THE UNIVERSITY OF WESTERN AUSTRALIA | Health and Medical Sciences

Highlights
Semester One 2019

Global impact

UWA's Faculty of Health and Medical Sciences is developing future leaders to meet the global health challenges of tomorrow and seize opportunities in a rapidly changing world.

Our mission is to advance life-long health through education, research and innovation.

We offer world class training and research opportunities in a wide range of scientific and clinical disciplines to significantly benefit the health of Australian and international communities.

Through research-led teaching, we encourage the lifelong adaptation and assessment of new theories, treatments and diagnostic techniques that incorporate a holistic approach to health sciences and a more sensitive interaction with patients.

We strive to deliver research-led teaching in high-quality facilities and are supported in this venture by leading academics, valued alumni and expert health professionals.

UWA has acquired an international reputation for research excellence in health and medicine, attracting world class researchers across a wide range of disciplines and diverse fields.

Our exceptional community of researchers work across health and medical research institutes, hospitals and other health care providers. At the core of their work is translating discoveries into patient care, community health and health policy.

The achievements of our researchers have been globally recognised in recent ranking announcements, including the Academic Ranking of World Universities (ARWU). UWA also improved 5 places, from 91 to 86, in the 2020 QS World University Rankings.

Clinical Medicine at UWA is ranked

8th in the world and **1st** in Australia

(ARWU 2019)

Awarded **$19.3M** in NHMRC funding (2018)

356 PhD Students (2019) in Health and Medical Sciences

Ranked in top **35** in the world for Biological Sciences and Human Biological Sciences (ARWU, 2019)

1059 Research Publications (Jan-June 2019) in Health and Medical Sciences

Federal Funding boost for indigenous mental health services

> “The program will test models in ‘real world’ mental health service settings which will then be developed for primary mental health and specialist services, both for Indigenous and mainstream users.”

A multidisciplinary research program has received $5 million to improve the delivery of mental health services for Australia’s Indigenous population.

The funding is part of the Federal Government’s Medical Research Future Fund (MRFF) Million Minds Mission and follows calls for a new approach to Indigenous mental health services to foster and promote cultural values and strengths, as well as empowering those who use the services.

Researchers will work with Indigenous service users to develop clinically and culturally capable Indigenous mental health service models and establish how they can best work within families and communities. They will also look at how services can better prevent mental health difficulties and suicide and consider cultural healers’ work with service users.

Lead researcher Professor Pat Dudgeon, from the UWA Poche Centre and School of Indigenous Studies, said the project would play a vital role in improving Indigenous wellbeing and suicide prevention across Australia.

“The program will involve researchers from many different parts of the University, providing a multidisciplinary approach to solving some of our country’s ‘wicked’ problems,” Professor Dudgeon said.

“The models will feature integrated mental health, alcohol and drug, suicide prevention and social and emotional wellbeing services and enhanced workforce capabilities to meet complex needs,” she said.

Professor Sean Hood, Head of the UWA Division of Psychiatry and the Faculty’s Associate Dean (Community and Engagement), said this is an important program because it leverages the unique breadth of experience at UWA.

“As an integrated cross-faculty research program we have been able to use cutting-edge mathematical techniques we developed in public and private hospital settings and applied these to Indigenous mental health in a culturally sensitive manner,” Professor Hood said.

The multidisciplinary research team will be led by senior Indigenous researchers and include partnerships with Indigenous-specific and other mental health service providers.

Pleural medicine leader named cancer researcher of the year

A researcher from the Medical School has been named Cancer Council Western Australia 2019 Cancer Researcher of the Year.

Professor Gary Lee was recognised for his research into pleural effusion, a build-up of fluid in the chest which affects more than 8,000 cancer patients a year in Australia. Pleural effusion especially effects those with lung and breast cancers and most of those with mesothelioma, a fatal cancer of the lining of the lung caused by exposure to asbestos.

The resulting fluid accumulation as part of these diseases often causes disabling breathlessness and requires repeated invasive procedures to drain. Management of cancer-related effusions accounts for more than 8,000 bed days and more than 10 million care costs in each year in public hospitals of Western Australia alone.

Professor Lee divides his time between working as a professor of respiratory medicine at UWA and a consultant chest physician and director of pleural services at Sir Charles Gairdner Hospital.

Western Australia is the first state where all tertiary hospitals have a specialist pleural physician, all trained by Professor Lee at Sir Charles Gairdner Hospital. Professor Lee was instrumental in setting up pleural medicine as a new subspecialty in Australia. This has significantly improved the diagnosis and management journey of cancer patients with pleural effusions.

Professor Lee led the use of a new drainage device (called the indwelling pleural catheter) that allows, for the first time, patients to drain their fluid at home if and when they become breathless.

He set up the AMPLE (Australasian Malignant Pleural Effusion) network across hospitals in Australia, New Zealand, Hong Kong, Singapore and Malaysia. Through the AMPLE network, he led two multicentre randomised trials that showed indwelling catheter treatment improves patient symptoms and quality of life.

Most importantly it allows patients with advanced cancers to spend significantly less time in hospital and more time at home with family. From a healthcare perspective, this treatment can save more than 14,000 hospital bed days across Australia a year.

"This award is an important recognition of the effort of my very dedicated team of research fellows and collaborators who are devoted to improving patient care," he said.

Professor Lee follows UWA's internationally recognised asbestos-related diseases expert Professor Anna Nowak who was awarded Cancer Researcher of the Year in 2018.

Professor Nowak was also awarded almost $100,000 by Cancer Council this year to undertake laboratory testing to understand why some patients with mesothelioma responded better to a combination of chemotherapy and immunotherapy.

> "We are proud to show that investigators from WA could design and lead high-quality, multicentre clinical trials that impact on clinical practice worldwide."

Babies make room in the womb for bacteria

Our exposure to bacteria begins before we're born, according to new research led by Dr Lisa Stinson from the division of Obstetrics and Gynaecology. The study, published in *Frontiers in Microbiology*, used rigorous contamination controls to confirm exposure to bacteria begins in the womb.

Researchers collected amniotic fluid samples from 50 healthy women undergoing planned caesarean deliveries and found nearly all contained bacterial DNA. They subsequently found all 50 newborns had bacteria in their first bowel movement.

"Over the last decade, numerous studies have detected bacterial DNA in amniotic fluid and first-pass meconium (baby's first poo), challenging the long-held assumption the womb is sterile," Dr Stinson said.

The researchers said it was important to conclusively determine whether a healthy womb contained bacteria because the 'fetal microbiome' was likely to have a significant impact on the developing immune system, gut and brain.

To settle the issue, the research team took strict measures to eliminate bacterial contamination when analysing amniotic fluid and meconium samples.

For example, they purified the reagents used to detect bacterial DNA in the samples, by adding an enzyme which digests DNA remnants from bio-manufacturing.

"Despite these measures, we still found bacterial DNA in almost all samples," Dr Stinson said.

"Interestingly, the meconium microbiome varied hugely between individual newborns. The amniotic fluid microbiome for the most part contained typical skin bacteria, such as *Propionibacterium acnes* and *Staphylococcus* species."

None of the women who took part in the study nor their babies had any sign of infection. In fact, the fetal microbiome may prove to be a beneficial regulator of early development.

"We found that levels of important immune modulators in meconium and inflammatory mediators in amniotic fluid varied according to the amount and species of bacterial DNA present," Dr Stinson said.

"This suggests the fetal microbiome has the potential to influence the developing fetal immune system."

Dr Stinson's research was carried out under the supervision of Professor Jeffrey Keelan, Head of the School of Biomedical Sciences and Dr Matt Payne, Research Fellow in the Division of Obstetrics and Gynaecology at the UWA Medical School.

Lactamap to support GPs caring for breastfeeding mums

Researchers from the School of Allied Health have launched a world-first online lactation care support system called LactaMap to support GPs who are helping patients who have problems breastfeeding.

Lead researcher Melinda Boss said LactaMap was developed specifically to provide doctors with an evidence-based program they can use during consultations to help treat mothers and babies experiencing lactation issues.

"Unlike other medical guidelines, LactaMap is an online lactation care support system for doctors to use at the point of care, to support mothers and infants experiencing difficulty with breastfeeding," Ms Boss said.

"Lactation completes the reproductive cycle but is often considered outside of the scope of modern medicine. Conflicting advice is one of the most common factors that impact a mother's confidence in her ability to initiate and sustain breastfeeding."

Ms Boss said LactaMap addresses breastfeeding difficulties by starting with consideration of four key areas: pain, milk transfer, maternal health and infant health.

"Once the GP has this information base, they can then work through the platform to develop a personal care plan for the patient," she said. "The platform contains 112 clinical practice guidelines as well as the LactaPedia glossary and 21 information sheets that can be printed out during the consultation or emailed to patients."

LactaPedia is an online lactation dictionary for science and medicine that sets the international standard for breastfeeding language. It was created by Ms Boss and Emeritus Professor Peter Hartmann to address the lack of consistency in lactation-related terminology and help counteract some of the conflicting advice women receive when breastfeeding.

It defines more than 560 terms associated with lactation, including physiology, the composition of human milk and conditions that affect lactation. The lactation glossary can be freely accessed by medical professionals and scientists as well as the general public.

As reported in the *Journal of Human Lactation*, early weaning represents a major public health concern and results in an estimated $4 billion loss to the Australian economy each year.

LactaMap is accessible to doctors free of charge. The research team gratefully acknowledges the support of major sponsor the Family Larsson-Rosenquist Foundation, as well as the support of the Rotary Club of Southern District.

> "Our hope is to create a common medical and scientific understanding that will help to normalise human lactation."

Faculty award winners

The Faculty congratulates all 2019 award winners. The following are some highlights of staff and alumni achievements so far this year:

Senior Research Fellow Melinda Boss
WA Pharmacist of the Year Award, Western Australian Pharmacist Awards

Dr Mitali Sarkar-Tyson
Project Leader Award, Defence Materials Technology Centre (DMTC)

Dr Sally Brinkman
NHMRC Research Excellence Award, 2018 Career Development Fellowship Scheme, National Health and Medical Research Council

Dr Dayse Tavora-Vieira
Researcher of the Year- SMHS-Excellence Awards

Professor Helen Milroy
First Indigenous AFL commissioner, Australian Football League

Dr Jilen Patel
WA Young Achiever of the Year Masonic Care WA/Freemasons WA Community Service and Volunteering Award

Dr Chan Cheah
Woodside STEM Excellence Award, 2019 Business News 40under40

Associate Professor Lynette Fernandes
Senior Fellowship to Advance Higher Education Academy, Advance Higher Education Academy

Assistant Professor Anna Waterreus
Travel Award, Schizophrenia International Research Society, Daniel Beck Memorial Award for Schizophrenia Research

Professor Wendy Erber and **Associate Professor Kathryn Fuller**
Rio-Tinto Australia-Japan Collaborative Program, Foundation for Australia-Japan studies (FAJS)

Professor John Newnham
Finalist Western Australian of the Year Award, Australian Medical Association (WA) Hippocrates Award

Ms Glenda Kickett
Finalist Western Australian of the Year Award

Dr Angus Turner
Professionals Award, 2019 Western Australian of the Year Awards

Professor Wendy Erber
Scientist of the Year Finalist WA Premier's Science Awards

Professor Ryan Lister
Scientist of the Year Finalist WA Premier's Science Awards

Ms Hayley Passmore
ExxonMobil Student Scientist of the Year Finalist

Ms Sharynne Hamilton
ExxonMobil Student Scientist of the Year Finalist

Ms Kirsty McLean
ExxonMobil Student Scientist of the Year Finalist

Professor Vera Morgan
Raine Medical Research Foundation Collaboration Awards, 2018 Australasian Epidemiological Association (AEA) Annual Meeting Awards, 2018

Dr Yael Perry
Raine Medical Research Foundation Collaboration awards, 2018

Dr Lee Nedkoff
Raine Medical Research Foundation Collaboration awards, 2018

Dr Anabel Sorolla Bardaji
Raine Medical Research Foundation Collaboration awards, 2018

Associate Professor Lisa Wood
Pro Bono Australia Impact 25 Award, Sax Institute Research Action Award, 2018, 2018 Public Health Association of Australia WA Branch Policy and Research Translation Award for 2018, Faculty Travel Award 2019

Ms Shannen Vallesi, Mr Craig Cumming, Ms Angela Gazey, Mr Nick Wood and **Nuala Chapple.**
2018 Public Health Association of Australia WA Branch Policy and Research Translation Award for 2018

Dr Demelza Ireland
Faculty Excellence in Teaching Award - *Individual or Teams*

Associate Professor Christopher Peacock
Faculty Excellence in Teaching Award - *Individual or Teams*

Please email comms-hms@uwa.edu.au with news of awards and achievements.

Our Schools

Ms Amber Boyatzis
Faculty Excellence in Teaching Award - *Early Career*

Ms Natalia Popowicz
Faculty Excellence in Teaching Award - *Early Career*

Associate Professor Allison Imrie
Citation for Outstanding Contribution to Student Learning

Dr Susannah Warwick
Citation for Outstanding Contribution to Student Learning

The Noisy Guts Project
National iAwards Finalist & WAITTA INCITE Awards Winner, Most Innovative Enabler in Health Care, National iAwards Finalist & WAITTA INCITE Awards Research & Innovation Project of the Year

QUEEN'S BIRTHDAY HONOURS:

Professor Richard Pestell, AO
MBBS '82, DM '08

Professor David Mackey, AO

Dr Bill Carroll, AM
MBBS '73, MD '85

Associate Professor Prudence Manners, AM
MD '01

Professor Dao-Yi Yu, AM
PhD '91

Medical School

UWA's Medical School brings together the brightest students, experienced clinicians and committed researchers to unlock the greatest health challenges of our day. We have a renowned research program carried out in laboratories, hospitals and in the community at a patient level, and we offer a range of scientific and clinical research opportunities across 10 divisions.

School of Biomedical Sciences

The School encompasses teaching and research in a range of biological, medical and health-related fields. Offering both undergraduate and postgraduate courses, students have the opportunity to learn about the intersection between human pathology and health, and an awareness of the approaches and applications of the biomedical scientific disciplines.

School of Allied Health

Allied health professionals work in the health, social and psychosocial services care team, using specialised skills to provide evidence-based services to patients and other service users. The School offers professional entry to practice courses in pharmacy, podiatric medicine and social work, as well as health professions education courses for those wishing to become educators in health.

School of Population and Global Health

The School is a leading research, teaching and service organisation whose work influences health policies and practices. The School comprises Population and Public Health, the Western Australian Centre for Rural Health (WACRH) and the Raine Study. We take an evidence-based approach through research, advocacy and health promotion to protect and improve the health of communities.

Dental School

The UWA Dental School is WA's only tertiary dental training centre, offering aspiring and existing dentists a range of practical and innovative postgraduate courses in a high-tech dental and learning facility. Using state of the art dental technology, our research contributes to the understanding of oral diseases, their prevention and treatment.

Doctor of Dental Medicine Career Mentor Café

Over 30 students and seventeen alumni attended the UWA Dental School annual Career Mentor Café on Wednesday June 19 at Coffee Anatomy, Harry Perkins Institute of Medical Research. The annual "speed networking" event is designed to give first year dental students the opportunity to connect with alumni and explore professional development and guidance as they begin their career in dentistry.

Now in its fourth year, the Career Café is proving to be a highly popular event for both students and alumni. The format of the event facilitates conversation and connection between students and graduates via rotating seating positions in a set time frame.

First year DMD student Yasaman Mishanini found the evening a great opportunity to mingle with passionate and charismatic dental alumni.

"I was surprised to learn just how many career avenues there are in dentistry ranging from private specialist care to general practice to epidemiology," she said.

Fourth-generation dentist graduates from UWA

Dr Grace Cooper recently graduated with her Doctorate in Dental Medicine. Dr Cooper's great grandfather graduated as a dentist in 1920, her grandfather in 1949 and her Dad in 1979. Her family's connection to the profession greatly impacted Grace's decision to study dentistry.

"After getting the idea from my family, the more I learned about the profession, the more I was sure it was what I wanted to do", Dr Cooper said.

A career in dentistry offers so many opportunities, challenges and rewards and this is what attracted Grace to the profession.

"I enjoy helping people, especially if it means getting them out of pain. The satisfaction that I get from my job, for example from winning over an anxious patient to improving someone's confidence in their smile, at the end of the day is truly rewarding", she said.

Dr Cooper is now working in two Dental Practices, Spearwood Dental Centre and Harmony Dental in Morley. As a new graduate, she is still enjoying exploring all the different aspects of dentistry, especially aesthetic dentistry and restorative dentistry.

UWA dentist honoured for work with disadvantaged communities

UWA paediatric dentist Dr Jilen Patel has been named 2019 7News Western Australian Young Achiever of the Year and also awarded the Masonic Care WA/Freemasons WA Community Service and Volunteering Award for his work with vulnerable communities.

Dr Patel is passionate about improving oral health outcomes among disadvantaged communities and says his volunteering work focuses primarily on children, as "their voices are often left unheard".

A graduate from the UWA Dental School, Dr Patel is now a specialist paediatric dentist at Perth Children's Hospital and the Oral Health Centre of WA. His journey was inspired by mentor and UWA alumnus Dr John Owen AM who is the founding director of the Kimberley Dental team and where Jilen is now a director and Senior Dental Officer.

The team provides voluntary dental services to remote communities across the Kimberley region and distributes tens of thousands of toothbrushes and toothpaste to Kimberley Schools.

Dr Patel has continued to play an active role in oral health advocacy and developing oral health policy and practice for underserved communities.

"We want to reach those people who have issues accessing health care and specifically dental care."

Dr Patel has also been involved with creating an integrated, multidisciplinary oral health education and prevention program for refugee children. His work has led to the implementation of an Australian-first, randomised controlled clinical trial aiming to slow the progression of tooth decay.

"We have also translated the model of care to provide services to other vulnerable members of the community, including homeless people in the metropolitan region, disadvantaged youth, refugees and aged care," he said.

Connectivity, collaboration and opportunity to generate healthy futures for our kids: UWA Health Campus and Perth Children's Hospital

The first of many milestones was recently achieved by Western Australia's Perth Children's Hospital (PCH) celebrating its first birthday, marking the move from Princess Margaret Hospital in Subiaco to Hospital Avenue in Nedlands.

The close proximity of the UWA Health Campus next to WA's specialist paediatric hospital and trauma centre, and the wider Child and Adolescent Health Service, provides new opportunities for advancing the health and wellbeing of children, while both driving research success and teaching excellence.

A unique feature of a health and medical sciences degree at UWA is the location of the Health Campus on the same site as the largest medical centre in the southern hemisphere, the Queen Elizabeth II Medical Centre. This centre houses two major public hospitals – Sir Charles Gairdner and the Perth Children's Hospital.

Collaboration between clinical practice and pedagogy creates a synergetic relationship between universities and health services; a key to attracting world-leading researchers and teachers. Students across the Faculty benefit from being surrounded by working hospitals and internationally renowned health organisations, having the opportunity to be embedded in these facilities from early on in their studies; and gaining real world practical experience through hands on training with leading researchers and clinicians.

The recent appointment of Derek Roebuck as Professor of Paediatric Radiology at UWA and Perth Children's Hospital is a great example of the kind of partnerships that organically flourish through this unique colocation of health and education facilities in Perth.

Professor Roebuck has extensive experience in the treatment of children with renovascular disease and complex aerodigestive problems. One of his major medical interests is paediatric cancer. He was Radiology Chair of the International Childhood Liver Tumour Strategy Group (SIOPEL) for over 15 years and appointed to Great Ormond Street Hospital, London in 1999 to develop the Interventional Radiology service.

It is not only undergraduate and postgraduate students who are benefiting from this symbiotic relationship. Professional education opportunities for staff, alumni, higher degree and early career researchers

> A community approach is critical to answer some of the big questions around child and youth mental health."

also excel through the use of shared state of the art research facilities, equipment, idea generation and networking.

Cross cultivation of ideas from academia to research and practice helps translate science into positive health outcomes enabling greater knowledge, innovation and lifesaving discoveries for children's health.

UWA researchers Associate Professor Ashleigh Lin and Professor Helen Milroy are another example of how this synergistic relationship between clinic and campus is driving innovation in child health research. Together, they are co-leading Embrace, a new Telethon Kids Institute mental health initiative.

Telethon Kids is based at the Perth Children's Hospital and brings together community, researchers, practitioners, policy makers and funders to improve the health, development and lives of children and young people. Their Embrace initiative is Australia's first comprehensive research centre focused on mental health in people from birth to 25 years of age.

Embrace will bring together researchers, clinicians, service providers and the community in a collaborative effort to find new strategies and tools to address alarming rates of mental health issues in this age group.

Director of Telethon Kids Institute, consultant paediatrician at Perth Children's Hospital and UWA Professor Jonathan Carapetis said an initiative like Embrace is unique because of its focus on early detection and intervention of youth mental health issues.

"What's different about Embrace is that we're looking right from early childhood through to early adulthood, so that we can make sure to identify mental health issues where they start," said Professor Carapetis.

"We need early identification and intervention strategies so kids can enjoy a happy childhood and a mentally healthy future."

The growing relationship between the University community at the UWA Health Campus and the Child and Adolescent Health Service is proving to have a significant impact on the future of child health; whether it be through offering students a world-class student experience and education or pioneering groundbreaking research, the positive effects of this new health hub will continue to create unique opportunities to advance the health and wellbeing of children in WA and beyond.

80 percent of disadvantaged families are not adequately nourished

> “We need to understand more comprehensively what stops people moving out of poverty.”

A multidisciplinary study involving researchers at the School of Population and Global Health has found two-thirds of disadvantaged families struggle to afford feeding their children a balanced meal. Of these families, adults had lower food security than children, sometimes sacrificing food or going hungry in order to feed their children.

The 100 Families WA study, which aims to understand disadvantage and poverty, found around 80 per cent of disadvantaged families did not have stable access to food to meet their nutritional requirements. These initial findings are part of a wider report of the baseline findings due to be released in August.

Professor Colleen Fisher, Head of UWA’s School of Population and Global Health, said living with entrenched disadvantage had severe negative social and health outcomes for individuals and families.

“The 100 Families WA study provides us with the opportunity to understand not only the lived experience of poverty, but also the policy and practice changes needed to significantly reduce levels of poverty”.

> “This research is important because the results will provide a very robust evidence base on which significant policy and practice decisions can be made.”

100 Families WA is a collaborative research project between UWA and eight not-for-profit organisations in the community services sector including Anglicare WA, Ruah Community Services, Wanslea, Jacaranda Community Centre, Centrecare, UnitingCare West, MercyCare, and WACOSS to complete the research.

“The School of Population and Global Health is well placed to be a part of this integral research because of our commitment to improve health and social outcomes. Reducing levels of poverty is central to this,” said Professor Fisher.

The project was launched in May 2018 and will continue until 2022, with a baseline study involving 400 families, and in-depth interviews with 100 families. As part of the project, the lives and experiences of 100 families will be followed over time to examine the causes of entrenched disadvantage, its impact and the factors that positively contribute to exit from deep entrenched poverty. A central tenet of the 100 Families WA project is that research takes place with families, rather than on them.

The project has received in-kind support from all partners, seed funding from the Centre for Social Impact supported by The Bankwest Foundation and the School of Population and Global Health. In 2018 the McGowan Government announced a $1.75 million grant on behalf of Lotterywest for the 100 Families WA project.

Health Professions Education team and alumni.

Health Professions Education celebrates 10 years of graduates

This year marks the tenth anniversary of Health Professions Education (HPE) graduates. To celebrate this milestone, an alumni evening was held in May. Over 40 current students, academics and alumni joined guest speaker Ms Karen Bradley, Executive Director – Clinical Leadership and Reform from the Department of Health to celebrate the success and growth of UWA's HPE division in the last 10 years.

In today's healthcare education system, many involved in teaching are practising clinicians who require training as managers, teachers or policymakers. HPE at UWA has developed a strong reputation locally and internationally for its expertise incorporating innovative teaching and learning methodologies, across a suite of reputable face-to-face and online postgraduate courses and professional short course programs.

HPE graduates have forged exciting careers as educators, researchers, practitioners and clinicians, and have worked across diverse fields and industries including higher education institutions, public regulatory bodies, community and healthcare service organisations.

Head of Division, Professor Sandra Carr said, "the evening was testament to the fantastic success of our graduates and their application of the knowledge and practical training they received during their studies here. HPE is very proud of our strong worldwide alumni community and professional friends and it was lovely to celebrate this special milestone with our current community of students, alumni and valued network."

Hospital discharges to ‘no fixed addresses’ – here’s a much better way

“Homelessness is one of the most intractable and complex problems facing cities around the globe,” says my colleague Dr Jim O’Connell from the Boston Health Care for the Homeless Program (BHCHP). It is somewhat sobering to hear that Boston is now into its third ‘ten-year plan’ to end homelessness. Despite the success of Boston’s Housing First programs housing many people who have lived on the streets for years, it has proven difficult to ‘turn off the homelessness tap’.

The reasons include the lack of affordable housing options and a systemic failure to break the cycle of people leaving the corrections system without somewhere to live.

O’Connell spent a week in Perth in 2018 as a Raine Medical Foundation Visiting Fellow at UWA. He recounts around half the people entering Boston homeless shelters indicate that ‘a jail’ was where they slept the previous night.

These are cautionary warnings for Australia, where concerted efforts to end homelessness are up against an affordable housing crisis and huge public housing wait lists. Alarming numbers of people are released from Australian prisons to homelessness each year.

So while ending homelessness in Australia is a vital aspiration, which needs to be backed by a coordinated national strategy, multisectoral action and greater dedicated funding, our cities also need to be better equipped to deal with the health impacts and other consequences of homelessness until it can be eradicated.

Hospital and human costs are high

One of the most costly consequences of homelessness for any city is the burden on the health system. Although mental and physical health issues can contribute to homelessness, being homeless also increases the risk of many health problems. These include psychiatric illness, substance use and chronic and infectious diseases.

Across Australia, people who are homeless are among the most frequent presenters to emergency departments. Their rate of unplanned hospital admissions is high. The average stay is longer too.

All of this strains the resources of our public hospitals, as shown in our recent analysis of data for homeless patients seen at Royal Perth Hospital.

Globally and within Australia, pressure is mounting on hospitals to shorten stays in costly hospital beds. However, post-discharge care via less costly ‘hospital in the home’ programs is not an option for patients with ‘no fixed addresses’.

As a result, homeless patients face either longer inpatient admissions or are discharged when too unwell for the challenges of living on the street – and that in turn results in deteriorating health and many unplanned readmissions.

This article was originally published by Associate Professor Lisa Wood from the School of Population and Global Health on The Conversation: theconversation.com/au

This article has been adapted for print with the author’s permission.

Respite centres offer a solution

An innovative solution to these problems is the medical respite model for homeless people. This originated in the United States in the mid-1980s.

A respite centre enables people who are homeless to recuperate after hospital in a more home-like environment. Here they can receive follow-up care, social support and be linked to community services and accommodation providers.

A more homely non-hospital environment is a critical ingredient, as hospitals can be traumatising for homeless people. Many of them have suffered violence, sexual abuse, neglect, incarceration or other forms of trauma, further compounded by the trauma of living on the streets. From the Boston experience, therapy dogs, social connection, recreational activities, art therapy and patient support groups are among the healing benefits that can be provided outside a hospital environment.

One of our reasons for bringing Jim O'Connell to Australia was to draw on his experience as a founder of the first medical respite centre for homeless people in the US. It began as a 25-bed facility in Boston in 1985 and now has 124 beds. Sadly, the demand keeps growing – for every bed that becomes available, there are 20 calls from hospitals wanting a bed for homeless patients.

What facilities does Australia have?

The respite centre model has flourished in North America, with over 70 in cities across the US and a growing number in Canada. Australia at present has two small examples, in Melbourne and Sydney.

Associate Professor Lisa Wood participating in the Homeless Healthcare outreach program.

In Melbourne, The Cottage is literally a cottage next to St Vincent's Hospital in Melbourne. It has six patient beds, with an average stay of nine days.

Tierney House is a 12-bed, short-stay respite unit run by St Vincent's Hospital Sydney. Support and care is provided for around $400 a day. This is far cheaper than the average Australian hospital bed cost of $2,003 a day in 2015-16.

Perth is seeking to establish Australia's first 20-bed medical recovery centre for people who are homeless. It's based on the US respite care model, but with a sharpened focus on connecting people to housing and long-term health and other support to remain housed. Linking people to a general practitioner through Homeless Healthcare will be a critical part of the model, as its GPs and nurses can provide primary care and follow-up in the community to avert future hospital admissions.

As Dr Andrew Davies, of Homeless Healthcare, and I stressed recently in the MJA, the absence of safe and secure housing lies at the core of the health disparities seen among people who are homeless. This is particularly apparent when they are discharged from hospital before they are well enough to return to the streets.

Just imagine trying to recover from a hospital admission without a safe place to rest and sleep, nowhere to wash, no secure storage for medications, not to mention poor access to nutritious food and difficulty maintaining hygienic wound care.

In 2019 as part of the WA Sustainable Health Review Final Report, the State Government announced funding for the establishment and evaluation of a 20-bed medical respite centre to provide clinical care to homeless people who may otherwise be admitted to hospital. This will be first medical recovery centre of its kind in the Southern Hemisphere.

Can being born blind protect people from schizophrenia?

Researchers in the Schools of Population and Global Health and Medicine have released a study that provides compelling evidence congenital/early cortical blindness (when people are blind from birth or shortly after) is protective against schizophrenia.

The unusual discovery has fascinated scientists and may lead to a better understanding of what causes schizophrenia – a question that has baffled scientists for decades.

The researchers used data collected from health registers between 1980 and 2001 on nearly half a million people in Western Australia and found no one with a diagnosis of congenital or early cortical blindness developed schizophrenia.

Lead author Professor Vera Morgan from the UWA Neuropsychiatric Epidemiology Research Unit said they also found no one with congenital or early cortical blindness had developed any other psychotic illnesses.

"This leads us to think there is a link that must be explored," she said.

Professor Morgan said that the brain's plasticity could be the link.

"This research may have implications for intervention in the future. If we can understand what causes the protective effect and artificially reproduce this, we may be able to intervene early at a stage to minimise or prevent those symptoms that can lead to schizophrenia."

"It's very difficult to say what the exact mechanism is but we think that the protective effect for schizophrenia is related to some kind of compensatory cortical reorganisation in the brain that's happening in response to having congenital or early cortical blindness," she said.

"As a result, some functions that are impaired in schizophrenia may actually be enhanced in people with congenital or early cortical blindness."

Professor Morgan said the research had concentrated on people who were blind at birth or in their early years because there was greater brain plasticity at that age and greater potential for new neural connections to be formed.

Stepping forward with ease

The UWA Podiatric Surgery clinic is a state-of-the-art surgery facility and the first of its kind in the southern hemisphere. Highly qualified and experienced Podiatric Surgeons consult at the clinic, diagnosing and treating a variety of foot and ankle conditions requiring surgery.

With individual consulting rooms, a purpose-built operating theatre for onsite day surgery and the latest podiatric technology, the clinic offers the best possible care to patients. In 2019, the clinic has treated many patients and performed a number of procedures both simple and complex.

Postgraduate students in the Doctor of Podiatric Surgery (DPS) course undertake a substantial portion of their training in the clinic, having the opportunity to treat patients under expert supervision by the University's Surgery teaching staff and other visiting podiatric surgeons.

The DPS is a unique program in Australia, with no other university offering similar training.

Associate Professor Cam Wareham, Head of the Division of Podiatric Medicine and Surgery within the School of Allied Health said:

"The Podiatric Surgery clinic is a distinctive feature of our facilities which support the education of our Doctor of Podiatric Surgery students. This first class facility enables them to gain expert knowledge of many foot and ankle problems and furthers their understanding of the theoretical and practical aspects of foot surgery.

The opportunity to comprehensively train in our expert clinic is part of the reason we continue to attract the best students to our DPS course," he said.

Medical students attend national leadership conference

In May, a group of six Doctor of Medicine (MD) students attended the National Leadership Development Seminar (NLDS) in Canberra. Mudra Shah, Lianne Leung, Mark Hoey, Jana Crous, Erin Hassett and Nicholas Leedman were supported by the Faculty to attend the annual conference, organised by the Australian Medical Students' Association (AMSA).

The NDLS has long been regarded as AMSA's most prestigious academic event, with delegates having a unique opportunity to engage with medical, social, and political issues. This year's NDLS theme was "Passion for Inspiration".

Insights into effective leadership, problem solving strategies, sustainable leadership and attaining work life balance were a prime focus of the plenaries, panel discussions, workshops, projects breakouts and social events.

NLDS provides a unique and intimate forum to discuss issues integral to health, education, politics and leadership, and is designed to shape the medical leaders of tomorrow, both in a professional and personal context.

Ranging from second to final year, each of the Faculty's student delegates were competitively chosen to attend the conference on the basis of increasing their future leadership capacity, and upskilling their leadership and teamwork skills.

Mr Michael Cornwall and Professor Schlaich

50 per cent of people do not know they have high blood pressure

Results of a recent study involving scientists from UWA and the Royal Perth Hospital Medical Research Foundation has revealed 50 per cent of Australians living with high blood pressure do not realise they have it.

The research was published in May in the *European Heart Journal Supplements* and found of 3817 people involved in the Australian component of the study, 31.2 per cent had high blood pressure and only half of them were aware of it. Of those who received treatment, 40 per cent still had blood pressure above the recommended level. People who smoked, drank alcohol or had cerebrovascular disease were at greater risk of having elevated blood pressure.

Australian study lead UWA Professor Markus Schlaich, who holds the Dobney Chair in Clinical Research at the Royal Perth Hospital Medical Research Foundation said the results were alarming.

"Even though effective treatments for this condition are widely available, only half of the people affected by it are being treated, and of those treated only 60 per cent are having their blood pressure adequately controlled," Professor Schlaich said.

"This tells us that the majority of people who have high blood pressure may have never had it measured and are unaware of their condition."

High blood pressure is the biggest contributor to cardiovascular death and disease worldwide, affecting about six million adult Australians and more than a billion adults globally with the figure forecast to reach 1.5 billion by 2025.

35-year-old patient Michael Cornwall has suffered high blood pressure but is among those to seek detection early and now enjoys an improved lifestyle after treatment.

Mr Cornwall said since the treatment, his blood pressure had dropped from 140 over 90 to a more manageable 120 over 80 mmHg.

"A lot of younger people think it's something that typically happens to older people or people that aren't active but I'm proof that it can happen to young active people," he said. "Treatment is really easy and you can still lead a normal, healthy life."

New collaboration to improve treatments for cancer patients

The University of Western Australia has entered a new collaboration with Douglas Pharmaceuticals, building on the work of researchers from UWA and the Telethon Kids Institute, to develop immunotherapy treatments for cancer.

Cancer immunotherapy, including the use of checkpoint-blocking antibody therapies, has shown remarkable results in recent years, with many patients achieving long-lasting results and the regression of their cancer, approaching 'cures'.

However, while the treatment is effective for some patients, others do not respond and the reasons for this are not yet properly understood.

Lead researcher Dr Joost Lesterhuis, a medical oncologist and group leader from the School of Biomedical Sciences, and his team, including Dr Anthony Bosco, Systems Biologist at Telethon Kids Institute, used a network analysis method to look at how thousands of genes connect with each other in a cancer, and which needed to be activated to respond positively to immunotherapy.

The team pinpointed drug combinations that would tip the balance and achieve favourable, long-lasting results.

One of the identified drug combinations which is shown to have far greater activity than the use of a single drug on its own will be developed with Douglas Pharmaceuticals with the aim of progressing into a clinical trial in 2020.

Dr Joost Lesterhuis said the partnership was an exciting opportunity to translate highly promising research findings into the clinic, with the potential to make meaningful improvements in the treatment of cancer.

"Through the partnership we will be able to perform crucial laboratory studies to optimise treatments and better understand why some patients respond to immunotherapy while others do not," Dr Lesterhuis said.

"I think it is a fantastic example of how approaches from very different fields of science, in this case mathematics, computer science and cancer medicine, can together give us unique new insights with the potential to provide new treatments for people with cancer."

Master of Pharmacy student wins ThinkSwiss Research Scholarship

Master of Pharmacy student Alexander Gallo was recently awarded the ThinkSwiss Research Scholarship which will provide him with financial support to undertake a research internship in Switzerland.

The aim of the scholarship is to promote and increase research opportunities in Switzerland and to foster the exchange between Swiss and Asia-Pacific universities.

"I'm extremely excited to be representing UWA in Switzerland and am very thankful to all the staff in Pharmacy for helping me to succeed in the course and to receive this scholarship. It's a wonderful opportunity," said Alexander.

Alex will be based at the University of Basel in the Department of Pharmaceutical Sciences where his research will focus on biosimilar drugs. This will involve reviewing data collected from 10 different countries to assess the current practices and laws around biosimilars and their interchangeability. The overall aim of the project is to form international guidelines on biosimilars and how they should be dealt with.

"It's a fantastic achievement for Alex to be awarded the ThinkSwiss Research Scholarship. We are also very pleased that another Pharmacy student, Chelsea Harben, will be completing her research at the University of Basel as well. To have two students undertake their research internationally is very exciting," said Assistant Professor Liza Seubert, Head of Division of Pharmacy.

"The restructure of the Master of Pharmacy curriculum has provided a dedicated block for students to undertake their research projects. This has opened up opportunities for students to complete these projects internationally."

Alex and Chelsea will be in Switzerland for 11 weeks from 22 July to 4 October.

Broadening Units: Graduates ready for a changing world

This semester, the Faculty received record enrolments for our popular offering of broadening units. Students from the disciplines of Commerce, Engineering, Science and Arts joined health students to explore units in Life and Health Sciences.

Australian and international employer groups continually emphasise a need for graduates who have acquired a broader suite of 'transferrable' skills that prepare them for employment in a changing world.

UWA's flexible undergraduate course structure offers students the opportunity to explore interests across a wide range of disciplines, in addition to their primary major or degree specific area of knowledge.

For example, students studying the Bachelor of Biomedical Science can choose to learn a language, take a personal finance unit, or study units from design, management, economics, communications, philosophy, environmental science or any other of UWA's undergraduate majors. The breadth of knowledge this opportunity allows is a key advantage of the unique UWA course model.

One of the most popular broadening units was *Mental Health and Wellbeing* with a record enrolment of 250 students last semester. Mental health is one of the most important and topical facets of modern healthcare and the focus of this unit is to provide students with an overall understanding of mental health and wellbeing for themselves and others.

Drugs That Changed the World is another unit which continues to be very popular with students across the University, with a record number of 1000 enrolments in Semester 2, 2018. The content of this unit examines both the future of drugs and some of the most important drugs that have impacted society and revolutionised medicine and healthcare.

Issues In Women's Health Across their Lifespan is another unit offered in Semester 2 proving to be of keen interest to students. This unit introduces students to diverse contemporary issues in womens health such as basic advances in genetic mapping; advances in assisted reproduction, and the impact this has on women's health issues.

Most students choose to take their broadening units in the first and second year of their degree, which can lead to the discovery of interests and passions that will give them a distinct advantage with potential employers or open up further avenues of study.

Students have the opportunity to complete at least four broadening units throughout their undergraduate degree.

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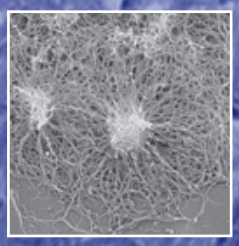

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