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

Department of Health Western Australia Human Research Ethics Committee

Project Summaries for Approved Proposals

July to September 2023 Quarter

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Project summaries for proposals approved by the Department of Health Human Research Ethics Committee – July to September 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 July to September 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	Maternal characteristics associated with the likelihood of adequate syphilis treatment in pregnancy in Australia, 2016 to 2021
Coordinating Principal Investigator	Professor Tony Stewart
Institution	Australian National University
Ethics Approval Date	24/07/2023

Congenital syphilis is a serious condition caused by infection with the organism Treponema pallidum passed on during pregnancy from a mother who did not receive the correct treatment for syphilis in pregnancy to their unborn baby. It can result in miscarriage, stillbirth, and the death of a young child, as well as premature birth, low birth weight, birth defects, blindness, and hearing loss. It is easily prevented by the early detection and treatment of syphilis in pregnancy, which involves attending antenatal care, undergoing syphilis testing, and starting and completing treatment with penicillin at least 30 days before the baby is born.

In Australia syphilis among women who may fall pregnant is increasing as are the numbers of babies with congenital syphilis. The research project will investigate the characteristics of mothers that receive the correct treatment for syphilis in pregnancy and do not give birth to a baby with congenital syphilis and compare them with the characteristics of mothers that do not receive the correct treatment for syphilis in pregnancy and do give birth to a baby with congenital syphilis.

The project will involve a mixed-methods study including a case-control study and an analysis of the themes found in deidentified case review reports.

The case-control study will involve the analysis of de-identified national notifications of congenital syphilis which have been linked to the de-identified records of their mothers, comparing them to de-identified notifications of women with syphilis in pregnancy that have been collected by states and territories in Australia from 2016 to 2021.

Most Australian states and territories do an in-depth review of congenital syphilis cases or a form of root cause analysis of cases. These de-identified reviews will be analysed thematically to supplement the case-control study and improve its validity. The frameworks by which congenital syphilis cases are reviewed will be examined and an outcome include a consistent national framework for reporting on congenital syphilis cases. If it is not possible to access de-identified case reviews an analysis will be made of publicly available reports, publications and presentations of congenital syphilis cases.

While there are overseas studies of this nature this has not been done in Australia before and will help us understand the gaps in the prevention of congenital syphilis in Australia, informing policy and moving us closer to the elimination of congenital syphilis in Australia.

Project Title	National Bowel Cancer Screening Program: interval cancers in Western Australia project
Coordinating Principal Investigator	Professor Rachael Moorin
Institution	Curtin University
Ethics Approval Date	25/07/2023

Bowel cancer has a significant impact on the health of Western Australians. The Australian Government Department of Health in Canberra centrally manages the National Bowel Cancer Screening Program (NBCSP). The NBCSP aims to maximise the early detection of bowel cancer through the provision of free immunochemical Faecal Occult Blood Test (iFOBT) screening, and if positive, follow-up colonoscopy provided through mainstream health services. Whilst the success of the NBCSP can be demonstrated by a 40% lower risk of dying among participants compared to those never invited, the risk of an interval cancers among NBCSP participants has not been calculated for the eligible cohort (50-74 year olds). An interval cancer is defined as “a cancer diagnosed after a negative test result and before the next invitation to the program (≤24 months)”.

Monitoring interval cancer rates are considered a key quality indicator measure among screening programs internationally. However, this has never been reported due to limited data availability. Determining the efficacy of participation in the NBCSP remains a critical component of program monitoring that is yet to be fulfilled.

This study has been commissioned by the WA Cancer Network and will offer the first insights into NBCSP interval cancer rates in WA, will benchmark future analysis, and enable comparison between rates in WA and those achieved nationally and internationally. This project aligns with the WA Cancer Plan 2020-25 priority areas:

- Priority 1.6: Advocate for improvements to the quality and analysis of national cancer screening data to improve services
- Priority 4.1: Commission research that addresses variations in cancer outcomes

Aim

To identify interval cancers, defined as a colorectal cancer diagnosis within ≤24 months of a negative NBCSP screening test result, from the 2018 calendar year in WA as a proof of concept.

The 2018 screening round has been selected as advice from WACR indicates the most current complete colorectal cancer data available is to December 2020.

Objectives

- Calculate the interval cancer rate in WA among NBCSP participants who participated in 2018 (calendar year).
- Compare WA rates against national rate and rates of international colorectal screening programs.
- As a proof on concept evaluate the feasibility of and procedures required for the WACR to receive bowel screening data to facilitate routine monitoring of interval cancers.

Project Title	Mapping sex differences in the journey of an individual with coronary heart disease through the healthcare system
Coordinating Principal Investigator	Dr Crystal Lee
Institution	Curtin University
Ethics Approval Date	25/07/2023

A general practice visit is often the first point of contact with the health system and a gateway to other specialist health services. However, data from different services are not easily "joined up" making it difficult to look across the patient's care journey. Importantly, there is growing evidence to indicate that women are experiencing much different coronary heart disease care pathways in Australia compared with men and that they are underrepresented in the evidence informing current care pathways. This project will join patient records from general practices in New South Wales, Victoria and Western Australia that are participating in MedicineInsight to their hospital admission, emergency department presentation, drug dispensing, and medical services claims records. Patients with a history of coronary heart disease determined from at least one of the health administrative records will be included in the study. The joined-up dataset will allow us to identify points of failure that impact on patient management and risk of hospital readmission that potentially disadvantage women more than men. This research will contribute to improvements in the delivery of health services and patient outcomes in Australia.

Project Title	Identification of Ross River virus hotspots across Western Australia to improve land-use planning decisions
Coordinating Principal Investigator	Dr Alex Xiao
Institution	Department of Health
Ethics Approval Date	07/08/2023

In this collaborative project, researchers from the Environmental Health Directorate (EHD) and Epidemiology Directorate of the Western Australia Department of Health (WA DoH) will guide a Master of Infectious Diseases student from the University of Western Australia (UWA) in reviewing the Ross River virus (RRV) data over the past 20 years to calculate the risk of RRV infections at the Statistical Area Level 2 (SA2) level for all of Western Australia (WA).

The data used in this project will comprise human RRV case data aggregated by the Statistical Area 2 (SA2) geographic level. Additional data on estimated populations for each geographical area and on land use in WA will also be utilised to estimate incidence and identify hotspots. The research team plans to replicate a scientific paper examining RRV data for southeast Queensland that was successful in determining hot/cold spots for RRV transmission and thus determining the areas of highest risk.

Project Title	Implementing exercise and nutrition services into standard oncology care in Southwest WA
Coordinating Principal Investigator	Dr Mary Kennedy
Institution	Edith Cowan University
Ethics Approval Date	09/08/2023

Cancer affects one in three men and one in four women, living regionally, under the age of 75 (Western Australian Country Health Service, n.d). Because advances in detection and treatment have improved survival rates, cancer will be a chronic condition for many people who will require long-term management and supportive care. Two key strategies that have been shown to be beneficial for people living with cancer are exercise and nutrition (Gray et al., 2020; Schmitz et al., 2019). However, referrals to these services are not routinely provided in practice, particularly in country and regional WA. This has led to a gap between what we know we should be doing and what we actually do (herein referred to as the "know-do" gap). The main reason for this gap is the lack of research investigating "how to" integrate these essential services into practice settings (Kennedy, 2021). We hypothesize that employing the principles of Implementation Science (IS) will facilitate the co-development and integration of a standardized exercise and nutrition referral pathway into standard oncology care, which will be accepted by health service providers (HSPs) and improve health outcomes for patients receiving cancer care. This approach will close the "know-do" gap and ensure people in regional and country WA receive evidence-based oncology care.

Project Title	Obtaining state-wide data to contribute to One Health/System Dynamics approach to reducing Clostridioides difficile infection
Coordinating Principal Investigator	Professor Thomas Riley
Institution	PathWest, Queen Elizabeth II Medical Centre (QEII)
Ethics Approval Date	09/08/2023

Clostridioides (Clostridium) difficile is an antimicrobial-resistant (AMR) gastrointestinal pathogen that causes life-threatening diarrhoea. The incidence of C. difficile infection (CDI) continues to increase in Australia despite a concerted hospital-based infection prevention and control program and antimicrobial stewardship. This is important because the United States (US) Centers for Disease Control and Prevention rates C. difficile in its top 5 most "urgent" AMR threats, causing over 460,000 infections and over 20,000 deaths in the US annually. In Australia, similar rates see C. difficile cause >8,500 cases and 600 deaths annually, more than any other enteric pathogen. CDI is expensive; 25% of infections recur and costs are >AU$100 million annually. We have compelling evidence that many human cases of CDI arise from direct or indirect exposure to food, soil or compost, contaminated with animal manure containing C. difficile. We believe that the continued rise in CDI is due largely to infection in the community and that environmental sources are a critical preventable source of infection.

Our big idea proposes a major paradigm shift in CDI prevention, by looking beyond the hospital setting, to create new knowledge about how C. difficile is transmitted/amplified in the wider environment. We propose a One Health approach (in which multiple sectors work together to achieve better health outcomes) to identify and simulate novel interventions to reduce the incidence of human CDI using System Dynamics (SD) modelling methodology. We will undertake a cost-effectiveness analysis of potential interventions to inform policy and practice. The proposed study is significant for being the first to

consider sources of CDI outside of the hospital setting; for identifying the most feasible and impactful leverage points for targeting intervention strategies within the system; and for uniting the agricultural, retail, government and health sectors in the goal of reducing human infection and deaths from CDI through practice and policy changes. Finally, we will develop best practice guidelines to avoid infection. Our approach will reduce morbidity and mortality from CDI and reduce healthcare costs.

Project Title	Targeting interventions to improve influenza control: a proof of principle geo-mapping study
Coordinating Principal Investigator	Dr Kefyalew Alene
Institution	Curtin University and Telethon Kids Institute
Ethics Approval Date	12/09/2023

This study aims to map influenza prevalence and vaccination uptake within WA. The project also aims to evaluate the impact of ecological factors such as population demography, socioeconomic index, distance to the nearest health facility, and climatic factors upon the rates of influenza infection. The results of this study will be used to inform policy that is effective in targeting key populations and optimum vaccination timeframes.

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