



Curtin University

2020

FUTURE OF HEALTH

PUBLIC HEALTH

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Faculty of Health Sciences research magazine

INTRODUCTION

Public health has arguably never been more important. With a focus on collaboration, innovation and leadership, Curtin's research in this vital field is helping shape the healthy population of tomorrow.

From chronic disease to workplace hazards to sexual health, we are conducting research on issues that impact the lives of Australians nationwide. With a staggering 30 per cent of the country at risk of developing chronic kidney disease, we are exploring how big data can help identify and manage the risk of this serious illness (page 1). We're also leading an Australia-first study into migrant exposure to workplace hazards (page 2).

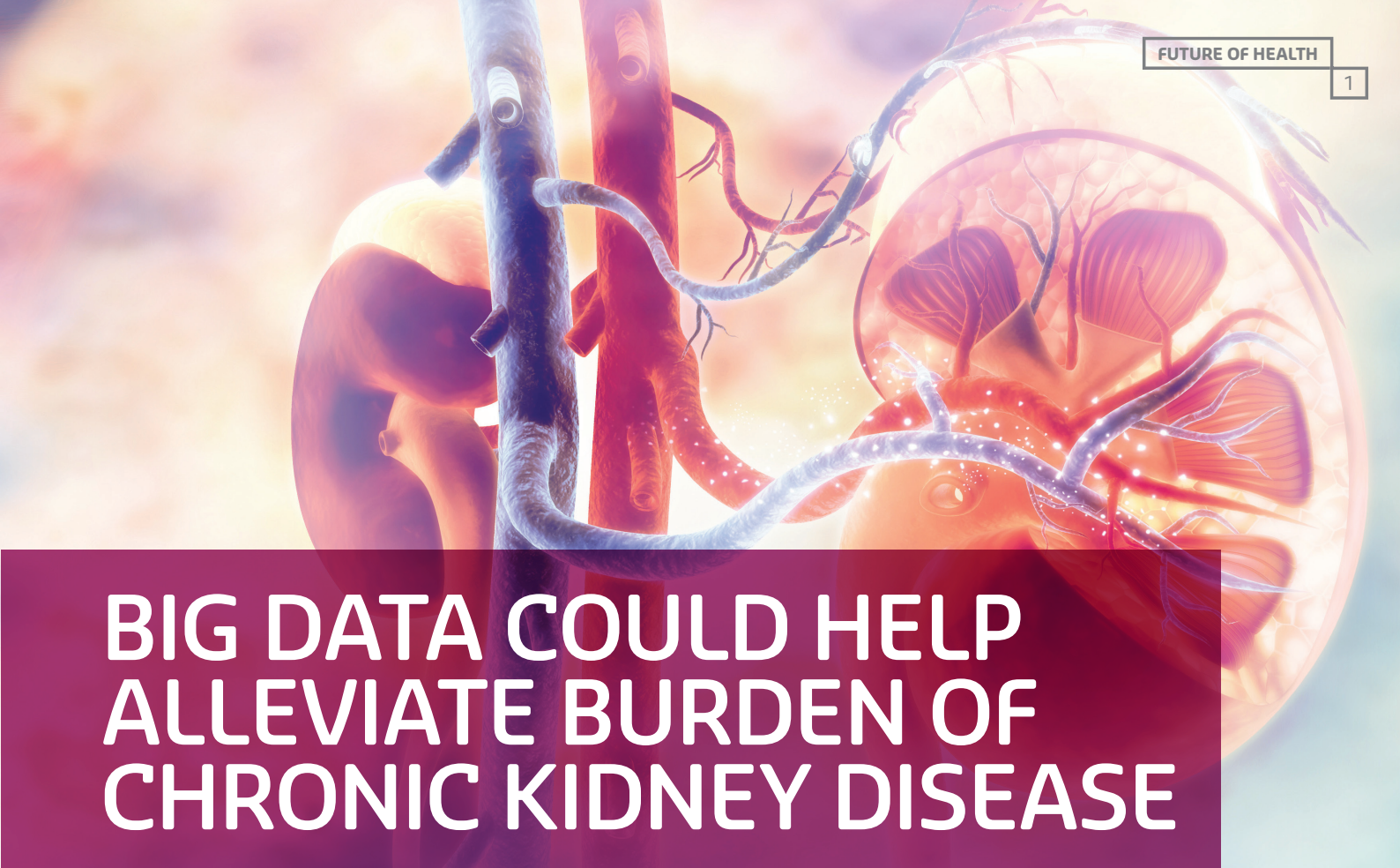
As well as exploring innovative solutions to the nation's physical health challenges, our experts are addressing gaps in support for vulnerable groups. Curtin investigators are spearheading research into the wellbeing of young adults who have lived in out-of-home care (page 12) in parallel to developing ways to assist the rising number of women imprisoned for violent offences (page 4).

For more than forty years, we have led world-class research in the science and art of preventing disease, prolonging life and promoting health and wellbeing. Recognised as a leader in public health, Curtin is home to several acclaimed research centres and institutes. The Collaboration for Evidence, Research, and Impact in Public Health (CERIPH) centre, established in 1986, was the first research centre in health promotion to be established by an Australian university. You can learn more about the important work conducted by CERIPH in our story on improving society's sexual health (page 8).

We hope you enjoy reading the inspirational stories in this publication and our vision of a healthier future for all.

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BIG DATA COULD HELP ALLEVIATE BURDEN OF CHRONIC KIDNEY DISEASE

Signs of chronic kidney disease are present in close to 10 per cent of the Australian population, and this figure is rising, with around 30 per cent of Australians at risk of developing the condition in the future. That alone is staggering, but if you live in a rural area or you're Aboriginal, the outlook is much worse.

Chronic kidney disease (CKD) – a condition characterised by the gradual loss of kidney function – affects people living in rural and remote areas at almost twice the rate of city dwellers. It affects Indigenous Australians at more than four times the rate.

In a country that invests so heavily in public health services, statistics like these beg the question, where are the gaps in the system?

One of the key challenges is that only about 10 per cent of sufferers know they have the condition, due to an absence of symptoms, particularly in the early stages. This makes them less likely to go to the doctor and makes doctors less likely to request kidney function tests in the first place.

In partnership with the WA Country Health Service, the WA Department of Health, the WA Primary Health Alliance, and the Digital Health CRC, Curtin Professor Suzanne Robinson is leading new research to better identify and manage CKD using health data analytics.

Robinson hopes this will generate new knowledge to alleviate the burden of CKD on both patients and the health economy.

The research uses data linkage and machine learning to mine existing health records, and will provide new insights into the risk factors associated with CKD, identifying the gaps in the system that are contributing to the rising burden of disease.

The data being analysed comes from blood test results and the information recorded when a patient enters the hospital. This paints a picture of the patient journey right from the very first onset of signs of poor kidney function, even before symptoms appear. It will be the events that happen in those very early stages that are key to new interventions.

“A main objective of the research is to identify the ways that we can intervene early, to prevent people developing CKD, or to delay their progression from early stage CKD to a more burdensome disease,” she says.

“The digital era has seen the collection of large amounts of data at the forefront of helping inform health policy, planning and patient support.”

The project is funded by the Digital Health Cooperative Research Centre, WA Country Health Services, WA Department of Health, WA Primary Health Alliance and Curtin University. ■



STUDY FINDS MIGRANTS EXPOSED TO HIGHER RISK IN THE WORKPLACE

Migrants to Australia are more vulnerable to hazards in the workplace than Australian-born workers, a Curtin study has revealed.

Working conditions for the 200 million migrants worldwide have been examined and found wanting in several industrialised countries, including the United States, Canada and Spain, but until now, the workplace safety of migrant workers in Australia had not been explored.

This is a significant oversight given the number of migrants working in Australia.

“Australia is a nation of migrants,” says Curtin Associate Professor Alison Reid, a researcher in epidemiology and biostatistics. “Foreign-born workers make up 35 per cent of the current workforce.”

With funding from the Australian Research Council, Reid and her team are leading research in the field.

“Globally, the majority of migrant workers do the 3Cs – cooking, caring and cleaning – and 3Ds – dirty, dangerous and demeaning – jobs,” she says.

“We decided to explore the exposure of migrants to two types of workplace hazard in particular – carcinogens and psychosocial factors.”

Common workplace carcinogens include diesel engine exhaust and environmental tobacco smoke, while psychosocial hazards involve precarious work, bullying, racism, job strain and underemployment.

“We conducted three national surveys in several languages to see if there were variations in exposure among foreign and Australian-born workers,” she says.

Workers from Vietnamese, Chinese and Arabic-speaking backgrounds were contacted, as well as workers born in the Philippines, India and New Zealand and Australian-born workers of Caucasian ancestry.

The findings revealed significant differences in exposure levels.

“We found workers from Arabic-speaking backgrounds were twenty-two per cent more likely to be exposed to diesel engine exhaust than Australian-born workers in the same occupation,” she says. “This suggests the former are given the more hazardous tasks.”

“In addition, we found that forty per cent of workers who completed the interview in a language other than English were exposed to carcinogens, compared to 29 per cent of English speakers.”



All groups reported exposure to psychosocial hazards, with workers from New Zealand, the Philippines and India citing low job security and Chinese workers reporting low levels of autonomy. Workers from the Philippines were found more likely to work as labourers, despite more than half completing tertiary education.

Reid also looked at fatalities and hospital admissions for work-related injuries and whether they differed by country of birth.

“In contrast to many other countries, we found that Australian-born workers are more likely to die from a work-related injury than workers from other countries,” she reveals.

“The only exception was men and women from New Zealand who are more likely to be killed from a work-related incident than Australian-born workers.”

The research also found that workers born in the United Kingdom, Italy and Germany were more likely to die from malignant mesothelioma than Australian-born workers.

“Workers from these countries most likely came to Australia as part of an Assisted Passage Scheme,” Reid explains. “They would have been placed in government-sponsored employment to build Australia’s infrastructure.

These workers had to stay in these jobs, for a minimum period of two years, in order to migrate permanently to Australia.”

The Curtin researcher has identified a number of factors which influence the vulnerability of a migrant worker to occupational hazards. These include the migration process and the migrant’s education, skillset and English language proficiency.

“The receiving country is also a factor,” she says. “For example, whether the migrant’s right of stay in the country is contingent on a contract with one employer.”

The findings highlight a lack of knowledge among migrants around their rights, entitlements and hazard identification. The research has led to SafeWork Australia launching a work area to examine occupational health and safety for migrant workers.

Reid says she is pleased with the results.

“All new arrivals to Australia now receive information about ways to work safely in Australia, translated into multiple languages,” she smiles. “There is more work to be done but we are moving in the right direction.” ■

BEYOND VIOLENCE:

breaking the cycle for
women in prison





The number of women serving prison sentences for violent offences is soaring nation-wide. But new research involving Curtin's National Drug Research Institute (NDRI) aims to break the cycle of offence and keep families together.

Prisoner numbers nationally are at their highest point in a decade, and imprisonment rates have never been higher. While still outnumbered by their male counterparts, female prisoners are one of the fastest growing groups in Australian prisons, with a 56 per cent increase in the 10 years to 2018.

In 2018, 40 per cent of women in prison had been convicted of or were awaiting sentencing for a violent offence, with Aboriginal women over-represented in these statistics. Indeed, between 2006 and 2016, the number of women sentenced for a violent offence increased by more than 50 per cent.

Despite this, prevention or rehabilitation prison-based programs designed specifically for women and targeting their experiences around violence, have been lacking in Australia.

NDRI researchers are heading the Western Australian trial for the 'Beyond Violence' program, an international collaboration funded by the National Health and Medical Research Council. The research, led by NDRI Adjunct Professor Tony Butler from UNSW's Kirby Institute, seeks to help Aboriginal and non-Aboriginal women incarcerated for violent offences to break the cycle of violence and repeat offending in WA and NSW.

Developed by renowned American psychologist Dr Stephanie Covington, the Beyond Violence program is specifically for women with histories of violence involved with the criminal justice system. A violence prevention program, it is trauma informed and gender specific. It addresses the violence women experience and enact and targets substance use and mental health.

A version of the program, modified for Australians, is being trialled in Western Australian prisons until the end of 2020. An Aboriginal Women's Working Group, facilitated by NDRI Associate Researcher and Beyond Violence Investigator Dr Jocelyn Jones, has ensured it is culturally safe for Aboriginal women.▷

Evidence-based research

Beyond Violence is one of the first evidence-based programs specifically targeting women who are incarcerated for offences involving violence.

“The treatment and rehabilitative needs of incarcerated women have historically been sidelined to those of men,” says Curtin-based lead researcher Dr Mandy Wilson.

“During our previous research, women prisoners highlighted the need for such a program, indicating they would participate in an intervention that addressed their use of – and experiences around – violence, if it was available.

“Preventing the imprisonment of Aboriginal women, in particular, is vital as they are disproportionately overrepresented in our prisons and are often the main carers of their own children, and the children of immediate relatives and extended family network members.

“If Beyond Violence is effective, there will be substantial benefits for individuals, their families and the community, given it costs about \$237 a day to keep an adult incarcerated.”

The Beyond Violence research is part of the Justice Health research program at NDRI, which has a strong focus on identifying the support needed to break the cycle of offending, particularly among young and adult Aboriginal women.

Importantly, much of the team’s research is community-led and initiated. An earlier project, ‘Drinking in the Suburbs’, arose from concerns within the Aboriginal community about young people drinking, fighting and getting in trouble with the law. When the results were shared with the community, particular concern was expressed about the findings relating to the female participants, many of whom were consuming alcohol at levels that placed them at a heightened risk of harm. The young women reported fighting that often led to significant injury to self and others and low-level contact with police. These findings were similar to the male participants, however the young women were found to be less likely to speak with others about these issues or to be linked into support services and health-promoting activities.

These findings led to the development of the YAWG Project, which aims to create a resource package informed and developed by young Aboriginal women, to demonstrate to service providers the daily challenges they face and the support they need to avoid violence and other adverse outcomes.

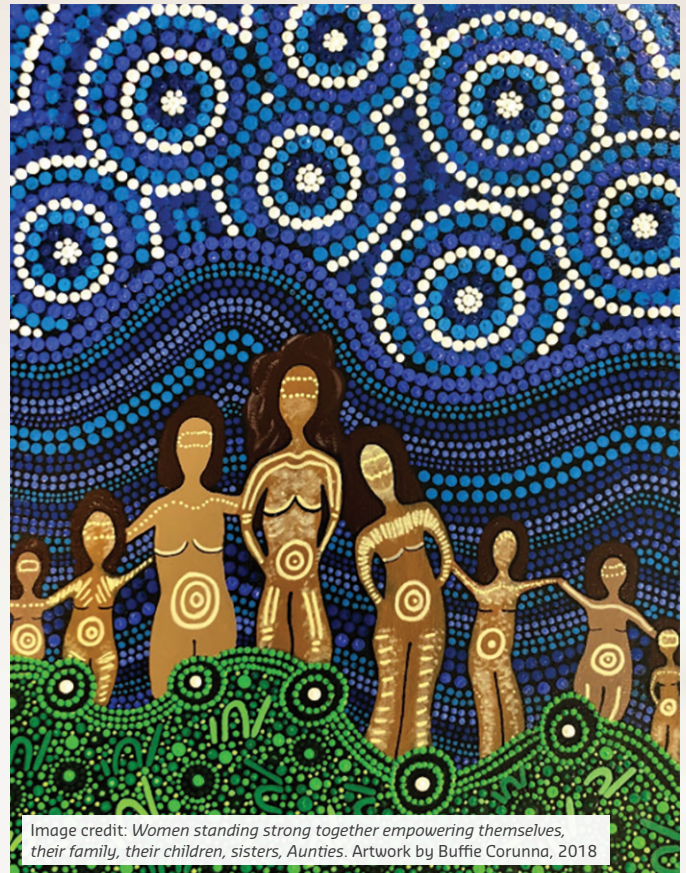


Image credit: *Women standing strong together empowering themselves, their family, their children, sisters, Aunties.* Artwork by Buffie Corunna, 2018

A further study focusing on the social and cultural resilience and emotional wellbeing of Aboriginal mothers in prison has also highlighted the extent of violence the women in the research experienced – 88 per cent had experienced violence and 69 per cent had used it in their relationships with others – as well as high levels of intergenerational offending.

“It was fascinating talking to the women in prison,” Wilson says.

“The big revelation was about the ubiquity of violence in their lives. We recognised these women in the young girls from the earlier project, which made us think about how important it is to intervene early.”

“The women were reflecting back on when they were young. For many, that’s when the fighting started and it was then being taken into adulthood and their adult relationships.”

Wilson says more than 90 per cent of the women in the Beyond Violence control group have experienced family and domestic violence.

“Many have told us that they eventually ‘snapped’ and used violence themselves in the context of violent intimate partner relationships, and for some, this directly contributed to their current imprisonment,” she explains.

“That shows that what’s missing in the community is support for women who find themselves in situations where they’re using violence because they believe there is no other recourse or that there is nothing available to help them.

“I’d like to see something based in the community, like a booster for women who do a program like Beyond Violence while in prison, as well as a modified version of the program run for women in the community who may use violence, but who are yet to become enmeshed in the criminal justice system.”

Wilson believes the programs could be a successful preventative measure.

“If we can give these women the skills and support in the community to keep them out of prison and with their families, especially mums, it’s going to have a positive flow on effect on the families and the rest of the community.” ■



IMPROVING SOCIETY'S SEXUAL HEALTH

For more than two decades, Curtin researchers have been looking at ways to improve society's sexual health. Today, multiple groups are benefitting from this research and better access to information about their sexual wellbeing. These include school students, teachers, parents, migrants and mobile populations, as well as those of diverse sexuality, gender and Aboriginal and Torres Strait Islander people.

Teaching the teachers

"Today's young people are grappling with an unprecedented number of issues," says Curtin Associate Professor Sharyn Burns.

"Social media use, pornography, gender diversity, discrimination, violence and the complexity of relationships, just to name a few. Sex education in schools is now more critical than ever."

But while relationships and sexuality education (RSE) are important curriculum learning outcomes, Western Australian teachers say they feel ill-prepared to tackle the tough topics.

To combat the lack of teacher training, Burns launched the Curtin RSE Project, funded by the Department of Health, which aims to equip teachers with the skills to confidently teach RSE in the classroom. It also facilitates strategies to enhance the school environment and ethos, as well as engaging parents and the community.

"We offer intensive professional development, symposiums and short face-to-face and online training," she explains. "We have developed a specific unit for pre-service teachers,

embedded in the Curtin curricular, making us one of just two universities in Australia to offer a specific RSE unit for teachers."

The training has attracted positive feedback from teachers who credit the course with increasing their confidence and comfort in teaching RSE and facilitating related activities.

Now the project has shifted in scope to developing a whole-school approach to RSE delivery.

"We're working closely with four unique school communities to build a case study," Burns says. "We've engaged a primary school, a secondary school and a special needs school in the metropolitan area and a remote rural school with a high Indigenous population. The case study approach allows the schools to implement strategies specific to their school communities."

In addition to teacher training, the Curtin school-based sexual health program is also focused on improving take-up rates for the human papillomavirus (HPV) vaccination.

"The HPV vaccination has been provided through the school-based vaccination program to girls since 2007, and boys since 2014," says Burns.

"To increase full coverage, our formative study, funded by the Department of Health, found that a multifaceted approach including education, different approaches to parental consent, and intensive follow-up is needed."



Addressing HIV in mobile and migrant populations

Despite a nationwide decline in HIV diagnoses in recent years, known cases of the virus within Australia's mobile and migrant populations have been on the rise.

For more than a decade, Curtin researcher Gemma Crawford and colleagues have been exploring this issue.

"High income countries, such as Australia, have seen an increase in HIV notifications among those migrating to Australia – and those travelling to and from countries with high HIV prevalence," Crawford explains.

Crawford and her team have released *HIV and Mobility in Australia: Road Map for Action*, a report funded by the Commonwealth, with recommendations to inform national practice, policy and research. The report has led to subsequent national report cards and a range of collaborative research projects at the state and national level. The team has also established a national Community of Practice for Action on HIV and Mobility, a coalition of more than eighty members across Australia including universities, government departments and non-government organisations.

"Migrants from culturally and linguistically diverse backgrounds are emerging as a priority population in Australia," says fellow Curtin researcher Associate Professor Alison Reid.

"They face significant barriers in accessing sexual health services, including testing and treatment for HIV and viral hepatitis, which can lead to late diagnosis and poorer health outcomes."

An Australian Research Council Linkage project led by Reid is testing the feasibility of a periodic national surveillance survey to determine knowledge, attitudes, and practices related to sexually transmitted infections and blood borne viruses for people born in Southeast Asia and sub-Saharan Africa.

The project is a collaboration with fifteen partners across five states. ▷



Closing the gap

Australia's Indigenous communities are particularly vulnerable to sexual health-related illnesses.

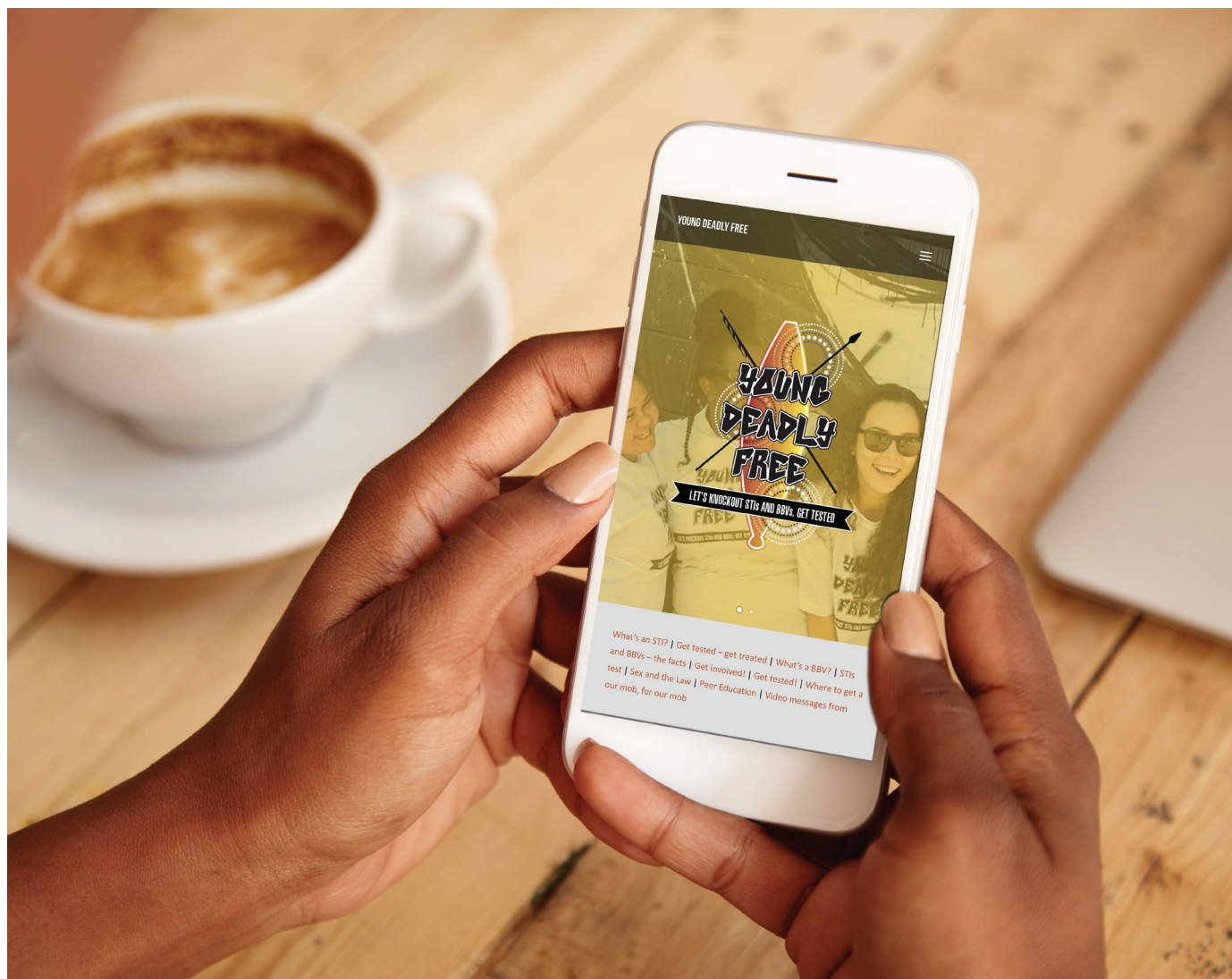
"Sexually transmitted infections and blood borne viruses are more prevalent among Aboriginal and Torres Strait Islander populations than non-Aboriginal populations," explains Curtin researcher Dr Roanna Lobo.

Lobo is working with the South Australian Health and Medical Research Institute to evaluate sexual health promotion programs aimed at young Aboriginal and Torres Strait Islanders.

*"The **Young Deadly Free** peer education pilot program and the **Young Deadly Syphilis Free** campaign are aimed at young Indigenous people aged between 16 and 29 years, who live in remote and very remote areas of Australia," she says.*

Building research capacity

Lobo also leads the Sexual Health and Blood-borne Virus Applied Research and Evaluation Network (SiREN) established in 2012. Funded by the State Department of Health, the project supports service providers, researchers and policy makers who work in the sexual health and blood-borne virus space to engage in research and evaluation.





Supporting transgender identity

"Individuals who belong to sexual and gender minority groups are often the target of stigma, prejudice, discrimination, harassment, abuse and violence," says Curtin Associate Professor Sam Winter, an expert in transgender health, wellbeing and rights.

He says these experiences can drive individuals to the margins of society and render them vulnerable to poor health outcomes.

"Stigma and prejudice in the workplace can lead to unemployment, which is often associated with poverty and poor health," he says.

"Transgender people can encounter great difficulties getting a job. They are driven by circumstance into a relatively narrow range of occupations, including sex work."

Winter and colleagues have partnered with the United Nations Development Program and the Asia-Pacific Transgender Network (APTN) to examine discrimination against transgender people applying for jobs in Malaysia, Singapore, Thailand and Vietnam. Their initial report *Denied Work*, details substantial discrimination in all four countries. APTN is drawing on the findings in advocacy work across the region.

"Transgender people face challenges not only in getting a job but in leading their lives more generally, particularly when their identity documents do not conform to their gender identity," says Winter.

He has examined the degree to which transgender people who hold gender affirming documentation enjoy improved mental health and wellbeing.

"There is a clear link," he says. "The more gender affirming documents a person holds, the better the mental health. A number of states, including Western Australia, are reviewing their legislation on gender recognition, so this research has significant potential to impact on policy."

Winter is working closely with the United Nations Educational, Scientific and Cultural Organization (UNESCO) and Education International to examine the attitudes and beliefs of teachers based in the Asia-Pacific region towards sexual and gender minorities. The research team are exploring attitudes in a wide range of countries, including India, Nepal, the Philippines and Australia. The research builds on an earlier project with UNESCO to develop tools to promote inclusion in schools.

"The current findings have revealed that there is a wide range of attitudes and beliefs towards lesbian, gay, bisexual and transgender people," he says.

"Education International is already drawing on the findings in its work to advocate for equality and inclusion." ■

THE TROUBLING TRANSITION TO INDEPENDENCE

for young people leaving
out-of-home care



Turning eighteen is a momentous milestone for many. Bestowed overnight with the badge of legal adulthood, the new-found freedom can be thrilling. But for those who have spent their lives in out-of-home care, the sudden shift can be a shock.

"Children and young people living in out-of-home care face challenges not generally confronted by their peers," explains Curtin Professor Donna Chung.

"These children may live with family members, foster carers or in residential group homes and their lives often include the involvement of courts, child protection and other services.

"To further complicate matters, the possibility of developing strong friendships, networks and confidence at school are hampered by the number of 'placements' many of these young people experience, which can be profoundly destabilising."

Chung says national and international research reveals that many of the impacted children and young people face significant disadvantage and marginalisation as they transition to adulthood.

"Traditionally, turning eighteen has marked the point at which these young people are expected to start living independently," she says.

"But today's generation of young people tend to live at home with their parents until far later, often well after gaining full-time employment, in order to save for holidays, cars or houses."

With this option not available to those in out-of-home care, she says the inequality in future outcomes becomes even more marked.

"The Australian Government has recognised the importance of providing assistance to young people beyond the age of eighteen, but there is uncertainty about how best to provide that support," she says.

"In Western Australia the number of children in out-of-home care is also increasing, with Aboriginal children representing more than 60 per cent of the total number in care."

These concerning figures prompted Chung to reach out to government and not-for-profit agencies for a solution.

"I asked for their commitment to collaborate on a large state-wide project to offer direction on policy and practice to improve outcomes for young people," she explains.

The resultant project led by Chung involves multi-disciplinary researchers from Curtin, Monash University and the University of Western Australia.

"In order to make a difference, we were well aware our research had to be a collaboration with industry and the community and rely on a range of research expertise and methods," she says.

"One strand of the project is an Aboriginal-led, place-based study that will involve young people, their families and the wider Aboriginal community," she explains.

"We want to address the unacceptably high rate of Aboriginal children in care. It will also ensure that plans for the future are developed by those directly impacted."

"It's a rare opportunity to work with industry and the community to gain a comprehensive understanding of people's experiences and outcomes following out-of-home care in Western Australia," says Chung.

Her aim is to arm decision makers with knowledge that can translate into change locally and overseas.

"We really hope to make a difference to a group of young people who are frequently overlooked and marginalised," she says.

"These young people often live without the support and sense of belonging that the rest of the community takes for granted." ■



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