.





This clinical stream includes gastroenterology, gastrointestinal surgery, urology, hepatology, as well as head and neck services.

There is a particularly strong focus on liver research and treatment in the District.

Hepatitis B and C are inflammatory conditions which affect the liver. They are caused by viral infections and, if untreated, can cause liver damage and raise the risk of cancer. South western Sydney has one of the highest rates of viral Hepatitis and liver cancer in Australia. However, many people who have developed Hepatitis are not aware of their condition. Over eight months, Dr Scott Davison and his team



from Liverpool Hospital ran a study in which over 5,000 people were screened for Hepatitis B and C at Liverpool Hospital's Emergency Department. The aim of the research study was to identify the prevalence and risk factors for Hepatitis infections in the south western Sydney region, and to more effectively provide patients with access to treatment for this condition.

South western Sydney researchers are conducting research into how to prevent the transmission of Hepatitis B throughout pregnancy, as well as during and after birth. The Liver Research Group, led by Associate Professor Miriam Levy, are investigating how to combine anti-viral therapy with vaccinations to best protect newborn babies from Hepatitis B. The group is also testing novel strategies to improve health literacy in culturally and linguistically diverse Hepatitis B patients. Researchers are evaluating a range of tools, including YouTube videos and mobile apps, to help patients from non-English speaking backgrounds understand their condition and treatment options.

In addition to these research groups, District clinicians specialising in interventional endoscopy and colorectal cancer screening have

Key Publications Include:

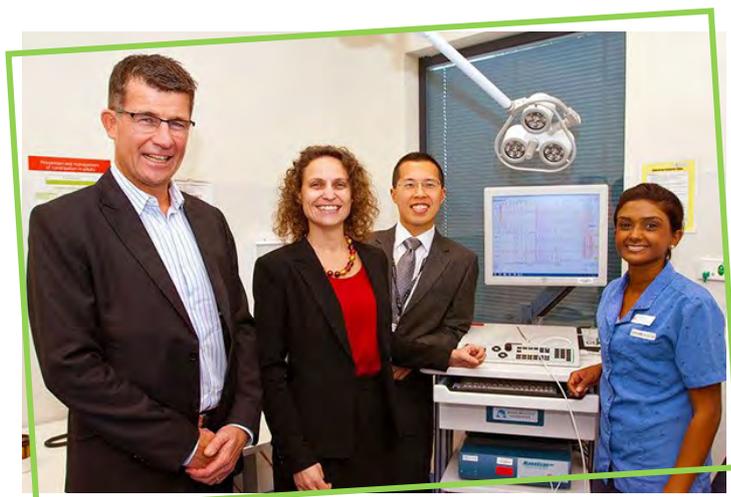
- Wu, Y, Lin, B, Thilakanathan, C, Lehmann, P, Xuan, W, Mohsen, W, Toong, C, Williams, AJ, Ng, W & Connor, S 2019, 'Therapeutic drug monitoring in Inflammatory Bowel Disease reduces unnecessary use of infliximab with substantial associated cost savings', *Internal Journal of Medicine*, first published October 7, <https://doi.org/10.1111/imj.14644>
- Merrett, N, Richardson, A, Lam, V, Walton, R & Currow, D 2020, 'Pancreaticoduodenectomy outcomes in Australia', *ANZ J Surg*, vol. 90, no. 5, pp. 938-939
- Rajendra, S, Sharma, P, Gautam, SD, Saxena, M, Kapur, A, Sharma, P, Merrett, N, Yang, T, Santos, LD, Pavey, D, Sharaiha, O, McKay, O, Dixon, H & Xuan, W 2020, 'Association of Biomarkers for Human Papillomavirus With Survival Among Adults With Barrett High-grade Dysplasia and Esophageal Adenocarcinoma', *JAMA Network Open*, vol. 3, no. 2, e1921189
- Ermerak, G, Behary, J, Edwards, P, Abi-Hanna, D & Bassan, MS 2019, 'EUS-guided enteroenterostomy for nonoperative management of afferent loop syndrome after Whipple resection', *VideoGIE*, vol. 4, no. 10, pp. 461-463
- Singh, T, Haque, IU & Merrett, N 2020, 'Plug mesh repair of rare prevascular femoral hernia: a case report', *ANZ J Surg*, <https://doi.org/10.1111/ans.16013>
- Berney, CR, 2019, 'Laparoscopic splenic vessels and spleen-preserving extended distal pancreatectomy for single metastatic renal cell carcinoma', *Journal of Minimal Access Surgery*, vol. 15, no. 3, pp. 249-252
- Badiani, S, Gonzales, R, Cohen-Hallaleh, RB & Berney, CR 2020, 'No room for womb - A rare cause of mechanic large bowel obstruction', *ANZ J Surg*, First published 26 June, <https://doi.org/10.1111/ans.16094>

substantial academic expertise, leading to international presentations, publications and grants.

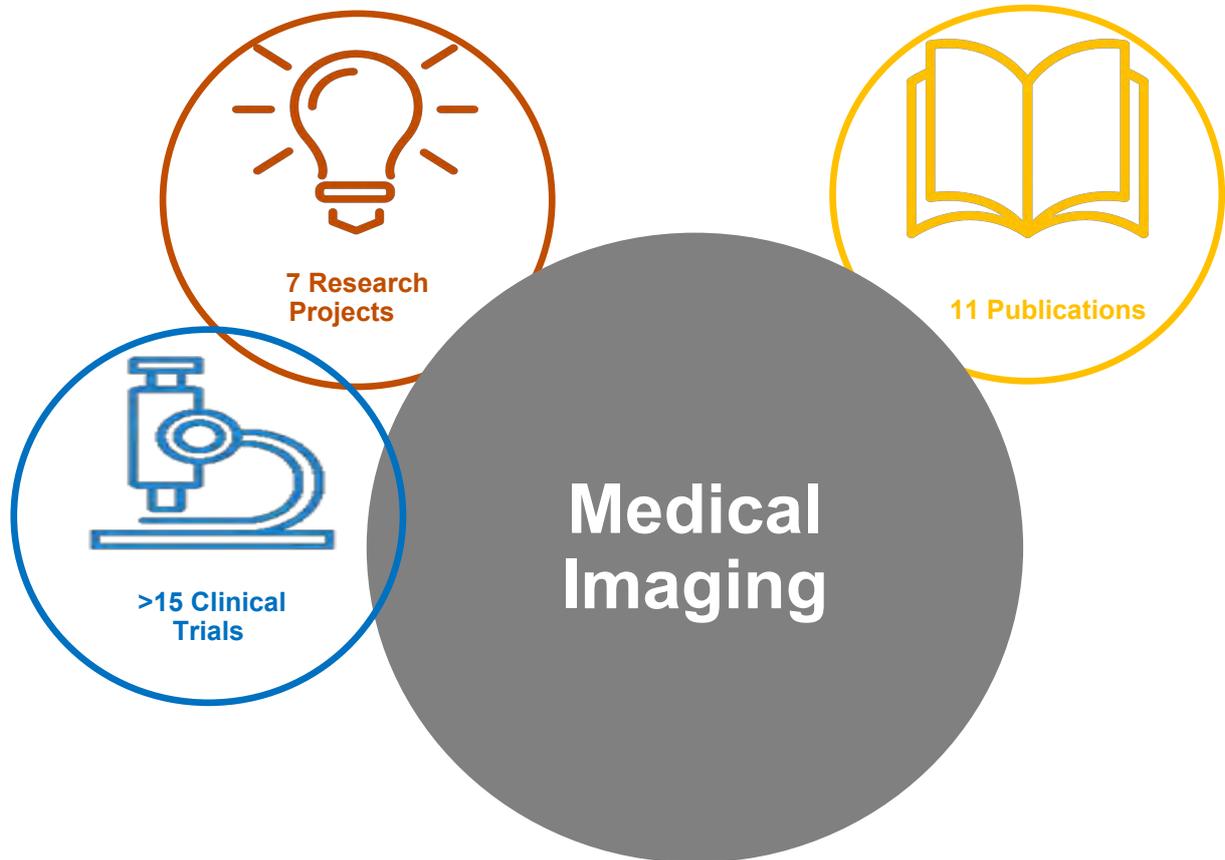
In 2019, the Upper Gastrointestinal Unit won a District Board Award for Safety and Quality, in recognition of their project: Fast-track ambulatory abscess pathway: an Australian streamlined emergency surgery pathway.

The clinical stream collaborates with a range of partners, including the Queensland Institute of Medical Research, the International Cancer Benchmarking Project, the Australian Pancreatic Cancer Genome Initiative, the International Cancer Genome Initiative, the Australasian Gastro-Intestinal Cancer Trials Group, Monash University and the NSW Cancer Institute. Clinical Stream researchers also work closely with the Gut and Microbiome Academic Unit.

In November 2019, Professor Neil Merrett gave two presentations about his oesophageal cancer research to the OESO World Conference, a prestigious international congress for research into diseases of the oesophagus.



RESEARCH HIGHLIGHTS



Medical imaging uses a variety of technologies to create a picture of the human body.

Medical imaging is crucial for clinicians to be able to diagnose and treat many medical conditions, and to inform medical decision-making. Medical imaging in the District includes X-ray, computed tomography, magnetic resonance imaging, ultrasound, radiotherapy, and nuclear medicine technologies.

In 2019-2020, District researchers were involved in a variety of clinical trials using medical imaging to improve diagnosis, treatment and patient care. As part of a national network, researchers in south western Sydney tested whether positron emission tomography imaging can be used to gain information about neurodegenerative biomarkers in people at risk of dementia. Liverpool and Campbelltown Hospitals participated in a trial which aims to better measure and predict treatment outcomes for men undergoing radiotherapy for prostate cancer. The study uses multiparametric magnetic resonance imaging and prostate-specific membrane antigen positron emission tomography before the patients begin radiotherapy and then at 6, 12 and 18 months after radiotherapy. Medical imaging researchers are also working on a clinical trial investigating

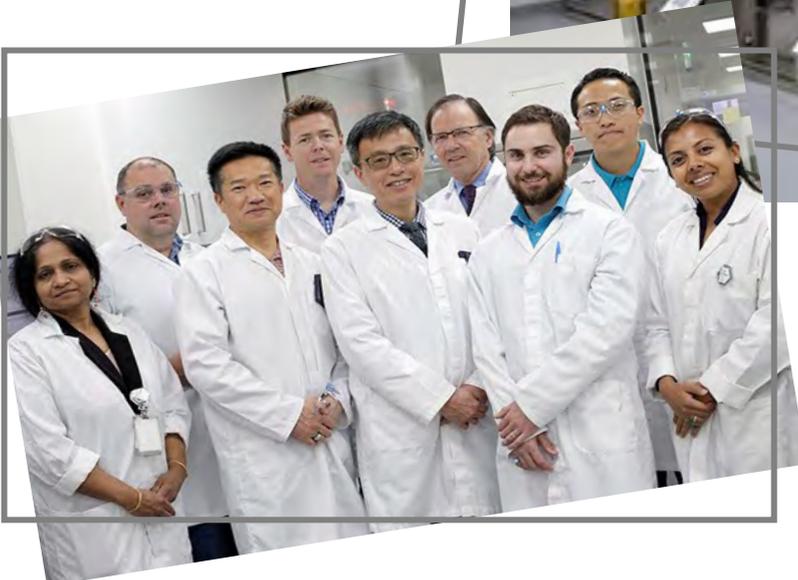
whether the medication Isatuximab, in conjunction with other chemotherapy treatments, provides clinical benefits for patients diagnosed with multiple myeloma who are not eligible for transplant. Multiple myeloma is a cancer of the plasma cells in bone marrow and can be fatal.

Researchers from south western Sydney have presented their research at international conferences. In September 2019, Dr Peter Lin gave a presentation about new treatments for HPV-related Oropharyngeal Squamous Cell Carcinoma at the American Society of Radiation Oncology's annual meeting. Dr Lin also gave a presentation about developing nuclear molecular theranostics at Liverpool Hospital at the 2019 Annual Meeting of the Society of Nuclear Medicine in Taiwan.

Medical imaging researchers in south western Sydney partner with a range of organisations, including the Australian and New Zealand Urogenital and Prostate Cancer Trials Group, the Australian Dementia Network, the Trans-Tasman Radiation Oncology Group, the Ingham Institute for Applied Medical Research, the Centre for Oncology Education and Research Translation, the Cancer Institute NSW Translational Cancer Research Centre, the University of New South Wales and the University of Sydney.

Key Publications Include:

- Lin, P 2019, 'FDG PET imaging in large vessel vasculitis: Stuck at the first hurdle?', *International Journal of Rheumatic Diseases*, vol. 22, no. 8, pp. 1357-1360
- Sathiakumar, C, Mali, M, Williams, P, Som, S & Lin, P 2020, 'Radiation Safety aspects of Liverpool Hospital Cyclotron Unit: First two years of operation', *Radiation Protection in Australasia*, vol. 37, no. 1, pp. 2-17
- Sumal Fernando, S. Lin, M, Pham, TT, Chong, S, Ip, E, Wong, K, Chua, W, Ng, W, Lin, P & Lim, S 2020, 'Prognostic utility of serial 18F-FDG-PET/CT in patients with locally advanced rectal cancer who underwent tri-modality treatment', *British Journal of Radiology*, vol. 93, p. 1105
- Rajendra, S, Sharma, P, Gautam, SD, Saxena, M, Kapur, A, Sharma, P, Merrett, N, Yang, T, Santos, LD, Pavey, D, Sharaiha, O, McKay, O, Dixon, H & Xuan, W 2020, 'Association of Biomarkers for Human Papillomavirus With Survival Among Adults With Barrett High-grade Dysplasia and Esophageal Adenocarcinoma', *JAMA Network Open*, vol. 3, no. 2, pp. 1-14
- Sacks, J, Atlas, S, Enno, A, Santos, L, Humphries, J & Kirwan, A 2020, 'Case Report: Giant villous adenoma of the sigmoid colon: an unusual cause of homogeneous, segmental bowel wall thickening', *British Journal of Radiology*, <https://doi.org/10.1259/bjrcr.20200016>





The Mental Health Clinical Stream conducts research on a variety of topics addressing the needs of the south western Sydney community, including study of developmental disorders in children, the treatment of Post-Traumatic Stress Disorder, and the behavioural management of eating disorders.

Professor Valsamma Eapen and her team have been awarded a grant of \$1.2 million over five years from the National Health and Medical Research Council for the project "Watch Me Grow". This project provides parents and clinicians with more information during children's visits to primary health care providers. Professor Eapen and her colleagues are investigating whether this program increases the likelihood that childhood developmental and behavioural disorders will be identified early. This would help children to receive faster and more targeted care for their health care needs.

Associate Professor Shameran Slewa-Younan was awarded two grants for her research on mental health literacy programs for the Arabic-speaking community in south western Sydney.

Dr Stephen Matthey is completing an evaluation of an innovative clinical strategy to enhance parents' communication and understanding between each other.

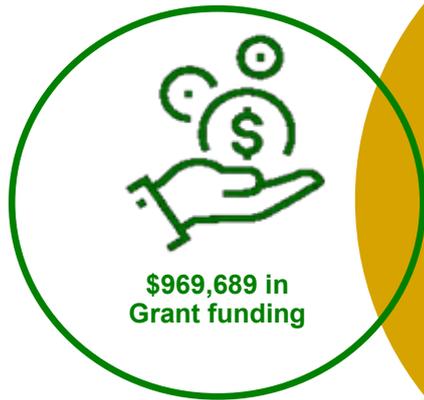
Members of the Mental Health Clinical Stream have also been recognised for their research excellence. Professor Phillipa Hay was awarded the 2020 Senior Research Prize of the Royal Australian and New Zealand College of Psychiatrists. This prize is awarded annually for the most significant contribution to psychiatric research in Australia and New Zealand over the preceding five years. Professor Hay was also co-awarded an Excellence in Research Interdisciplinary Team Award from Western Sydney University, together with the Diabetes, Obesity and Metabolism Translational Research Unit (DOMTRU).

The Mental Health Clinical Stream have communicated their research findings through television and radio, giving interviews with the ABC, SBS, Channel 7 and Channel 9 about Tourette Syndrome, body image and mental well-being.

Key Publications Include:

- Lee, PH, Eapen, V, et al. 2019, 'Genomic Relationships, Novel Loci, and Pleiotropic Mechanisms across Eight Psychiatric Disorders', *Cell*, vol. 179, no. 7, pp. 1469-1482
- Silove, D, Mohsin, M, Klein, L, De Jesus Tam, N, Dadds, M, Eapen, V, Tol, WA, Da Costa, Z, Savio, E, Soares, R, Steel, Z & Rees, S 2020, 'Longitudinal path analysis of depressive symptoms and functioning among women of child-rearing age in post conflict Timor-Leste', *BMJ Global Health*, vol. 5, no. 3, <http://dx.doi.org/10.1136/bmjgh-2019-002039>
- Dadich, A, Moore, L & Eapen, V 2019, 'What does it mean to conduct participatory research with Indigenous peoples? A Lexical review', *BMC Public Health*, vol. 19, <https://doi.org/10.1186/s12889-019-7494-6>





Nursing and Midwifery



South western Sydney is an important centre for nursing and midwifery research.

The District hosts the Centre for Applied Nursing Research, which investigates ways in which to provide safer and higher-quality patient care, especially for patients with chronic and complex conditions. The New South Wales Centre for Evidence Based Health Care at Western Sydney University focuses on producing high-quality systematic reviews of medical evidence to inform clinical practice and professional skills training. Nursing and midwifery researchers in the District have formed a research committee which meets regularly to support the implementation of the nursing research strategy. Midwifery researchers also work closely with the Women's Health Initiative Translational Unit (WHITU) on a variety of projects.

South western Sydney is home to many people from culturally and linguistically diverse (CALD) backgrounds. Nursing researchers are undertaking a study to improve access to sustained nurse home visiting programs for families with low English proficiency. The study aims to identify the best models of care for sustained nurse home visiting programs in CALD populations. Researchers are also creating resources to assist interpreters and nurses that can be implemented through existing health service infrastructure.

Nursing researchers have also implemented and evaluated the Safewards program of interventions for mental health inpatient units. This is a program of 10 nurse-initiated and

delivered interventions, designed to reduce conflict and improve safety for both staff and patients. These interventions have helped to build rapport between nurses and patients by establishing mutual expectations and clear communication, and focusing on shared aims. Initial results from the evaluation indicate that this program has been very successful, with a 23 per cent reduction in the risk of conflict.

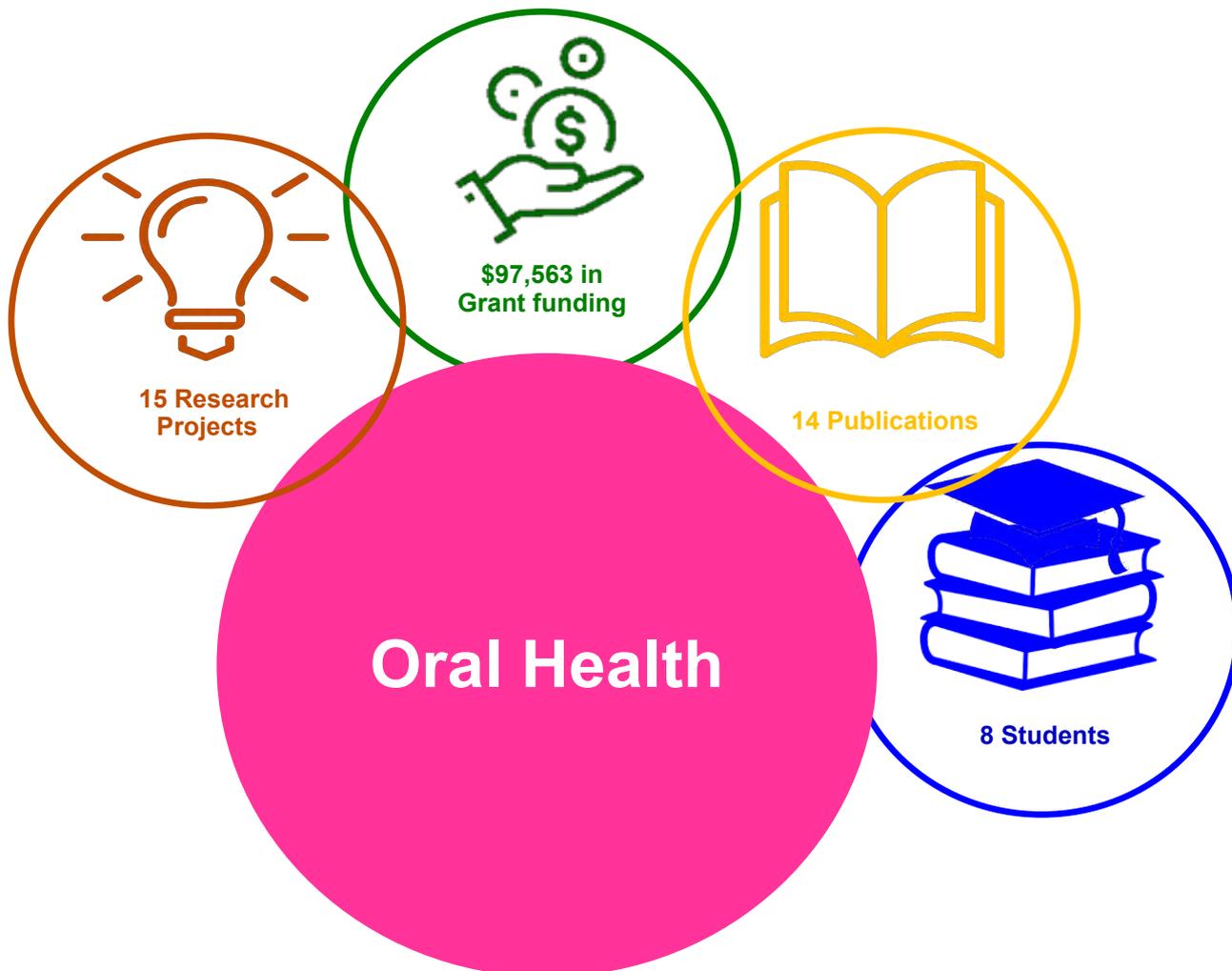
In 2019-2020, nursing and midwifery researchers have presented at national and international conferences. In September 2019, Ms Bernadette McNally presented on reducing the incidence of hospital-acquired pressure injuries at the International Forum on Quality and Safety in Healthcare in Taiwan. Ms Dana West gave a presentation about elastomeric infusion technology at the 12th Hospital in the Home Annual Scientific Meeting in Perth. In March 2020, Ms Bernadette Shepherd and Mr David Sanchez gave presentations about treatment for delirium in a hospital setting at the Macarthur Research Showcase.

Nursing and midwifery researchers collaborate widely with academic institutions, such as the University of Sydney, the University of Wollongong, the University of New South Wales, Western Sydney University and the Garvan Institute of Medical Research. They also partner with the NSW Health Interpreter Services, Tharawal Aboriginal Medical services, the STARTTS service for rehabilitation of trauma survivors, and SPHERE Clinical Academic groups.

Key Publications Include:

- Frost, SA, Kelly, A, Gaudin, J, McEvoy, L, Wilson, C, Marov, L, El Haddad, C, Center, J, Eisman, JA, Nguyen, TV & Hassett, G, 'Establishing baseline absolute risk of subsequent fracture among adults presenting to hospital with a minimal trauma-fracture', *BMC Musculoskeletal Disorders*, vol. 21 no. 133, <https://doi.org/10.1186/s12891-020-3161-4>
- Ogbo, FA, Ezeh, OK, Dhami, MV, Naz, S, Khanlari, S, McKenzie, A, Agho, K, Page, A, Ussher, J, Perz, J & Eastwood, J 2019, 'Perinatal Distress and Depression in Culturally and Linguistically Diverse (CALD) Australian Women: The Role of Psychosocial and Obstetric Factors', *International Journal of Environmental Research and Public Health*, vol. 16, no.16, pp. 1-22
- Ogbo, FA, Ezeh, OK, Khanlari, S, Naz, S, Senanayake, P, Ahmed, KY, McKenzie, A, Ogunsiji, O, Agho, K, Page, A, Ussher, J, Perz, J, Barnett, B & Eastwood, J 2019, 'Determinants of Exclusive Breastfeeding Cessation in the Early Postnatal Period among Culturally and Linguistically Diverse (CALD) Australian Mothers', *Nutrients*, vol. 11, no. 7, pp. 1-16
- Dickens, GL, Tabvuma, T, Hadfield, K, & Hallett, N 2020, 'Violence Prevention Climate in General Adult Inpatient Mental Health Units: Validation study of the VPC-14', *International Journal of Mental Health Nursing*, first published: 13 June, <https://doi.org/10.1111/inm.12750>





A person's oral health is often an important indicator of their overall health and quality of life.

Poor oral health can raise the risk of developing other serious health conditions, such as stroke and cardiovascular disease. Oral Health Services researchers from the District investigate how to best prevent and treat conditions such as dental caries, tooth loss, periodontal disease and oral cancer. The District, Western Sydney University, and the Ingham Institute for Applied Medical Research have together formed the Centre for

Oral Health Outcomes and Research Translation (COHORT), an innovative group who translate research findings into improved outcomes for policy, education and clinical practice.

Oral health researchers won a number of grants to support their valuable work in 2019-2020. COHORT researchers received \$52,000 for their work partnering with the Nepean Blue Mountains Local Health District. Western Sydney University awarded south western Sydney researchers a grant worth \$22,800 to promote oral health among patients with diabetes in Nepal. SWSLHD awarded researchers \$8,563 for an oral health program for clients attending Drug Health Services in south western Sydney.

In 2019, COHORT PhD student Prakash Poudel won the Western Sydney University Student Award for Excellence in University Engagement and Sustainability. This award was given in recognition of his work in improving oral health care practices for patients with diabetes. Mr Poudel initiated and led a multidisciplinary team which developed patient education materials and a risk assessment tool to help clinicians identify patients at risk of poor oral health. In October 2019, Mr Poudel's work was also recognised with a District Quality Award.



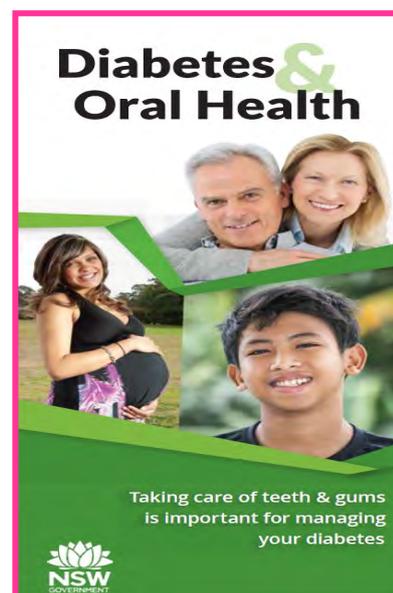
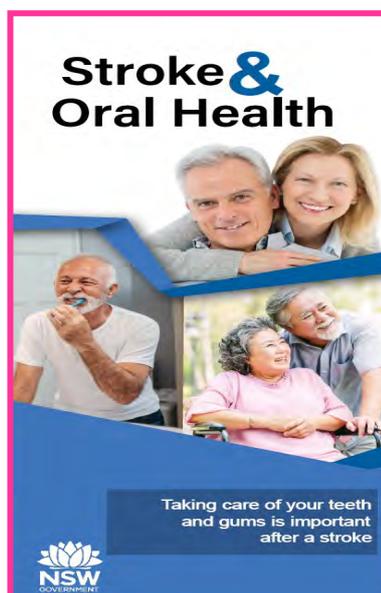
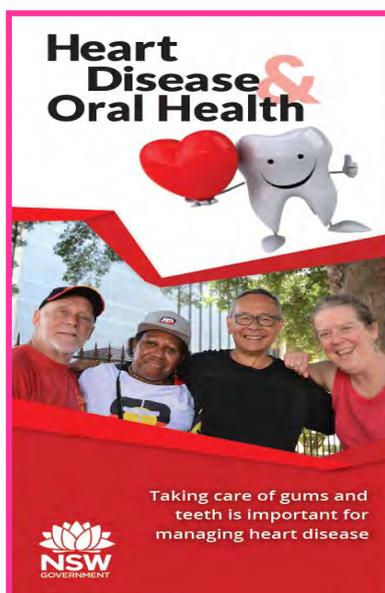
Key Publications Include:

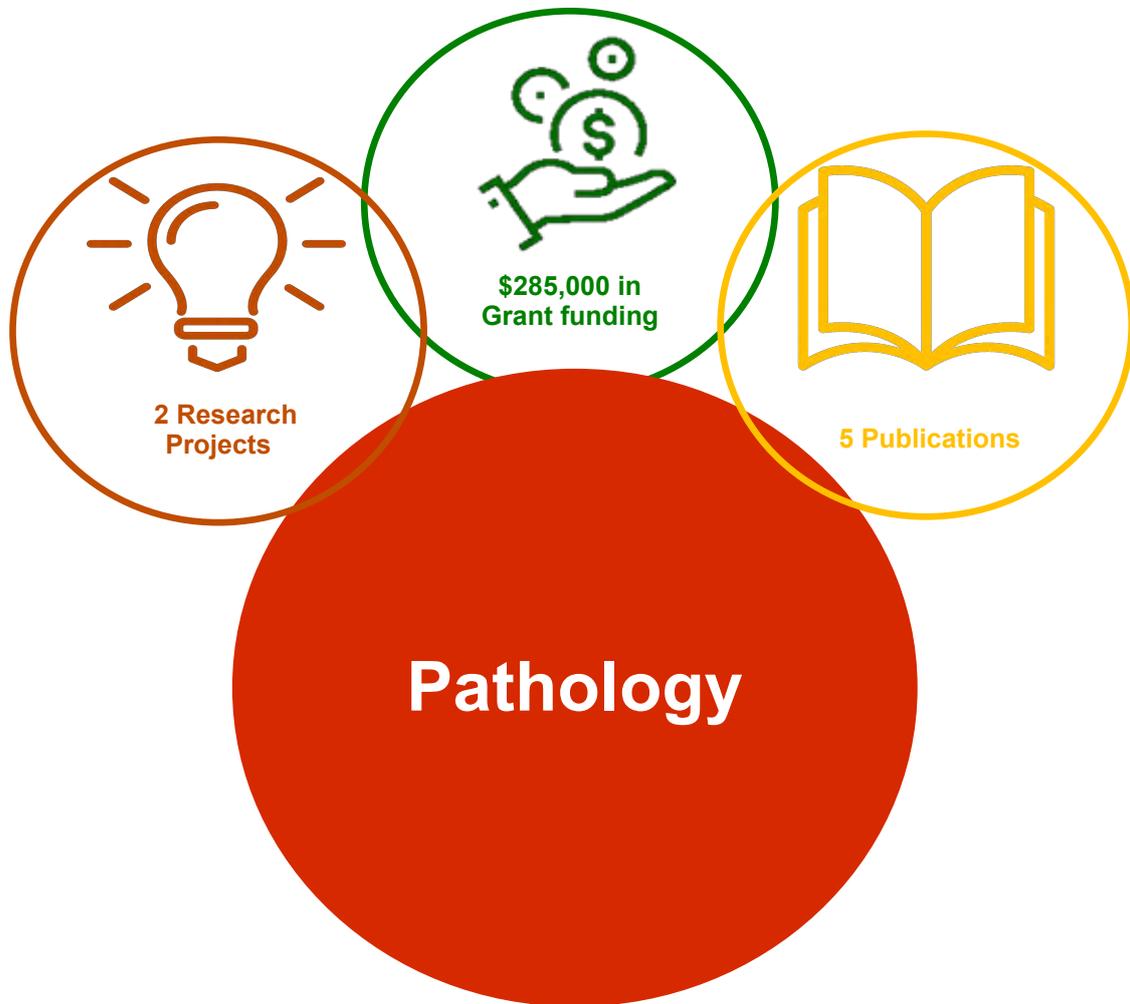
- George, A, Sousa, MS, Kong, AC, Blinkhorn, A, Norrie TP, Foster, J, Dahlen, H, Ajwani, S & Johnson, M 2019, 'Effectiveness of preventive dental programs offered to mothers by non-dental professionals to control Early Childhood Dental Caries: A review', *BMC Oral Health*, vol. 19, no. 1, p. 172
- George, A, Kong, A, Villarosa, A, Duff, M, Sheehan, A, Burns, E, Priddis, H, Clarity, C & Dahlen, H. 2020, 'Implementing and evaluating the effectiveness of an oral health module for the Bachelor of Midwifery program at an Australian university', *Nurse Education Today*, vol. 90, <https://doi.org/10.1016/j.nedt.2020.104457>
- Patterson Norrie, T, Villarosa, AR, Clark, S, Villarosa, AC, Macdonald, S, Srinivas, R, Anlezark, J & George, A 2020, 'Oral Health in Residential Aged Care: Perceptions of Nurses and Management Staff', *Nursing Open*, vol. 7, no. 2, pp. 536-546
- Saraswat, N, Everett, B, Pillay, R & George, A 2020, 'Knowledge, attitude and practices of south Asian migrants in developed countries regarding oral cancer risk behaviours: an integrative review', *BMC Cancer*, vol. 20, no. 1, p. 477

COHORT researchers have developed brochures on 'Heart Disease & Oral Health', 'Stroke & Oral Health' and 'Diabetes & Oral Health', which have been endorsed by NSW Health, the Stroke Foundation and the Australian Dental Association (NSW) for distribution throughout the state. The brochures will help raise awareness about the importance of oral health among patients with diabetes and patients who have experienced a stroke.

Oral Health researchers in south western Sydney partner with a wide range of

organisations locally and nationally, including the University of Sydney, the University of New South Wales, the University of Melbourne, the NSW Centre for Oral Health Strategy, Dental Health Services Victoria, the Australian Dental Association, the Diabetes Association of Australia and the George Institute for Global Health. They also collaborate with international organisations, including the World Health Organization – Western Pacific, New York University, Tokyo Women's Medical University, Kathmandu University, and King's College London.





Pathology services to the District are provided by NSW Health Pathology – South as part of NSW Health Pathology. The main pathology centre in the District is located on the Liverpool Hospital campus and includes the departments of Anatomical Pathology, Haematology, Microbiology and Biochemistry. These departments are supported by local laboratories at sites across south western Sydney including Bankstown-Lidcombe Hospital, Bowral & District Hospital, Campbelltown Hospital and Fairfield Hospital. The pathologists and scientists of the District support many

clinically led projects in the south western Sydney region as well as initiating their own projects.

The Haematology research group at Liverpool hospital study the causes, development, prevention and treatment of blood-related diseases. They have been developing a liquid biopsy for molecular profiling of cancer of the plasma cells in bone marrow, known as multiple myeloma. This advance could allow clinicians to detect and analyse multiple myeloma in a way which is less invasive and more reliable than previous technologies. The department has 10 active open clinical trials and 12 clinical trials in active follow-up.

Researchers in south western Sydney have also been using cutting-edge microscopy technology in the development of new diagnostic tests. Professor Murray Killingsworth, Dr Tzipi Cohen-Hyams and their colleagues partner with the Ingham Institute, the University of New South Wales, Western Sydney University and other national and international institutions to access state-of-the-art technologies such as nanoparticle-based cryogenic correlative light and electron microscopy.



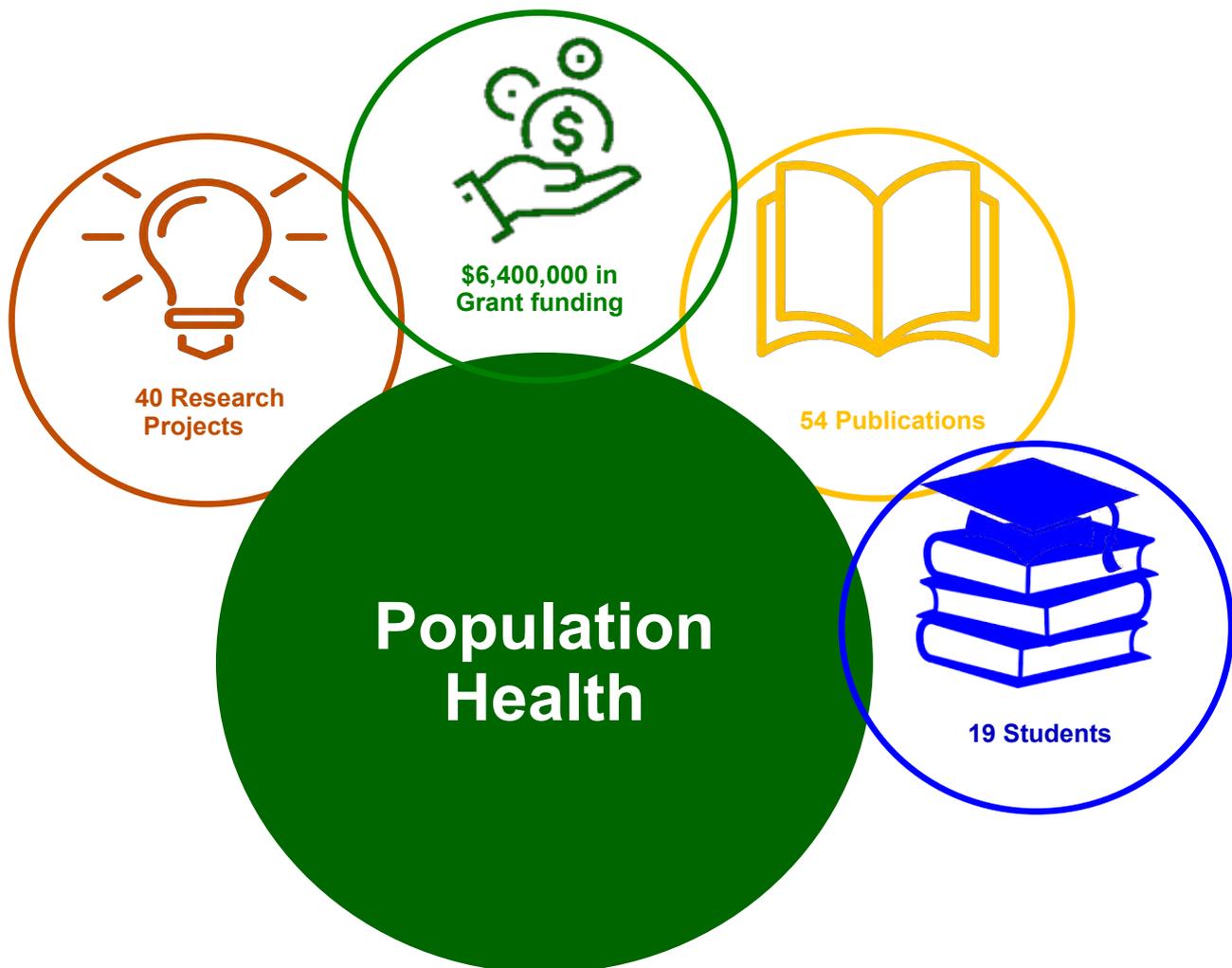
Key Publications Include:

- Unnikrishnan, A, Lim, XY, Joshi, S, Nunez, AC, Vaughan, L, Pickford, R, Hough, S, Davidson, S, Fong, C, Kenealy, M, Hiwase, DK, Pasalic, L, Mohammed, S, Lee, L, Passam, FH, Spring, K, Rebeiro, P, Ling, S, Fuller, S, Presgrave, P, Roncolato, F, Larsen, S, Enjeti, AK, Stevenson, WS, Tiley, C, Campbell, PJ, Lemech, C, Olivier, J, Hertzberg, M, Polizzotto, MN & Pimanda, J 2019, 'In Vivo Assessment of Intracellular Dynamics Comparing Injection Versus Oral Azacitidine in a Phase IIb Investigator Initiated Clinical Trial', *Blood*, vol. 134, no. Suppl 1, p. 4247
- Di Ciaccio, P, Kearney, A & Ling, S 2020, 'Comparing the area under the curve and peak height methods in the calculation of FLT3-ITD allelic ratio', *International Journal of Laboratory Hematology*, first published in June, <https://doi.org/10.1111/ijlh.13263>
- Cohen-Hyams, T, Mam, K & Killingsworth, MC 2020, 'Scanning electron microscopy as a new tool for diagnostic pathology and cell biology', *Micron*, vol. 130, no. 102797
- Santos, LD, Gune, S, Killingsworth, MC, Cohen-Hyams, T, Wuhrer, R, Harvey, M, McNamara, N, Nguyen, L, Sabapathy, S, Evangelista, C & Yong, JLC 2019, 'Determining and characterizing if deer placenta stem cells are present in commercial food supplement capsules: utilizing microscopy, elemental analysis, cytology, histology, immunohistochemistry and flow cytometry', *Microscopy & Microanalysis*, vol. 25, no. Suppl 2, pp.1098-1099

Legionella pneumophila is a bacterium which can cause Legionnaire's Disease, a form of atypical pneumonia. Researchers in south western Sydney have used the CRISPR/Cas9 gene editing technology to more effectively analyse and classify occurrences of this bacterium. This technology has enabled researchers to correctly classify which *Legionella pneumophila* genomes are related to each other. This research has the potential to help trace and investigate outbreaks of Legionnaire's Disease.

Pathology researchers in south western Sydney are investigating the mechanisms leading to vision loss from age-related macular degeneration (AMD). This is the most common form of vision loss in people aged over 65. Researchers have identified the role of chronic inflammation in the beginning of types of end stage AMD. This has assisted the development of anti-inflammatory treatments to help control this condition.





Population Health research plays an important part in the prevention of health conditions by studying large-scale patterns of health and disease in the population as a whole.

The projects of the Population Health clinical stream shed light on a variety of factors which influence the prevalence of communicable and non-communicable diseases and provide more effective guidance for health policy.

An important part of the Stream's research program is the investigation of social and environmental factors which affect how much physical exercise people undertake. People's exercise patterns can have a substantial impact on the prevalence of many health conditions, including type 2 diabetes. Professor Bin Jalaludin and his colleagues have received a seed grant to find out more about the small and large factors which influence how much people walk in an urban environment. The Pasifika Preventing Diabetes Programme led by David Simmons, has been successful in securing \$1.5 million over four years for a large randomised control trial testing the impact of a lifestyle-based intervention to

prevent type 2 diabetes, in partnership with the Sydney Pasifika community. The Population Health Unit is partnering on an international grant and has received \$1.45 million over three years to investigate the impact the quality of park greenspace on population health outcomes.

The Health Promotion Service is participating in a number of projects, including the 'Thirsty? Choose Water!' campaign with the University of Newcastle and the Office of Preventative Health, which encourages secondary school students to avoid sugar sweetened beverages.

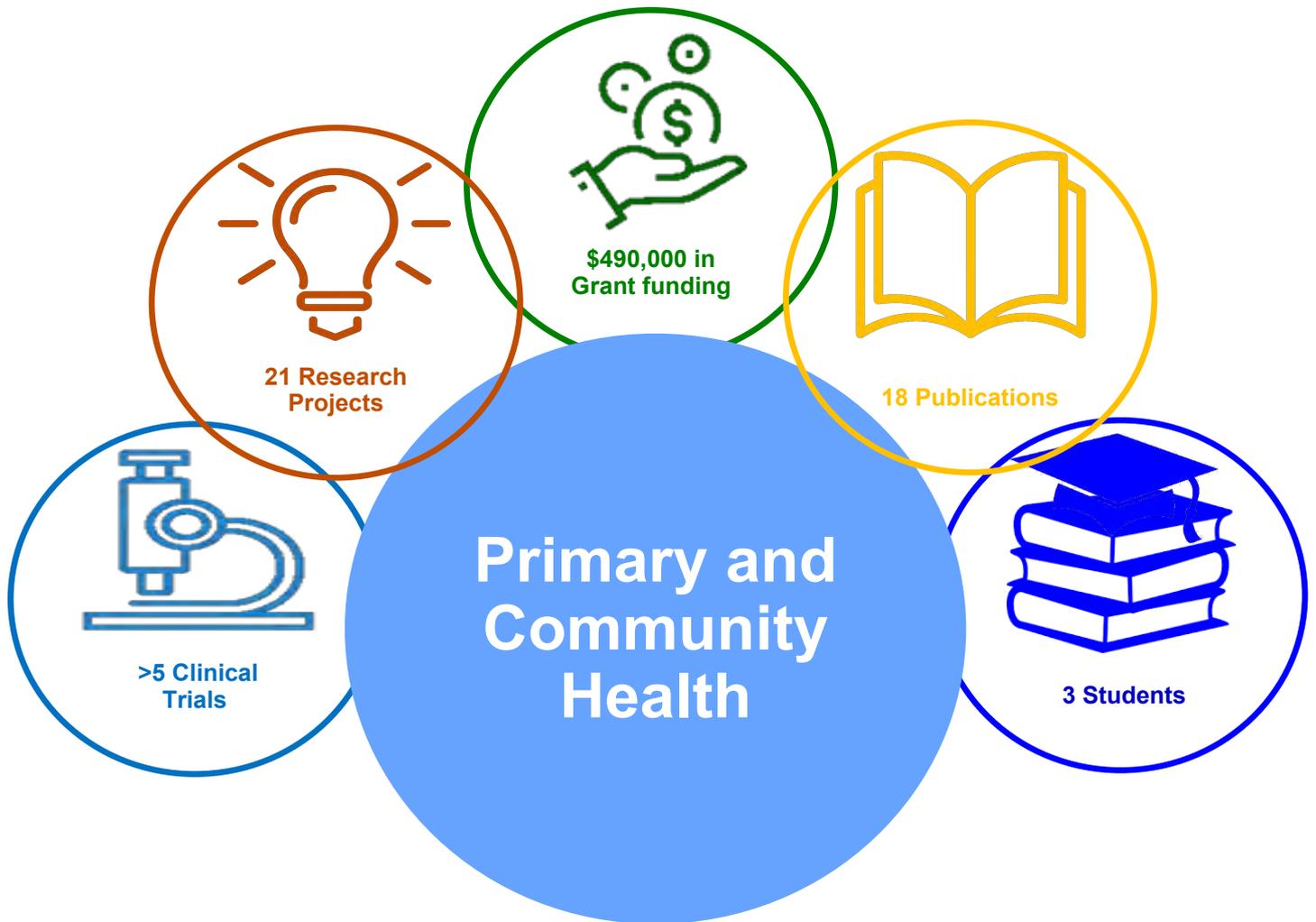
In 2019-2020, Professor Evelyne de Leeuw won the Lady Mary Fairfax Distinguished Researcher Award while Professor Bin Jalaludin received the Award for Research Excellence for Conjoint Academic Staff from the Faculty of Medicine at the University of New South Wales.

Professor de Leeuw gave a World Health Organization webinar in November 2019, discussing recent developments in Health Promotion research.

Key Publications Include:

- Blake, B, Jones, M & Spratling, M 2020, 'Refugee Health Nursing: An evolving specialty area', *Primary Times*, vol. 20, no. 1, pp. 39-41
- Slewa-Younan, S, McKenzie, M, Thomason, R, Smith, M, Mohammad, Y & Mond, J 2020, 'Improving the mental wellbeing of Arabic speaking refugees: an evaluation of a mental health promotion program', *BMC Psychiatry*, vol. 20, no. 1, p. 314
- Fletcher-Lartey, S, Dronavalli, M, Alexander, KE, Ghosh, S, Boonwaat, L, Thomas, J, Robinson, A, Patel, Z, Forssman, B & Pal, N 2019, 'Trends in Antimicrobial Resistance Patterns in *Neisseria Gonorrhoeae* in Australia and New Zealand: A Meta-analysis and Systematic Review', *Antibiotics*, vol. 8, no. 4, p.191
- Alexander, KE, Wickens, M & Fletcher-Lartey, SM 2020, 'Measles elimination in Australia: hard won, easily lost', *Australian Journal of General Practice*, vol. 49, no. 3, pp. 112-114
- Dronavalli, M, Lord, H, Alexander, K, Boonwaat, L, Pal, N & Fletcher-Lartey, SM 2020, 'Effectiveness of oseltamivir prophylaxis in influenza outbreaks in residential aged care', *Journal of Epidemiology and Global Health*, vol. 10, no. 2, pp.184-189





Primary and community health care refers to the treatment of patients outside a hospital setting.

It is often a patient's first contact with the health care system when seeking treatment for a health condition. In south western Sydney, primary and community health care research focuses on children and families, in particular screening and early intervention for children at risk of developmental health conditions.

Many children are born into difficult circumstances which reduce their chances of

good physical and mental health in adulthood. To address these circumstances, primary health researchers in south western Sydney are working with the Royal Children's Hospital in Melbourne and other local health districts in Sydney on the Restacking the Odds project. This project aims to ensure better access to five early childhood health interventions, targeted for the most disadvantaged 25 per cent of the population. The project includes rigorous evaluation to assess the quality of these interventions, to inform health policy and to provide evidence for best practice health services.

Researchers in south western Sydney are also working on a health literacy training program for new parents' groups. The Parenting Plus program empowers new parents by giving them the knowledge and skills to make informed decisions about their family's health. The program provides advice on child development, health eating and dietary guidelines, communication and accessing health services, first aid and immunisation.



Key Publications Include:

- Ghosh, S, Dronavalli, M & Raman, S 2020, 'Tuberculosis infection in under-2-year-old refugees: Should we be screening? A systematic review and meta-regression analysis', *Journal of Paediatrics & Child Health*, vol. 56, no. 4, pp. 622-629
- Zwi, K, Sealy, L, Samir, N, Hu, N, Rostami, R, Agrawal, R, Cherian, S, Coleman, J, Francis, J, Gunasekera, H, Isaacs, D, Larcombe, P, Levitt, D, Mares, S, Mutch, R, Newman, L, Raman, S, Young, H, Norwood, C & Lingam, R 2020, 'Asylum seeking children and adolescents in Australian immigration detention on Nauru: a longitudinal cohort study', *BMJ Paediatrics Open*, vol. 4, no. 1, e000615
- Garg, P, Eastwood, J & Liaw, S 2019, 'Realist Synthesis of Literature Informing Programme Theories for Well Child Care in Primary Health Systems of Developed Economies', *International Journal of Integrated Care*, vol. 19, no. 3, p. 5
- Wickramasinghe, Y, Raman, S, Garg, P, Jain, K & Hurwitz, R 2019, 'The adverse childhood experiences checklist: Can it serve as a clinical and quality indicator?', *Journal of Paediatrics and Child Health*, vol. 55, no. 9, pp. 1113-1118
- Chow, JSF, Gonzalez-Arce, VE, Tam, CWM, Warner, K, Maurya, N & McDougall, A 2019, 'Creating a successful health pathway to support the integration of patient care', *Journal of Integrated Care*, vol. 28, no. 2, pp. 171-182

South western Sydney has the highest childhood obesity rate in Australia. Experiencing obesity in childhood increases a person's risk of developing other health conditions in adolescence and adulthood. Professor Elizabeth Denney-Wilson and her colleagues are investigating ways to prevent childhood obesity through the infant feeding advice provided by child and family nurses. The researchers aim to explore which factors cause new parents to follow best practice feeding advice for their infants. The project also aims to discover how child and family nurses can best support childhood obesity prevention practices.



Primary and Community Health researchers were the 2019 winners of the South West Sydney Research Group Collaborative Achievement Award for a project investigating the feasibility of the Toddler Communication Assessment Protocol. They also present their research at a variety of national and international conferences. In October 2019, Ms Annette Zucco gave a presentation about how dispersed teams can deliver high quality care at the 36th International Safety and Quality Conference in Cape Town, South Africa.

In February 2020, Associate Professor Shanti Raman gave a presentation about perinatal health care for refugee women at the Advancing the Evidence conference in Melbourne.

Primary and Community Health researchers have developed a range of partnerships, including collaborations with Allied Health, the Ingham Institute, the University of New South Wales' School Of Public Health, the BestSTART Academic Unit, the University of Wollongong and the NSW Health Interpreter Services.



The Surgical Specialties Clinical Stream focuses on treatment and rehabilitation for orthopaedic and musculoskeletal conditions.

In 2019-2020, the Surgical Specialties Clinical Stream has been successful in winning grant funding to support their valuable research. Professor Ian Harris received \$240,335 from the HCF Research Foundation for his work in assisting patients with knee osteoarthritis to make informed decisions about their surgical and non-surgical management options. Professor Harris also received NHMRC Centre for Research Excellence funding, partnering with Chief Investigator Chris Maher from the Sydney School of Public Health, for research to improve health care and health outcomes for people experiencing lower back pain.

A randomised clinical trial led by south western Sydney researchers won the 2019 PEDro Award and was recognised by the international physiotherapy community as being one of the most important studies of the last five years. The study found that after an uncomplicated total knee arthroplasty, an inpatient rehabilitation program did not improve mobility outcomes, as compared to a monitored home-based rehabilitation program. This study has important

implications for models of care and cost-effective provision of rehabilitation programs.

In 2019-2020, researchers from the Surgical Specialties Clinical Stream presented at national and international conferences. In July 2019, Dr Scott D'Amours gave a presentation at the 44th Annual Scientific Congress of the Royal College of Surgeons of Thailand, entitled 'Better trauma care: what's new in training for trauma?' In August 2019, Dr D'Amours presented his research into traumatic abdominal wall rupture at the meeting of the International Surgical Society, which was held in Krakow, Poland.

Surgical Specialties researchers partner with high schools and community agencies to deliver the Prevent Alcohol and Risk-Related Trauma in Youth (PARTY) program. In the 15-24 age group, 40 per cent of deaths are due to injuries, accidents and trauma. The PARTY program aims to provide teenagers with information so that they can identify risky situations and make safer choices. Doctors, nurses, physiotherapists and speech therapists, together with representatives from the Ambulance Service, the NSW Police and those who have been directly affected by injury, together deliver the program at Liverpool Hospital.

Key Publications Include:

- Chuan, A, Zhao, L, Tillekeratne, N, Alani, S, Middleton, PM, Harris, IA, McEvoy, L & Ní Chróinín, D 2020, 'The effect of a multidisciplinary care bundle on the incidence of delirium after hip fracture surgery: a quality improvement study', *Anaesthesia*, vol. 75, no. 1, pp, 63-71
- Lawson, A, Tan, AC, Naylor, J & Harris, IA 2020, 'Is retrospective assessment of health-related quality of life valid?', *BMC Musculoskeletal Disorders*, vol. 21, no. 1: 415
- Thompson, K, Griffiths-Jones, W, Frendin, L, Wood, J, Harris, IA, Chen, DB & MacDessi, SJ 2020, 'Interobserver Agreement of Sensor-Derived Compartmental Pressure Measurements in Computer-Assisted Total Knee Arthroplasty', *The Knee*, vol. 27, no. 3, pp. 717-722
- Mitchell, R, Draper, B, Brodaty, H, Close, J, Ting, HP, Lystad, R, Harris, I, Harvey, L, Sherrington, C, Cameron, ID & Braithwaite, J 2020, 'An 11-year review of hip fracture hospitalisations, health outcomes, and predictors of access to in-hospital rehabilitation for adults ≥ 65 years living with and without dementia: a population-based cohort study', *Osteoporosis International*, vol. 31, no. 3, pp. 465-474
- Lawson, A, Santhakumar, P, Naylor, J, Churches, T, Frost, S & Harris, IA 2020, 'Wrist deformity, bother and function following wrist fracture in the elderly', *BMC Research Notes*, vol. 13, no. 169





Women's Health

Women's Health researchers are collaborating on a range of studies to improve outcomes for mothers and babies in South Western Sydney.

Professor John Smoleniec and his team are working on an observational study across multiple sites to get a better understanding of the risk factors and development of Severe Hemolytic Disease. This is a dangerous condition for a late stage foetus or newborn baby, in which an antibody produced by the mother passes through the placenta and attacks red blood cells. In severe cases, this can cause the baby to die of heart failure. This study aims to help clinicians to provide more informed management and care of pregnant women at high risk of this condition. Professor Smoleniec is also currently leading a study to investigate the safety and effectiveness of a new treatment for pregnant women at high risk for Severe Hemolytic Disease.

South Western Sydney researchers are partnering with academics and other Local Health Districts on the Timing of Birth Study. The goal of the Timing of Birth study is more effectively translate scientific evidence into clinical practice in regard to planned caesarean sections and induction of labour. Researchers are mapping current practices at eight

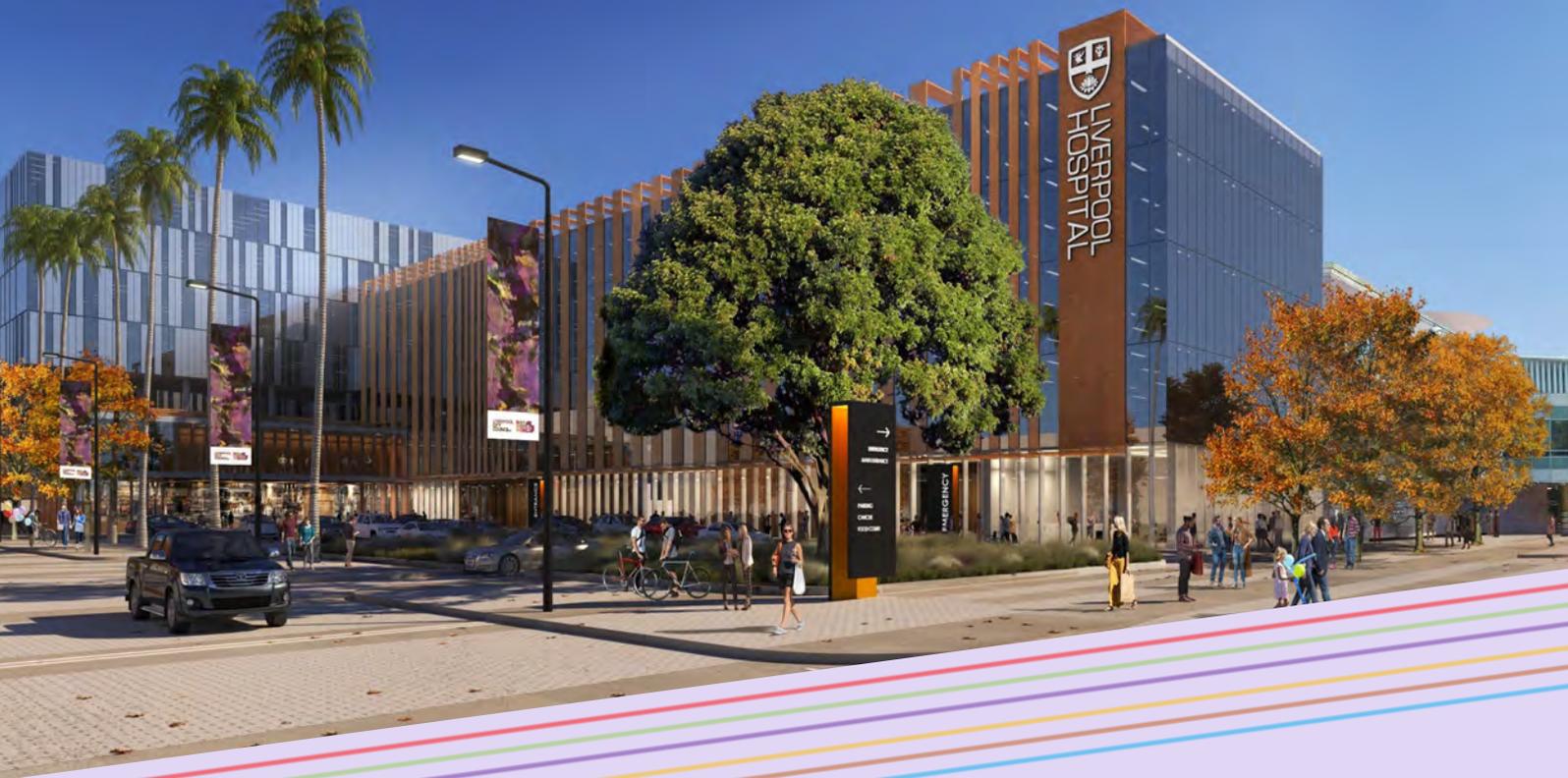
participating maternity hospitals across Sydney and are comparing these practices with national and international guidelines. They aim to find out why clinical variation from the guidelines occurs and to better understand which factors support or prevent the implementation of evidence-based practice.

Women's Health researchers are assessing the impact of the Safer Baby Bundle program on the prevention of stillbirth. It has been suggested that 20-30 per cent of stillbirths could have been avoided if substandard maternity care practices had been addressed. The Safer Baby Bundle program is a set of educational modules for clinicians, addressing key factors related to the risk of stillbirth. These modules include improving care for women with foetal growth restriction and improving awareness about the safest sleeping position for women in late stages of pregnancy. The program also includes a range of resources for clinicians to share with pregnant women.

Women's Health clinicians are also actively involved with the research projects of the Women's Health Initiative Translational Unit (WHITU).

RESEARCH HIGHLIGHTS





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