Government of **Western Australia**
Department of **Health**

Department of Health Western Australia Human Research Ethics Committee

Project summaries for approved proposals

October to December 2023 quarter

better health ▪ better care ▪ better value

Project summaries for proposals approved by the Department of Health Human Research Ethics Committee – October to December 2023 quarter.

The material contained in this document is made available to assist researchers, institutions and the general public in searching for projects that have ethics approval from the Department of Health Human Research Ethics Committee (DoH HREC). It contains lay descriptions/summaries of projects approved in the October to December 2023 quarter.

Under the WA Health mandatory Research Governance Policy, the DoH HREC, must review all research projects that require the use and disclosure of personal health information from the DoH Data Collections, including data linkage. DoH HREC approval cannot occur until approval to access a DoH data collection is approved by the data collections' Data Steward or their delegate.

The lay descriptions/summaries outlined below have been provided by the respective Principal Investigator and are shared with their consent.

Project title	The BEST-Fluids study: Better Evidence for Selecting Transplant Fluids
Coordinating principal investigator	Michael Collins
Institution	Royal Adelaide Hospital, South Australia
Ethics approval date	8/11/2023

End-stage kidney disease (ESKD) imposes a large and growing healthcare burden on patients, carers and healthcare systems in Australia, New Zealand (NZ), and worldwide. Kidney transplantation is the best treatment for ESKD, and offers improved survival and quality of life at significantly lower cost than dialysis. However, there is a shortage of available donor organs, and many kidney transplants fail prematurely due in part to injury sustained at the time of transplantation.

Delayed or slow graft function (DGF), the requirement for dialysis or poor kidney transplant graft function early after transplantation, affects 20-50% of deceased donor kidney transplants, and increases the risk of graft failure and patient mortality. DGF reflects acute kidney injury caused by ischaemia-reperfusion injury during transplantation, and is driven by donor, recipient and transplant factors. Intravenous fluids are a critical, albeit inexpensive, aspect of care that impacts early transplant function. Currently, 0.9% sodium chloride ('normal' or 0.9% saline) is standard of care. However, 0.9% saline may be harmful due to its high chloride content relative to plasma, which causes metabolic acidosis and may promote acute kidney injury, and thus DGF. Studies of more physiological, low-chloride, balanced solutions versus normal saline in transplantation have shown reduced acidosis, but have been too small to show differences in transplant outcomes.

The primary objective of the BEST-Fluids Study (Better Evidence for Selecting Transplant Fluids) is to test the hypothesis that compared to 0.9% saline, peri-transplant use of a low-chloride, balanced crystalloid solution, Plasma-Lyte® 148 (Plasmalyte) will reduce the incidence and severity of acute kidney injury and delayed graft function (dialysis after transplant), ultimately leading to superior long-term outcomes.

The BEST-Fluids study is an investigator-initiated, pragmatic, registry-based, multi-centre, double-blind, randomised controlled trial comparing two approaches to intravenous fluid management in deceased donor kidney transplantation. A total of 574 participants (both adults and children) with ESKD receiving a deceased donor kidney transplant will be recruited from participating renal transplant units in Australia and NZ.

The primary outcome measure is a ranked composite of duration of DGF for those who require dialysis and, for those who do not, the rate of recovery of kidney transplant graft function measured by creatinine reduction ratio from day 1 to day 2 post-transplant. Secondary outcome measures include requirement for and duration of dialysis; creatinine reduction ratio on day 2 and creatinine trends over time; hyperkalaemia; fluid overload urine output; requirement for inotropic support; acute rejection episodes; mortality; renal biopsies; graft survival and death-censored graft survival at 12 months; graft function (estimated glomerular filtration rate, eGFR) at 12 months; quality of life; and length or hospital stay, healthcare resource use, and cost-effectiveness.

Project title	Assessing the health, economic and wellbeing benefits of Homeless Healthcare services in hospital, primary care and community settings
Coordinating principal investigator	Lisa Wood
Institution	The University of Notre Dame, Australia
Ethics approval date	11/10/2023

Aim

Evaluate the impact of primary, secondary, and tertiary health care services on health outcomes and health service access of people experiencing homelessness in Western Australia.

Objectives

- Evaluate the changes in health service use (e.g., emergency department (ED) presentations, hospital admissions, length of stay (LOS)), health outcomes (e.g., managed mental health conditions, multimorbidity and mortality) and housing and social support outcomes among clients of the services being evaluated,
- Assess the cost effectiveness of the services participating in this evaluation, including modelling of future return on investment associated with continuation or expansion, and
- Map barriers and enablers to improving the health, social and housing circumstances of people who are homeless, which are being addressed by the services being evaluated.

Justification/rationale

People experiencing homelessness (PEH) are less likely than the general population to access primary health care and far more likely to engage with the acute, higher-cost end of the health service spectrum. Whilst improving access to primary health services is one part of the solution, the strong association between homelessness and poor health is difficult to ameliorate unless wider social determinants of health (such as housing, addiction and social isolation) are also addressed. Coupling the addressing of health, housing and social issues therefore has great potential to avert the revolving door between homelessness and poor health. However, there is a need to build the evidence base for this approach, via evaluation of intervention models which recognise that critical health and social issues may need to be addressed prior to or in tandem with accommodation-based solutions.

Participant group

The study cohort comprises clients supported by the services being evaluated in the study (primarily but not limited to HHC, the RPH Homeless Team and their affiliated services).

Additionally, the study cohort includes RPH-Bentley Group (RPBG) patients identified as being homeless (typically those flagged in the hospital system as having NFA or coded with the International Classification of Diseases (ICD) code Z59.0: 'Homelessness') who have not received support from the services. These individuals form a logical comparison group for the evaluation of the impact of the services on the hospital use and health outcomes of the study cohort.

Methods

This is a mixed methods study comprising quantitative, economic and qualitative analysis of existing data, client interviews, client case studies and staff and stakeholder interviews.

Quantitative data analysis

Quantitative data analysis will be undertaken using appropriate statistical packages (including Stata, SPSS, and R). Analysis will make use of descriptive statistics, comparison of means and regression techniques to quantify changes in outcome variables (e.g., numbers of ED presentations and admissions, length of stay, etc.) and determine which components of the care delivered to clients have the greatest impact on these outcomes. Findings will be incorporated into subsequent economic analysis and used to inform models of 'best care'.

Specifically, analysis of the hospital and health service data will:

- Compare hospital data for study participants pre/post support from the services and between study participants and the comparison cohort (see Section 4.1), and
- Examine changes in presenting health issues and health outcomes amongst clients of the services (via non-hospital data collected by the services).

Qualitative data analysis

Interview data from clients, staff and stakeholders will be recorded where the interviewee grants permission (per the ethics approval) and transcribed verbatim, and content analysis of the data will be undertaken. Transcripts will be read line by line and the frequency and patterns of use of relevant terms will be identified. To ensure rigorous interpretation of the data, data will be collected from a diverse range of study participants to ensure varied perspectives. All raw data, methods and analysis decisions will be documented throughout the project. After the completion of the data collection and analysis, sufficient detail will be included in the study report to allow readers to assess the appropriateness of the findings and their applicability to other settings. To ensure all conclusions are dependent upon the subjects and not the researchers, key findings will be presented to the research team for discussion. Data from client interviews and staff focus groups will help inform interpretations of homelessness and the health trajectories of participants.

Economic analysis

Economic analysis will be undertaken to assess the cost-effectiveness of the services. Costs of service delivery and client contacts with the health system will be compared pre-to-post reception of support from the services. Separate analyses will consider cost effectiveness in relation to client sub-cohorts (e.g., those who have accessed HHC services in community or residential settings or via its outreach services, and those who have received support from the RPH Homeless Team).

Expected outcomes

It is anticipated that this study will provide important evidence to reduce the enormous burden of poor health among people who are homeless, and the associated burden on the health system. More specifically, the study will address important evidence gaps regarding the effectiveness of tailored primary care services for people who are homeless, delivered both in conjunction with hospitals and via community and homelessness service settings. The inclusion of the economic component will enable quantification of cost savings attributable to changes in health outcomes among study individuals.

Project title	Monitoring HPV vaccine impact among Australian populations
Coordinating principal investigator	Dorothy Machalek
Institution	The Royal Women's Hospital, Victoria
Ethics approval date	13/12/2023

Background/rationale

In 2007, Australia became one of the first countries to implement a National HPV Vaccination Program, using a three-dose course of the quadrivalent HPV vaccine. The vaccine protects against infection with HPV types 16 and 18, which are estimated to cause 70% of cervical cancers worldwide and HPV types 6 and 11, the cause of most genital warts. Over an initial three-year catch-up phase (2007–2009), all females aged 12–26 years were offered free vaccination through school, for girls up to 18 years, and through the community for adult women up to the age of 26 years. In 2013, the vaccination program was extended to include 12–13 year old males, with an initial two-year catch-up period for males 14–15. Vaccination of children aged 12–13 years at schools is ongoing. By the end of 2018, all Australian women and men up to the age of 38 and 20 years, respectively, have been offered free vaccines in the community catch-up or school-based program.

Since implementation, surveillance data has provided growing evidence for the safety and population-level benefits of HPV vaccination in Australia, both directly and through herd protection of those who remain unvaccinated. These benefits include rapid and substantial reductions in the prevalence of vaccine-targeted HPV genotypes, diagnoses of genital warts, and incidence of high-grade screen-detected abnormalities, evident soon after program implementation. More recent data have provided further evidence that these reductions have extended to women in their thirties, largely reflecting the extended catch-up program offered to women aged 12 to 26 in the first few years of program implementation. The demonstrated benefit among women has also extended to reductions in the risk of HPV acquisition among males. Indeed, significant falls in vaccine-targeted HPV genotype prevalence and genital warts diagnoses in young Australian heterosexual males have also been noted. These findings have provided general reassurance that the introduction of HPV vaccination will result in significant reductions in HPV-related cancers in the near future. However, continued monitoring of coverage and disease epidemiology is needed to determine if these results can be sustained or improved in the future.

In 2018, the next-generation nonavalent HPV vaccine, administered in a routine two-dose schedule, replaced the three-dose schedule of the quadrivalent vaccine in the program. The vaccine protects against infection with five additional oncogenic HPV types (31/33/45/52/58), collectively responsible for an extra 20% of cervical cancers. The switch to the nonavalent HPV vaccine was informed by several factors: a cost-benefit analysis in the context of the renewed National Cervical Screening Program, the high clinical efficacy of the nonavalent vaccine, and the potential to reduce cancer-causing HPV types in the community further, as well as the WHO recommendation for a reduced vaccine schedule for girls under 15 years of age. The latter recommendation was made based on immunological bridging studies and clinical trial data that found a two-dose schedule with broader spacing between doses administered in preadolescence were serologically non-inferior to three doses administered to adult women. However, as yet, there are no real-world data on the population-level effectiveness of the nonavalent HPV vaccine, nor a two dose program.

MSM are at high risk for anal cancer, experiencing rates 20 times that of the general population, and MSM living with HIV are the most highly affected population, with rates 100 times high than the general population. This is due to high exposure to anal HPV, combined with their impaired immune function. This high burden of HPV infection and related diseases represents an enormous potential of Australia’s gender-neutral HPV vaccination policy. Surveillance as school program eligible male cohort mature, and age will be essential to monitor the impact of universal vaccination among MSM prospectively.

Monitoring the prevalence of HPV infection over time and linking to vaccination records held at AIR provides a mechanism to evaluate the impact of the national HPV vaccination program, monitor the direct (vaccinated) and indirect (herd protection) impacts of the vaccine, and monitor for evidence of cross-protection against phylogenetically related, non-vaccine targeted HPV types.

Aims and objectives

The overall aim of this study is to monitor the prevalence and correlates of HPV infection in young women (16-24 years) attending routine Chlamydia screening and men who have sex with men (16 years and older) attending routine STI screening and to evaluate the impact of the national HPV vaccination program on HPV prevalence over time.

Specifically, the study aims for young women (16-24 years) are:

- estimate the individual and group-wise prevalence of vaccine-preventable HPV types 16/18, 31/33/45 and 52/58;
- estimate the individual and group-wise prevalence of remaining non-vaccine preventable oncogenic/probably oncogenic HPV types 35/39/51/56/59/66/68;
- describe correlates and risk factors of HPV infection, including age, chlamydia infection status, area of remoteness, socioeconomic status, source of recruitment, and vaccination status.

The study aims for men who have sex with men (16 years and older) are:

- estimate the prevalence of anal HPV infections among residual rectal samples collected from men attending routine STI screening
- describe any variation in prevalence by age, chlamydia and gonorrhoea status, area of remoteness, socioeconomic status, source of recruitment and vaccination status
- established a network of laboratories across Australia to enable future surveys of HPV prevalence

The following questions will be explored using the data collected:

- What is the prevalence of vaccine-preventable and non-vaccine-preventable HPV types among young Australian women and men who have sex with men? (research aim 1a, 1c, 2a, 2b)
- What proportion of HPV infections can be further prevented by vaccination, i.e. what is the prevalence of the remaining five HPV types targeted by the nonavalent vaccine? (research aim 1b, 2b)
- What are the risk factors for HPV infection, i.e. are there any differences in type-specific HPV prevalence of oncogenic HPV types across age groups, risk groups (positive versus negative STI test), area of residence, socioeconomic status, and vaccination status? (research aim 1c, 2b)

Outcomes/benefits

The HPV vaccination program is a considerable financial investment by the Commonwealth Government. In response to Australia's HPV Surveillance Plan, as endorsed by the Communicable Diseases Network Australia (CDNA), the Commonwealth Department of Health initiated the National HPV Monitoring Program in 2014. Monitoring the impact of HPV vaccination on the prevalence of circulating anogenital HPV types in Australia is a core component of the national program. One of the key indicators for monitoring the impact on HPV infection includes monitoring HPV prevalence by vaccination status among key populations. To achieve this, individual records can be matched to vaccination data held by AIR to determine the vaccination status among key populations. This is to ensure that the vaccine is providing direct protection against vaccine-targeted HPV types to those vaccinated and the extent of herd and cross-protection.

Project title	Investigating the impact of COVID-19 on vaccination coverage in children in Western Australia (WA)
Coordinating principal investigator	Rachel Foong
Institution	Department of Health, Western Australia
Ethics approval date	13/12/2023

The COVID-19 pandemic disrupted many aspects of our lives including access to healthcare and routine immunisation in young children. The experience of WA during the pandemic was unique, where the state was relatively COVID-19 free in the years 2020 and 2021 due to strict border closures, but then experienced rising cases and COVID-19 infection waves in 2022 once borders reopened. This study aims to assess if the disruptions caused by COVID-19 affected immunisation coverage in young children and the timeliness on when they received vaccines when they were due. This study will also identify factors that contributed to lower and/or delayed uptake of childhood vaccinations.

The study will use information already collected in the Australian Immunisation Register. This national database contains records of all immunisations received and will allow for comparison of immunisation rates of children born before the COVID-19 pandemic in 2017 and during the pandemic in 2020. Coverage data thus far shows that immunisation rates in young children in WA have declined after the COVID-19 pandemic however reasons for this have not been shown, and particularly which community groups were specifically affected. This study will investigate how the response to the COVID-19 pandemic affected coverage rates in metropolitan Perth and regional WA. As the timeliness of receiving vaccines is important factor in protecting children against vaccine-preventable disease, we will also examine if this was impacted, and finally if there were factors, such as socioeconomic factors and provider preferences, that may have contributed to any effects of the pandemic.

The findings will provide information on low coverage areas, and aid in targeted childhood vaccination messaging should there be future COVID-19 infection outbreaks in the WA community.

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