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'Future directions for immunisation and communicable diseases control: embracing ideas, innovations and improvements'

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Abstract Book

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2024 GSK Awardee: Proposal for the development of visual learning resources demonstrating the administration of multiple vaccines to infants, children, and young people (Queensland Specialist Immunisation Service)

Ms Roxanne Taylor

1B - Vaccine practice, Room E1, June 10, 2025, 11:00 AM - 12:30 PM

Provider recommendation is considered a major driver of a parent's decision to vaccinate their child. Every clinical presentation to a healthcare provider should be an opportunity for clinicians to discuss immunisation with families and offer or provide vaccination as a routine part of care. If healthcare staff are not confident to have these conversations, the opportunity is missed, to the detriment of the health and wellbeing of the families we care for.

Failure to provide safe, appropriate and timely vaccination for our paediatric cohort impacts consumer acceptance of vaccination and herd immunity, with an increased risk of vaccine preventable disease in the communities our patients live. Addressing these challenges to the provision of vaccination is ongoing and complex.

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2024 GSK Awardee: Yellow Fever Vaccine Risk-Benefit Analysis Tool for Travellers

A/prof Luis Furuya Kanamori

1B - Vaccine practice, Room E1, June 10, 2025, 11:00 AM - 12:30 PM

Yellow fever (YF) is a viral disease transmitted by mosquito bites that is endemic in parts of South America and Africa. Despite the availability of an vaccine, YF still affects >100,000 persons annually,1 and poses a significant risk to unvaccinated travellers (170/100,000 YF cases per month of travel, with 40% case-fatality rate).

YF vaccines are effective; however, as live vaccines there are precautions and contraindications for their use in some individuals. Severe adverse events following immunisation (AEFI) with catastrophic consequences (including deaths) have been reported , particularly among those aged >65 years, those with a history of thymectomy and immunocompromised individuals.3 YF vaccination is required for travellers to certain countries. While YF vaccine requirements are applied at a country level,4 the risk of YF can vary substantially within a country. For example, YF is endemic in the Amazon region of Peru, but there is no transmission at altitudes above 2,300m or in most coastal areas. If a health professional advises against vaccination for medical reasons, a medical exemption letter may be issued.
A YF vaccine risk-benefit analysis tool would greatly assist clinicians and travellers to weigh the risks (severe AEFI) and the benefits (reduction in risk of YF) of vaccination, and help with decisions about getting vaccinated versus obtaining a medical exception certificate. This is particularly relevant for older and immunocompromised travellers to regions with variable risk of YF infection within a country.

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2024 GSK Awardee: Tracking GenAI-powered Social Bots' Influence on Vaccination-Related Discussions

Dr Muhammad Javed

1B - Vaccine practice, Room E1, June 10, 2025, 11:00 AM - 12:30 PM

Current social bot detection methods primarily rely on heuristics or rule-based approaches. These methods analyse factors like account activity, metadata, content characteristics, and network connections. However, the landscape has shifted dramatically with the emergence of powerful generative AI (GenAI) powered by Large Language Models (LLMs) with billions of parameters.

These GenAI-powered bots pose a significant challenge to tracking social bot influence in online discussions, particularly those related to vaccines. They can mimic human conversation remarkably well, not only generating posts, comments, and replies but also weaving conversation threads. This ability to simulate human-like interaction significantly hinders traditional detection methods. These challenges include sophisticated AI-generated content and adversarial attacks by malicious actors.

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2024 GSK Awardee: Let’s have a yarn about the whooping cough vaccine

A/prof Mary Bushell

6F - Pertussis, Riverbank Room 4, June 12, 2025, 11:00 AM - 12:30 PM

"Let’s have a yarn about the whooping cough vaccine", will bring together expectant First Nations women, who live in the Southern NSW Local Health District (SNSWLDH) to ‘yarn’ about the pertussis vaccine. Yarning will be facilitated by First Nations peoples. At least five yarning circles will be organised, hosted in Goulburn, Queanbeyan, Moruya, Bega, and Cooma.
Additional yarning circles will be flexible, ensuring inclusivity and accommodating the needs of the community. This initiative’s overarching goal is to foster shared decision-making, enhance pertussis vaccine uptake, and mitigate vaccine hesitancy within this demographic. A secondary outcome will be the development of an acceptable culturally appropriate vaccines information leaflet (s), co-developed with First Nations Women who live in the area to meet their information needs – “women’s business”.

Modifiable drivers of gastroenteritis among children in high-income countries: A scoping review

Mr Megbaru Abate[1], Dr Alexandra Robbins-Hill[1], Associate Professor Sheleigh Lawler[1], Associate Professor Yibeltal Assefa[1], Professor Simon Reid[1]
[1]The University of Queensland, Brisbane, Australia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Abstract
Background: Globally, gastroenteritis (GE) significantly impacts children's health and contributes to societal, economic, and health burdens. Previous studies reporting risk factors of GE in children in high-income settings mainly rely on outbreak investigations, which inherently capture only a fractional representation of the overall spectrum of GE occurrences. In addition, there is paucity of comprehensive information pertaining to modifiable risk factors of GE. This scoping review aims to synthesize existing evidence concerning modifiable and behavioural risk factors associated with GE among children in high-income countries.
Methods: PubMed, Embase, CINAHL, and Scopus were the databases from which articles were retrieved. A descriptive synthesis of the evidence was performed, following the Arksey and O'Malley scoping studies framework and enhanced by the Preferred Reporting Items for Systematic Reviews and Meta-analysis extension for Scoping Reviews checklist (PRISMA-ScR).
Findings: The systematic search identified 13,395 journal articles, which were subsequently screened, and duplicates removed, resulting in 19 articles for inclusion in the review. The majority of these studies (63.2%) employed a case-control design and were predominantly conducted in community settings (68.4%). Factors such as parental literacy, contact with individuals exhibiting gastrointestinal symptoms, and nappy-wearing were identified as significantly associated with childhood GE within domestic environments. Childcare-related variables, including enrolment size, mixing of personnel between child groups, the presence of central cleaning stations, and the implementation of hygiene and disease prevention policies, showed significant association with GE. In addition, the presence of sand pits, paddling pools, and animals in childcare centers correlated with increased incidences of GE among attending children.
Conclusions: The scoping review reveals a complex and varied research landscape on factors influencing gastroenteritis (GE) for children in high-income countries. The findings suggest that while some variables are closely linked to specific pathogens, others may not be, highlighting variability across GE aetiology. The significant association between various household level and childcare-related factors and childhood GE points to a valuable direction for future research and public health intervention.

Harnessing Artificial Intelligence and Data Systems for Effective Communicable Disease Control

Dr. Shreya Chauhan[1], Dr. Anil Chauhan[2]
[1]Western Sydney University, Westmead, Australia, [2]Gujarat Assembly, Gandhinagar, India
5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Background: The ongoing evolution of communicable diseases highlights the urgent need for advanced solutions in public health surveillance and immunisation strategies. Rapid developments in artificial intelligence (AI), data collection, and digital surveillance systems have created unprecedented opportunities to improve disease monitoring, outbreak prediction, and immunisation coverage. However, despite these advancements, immunisation rates have seen declines in certain regions, and gaps in coverage persist among key populations, necessitating innovative approaches to communicable disease control.

Objective: This presentation examines the transformative role of AI and data integration in enhancing communicable disease surveillance and immunisation strategies. The aim is to explore how these technologies can help optimize disease monitoring, accurately forecast outbreaks, and engage underrepresented populations to address critical gaps in vaccine coverage.

Methods/Approach: Leveraging recent case studies and research from both Australian and global contexts, this presentation will analyze practical applications of AI and digital data systems in public health. Specific examples include AI-driven models that assess high-risk groups, real-time data-sharing platforms that enable early outbreak detection, and targeted digital health messaging designed to increase vaccine uptake in underserved communities.

Results/Discussion: Findings indicate that integrating AI with existing health data infrastructure can significantly enhance early warning systems, facilitating proactive responses to emerging diseases. Key insights include the value of predictive algorithms for trend forecasting, mobile health (mHealth) platforms for real-time data dissemination, and personalized health messaging that effectively addresses vaccine hesitancy among priority groups.

Conclusion/Implications: Embracing AI and data-driven solutions in communicable disease control enables more responsive, efficient, and inclusive public health interventions. This approach aligns with the conference theme by demonstrating how innovations in technology can address current challenges in disease control and inform future immunisation practices, ultimately improving public health outcomes on a community and global scale.

Vaccination in aged care: a study of influenza, zoster & pneumococcal vaccination

Mr Steve Wiblin[1], Dr Natalie Soulsby
[1]Pfizer, Sydney, Australia, [2]Embedded Health , Adelaide, Australia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background: Older adults living in aged care are at risk of poor health outcomes due to influenza, pneumococcal disease and herpes zoster infections. Despite these conditions being vaccine-preventable, little is known about vaccine uptake rates in the residential aged care setting in Australia.

Methods: This was a retrospective cohort study examining the medical records of residents of 31 aged care homes in Australia (n=1,108). Data were extracted from medical records for the period March 2023 to September 2023. The proportion of residents vaccinated against influenza, pneumococcal and herpes zoster was calculated. Univariate and multivariate logistic regression was used to identify possible demographic and other characteristics associated with vaccination uptake.
Results: 1,108 residents were included in the study. Two-thirds (68%) were female, median age was 87 years. All residents had one or more comorbidity. Most (92.6%) had received an influenza vaccine within the prior two years, but only 38.3% had received a pneumococcal vaccine and 16.8% had received herpes zoster vaccination.
In all models, receipt of the other vaccines was a significant predictor for vaccine uptake. The other factor associated with influenza vaccination was abstinence from alcohol; and younger age for herpes zoster vaccination.

Conclusions: While there is high uptake of influenza vaccines, there is a low uptake of both pneumococcal and herpes zoster vaccine in residents of aged care facilities. Further research into the barriers and enablers of vaccine uptake should be undertaken, with the goal of increasing vaccination uptake in this vulnerable population.

Mapping COVID–19 Infections and Fatality in Saudi Arabia: An Exploration

Dr Hamad Aldossari[1]
[1]Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Abstract

Background

Geospatial mapping techniques can be creatively utilized to consolidate and describe events sequentially, especially in instances of epidemics like COVID-19. Saudi Arabia was seriously affected by this epidemic across its 13 administrative areas, beginning in March 2020 and ending in May 2023. This research, utilizing mapping as a tool, explores the spread of disease over the period, illustrating its locational spread, geographic variations, prevalence, and burden.

Methods

This research utilized daily reports published by the Ministry of Health, Saudi Arabia. Analyses were carried out by dividing the infections into three periods 2000-2021; 2021-2022; and 2022-2023 for exploratory purposes. Analyzed data were then transferred to maps for visual presentations. They are presented in six panels of varying interpretations.

Results

During this period, 205 locations in the country were affected, with fewer cases in the first year, a wider spread in the second year, and subsidence in the third year. Although this pattern holds for infections, fatality continued beyond the period, as an aftereffect.

Conclusions

Severe prolonged infections and fatalities were observed in smaller administrative areas, especially in the southwestern regions, comprising Jazan, Najran, Aseer, and Al-Baha. Analyzing data using mapping is crucial for understanding the real picture of the rise and fall of COVID-19 infections, which is instrumental in planning and implementing precautions and control measures in similar epidemic and disaster situations.

Phase 2b/3 Study Evaluating Efficacy and Safety of Clesrovimab in Healthy Infants

Dr Louise Dunn[1], Heather Zar[2], Eric A. F. Simões[3], Shabir A Madhi[4], Octavio Ramilo[5], Shelly D. Senders[6], Julie S. Shepard[7], Kamolwish Laoprasopwattana[8], Jorge Piedrahita[9], Jose M. Novoa Pizarro[10], Sergio L. Vargas[11], Marc Dionne[12], Teresa Jackowska[13], Enmei Liu[14], Yasunori Ishihara[15], Kazushige Ikeda[16], Ying Zhang[17], Radha A. Railkar[17], Jeannine Lutkiewicz[17], Andrew W. Lee[17,18], Andrea Guerra[19], Anushua Sinha[17]

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5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

Background: Clesrovimab is an investigational, long-acting monoclonal antibody (mAb) targeting site IV of the fusion protein for the prevention of RSV lower respiratory tract infection in infants.

Methods: This phase 2b/3 double-blind, randomized, placebo-controlled pivotal study enrolled healthy preterm and full-term infants birth to 1 year of age entering their first RSV season. Participants (pts) were randomized 2:1 to receive clesrovimab (105 mg IM) or placebo on day 1. Safety and tolerability were a primary endpoint. There were two hypothesis-tested endpoints: the efficacy of clesrovimab against RSV-associated medically attended lower respiratory tract infection (MALRI) through day 150 (primary) and against RSV-associated hospitalization through day 150 (secondary). The MALRI definition required ≥1 indicators of lower respiratory tract infection (LRI) or severity.

Results: There were 3,632 pts randomized across 22 countries; >99% received study intervention. RSV-associated efficacy endpoints through day 150 and day 180. Clesrovimab reduced the incidence of RSV-associated MALRI requiring ≥1 indicator of LRI/severity (60.4% [95% CI: 44.1, 71.9], p<0.001) and ≥2 indicators of LRI/severity (88.0% [95% CI:76.1, 94.0]), RSV hospitalization (84.2% [95% CI: 66.6, 92.6], p<0.001), and severe MALRI (91.7% [95% CI:62.9, 98.1]) through day 150 postdose compared to placebo. Efficacy increased with increasing RSV-associated disease severity and was similar from days 1-180 compared to days 1-150 across endpoints. The proportions of pts with adverse events (AEs), including injection-site and systemic AEs, drug-related AEs, and serious AEs were comparable between the clesrovimab and placebo groups. There were no treatment-related deaths or deaths attributed to RSV disease.

Conclusion: A single dose of clesrovimab given before or during the first RSV season was efficacious in reducing RSV-associated MALRI and RSV-associated hospitalization in healthy preterm and full-term infants and was generally well tolerated with a safety profile comparable to placebo.

Evaluation of Clesrovimab in Infants at Increased Risk for Severe RSV Disease

Dr Louise Dunn[1], Heather Zar[2], Louis J. Bont[3,4,5], Paolo Manzoni[6,7], Flor M. Muñoz[8], Octavio Ramilo[9], Po-Yen Chen[10], José M. Novoa Pizarro[11], Gustavo A. Ordoñez[12,13], Maria Tsolia[14,15], Bruce Tapiéro[16], Mirta I. Acuña-Ávila[17,18], Javier M. Castellanos[19], Michael Meyer[20], Ichiro Morioka[21], Ziqiang Chen[22], Radha A. Railkar[22], Xiaowei Zang[22], Andrea L. Krick[22], Andrew W. Lee[22,23], Luis A. Castagnini[22], Dr Jen Coram, Anushua Sinha[22]

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background: Clesrovimab is an investigational, long-acting monoclonal antibody for the prevention of RSV lower respiratory tract infection (LRI) in infants, including those at high risk of severe RSV disease due to serious comorbidity or premature birth.

Methods: This is a planned interim analysis (IA) of a randomized, controlled, phase 3 trial in infants entering their first RSV season recommended to receive palivizumab due to prematurity, chronic lung disease of prematurity, or hemodynamically significant congenital heart disease. Participants (pts) were randomized 1:1 to receive clesrovimab (105 mg IM on day 1, placebo on day 28) or monthly palivizumab in season 1; eligible pts received clesrovimab (210 mg IM) in season 2. The primary endpoint was safety and tolerability of clesrovimab vs. palivizumab in season 1. Secondary endpoints included the incidence of RSV-associated medically attended LRI (MALRI) requiring ≥1 indicator of LRI or severity and of RSV-associated hospitalization through day 150.

Results: At this IA, 901 pts had been randomized into the trial. Baseline characteristics were well balanced. In season 1, the proportion of pts with AEs were comparable between arms; no pts in the clesrovimab arm had a drug-related serious AE. In the season 2 IA, proportions of pts with AEs were comparable between those who had received clesrovimab or palivizumab in season 1. There were 8 deaths (1.8%) in the clesrovimab and 4 (0.9%) in the palivizumab arm, all attributable to underlying comorbidities or causes unrelated to treatment. Incidence rates of RSV-associated MALRI and of RSV-associated hospitalization were comparable between clesrovimab (3.6% and 1.3%, respectively) and palivizumab (3.0% and 1.5%, respectively) through day 150.

Conclusions: In season 1, a single dose of clesrovimab had a safety profile and RSV disease incidence rates that were generally comparable to monthly palivizumab in infants at high risk for RSV disease.

COVID-19 Morbidity and mortality in Saudi Arabia: A year-wise geographic analysis

Dr Hamad Aldossari[1]
[1]Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background: Saudi Arabia crossed a crucial period of the COVID-19 epidemic that spread to 205 locations across 13 administrative areas. There were serious repercussions of mortality and morbidity during its three years of spread. With the hard efforts of all the sectors and agencies, this epidemic was successfully controlled in the country.
Aims and objectives: This analytical investigation of COVID-19 aims to pinpoint affected locations over the three years. It also investigates morbidity and mortality burden from the epidemic. Additionally, it identified locations, governorates, and administrative areas for the volume and severity of COVID-19 cases, year-wise.
Data and methods:
Daily reports of COVID-19 cases published by the Ministry of Health, Saudi Arabia from March 15, 2020, to April 30, 2023 analyzed in this research. Annual counts, estimates of crude infection rates, and case fatality rates with monthly averages were done for the entire country, its administrative areas, and 205 locations.
Results: Despite a progressive trend, the impact of second and third waves on morbidity and mortality varied across administrative areas, governorates, and locations. While major administrative areas of Al-Riyadh, Makkah Al-Mokarramah, Al-Madina Al-Monawarah, and the Eastern Region experienced significant consequences, others such as Al-Baha, Jazan, and Aseer have faced serious repercussions. Additionally, mortality was notable in Al-Jouf, Hail, Jazan, Aseer, Northern Borders, and Al-Baha – the smaller administrative areas. Besides, certain locations within the administrative areas, other than popular cities and administrative headquarters, emerged as COVID-19 hotspots, particularly of mortality.
Conclusions:
The morbidity and mortality of COVID-19 in Saudi Arabia exhibited a discernible pattern across the administrative areas, governorates, and locations, with numbers and infection rates fluctuating every month with increases and decreases. Although mortality rates were higher in the initial year, significant control measures were implemented. The fatality rate displayed notable variations across administrative areas. This analysis holds significance for the development of epidemic control systems, the implementation of resistance measures at the grassroots level, and the establishment of a surveillance system. Furthermore, it contributes to a clearer understanding of the situation that facilitates international comparisons and formation of collaborative networks.

BCG for Victorian children - protecting health and preventing disease, Monash Immunisation

Ms Cathy Boundy[1], Mrs Sarah Pitts[1]
[1]Monash Health, Clayton, Australia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Tuberculosis is one of the biggest health burdens worldwide with 10.6 million people infected in 2022 – 1.3 million of these children. It is curable and preventive according to the WHO 2022 but sequalae can be insidious and deadly, especially if the person is young or has other comorbidities such as HIV.
Having given over 12,000 BCG vaccines since its inception 13 years ago, Monash Immunisation, Monash Health's specialist immunisation service, is one of the largest Medicare covered providers of BCG to our small people under 5 years of age in Australia. With a usual waitlist of around 6 months. and running clinics servicing 100-110 patients a month, we have become experts in BCG consultation, TST and BCG intradermal techniques and discussing the practicalities of the BCG vaccine site and its side effects with patients and their families.
This poster will cover the patients we have seen and continue to see – where they travel to, which communities they come from and our move to telehealth and coordination of visits during the covid19 pandemic shutdowns in Melbourne. Discussion and implementation of other NIP vaccines such as early MMR and influenza and learnings from these experiences will be considered and the further work we need to look at - the communities that we are missing at Monash Health and ideas that we can use to engage them as well as the outlook for BCG as a preventative vaccine going forward.

A systematic review: Approaches maximising childhood immunisation among First Nations populations

Dr Jenni White[1,2], Ms Brittany Wilson[3], Ms Katrina Clark[2], Dr Catherine Kind[3,4,5], Dr Katarzyna Bolsewicz[3,4], Dr Jessica Kaufman[6,7], Ms Yasmin Mohamed[6,7], Professor Margie Danchin[6,7], Dr David Durrheim[1,2]

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2E - Public health in practice, Riverbank Room 3, June 10, 2025, 1:30 PM - 3:00 PM

Background:
Immunisation coverage for First Nations children living in high income countries (HIC) remains inequitable. The majority of The Organisation for Economic Co-operation and Development (OECD) members have high-income economies, and 18 have First Nations populations. To understand what has proven successful in closing the gap, we aimed to systematically identify approaches to improve childhood (0-5 years) vaccination coverage and timeliness among First Nations populations in HIC who are members of the OECD, and systematically assess the quality of study designs and approaches from a First Nations perspective.

Methods:
A Collaborative Yarning approach underpinned review of First Nations people's engagement using The Aboriginal and Torres Strait Island Quality Appraisal Tool (QAT) alongside the Effective Public Health Practice Project Quality tool (methodological quality) and a taxonomy of intervention component purposes (to determine the primary component).

Results: Fourteen studies met inclusion criteria (12 quantitative and two qualitative studies). Six studies were conducted in Australia, four in Canada, three in New Zealand and one in the USA. Included studies reported interventions in 6 of the 11 taxonomy categories as their primary purpose. No studies were of high quality from a methodological or cultural point of view. Most approaches for closing the immunisation gap achieved only low-certainty and very few reached recommended population-level coverage. We found the taxonomy categories "To Remind and Recall", and "To improve service infrastructure" (opportunistic immunisation) were most effective.

Conclusions:
While there is extensive international documentation of immunisation coverage gaps in First Nations populations, we identified a paucity of high quality research on solutions. There is an urgent need for high quality research optimising childhood immunisation coverage and timeliness in partnership with First Nations communities in high-income countries. Results highlight the benefit of access approaches. We posit incorporating the QAT in research with First Nations peoples.

Aboriginal and Torres Strait Islander research:
Sharing of knowledge is essential to First Nation communities. By using Collaborative Yarning, we laid the groundwork for ensuring First Nation Communities benefit and that Aboriginal researcher voices were heard and listened to, thus confirming the process was not influenced by an academic setting shaped by Western epistemologies.

The impact of temperature rise on Salmonella and Campylobacter bacteraemia in Queensland

Dr Naveen Manchal[1], Dr Megan Young[2], Ms Maria Eugenia Castellanos[1,4,5], Associate Professor Oyelola Adegboye[1,3,4,5]
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2B - Foodborne diseases, Room E1, June 10, 2025, 1:30 PM - 3:00 PM

Climate change and rising ambient temperatures with heatwaves have been associated with increased risk of food borne infections. Existing literature has demonstrated associations between climate variables and bacterial gastroenteritis but not serious manifestations like bacteraemia. We conducted a time series analysis in Queensland, Australia to estimate the risk of bacteraemia from Salmonella and Campylobacter from 2010 to 2020. Using Quasi-Poisson regression and a Distributed Lag Non-Linear Model, we analysed weekly cases of bacteraemia, controlling for seasonal trends and precipitation. There were a total of 1034 cases of Salmonella and 234 Campylobacter bacteraemia cases. Compared to reference values, the risk of salmonellosis increased to 2.13 (95% CI: 1.62, 2.79) at the 95th mean temperature percentile (26.7C) and to 2.71 (95% CI :1.90, 3.55) at the 95th maximum temperature percentile (34.4C). Significant association was found for weekly maximum temperature and Campylobacteriosis at the 99% quantile,37.7 0 C, with RR of 9.34(1.08,8.03e+). Heat waves were also significantly associated with Salmonella bacteraemia. In Southeast-QLD, the rise in cases was within a week of exposure and in Tropical North QLD, another rise was noted after 4 weeks. This study confirms the risk of bacteraemia from these two pathogens from rising ambient temperatures and heat waves.

An outbreak of salmonellosis after consuming wild hunted kangaroo, Northern Territory 2024

Mr Anthony Draper[1,2,3], Joanne Gerrell[2,4], Stacey McKay[4], Ana Ordonez[4], Dr Ella Meumann[3,5,6], Dr Rob Baird[5], Dimitrios Menouhos[5], Manoj Basnet[5], Tinus Creeper[5], Dr Max Cummins[5], Dr Vicki Krause[1]
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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

An outbreak of salmonellosis occurred in August 2024 after consuming wild hunted kangaroo in a remote area of the Northern Territory (NT), Australia.

We conducted an outbreak investigation via telephone and face-to-face interviews, using a standardised questionnaire that recorded symptoms and exposures to foods and activities prior to onset of symptoms. A confirmed outbreak case was defined as anyone with laboratory confirmed Salmonella Muenchen infection who was part of a group of people who shared meals on 25–26 August 2024. A probable outbreak case was defined as anyone who was part of a group of people who shared meals on 25–26 August 2024 and subsequently experienced diarrhoea, in the absence of a laboratory test.

Of the seven members of the group who shared meals, all became ill (attack rate 100%); three were confirmed cases and four were probable cases. The median age was 32 years (range 23–65 years); six (86%) were male. The median incubation period was 24 hours (range 6–30 hours). The most commonly reported symptoms were diarrhoea (100%, 7/7) and abdominal pain (86%, 6/7). Two cases were admitted to hospital, both for an overnight stay; all recovered.

All seven cases consumed the same meal – a single, locally hunted and butchered kangaroo. Contamination likely occurred due to unsafe butchering, storage, transportation and insufficient cooking of the meat. This outbreak highlights the risks of contamination of game meat (in this case kangaroo) with Salmonella. Those preparing hunted meat should wash hands and knives regularly while butchering an animal to avoid contamination; should store butchered meat below 5 °C to avoid bacterial growth and cook foods thoroughly to kill microbes. We estimate that the cost to society of this outbreak was 9,810 Australian dollars.

The Experience of Seeking & Granting Special Medical Exemptions for Mandated Vaccines

Ms Bianca Devsam[1,2,3], Ms Jaysha Tippins[1], Dr Sophia Vasiliadis[1], Professor Margie Danchin[1,2,3], Dr Jenny O'Neill[2,3], Dr Jessica Kaufman[1,3]
[1]The Murdoch Children's Research Institute, Parkville, Australia, [2]The Royal Children's Hospital, Parkville, Australia, [3]The University of Melbourne, Parkville, Australia

2C - Mandates and messaging, Room E2, June 10, 2025, 1:30 PM - 3:00 PM

Background: Medical exemptions to mandated vaccines are permitted for particular health risks, such as anaphylaxis and immunosuppression. However, clinicians encounter requests for 'special medical exemptions' when the medical reason for requiring an exemption falls outside strict criteria. The specific processes for seeking, assessing, and granting these exemptions are often unclear and vary across jurisdictions.

Aim: To map and synthesise published literature on the experiences of parents, caregivers or individuals seeking special medical exemptions for mandated childhood vaccines, occupational vaccines for healthcare workers, and COVID-19 vaccines, as well as the experiences of clinicians assessing and granting such exemptions.

Methods: A scoping review guided by PRISMA-ScR and JBI methodology was conducted. Databases searched included Embase, Medline, CINAHL, PsycInfo, PubMed, Web of Science, and Google Scholar. Qualitative, quantitative, review articles, and grey literature were included. Citations were managed in Endnote and Covidence for screening and data extraction by two independent reviewers.

Results: The search yielded 3637 unique citations, with 33 articles undergoing full-text review. Preliminary findings reveal very few published articles that specifically address special medical exemptions. Most literature primarily focuses on parental experiences in seeking exemptions for their children. There is a significant gap in the literature regarding individuals' experiences in obtaining COVID-19 vaccine medical exemptions and clinicians' perspectives on managing these requests. Furthermore, the process and ethical considerations surrounding special medical exemptions remain largely unexplored.

Discussion/Conclusion: The lack of research in this area highlights the need for future research to understand the experiences of clinicians and exemption seekers and to clarify the exemption process. Such evidence will be vital in developing equitable evidence-based approaches to vaccine exemptions that consider both individual circumstances and public health imperatives. As vaccine mandates continue, understanding stakeholder experiences is crucial for building trust and effective public health policies amidst this complex issue.

The epidemiology of amoebiasis in the Northern Territory of Australia (2005-2024)

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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Amoebiasis is an important parasitic cause of morbidity and mortality worldwide and is known to be endemic in Northern Australia. The Northern Territory (NT) is the only jurisdiction in Australia where amoebiasis is notifiable. The epidemiology of amoebiasis across Australia is not well described. We undertook this retrospective study to describe the epidemiology of amoebiasis in the NT from January 2005 to June 2024. Data were obtained from the Northern Territory Notifiable Disease System (NTNDS). Of the 26 cases identified, most were men (21/26, 81%), non-Indigenous Australians (23/26, 89%) and overseas acquired (18/26, 69%). A majority had extra intestinal manifestations (17/26, 65%), required hospitalisation (14/26, 54%) and made a full recovery (25/26, 96%). Of the 6 locally acquired cases, 4 were from the Top End region. The highest annual incidence (5) was in 2024, all of whom were returned travellers from the Asia-Pacific region. This study highlights that amoebiasis in the NT is both endemic and overseas acquired, and that clinicians should consider this differential diagnosis in anyone presenting with abdominal pain, fever and/or diarrhoea and initiate timely testing and appropriate treatment. The true incidence of disease across Australia could be estimated if a national surveillance system were in place for amoebiasis, while encouraging clinicians to maintain a high index of suspicion for this condition.

Developing an immunology curriculum for youth – contributions from a Delphi study

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2C - Mandates and messaging, Room E2, June 10, 2025, 1:30 PM - 3:00 PM

Vaccine hesitancy is adversely influencing people's health. An infodemic is threatening trust in science and has contributed to peaks in vaccine hesitancy among New Zealanders, particularly teenagers (Hodson, 2023). The problem is exacerbated by social media informational cascades that entice youth toward belief in mis- and disinformation (Alemu et al., 2023). Health and vaccine literacy can lead to higher levels of vaccine acceptance, especially among young people (Singh & Chase, 2022). Hence, education is not only required for teenagers exposed to various information sources but also for science teachers to educate these learners. Using a Delphi approach, this study sought the opinions of 16 experts to determine the content of an immunology curriculum for teenagers. Immunologists, virologists, physicians, medical writers, advisors and educators were surveyed as expert informants. In a 3-phase iterative survey, the informants recommended the inclusion of four main areas for teaching an immunology curriculum: the immune system, vaccination, mis- and disinformation, and pedagogical advice/strategies. Findings suggest that secondary teachers should aspire not only to teach basic immunology and vaccination but also explicitly teach myths about vaccines and the fallacies that underpin them. Experts reason that delving into complex immunology and vaccination ideas can deter students from the topic. However, engaging in classroom discussions about myths may offer unique opportunities for teachers to debunk mis- and disinformation, especially as classrooms can be a uniquely safe space for learners. Using a variety of pedagogical tools and strategies to engage learners in immunology, along with verified resources for a complicated topic, was also recommended.

References:
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Singh, H., & Chase, A. J. (2022). Measuring vaccine acceptance and knowledge within health professions education br. Vaccine, 40(37), 5452–5458. https://doi.org/10.1016/j.vaccine.2022.07.039

What is the quality of evidence informing Australian vaccine clinical practice recommendations?

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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

Policy and clinical practice guidelines are dependent on high quality evidence when making vaccine recommendations. A review of the quality of the evidence used to inform vaccine clinical practice guidelines could help guide researchers on how to improve the design of their clinical studies to produce evidence of greater value to decision-makers. In Australia, the Australian Technical Advisory Group on Immunisation (ATAGI) develops evidence-based vaccine clinical practice recommendations using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology, a transparent, systematic and methodical framework for developing and presenting summaries of evidence and its certainty.

We summarised the publicly available Australian GRADE assessments for the use of vaccines for prevention of cholera, diphtheria, tetanus and pertussis, human papillomavirus, influenza, meningococcal, pneumococcal, rabies and varicella zoster virus, including the certainty of evidence for each outcome (e.g., effectiveness, immunological or safety outcomes) and overall, in addition to the reasons for downgrade or upgrade of the certainty assessments. Across 25 research questions, 189 separate outcomes were assessed; of these 43 (23%), 38 (20%), 68 (36%) and 40 (21%) were classified as informed by very low, low, moderate and high certainty of evidence, respectively. Overall, 4 (16%), 10 (40%), 9 (36%) and 2 (8%) research questions across the disease areas had their overall certainty of evidence classified as very low, low, moderate and high, respectively. Certainty of evidence was downgraded for confounding, uncertainty in the effect estimation, and differences between the research questions asked by ATAGI and those answered in the studies.

There is an unmet need to improve the quality of evidence available to vaccine policy-makers. This could be achieved by improvements in the design of vaccine trials, particularly focusing on improving the precision of statistical estimates, inclusion of relevant subpopulations and ensuring trial endpoints are better aligned with the needs of policy-makers.

Investigation into an outbreak of mpox cases linked to a high-risk event.

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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

Objectives: This presentation describes the outbreak investigation and public health response to a cluster of mpox cases in Southeast Queensland in 2024; and to provide recommendations for the control of future outbreaks of mpox. Design: The admission of an mpox case to a Queensland hospital in May 2024 precipitated the coordinated response from two metropolitan public health units. A prospective cohort study design was used to follow up attendees of an intimate group event over a 21-day period. Main outcome measures: Relative risk was determined for developing infection after attendance at the group event, when taking into account, the level of vaccination against monkeypox virus (MPXV). Results: Transmission of MPXV occurred exclusively among high-risk contacts, and no transmission was observed to medium, nor low risk contacts. Laboratory investigations revealed all cases in this outbreak were of human MPXV clade 11b. Study findings suggested that complete vaccination against mpox virus was a protective factor against development of mpox (Relative Risk=0.33, 95% CI: 0.06-1.88) compared with partial or no vaccination, after attendance at the high-risk exposure event. The investigation demonstrated that building trust with event attendees and their contacts was crucial to the attainment of case histories and assisted greatly in the overall public health response. Conclusion: Learnings from this investigation suggest there is less urgency for follow-up of household contacts and other medium and low-risk contacts of mpox, compared with high-risk contacts. A huge thanks is owed to the extensive group of public health workers in the Southeast Queensland area for carrying out this comprehensive public health response.

16-year single-service experience of immunisation in children following liver transplant: Opportunities missed?

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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

Background:
Paediatric liver transplant recipients are at high risk of vaccine-preventable infections due to immunosuppression and challenges completing vaccination schedules before transplantation. Queensland Liver Transplant Service (QLTS) partnered with Queensland Specialist Immunisation Service (QSIS) to improve immunisation outcomes through tailored vaccination plans. This study evaluated vaccination rates among paediatric liver transplant recipients comparing outcomes before and after collaboration. It also assessed eligibility for consideration of live vaccines.
Methods:
This single-centre retrospective observational study analysed immunisation status of paediatric liver transplant recipients managed by QLTS between January 2008 and January 2024. Vaccination status was evaluated using data from electronic medical records, pathology systems, and Australian Immunisation Register. National Immunisation Program (NIP) guidelines relevant to birth year were considered.
Results:
A total of 107 patients were analysed, with 48(45%) known to QSIS prior to transplant and 59(55%) not known. Patients seen by QSIS had significantly higher immunisation rates: At transplant, 98% of QSIS patients were up to date with routine vaccines (excluding live vaccines) compared to 73% of non-QSIS patients ($p < 0.001$). Including live vaccines, 67% of QSIS patients were up to date, compared to 44% of non-QSIS patients. Post-transplant, 93% of QSIS-engaged patients remained up to date with the (NIP) compared to 71%. Of 107 analysed patients, 5(4.7%) were fully eligible to receive live vaccines but had not yet received them, and 2(1.9%) had already been vaccinated post-transplant. A further 68(64%) were deemed potentially eligible, meeting clinical criteria but lacking serology results. QSIS patients also demonstrated improved uptake of medically at-risk (MAR) and Hepatitis A vaccines.
Conclusion:
This study underscores the significant impact of service collaboration in improving immunisation outcomes for paediatric liver transplant recipients. QSIS patients demonstrated markedly higher adherence to NIP and MAR schedules compared to non-QSIS patients, highlighting the value add of a specialised immunisation service.

Investigation into a Hepatitis B outbreak - Perth, Western Australia, August 2023-24

Ms Robyn Stevenson[1,2], Dr Suzanne McEvoy[1], Mr YiHorng Ler[3], Dr Avram Levy[3], Dr David Speers[3], Professor Kathryn Glass[2], Dr Benjamin Scalley[1]
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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

Hepatitis B is a major health problem in vulnerable communities in Australia. An increase in newly acquired Hepatitis B virus (HBV) notifications in metropolitan Perth was observed in early 2023-24, triggering an outbreak investigation. Notifications of newly acquired HBV were reviewed, and genomic investigation conducted to determine if the HBV cases were related and identify risk factors.

A descriptive study of newly acquired Hepatitis B cases notified between August 2023 and August 2024. Data for the epidemiological investigation was derived from the Western Australian Notifiable Infectious Diseases Database (WANIDD) and the Hepatitis B REDCap database at Boorloo (Perth) Public Health Unit to analyse demographics, risk factor identification, the timing of disease onset and links between cases. Genotyping and whole genome sequencing was conducted at the state's reference laboratory, PathWest.

There were 24 cases included in this investigation. Most cases were over 30 years old (n=19, 79%), with similar numbers of male and female cases, and only 17% (n=3) were fully vaccinated. Aboriginal cases were over-represented (n=6, 25% compared to 2% in the population). The most common risk factor reported was unprotected casual sex (n=18, 75% of cases), followed by born overseas (n=8, 33%) and intravenous drug use (33%). Sequencing was possible for 20 cases (83%). Of the genotyped cases, 12 (60%) were identified as subgenotype A2. Whole genome sequencing (WGS) indicated that there were two clusters of A2 cases (3 cases and 2 cases), and one cluster of B3 cases (2 cases) that were genomically identical.

There was an unexpectedly high number of HBV A2 cases identified via sequencing; however, many cases were not linked epidemiologically or genetically. This HBV WGS investigation is one of the first in Australia and demonstrates the utility of WGS when outbreaks are suspected but where there are few direct epidemiological links.

A novel approach to immune compromised Hepatitis B non-responders

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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Background
Hepatitis B virus infection is a global health problem. Successful vaccination response is achieved in about 95% of the immune-competent population.The vaccine to prevent Hepatitis B is typically administered in three doses with an additional fourth dose, intradermal dosing or a repeated higher dose regimen is given to those that fail to show immunity. Despite these additional regimens, some remain vulnerable to hepatitis B and are deemed non-responders.

Individuals with immune compromise have the highest likelihood of non-response. Various strategies have been developed to elicit an immune response in these individuals with some success. One of these alternative strategies, using the combination Hepatitis A & Hepatitis B vaccine may show an improved response. In a study by Cardell,three doses of combined hepatitis A and hepatitis B vaccine to 44 patients, who had been previously non-responsive. Approximately 95% showed an immune titre > 10 mIU/mL. This suggests hepatitis A antigen may act as an adjuvant and enhance immune response.

Method
An audit was commenced in June 2024 at Monash Health for immune compromised Hepatitis B non-responders, who had previously completed a full course of Hepatitis B vaccines followed by re vaccination. These patients were offered a combined Hepatitis A & Hepatitis B vaccine on an accelerated and shortened schedule, four weeks apart. Hepatitis B serology was checked four weeks later to ascertain an immune response.

Results
To date a total of 36 patients have been enrolled in the project. 18 renal patients and 18 infectious disease patients. Each of these patients have previously completed up to 3 full courses of Hepatitis B vaccine, using various vaccine strategies and have not previously seroconverted. To date, 10 patients have completed the two doses of Twinrix and had serology 4 weeks later All 10 patients have now seroconverted to Hepatitis B.

Conclusion:
Every effort should be made in high-risk populations to vaccinate against this virus. Immunity is looking promising with the combined Hepatitis A & B vaccine.. The data in this abstract will be updated following expansion of the project with external grants being sought.

Real-world effectiveness of LAIV and IIV in children: SLR and network meta-analysis

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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

Background: The Live Attenuated Influenza Vaccine (LAIV) has been widely used in paediatric immunisation programmes in the Northern Hemisphere.We evaluated real-world absolute vaccine effectiveness (aVE) and relative vaccine effectiveness (rVE) of LAIV and Inactivated Influenza Vaccines (IIV) over the 20yrs of LAIV availability.
Methods: SLR and NMA of case-control, test-negative design and cohort studies published from Jan_2003 to Dec_2023 in peer-reviewed journals or by public health institutes. Inclusion criteria: children ≤19yrs in Northern Hemisphere, evaluating seasonal trivalent or quadrivalent LAIV or IIV (standard dose, non-adjuvanted), estimating effectiveness against influenza defined via clinician diagnosis or laboratory-confirmation in any setting. Studies combining multiple influenza vaccines were classified as LAIV or IIV when >90% of the children received LAIV or IIV. Random-effects meta-analysis was used to estimate pooled aVE by season (excluding 2009/10 due to A(H1N1) pandemic) and time period: pre-A(H1N1)-pandemic [2003/04 to 2008/09]; post-A(H1N1)-pandemic and prior to changes to the LAIV strain development process [2010/11 to 2016/17]; and recent years [2017/18 to 2022/23]. rVE was estimated using a three-node NMA (LAIV, IIV and unvaccinated).
Results: All but 3 of the 109 studies defined outcomes using laboratory-confirmation. aVE of LAIV and IIV against any influenza was similar (~50%) across time periods. rVE of LAIV vs IIV was not estimable pre-A(H1N1)-pandemic . From 2010/11, the 95% CIs of rVE overlapped 0 for all influenza outcomes, with the exception of A(H1N1) from 2010/11 to 2016/17 (-46%,95%CI:-57, -33) and for influenza B in recent years from 2017/18 (196%,95%CI:73, 406).
Conclusions: Over a 20yr period, aVE of LAIV against influenza in the real-world was moderate and comparable to that of IIV. Post-A(H1N1) pandemic, protection of LAIV against A(H1N1) was reduced compared to IIV, but was restored from 2017/18 after updates to LAIV strain development process. LAIV provided greater protection against influenza B than IIV.

ACCEPTABILITY OF EPI SUPPORTIVE SUPERVISORY E-TOOL BY USERS IN FIJI IN 2025

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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

In the prevention of the childhood diseases and mortality, it is globally recognized that childhood immunization is the most effective strategy (Whitney et al., 2014). Supervising the immunization program by Nursing Leaders is important, to know the effectiveness of the program (Dennison et al., 1968). This research aims to find out the acceptability of the Supportive Supervision E-Tool by Nursing Managers and acceptance by nurses being assessed using the tool. In the health sector, E-tool has become an increasingly key consideration in the development, evaluation and implementation of healthcare interventions (Sekhon et al., 2017).
An explorative mixed method study will be conducted, with the purposeful sampling of supervisors, who will be given a questionnaire, to assess them using the E- tool. While focus group discussions will be conducted with nurses chosen randomly from the divisions on their experience of being assessed with the E-Tool. The discussions were recorded into a voice recorder, data coded, sorted, and categorized into themes as thematic analysis was used.
Expected result would be that the Supervisors would find the E-Tool convenient to use and efficient as it covers all areas of Expanded Program of Immunization (EPI), hence tranquil flow of data and information collected. The tool will also generate the areas the nurse's should improve on thus creating a more informed feedback sessions. At the same time the managers would comment on questions which may not be clear and suggest changes to be done with the E-tool Questionnaire. From the Nurses they will also be receptive, as the tool will give them Feedback on where to improve, identify tools and equipment's which are standard to have in his or her facility to effectively carry out the EPI program.
Overall the use of E-Tool has strengthened the supportive supervision through identifying and addressing areas of improvement and a tool which is used by both the supervisors and the workers working together to achieve the expected outcome(Husband, R. (2017), standardizing equipment's and tools used by health facilities, leading to a better service delivery and outcome. Therefore the use of E-Tool was received and implemented with positivity.

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Jetlagged Immunity: a mumps cluster in a well vaccinated high school population

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

The Northern Sydney Public Health Unit in NSW investigated a mumps cluster at a high school in 2024, where all students had received at least one dose of the mumps, measles, and rubella (MMR) vaccine. Lasting just over four weeks, initial cases were acquired overseas, however local transmission did occur. Symptoms were mild, primarily unilateral swelling of the parotid glands, a common sign of mumps, and likely delayed recognition and diagnosis.
Once the cluster was recognised, infected individuals were isolated to prevent further transmission, and the situation was closely monitored. While the symptoms were generally mild and there were no reports of severe complications, the cluster raises concerns about the long-term effectiveness of the vaccine in some individuals, the potential for mumps to resurge in communities with low vaccine coverage, delayed immunity and the possibility of vaccine strain mismatch. Furthermore, delayed diagnosis and recognition of symptoms, was contributed to by factors including lack of utilisation of appropriate laboratory testing, such as PCR, and cost, as well as presumed complete immunity.
Most of the students had had their primary vaccination course on time in childhood with an average time between the students' vaccination and the onset of symptoms of around 11 years. Despite the widespread vaccination coverage, this cluster highlights the possibility of vaccine failure or waning immunity over time.
The cluster also underscores the importance of ongoing vigilance and the potential need to consider booster vaccinations to maintain immunity, especially as international travel increases the risk of imported infections and the disruption of vaccination programs internationally throughout the covid pandemic.

Enhanced safety surveillance for the 2024 Western Australia RSV infant immunisation program

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4A - RSV and pregnancy vaccine safety, Halls CD Lower Section, June 11, 2025, 1:30 PM - 3:00 PM

Nirsevimab (Beyfortus®, AstraZeneca/Sanofi Pasteur) is a single dose long-acting monoclonal antibody designed to prevent serious respiratory syncytial virus (RSV) illness among infants entering their first RSV season and at-risk children entering their second RSV season. Clinical trial data reported a favourable safety profile of nirsevimab, however real-world data on adverse events following immunisation (AEFI) is limited.

From 2 April to 30 September 2024, the Western Australian Department of Health offered nirsevimab to all children born on or after 1 October 2023 entering this first RSV season as well as Aboriginal or medically-at-risk children born on or after 1 October 2022 entering their second RSV season. The Western Australian Department of Health used post-licensure safety surveillance to capture adverse events following nirsevimab through passive surveillance (Western Australian Vaccine Safety Surveillance (WAVSS) system), data linkage case finding, and two participant-based active surveillance surveys (Smartvax and REDCap).

WAVSS received 24 AEFI reports; 17 (71%) were co-administered with other routine immunisations, and 14 (58%) were reported via active surveillance. No serious AEFI were identified as being due to nirsevimab.

Smartvax surveillance, with a response rate of 27% (n=1,240), reported a reaction rate of 23% (n=284) with 2% (n=21) reported medical attendance (visit to a GP, emergency department, or called a helpline). None sought medical attention from a nurse or was admitted to a hospital.

The REDCap newborn survey, with a response rate of 23% (n=1,113), reported a reaction rate of 5% (n=47) with no reported medical attendance. Data linkage case finding resulted in 6 reports to WAVSS, with no concerning AEFI identified that may be related to nirsevimab.

The most commonly reported reaction across all surveillance methods were common and expected AEFI including rash, injection site reaction, fever, and gastrointestinal issues. Western Australia's universal prophylaxis to newborns and young children found nirsevimab to be safe and well tolerated.

Parental drivers of childhood vaccine uptake in Indonesia, since 2020: systematic review

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6C - Vaccine policy for the region, Room E2, June 12, 2025, 11:00 AM - 12:30 PM

Background: Indonesia has high numbers of 'zero-dose' children, who have received no vaccines, and this number increased during the pandemic. This systematic review aimed to identify and synthesise parental barriers to routine vaccine uptake in children under 5 years in Indonesia since 2020.

Method: On 27 October 2023 we searched Medline, Embase, PubMed, Google Scholar, Portal Garuda, Sari Pediatri, Paediatrica Indonesiana, WHO database, and seven Indonesian university repositories for peer-reviewed studies published in English or Bahasa-Indonesian since January 2020. We appraised studies with the Mixed Methods Appraisal Tool (MMAT). Eligible studies described factors related to routine childhood immunisation among parents of children aged 0-5 years in Indonesia. We extracted data on factors' reported association with uptake or description as either facilitators or barriers. We deductively categorised data into the UNICEF/WHO Behavioural and Social Drivers of Vaccination model.

Results: We included 144 studies with a total of 20,833 participants. Most studies targeted mothers and were cross-sectional. Many studies had a low MMAT rating due to inadequate reporting of results. Thinking and feeling domain facilitators included good caregiver knowledge of and attitudes towards immunisation, with barriers in this domain including concern about side effects and vaccine halal status. For social processes, husband and community support of immunisation were facilitators, whereas family and health worker support of immunisation had less consistent impact. Living close to health centres was a practical facilitator, while barriers included cost, busy caregivers, pandemic restrictions, and fear of COVID-19.

Conclusion: Since the start of the pandemic, routine childhood vaccination in Indonesia was affected by both access and acceptance barriers. Most barriers are modifiable and can inform tailored programs to increase vaccine uptake, such as those that involve education and community engagement at the local level.

Funding: Australian Department of Foreign Affairs and Trade.

Registration: Prospero ID: CRD42024518128.

Seasonality of RSV in northern Western Australia

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6A - RSV prevention, Halls CD Lower Section, June 12, 2025, 11:00 AM - 12:30 PM

Background: Respiratory syncytial virus (RSV) infection and associated hospitalisations represent a significant public health burden. In Australia, the hospitalisation rate for RSV from 2009 to 2017 was estimated at 54.8 per 100,000 population, with higher rates observed in high-risk groups such as children under 5 years and adults over 75 years.
In 2024, the Western Australia Government funded an RSV infant immunisation program, offering nirsevimab (Beyfortus) immunisation during the temperate winter season. However, the Kimberley and Pilbara regions in northern tropical Western Australia (WA) have historically shown variation in this winter seasonality.

Methods: An ecological study with time-series analysis is being conducted to document RSV seasonality in WA from January 1, 2012, to December 31, 2024. The study utilises RSV-associated hospitalisation records (Emergency Department Data Collection, Hospital Morbidity Data Collection) and RSV notification data (WA Notifiable Infectious Diseases Database), to document, analyse, and compare RSV seasonality in northern WA to the rest of WA.
This ongoing study will also utilise nirsevimab immunisation records (Australian Immunisation Register) to assess the impact of nirsevimab on RSV seasonality during 2024.

Results: Preliminary analysis indicates that RSV seasonality varies between northern WA and the rest of WA, with northern WA not following the winter seasonality seen in the rest of WA.
In northern WA, variation is seen from the rest of WA and between northern regions. In the generally tropical Kimberley region, ongoing transmission of RSV is observed without any clear seasonality. In the Pilbara region, transmission of RSV outside the winter season is evident, with the region experiencing prolonged seasonality.

Conclusions: Seasonal variation for RSV transmission outside the typical winter season is observed in the tropical regions of WA. Continued provision of RSV immunisation programs should be considered year-round in the northern regions of WA.

Comparing RSV immunisation strategies: maternal vaccine, monoclonals or both?

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5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

Introduction
The RSV immunisation landscape has changed dramatically in recent years with the introduction of both a single-dose monoclonal antibody and a maternal vaccine for the prevention of severe RSV infection in infants. In November 2024, the Australian federal Health Minister announced a hybrid program for 2025, with RSVpreF (maternal vaccine) on the National Immunisation Program, and nirsevimab (monoclonal) to be offered by individual States and Territories. Our aim is to use mathematical modelling to support decision-making around the development of RSV immunisation policy, with an initial focus on Western Australia (WA).

Methods
We developed a dynamic transmission model of RSV calibrated to linked population-based administrative health data from southern WA (cohort data from 2010-2019). The model simulates RSVpreF and nirsevimab immunisation on the population with protection characteristics of the products reflecting efficacy trial data. The model also captures the differential impact of potential immunisation strategies on infants born preterm, a significant subgroup at higher risk of severe RSV infection.

Results
Using our model, we analysed the impact of a set of potential single product and hybrid RSV immunisation scenarios with different assumptions of coverage levels and implementation timing (seasonal versus year-round), and strategies that consider RSV at-risk groups. We show that hybrid strategies combining year-round maternal immunisation with seasonal infant immunisation for newborns and other at-risk subgroups resulted in comparable numbers of averted RSV hospitalisations to high coverage, year-round single product programs. The model predicts the analysed hybrid programs to avert around 50% of annual RSV-hospitalisations of infants under 6 months.

Conclusions
Modelling can provide valuable evidence on the use of alternate RSV immunisation strategies in local or national programs, with consideration to the individual protection characteristics of the prevention products used, and the epidemiology of RSV in the intended population.

Common, vaccine-preventable, respiratory viruses trigger heart attacks and strokes: systematic review

Ms Tu Nguyen[1,2], Dr Diana Vlasenko[2], Dr Aishwarya Shetty[2], Dr Eric Zhao[2], Prof Christopher Reid[3,4], A/Prof Hazel Clothier[1,2,5], Prof Jim Buttery[1,2,6]
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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

BACKGROUND: Respiratory tract infections may trigger acute myocardial infarction (AMI) and stroke. However, the pathogen-specific relative contributions and overall public health impact are less clear. We conducted a systematic review to examine the relative effects of laboratory-confirmed respiratory virus infections as triggers for AMI and stroke.

METHODS: We searched MEDLINE, PubMed, Embase, Cochrane, and Web of Science, from inception to August 2024. Analytic epidemiological studies among human participants, published in any language, capturing laboratory-confirmatory respiratory viral infection(s) and that reported AMI or stroke outcomes, were eligible. Data were analysed by exposure-outcome relationship and reported measure of effect(s) and between-study heterogeneity (I^2) assessed. If studies were sufficiently homogeneous, data were pooled in a random effects model. Risk of bias was assessed across studies and certainty of the evidence graded. This review was registered with PROSPERO: CRD42024494997.

RESULTS: Of 11,017 articles identified, 48 studies were included. SARS-CoV-2 and influenza were the most frequently associated triggers. There was high-certainty evidence that influenza triggers AMI (incidence rate ratio (IRR): 5.37; 95% CI, 3.48-8.28; I^2 = 69.4%). SARS-CoV-2, respiratory syncytial virus, and Coxsackie B virus infection may also trigger AMI, albeit with lower certainty of evidence. Influenza was associated with a 4.7-fold increased risk of stroke within the first 28 days following infection (IRR: 4.72; 95% CI: 3.78-5.90; I^2 = 0%). Moderate-level evidence suggested SARS-CoV-2 and cytomegalovirus (CMV) may trigger stroke. As no randomised controlled trials met inclusion criteria, this review was limited entirely to observational studies, hence subject to risk of bias due to confounding.

CONCLUSION: Our findings suggest that common, often vaccine-preventable, respiratory viral infections are associated with an increased short-term risk of AMI and stroke. Vaccine probe studies, specific to influenza and SARS-CoV-2, for the prevention of acute cardiovascular events may be helpful to assess the impact on population burden.

Understanding Social and Behavioural Drivers of Mosquito Borne Disease Prevention in Australia.

Mrs Rebika Nepali[1], Professor Julie Leask[1,2], Dr Victoria Brookes[3], Dr Cameron Webb[4], Dr Nicolas Smoll[5], Dr Kerrie Wiley[1,2]
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6E - One Health preparedness, Riverbank Room 3, June 12, 2025, 11:00 AM - 12:30 PM

Background:

Japanese Encephalitis (JE) is a major human health concern in the World Health Organisation South-East Asia and Western Pacific Regions. There have been 45 human cases and seven deaths in Australia since January 2021. However, there are few Australian studies examining awareness and behaviour about mosquito-borne disease prevention. This is needed to inform policies and programs. This study explores what motivates people in NSW and QLD to adopt mosquito borne-disease preventive behaviours including JE vaccination.

Methods:

Semi-structured qualitative interviews of 25 purposively samples adults living/working in NSW and QLD Local Government Areas of concern for Japanese Encephalitis Virus and potential future risk areas. Data were thematically analysed using NVivo, and BeSD framework to explore the drivers for mosquito-borne disease prevention.

Results:

Participants reported a spectrum of behaviour combinations for JE prevention including mosquito and bite prevention, and vaccination. Common mosquito prevention methods included repellents, screens, and coils. Most participants from metro areas were unaware of JE and its vaccine, viewing it as a regional issue. Regional participants felt at risk due to exposure to water reservoirs and animals, despite knowing little about JE or its vaccine. Some saw mosquitoes as a part of Australian life that was of little concern. Participants expressed willingness to get vaccinated if recommended by their GP, however many viewed it as a travel vaccine. GP, media and school campaigns were common sources of information. Those living in border communities relied on information from both NSW and QLD. Confusion about eligibility criteria and questions about mandates were common and usually connected with COVID experience.

Conclusions:

The spectrum of risk perception and behaviours suggest the need for tailored campaigns and interventions that account for the impact of prior COVID experience. These should be implemented through multi-sectoral coordination.

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A systematic review of knowledge, attitudes, and practices towards Japanese Encephalitis vaccination.

Mrs Rebika Nepali[1], Dr Catherine King[1,2], Professor Julie Leask[1,2], Associate Professor Victoria Brookes[3], Dr Cameron Webb[4], Dr Majdi M. Sabahelzain[1], Miss Adeline Tinessia[1], Miss Emma Campbell[1], Dr Kerrie Wiley[1,2]
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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

Background:

Japanese Encephalitis (JE) is a mosquito-borne disease of concern, with high case-fatality rates and significant long-term effects on survivors. In addition to preventing mosquito bites, vaccination is the most effective prevention method, but global uptake is limited. This study aims to systematically review global research on knowledge, attitudes, and practices (KAP) towards JE vaccination and identify barriers to effective program delivery.

Methods:

We searched seven data bases, reference lists of included studies and grey literature for studies on KAP for JE vaccination. Studies were screened by a minimum of two independent reviewers, resolving discrepancies by consensus. The data were then thematically summarised using the American Psychological Associations (APA) definitions of Knowledge, Attitudes and behavior to benchmark our synthesis.

Results:

Of the 2452 records, 26 studies from seven countries met the inclusion criteria. Studies were of variable quality and inconsistent in how KAP were measured and reported. Studies examined four participants groups: vaccine recipients (travellers, caregivers and non-traveller adults), and vaccine providers/advocates. Of the few studies that reported knowledge, travellers and adult groups had little to no knowledge of the vaccine, whereas caregivers had knowledge about the availability gained through health workers and community leaders. Higher literacy among caregivers, non-traveller adults and vaccine advocates was associated with increased vaccine uptake. Most studies reported only attitudes and practices. Attitudes were generally positive and influenced by health worker and community leaders. Practices among travellers were driven by cost and time. Cost, migration and vaccine availability drove practices among caregivers and non-traveller adults living in endemic countries.

Conclusion:

There is limited information on knowledge, attitudes, and practices (KAP) regarding Japanese Encephalitis (JE) vaccination in both endemic and non-endemic countries. Engaging community leaders and healthcare providers/advocates, and tailoring interventions for different population groups can help address barriers to JE vaccination and improve uptake.

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HIV self-testing among young people in southern Ethiopia : Descriptive qualitative study

Mr Eshetu Andarge Zeleke[1,2], Associate Professor Jacqueline Stephens[1], Dr. Hailay Abrha Gesesew[3,4,5], Associate Professor Behailu Merdekios Gello[2], Mr. Kidus Temesgen Worsa[2], Professor Anna Ziersch[1]

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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

Background: Young people are at heightened risk of new HIV infection in sub-Saharan Africa including Ethiopia. However, few test for HIV because of a range of obstacles including societal stigma and discrimination and inaccessible services. HIV self-testing (HIVST) is a newly endorsed screening test option that seeks to address those challenges. We conducted a qualitative study that explored perspectives of various stakeholders on the acceptability and use of HIVST in Southern Ethiopia, to identify potential enablers and barriers to HIVST.

Methods: A descriptive qualitative study was applied among young people aged 15-24 years, health professionals, peer navigators (lay people trained on HIVST) and HIV program managers . Eight focus group discussions and 15 key informant interviews were completed with a total of 80 participants. Data was analysed using thematic analysis and trustworthiness was assured based on credibility, transferability, dependability, and confirmability criteria of the research technique and reflectivity of the investigatory team.

Results: All the stakeholders reported that HIVST is highly acceptable for young people. Greater privacy and confidentiality and subsequent reduction in stigma and discrimination; increased pathways to confirmatory testing and improved HIV care; reduced risk of contamination to health professionals and clients; and saving time and money were the key enablers identified. Nonetheless, concerns about lack of awareness; fear of social harm; requirement for confirmatory testing; perceived uncertainty and untimeliness; lack and costliness of kits; perceived inaccuracy of oral HIVST; and risk of contamination and pain after blood samples-based HIVST were shared among the stakeholders as barriers.

Conclusions and recommendations: HIVST is a well-accepted HIV screening for young people in urban southern Ethiopia. Interventions aimed to scale up HIVST need to consider barriers and consider wide promotion of the kits through a range of avenues, education on the benefits of HIVST and ways to link people to counselling.

Refining strategies for HIV self-testing in South Ethiopia : Nominal Group Techinique

Mr Eshetu Andarge Zeleke[1,2], Associate Professor Jacqueline Stephens[1], Dr Hailay Abrha Gesesew[3,4,5], Associate Professor Behailu Merdekios Gello[2], Mr. Kidus Temesgen Worsa[2], Professor Anna Ziersch[1]
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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Background: HIV self-testing (HIVST) is a new approach to HIV testing that is aimed facilitate HIV screening particularly among vulnerable populations in contexts such as Sub-Saharan Africa. We conducted a nominal group technique (NGT) meeting with HIV experts and representatives of young people in Southern Ethiopia to examine potential strategies to provide efficient and targeted HIVST to young people.
Methods: The NGT was conducted with 18 experts to refine best strategies for HIVST promotion, service delivery and legislative considerations. Participants were presented with recommended strategies to improve HIVST service that were drawn from the literature and our qualitative study among urban young people in Southern Ethiopia. Mean scores and standard deviation respectively were used to examine the ranked scores given to the strategies and to determine consensus in the two rounds of meeting. Qualitative data collected during the NGT discussion was analysed with thematic content analysis.
Results: Out of nine strategies, the panellist rated community-based institutional delivery of HIVST (e.g. schools) as the top ranked strategy and with the highest degree of consensus in the second round of the NGT, while online marketing and delivery of HIVST kits was ranked as the last (9th) strategy in both rounds. The first and last strategies respectively showed a statistically significant increase and decrease in mean scores on Wilcoxson signed rank test. Feasibility was the major concern across all the strategies (except health facility-based delivery) though online distribution was emphasized as impractical in present urban Ethiopia.
Conclusions and recommendations: Experts believed strategies that involve young people's usual places of gathering (community institutions and everyday places) were very important venues to scale up HIVST services. The NGT analysis would be a valuable input to policy makers, program planners and researchers for implementation or further examination on how best to promote HIVST among young people.

Outreach immunisation clinic brings care closer for First Nation families

Miss Emma Birrell[1], Mrs Kelsey Fletcher[1], Phoebe Williams[1], Vicky Sheppeard[2], Beverley Davison[2,3], Sharon Brown[2,3], Lola Ryan[2,3], Susan Harmon[1], Sandra Pengilly[1]
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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

In 2024 immunisation coverage for First Nation infants in SESLHD declined from 91.4% to 83.3% demonstrating a clear need to address access to immunisation. Sydney Children's Hospital in partnership with the SESLHD PHU, undertook community engagement and worked with Aboriginal healthcare providers in the La Perouse area. Several barriers to immunisation were identified for the local community including: transport issues; out-of-pocket costs to see general practitioners (GPs) and limited availability of GP appointments; alongside Medicare registration delays and vaccination concerns. Importantly, a need for a trusted Aboriginal health worker (AHW) to assist with reliable information around vaccine safety was highlighted as a key need to increase uptake of immunisation for First Nation infants.

In response, we established a fortnightly outreach clinic at La Perouse Community Health Centre that provides immunisations and education on timely vaccine administration. Collaborating closely with AHWs and community services to enable a culturally-safe approach to care, initiatives including available parking, flexible appointment options, SMS reminders, and a "no Medicare, no worries" policy were incorporated to the model.

We also implemented a nurse-initiated medication (NIM) protocol for prescribing and administering paracetamol, allowing authorised nurse immunisers to administer paracetamol prior to meningococcal B vaccination – including a take-home bottle for additional paracetamol doses. This has increased uptake of meningococcal B vaccines.

Sometimes it's just about having a yarn, focusing on relationship building—listening to families, addressing concerns, and fostering trust. This was particularly apparent during the rollout of the RSV nirsevimab program.

Since April 2024 we have had 113 direct interactions with children and families, with strong ongoing engagement. Further collaboration with the PHU is ongoing, including commencing a whole family model of care to provide immunisations for all ages.

The program reflects our commitment to improving First Nations immunisation rates through education, collaboration, and culturally-sensitive care. Through continuous feedback and partnership, we aim to share lessons to actively reduce the barriers to immunisation for First Nations children and build a foundation for better health outcomes for the community.

Note: Permission to publicise this service has been obtained from the La Perouse Aboriginal Health Centre and the PHU.

Factors associated with delayed diagnosis of HBV in South Eastern Sydney.

Ms Eunice Stiboy[1,2], Dr Heather Valerio[3], Mr Shane Tillakeratne[3], Dr Vicky Sheppeard[2], Dr Amy E Parry[1], Dr Anthea Katelaris[2], Scientia Professor Gregory Dore[3]
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2D - STIs and blood-borne viruses, Riverbank Room 2, June 10, 2025, 1:30 PM - 3:00 PM

Introduction
Hepatitis B virus (HBV) remains a public health challenge, with chronic HBV infection leading to advanced liver disease complications including decompensated cirrhosis (DC) and hepatocellular carcinoma (HCC). Prevention of HBV-related DC and HCC relies on effective interventions, particularly antiviral therapy, with late HBV diagnosis a missed opportunity for their earlier introduction. This study investigates factors associated with late HBV diagnosis in a large, metropolitan area of Sydney, Australia.

Methods
This population-based cohort study used linked data, consisting of all HBV notifications in New South Wales linked to hepatitis C virus notifications and hospital admission data. DC and HCC diagnosis was based on first hospitalization for each event. Late diagnosis was defined as HBV notification at or within two years of DC or HCC diagnoses. Cross-tabulation and unadjusted and adjusted logistic regression analyses were performed to assess the association of late diagnosis with demographic, temporal, geographic, and clinical factors.

Results
Between 2002 and March 2022, 10,910 individuals in SESLHD were notified with HBV, with 296 (3%) diagnosed with DC or HCC. Late diagnosis occurred in 102 (34%) of these individuals and was more common in females (43%) versus males (31%), individuals born between 1945 and 1964 (55%), and those born in West/South Asia (43%). Female sex was independently associated with late HBV diagnosis (adjusted odds ratio [aOR] 1.92, 95%CI 1.08-3.42). Trends towards associations with late HBV diagnosis were observed for birth cohort (≥1965) (aOR 2.02, 95% CI 0.85-4.82), overseas birth (aOR 1.92, 95% CI 0.96–4.01), alcohol use disorder (aOR 2.72, 95% CI 0.86–8.96), and year of DC or HCC diagnosis (aOR 0.57, 95% CI 0.28–1.16 2016-2021 vs 2001-2008).

Conclusion
A third of people with HBV-related advanced liver disease complications are diagnosed late, reducing opportunities for effective interventions. Strategies to enhance earlier HBV diagnosis are required to reduce HBV disease burden and advance HBV elimination efforts. Strategies should aim to reach groups most affected, while also ensuring equity for groups at higher risk, such as women. These findings underscore the importance of localised data and benefits of data linkage.

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Management of a hepatitis A outbreak in a primary school setting

Dr Storm Holwill[1], Gabrielle Hales[1], Shaun Coutts[2], Elizabeth Masulans[3], Dr Charles Alpren[1], Dr Finn Romanes[1]
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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

Background: Hepatitis A, an acute enteric illness of faecal-oral transmission, is not endemic to Australia. On 2 September 2024 Western Public Health Unit (WPHU) was notified of a case of hepatitis A in a five-year-old female who had not travelled overseas. The child attended the same primary school junior campus as a case notified three weeks earlier in a six-year-old female who acquired infection whilst visiting family in an endemic country and subsequently attended school whilst infectious. WPHU led a response to investigate the outbreak and implement control measures.

Methods: Outbreak cases were confirmed or probable cases of hepatitis A (per CDNA SoNG) with a symptom onset from 12/08/2024 and an epidemiological link to the school or another outbreak case.

Investigation included case interviews, environmental assessment of the school, and laboratory investigations including genotyping. Management included communication with the school community, infection prevention and control interventions, and a vaccination clinic to provide post exposure prophylaxis (PEP) for identified contacts including household contacts of students.

Results: Including the index, five cases were linked to the outbreak: four students and one parent of an unaffected child. Cases were identified in three of the five junior campus classes. All cases attended the campus during the index case's infectious attendance period, including the adult case who attended two on-campus events during this period.

128 children and 155 adults (approximately 67% of eligible contact population) received hepatitis A vaccine PEP via the pop-up vaccination clinic, likely meeting the herd immunity threshold. No cases were acquired following the interventions. Whole genome sequencing confirmed all five cases to be genomically linked.

Conclusions: The response to this outbreak in a primary school setting demonstrated the importance of clear, proactive communication, thorough environmental assessment and IPC interventions, and timely mass vaccination to prevent further propagation of cases.

All in a weekend: The first days of an unprecedented Legionella outbreak

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1D - Preventing respiratory infections, Riverbank Room 2, June 10, 2025, 11:00 AM - 12:30 PM

On Friday 26 July 2024, Western Public Health Unit (WPHU) received six legionellosis notifications – more than our monthly average – in one afternoon. The team allocated notifications for immediate interview and regrouped an hour later with preliminary interview outcomes. By 6pm we had confirmation of four Legionella pneumophila serogroup 1 (LP1) cases in adult males living in Melbourne's Western suburbs all admitted to hospital with respiratory illnesses with onset within days of one another and no clear overlap of exposures.

WPHU informed the Department of Health and Local Public Health Unit (LPHU) Network and asked that LPHUs be on high alert for LP1 notifications over the weekend, consider immediate interview of cases, and contact WPHU to compare exposure sites.

More notifications arrived from 6am Saturday. By early afternoon 13 LP1 notifications had been received across four LPHUs with no common exposure, and an urgent assessment meeting was convened with the Department of Health and other affected LPHUs. Cases had symptom onset from mid-July and had dispersed exposures to the southeast of an industrial area in Melbourne's northwest. Outlying cases with residence and most exposures outside of the general dispersion pattern were used to identify a potential signal in the industrial area.

By Monday morning 17 cases had been reported. An environmental event leading to widespread dispersal of Legionella from the industrial area was considered amongst other hypotheses. Victoria's cooling tower registration system allowed towers with overlapping close case exposures including within this industrial complex to be rapidly identified and earmarked for testing and treatment whilst the outbreak investigation continued.

The cooling tower responsible for the outbreak was subsequently found to be one of those tested and treated at the beginning of the response.

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Provider setting for adult influenza and COVID-19 vaccination within Australia

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background: Despite evidence that influenza and COVID-19 vaccines are safe and effective, uptake remains suboptimal. To expand community access to vaccines, in 2024 a National Immunisation Program for Vaccination in Pharmacy was implemented. We examined characteristics of adults receiving vaccinations in different provider settings.
Methods: Influenza and COVID-19 vaccinations given to adults (aged ≥ 20 years) between 1/1/2023 and 31/12/2024 and reported in the Australian Immunisation Register were linked to demographic information including the 2021 Census data through the Person Level Integrated Data Asset.
Results: In 2023, 61% of 7.49 million reported influenza vaccinations and 54% of 4.09 million reported COVID-19 vaccinations were provided in general practice whilst 24% of influenza and 44% of COVID-19 vaccinations were provided in pharmacies. In 2024 the number of reported doses of both vaccines declined (influenza: 7.01 million; COVID-19: 2.48 million) however, there was a small increase in the proportion (27%) and number of influenza vaccinations (1.87 million) given in pharmacy. The proportion of COVID-19 vaccinations given in general practice increased (62%) but the total number decreased substantially (1.42 million).
In 2023 and 2024, for both vaccines, a lower proportion of vaccinations were given in pharmacy among adults: aged ≥65 years (vs. <65 years); from culturally and linguistically diverse (CALD) backgrounds (vs. non-CALD backgrounds); with lower incomes (vs. higher incomes); with lower employment (unemployed vs. employed); with lower education (high school certificate vs. undergraduate degree or higher).
Conclusion: Overall general practice continues to be the most common setting for both influenza and COVID-19 vaccination. Groups known historically to have lower vaccine uptake also had low uptake of vaccination in pharmacy. Expanding vaccination provider types, including to pharmacy may help encourage uptake, but examining how this impacts population coverage in undervaccinated populations is needed to inform future setting-specific interventions aimed at improving vaccine uptake.

Risk profiles of short-term AEFI for COVID-19 booster vaccines

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6B - Shingrix and COVID-19 vaccine safety, Room E1, June 12, 2025, 11:00 AM - 12:30 PM

There is an ongoing need for COVID-19 booster coverage for protection of vulnerable populations. Consumers and vaccine providers require granular information on the impact of adverse events following immunisation (AEFIs) of COVID-19 boosters, to inform community perceptions of vaccine safety and reactogenicity and influence uptake. Online surveys were sent to vaccinees three days post-administration via AusVaxSafety, Australia's active vaccine safety surveillance system, soliciting reports of AEFI. We report the short-term safety profiles of COVID-19 booster doses administered to Australian adults between 1 January 2023 and 31 August 2024. Bayesian hierarchical modelling was used to estimate the probability of medical attendance (MA) and of experiencing an AEFI after booster vaccination by age, sex, common chronic medical conditions and co-administered vaccines. 433,626 post-vaccination surveys were sent, with 251,949 responses received (58.1%). Overall proportions of reported MA within three days of booster vaccination were ≤1.0% for all vaccine brands (Comirnaty 0.6%; Spikevax 0.9%; Nuvaxovid 1.0%), including when co-administered with either an influenza, pneumococcal (Prevenar 13) or diphtheria-tetanus-pertussis vaccine. Proportions of MA, including routine medical appointments, were ~1% higher in respondents who identified with a chronic medical condition. 5.4% of survey respondents reported any time loss from work or normal activities; of which 14.4% recorded <1 day and 49.6% recorded 1 day. The proportion of respondents who reported any AEFI for Comirnaty, Spikevax and Nuvaxovid were 26.1%, 40.8% and 26.3%, respectively. The most common symptoms were injection site reaction, fatigue and myalgia. Higher risk of AEFI occurred for females compared to males, with an age-dependent risk peaking around 30-40 years of age. The risk of reactogenicity was higher for Spikevax compared to Comirnaty vaccines across all symptoms. Reactogenicity of booster doses was lower compared to COVID-19 vaccine priming doses, with low risk of requiring medical attendance and limited impact on normal activities.

Immunogenicity and safety summary for the chikungunya virus-like particle vaccine development programme

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4C - Zoonoses & arboviruses, Room E2, June 11, 2025, 1:30 PM - 3:00 PM

Introduction:

Chikungunya virus (CHIKV) is a threat to public health and a risk for travellers to endemic countries. Typical acute symptoms include fever, arthralgia, myalgia, fatigue, and headache. Debilitating arthralgias may persist for months or years. We report aggregated safety and immunogenicity data from five clinical trials for a CHIKV virus-like particle (VLP) vaccine, which has been approved for use by the US FDA in February 2025.

Methods:

To date, the CHIKV VLP vaccine development programme has included three phase 2 and two phase 3 trials across multiple sites in the US, which enrolled participants 12 to 95 years of age. Participants received a single dose of CHIKV VLP vaccine or placebo. The safety population included 3141 vaccinated and 675 placebo participants from five trials and the immunogenicity evaluable population included 2829 vaccinated and 607 placebo participants from four trials. Immunogenicity was assessed by measuring CHIKV serum neutralising antibody (SNA) titres (NT80) at selected time points; SNA NT80 ≥100 is the surrogate marker likely to predict protection. Immunogenicity and safety were assessed through Day 183 post vaccination.

Results

Immunogenicity findings showed robust responses, with a seroresponse (SNA NT80 ≥100) as early as Day 8(47%), peaking at Day 15 (96%) and Day 22 (97%; primary endpoint), and lasting through Day 183 (85%).In phase 3 trials, the seroresponse rate and geometric mean titre was significantly higher in the vaccine group than the placebo group at all time points. CHIKV VLP vaccine demonstrated a favourable safety profile across trials. Most AEs were mild or moderate; events primarily consisted of injection site pain, headache, fatigue, and myalgia. Solicited and unsolicited events of arthralgia were reported at similar rates between vaccinated and placebo participants. SAEs occurred in <1% of participants, with no vaccine-related deaths. Overall, no safety signals were detected.

Conclusions

CHIKV VLP vaccine offers a VLP-based vaccine option for immunisation against CHIKV disease. The data analysed demonstrate the strong immunogenicity and favourable safety profile of CHIKV VLP vaccine; rapid and durable SNA NT80 responses support the potential for this vaccine to protect individuals ≥12 years of age from disease caused by CHIKV.

Beyond attitudes, why vaccine accessibility matters: qualitative longitudinal study findings

Ms Georgia Chisnall[1], Ms Louise Letley[2], Prof Sandra Mounier-Jack[1], Prof Helen Bedford[3], Dr Tracey Chantler[1]
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2E - Public health in practice, Riverbank Room 3, June 10, 2025, 1:30 PM - 3:00 PM

Background: Even with calls to action and considerable attention, childhood vaccination uptake has declined for a thirteenth consecutive year in England. Understanding the reasons for sub-optimal vaccine uptake is essential in developing appropriate interventions to increase coverage. Scoping work identified that vaccine accessibility was poorly conceptualised and under-investigated as a potential cause of poor uptake with a dominant focus on vaccine hesitancy. This study aimed to explore the potential contribution of vaccine accessibility in driving the pervasive challenge of sub-optimal vaccine uptake.

Methods: A longitudinal cohort study was established in May 2023. Sequential interviews were conducted with 22 parents from the birth of their child approximately four weeks after each vaccination appointment was due. In addition, parents kept dairies which captured appointment correspondence, booking systems, and appointment attendance in-real-time. Data were analysed using temporal thematic analysis.

Results: Four vaccination trajectories were observed collectively referred to as the 4S Vaccination Trajectory Framework: supported (n=9), struggled (n=10), stalled (n=2), and shunned (n=1). Those with a struggled trajectory assumed a driving role in ensuring their child received their vaccinations on time, while those in the stalled trajectory faced challenges securing appointments resulting in delayed vaccination. Which journey parents encountered was highly dependent on the features of the booking system and how their General Practices responded to parents who were late, or forgot, to attend appointments. Parents often had to contend with notable administrative burden or endure adversarial events to get their child vaccinated.

Conclusions: This study reveals the nature of access constraints faced by parents trying to secure vaccination appointments for their children in England. To address declining vaccination coverage, it is vital that accessibility is improved, and services meet parents' needs. This study deepens our understanding of accessibility issues with the vaccination service and has implications for policy and practice.

Barriers to annual influenza vaccine uptake in Australian adults

Dr Maria Christou-Ergos[1,2], Dr Majdi Sabahelzain[1,2], Dr Jessica Kaufman[3,4], Dr Maryke Steffens[5,6], Dr Katarzyna Bolsewicz[1,5], Prof Margie Danchin[3,4,7], Prof Julie Leask[1,2]
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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

Background: Influenza vaccine coverage has been persistently suboptimal in Australian adults. By the end of the 2024 influenza season, the country saw its lowest annual coverage rates compared to the preceding five-year period. While past influenza vaccination is a strong predictor of current uptake, vaccination behaviour can be inconsistent, contributing to patchy coverage. The National Vaccination Insights Project sought to understand the barriers and drivers of routine annual influenza vaccine uptake in Australian adults.

Methods: Between July and September 2024, eighteen in-depth interviews were conducted with adults aged over 18 years who did not intend to receive an influenza vaccine in 2024 but had received at least one in the preceding two years. Transcripts were analysed using the framework method.

Results: For most interviewees, not getting an influenza vaccine was their default behaviour. At busy times, vaccination was not prioritised, and inaction was more convenient, especially when they were not worried about getting influenza or felt unsupported by entities that encourage vaccination (i.e. governments and the medical establishment). At times when they had received an influenza vaccine, interviewees acted in response to opportunities and prompts that offered convenient avenues for vaccination rather than actively seeking it out themselves. Other drivers included; the perceived importance of preventing illness during a life event such as travel or pregnancy; and the perceived responsibility to protect close others from influenza.

Conclusions: To encourage annual influenza vaccine uptake amongst Australian adults, increasing available information about influenza severity and encouraging vaccination via personalised annual prompts may be useful. Consideration should also be given to improving experiences within health settings by adequately addressing concerns and mitigating distress. Increased access to vaccination during people's regular routine, for example, in workplaces, and engaging community groups with vaccination may also help normalise, and reinforce the importance of, annual influenza vaccination.

Impact of Vaccine Mandates and Removals on COVID-19 Vaccine Uptake: Aggregate-data Analysis

Dr Aregawi Gebremariam[1], DR Mesfin Genie[1], DR Fabio Martinenghi[1], Prof Katie Attwell[2], DR Huong Le[3,4], DR Bette Liu[8], DR Annette Regan[9], DR Frank Beard[10,11], DR Kristine Macartney[10,12], PROF Francesco Paolucci[1], DR Hannah Moore[3,4], DR Christopher C Blyth[3,5,6,7]
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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

Background: The COVID-19 pandemic urged various interventions to increase vaccine uptake, including the implementation of vaccine mandates. These mandates have varied widely in terms of their design and timing across different jurisdictions, impacting different sub-populations and sectors. This study explores the effects of vaccine mandate announcements and removals on vaccine uptake across Australia, France, Italy, and the US (California).

Methods: We employed an Interrupted Time Series (ITS) analysis to assess the impact of COVID-19 vaccine mandate announcements and removals on vaccine uptake. The study utilized aggregated data from various sources, including Our World in Data and local health databases. The primary outcome was the natural logarithm of first doses and booster doses per hundred thousand people. Policy impact was evaluated through changes in vaccine uptake trends before and after policy announcements and removals.

Findings: Vaccine mandates was associated with an increase in vaccine uptake in all studied countries. Initial mandates appeared to have been associated with an increase in the first dose uptake by 113% (95% CI, 63% - 178%) in Italy, 195% (95% CI, 113% - 308%) in France (though goes away when cases and deaths are controlled for) and 32% (95% CI, 16% - 51%) in California, demonstrating robust responses to policy interventions. The effects varied by the type of mandate, with employment mandates or mandates announced later having different/lower impacts compared to public space mandates or the first mandate, for instance in Italy. However, the removal of mandates generally resulted in decreased vaccine uptake, highlighting the mandates' role in sustaining high vaccination rates. Updates on the results for Australia will be provided in due course.

Conclusion: Vaccine mandates increased COVID-19 vaccine uptake during critical periods of the pandemic. The removal of these mandates often associated with a reduction in uptake, suggesting that the continuity of such policies may be crucial in maintaining high vaccination rates. These findings underscore the importance of carefully timed and targeted public health interventions to manage vaccine coverage during pandemics. Future policies should consider the diverse impacts of mandate types and the potential benefits of maintaining mandates during ongoing public health crises.

Vaccine microarray patch self-administration: A preliminary study in adults aged 50+

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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

We assessed the safety, performance, acceptability, and usability of the High-Density Microarray Patch (HD-MAP) for vaccination in adults aged 50 and over.

This study was a single-centre, open-label, single-arm intervention in healthy adults aged 50+. HDMAPs (vaccine-free) were applied by a trained user and self-administered. Participants received one excipient-coated HD-MAP to the volar forearm (FA) and the upper arm (UA) administered by a trained user. Participants then self-administered a HD-MAP to the FA and UA. Application sites were compared for skin response. Participants completed an online survey and participated in a semi-structured interview on acceptability and usability. Analyses were undertaken using descriptive statistics. Interviews were coded in NVivo12 and subject to thematic analysis. The study occurred from 8 September 2021 to 15 February 2022 in Brisbane, Australia.

Of 44 participants, 43 % (n = 19) were male, and 57 % (n = 25) female. The HD-MAP was well-tolerated, with no treatment-related serious adverse events. The increase in transepidermal water loss following self-administration was similar to that observed for trained user administration (UA: 7.5 fold vs 6-fold, FA: 6.1-fold vs 6.6 fold). Fluorescent dermatoscopy confirmed that HD-MAPs engaged with the skin surface and that self and trained user administrations were similar. All participants found the HD-MAP applicator easy to use. 82 % of participants preferred “vaccination” by HD-MAP should its efficacy be proven equivalent to intramuscular injection (IM). Participants reported high acceptance of the resulting transient marks on the skin (82 %). 98 % of participants agreed that self-administration of the HD-MAP at home, without supervision, was highly preferable for its convenience.

HD-MAPs were safe in adults 50+ years, and performance was effective, regardless of administrator. Participants preferred the HD-MAP for its ease of use and convenience in self-administration. This vaccine delivery method shows promise for future implementation for this population.

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Efficacy of Cell-Based Quadrivalent Influenza Vaccine in Children 6-47 Months of Age

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

The burden of influenza is high in children <5 years and vaccination is one of the most successful public health interventions to prevent disease. The clinical benefit of a cell-based inactivated influenza vaccine (QIVc) was evaluated in young children in a Phase 3 randomized, observer-blinded, controlled trial. Children aged 6-47 months were randomly assigned QIVc or meningococcal group C polysaccharide conjugate vaccine (Comparator) and monitored weekly for Influenza-like Illness and specific symptoms during influenza season. Nasopharyngeal swabs were collected for each ILI episode and tested for influenza by RT-PCR. Positive isolates were cultured to determine if they matched seasonal vaccine strains. The primary objective was to demonstrate absolute vaccine efficacy (aVE) of QIVc vs Comparator to prevent RT-PCR confirmed influenza or culture-confirmed illness from influenza strains antigenically matched to vaccine. Safety assessment included reporting of solicited and unsolicited adverse events. A total of 5723 subjects from 15 countries were enrolled over 5 influenza seasons, Southern Hemisphere (SH) 2019, Northern Hemisphere (NH) 2019/2020, NH2020/2021, NH2022/2023, SH2023; 5697 received at least 1 dose of study vaccine and 5691 were evaluated for efficacy. The aVE for RT-PCR confirmed and culture-confirmed influenza from any Type A and/or B strain was 41.26% (97.98% CI: 21.55, 56.02) and 50.67% (95% CI: 32.83, 63.77), respectively. The aVE for culture-confirmed influenza antigenically matched to vaccine strains was 46.90% (97.5% CI: 19.19, 65.11). Percentages of subjects reporting any solicited (55.8%; 60.8%), unsolicited (57.4%; 60.0%) and serious (2.2%; 3.0%) adverse events were similar between QIVc and Comparator groups, respectively. No serious adverse events were related to QIVc. This phase 3 study demonstrated that QIVc is effective in preventing influenza in children 6 months through 47 months of age with a clinically acceptable safety profile.

Transition to a single dose HPV vaccine schedule in Australia: lessons learned

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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Background: In Australia, human papillomavirus (HPV) vaccination is routinely offered to adolescents aged 12-13 years, primarily through schools. Until recently, it comprised two doses. Before the COVID-19 pandemic, Australia achieved high HPV vaccine coverage with closing equity gaps over time, but coverage declined during the pandemic and has continued falling, with widening equity gaps, since. In February 2023, Australia moved to a single-dose schedule, which should have increased coverage. However, this has not yet occurred. Evaluating the shift to a single dose is crucial to identify implementation challenges and their impact on vaccine coverage. We aimed to explore program perspectives on the transition, how the broader context influenced implementation, and lessons learned.
Methods: In September 2024, we interviewed 11 state and territory senior immunisation program staff online about their experiences implementing the change to single dose HPV vaccine in the school-based program. Interviews were approximately 60 minutes duration. Group analysis identified categories and themes.
Results: Analysis identified post-pandemic changes to routine program operations and how the change process was managed. Factors that aided implementation included centrally produced communication resources and well-established communication channels with parents and providers; challenges included the short lead time to implementation, inability to change existing processes quickly, and difficulty maintaining multiple school visits. Analysis also identified broader factors that influenced implementation, including post-pandemic parental hesitancy, lower school attendance, staffing challenges and introduction of electronic consent.
Conclusions: In this presentation, we will discuss some of the reasons why, a year after implementation, simplifying the HPV vaccination schedule may not have had the intended positive impacts on vaccination coverage. We will discuss implementation challenges and the influence of external factors, as well as lessons learned from the implementation and areas that require ongoing support and improvement.

A slow moving outbreak: Regional risk discrepancy in infant botulism, Victoria, Australia

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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Background: Infant botulism accounts for 70% of all new botulism cases internationally per year. Infant botulism has been a notifiable disease in Australia since 1992, with approximately 1 new case per year from a birth cohort of 300 000 infants. Treatment is with human botulinum immune globulin (Baby BIG). Available internationally via the Californian Department of Health, administration early in clinical disease is associated with improved neurological outcomes. Over recent years, clinicians noted apparent regional clustering in Victorian infant botulism cases. This led to an investigation to determine if an outbreak, albeit a slow one, was occurring.

Methods: We undertook a retrospective, descriptive study of confirmed cases of infant botulism in Victoria presenting to hospitals in Victoria, Australia between 1978 and 2022. There was a focus on examining the geographical area where the infants resided or had visited prior to the clinical presentation.Moran’s I test for spatial autocorrelation was used to determine if spatiotemporal clustering was present.

Results: Twelve cases of infant botulism presenting to health services in Victoria between 1978 and 2022 were identified. All infants required tertiary hospital paediatric admissions for supportive management due to their clinical presentation, and the duration of admission ranged widely from 11-238 days. Eight of the twelve cases resided in regions in the north-west of Victoria or south-west of New South Wales. Case clustering was demonstrated in the north-west of Victoria ($p<0.01$).

Conclusion: Based on the available epidemiology, there appears to be a case clustering around the Victorian North-West. A causal hypothesis was not apparent, and a OneHealth approach is warranted to explore the complexity of Botulism transmission dynamics. Awareness and education for regional hospital staff and primary care providers around the spectrum of clinical presentations may provide a pathway for timely diagnosis, clinical care and treatment.

‘Our Business’: Improving HPV vaccination rates for First Nations young people

Associate Professor Natalie Strobel[1], Professor Daniel McAullay[1], Associate Professor Jocelyn Jones[1], Ms Kim Gates[2]
[1]Edith Cowan University, Mount Lawley, Australia, [2]Aboriginal Health Council of Western Australia, Mount Lawley, Australia

5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

Low HPV vaccination rates among young Aboriginal and Torres Strait Islander (Aboriginal) people can result in an increased risk of HPV-related cancers. Health promotion empowers individuals to control their health, and social media offers a key platform to reach youth. Our approach co-creates health messages with young Aboriginal people, disseminated by local "micro-influencers" on social media.

This presentation aims to (i) present young people’s thoughts on HPV and the vaccination and (ii) the process of developing the social media campaign for young Aboriginal people called ‘Our Business’.

To create the "Our Business" brand, we partnered with a marketing agency specialising in Generation Z's social media habits (DeeBlanche), who was guided by the HPV Aboriginal Advisory Group and Aboriginal Content and Strategy Advisor, Nooky. Extensive interviews with 60 Aboriginal young people and 22 families provided invaluable insights into their HPV knowledge, understanding of the vaccine, and social media use. This data directly informed the brand's identity, key health messages, and the selection of appropriate micro-influencers. We collaborated with 15 Aboriginal and Torres Strait micro-influencers who created content for the campaign.

The "Our Business" campaign launched in 2024, coinciding with the HPV vaccination schedule in Perth schools, Western Australia. Our influencers released 22 videos across Instagram and TikTok, achieving impressive initial reach. As of June 2024, 18 TikTok posts from 10 influencers received just under 250,000 views and nearly 14,000 likes.

We will evaluate the campaign's effectiveness using a controlled interrupted time series analysis to examine changes in HPV vaccination rates in Perth. These promising early results will inform the campaign's evolution for 2025 and beyond.

This project prioritises Aboriginal leadership and community engagement. Developed with Aboriginal youth, it features health messages created by youth and families. The project is guided by a Aboriginal Reference Group including ECU's Elder in Residence, Dr Roma Winmar. Aboriginal influencers and Nooky, ensure cultural relevance. Community leadership is embedded throughout, with project data recently presented at IMICH 2025 (Canada) by one of our Reference Group members. We have permission to present these research findings.

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Short-term safety of vaccines in pregnancy given concomitantly or alone in Australia

Dr Thuy Nguyen[1,2], Dr Lucy Dawes[1], Prof Nicholas Wood[1,2], Prof Kristine Macartney[1,2], Dr Lucy Deng[1,2]
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4A - RSV and pregnancy vaccine safety, Halls CD Lower Section, June 11, 2025, 1:30 PM - 3:00 PM

Understanding the short-term safety of vaccines administered during pregnancy is essential for guiding public health recommendations. We assessed the short-term safety of dTpa, influenza, and COVID-19 vaccines*, including their concomitant administration to pregnant women aged 15–49 years, who received these vaccines between 1 January 2023 and 30 September 2024 at participating general practices in AusVaxSafety. Online surveys soliciting adverse events following immunisation (AEFI) were sent three days post-vaccination. Demographic and vaccination data were retrieved from general practice records.

Among the 5,548 pregnant women (median age 32 years [IQR 29–35]) who responded to the survey, 81.8% received a single vaccine, while 18.2% received two or more vaccines on the same day. Most received dTpa (51.9%), influenza (26.8%), or both (14.6%). 90% were in their second or third trimester. Overall, 1,335 (24%) respondents reported at least one AEFI within three days post-vaccination, highest for COVID-19 vaccines alone (44%) or with other vaccines (48%) and lowest for influenza alone (16%). The most frequently reported symptoms were local pain (21%), fatigue (14%), myalgia (9.8%), and headache (8.9%). Medical attendance was reported by 0.5% of respondents, with 0.2% visiting an emergency department. Older age groups (≥25 vs. <25 years) reported slightly higher AEFI proportions for dTpa (26% vs. 16%) and influenza vaccines (16.9% vs. 9.9%). Those with underlying medical conditions reported higher AEFI proportions across most vaccine groups (35% vs. 23%). Impact on daily activities were reported in 4.4% of dTpa recipients, 3.4% of influenza recipients, 6.0% of those receiving both, 7.6% of COVID-19 vaccine recipients, and 17% of those receiving COVID-19 with other vaccines.

These findings provide an important baseline of short-term safety of maternal vaccination as new vaccines continue to be introdcued into the maternal vaccination program.

(*) RSV vaccines will be included if data allow at the time of presentation.

MenB-or-not-MenB in one visit: Short-term safety of concomitant vaccination in infants

Dr Thuy Nguyen[1,2], Dr Lucy Dawes[1], Prof Nicholas Wood[1,2], Prof Kristine Macartney[1,2], Dr Lucy Deng[1,2]
[1]National Centre For Immunisation Research And Surveillance, Westmead, Australia, [2]The University of Sydney Children's Hospital Westmead Clinical School, Westmead, Australia

2F - Improving vaccine safety surveillance, Riverbank Room 4, June 10, 2025, 1:30 PM - 3:00 PM

Understanding the short-term safety of scheduled National Immunisation Program (NIP) and additional vaccines in young children is crucial for guiding immunisation policies and improving coverage. We assessed the safety of childhood vaccines administered at 2, 4, 6, and 12 months, comparing children receiving standard NIP vaccines alone, meningococcal B (MenB) alone, or both in one visit. Data were collected from children aged 2 – 12 months vaccinated between 1 April 2022 and 30 June 2024 at AusVaxSafety sentinel sites via parent surveys three days post-vaccination.
At the 2-month schedule, 15,088 responses were received (85% standard NIP [DTPa-HepB-IPV-Hib; Pneumococcal; Rotavirus], 6.5% MenB alone, 8.5% both), with adverse events following immunisation (AEFI) reported in 23%, 31%, and 26%, respectively. At 4 months (14,109 responses: 75.6% standard NIP [DTPa-HepB-IPV-Hib; Pneumococcal; Rotavirus], 10.1% MenB alone, 14.3% both), AEFI were reported in 30%, 36%, and 48%. At 6 months (9,726 responses: 69.5% standard NIP [DTPa-HepB-IPV-Hib], 18% MenB alone, 12.4% both), AEFI were reported in 20%, 36%, and 43%. At 12 months (12,447 responses: 72.4% standard NIP [Meningococcal ACWY; Measles-mumps-rubella; Pneumococcal], 13.4% MenB alone, 14.2% both), AEFI were reported in 28%, 47%, and 48%.
Fever was highest in the NIP+MenB group at all time points (16% at 2 months, 31-34% at 4-12 months), compared to 16-29% for MenB alone, and 9-16% for standard NIP. Medical attendance ranged from 0.9-1% for standard NIP, 1-3% for MenB alone, and 1-2% for NIP+MenB across all schedules.
AEFI rates varied by age and vaccine type, with higher proportions in children receiving MenB alone or with standard NIP vaccines. However, severe AEFI were rare. These findings support the co-administration of scheduled childhood vaccines and MenB to minimise GP visits and enhance vaccine coverage. Ongoing surveillance remains essential to maintain confidence in childhood immunisation.

Purple Peril: Is this the Superfood making you sick?

Mrs Sally Freeman[1], Dr Sean Tobin[1], Dr Adelaide Nyinawingeri[1]
[1]Northern Sydney Public Health Unit, Hornsby, Australia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

In September of 2024, the Northern Sydney Public Health Unit in NSW was alerted to a gastroenteritis outbreak in a boarding school. On the same day, we were also contacted by the One Health Branch and requested to investigate several food complaints that had been received by the NSW Food Authority.

Further investigation and interviews with complainants revealed a link between the public complaints and the boarding school. All complainants had eaten at one of two food outlets that were owned by the same company and served the same food type. The boarding school was located within easy distance of both outlets and was a preferred after-school and weekend hangout for students.

The NSW Food Authority was alerted to the outcomes of interviews and undertook investigation of the venues reviewing food safety practices, inspecting preparation areas and undertaking food testing. A second wave of complaints prompted further investigation and actions by the food authority, resulting in further reviews of food importation processes and potentially the prevention further cases.

Digital and social media-savvy individuals, particularly younger demographics, were most affected by the outbreak. Many complainants utilised social media platforms and online food reviews to share their symptoms, potentially amplifying the issue and raising public concern. Despite the increased awareness, few were willing to undergo testing, as many believed their symptoms were mild, self-limiting, or had already resolved by the time they made complaints. Additionally, the high level of gastro-like illness circulating in the community made it difficult to differentiate between unrelated cases and those tied to the outbreak. While social media and digital disease surveillance offer promise, they also raise ethical concerns. In this case, it’s unclear whether these online reviews increased noise in the investigation or improved reporting.

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Estimating the NNV to prevent medically attended RSV-related outcomes in high-income countries

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background:
The bivalent RSVpreF vaccine has been approved in multiple countries to prevent RSV-related lower respiratory tract disease among older adults. We estimated the number needed to vaccinate (NNV) to prevent medically attended RSV-related outcomes in high-income countries to assess the public health utility of an RSVpreF vaccination program.

Methods:
NNV was estimated using vaccine efficacy data from the RENOIR Phase III trial, RSV burden data from Li et al's systematic review/meta-analysis and US risk factor prevalence. NNV for the 2-year and 4-year time horizons were computed with a 2-year observed vaccine efficacy projected over 4 years assuming a linear decay. NNV was estimated by care setting, age group, and risk status.

Results:
To prevent one hospitalization over a 4-year horizon, NNVs were 1,229 for adults aged 18-49 years, 256 for 50-64 years, and 115 for ≥65 years. To prevent one physician office (PO)/ hospital outpatient (HO) visit over a 4-year horizon, NNVs were 28 for adults aged 18-49 years, 20 for 50-64 years, 16 for ≥65 years. NNVs declined with increasing age and longer time horizon and were lower for adults with underlying medical conditions, especially for hospitalization or death. ED and PO/HO were less influenced by age and time horizon. NNV to prevent RSV-related hospitalization was similar for adults ≥65 years (115) and adults 50-64 years with comorbidities (90), and NNV to prevent RSV-related death in adults ≥65 years (1,891) was comparable to that in adults 18-49 years with comorbidities (1,741) over a 4-year horizon.

Conclusion:
The NNV for RSV vaccine largely depends on RSV disease incidence rate, vaccine efficacy and durability, outcome severity, and patient risk factors for severe RSV disease. Public health programs should consider RSV vaccination for younger adults with underlying conditions as the NNV approaches values for that of adults ≥65 years.
Disclosure: This study was sponsored by Pfizer.

Factors Associated with Timely First-Dose Pentavalent and Measles–Rubella Vaccination: East New Britain

Ms Milena Dalton[1,2], Professor William Pomat[3,4], Professor Margie Danchin[2,5,6], Professor Caroline S E Homer[1,2], Mr Benjamin Sanderson[1], Dr Patrick Kiromat[7], Professor Leanne J. Robinson[1,3,8], Dr Michelle L. J. Scoullar[1], Ms Pele Melepia[7], Dr Moses Laman[9], Ms Hannah A. James[10], Ms Elsie Stanley[7], Dr Edward Waramin[11], Dr Stefanie Vaccher[1]

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4D - Vaccine programs for the region, Riverbank Room 2, June 11, 2025, 1:30 PM - 3:00 PM

Background: Immunization coverage varies across Papua New Guinea. In East New Britain (ENB) Province in 2022, only 65.5% and 50.2% of children under one year received their first dose of pentavalent (DTP1) and measles–rubella (MR1) vaccine, respectively. This study aimed to examine barriers and enablers to routine immunization in areas of un(der)-vaccination in ENB. Methods: A face-to-face survey was conducted with caregivers of children aged 12–23 months in ENB. We used Poisson regression to calculate incidence rate ratios (IRR) and 95% confidence intervals (95% CI) for factors associated with timely receipt of DTP1 or MR1 vaccines, defined as a child who was vaccinated between –2 and +30 days of the vaccine schedule. Delayed receipt is defined as a child who was vaccinated >30 days from the recommended due date. Results: Among 237 caregivers surveyed, 59.9% of children were vaccinated within the "timely" window for DTP1 and 34.1% for MR1. Timely DTP1 receipt was associated with a facility-based birth (IRR:1.93; 95% CI: 1.10–3.38) and trusting healthcare workers "very much", compared to "a little or moderately" (IRR:1.53; 95% CI: 1.17–1.99). For MR1, the caregiver having completed tertiary/vocational education (IRR:1.79; 95% CI: 1.15–2.78), reporting taking a child to be vaccinated is affordable (IRR:1.52; 95% CI: 1.04–2.22), and healthcare workers explaining immunization services and answering associated questions (IRR:1.68; 95% CI: 1.18–2.41) were associated with timely vaccination. Conclusions: Activities to improve timely vaccination in ENB could include strengthening healthcare worker interpersonal communication skills to optimize trust and incentivizing women to give birth in a health facility.

Rural realities of Covid-19: Strengthening health communication in Papua New Guinea

Ms Barbara Kepa[1]
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4D - Vaccine programs for the region, Riverbank Room 2, June 11, 2025, 1:30 PM - 3:00 PM

Covid-19 presented significant challenges worldwide, yet rural communities in Papua New Guinea (PNG) demonstrated resilience, adaptability, and self-reliance in navigating the crisis. Despite resource limitations, communities relied on traditional knowledge, social networks, and localized innovations to manage health risks and food security disruptions. Understanding these lived experiences is essential for developing effective health communication strategies that are responsive to rural realities.

This study was conducted in two rural communities, Balimo, located in Western Province near the Australian border, and Tari, in Hela Province in the Highlands of PNG. It employed a participatory research approach, using photovoice to document the experiences of sixteen male and female participants. Their narratives provide insight into how rural communities responded to health challenges, adapted pandemic protocols, and sustained their well-being through culturally relevant practices. Findings highlight that while pandemic measures were difficult to implement due to limited access to essential services, communities adapted them to align with their lived realities. Healthcare access, already constrained in remote areas, became a collective effort, with individuals sharing knowledge and resources. Similarly, disruptions to food security prompted a revival of traditional agricultural practices, ensuring sustenance. Traditional healing methods, including steaming, herbal infusions, and the use of medicinal plants, played a crucial role in preventative and curative care. Rather than focusing solely on vulnerabilities, these findings emphasize the agency and resourcefulness of rural communities. Recognizing and integrating these lived experiences into health communication strategies is crucial for improving crisis preparedness, fostering trust, and ensuring that public health interventions are community-centred, culturally appropriate, and grounded in existing social and knowledge systems.

Self-amplifying mRNA SARS-CoV-2 Vaccine ARCT-154 Safety in Adults: Pooled Phase 1/2/3 results

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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

Background: Public health concerns due to ongoing emergence of SARS-CoV-2 variants necessitates further development of improved COVID-19 vaccines. One major innovation are self-amplifying mRNA vaccines such as ARCT-154 (Arcturus Therapeutics Inc.) which induces superior immunogenicity compared with conventional mRNA in terms of magnitude, breadth and persistence of neutralizing antibodies.

Methods: In a pivotal placebo-controlled trial in Vietnam combining phase 1, 2 and 3 cohorts, over 17,000 adults received at least one dose of ARCT-154. Here we report the safety and reactogenicity observations made (NCT05012943).

Results: ARCT-154 elicited more local reactions than saline placebo, mainly reports of mild/moderate and a few severe cases of injection site pain. Most frequent solicited adverse events were fatigue, myalgia, headache, arthralgia and chills. Solicited local and systemic reactogenicity resolved within 7 days. Long-term follow-up has not revealed any safety concerns, with no reports of myocarditis or pericarditis. Acceptable tolerability of ARCT-154 was also observed in older participants and in those liable to severe consequences of COVID-19 due to underlying medical conditions. No serious consequences occurred in several pregnancies reported after vaccination, with normal outcomes when followed to term.

Conclusions: Data from this large trial suggest that ARCT-154 is safe and well tolerated.

Transforming public health response: Integrating Rapid Antigen Tests in COVID-19 surveillance, Australia

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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

Background: The COVID-19 pandemic led to the unprecedented implementation of self-reported Rapid Antigen Tests (RATs) in Australian disease surveillance systems. In this study we aimed to, compare the epidemiology of RATs-diagnosed versus laboratory-confirmed cases; assess changes in COVID-19 notifications following RAT implementation; and evaluate validity of self-reported demographic data of RAT cases.
Methods: We analysed COVID-19 case notifications from the National Notifiable Disease Surveillance System (NNDSS) between February 26 and October 12, 2022. We stratified cases by sex, age, Indigenous status, state and territory, Socio-Economic Indexes for Areas and remoteness.
Results: Of 7,036,720 COVID-19 notifications to the NNDSS during the study period, 4,314,010 (61%) were RAT-positive cases. Comparable trends between RAT and laboratory-confirmed cases were observed throughout the study period, showing strong concordance and high confidence in the results. Compared with laboratory-confirmed tests, the proportion of RAT usage was higher among those aged 5-19 years (n=983,025; 70%), Indigenous Australians (n=198,557; 72%), those in lower socio-economic areas (n=766,825; 66%) and remote residents (n=59,492; 78%). The proportion of cases diagnosed by RATs varied between states and territories, reflecting potential regional differences in testing strategies and accessibility. Self-reported demographic data demonstrated high completeness across key variables analysed.
Conclusions: RAT implementation successfully expanded testing access, particularly benefiting younger age groups, Indigenous Australians, and residents of disadvantaged and remote areas. The high quality of self-reported data and concordance with laboratory-confirmed cases suggest that RATs and digital self-reporting systems could effectively support future public health surveillance, especially in resource-limited settings.

Pandemic preparedness: Use of a tabletop exercise to inform planning.

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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

The COVID-19 pandemic underscored the need for resilient and adaptive public health systems and led to the decentralisation of selected public health functions into local public health units in Victoria. As pandemic-scale events are predicted to increase, understanding how local public health units can be prepared and coordinate with jurisdictions after decentralisation is critical.

The Western Public Health Unit in Melbourne, Victoria, initiated a project to enhance pandemic preparedness and response capabilities, through:

· Defining key components of an effective pandemic response.

· Understanding roles and responsibilities for the unit and any intersection/dependencies with other agencies.

· Identifying and addressing capability gaps in the unit's pandemic preparedness and response functions.

A core component of the needs analysis phase of the project was an exploratory tabletop exercise. Tabletop exercises are an established tool to test systems and processes, however in this instance we used the tool at the formative stage of our project to explore and assess pandemic preparedness and response requirements. Using a hypothetical and unfolding highly pathogenic avian influenza pandemic scenario, 18 participants from various roles within the unit reflecting public health medicine, epidemiology, infection prevention, operations, health promotion, and health protection expertise identified critical pandemic actions, responsibilities and planning assumptions underpinning the response.

The exercise identified over 100 key actions across preparedness, response, and recovery phases of a pandemic. These results inform an example end-to-end pandemic preparedness and response framework that will support validation of assumed externally owned actions, enable an assessment of the unit's current capability to deliver on locally owned actions, and guide high priority areas for capacity strengthening within the unit to ensure readiness.

This experience shows the utility of a tabletop exercise as a tool to inform pandemic preparedness planning, highlight and bridge capability gaps and strengthen pandemic resilience within complex public health ecosystems.

Strategies to address caregiver-identified barriers to childhood immunisation in Australia

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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

Background:

Childhood vaccination rates in Australia have declined since 2020. National survey data on barriers to vaccination in children aged <5 years, collected in the first year of the National Vaccination Insights Project (2024), suggests parents face access (practical) and acceptance barriers (e.g. beliefs about safety and effectiveness of vaccines) to vaccination. This study aimed to use these data to inform evidence-based, feasible strategies that can be further tailored to context to improve vaccination rates in Australia.

Methods:

In July 2024 we held an online interactive workshop with 12 immunisation stakeholders representing community members (n=5; Group 1); healthcare professionals (n=3; Group 2) and immunisation policymakers (n= 4; Group 3). Based on the literature, we mapped evidence-based strategies to the survey-identified barriers. From the resulting list, stakeholders selected strategies they deemed most appropriate and feasible and discussed how to implement them. We synthesised workshop outputs along with expert input informed by relevant literature to propose policy and practice-related actions.

Results:

Group 1 selected and discussed on-site vaccinations in community settings and tailored campaigns sharing positive social norm messages about vaccination. Groups 2 and 3 focused on reminders for upcoming vaccination and default appointments; provider performance assessment and feedback; dialogue-based interventions and accessible information for parents. Stakeholders noted that implementation of these strategies will require policy and funding changes for primary care and streamlining use of Australian Immunisation Register data.

Conclusions:

Addressing barriers to childhood vaccination requires a multi-sectoral, multi-strategy approach. We propose four inter-related themes of action: increase access; increase acceptance (through increasing providers' communication skills and community engagement with vaccination); and facilitate use of data. Serial collection of vaccination insights data across populations and vaccines is needed to build a more robust dataset that will facilitate comparison of trends over time, development of relevant strategies and evaluation of their effectiveness.

Has Australia achieved elimination of trachoma as a public health problem?

Ms Alison Jaworski[1], Ms Carleigh Cowling[1], Mr Sergio Sandler[1], Mr Noorul Absar[1], Professor Susana Vaz Nery[1], Professor John Kaldor[1]
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2D - STIs and blood-borne viruses, Riverbank Room 2, June 10, 2025, 1:30 PM - 3:00 PM

Context
Trachoma is the world's leading infectious cause of preventable blindness. Australia remains the only high-income country with endemic trachoma, found in remote First Nations communities in western and central jurisdictions. In 2022 Australia reached World Health Organization (WHO) benchmarks for elimination as a public health problem (EPHP): trachomatous inflammation-follicular (active trachoma) prevalence <5% in children and trichiasis (severe advanced disease) prevalence 'unknown to the health system' <0.2% in adults, within formerly endemic jurisdictions. 2024 was the final year of monitoring against these benchmarks, before being eligible to apply for EPHP validation.
Methods
WHO grading criteria was used to classify trachoma in children aged 5–9 years by trained graders. Trichiasis rates are derived from public health surveillance, visiting optometry services, and Adult Health assessments (715 checks). Jurisdictions also submit data on implementation of the SAFE strategy for trachoma control: Surgery to correct trichiasis, Antibiotics to treat infection, Facial cleanliness and Environmental improvements to reduce transmission and prevent reinfection.
Results
In 2024, 86 at-risk communities were screened for trachoma. Overall trachoma prevalence was 2.1% in the Northern Territory, 1.3% in Western Australia and 0% in South Australia. Several communities still report hyper-endemic trachoma (>20% prevalence). In total, 1,674 doses of antibiotics were administered in 25 communities to treat active infection. Trichiasis in screened persons aged 15+ years was 0.04%, with six surgical interventions.
Conclusion
Australia has met criteria for EPHP validation; however, systemic efforts are needed to prevent recrudescence. Ownership by and accountability to First Nations people must underpin post-EPHP strategies developed. Surveillance and control will need to be maintained in at-risk communities and may include the use of biomarker assessments in partnership with ACCHOs and primary care. Focusing on improving social and environmental determinants of health, changing focus from "SAFE" to "EFAS", will be critical to maintaining elimination status.

Statement on First Nations-focused research
This presentation will be delivered by the National Trachoma Surveillance and Reporting Unit, funded by the Australian Government to collate and analyse trachoma prevalence and control data submitted annually by states/territory health departments, ACCHOs, primary care providers and others that undertake delivery of the SAFE strategy.

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Immunogenicity of ARCT-154, a self-amplifying mRNA COVID-19 vaccine, in different booster settings

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background: A self-amplifying mRNA (sa-mRNA) vaccine against COVID-19 (ARCT-154) was evaluated for immunogenicity in three clinical studies with four booster scenarios: first homologous booster, first heterologous booster, second heterologous booster, and a two-dose series in previously infected participants.

Methods: Neutralizing antibody responses were measured four weeks after vaccination using pseudovirus microneutralization assays against the Wuhan-Hu-1 and SARS-CoV-2 variants.

Results: ARCT-154, administered as a homologous booster, resulted in a geometric mean fold-rise (GMFR) of 6.5 (95% confidence interval, 5.6–7.5) and seroconversion rate (SCR) of 77% (69.8–83.2), compared with 1.4 (0.9–2.2) and 17.3% (8.2–30.3) with placebo. A first heterologous booster of ARCT-154 achieved a GMFR of 36.7 (17.4–77.5) and SCR of 91.7% (61.5–99.8) against Wuhan-Hu-1, with GMFRs ranging from 20.0 to 29.4 for Beta, Delta, and Omicron BA.1 variants. When comparing ARCT-154 and BNT162b2 mRNA vaccine as a second booster dose, GMFRs against Wuhan-Hu-1 were 6.8 (6.0–7.6) and 4.4 (4.0–4.8), and SCRs were 66.1% (61.1–70.9) and 51.2% (46.0–56.4), respectively. Similar inter-group differences were shown for the Omicron BA.4/5 and persisted for ≥12 months. Following natural infection, one dose and two doses of ARCT-154 resulted in GMFR of 4.4 (2.2–7.0) and 6.2 (3.8–10.0), and SCR of 58.8% (32.9–81.6) and 79.3% (44.9–92.2) against Wuhan-Hu-1, respectively. Neutralizing antibodies remained elevated for at least 6 months.

Conclusions: These results confirm that ARCT-154, administered as a homologous or heterologous booster after previous COVID-19 vaccination or natural exposure, provides robust, broad, and durable immune responses against SARS-CoV-2 viruses.

COVID-19 and influenza attributable deaths in Australian children 2018-2023: a national analysis

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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

Background and Aims:
Understanding COVID-19 and influenza severity in children, particularly mortality rates, is essential to inform future public health strategies, including vaccination. Administrative data sources may under- or over-estimate true mortality. To estimate and compare mortality rates attributable to COVID-19 and influenza in the Australian pediatric population.

Methods:
Case series review of children aged <18 years hospitalized with laboratory-confirmed SARS-CoV-2 or influenza infection and recorded as deceased. COVID-19 cases were ascertained by yhe Paediatric Active Enhanced Disease Surveillance (PAEDS) network of eight sentinel hospitals January 2020 – September 2023 and influenza, seasonally, from 2018 – September 2023. Population mortality rates were calculated using deaths notified to Australia's National Notifiable Diseases Surveillance System (NNDSS). COVID-19 or influenza-laboratory test positive deaths were assessed and categorized for virus role as either: the primary cause; a contributory cause; an unlikely cause; or unable to be determined. Primary and contributory causes of death, deemed "causally related", were used to calculate an attributable mortality proportion. Crude annual population mortality rates were calculated using NNDSS notifications and Australian Bureau of Statistics (ABS) mid-year population data. Adjusted attributable death rates were estimated using attributable mortality proportions.

Results
In children who died with laboratory confirmed SARS-CoV-2 or influenza infection, attributable in-hospital mortality proportions were 11/19 (58%) and 23/29 (79%) respectively. Among COVID-19 and influenza attributable deaths (age range <1 months – 17 years), 47% (16/34) had no known pre-existing co-morbidity. Across observation periods, the respective crude and adjusted annualized average weighted mortality rates per million population were 1.35 and 0.78 (plausible range: 0.51–1.13) for COVID-19, and 1.34 and 1.06 (plausible range: 0.73–1.15) for influenza.

Conclusions:
In Australia, crude mortality estimates of COVID-19 in children using routine surveillance data may include deaths not attributable to the virus and so overestimate severity. Accurate age-specific attributable mortality rates in children and their association with medical co-morbidity is important to informing vaccination policies and other public health measures for prevention of high burden respiratory viruses in children.

Family cluster of locally acquired hepatitis A

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Hepatitis A is not endemic in Australia. Most cases occur in travellers returning from high-incidence countries. (1)

On 13 November 2024, Western Public Health Unit (WPHU) was notified of a case of hepatitis A in an adult individual. Of four household contacts, one school-aged child reported symptoms. Both this child and an asymptomatic sibling attending childcare returned positive hepatitis A IgM and PCR test results. No case reported consumption of high-risk foods, contact with a known case or overseas travel.

Genomic testing identified all three cases were infected with identical strains that had no links to other Victorian cases. WPHU and the Department of Health assessed that food testing was not indicated.

In response, WPHU arranged post-exposure prophylaxis (PEP) of childcare contacts through a council-run immunisation clinic. Of 139 childcare attendees, 32 (23%) received PEP with logistical challenges arranging the clinic potentially affecting uptake. Information sheets distributed to all school and childcare contacts encouraged testing and exclusion should symptoms occur. No subsequent cases were identified following one incubation period.

This isolated, locally acquired, genomically distinct cluster likely indicates spread from an undiagnosed overseas-acquired case. The region has a growing South Asian population with a frequent incidence of overseas-acquired hepatitis A cases. Undetected infection in travellers returning from hepatitis A endemic regions is possible, particularly amongst young children who often remain asymptomatic.

Where local acquisition without a source is identified, asymptomatic infection in young children should be considered. Established processes between public health and local government would help facilitate greater ability to deliver PEP and increase vaccination uptake during outbreaks.

(1) Australian Immunisation Handbook. Hepatitis A. 9 October 2024. Available from: https://immunisationhandbook.health.gov.au/contents/vaccine-preventable-diseases/hepatitis-a#epidemiology

First case of sexually transmitted Zika virus infection, Northern Territory 2024

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2D - STIs and blood-borne viruses, Riverbank Room 2, June 10, 2025, 1:30 PM - 3:00 PM

While the Zika virus (ZIKV) is not endemic in Australia, it continues to be prevalent in many neighbouring countries in the Indo-Pacific region. It poses significant public health concerns due to its association with severe outcomes, including Guillain-Barre syndrome and congenital malformations such as microcephaly. Although vector-borne transmission is the primary route, sexual transmission has been documented, raising the possibility of unrecognised and underreported infections.

We report the details of 2 cases of ZIKV infection diagnosed in the Northern Territory of Australia. The first case was a male traveller who contracted the virus in Timor-Leste and the second, his female partner in Australia. We believe this represents the first reported incidence of sexually transmitted ZIKV infection acquired in Australia.

The investigation emphasizes the importance of obtaining detailed patient histories, including sexual histories, to improve detection and understanding of ZIKV transmission. It also highlights the challenges of diagnosing ZIKV due to its nonspecific symptoms and the necessity of public health education regarding ZIKV transmission and prevention strategies. Clinicians need to be aware of the symptoms, geographic distribution and transmission modes of infectious diseases like ZIKV in returned travellers, as well as the potential implications for their contacts. Heightened awareness is important to ensure early detection, appropriate management, and counselling to prevent transmission.

Understanding parental decisions to decline or delay Nirsevimab in WA in 2024

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6A - RSV prevention, Halls CD Lower Section, June 12, 2025, 11:00 AM - 12:30 PM

In November 2023, Australia's Therapeutic Goods Association approved 'Nirsevimab', a monoclonal antibody which provides passive immunity (lasting at least 5 months) to infants against respiratory syncytial virus (RSV).

Subsequently, in March 2024 the government of Western Australia announced a state funded program to provide Nirsevimab immunisation to newborns (at birth), those <8 months at start of the 2024 winter season (April – September), and at-risk infants <19 months.

RSV is highly contagious infection and a leading cause of hospitalisation in children aged under 5 years. Nirsevimab has shown to be >85% effective at preventing RSV associated hospitalisations in infants.

Many parents accepted the immunisation for their child, with over 22,000 doses of Nirsevimab being administered in WA. However, a cohort of parents chose to either decline Nirsevimab, or to delay it (which we define as initially declining the immunisation at first opportunity of availability, but later accepting it).

Here we outline findings from a qualitative study of ten parents in WA whose infants were eligible for Nirsevimab in 2024, and who opted to either delay or decline the immunisation. We explore factors and rationales for their choices; uncover how their Nirsevimab decision fit with their broader attitudes and perspectives towards vaccination, as well as their understanding of RSV infection; and discuss their reflections on their Nirsevimab decision. Key findings include parents' concerns around the 'newness' of Nirsevimab, anxiety as to potential immunisation safety risks (particularly in the post-COVID context), and perceptions that baby was not at high risk of being infected with RSV.

As RSV immunisation programs expand across Australia, and globally, this study contributes valuable knowledge around parental attitudes and decision-making pertaining to infant RSV immunisation. The findings should be considered by healthcare workers, policy makers, and immunisation program managers in their efforts to support RSV immunisation of infants.

Making it easier to get children vaccinated for influenza: an outreach pilot

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Influenza is a vaccine-preventable disease, with free National Immunisation Program (NIP) vaccines for at-risk groups. Children, are a priority group because they have the highest influenza rates and risk severe illness, driving healthcare costs and family strain. In 2024, only 25.8% of Australian children aged 6 months to under five years received an influenza vaccine, historically lower than other NIP vaccines. Global declines are also evident. Our hypothesis is outreach clinics at accessible times and locations can improve coverage.

The Australian Capital Territory Health Directorate and Canberra Health Services collaborated to deliver a two-year outreach vaccination pilot program from 2024-2025. The pilot program aimed to implement outreach clinics for 8 weeks each year from May-June, to align with the surge in seasonal influenza cases. The pilot program held outreach clinics during weekdays and weekends at accessible locations, such as community halls, scout halls and places of worship.

There was strong community support, with the highest uptake observed during Saturday clinics. Parents also rated the service more accessible than existing childhood immunisation providers, such as General Practices and Early Childhood Immunisation clinics which are only open during business hours. Interim evaluation suggests that after-hours service is more important to parents than new locations.

Limitations of the pilot included the inability to address other barriers to immunisation, including negative attitudes and perceptions to the influenza vaccine and not catering to parents who are less supportive of childhood immunisations. It is recommended to address these while continuing to drive accessibility through outreach programs.

The current program model could be used to guide future afterhours immunisation investments for young children's routine NIP vaccinations. Furthermore, this model could be adopted to immunise vulnerable groups and emerging threats such as mpox and avian influenza.

Strengthening Village Health Committees in Solomon Islands to Promote Immunisation

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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

With the support of Gavi, the Burnet Institute and World Vision implemented a program to reestablish Village Health Committees (VHCs) across three provinces in the Solomon Islands. This initiative was designed to enhance immunisation awareness among rural communities that encounter barriers to accessing vaccines and to address the lack of awareness about the importance of immunisation.

Communities were selected based on their low immunisation coverage and limited access to healthcare services. Recruitment of local leaders and community members ensured that newly formed committees included respected and valued members of the community. The composition of the committees included a balanced representation of men and women aged 21 to 66.

A three-day training program was collaboratively developed with committee members, focusing on community leadership, immunisation awareness, and the planning of immunisation campaigns. Each committee was provided with a flipchart containing images and descriptions in both Pijin and English to serve as a resource during their campaigns.

Twelve months after training, each VHC was visited to discuss their experiences, including what strategies were effective and what challenges they encountered. Feedback from committee members was positive, particularly among women, who reported increased confidence in their roles as community leaders. They felt better equipped to discuss immunisation with family and friends and felt more confident in prioritising immunisation as a critical topic in community meetings.

All VHCs emphasised the importance of disseminating this information beyond their immediate villages and throughout the Solomon Islands. They also recommended the inclusion of a health facility nurse in their training sessions to address any additional questions related to local health services and to explore the potential for outreach vaccination programs.

In 2025, this project will be expanded to reach an additional ten villages across five provinces to further enhance vaccination coverage and awareness.

COVID-19 vaccine mandates for healthcare workers: Comparative study of Australia and France

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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

Context and aim: This study investigates the introduction and removal of COVID-19 vaccination requirements for healthcare workers (HCWs) in Australia and France, focusing on governance processes to explain similarities and differences.

Methods and analysis/research findings: We analysed policy documents to ascertain start and end dates of mandates. We conducted in-depth qualitative interviews with key informants in Australia and France, including Ministers and senior bureaucrats, to gather insights into the rationales and processes. Data was collected and analysed inductively via the interdisciplinary "MandEval" project. Australia's COVID-19 vaccine requirements were influenced by policies for other infectious diseases but arose through a federal process. The rapid spread of COVID-19 overseas heightened concerns about hospital capacity and staff shortages, motivating strict policies to protect healthcare workers and vulnerable patients. Mandates were framed as ensuring a functioning healthcare system. A complementary occupational health and safety framing emerged subsequently. As states and territories enacted their own policies, there were variations in execution and removal. The unitary policy of France, by contrast, was informed by the input of various expert groups. There were similarities and differences with Australia. Both jurisdictions used executive orders and offered limited exemptions (medical only). Consequences for non-compliance ranged from redeployment to dismissal. Perceptions of the pandemic's severity and vaccine effectiveness played a role in mandate removals. However, in France, the removal decision arose through a broader examination of the appropriateness of HCW vaccine mandates for multiple diseases.

Translational outcomes: This study highlights the processes of introducing and removing vaccine mandates within unitary and federal systems to offer lessons for the next pandemic.

Future actions: The team is conducting further analysis on mandate policymaking in Italy and the United Kingdom.

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Therapeutic Goods Administration expanded safety surveillance for seasonal influenza vaccines: 2024 findings.

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
Influenza vaccine formulations change annually to capture new circulating virus strains demanding sensitive and responsive post-market surveillance systems to swiftly detect and investigate adverse events following immunisation (AEFI).

Process
Since 2023, the TGA has conducted monthly expanded safety surveillance for seasonal influenza vaccines reviewing AEFI reported to the TGA and adjusting for vaccine doses using data from the Australian Immunisation Register (AIR) during the influenza season. We examined the overall numbers, cumulative reporting rates, and the most frequently reported AEFI for all influenza vaccines, with subgroup analyses conducted by trade name. Reporting rate trends for adverse events of special interest (AESI) including pyrexia, febrile convulsions, seizures, Guillain Barre Syndrome (GBS), stroke, pericarditis and myocarditis were monitored. AESI reporting rates were compared against published background population rates. Disproportionality analysis reporting (DPAR) was conducted to identify potential safety signals. Active surveillance findings for seasonal influenza vaccines published in the National Center for Immunisation Research and Surveillance's AusVaxSafety reports were also considered.

Analysis
From 1 March to 31 August 2024, 1,034 AEFIs following influenza vaccination were available for analysis. Cumulative rates of AEFI were considered rare across all influenza vaccine trade names. Seven of the ten most frequently reported AEFI were expected and listed within the vaccine product information. No potential safety signals were identified for the monitored AESI. Three unknown safety signals identified from DPAR were further investigated, each resulting in a recommendation to update the relevant product information.

Conclusions
The TGA's expanded safety surveillance of influenza vaccines provides reassuring evidence of the safety profile of quadrivalent vaccines. The TGA will continue to use expanded safety surveillance methods to promptly identify, investigate, and action potential safety concerns with influenza vaccines, including for the new trivalent influenza vaccines to be phased in during 2025.

South Australian legislative changes: Removing barriers to Pharmacists administering more vaccines.

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Since 2013, the Pharmacy Board of Australia has considered the administration of vaccines within the scope of practice of suitably trained pharmacists[1].
Each Australian State and Territory has utilised various mechanisms within the architecture of their medicines and poisons legislation to facilitate pharmacists administering vaccines[2]. Generally, these include an authority and list of vaccines pharmacists may administer in defined circumstances.
In South Australia, pharmacists were added to the Vaccine Administration Code (Code) in 2015. The Code is subordinate legislation under the Controlled Substances (Poisons) Regulations 2011 which was originally developed to facilitate registered nurses administering vaccines under programs delivered through local councils.
Over the past decade, pharmacists have played a significant role in providing easy accessibility for South Australian's seeking vaccines, including the seasonal influenza vaccine, COVID-19 vaccine and others under the National Immunisation Program Vaccinations In Pharmacy (NIPVIP). Community acceptance and demand for pharmacist-delivered vaccine services was reflected in ongoing updates to the Code allowing pharmacists to administer an expanding range of vaccines. Limitations of the Code, including the requirement that vaccines must be part of approved immunisation programs, proved problematic in allowing pharmacists to provide all vaccine services within their scope of practice.
With support from the Minister for Health and Wellbeing, a process was undertaken to make a new regulation under South Australian legislation to facilitate pharmacists administering vaccines. The regulation minimises regulatory barriers and empowers pharmacists to work to their individually defined scope of practice, allowing the pharmacist vaccinator workforce to realise its full potential. South Australia is unique as the first Australian jurisdiction to allow pharmacists to administer vaccines in line with individual practitioner's scope of practice and the Australian Immunisation Handbook.

References:

1. Pharmacy Regulation at work in Australia 2013/14 AHPRA---Report---Pharmacy-Regulation-at-Work-in-Australia-2013-14.PDF
2. Pharmacist administered vaccinations Pharmacist administered vaccinations - Pharmaceutical Society of Australia (psa.org.au)

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Long-term 4CMenB protection against invasive meningococcal disease and gonorrhoea, in South Australia

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6D - Zoster and cocci, Riverbank Room 2, June 12, 2025, 11:00 AM - 12:30 PM

Background:
Due to high rates of invasive meningococcal B disease, a 4CMenB vaccine population-based program was introduced in infants in October 2018 and in adolescents in February 2019 in South Australia.

Aim:
This study aimed to evaluate the long-term vaccine effectiveness (VE) and vaccine impact (VI) of 4CMenB on invasive meningococcal disease (IMD) and gonorrhoea, five years after implementation of the program.

Methods:
VE was estimated as the reduction in the odds of IMD and gonorrhoea notifications using a case-control approach. Vaccination history was obtained from the Australian Immunisation Register with 20 matched controls selected for each case. Vaccine impact for both diseases was estimated as incidence rate ratios (IRR) in pre-vs-post-program implementation years using negative Poisson/binomial regression. The instantaneous risk of a second gonococcal notification was assessed using Cox proportional hazards regression.

Results:
For IMD, VE=98.5% (95%CI 81.9-99.9%; p=0.001) for three doses and VE=64.0% (95%CI 7.4%-86.1%; p=0.034) for 2 doses in infants. In adolescents, two-dose VE=92.6% (95%CI 37.5%-99.1%; p=0.017). There was a 72.8% relative reduction in IMD B disease in infants <12 months of age (adjusted IRR=0.272 (95%CI 0.119%-0.622%; p=0.002) and 76.2% reduction in adolescents aged 15-18 years of age (adjusted IRR=0.238 (95%CI 0.097%-0.584%; p=0.002).
Estimated two-dose VE against gonorrhoea in adolescents and young adults was 40.1% (95%CI 32.5%-46.9%; p<0.001) using age-matched individuals with chlamydia notifications as controls. VE=-4.3% (95%CI -41.8-33.2) >60 months post-vaccination compared to those within 3-60 months of vaccination (VE=42.8% (95%CI 35.1%–49.6%)). Females had a higher VE estimate (41.6% (95%CI 31.4%-50.3%)) compared to males (38.9% (95%CI 25.5%-48.3%)). There was a 35.5% relative reduction in gonorrhoea notifications in 15-17 year olds (adjusted IRR=0.645 (95%CI 0.436-0.955; p=0.028)). The risk of a second gonococcal notification was lower in vaccinated gonococcal cases (aHR=0.633 (95%CI 0.465-0.861;p=0.004).

Conclusions:
4CMenB demonstrates high effectiveness against IMD and moderate effectiveness against gonorrhoea up to five years post-vaccination and offers benefit to high-risk groups for both diseases. Waning effectiveness was observed for gonorrhoea at 5 years. Continued evaluation of effectiveness for IMD and requirement for booster doses will occur through the recently NHMRC awarded NEIS Centre of Research Excellence in Neisseria disease control.

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Policy options for Disease X using an integrated epidemiological and economic model

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6E - One Health preparedness, Riverbank Room 3, June 12, 2025, 11:00 AM - 12:30 PM

Background:
The COVID-19 pandemic caused significant social and economic disruption, showing no country was well prepared for a new respiratory pandemic. We argue there is value in integrated epidemiological, social and economic scenario modelling of plausible respiratory pandemic viruses (i.e. Disease X) before their occurrence. This study illustrates such an approach by evaluating public health and social measure (PHSM) strategies for Disease X scenarios in Victoria, Australia.

Methods:
We used an agent-based model with 6.6 million agents to estimate infection-related morbidity, mortality, and costs over 3 years, considering Victorian demographic and movement patterns. We examined 27 Disease X typologies with low/medium/high: incubation period, infection fatality risk, and proportion asymptomatic. These parameters have plausible probability distributions from which their values were drawn. We also modelled 3 stringency levels of PHSM strategies (i.e. elimination, suppression and mitigation). These strategies were ranked based on cumulative deaths, days exceeding hospital capacity, days in lockdown, and cost-effectiveness from health system and partial societal perspectives.

Preliminary Results:
Initial results suggest more stringent PHSMs reduced hospitalisations and deaths by about 25% but led to an average of 50 more days in lockdown. From a health system perspective, stricter PHSMs were cost saving and resulted in greater health gain. Fuller results will be presented at the conference.

The Bat Health Focus Group: One Health in action

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

The One Health paradigm encompasses human, animal, and environmental health and therefore requires the collaboration and cooperation of a varied group of people with differing backgrounds and priorities. Wildlife Health Australia demonstrates what this can look like through our Bat Health Focus Group (BHFG).

There are many reasons why considering wildlife health in a One Health context is important and this is particularly clear with bats. Bats can transmit zoonotic diseases which have human and public health implications, but they also provide vital ecosystem services. Many bat species in Australia are also listed as threatened. Using a collaborative One Health approach the BHFG considers bat health issues in the broader context of public health, biosecurity, domestic animal health and environmental impacts. This demonstrates how taking a One Health focus can make a real contribution to the overall collaboration of multiple sectors to the benefit of people and bats. This presentation will focus on how the BHFG takes a One Health approach and highlight several key achievements and resources including communications and public health messaging guidelines, PPE and biosecurity information, disease surveillance and the critical importance of cross sector collaborations for pandemic prevention and preparedness.

The importance of building capacity in One Health is acknowledged as a key area of focus by the interim Australian CDC. With this growing interest, the BHFG provides an example of what One Health in action can look like and how this can be applied to various contexts.

Hepatitis screening in drug, alcohol and mental health services, Shepparton, rural Victoria

Ms Suzanne Wallis[2], Dr Vinay Menon[1], Dr Andrew Lam[4], Ms Katelouise Howard[2], Ms Lily Summers[5], Ms Nicola Chen[1], Dr Will Cross[1], Associate Professor Ravi Bhat[4], Professor Edward Ogden[3]
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2D - STIs and blood-borne viruses, Riverbank Room 2, June 10, 2025, 1:30 PM - 3:00 PM

Hepatitis C causes significant morbidity and mortality, particularly in drug, alcohol and mental health service populations. Screening remains suboptimal in these settings, particularly in regional areas. According to modelled estimates, Shepparton has the highest hepatitis C prevalence in regional Victoria, and nearly the lowest treatment rates.

A large proportion of undiagnosed people with hepatitis C in the Goulburn Valley region are likely to attend drug, alcohol or mental health services in Shepparton. We implemented an intervention to improve hepatitis C screening at the central service for these patients in Shepparton, the Goulburn Valley Health (GVH) Joint Addiction Medicine and Mental Health Service. This included clinical guidelines promoting universal screening, intensive staff education, integrated screening prompts, advocacy from service leaders, and a streamlined referral process to the local Nurse Practitioner-led hepatitis clinic.

We audited screening rates at the GVH mental health inpatient service and drug and alcohol outpatient service before and after the intervention. 404 patients were included over 9 months. Hepatitis C screening rates increased significantly from 6.6% pre-intervention to 27.9% post-intervention. Antibody-positive patients were referred to the hepatitis Nurse Practitioner for assessment and treatment.

This was a pragmatic audit of an intervention, and its limitations must be considered. However, the evidence suggests that the intervention was effective in increasing screening rates. Significant work remains to ensure the intervention is sustainable, grows to become more universal, and achieves successful follow-through of antibody-positive patients through to treatment and cure.

We are now expanding the program to include Shepparton's major needle syringe exchange program, and partnering with research organisations. Our strategy will be to combine three initiatives: 1) Universal screening, 2) Point-of-care hepatitis C testing, and 3) Financial incentives. We believe this strategy will further improve screening rates and follow-through to cure.

"Effective Measles Outbreak Response: Vaccine Efficacy and REDCap's Role in Contact Tracing"

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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

Background

Measles is a highly contagious viral, airborne disease which typically presents with high fever, cough, conjunctivitis and a maculopular rash. While no longer endemic in Australia, imported cases do occur. A single case of measles is a public health emergency requiring rapid contact tracing to prevent further cases. In January 2025 a returned traveller with measles was notified to the Centre for Disease Control (CDC) in Darwin, Northern Territory (NT); the first case in NT since 2019.

Methods

A weekend outbreak team was formed to follow national public health response guidelines. We interviewed the case to determine travel history, infectious period and potential contacts and provided isolation advice.
A Research Electronic Data Capture (REDCap) database recorded contact details, vaccination status and past infection history. Telstra Integrated Messaging was used to send text messages to contacts, asking them to telephone CDC. A REDCap questionnaire was administered to determine susceptibility to infection, identify further contacts and determine appropriate public health action. Eligible contacts were given either measles-mumps-rubella (MMR) vaccine or normal human immunoglobulin (NHIG) to prevent measles infection. Staff overtime hours and cost were calculated.

Results

We identified 164 contacts; 155 (94%) were successfully contacted; 9 (5%) were lost to follow up but fully vaccinated. Five contacts (3%) received the MMR vaccine, one person received NHIG. Two contacts were symptomatic and tested for measles, both tested negative. The contact tracing was completed by 8 staff over 12 hours on a weekend. We calculated the human resource cost for this outbreak response to be approximately $7,200.

Conclusion

This outbreak response highlighted vaccine effectiveness and that a rapid, co-ordinated response was critical in preventing transmission. The use of REDCap as a contact tracing database allowed for an effective and cost-efficient public health response.

Six-month persistence and safety of mRNA-based influenza or multicomponent vaccines in adults

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background: Seasonal influenza and SARS-CoV-2–associated diseases cause substantial burden in adults. We report 6-month post-vaccination immunogenicity and safety from two studies evaluating mRNA-based standalone vaccination against seasonal influenza or multicomponent vaccination against seasonal influenza+COVID-19.

Methods: Two phase 3, randomised, observer-blind trials evaluated immunogenicity and safety of mRNA-1010 (seasonal influenza) or mRNA-1083 (seasonal influenza+COVID-19) versus licensed comparators in adults. Study 1 (NCT05827978) was a 3-part trial where participants were randomly assigned (1:1) to receive mRNA-1010 or an age-appropriate licensed quadrivalent vaccine: standard-dose (SD-IIV4) for Parts A (≥18 years) and B (18-64 years) and high-dose (HD-IIV4) for Part C (≥65 years). Study 2 (NCT06097273) evaluated mRNA-1083 in participants (Cohort A: ≥65 years; Cohort B; 50-64 years) randomly assigned (1:1) to receive mRNA-1083+placebo or co-administered licensed COVID-19+HD-IIV4 (≥65 years) or COVID-19+SD-IIV4 (50-64 years) vaccines. Immune responses were assessed by haemagglutination inhibition assay (HAI [influenza]) and pseudovirus neutralisation assay (PsVNA [SARS-CoV-2 XBB.1.5]) for up to 6 months after vaccination.

Results: In Study 1, mRNA-1010 elicited HAI titres at Day 29 that were higher than licensed SD-IIV4 or HD-IIV4 comparators for all vaccine-matched influenza strains. Titres remained above baseline 6 months post-vaccination (Day 181), and were numerically similar to or higher than comparators for all age groups. In Study 2, mRNA-1083 elicited robust antibody responses at Day 29 that were higher than or similar to co-administered licensed comparators for all vaccine-matched influenza and SARS-CoV-2 strains. HAI and PsVNA responses to mRNA-1083 remained similar to or higher than co-administered comparators for both age cohorts 6 months post-vaccination. In both trials, no safety concerns were identified through Day 181 for either mRNA-1010 or mRNA-1083 vaccines.

Conclusions: mRNA-1010 and mRNA-1083 elicited robust humoral immune responses that persisted through 6 months post-vaccination, remaining comparable to or higher than licensed comparators. Both vaccines demonstrated acceptable tolerability and safety profiles over the 6-month period.

Counting our breaths: surging pneumonia and syndromic surveillance

Ms Kwendy Cavanagh[1,2], Dr Jiaying Zhao[1], Ms Therese Ryan[1], Ms Melissa Irwin[1], Ms Katie Newton[1], Ms Anna Sordo[1], Ms Guddu Kaur[2], Dr Catherine Francis[1]
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1D - Preventing respiratory infections, Riverbank Room 2, June 10, 2025, 11:00 AM - 12:30 PM

The NSW Public Health Rapid, Emergency, Disease and Syndromic Surveillance (PHREDSS) system uses emergency department (ED) data to detect unusual patterns of activity and severity of presentations in near real-time. Presentations are grouped into 'surveillance syndromes' by clinician-assigned diagnoses and compared statistically with historical trends. In late 2023, 'pneumonia' presentations rose, exceeding previous peaks throughout 2024. We aimed to characterise this surge, identify surveillance gaps and inform public health strategies.

We analysed PHREDSS data for 'pneumonia' ED presentations from 2015-2024, by demographic and acuity measures (ambulance arrival, triage category and admission). Presentation rates and age-group proportions in 2024 were compared with pre-pandemic averages (2015-2019). Public notification and laboratory data were reviewed for trends in causative organisms. Additional investigations of linked admitted patient diagnoses were conducted.

Compared to the 2015-2019 average (n=26,921), pneumonia presentations were over 1.5 times higher in 2024 (n=49,273). Presentation rates per 100,000 population increased most in children aged 5-16 years (RR 4.46, 95% CI 4.33-4.60) and younger adults aged 17-34 years (RR 2.61, 95% CI 2.53-2.70). Children aged 5-16 years represented 16.3% of pneumonia presentations in 2024 compared to 6.3% in 2015-2019. Although admissions rose, apparent acuity dropped, with a lower proportion of presentations admitted to hospital in 2024. Public laboratory data showed increases in various pathogens, including respiratory viruses and Mycoplasma pneumoniae, however these did not directly reflect pneumonia diagnoses so cannot confirm underlying causes. Linked data results will be presented at the conference.

Despite inherent challenges in pneumonia surveillance, the PHREDSS system rapidly detects changing demographic and severity trends facilitating timely health service planning. Precipitating factors remain undefined, limiting the specificity of public health intelligence. Linked admitted patient data characterises causative organisms but is delayed. Complementing rapid syndromic surveillance with admitted patient and pathology data could promote more tailored public health action.

Serotype distribution of GBS in maternal colonization and infant invasive disease

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4B - STI surveillance and prevention, Room E1, June 11, 2025, 1:30 PM - 3:00 PM

Background: Group B Streptococcus (GBS) remains a leading cause of neonatal sepsis worldwide, despite a decline in incidence due to intrapartum antibiotic prophylaxis. Maternal rectovaginal colonization with GBS is the most common pathway for invasive disease in the newborn. We aimed to determine the serotype distribution of GBS colonizing pregnant women and causing invasive disease in infants, to inform GBS vaccine development.

Methods: We conducted a systematic literature search of Embase, MEDLINE, Google Scholar, Cochrane CENTRAL and the World Health Organisation's International Clinical Trials Registry Platform. The study protocol was registered on PROSPERO (CRD42024529717). GBS colonization was defined as isolation by culture of GBS from either the vagina, rectum, or perianal region at any time during pregnancy. Early onset disease was defined as invasive GBS disease in infants aged 0 – 6 days after birth and late onset disease in infants 7 – 89 days after birth. Study selection, data extraction and data analysis were performed in accordance with MOOSE (Meta-analyses Of Observational Studies in Epidemiology) guidelines. We conducted random effects proportional meta-analyses to estimate the prevalence of serotypes of GBS in maternal colonizing and infant disease.

Results: We identified 315 studies that provided data on serotype distribution (24,848 GBS positive samples from pregnant women; 10,473 samples from infants with early onset disease and 8,307 samples from infants with late onset disease). The three most prevalent serotypes in maternal colonization were III (25.2%), V (17.7%) and Ia (17.4%). The three most prevalent serotypes causing early onset disease in infants were, III (43.9%), Ia (20.3%) and V (11.2%); and those causing late onset disease in infants were III (73.0%), Ia (13.8%) and Ib (5.6%), respectively.

Conclusions: Serotypes III, Ia, Ib and V appear to be responsible for the majority of Group B Streptococcus in maternal colonization and infant invasive disease.

Key words: Group B streptococcus, maternal colonization, early onset, late onset, serotype

Preparing for future Group B Streptococcus vaccines: Attitudes of pregnant women

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4B - STI surveillance and prevention, Room E1, June 11, 2025, 1:30 PM - 3:00 PM

Background: Vaccines for Group B Streptococcus (GBS) intended for pregnant women are currently undergoing clinical trials. Conducting preparatory research now can help identify factors influencing GBS vaccine acceptance, including potential challenges. Gaining this insight will allow for targeted interventions to facilitate positive consumer experiences and timely vaccine adoption as well as address anticipated barriers to vaccination.

Methods: Pregnant women residing in Australia were invited to participate in online focus group discussions (FGDs). To date, four FGDs with 17 pregnant women from South Australia (n = 6), Victoria (n = 1), New South Wales (n = 4), Western Australia (n = 2), Queensland (n = 2), Tasmania (n = 1) and the Australian Capital Territory (n = 1) have been conducted.

Results: Participants were aged between 19–43 years. The majority had completed a university degree (n = 14) and eight were employed in the healthcare sector. Despite 12 women having had babies before, only four had awareness of GBS infection and eight did not recall having a vaginal swab in their last pregnancy. Four themes were developed. 1) Baby wellbeing and safety perceptions drive acceptance, 2) GBS in pregnancy is not mainstream knowledge and this and safety concerns drive hesitancy, 3) Easy and flexible access to vaccination services will improve uptake, 4) Preferred communication strategies for pregnant women about GBS and the vaccine should be multimodal and woman centred. Perceived infant benefit was the most important driver of GBS vaccine acceptance. Safety concerns about a novel vaccine was the most prominent barrier identified. Strong messaging that highlights vaccine safety and potential infant benefits together with in-depth information about GBS infection would be required to facilitate uptake of GBS vaccines among pregnant women.

Conclusions: Preparation for GBS vaccine implementation should include efforts to increase awareness among pregnant women about GBS infection.

Keywords: Group B Streptococcus, Group B Streptococcus vaccine, maternal immunisation, maternal vaccine, vaccine acceptance

Safety of aH5N6c Influenza Vaccinations in Adults Primed with aH5N1c or Unprimed

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background. A prior Phase 3 study (V89_18) evaluated the immunogenicity and safety of an MF59-adjuvanted, cell-based H5N1 pandemic vaccine (aH5N1c) in healthy adults. Subjects were asked to participate in an extension study (V89_18E1) to evaluate the safety of two aH5N1c priming doses followed by booster vaccinations with aH5N6c 3 weeks apart. Immunogenicity results have been reported separately.

Methods. 258 subjects were evaluated. Primed subjects, who had received 2 aH5N1c doses were randomized 1:1 to receive aH5N6c Day 1 and aH5N6c or saline placebo on Day 22. H5 naïve subjects received two aH5N6c vaccinations, 3 weeks apart. Adverse event (AE) observation extended from first vaccination until study completion. AEs were collected as either unsolicited or solicited AEs (reactogenicity) collected for 7 consecutive days following vaccination.

Results. Reactogenicity within 7 days after any vaccination was similar across treatment groups. Injection site pain was the most frequently reported solicited local AE. The most frequently reported solicited systemic AEs were fatigue, headache and malaise. Most solicited AEs were mild/moderate in intensity, with onset close to vaccination, and resolved within 3 days. Rates of solicited AEs were lower after the second vaccination than the first vaccination. Receipt of a third or fourth dose of MF59-adjuvanted H5 vaccine in primed subjects did not result in increased reactogenicity. From Day 1 through Day 43, the proportion of subjects reporting at least 1 unsolicited AE was similar across treatment groups. The majority of unsolicited AEs were mild. The overall incidence of SAEs was low and none were considered related to the study vaccine.

Conclusions. Vaccinations with aH5N6c were well tolerated and no safety concerns were identified. Repeated dosing with an MF59-adjuvanted H5 vaccine did not result in increased reactogenicity. The safety profile observed in this trial was consistent with that of other MF59-adjuvanted monovalent cell-based influenza vaccines.

Respiratory Syncytial Virus Testing Patterns and Patient Characteristics: A Retrospective Analysis

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6A - RSV prevention, Halls CD Lower Section, June 12, 2025, 11:00 AM - 12:30 PM

Background:
RSV causes significant disease burden, but most Australian research focuses on hospital data only. This study provides a comprehensive analysis of RSV testing from both private and public pathology providers across multiple states, examining testing patterns and patient characteristics across care settings.

Methods:
We obtained de-identified RSV testing data from 1 September 2017 to 31 August 2023 from the three largest private pathology providers and two public providers in Australia. A descriptive analysis reporting RSV testing patterns in hospitals and the community, focusing on patient characteristics (age, sex, location, remoteness, and socioeconomic status) was performed. Continuous and categorical variables were compared using the Wilcoxon rank-sum and chi-square test, respectively.

Results:
Of 8,982,585 RSV tests conducted in New South Wales, Queensland and Victoria during the study period, 7.1% returned positive results. 5,744,059 (67.2%) were done in the community, compared to 3,238,526 (32.8%) in hospitalised patients ($p<0.001$). A higher percentage of females were tested (54.5%). Across all care settings analysed, test rates were highest in major cities. Children under 5 years had the highest testing rate at 18,432.5 per 100,000 population (from total annual population, 2017-2023) ($p<0.001$). Among individuals ≥15 years, those ≥75 years had the highest testing rate at 11,914 per 100,000. Higher socioeconomic groups (Q5) were more likely to be tested in the community and private settings, while middle socioeconomic groups (Q3) were most likely to be tested in public hospitals. Community test rates decreased stepwise with increasing socioeconomic disadvantage ($p<0.001$). Positive RSV test rates were highest in major cities (879.5 per 100,000), mainly in the community, and among higher socioeconomic groups ($p<0.001$).

Conclusion:
Our findings highlight the role of community testing, with high test volume and positivity rates and underscore the need for equitable testing across all socioeconomic and geographic areas to assess RSV burden and prioritise prevention.

Understanding Factors Influencing Decreased Childhood Vaccine Uptake Amongst Communities in Western Sydney

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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

Background: Since the onset of the COVID-19 pandemic, vaccination coverage for 12-month-old children has declined in the Cumberland Local Government Area (LGA) of Western Sydney. Insights from the WSLHD Public Health Unit (PHU) Immunisation Team over the past two years indicate that a range of factors, including fear and mistrust linked to the pandemic, may be contributing to this decline. This study aims to investigate the underlying reasons for low childhood vaccine uptake in the region.

Methods: In this ongoing qualitative study, focus groups have been conducted with parents and caregivers from Arabic and Nepali-speaking communities in Western Sydney's Cumberland LGA, with plans to conduct additional focus groups in both Arabic and Nepali, as well as English. Participants were recruited through Multicultural Health and their community contacts. The focus group discussion guide was developed using the Behavioural and Social Drivers of Vaccination (BeSD) framework. These discussions were transcribed and translated, and qualitative data were analysed thematically using an inductive approach.

Results: Preliminary findings with Arabic and Nepali-speaking communities indicate that trust in healthcare providers particularly Arabic-speaking doctors, and strong family and social network support are key drivers of vaccination. Both groups emphasised the importance of community institutions, such as schools and mosques, for providing trusted information. While some barriers were identified, including concerns about side effects, long waiting times, and access issues, our participants did not find them to be significant enough to prevent vaccination. Motivations for vaccination included a strong desire to protect children and meet childcare requirements.

Conclusion: Early insights highlight the importance of trust, family support, and accessible information in shaping vaccination decisions. Further exploration is needed, particularly with those who struggle to access or trust immunisation services.

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Recombinant Zoster Vaccine Efficacy Against Complications, and Case Characterisation, in Long-Term Study

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6D - Zoster and cocci, Riverbank Room 2, June 12, 2025, 11:00 AM - 12:30 PM

Background
ZOE-LTFU was an extension of two pivotal efficacy trials (ZOE-50/70) following participants vaccinated with adjuvanted recombinant zoster vaccine (RZV). Vaccine efficacy (VE) against herpes zoster (HZ) from 1-month post-dose 2 up to 11 years was 87.7%. We report characteristics of confirmed HZ cases during ZOE-LTFU, focusing on pain and complications.

Methods
ZOE-LTFU was a phase 3b, open-label study conducted in 18 countries between 2016 and 2023 (NCT02723773). Participants from the original randomised trials (NCT01165177 and NCT01165229) who received ≥1 dose of RZV were eligible. Pain experienced during an HZ episode was evaluated by the Zoster Brief Pain Inventory (ZBPI) until 90 days after first HZ visit or a 4-week pain-free period.

Results
Of 7273 participants in the primary VE analysis cohort, 69 had a confirmed HZ episode, and 61 had a ZBPI evaluation within 16 days of rash onset. Median age at first vaccination was 71.0 (50.0–87.0) years (N=69). Most participants (58/61, 95.1%) reported pain, with 52 (85.2%) experiencing clinically significant pain (score ≥3) and 38 (62.3%) reporting severe pain (score ≥7). Mean Worst Pain Score was 6.7 (standard deviation 3.0). Clinically significant pain resolved after a median of 19 days. Most participants (85.2%) received pain medication with a trend for longer duration of use with increasing age. VE was 87.5% (95% confidence interval [CI] 64.8, 96.8) against post-herpetic neuralgia (PHN) and 91.7% (95% CI 43.7, 99.8) against non-PHN complications in participants ≥50 years; complications occurred in participants ≥76 years 6–10 years after vaccination.

Conclusion
The limited numbers of HZ cases in ZOE-LTFU were associated with less frequent HZ complications. VE against PHN and non-PHN complications remained high over 11 years and was comparable to the original studies. These findings support the long-term benefit of RZV in preventing HZ and its complications.

Funding: GSK (201190); Encore from IDWeek 2024

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Protecting the community against Q Fever: The Gippsland Q Fever Project

Dr Shereen Labib[1], Mrs Lamees Alafeshat[1], Ms Winnie Maina[1], Ms Kathryn Watson[1], Dr Katharine Noonan[1], Ms Katie Walker[1], Dr Alex Tai[1], Mrs Annelies Titulaer[1], Associate Professor Alyce Wilson[1,2,3,4]

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Protecting the community against Q Fever: The Gippsland Q Fever Project

Background

Gippsland is a major agricultural region in Southeastern Victoria, where dairy farming and meat production are key industries. In 2024, following multiple outbreaks and a subsequent sharp rise in cases, Gippsland reported 45 per cent of all Q fever cases in Victoria. In response, the Gippsland Region Public Health Unit (GRPHU) launched a community engagement and media campaign. This response was amplified leveraging a partnership with the dairy industry body (GippsDairy), to increase reach and explore solutions to improve vaccine access and reduce costs.

Process

A steering committee was convened with membership from GRPHU, GippsDairy, WorkSafe, Agriculture Victoria and FarmSafe Australia. Three key interventions were identified as the focus for the Gippsland Q Fever project: subsidising testing and vaccination, improving access to vaccine providers; and increasing awareness within the healthcare and agriculture sectors. A serosurvey to capture levels of exposure within the community was also identified as a future lobbying tool for government funded vaccine. A successful grant received through the Victorian Livestock Biosecurity Fund (Agriculture Victoria) helped fund the project.

Results

Three primary health care clinics were engaged to offer subsidised Q fever testing and vaccinations to 200 dairy farm workers in 2025. A nationwide vaccination shortage slowed the process, however testing and vaccinations are underway. Twenty extra health care practitioners were selected via an expression of interest process to complete training in Q fever testing and vaccination via an online module as well as a practical component.

Outcomes

Greater ongoing investment in screening and vaccination services to increase Q Fever awareness and minimise cost and access barriers is essential. Exploring policy options to enhance preventive measures for high-risk occupations may be required to mitigate the rising number of cases nationwide. Ongoing engagement with agribusinesses is also needed to bolster Q fever awareness to reduce the disproportionate burden of Q fever in Gippsland.

RZV provides durable HZ protection in ≥50-year-olds: 11-year efficacy and safety analysis

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6D - Zoster and cocci, Riverbank Room 2, June 12, 2025, 11:00 AM - 12:30 PM

Background
RZV had >90% efficacy against HZ in ≥50- and ≥70-year-olds (YO) in pivotal trials of ~4- Y follow-up. There is a need to understand long term vaccine efficacy (VE) by age strata. This final analysis of ZOE-LTFU (NCT02723773) provides, for the first time, long-term VE by age strata, plus safety after 11Y of follow-up since vaccination in the ZOE-50/70 efficacy studies (NCT01165177/NCT01165229).

Methods. VE during ZOE-LTFU was assessed overall against HZ in participants vaccinated from age 50 Y (primary objective) and by age ranges. Additionally, VE was assessed from 1 month after the second dose of RZV (RZV2) in ZOE-50/70, and yearly, overall and in all age ranges (secondary objectives). Analysis of VE for ZOE-LTFU used historical control estimates from the ZOE-50/70 placebo groups. Serious adverse events (SAEs) related to vaccination were recorded.

Results. 7258 subjects were included in the VE assessment on modified total vaccinated cohort (mTVC) over the duration of ZOE-LTFU. Overall, during 6 Y follow up in ZOE-LTFU, VE against HZ was 79.77% (95% CI 73.72–84.61) in participants ≥50 Y, and 73.18% (62.94–80.92) in participants ≥70 Y. VE from 1-month post-RZV2 until median of 11.6 Y post-vaccination was 87.73% (95% CI 84.89–90.12) in ≥50 YO and 84.33% (79.91–87.93) in ≥70 YO. Annual VE at Y11 was 82.00% (95% CI 63.03–92.22) in ≥50 YO and 72.00% (33.41–89.77) in ≥70 YO. No SAEs were considered causally related to RZV vaccination by the investigators.

Conclusions. RZV is the only vaccine to demonstrate high efficacy against HZ persisting beyond 10 Y. Uniquely, protection extends to all age-groups vaccinated from age ≥50 Y. No new concerns regarding RZV long-term safety were identified. Study results provide a better understanding of long-term protection with RZV and can guide decision-making regarding vaccination for HZ prevention.

Funding: GSK (201190); Encore from 34th ECCMID 2024

RZV doesn't increase HZ recurrence in adults aged ≥50 with HZ history

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6D - Zoster and cocci, Riverbank Room 2, June 12, 2025, 11:00 AM - 12:30 PM

Background: Recombinant zoster vaccine (RZV) is recommended for herpes zoster (HZ) prevention in adults ≥50 YOA, but those with HZ history were excluded from pivotal trials. Final results are presented for a clinical trial evaluating HZ recurrence and safety after RZV vaccination in adults with HZ history.

Methods: This phase III, observer-blind, placebo-controlled trial (NCT04091451) randomized (1:1) adults ≥50 YOA with documented HZ episode ≥6 months prior. Participants received RZV or placebo 2 months apart and were followed for ≥ 26 months. Primary endpoint: HZ incidence from month 3 to study end (non-inferiority: upper limit of 95% CI of incidence rate ratio [IRR] of HZ recurrence [RZV vs. placebo] <5) in modified exposed set (mES: 2 doses, no HZ episode prior to 30 days post-dose 2). Complementary analysis assessed IRR in exposed set (ES: ≥1 dose) from day 1 to study end. Secondary endpoints included: solicited AEs 7 days post-dose, SAEs and potential immune mediated diseases (pIMDs) from day 1 to 1-year post-dose 2, and vaccine-related SAEs until study end.

Results: 1426 adults (RZV: 714; Placebo: 712) received ≥1 dose. All 8 confirmed HZ cases in mES (RZV: 668; Placebo: 682) were in Placebo group. Non-inferiority was met (IRR: 0.00 [95% CI: 0.00–0.46]). Similar results were seen in the ES. Similar results were observed in ES. Most solicited AEs were mild/moderate; median duration: ~2 days. Administration site pain and fatigue were the most common. SAEs were reported by 44 (6.2%) participants in RZV group and 32 (4.5%) in placebo group; pIMDs by 4 (0.6%) and 7 (1.0%) participants, respectively. One SAE/pIMD (type 1 diabetes, onset 701 days post-dose 2) was considered vaccine-related.

Conclusions: In adults ≥50 with a history of HZ, RZV does not increase recurrence and shows no new safety concerns, consistent with its known safety profile.

Funding: GSK (204939); Encore from ESCMID 2025

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Impact of Increased RZV Coverage on HZ Burden in ≥50-Year-Olds: 11-Year Data

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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Background: Herpes zoster (HZ) is a viral disease impacting patients quality of life due to pain and rash. It is a vaccine-preventable disease with approximately 15 million cases observed annually in individuals ≥50 years of age (YOA) worldwide. Recombinant zoster vaccine (RZV) has proven effective in protecting against HZ infection. This is the first study evaluating the potential increased (incremental) public health benefits - in terms of HZ cases averted - of vaccinating adults ≥50 YOA worldwide with RZV.

Methods: A previously published static multi-cohort Markov model with an annual cycle length, and a lifetime horizon was used, which incorporated the following inputs : population estimates, and age-gender specific mortality rates from the latest (2022) United Nations data, depicting populations on December 31, 2023; HZ incidence rates from a recent (2021) meta-regression analysis of HZ burden across the globe (Asia, Europe, Northern America, and Oceania); RZV efficacy modelled based on 11-year clinical trial follow-up data [NCT02723773].

Results: Assuming a 70% second-dose completion rate in the general population ≥50 YOA worldwide, absolute increases in uptake of RZV by 5% would reduce the number of expected cases by >10 million over the remaining lifetime of vaccinated individuals. Numbers needed to vaccinate (NNV) to avert 1 HZ case by age group worldwide varied from 9 in 50-59 YOA to 18 in ≥80 YOA, and 10 overall in ≥50 YOA. Variations observed by region and age reflected varying inputs, i.e. population demographics, HZ incidence rates, life expectancy and vaccine efficacy.

Conclusion: Even with a relatively modest increase of coverage rates worldwide, RZV is projected to prevent millions of HZ cases due to the long-term protection it affords. Lower NNVs are observed in younger vaccinated cohorts, irrespective of region, outlining the relative merits of age of vaccination.

Funding: GSK (VEO-000923); Encore from IDWeek 2024

From Herd to Human: Lessons from a Q Fever Outbreak in Gippsland

Dr Shereen Labib[1], Dr Katharine Noonan[1], Mrs Lamees Alafeshat[1], Ms Katie Walker[1], Mr Victor Patino[1], Mrs Kathryn Watson[1], Ms Winnie Maina[1], Dr Alex Tai[1], Mrs Annelies Titulaer[1], Associate Professor Alyce Wilson[1,2,3,4]
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4C - Zoonoses & arboviruses, Room E2, June 11, 2025, 1:30 PM - 3:00 PM

From Herd to Human: Lessons from Containing a Q Fever Outbreak in Gippsland

Background:
Gippsland is a rural region in southeastern Victoria where dairy farming and agriculture are key industries. Q fever, caused by Coxiella burnetii, is a zoonotic disease primarily transmitted through inhalation of contaminated aerosols from livestock. From 2024-25, the Gippsland Region Public Health Unit (GRPHU) managed a large Q fever outbreak among individuals associated with three interconnected goat farms.
Process:
The outbreak investigation identified 22 confirmed cases among 57 at-risk individuals (attack rate: 38.6%). Active case finding detected additional undiagnosed cases among farm workers and household contacts. Of the confirmed cases, 21 (95.5%) cases were symptomatic, with five (22.7%) requiring hospitalisation. Two-thirds were male, with a median age of 29 years (range: 19–56). No workers had prior vaccination for Q fever. WorkSafe conducted site assessments and Agriculture Victoria (AgVic) provided livestock movement data. GRPHU arranged Q fever vaccination for six individuals through local GP clinics.
Analysis:
This outbreak underscored challenges in coordinating a One Health response, balancing public health and occupational health priorities, and addressing gaps in vaccination and prevention. Delays in serological and PCR testing complicated case identification. Communication barriers between public health authorities, farm managers, and affected individuals hindered risk messaging and response coordination. Lack of clarity of roles and processes across human, occupational, and animal health agencies added complexity to response efforts. Preventive strategies, including PPE recommendations and vaccination promotion, were impacted by logistical and cost concerns.
Outcomes:
The outbreak highlighted the need for improved communication and coordination between human and animal health agencies to strengthen One Health responses. Enhanced surveillance protocols and better integration of occupational health into farm biosecurity are needed to mitigate future outbreaks. Expanding access to and promotion of Q fever vaccination for high-risk workers should be a priority. Policy discussions are necessary to explore stronger preventive measures, including potential vaccination requirements for high-risk industries.

Short-term safety of Shingrix and Arexvy vaccines in older adults

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6B - Shingrix and COVID-19 vaccine safety, Room E1, June 12, 2025, 11:00 AM - 12:30 PM

Understanding the short-term safety of newly introduced vaccines for older adults is essential for public confidence, uptake, and post-vaccination care planning. We describe the safety profile of the recombinant zoster vaccine (Shingrix®) and the recombinant respiratory syncytial virus pre-fusion F protein vaccine (Arexvy®) using AusVaxSafety active surveillance data. We analysed adverse event following immunisation (AEFI) reports collected three days post-vaccination for adults aged ≥60 years who received Shingrix between 1 November 2023 and 31 December 2024, and Arexvy between 29 February 2024 and 31 December 2024. The proportions of AEFI reports, medical attendance (MA), and the most commonly reported AEFIs were described. Shingrix data were compared with Zostavax (prior to November 2023), and Arexvy data were compared with high-dose or adjuvanted influenza vaccines administered during the 2024 flu season.

Among Shingrix recipients (N = 120,381, 58% female, median [IQR] age 74 [68, 79]), 47.4% reported AEFIs, with 0.4% seeking medical attention. The most common reactions were local reactions (42.5%), fatigue (28.9%), muscle or joint pain (23%), and headache (17.9%). Compared to Zostavax (13.9% AEFI, 0.2% MA), Shingrix had a higher reactogenicity profile. Among Arexvy recipients (N = 2,395, 62% female, median [IQR] age 75 [70, 80]), 36.8% reported AEFIs, with 0.5% seeking medical attention. Common reactions included local reactions (30%), fatigue (21%), muscle or joint pain (14%), and headache (12%). AEFI and MA reports were higher than that of high-dose or adjuvanted influenza vaccines (15% and 0.1%, respectively).

Both Shingrix and Arexvy demonstrated higher reactogenicity than their respective comparators, consistent with expectations for recombinant vaccines. However, severe AEFIs were rare, and MA rates remained low. These findings support the safety of these vaccines and highlight the need for proactive communication to manage expectations regarding reactogenicity. Ongoing surveillance will be essential to assess long-term safety and inform public health recommendations.

AS01E-adjuvanted RSVPreF3 vaccine shows non-inferior immunogenicity and acceptable safety in at-risk adults

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1A - COVID-19, Halls CD Lower Section, June 10, 2025, 11:00 AM - 12:30 PM

Background: In older adults ≥60 YOA, adjuvanted RSVPreF3 was 82.6% effective against RSV lower respiratory tract disease over 1 season and provided clinically relevant protection over 3 seasons. In adults 50–59 YOA, including those at increased risk (AIR) for RSV, adjuvanted RSVPreF3 induced a non-inferior immune response compared to adults ≥60 YOA. We report immunogenicity and safety of adjuvanted RSVPreF3 in AIR adults 18-49 YOA.

Methods: Phase 3 open-label study (NCT06389487). AIR adults 18–49 YOA (RSV-AIR group) with chronic cardiopulmonary diseases, diabetes mellitus types 1/ 2, chronic liver or renal diseases, neurologic or neuromuscular conditions and older adults ≥60 YOA (RSV-OA group) received 1 dose of adjuvanted RSVPreF3. Non-inferiority of humoral immune response in AIR adults 18–49 YOA versus older adults ≥60 YOA was assessed 1M post-vaccination, with reactogenicity and safety.

Results: 855 participants received adjuvanted RSVPreF3 (RSV-AIR: 426; RSV-OA: 429). 1M post-vaccination, non-inferiority in immune response was shown for RSV-A and RSV-B neutralizing titers. Within 4 days post vaccination, solicited AEs were reported by 91.1% (RSV-AIR) and 70.3% (RSV-OA) of participants, with the most frequent being injection site pain, myalgia, and fatigue. Most solicited AEs were more common in RSV-AIR compared to RSV-OA, but there was low and comparable reporting of grade 3 events across groups. Unsolicited AEs within 30 days post-vaccination were 15.0% (RSV-AIR) and 16.3% (RSV-OA). SAEs up to the data lock point were reported by 0.2% (RSV-AIR) and 1.4% (RSV-OA) of participants, with no vaccine-related SAEs, potential immune-mediated diseases, or deaths.

Conclusions: Adjuvanted RSVPreF3's immune responses in AIR adults 18–49 YOA were non-inferior to the immune responses in adults ≥60 YOA, in whom efficacy was demonstrated. In AIR adults 18–49 YOA, the adjuvanted RSVPreF3 had a clinically acceptable reactogenicity and overall safety profile.

Funding: GSK (222253); Encore from RSV Symposium

Immunisation against vaccine-preventable diseases in immunocompromised individuals receiving novel immunosuppressive therapies

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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

The availability and use of biological and small molecule targeted therapies are rapidly expanding. The intricate nature of their mechanisms of action and the impact of the underlying condition makes it challenging for clinicians to understand the infectious complication risks and safety/efficacy of vaccination for individuals prescribed these agents. We aimed to summarise the current evidence via structured literature searches, focusing on the risk of vaccine-preventable diseases, vaccine efficacy and safety in patients receiving these novel therapies.

Our review revealed the dysregulated immunity, infection risk and vaccine responses in patients on biological and small molecule agents varied widely, ranging from high (e.g., alemtuzumab, blinatumomab) to negligible (e.g., etanercept, mepolizumab, imatinib). The observed infectious complications may differ from what would be predicted based on the mechanism of action, possibly due to a cohesive interplay of the innate and adaptive immune response to infection. Higher risks of serious infection were associated with the receipt of concomitant immunosuppressive medications, particularly corticosteroids. Current immunogenicity data is limited in assessing humoral responses from patients treated with biological therapies and are predominately investigating COVID-19, influenza, and pneumococcal vaccines, with fewer on herpes zoster, hepatitis B, and diphtheria/tetanus vaccines. Evidence suggests that the use of biological therapies results in attenuation, but not abolishment, of the antibody response to vaccines. Despite safety being a concern for live vaccines administered to patients prescribed biological agents, very few vaccine-strain infections in children have been reported, with most involving varicella vaccines, not vaccine-derived measles or rubella.

Current evidence is largely based on non-randomised trials and observational studies. Including immunocompromised individuals in future trials is necessary for accurate evaluation with assessments of cellular response, clinical efficacy and safety. Better prediction models or biomarkers for stratifying risk and predicting vaccine efficacy are important further steps.

ASSESSMENT OF INFLUENZA VIRUS AND CO-INFECTION WITH SARS-COV-2 OR RESPIRATORY SYNCYTIAL VIRUS

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

ASSESSMENT OF INFLUENZA VIRUS AND CO-INFECTION WITH SARS-COV-2 OR RESPIRATORY SYNCYTIAL VIRUS
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Abstract
Acute respiratory disease (ARD) accounts for large proportion of all acute morbidities and mortalities worldwide, among which acute viral respiratory tract infection is leading cause (appropriate 80%). Major Viral pathogens include influenza virus, respiratory syncytial virus (RSV), coronavirus, adenovirus, and rhinovirus. The aim was to assess influenza virus and co-infection with SARS-CoV-2 or Respiratory syncytial virus among SARI patients at Oromia Region, Ethiopia. Facility based cross sectional study was conducted during study period July 1, 2022 through to April 30, 2023 on SARI sentinel surveillance based on WHO SARI case
definitions. The throat-swab specimens collected, extracted viral RNA and subjected to CDC Multiplex RT-PCR to determine the positive cases. We further subtyped Influenza A positive specimens. A total of 302 throat-swab specimens collected and tested, 39 (12.9%) were Influenza positive where 25 (89.3%) influenza A (H3N2), 3 (10.7%) Influenza A (H1N1) pdm2009 and 11 (28.2%) Influenza B. Influenza positivity rate among age categories of under 5, 5-14, 15-49, 50-64, and age greater or equal to 65 years, respectively, were 58.9%, 26.6%, 5.1%, 5.1%, and 5.1%. Of the total 22 (7.3%) and 11 (3.6%) found to be positive for SARS-CoV-2 and RSV viruses, respectively. Among positive SARS-CoV-2 cases 73.2%, 13.6% and 9% attributed to age under 5, 15-49 and greater 65 years, respectively. Among positive RSV viruses 91% attributed to less than 5 years. Finally, co-infection with SARS-COV-2 and RSV found on 5(12.8%) and 3(7.7%) children, respectively, during December, January and February. Influenza co-circulation and co-infection mostly in under five children: not vaccinated, highlights economic burden implying less monitoring of vaccine uptake. Therefore, healthcare system and public should implement vaccination, holistic approach IPC measures, surveillance scaling up to include all age, never over look co-infection, strengthen multiplex (rt-PCR), conducting research well addressing the co-infection using large sample and case control study.
Key Words: SARI, Influenza, SARS-CoV-2, RSV

EPIWATCH, an artificial intelligence early-warning system as a valuable outbreak surveillance tool

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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

Artificial intelligence (AI) presents a transformative approach to public health surveillance, particularly in environments where traditional methods are limited or absent. By leveraging open-source data, AI-driven systems can provide epidemic intelligence, offering early warning signals of infectious disease outbreaks. EPIWATCH is an AI-powered outbreak detection and monitoring system that has demonstrated the ability to identify epidemic signals before official detection by health authorities.

This study evaluates the utility of open-source epidemic intelligence through two case studies. EPIWATCH reports on outbreaks of unspecified influenza-like illness and pneumonia- along with known causes such as influenza A/B, SARS-CoV-2, RSV, pertussis, adenovirus, and Mycoplasma pneumoniae from August to December of 2022 and 2023 were analyzed. In China, EPIWATCH detected an increase in respiratory illness in 2023 compared to 2022, contrasting with a global decline during the same period. Notably, a peak in pneumonia cases was identified from October to early November 2023, preceding the official recognition of Mycoplasma pneumoniae outbreaks by the WHO on 22 November 2023.

To assess EPIWATCH's utility in conflict zones, we analyzed infectious disease patterns in Ukraine before (November 2021–February 2022) and during the conflict (February–July 2022). Comparison with official sources revealed increased infectious disease reports during wartime, highlighting the system's potential for real-time epidemic intelligence in crisis settings.

These findings highlight the power of AI-driven surveillance in early outbreak detection, particularly in resource-constrained and conflict-affected regions. By complementing traditional surveillance, AI systems like EPIWATCH can optimize response and preparedness efforts, ultimately improving global health security. Given the acceleration of epidemics in recent years, leveraging open-source intelligence for rapid outbreak detection is essential for timely intervention.

STI Testing Uptake Among MSM Shigellosis Cases: Awareness and Screening Practices

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background:
Shigellosis is transmitted via the faecal oral route with many cases acquired overseas due to poor food hygiene practices; however, local transmission is seen in Australia among men who have sex with men (MSM). This transmission is linked to oro-anal sexual practices with increased risk of transmission of other sexually transmissible infections (STIs). At the South East Public Health Unit (SEPHU) in Victoria shigellosis cases with MSM contact as an acquisition risk factor are asked if they have had recent testing for STIs. For cases who have not had recent STI testing we recommend they obtain appropriate screening.

Aim:
To determine whether shigellosis cases with MSM contact as a risk factor undertook subsequent STI screening upon the advice of the local public health unit.

Method:
Data on all shigellosis cases that were notified to SEPHU between 1 January 2023 and 31 December 2023 who identified MSM contact as a risk factor were extracted from the Victorian Public Health Events Surveillance System. Eligible cases were contacted by phone by the project lead, and those who consented to participate were asked standardised questions about their shigellosis knowledge and STI testing. Where the first call was not answered, a further two phone calls were made and one text message sent.

Findings:
55 notified cases were identified for the study period. Five cases were lost to follow up during initial management after shigellosis diagnosis. Of the remaining 50 cases, 20 either declined participation or could not be contacted, and interviews were successfully completed for all 30 remaining cases.

At the time of initial management after shigellosis diagnosis, 26 cases (87%) had reported a recent STI test. Twenty-nine cases (97%) reported at least one STI screen after initial follow-up and 80% reported routine STI testing every three months. Additionally, 3% were living with Human Immunodeficiency Virus, 73% were on Pre-Exposure Prophylaxis and 57% were vaccinated for Hepatitis A. Nearly all cases (93%) were not aware that shigellosis is sexually transmissible.

Conclusion:
While most people were routinely undergoing regular STI checks, there was limited awareness that shigellosis can be transmitted through sexual contact.

Staphylococcus aureus bloodstream infection (SABSI) in Tasmania, 2010-2014

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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Introduction: Staphylococcus aureus bloodstream infection (SABSI) is a significant public health concern due to its incidence, high morbidity and 30-day mortality rate of 15-30%. SABSI can be acquired in both the community and healthcare settings, however interventions have focused on prevention in healthcare facilities which have been regarded as the predominant setting for SABSI infections. SABSI has been notifiable under the Public Health Act 1997 in Tasmania since 2010. This study aims to describe notified cases of SABSI in Tasmania from 2010 to 2024.
Method: This descriptive study analyses SABSI notifications in Tasmania from 1 January 2010 to 31 December 2024 and describes the differences between healthcare-associated and community-associated SABSI in terms of age, sex and resistance to methicillin over time.
Results: From 2010 to 2024, there were 2320 notifications of SABSI, with 1566 (68%) classified as community-associated and 751 (32%) as hospital-associated. The number of notified cases has steadily increased since 2010, peaking in 2023 with 229 cases. Males accounted for 65% of notifications, and the number of notifications increased with age in both sexes. The proportion of Staphylococcus aureus resistant to methicillin was 7.6% overall.
Discussion: The increasing trend in SABSI cases suggests a persistent public health challenge. The high proportion of community-associated cases indicates that interventions should extend beyond healthcare settings to address risk factors in the broader population. Future research should explore the reasons behind the higher notifications of SABSI in males and could consider factors such as biological susceptibility, healthcare access, and environmental exposure. Future research should focus on identifying risk factors associated with community-associated SABSI to support evidence-based public health interventions aimed at reducing SABSI.

A total system review of infectious disease surveillance in Aotearoa New Zealand

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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

Infectious disease (ID) surveillance plays a crucial role in protecting public health, including detecting disease outbreaks and potential pandemics as well as monitoring ID epidemiology and the impact of interventions.

Aims: 1) To systematically describe all of the ID surveillance systems in Aotearoa New Zealand (NZ) in 2025 according to 13 major functional ID categories and points in the causal path (disease, hazards/protections, interventions, determinants), 2) To compare the current scope of ID surveillance with a review done in 2010 to identify how surveillance has changed over this 15-year period and 3) To identify strengths and gaps in the current scope of ID surveillance where improvements are needed.

Methods and preliminary results: We conducted a review of literature and reports from key agencies responsible for ID surveillance in NZ. Key findings were systematically recorded in tabular form that listed all discrete surveillance systems.
We identified IDs of interest and whether these are currently covered by existing ID surveillance systems and strengths and gaps identified by topic experts and key end users.
We used our novel surveillance sector review framework for reviewing and assessing the performance of these systems and whether they are meeting end user needs.
Our preliminary findings show close to 150 ID surveillance systems are currently functioning in NZ. Over the last 15 years the overall number of ID surveillance systems has increased by more than 30% with increases seen across most categories.

Discussion and initial recommendations: In NZ, ID surveillance is carried out mostly by a range of government agencies. Academic/other groups run around 10% of ID surveillance systems. Some of these systems operate in silos with duplication in some areas and no clear central leadership.
We will present recommendations for achieving a more cohesive approach to ID surveillance that better meets the need of end users.

Viral kinetics of H5N1 infections in dairy cattle

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

Since early-2024 unprecedented outbreaks of highly pathogenic avian influenza H5N1 clade 2.3.4.4b have been ongoing in dairy cattle in the United States with significant consequences for the dairy industry and public health. Estimation of key epidemiological parameters is required to support outbreak response, including predicting the likely effectiveness of interventions and testing strategies. Here we pool limited publicly available data from three studies of naturally and experimentally infected dairy cattle. We quantify Ct value trajectories of infected dairy cattle and the relationship between Ct value and the log-titre of infectious virus, a proxy for infectiousness. We estimate that following infection peak Ct values are rapidly reached within 1–2 days with a population mean Ct value of 16.9 (13.2, 20.5). We identify a critical threshold Ct value of 21.5 (20.1, 23.6), with values of Ct value above this threshold representing little-to-no infectious viral load. Finally, we estimate the distribution of the duration of infectiousness for dairy cattle (i.e. the duration their Ct value remains above the critical threshold) with a population median of 6.2 (2.8, 13.1) days.

Temporal analysis of respiratory virus epidemics in Victoria over winter 2024

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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

During winter months of temperate regions, concurrent epidemics of multiple respiratory pathogens can occur, causing periods of increased clinical burden. Case time series — which are predominantly used to monitor infection levels — can exhibit substantial noise and day-of-the-week effects, limiting the visual interpretation of trends in raw data. However, statistical methods can infer smoothed trends in case time series by quantifying and accounting for different sources of noise. Here we apply statistical models to estimate the epidemic dynamics of SARS-CoV-2, RSV, and influenza subtypes (influenza A H3N2, influenza A H1N1, and influenza B) in Victoria, Australia, over the 2024 winter season. We model trends in daily reported cases and the daily growth rate over time for all pathogens/sub-types. We present: (1) retrospective analyses using the final dataset up to 10 September and (2) weekly real-time analyses from 19 March 2024 to 10 September 2024 using data up to each time-point, including a retrospective performance evaluation. We estimated similar peak timing of SARS-CoV-2 and RSV epidemics in late-May, followed by a H3N2-dominant influenza epidemic, which peaked in early-July. Transient increases in SARS-CoV-2 activity coincided with the emergence of new variants and transient decreases in influenza activity corresponded to the timing of school holidays. Real-time estimates demonstrated good agreement with those produced at the end of the season with significant overlap of the 95% credible intervals. Our findings demonstrate how statistical methods can be implemented in real-time to synthesise noisy case time-series data into interpretable trends (including uncertainty), enabling quantification of the strength of evidence for whether epidemic activity is increasing, stable or declining. Our real-time outputs were reported weekly to the Department of Health, Victoria from June–September 2024, complementing other routine surveillance indicators.

A novel outbreak of Brucella suis in a veterinary practice

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2B - Foodborne diseases, Room E1, June 10, 2025, 1:30 PM - 3:00 PM

A novel outbreak of Brucella suis in a veterinary practice: a One Health investigation
In January 2025, an outbreak of brucellosis was identified by the Hunter New England Public Health Unit (HNEPHU) at a veterinary practice following notification of three cases amongst staff, the first known outbreak of this nature in Australia. Active case finding revealed an additional five cases. Typing confirmed B. suis in 2 cases.
In Australia, B. suis affects feral pigs (after being eradicated from the Australian domestic pig population), pig-hunting dogs, and uncommonly humans (usually involved in pig hunting). In humans, the clinical presentation is variable, but may include a flu-like illness, including fever, headache, weakness, and generalised body aches, however there is a risk of severe complications and undulating illness.
A comprehensive One Health approach was taken to this investigation; HNEPHU worked with counterparts in animal health, clinical infectious diseases, and veterinary and human health laboratories.
An expert panel included these partners, and colleagues with specific national brucella experts provided guidance to the investigation and interpretation of findings. A site visit was conducted by HNEPHU and LLS, with a detailed inspection of the clinic – including environmental sampling, a serosurvey and a questionnaire for all staff (n=34). Cases were reviewed by the John Hunter Infectious Diseases Team. Laboratory investigations included serology and cultures for staff willing to be tested, followed by whole genome sequencing (WGS) for positive cultures. Environmental samples from the clinic were tested by EMAI and revealed multiple positive PCR brucella results.
To explore the source of the outbreak, high-risk procedures in pig-hunting dogs were cross matched with staff rosters. This process was complicated by data quality issues, and dogs identified for testing having been euthanised and disposed of. Investigations are ongoing, and our presentation will outline findings and learnings from this novel outbreak.

Multi-drug resistant shigellosis cases linked to sex on premises venue in WA

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
Multi-drug resistance (MDR) and extensive drug resistant (XDR) shigellosis has reportedly been increasing in Australia, with Shigella sonnei the most common species associated with MDR and XDR. In May 2024, an increase in MDR/XDR S. sonnei notifications prompted the WA Department of Health (DoH) to investigate.
Methods
Notifications of MDR/XDR S. sonnei are reported to the DoH by clinicians and laboratories under the Public Health Act, 2016. WA acquired MDR/XDR S. sonnei cases with illness onsets between May and October were interviewed with a semi-structured questionnaire on symptoms and possible risk factors. Data were analysed descriptively. Whole genome sequencing (WGS) was performed to ascertain genomic relatedness of cases.
Results
There were 35 cases (32 male, 3 female, median age 39 years) and most cases had illness onsets from May to July (71%). Ten (29%) cases were hospitalised and 14 (40%) reporting blood in their diarrhoea. Of the males, 27 reported being men who have sex with men (MSM). Nine of the MSM cases reported visiting the same sex-on-premises venue (SOPV) during their incubation period. In response to cases visiting a SOPV, prevention strategies included working with this and other SOPVs to develop online and venue-based communication material, and providing infection control advice and environmental monitoring as required. Individual cases were also adviced on helping to prevention transmission. Isolates from 28 cases underwent WGS and 26 were genomically similar (clustering within < 5 SNPs).
Conclusion
MSM exposure was the main risk factor for the acquisition of MDR Shigella sonnei in WA and a proportion of cases reported visiting a SOPV in common. A range of strategies at the individual, community and venue level were implemented to help prevent ongoing transmission in the MSM population. Since October 2024, notifications have decreased and no further cases have reported visiting a SOPV.

ICD-10-AM coded hospitalisations for varicella: are they chickenpox or are they shingles?

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6D - Zoster and cocci, Riverbank Room 2, June 12, 2025, 11:00 AM - 12:30 PM

Reliable estimates of varicella-zoster virus-related disease burden are important for surveillance, burden estimation and vaccine program evaluation. Studies of varicella coding accuracy in Australia are limited. We aimed to validate the primary diagnosis of varicella (ICD-10-AM code B01 subcategories) in a selection of hospital records in New South Wales (NSW).

We undertook a retrospective audit of hospital episodes with a principal diagnosis of varicella between 2017 to 2023, for children and adults at three NSW hospitals. Medical records were reviewed to determine whether an a-priori case definition for varicella or zoster was met. Differences in characteristics of correctly and incorrectly-coded hospital episodes were analysed.

Of 113 included hospital episodes, 69 (61%) met the case definition for varicella, 36 (32%) for zoster, seven (16%) neither varicella nor zoster, and one (2%) could not be determined. Compared to non-varicella cases, varicella cases had a lower mean age (21 ± 18.4 vs 47 ± 20.6, p<0.0001), shorter length-of-stay (median 2-days, IQR:1¬–4-days vs 4.5-days, IQR:3–8.5, p<0.001), shorter antiviral duration (median 8-days, IQR:7¬–10 vs 14-days, IQR:10–15, p<0.0001) and fewer complications (25% vs 64%, p<0.001). Severe complications occurred more frequently amongst non-varicella cases; meningitis (29% v 3%, p<0.001), encephalitis (16% vs 3%, p=0.012) and pneumonia (7% vs 4%, p=0.28).

There is substantial error in coding of hospital episodes using varicella diagnostic codes, potentially impacting burden estimates and vaccine evaluations. Ongoing training of clinicians and medical coders in recording and coding of varicella and zoster in hospital records is required.

The safety of maternal influenza and pertussis vaccinations in twin pregnancies

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4A - RSV and pregnancy vaccine safety, Halls CD Lower Section, June 11, 2025, 1:30 PM - 3:00 PM

BACKGROUND
The World Health Organization has identified vaccine hesitancy as an emerging threat to public health, and the spread of misinformation throughout the COVID-19 pandemic has severely impacted vaccine confidence. Concerns about the safety of vaccination in pregnancy is hindering their uptake, and although there is reassuring evidence for singleton pregnancies, to date there are no studies that have examined their uptake and safety amongst women carrying a multiple pregnancy. This is important because compared to singleton pregnancies, multiple pregnancies carry a higher baseline risk of adverse outcomes for both the mother and infant, and a higher morbidity and mortality burden from respiratory infections. We aimed to calculate whether there was an increased risk in stillbirth, preterm birth or small for gestational age (SGA) infants among women who received influenza and pertussis vaccines in twin pregnancies compared to unvaccinated twin pregnancies.

METHODS
Study design: Data linkage using whole of Queensland and Northern Territory population registered births between 2012-2017. We identified twin pregnancies from perinatal data collections and dates of vaccinations from immunisation registers. We used gold-standard data analysis methods recommended for maternal vaccination safety studies, and national birthweight percentile charts specific for Australian-born twins to accurately reflect risk among SGA infants. We used Cox proportional-hazard models to calculate the risk of adverse birth outcomes, with maternal vaccination status as the time-varying exposure.

RESULTS
There were n=11,945 infants derived from 5,921 unique multiple pregnancies. Most women were unvaccinated (73%). We found no statistically significant increased risk of any adverse pregnancy or birth outcome between women that received a maternal influenza and/or pertussis vaccination and unvaccinated pregnant women. This remained consistent in our models after adjustment for known and potential confounders. We also found a borderline reduced risk of SGA infants among women who received pertussis vaccination in pregnancy.

PUBLIC HEALTH IMPORTANCE
Our study provides robust and novel evidence that addresses a critical gap in maternal vaccination safety research. Importantly, we provide reassurance to healthcare providers and pregnant women that maternal vaccinations do not increase the risk of stillbirth, preterm births or SGA infants in multiple pregnancies.

How school immunisation provider interviews informed a routine adolescent vaccination communication resource

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1B - Vaccine practice, Room E1, June 10, 2025, 11:00 AM - 12:30 PM

Background: Australia's National Immunisation Program provides three vaccines (dTap, meningococcal ACWY, HPV) to adolescents at no cost through school immunisation programs. Whilst communication resources supporting school provider vaccination conversations are available, we know little about how these resources are used. Currently, the Sharing Knowledge About Immunisation (SKAI) website addresses routine vaccination in pregnancy and early childhood. To inform the expansion of SKAI to include routine adolescent vaccination, this study aimed to understand what questions about routine adolescent vaccination school providers answer, what communication resources they use and what resources they want.

Methods: We purposefully recruited a sample of 17 school immunisation providers and co-ordinators for qualitative interviews. We aimed for participant diversity by state/territory, professional role and years of school immunisation delivery experience. We thematically analysed qualitative data using an inductive team approach.

Results: Participants shared that their vaccination conversations routinely provided information about diseases and vaccines, provided reassurance about the importance of vaccines and clarified vaccine misunderstandings. Participants reported a lack of resources to support conversations with Aboriginal and Torres Strait Islander and culturally diverse communities. Some providers shared that they have tailored their communication strategies to help address these gaps. Providers suggested that new resources should be in plain language and shareable on social media.

Discussion: Interviews informed the SKAI expansion to adolescent vaccination. Findings supported maintaining the current SKAI topic areas but identified that information is needed about booster vaccines, HPV vaccination and how spiritual and religious observances can be respected during vaccination. We also identified that information address adolescent needle anxiety and routine vaccination for those with certain medical risk conditions is needed. To develop resources for priority populations, future SKAI research should be conducted in consultation with community members from Aboriginal and Torres Strait Islander communities and culturally diverse populations.

Making a difference: How consumer insights shaped two national immunisation projects

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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

Background: Engaging consumers is essential to ensure preventative health research addresses community needs. Engagement also facilitates translation of research findings and can result in more effective programs and policies. In Australia, there are currently limited published examples of how consumer engagement is implemented in immunisation research. The National Centre for Immunisation Research and Surveillance invited members from its Consumer Advisory Group (CAG) to take part as individuals ('consumer researchers') in two research projects. With these consumer researchers as abstract co-authors, we reviewed the consumer researcher program together and aimed to measure consumer involvement and outcomes.

Methods: Over six months, 10 CAG members with diverse backgrounds and lived experiences were invited to become consumer researchers. To measure program outcomes, we conducted a document review of meeting minutes, meeting summaries and returned feedback on draft files. Structured team discussions also assessed perceived program value, factors influencing collaboration, and challenges of consumer involvement.

Results: Six consumers accepted invitations to participate. Two consumers attended two Stakeholder Advisory Group meetings and a strategy workshop. Here, consumers provided insights on current community vaccination barriers and proposed strategies to address these. Five consumers reviewed draft communication resources about adolescent immunisation. These consumers suggested where to apply plain language and new information. Both projects incorporated collected consumer insights into final reports and draft versions. This oriented our resources to end-user needs, and consumers reported a greater understanding of immunisation research. Challenges arose when consumer suggestions were misaligned with project scope or current evidence.

Conclusions: There are benefits and challenges with involving consumer perspectives in immunisation research. The consumer researcher program strengthened the researcher-consumer relationships between co-authors, highlighted future opportunities for consumers and added valuable consumer involvement. These findings should be of interest to other organisations looking to work with consumers in immunisation research or public health more broadly.

Rethinking shigellosis clearance requirements for high-risk occupational groups: a 10-year Victorian audit

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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Background: Shigellosis is a highly infectious diarrhoeal illness transmitted via the faecal-oral route. In Victoria, Australia, public health protocols require exclusion of high-risk workers (HRWs)—food handlers, health/aged care workers, and childcare workers—until two consecutive negative faecal cultures are produced. However, limited evidence supporting this requirement exists, warranting a review of its utility and consistency with national protocols.

Aims: To assess the consistency of Victorian shigellosis exclusion and clearance requirements for HRWs compared to other Australian jurisdictions and evaluate the utility of requiring two consecutive negative clearance samples for return to work among HRWs.

Methods: Victorian public health protocols were reviewed, and exclusion and clearance requirements across Australian jurisdictions were surveyed via OzFoodNet Epidemiologists. Victorian shigellosis surveillance data (2014–2023) were analysed to assess HRW participation in clearance testing, initial clearance specimen results, and the proportion of cases with a subsequent positive sample after an initial negative result. The median duration of the clearance process was calculated.

Results: Among Australian jurisdictions, 7/8 required exclusion for probable cases, but none required clearance testing before returning to work. Victoria is the only jurisdiction mandating two consecutive negative clearance samples for all HRWs with confirmed shigellosis. Of 192 Victorian HRW cases, 72% (n=139) submitted ≥2 samples. Among those submitting ≥1 clearance sample (n=149), 89% (n=132) had an initial negative result. Only 3% (n=4) of those returning an initial negative clearance culture subsequently returned a positive clearance culture. The median clearance duration was 18 days.

Conclusions: While HRW participation in clearance testing was high, the overall yield of this multi-stage process was low, with most cases clearing infection by the initial sample and only 3% returning a positive sample after a negative result. Long clearance durations may have economic and logistical impacts on individuals and workforces. Further work to streamline protocols, including developing nationally consistent advice, would therefore be beneficial.

Structured Operational Research Training in Timor-Leste (SORT-iT) – engendering confidence in learning.

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6C - Vaccine policy for the region, Room E2, June 12, 2025, 11:00 AM - 12:30 PM

Background:
Timor-Leste is a country of 1.3 million people approximately 700km from Australia. Despite being independent since 2002, the country still faces significant health challenges, with limited resources. Structural Operational Research Training in Timor-Leste (SORT-iT) was designed to teach practical skills to people with no research background to conduct and publish research to inform evidence-based decisions. It was introduced in 2019 through STRONG-TL (Surveillance, Training and Research Opportunities for Communicable Disease Control in Timor-Leste) and has been delivered to 4 cohorts since then. Training modules were adapted from World Health Organisation Tropical Diseases Research program (WHO/TDR).

Methods:
Using the WHO/TDR modules as the standard, the contents of each module were modified to fit Timor-Leste context, delivered in multi-lingual format and with practical examples from participants' workplaces. Lectures were limited, with more focus on practical learning and one-to-one mentorship 'AKOMPANHA' with their selected and assigned mentor based on their topics and/or place of work. We introduced introductory training to potential participants one month before actual training to identify interested and committed candidates. Only those who then submitted Expression of Interest were selected for the training.

Results:
The SORT-iT training has contributed to strengthening around 70 Timorese healthcare workers' knowledge and skills in operational research. More than 5 participants have successfully published their first scientific research in international journals, more than 10 have presented their studies in national and/or international conferences. In 5 years the number of Timorese teachers/mentors on the course has increased from 4 to 23.

Conclusion:
This simple and interactive operational research training has empowered Timorese health care workers in their knowledge and understanding of health research and to make evidence-based decisions in their workplace. The whole experience of two ways learning and side-by-side mentoring has created a long-lasting relationship in a new culture of research.

Primary Case Role and Gastroenteritis Outbreaks Characteristics in Residential Aged Care Facilities

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Residential Aged Care Facilities (RACFs) house elderly individuals at increased risk of severe disease from gastroenteritis infections. Understanding how enteric pathogens enter these semi-restricted environments and the associated impact on outbreak magnitude can inform targeted prevention strategies.

The South East Public Health Unit (SEPHU) conducted a retrospective cohort study to investigate the association between the role of the outbreak primary case, defined as the case with the earliest symptom onset, and the size and duration of gastroenteritis outbreaks in RACFs.

66 RACF gastroenteritis outbreaks managed by SEPHU between November 2023 and December 2024 were included in the study. For each outbreak, the role of the primary case, either resident or staff, was identified from case line lists provided by RACFs as part of routine outbreak management. Outbreak size, defined as the total number of cases, and outbreak duration, measured by the number of days between symptom onset of the first and last cases, were obtained from Victoria's Public Health Event Surveillance System (PHESS).
Residents were the primary case in 86% of RACF outbreaks. Outbreaks where the primary case was a staff member (n=9) were, on average, larger in size (mean difference = 11.9 cases, t=1.3, p=0.19) and slightly shorter in duration (mean difference = 0.98 days, t=0.32, p=0.75) than outbreaks with a resident primary case (n=57), though these findings were not statistically significant. However, the number of staff cases was significantly higher where a staff member was the primary case (mean difference = 6.42, t = 3.75, p = 0.0004).

These findings identify residents as the primary case for most RACF outbreaks, highlighting a need for strengthening infection prevention for residents. Additionally, the greater number of staff cases infected when a staff member is the primary case underscores the importance of staff exclusions while infectious to protect the RACF workforce.

Automating Enhanced Surveillance Form Reminders for Gonorrhoea Notifications in South East Melbourne

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4B - STI surveillance and prevention, Room E1, June 11, 2025, 1:30 PM - 3:00 PM

Background:
Gonorrhoea is a high-burden notifiable condition, with over 260 notifications per month in the South East Public Health Unit (SEPHU) catchment in 2024. Enhanced Surveillance Forms (ESFs) provide critical epidemiological and clinical data, yet 40% of cases lack a completed ESF, impacting the ability to monitor disease trends, identify at-risk cohorts, and respond to antimicrobial resistance (AMR). The increasing prevalence of AMR in Neisseria gonorrhoeae presents a significant public health challenge, requiring robust surveillance to track resistance patterns and inform treatment guidelines. Understanding gonorrhoea transmission in priority populations, including Aboriginal and Torres Strait Islander communities, is also crucial for targeted interventions.

SEPHU must manually follow up with General Practitioners (GPs) for these cases, a process that demands significant resources. Additionally, challenges include incomplete GP contact details in surveillance systems, high caseloads leading to delays, and inconsistent data collection, all limiting the utility of enhanced surveillance.

Methods:
To address inefficiencies, SEPHU developed an automated system to improve ESF collection by standardising and cleaning GP and practice details, using text-matching algorithms (Levenshtein distance) to match cases to GPs, customising email communications to consolidate multiple cases per GP, establishing a centralised GP address book for improved contact accuracy and enabling bulk status updates in the Public Health Events Surveillance System (PHESS).

Results:

In the first automation batch, 1,015 gonorrhoea notifications pending ESFs were processed including 500 distinct GPs across 274 practices.
875 (86%) were successfully matched to GP practices, and ESF request emails were sent.
Of these, 297 (34%) ESFs were received within four weeks.
The SEPHU GP database now includes updated contact information for these GPs and practices improving future surveillance and engagement processes.

Implications for Public Health:
This automation enhances surveillance identifying high-risk transmission in priority populations, supporting evidence-based interventions and clinical guidelines, reducing manual workload and improving follow-up efficiency.

Conclusion:
Automating ESF collection improves the efficiency and accuracy of gonorrhoea surveillance, strengthening public health capacity to monitor disease transmission in vulnerable populations and improve engagement with GPs. This model can be adapted to other high-burden communicable diseases to enhance surveillance, data integrity, and targeted interventions.

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Right-sizing genomic surveillance for the early detection of novel and emerging viruses

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6E - One Health preparedness, Riverbank Room 3, June 12, 2025, 11:00 AM - 12:30 PM

Much of the existing guidance on sampling strategy required to detect novel and emerging viruses using genomic surveillance (GS) was developed during the SARS-CoV-2 pandemic; a time when unprecedented levels of diagnostic testing and sequencing were well-resourced, which is no longer the case. As viral pathogens continue to pose a global public health threat, GS objectives have broadened beyond SARS-CoV-2 variants to include early detection of emerging and novel viruses likely to appear initially at low numbers within a given population. The aim of this study was to estimate sample sizes for varying turnaround times (TATs) required to develop an agile, practical framework to enable contemporary early warning GS systems to detect emerging viral pathogens.

We estimated the number of genomes required to detect (with 80% or 95% probability) one case infected with a variant, amongst all cases within a population. We considered the effects of variant growth rate (doubling time) and TATs (the time between sample collection and sequence generation) upon the time to variant detection and its circulating prevalence at the time of detection, via a simple logistic growth model. We applied these estimates to two likely epidemiological scenarios, i) detection of novel virus or ii) emerging variant of an established virus, and therein defined the appropriate scales and speed for GS.

We found that the amount of sequencing required to detect a rare, low prevalence variant is affected by the doubling time of the variant. However, long TATs (>28 days) reduce the chance of early variant detection from a reasonable sample size irrespective of doubling time. Reducing TATs therefore reduces the overall amount of sequencing required for early detection. The findings of this study highlight both TATs and variant doubling times as critical elements that must be considered when designing and resourcing effective early warning GS systems.

Are booster doses of Japanese encephalitis vaccines needed for Australian target populations?

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

Since the 2022 Japanese encephalitis (JE) outbreak in mainland Australia, JE vaccination has been recommended for high-risk populations, including residents of JE virus-affected regions. However, the need for booster doses remains unclear. This review summarises relevant evidence and vaccination guidelines to inform Australian JE booster recommendations. It focused on effects of boosters and duration of immunity on live chimeric (Imojev) and inactivated Vero cell (JEspect) JE vaccines.

One study showed 90% of children in endemic regions were seroprotected (ie. JE virus-specific PRNT50 titre ≥1:10) at least 3 years after primary JEspect vaccination. Adult studies from non-endemic settings showed a declined seroprotection (82%) at 5 years after primary vaccination, with only 50-60% of those without tick-borne encephalitis virus remaining protected. A JEspect booster dose given 12-15 months after the primary series produced robust immune responses lasting at least 2 years in children and 6 years in adults.

Children (aged 9 to 42 months) in endemic countries primarily vaccinated with Imojev demonstrated >80% seroprotection rates at 1-2 years (5 studies), which declined to >65.6% at 5 years. Sustained seroprotection (93%) was observed in adults from non-endemic settings for at least 5 years after primary vaccination. A booster dose elicited a rapid anamnestic response, with persistent seroprotection rates at 5 years in both children and adults (99.1% and 97%, respectively).

In most non-endemic countries, one booster dose of JEspect is recommended 1-2 years after the primary course for those aged ≥2 months with ongoing risk. Second booster recommendations are inconsistent. Imojev boosters are generally recommended for children (aged ≥9 months) after 1 year, but not for adults. Current JE vaccine recommendations are based on limited immunogenicity data from small trials. Future research investigating long-term duration of immune responses and vaccine effectiveness is needed, especially from non-endemic regions with localised or sporadic JEV transmission.

Fiji National Immunisation Coverage Survey 2024

Associate Professor Jane Frawley[1], Professor Luisa Vodonaivalu, Sr Litiana Volavola, Dr Rachel Devi, Professor Andrew Hayen
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6C - Vaccine policy for the region, Room E2, June 12, 2025, 11:00 AM - 12:30 PM

Background: A Fiji National Immunisation Coverage Survey was conducted in September and October 2024. The primary objective was to quantify vaccination rates among children and adults according to the Fiji Immunisation Schedule.

Methods: The survey was conducted across 30 enumeration areas (EAs) in each division, as selected by the Fiji Bureau of Statistics (120 EAs nationwide). Teams used Computer Assisted Personal Interview devices for random selection of households and to conduct the interviews.

Results: In total, 6,076 households were surveyed (23,425 individuals). In total, 70.7% (95% CI: 65.0, 75.8) of children aged 24-35 months had received all vaccinations in line with the Fiji immunisation programme until 18-months of age, with variations between divisions. There were substantial differences in uptake between vaccines with early infant vaccines having strong uptake (BCG, 93.2%; 95% CI: 89.4, 95.7), compared with vaccines given at 12- (MMR1 90.5%; 95% CI: 86.5, 93.4) and 18-months (MMR2 75.1%; 95% CI: 69.5, 80.1). Overall, 15.9% (95% CI: 12.0, 20.8) of children received all vaccines on time. For children in Class 1, uptake rates for Td4 and MMR3 were 81.5% and 78.3%, respectively. National Td5 coverage in Class 6 was 78.3%, with notable differences across divisions, and 63.8% of eligible girls received an HPV vaccine. For adults, 53.3% (95% CI: 48.8, 57.9) of women received a Td vaccine during her most recent pregnancy. Uptake of COVID-19 and influenza vaccine during pregnancy was 43.8% (95% CI: 37.0, 50.9) and 24.3% (95% CI: 21.3, 27.6) respectively. Nationally, 83.1% of adults had received two doses of the COVID-19 vaccine.

Conclusion: The survey identified strengths and areas that need additional attention. Findings will inform tailored interventions, policies, and systems aimed at achieving equity and protection against vaccine-preventable diseases for all Fijians.

Strengthening Schistosomiasis Prevention in Central Sulawesi: Challenges, Gaps, and Global Best Practices

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

Background
Schistosomiasis remains a significant public health issue in Indonesia, particularly in endemic areas such as Lindu Highlands, Napu Plateau, and Bada Plateau. Schistosoma japonicum, the causative agent, is a major focus of eradication efforts as part of neglected tropical diseases (NTDs) in the region. Despite ongoing control programs, challenges persist in achieving sustainable prevention and elimination. This study aims to explore how prevention programs are implemented, identify areas for improvement, and examine best practices from other countries to inform more effective strategies.

Methods
A desk review is conducted to examine schistosomiasis prevention strategies from selected countries where Schistosoma japonicum remains endemic, including China, the Philippines, and Indonesia. The review includes peer-reviewed journal articles, WHO reports, national health guidelines, and grey literatures. Using the WHO framework for schistosomiasis control, a framework analysis is applied to systematically compare these international approaches with the local context in Central Sulawesi, focusing on diagnostic testing in humans and animals, the establishment of WASH (Water, Sanitation, and Hygiene) interventions, snail control activities, strategies for reaching groups at risk, and preventive chemotherapy programs.

Expected Outcomes
This study is expected to generate a comprehensive understanding of current schistosomiasis prevention efforts in Central Sulawesi by identifying key strengths and critical gaps in program implementation. Through a comparison with strategies from other Schistosoma japonicum-endemic countries and guided by the WHO framework, the study aims to identify contextually relevant and effective practices. Particular focus will be given to diagnostic testing in humans and animals, WASH interventions, snail control, outreach to at-risk populations, and preventive chemotherapy. The findings will inform actionable recommendations to strengthen program sustainability, enhance stakeholder coordination, and support the development of more targeted and community-centered prevention strategies suited to the socio-environmental conditions of Central Sulawesi.

Conclusion
Findings from this study will contribute to the development of more effective and community-centered schistosomiasis prevention strategies, improving coordination among stakeholders, addressing socio-environmental determinants, and integrating lessons from successful international programs are expected to be key focus areas for optimizing program outcomes.

Keywords: Schistosomiasis, Neglected Tropical Diseases (NTDs), Schistosoma japonicum, Prevention Programs, Community Engagement, Health Policy

Launch of the National Microbial Genomics Framework for Public Health 2025-2027

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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

Microbial genomics is a powerful tool that helps us better understand infectious diseases, improve public health surveillance, strengthen public health decision-making, and design vaccines and other treatments. During the COVID-19 pandemic, microbial genomics was essential in detecting SARS-CoV-2 variants of concern, informing public health policy and guiding Australia's response.

On 7 January 2025, the Australian Health Protection Committee endorsed the National Microbial Genomics Framework for Public Health 2025-2027 (the Framework). This Framework builds on the first National Microbial Genomics Framework 2019-2022 to provide a consistent, national, and strategic view for integrating microbial genomics into the Australian public health system, and for identifying microbial genomics policy issues and challenges that need to be addressed. In this iteration, the Framework incorporates implementation activities to cover the period of 2025-2027. The Framework contains updates which reflect a logical progression from the previous iteration's implementation activities, and alignment with the Interim Australian Centre of Disease Control's (CDC) strategic direction, including:

- updating the Framework to reflect the landscape of microbial genomics post-COVID-19
- adding One Health-related implementation actions, and
- aligning with the Interim Australian CDC's preliminary data strategy.

The Framework reinforces the Interim Australian CDC's collaborative commitment to integrating microbial genomics into the Australian laboratory and public health system. This will ensure this technology is effectively used throughout Australia, enabling Australia to better respond to public health threats.

Hepatitis C cascade of care – treatment outcomes following tertiary care referral

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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Background
Australia is committed to eliminating hepatitis C virus (HCV) as a public health threat by 2030. However, treatment uptake remains suboptimal, with declining treatment initiations by non-General Practitioner (GP) specialists not being offset by initiations by GPs and nurse practitioners. Little is known about clinical outcomes when GPs do not initiate treatment. The Coordinated Hepatitis response to Enhance the Cascade of Care (CHECCS) project, which aimed to improve follow-up of newly diagnosed HCV, identified 117 HCV RNA-positive cases notified to the Victorian Department of Health between September 2021 and March 2022, 50 of which were referred for non-general practice (GP) specialist care by their diagnosing doctor. However, CHECCS did not assess post-referral outcomes, and the care pathways and treatment outcomes of these cases was unknown.

Methods
Between July and September 2024, we contacted the tertiary clinics where cases were referred to determine their appointment attendance, treatment initiation, sustained virological response (SVR) and cirrhosis investigations.

Results
Thirty-seven (74%) referrals to tertiary care resulted in scheduled appointments, 32 (86%) appointments were attended, and 28 (88%) started treatment. Treatment initiation was higher among older patients and those born overseas, but lower among those with a recent history of injecting drug use (IDU). Treatment uptake was 100% among those reporting no IDU history, 88% in those with IDU >2 years ago, and 20% in people with recent IDU (<2 years). Of treatment those who completed treatment, 92% achieved SVR. Among clinic attendees, 22 (69%) had cirrhosis investigations, with six positive results.

Conclusion
High treatment initiation and SVR rates were observed among referred cases. However, individuals with recent IDU history had lower treatment uptake. Greater awareness of non-tertiary care HCV referral pathways among diagnosing clinicians, including models of care integrated with primary care services specialising in care for people who use drugs, would support DAA uptake and HCV elimination strategies.

Fusing disease surveillance data streams to infer epidemic conditions for decision-making

Dr Katharine Senior[1,2], Dr Saras Windecker[1], Dr Camelia Walker[2], Dr Peter Dawson[4], Professor James McCaw[2], Associate Professor Freya Shearer[2], Professor Nick Golding[1,3]
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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

During disease outbreaks, it is crucial to be able to rapidly estimate key disease parameters – such as transmissibility and severity – and understand infection trends to guide decision makers to adopt appropriate countermeasures. Efforts to do this during the COVID-19 pandemic with existing systems highlighted the need to diversify the data streams used in this process in three main ways. Firstly, existing systems relied on estimating disease parameters from First Few Hundred (FFX) studies, but these were slow and difficult to set up. We need to be able to estimate disease parameters from alternative data streams, such as contact tracing data. Secondly, we need to incorporate timeseries data to estimate the underlying infection trends in near-real time. Thirdly, we need the ability to account for behavioural changes in the face of dynamically changing interventions. To address these needs, we have been working with the Department of Defence to build a robust system that fuses different data streams and models to estimate epidemic conditions and parameters, which then flows through to scenario modelling to support decision making. In this talk I will give an overview of this prototype system – called the BioSurveillance Decision Support System (BDSS) – and the different data streams and models it supports. I will illustrate the system pipeline starting from different data streams to disease models, to scenario models and finally to decision outputs, using an example from the COVID-19 Delta outbreak in New South Wales in 2021. Outputs include near-real time estimates of infection prevalence that can be updated frequently, and decision scenarios for longer-term decision making.

Uptake of mpox vaccine and estimated coverage in targeted populations, Australia.

Ms Annabeth Simpson[1,2], Dr Alexandra Hendry[1], Dr James MacGibbon[3], Dr Mohamed Hammoud[4], Prof Martin Holt[3], Prof Kristine Macartney[1,2], Scientia Prof Andrew Grulich[4], A/Prof Frank Beard[1,2]
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1C - Mpox response, Room E2, June 10, 2025, 11:00 AM - 12:30 PM

Background
In August 2022, Australia initiated a funded mpox vaccination program, following the World Health Organization's declaration of a public health emergency of international concern due to mpox outbreaks in non-endemic countries, primarily affecting gay, bisexual and other men who have sex with men (GBMSM). A two-dose schedule of JYNNEOS vaccine is recommended for at-risk groups including sexually active GBMSM. Estimating mpox vaccination coverage is challenging due to the absence of precise population denominator data for GBMSM. We aimed to describe mpox vaccine uptake and estimate coverage among GBMSM.

Methods
Australian Immunisation Register (AIR) data at 6 February 2025 was used to calculate the number of mpox vaccine doses administered/received, by state/territory, provider setting, sex and age group. GBMSM population denominators by age group and state/territory were estimated using data from the third Australian Study of Health and Relationships, which provides national data on sexual health, behaviours and identity. Mpox vaccination coverage was calculated as the percentage of the relevant estimated population with recorded mpox vaccine doses in AIR.

Findings
Between 1 January 2022 and 31 December 2024, 114,622 doses of mpox vaccine were administered to 66,801 people, with the highest number (49,419) in 2022. Almost half of doses (43.7%) were administered in general practice. Most doses were administered in New South Wales (45,983;40.1%) and Victoria (40,020;34.9%). Of people who received at least one dose, 47,345/66,801 (70.9%) received two or more. Most recipients were male (94.2%), and one-third (33.9%) were aged 30–39 years. Coverage estimates will be presented.

Conclusion
Monitoring mpox vaccine uptake and coverage is essential for optimising the public health benefits of this important nationally funded program, identifying any coverage gaps and guiding future vaccination strategies and outbreak preparedness.

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Developing vaccine education materials: a case study from Fiji and Kiribati

Ms Luisa Vodonaivalu[1], Associate Professor Jane Frawley, Sr Litiana Volavola, Dr Rachel Devi, Ms Tatiku Kabuati, Dr Jessica Kaufman, Ms Kylie Jenkins, Professor Julie Leask, Professor Margie Danchin, Professor Holly Seale, Ms Isabella Overmars, Ms Yasmin Mohamad, Dr Claire Rogers
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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

This project used social and behavioural insights to explore community and health provider information needs, behaviours and beliefs around routine childhood, adolescent and adult vaccination to inform education materials in Fiji and Kiribati.

We conducted 12 focus groups in Fiji (113 participants) with community members and health providers in October 2022. Fiji had achieved strong uptake of the primary COVID-19 vaccine course due to mandates and financial incentives, but booster uptake was suboptimal. While routine childhood vaccines were generally accepted and acknowledged as important, there were indications that misinformation surrounding the COVID-19 vaccines was affecting childhood vaccine uptake. A flip chart was requested by health providers to help them address these issues with their communities. We developed, piloted and evaluated a culturally applicable flip chart with communities and health providers in 2023.

In Kiribati, a total of 30 participants took part in three different focus group discussions, two with community members and one with nurses, in 2024. The aim was to understand community attitudes and behaviours and tailor the flip chart for Kiribati. We found high acceptance for vaccines; however, there was little information available on the importance of vaccination. Childhood vaccine uptake was affected by practical issues, but frequently parents reported that they prioritised other needs. We tailored and evaluated the Fiji flipchart for Kiribati healthcare workers and their communities.

The process of developing, tailoring and evaluating vaccine information aids has highlighted important considerations including the importance of local languages, benefits and challenges of co-design, familiarity and power of story, and the ongoing need for culturally tailored, plain language information resources. This talk will focus on these factors and the importance of community inclusion and culture when designing and implementing information resources in the Pacific.

Syphilis outbreak investigations in the genomic era

Dr Rosa Coldbeck-Shackley[1], Dr Charlotte Bell[3], Trisha Rogers[3], Dr Lito Papanicolas[1], Mark Turra[1], Dr Lex Leong[1,2]
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4B - STI surveillance and prevention, Room E1, June 11, 2025, 1:30 PM - 3:00 PM

Syphilis notifications in Australia have continued to rise since an ongoing multijurisdictional outbreak (MJSO) was declared starting in Queensland 2011, the Northern Territory in 2013, Western Australia in 2014, and South Australia (SA) in 2016. In response, we trialled next generation sequencing for Treponema pallidum in SA to enhance understanding of syphilis genomic-epidemiology and to assess its utility for MJSO investigation.
Clinical swab samples (n = 137) referred to the SA Pathology Public Health Laboratory that screened positive for T. pallidum by PCR with Ct <=34 and collection dates between February 2021 to September 2024 were processed by target enrichment library preparation using Agilent baits and sequenced on an Illumina platform. Ancestral T. pallidum lineage and then finer sub-lineages were determined for 95 South Australian genomes that passed quality assessment in context with a set of publicly available national and international sequences (n = 786) using a hierarchical Bayesian analysis of population structure approach. Linked epidemiological data for SA cases were provided by the SA Communicable Diseases Control Branch.
Sequences from SA syphilis cases were divided amongst the two ancestral lineages: Nichols and SS14, then further into eight sub-lineages. Most sub-lineages clustered extensively with other international context sequences and SA cases from these globally diverse sub-lineages mostly resided in urban areas (SS14 sub-lineages 1.1.2, 1.2.10, 1.2.11, and Nichols sub-lineages 2.5.5, 2.5.6, 2.6.8). Two SS14 sub-lineages (sub-lineage 1.1.3 and 1.1.4) predominantly clustered with sequences from cases acquired in Australia and included a number of SA cases residing in regional-remote areas. Through epidemiological findings, nine sequenced cases were identified as MJSO, their sequences were associated with SS14 sub-lineages 1.1.3, and 1.1.4; and a Nichols sub-lineage 2.6.5. Despite the small sample size, genomic evidence indicates MJSO cases in SA are caused by multiple T. pallidum strains with introductions from unknown origins.

Public Health Response to an Avian Influenza Outbreak in Victoria

Dr Karen Blaney[1], Dr Luke Cardamone[2], Dr Naomi Clarke[1], Dr Mark Hayes[1], Dr Michael Muleme[1,3], Dr Bridgette McNamara[1,3], Dr Edura Jalil[5], Dr Storm Holwill[6], Dr Chuan Kok Lim[8], Dr Helen O'Brien[7], Dr Alexander Fidao[7], Dr Sally Salmon[9], Rebecca Kinnear[1], Dr Akhtar Hussain[1,3,4], Prof Eugene Athan[1,2,3,4]
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6E - One Health preparedness, Riverbank Room 3, June 12, 2025, 11:00 AM - 12:30 PM

Avian influenza viruses represent a significant threat to global public health and have contributed to the emergence of human influenza pandemics in the past. In 2024, a large outbreak of avian influenza occurred in poultry farms in Victoria, Australia, commencing with the detection of high pathogenicity avian influenza (HPAI) H7N3 at a poultry farm in the Golden Plains Shire on 22 May 2024. Over the following four weeks, HPAI (H7N3 and H7N9) was detected in poultry at an additional seven properties in the Golden Plains and Corangamite Shires. The overall control agency for outbreak response was Agriculture Victoria, with the Victorian Department of Health leading the human health response. Human case and contact definitions were established, with management of contacts (e.g., poultry workers and visitors to affected premises) dependent on their risk classification. Public health actions included influenza vaccination, antiviral prophylaxis, and active surveillance of high-risk contacts. Medical assessment and testing of suspected cases was facilitated through local health services and clinics. A total of 212 human contacts were identified, including 165 high-risk and 47 low-risk contacts, distributed across 25 Victorian local government areas based on postcode of residence. Twenty suspected cases were identified, all of whom tested negative for influenza A. There were no probable or confirmed human avian influenza cases. The recent HPAI outbreak in Victoria showcases the effectiveness of a coordinated One Health approach to disease management, and demonstrates the need for governments, agricultural industries and healthcare professionals to strengthen preparedness and response strategies for the global threat of HPAI H5N1.

Identifying the treatment gap: Linking individuals to hepatitis C care through notifications

Ms Nicole Matthews[1], Ms Gabrielle Lindeman[1], Ms Jacqui Richmond[1], Mr Paul Armstrong[1], Ms Freya Saich[1], Mr Troy Combo[1], Dr Tafireyi Marukutira[1,2], Doctor Jack Wallace[1], Professor Gregory Dore[3], Professor Carla Treloar[4], Doctor Jane Davies[5,6], Professor Joseph Doyle[1,7], Associate Professor Alisa Pedrana[1,2], Professor Margaret Hellard[1], Professor Mark Stoove[1,2]
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2D - STIs and blood-borne viruses, Riverbank Room 2, June 10, 2025, 1:30 PM - 3:00 PM

Background/Approach:
As Australia works towards its 2030 hepatitis C (HCV) elimination goal, the increasing challenge of identifying new cases highlights the need to strengthen care pathways. Ensuring both historical and new diagnoses are linked to care and that treatment is initiated post-diagnosis will be critical. Funded through an NHMRC Partnership Grant, Connect C aims to foster the sustainable use of HCV notifications data held by health departments to link those diagnosed with HCV to treatment. To achieve this, Connect C prioritises the building of linkages between health departments, community organisations, and healthcare and laboratory service stakeholders through in-person and online forums to inform community-accepted care models initiated from HCV notifications data.

Analysis/Argument:
Diverse perspectives from our stakeholder engagement emphasises the need for enhanced data sharing between government and health services to mobilise a broad workforce in supporting person-centred care pathways. A coordinated, system-wide approach to improve data visibility is required. Effective collaboration among stakeholders, including health authorities, community organisations, and peer support, is key to addressing barriers such as a lack of awareness of treatment options, stigma, poor access to healthcare and insufficient social support. Individuals who are not engaged in treatment can be identified and prioritised for care through better linkage of notifications data and other administrative health data.

Conclusions/Applications:
Utilising HCV notifications data, tailored treatment pathways and integrated peer support, can optimise acceptable pathways to HCV treatment, and re-engage individuals lost to care. Collaboration between health services and community organisations, including peer organisations, is key to mobilising sector resources to improve care pathways, enhancing retention in care, reducing the number of people living with HCV, improving health outcomes, and preventing transmission. This approach can help to accelerate progress towards HCV elimination by 2030, reducing HCV as a public health threat.

Uptake of influenza vaccination and antivirals among workers exposed to avian influenza

Dr Karen Blaney[1], Dr Naomi Clarke[1], Isis Caple[1], Laura Brown[1], Dr Michael Muleme[1,3], Dr Bridgette McNamara[1,3], Rebecca Kinnear[1], Prof Eugene Athan[1,2,3,4], Dr Akhtar Hussain[1,3,4], Dr Mark Hayes[1]
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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
A large outbreak of avian influenza occurred in poultry farms in Victoria, Australia in 2024. Risk assessment of the 212 people exposed to avian influenza ("contacts") on affected properties identified 172 contacts as eligible for post-exposure prophylaxis or treatment with influenza antivirals and seasonal influenza vaccination. Seasonal influenza vaccination is recommended for poultry workers during an outbreak of avian influenza; it does not protect against avian influenza, however could help prevent genetic reassortment between the viruses and emergence of a potentially pandemic subtype. Influenza antivirals were recommended for high-risk contacts (prophylaxis) and any symptomatic contacts (treatment) to reduce infection risk and disease severity.
Local primary care providers and health services facilitated provision of antivirals and vaccination free of charge. Despite these efforts, low uptake of vaccination and antivirals was observed among contacts.
Aim
The study aims to understand the enablers and barriers to antiviral and seasonal influenza vaccine uptake among contacts exposed to avian influenza.
Methods
A REDCap survey has been developed to explore factors influencing uptake and access to vaccination and antivirals. The survey was sent to all eligible contacts (N=172) via SMS. This included a translated version (Bahasa Indonesia) of the survey and SMS for 22 contacts.
Results
Preliminary analysis suggests factors such as perceived low risk of avian influenza, concerns about side effects, and difficulty accessing healthcare due to work constraints may have contributed to low uptake of antivirals and vaccination. Detailed results from this ongoing study will be presented.
Conclusion
Enhanced education on the risks of avian influenza could improve the uptake of vaccination and antivirals among high-risk groups. Further investigation is needed to explore factors influencing the uptake of these preventative interventions among workers exposed to avian influenza during outbreaks.

Approaches to Measuring Community Opinion During Public Health Emergencies

Ms Danielle Hutchinson[1], Associate Professor Holly Seale[1], Professor Raina MacIntyre[1], Dr Aye Moa[1]
[1]University Of New South Wales, Sydney, Australia

3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

Background: COVID-19 prompted an outpouring of people's opinions and feelings on social media, giving a rich data source for policy makers to monitor public sentiment regarding policy announcements. However, the use of this data by government decision makers in Australia has not been documented.

Aims: To explore the perspectives of public health decision makers regarding the collection and use of community sentiment data.

Methods: Semi-structured interviews with stakeholders (n=20) from local health, state and federal government departments who were involved in the COVID-19 response were conducted via videoconferencing. Questions related to the participant's perspectives towards the approaches that have been used to access public opinion during health emergencies, and if analysis of social media was utilised. Further, opinions were sought regarding best practice for future health emergencies, including the use of social media as a data source, and of artificial intelligence systems for analysis. The utility of these systems for multicultural communities was a particular focus.

Results: Thematic analysis of interview transcripts revealed that social media data was mostly monitored and used informally, for example, through manual review of comments on health department social media accounts, and addressed as talking points in health department communications. The benefits of using social media data included timeliness and minimal use of resources when compared to other methods. There was reticence in the majority of participants to emphasise social media data in decision-making due to likelihood of bias. Community consultation and engagement was viewed as the most important mechanism to collect reliable public opinion data from multicultural communities.

Conclusion: Insights from public health decision-makers identify that analysis of social media will need to be further validated before it can be used as a substantive input when responding to future health emergencies. Community consultation remains the most widely accepted data source, particularly for multicultural communities.

Recruitment and retention in an adaptive vaccine trial: A study coordinator's perspective.

Ms Miriam West[1], Dr Charlie McLeod[1,2,3,4], Dr Ushma Wadia[1,2,3,4], Dr Madeline Ong[1], Mr George Salama[1], Prof Peter Richmond[1,3,5]
[1]Wesfarmers Centre of Vaccine and Infectious Diseases, The Kids Research Institute Australia, Nedlands, Australia, [2]Infectious Diseases Department, Perth Children's Hospital, Nedlands, Australia, [3]School of Medicine, University of Western Australia, Crawley, Australia , [4]Centre for Child Health Research, University of Western Australia, Crawley, Australia , [5]General Paediatrics and Immunology Departments, Perth Children's Hospital, Nedlands, Australia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

The PICOBOO study aims to evaluate the safety and effectiveness of COVID-19 vaccine strategies in the Australian context. Under its adaptive trial design, existing participants were offered the opportunity to re-enrol at set time points, to receive a randomised COVID-19 booster vaccination, thereby 'starting again' on the visit schedule of activities. The PICOBOO study is being conducted across multiple Australian sites. We present recruitment and retention of adult participants at The Kid's Research Institute Australia. The research clinics are located within Perth Children's Hospital.
Re-enrolment was offered at our site during two periods, January-August 2023 and January-September 2024. Following the 2023 enrolment period, 49.1% (121/246) of eligible participants opted to re-enrol and were re-randomised to a COVID-19 vaccine booster. This re-enrolment increased to 54% (161/298) by the end of the 2024 period.
Participants were not limited in how many times they could receive a booster within the study, if they met eligibility criteria. Of those participants who re-enrolled, 28.6% (46/161) did so only once, 45.3% (73/161) re-enrolled twice, and 26.1% (42/161) re-enrolled three times.
In preparation for the next round of re-randomisation being offered mid-2025, a reflection of strengths and challenges is valuable to optimise recruitment efforts and minimise retention barriers. Areas identified include participant engagement, understanding of research result timelines, the inconveniences of hospital-based visits, personal motivations, the impact of changing attitudes towards COVID-19 in the broader community, and responding to the evolving recommendations during the pandemic.
Assessing the impact of these factors at various stages of re-enrolment will provide valuable insight into recruitment and retention for similar adaptive trials, providing a framework for long-term participant engagement and satisfaction.

Evaluation of using online survey to reduce pertussis transmission in regional Queensland

Dr Ho Yeung Lam[1], Arifuzzaman Khan[1], Dr Matthew O'Bryan[1], Michelle Jones[1], Dr Josette Chor[1]
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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Pertussis case notifications in Queensland have surged from 930 in 2023 to 14,993 in 2024 and significantly increased the workload of Public Health Units (PHUs). This surge has created a dilemma for PHUs, as maintaining the traditional approach of conducting phone interviews to collect clinical and exposure details, provide health advice, and manage high-risk contacts is both impractical and unsustainable, while scaling back risks further transmission. In response, the Wide Bay Public Health Unit introduced an online survey in August 2024 to streamline case investigation and management. Eligible patients with pertussis receive a Short Message Service (SMS) invitation to complete an online survey covering clinical history, vaccination status, exposure details, and antibiotic use. Automated health advice is provided based on responses. Only high-risk cases and survey non-responders receive phone follow-up. This evaluation aims to assess the survey's acceptability, impact on staff workload, and potential effects on pertussis control.

The evaluation utilises existing service data, including number of pertussis case notifications, case follow-up records, and survey response data collected between August and December 2024. Data analysis include descriptive statistics and logistic regression where appropriate. Key outcome measures include survey response rates, time to completion, as well as staff workload and follow-up actions for survey responders versus non-responders. The time trend of pertussis case notifications is analysed to evaluate the potential impact of the streamlined workflow on the control of pertussis in the region.

This evaluation provides insights into the feasibility of using online surveys for notifiable disease investigations and managements by PHUs. Findings can inform strategies to optimise case follow-up processes, reduce staff workload, and enhance public health responses.

Digital technologies for rapid response to Japanese encephalitis virus in regional Queensland

Dr Ho Yeung Lam[1], Jodi Pipes[1], Fiona Taylor[1], Helen Thomas[1], Anneke Marks[1], Kylie McGregor[1], Arifuzzaman Khan[1], Michelle Jones[1], Dr Josette Sin Yee Chor[1]
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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Digital technologies can play a crucial role in strengthening public health management of communicable disease risks and outbreaks. In February 2025, Japanese encephalitis virus (JEV)-positive mosquitoes were detected in Monto, Queensland, where the vaccination coverage was estimated at only 6.2%. This study describes how digital tools were utilised to support timely and effective public health interventions aimed at increasing community awareness and promoting vaccine uptake.

Within one week of notification, in collaboration with a local primary care practice in Monto, Short Message Service (SMS) notifications were sent to approximately 1500 unique phone numbers (covering at least 40% of population) to inform residents about the increased risk of JEV transmission, provide information on mosquito prevention and communicate the availability of JEV vaccination. In parallel, an online survey platform was introduced for community members to indicate their intention to receive vaccination, conduct preliminary eligibility screening and streamline referrals to the primary care practice for vaccination which commenced within two weeks after JEV detection.

To assess the effectiveness of these digital strategies, evaluation tools are used to measure community acceptance and engagement with SMS notifications and the online survey. Changes in vaccination coverage in the community are also measured to assess the impact of the interventions.

This experience highlights the potential of digital technologies to enhance communicable disease control by enabling the rapid and targeted dissemination of health information and improving vaccination coordination in the community. Further evaluation will assess their impact on community awareness, engagement, and vaccine uptake. Public Health Units can explore digital innovations to enhance outreach, optimise resource allocation, and support timely public health interventions.

Association between routine immunisation and COVID-19 vaccination in small island developing states

Ms Cyra Patel[1,2], Dr Gizem Bilgin[1], Professor Andrew Hayen[3], Professor Martyn Kirk[1], Dr Akeem Ali, Associate Professor Aditi Dey[5,6], Dr Ginny Sargent[1], Associate Professor Meru Sheel[1,2,7]
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6C - Vaccine policy for the region, Room E2, June 12, 2025, 11:00 AM - 12:30 PM

Background: There is limited evidence on the link between routine immunisation (RI) and emergency vaccination during infectious disease outbreaks. We examined the relationship between RI systems and COVID-19 vaccination coverage in small island developing states.

Methods: We analysed immunisation and health system performance data available from the WHO/UNICEF estimates of national immunisation coverage database, the COVID-19 Vaccination Information Hub and World Bank indicators. Our primary outcome was COVID-19 vaccination coverage at four timepoints (June 2021, December 2021, June 2022, December 2022) in 55 countries. Independent variables were coverage of six childhood immunisations (5-year mean annual coverage, 2015–2019), pandemic-related disruptions to RI, new vaccine introductions, health system performance measures, and economic and demographic characteristics. We calculated Spearman correlations for continuous variables and mean COVID-19 vaccination coverage for categorical variables.

Findings: COVID-19 vaccination coverage was higher in countries that sustained pre-pandemic RI coverage in 2021 and 2022. There were few moderate correlations between COVID-19 vaccination and pre-pandemic RI coverage namely with the birth dose of hepatitis B vaccine (June 2022: r=0.421, p=0.007; December 2022: r=0.438, p=0.005) and first-dose of measles-containing vaccine (December 2021: r=0.420, p=0.002). COVID-19 vaccination coverage was higher across all timepoints where HPV, influenza and second-dose of measles-containing vaccine had been introduced. COVID-19 vaccination coverage was strongly correlated with the density of physicians (June 2021: 0.897, p<0.001; December 2021: 0.785, p<0.001) and moderately correlated with that of nurses and midwives (June 2021: 0.630, p=0.001; December 2021: 0.605, p=0.002).

Conclusions: Countries that achieved higher COVID-19 vaccination coverage also sustained RI coverage during the pandemic, demonstrating the ability to withstand shocks to the health system. A sufficiently-sized skilled health workforce and flexibility to quickly adapt service delivery to reach populations across the age spectrum are critical to achieve high vaccination coverage during outbreaks.

Data use for immunisation decision-making in Vanuatu: role of electronic immunisation registers

Ms Cyra Patel[1,2], Ms Olivia Cheung[3], Ms Rachel Takoar[4], Mr Chris Gauthier-Coles[4], Dr Ginny Sargent[1], Mr Simon Samson[4], Dr Esther Makunga[5], Dr Philippe Guyant[6], Dr Syed Muhammad Faizan ul Haq[6], Mr Lauro Vives[6], Associate Professor Meru Sheel[1,2,7]
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6C - Vaccine policy for the region, Room E2, June 12, 2025, 11:00 AM - 12:30 PM

Background: Immunisation coverage data is collected via paper-based systems in most low-and-middle-income countries. Electronic immunisation registries (EIRs) can improve access to rich data for decision-making. We examined data use from paper-based systems for routine immunisation compared with an EIR for COVID-19 vaccination in Vanuatu.

Methods: We conducted a qualitative study, interviewing 16 key informants from the Vanuatu Ministry of Health at the national (n=7), provincial (n=3) and facility (n=1) levels, and international development agencies (n=5) in March 2024. We thematically identified data use actions and factors determining data use with the Performance of Routine Information System Management framework.

Results: Routine immunisation coverage data were used to identify coverage gaps, but use in planning service delivery or strategic decision-making was limited and inconsistent. In contrast, decision-makers used COVID-19 vaccination coverage data regularly to monitor the vaccination rollout, allocate resources, plan actions to deliver the program and assess adverse events. The COVID-19 EIR streamlined data processes, allowing data to be entered, analysed and shared at a faster pace. Barriers to using routine immunisation coverage data included inadequate data management processes, minimal performance feedback, lack of data use culture throughout the health system, poor data literacy and the workload of nurses. For COVID-19 vaccination, EIR data use was enabled by increased availability of human, financial and technical resources, adequately training workers on EIR use, greater demand and accountability for data by stakeholders, temporary improvements in internet connectivity, and a sense of urgency to achieve high COVID-19 vaccination coverage due to the pandemic.

Discussion: An enabling environment with skilled workers, adequate resources and demand for data was critical to foster data use in decision-making for COVID-19 vaccination. While the EIR enabled rapid access to data, health leadership, regular feedback and accountability to achieve targets were necessary to increase data use in decision-making.

Optimising Laboratory Operations for Multi-Site Clinical Trials: Strategies and Lessons Learned

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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

Introduction

A highly functional clinical laboratory is critical for supporting quality vaccine research. Multi-centre trials require efficient systems to facilitate reproducible collection, processing and preservation of bio-specimens. We share key lessons about optimising efficiency, capacity, and quality control processes for optimal sample collection in multi-site clinical trials, from the Platform Trial In COVID-19 Priming and Boosting (PICOBOO), a randomised adaptive platform trial, conducted at three Australian sites, involving >50 staff and enrolling 1112 participants, with 70,000 bio-banked specimens collected Mar 2022 to Sep 2024.

Key Learnings

1. Efficiency

The high volume of bio-specimens including sera, saliva and peripheral blood mononuclear cells, relative to available technicians posed a major challenge at trial onset, threatening feasibility. Our laboratory structure allowed senior scientists to discuss and implement swift changes to laboratory protocols with investigators. This resulted in updated processing methods with improved efficiency to cope with high volumes of samples, whilst reducing labour and consumable costs by approximately 20%, saving ~$155,000.

2. Reactive Capacity

Surges in clinic visits and evening collections were often unpredictable posing another major challenge. To optimise the laboratories capacity, we implemented systems involving robust laboratory management, effective methods of communication, and recruitment of surge personnel to staff the laboratory at short notice. This enabled rapid decision-making, scalability, and adaptability to accommodate unforeseen increased laboratory requirements.

3. Quality

Centralised standard operating procedures (SOPs) for sample management ensured consistent quality, integrity, and traceability across sites. Electronic freezer inventories, sample tracking systems, and frequent quality reviews reduced errors, improved documentation accuracy, and maintained bio-specimen quality. SOPs were codeveloped with stakeholders ensuring alignment with trial objectives and downstream immunological testing, ensuring quality and consistency across sites.

Conclusion

These key lessons, essential for optimising laboratory operations, were critical to the success of PICOBOO and systems established will be applicable for future, multi-centre clinical trials.

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Improving Indigenous Status Data in Notifications for Equitable Health Outcomes

Ms Nicole Matthews[1], Ms Gabrielle Lindeman[1], Mr Troy Combo[1], Ms Freya Saich[1], Ms Jacqui Richmond[1], Dr Tafireyi Marukutira[1,2], Professor Carla Treloar[4], Doctor Jane Davies[5,6], Professor Gregory Dore[3], Professor Joseph Doyle[1,7], Associate Professor Alisa Pedrana[1,2], Professor Margaret Hellard[1], Professor Mark Stoove[1,2]

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1D - Preventing respiratory infections, Riverbank Room 2, June 10, 2025, 11:00 AM - 12:30 PM

Background

Indigenous status data in hepatitis C (HCV) and other communicable diseases notifications can guide strategies to address health inequalities, inform self-determined models of care in HCV and address the disproportionate disease burden including HCV among Indigenous people. HCV notifications are primarily provided to health departments by pathology providers, with Indigenous status collection determined by legislative requirements. This data improves the understanding of HCV trends and burden across priority populations and developing targeted initiatives and policies. We conducted reviews to assess Australian notifications systems capacity to provide surveillance data to track progress to HCV elimination among Indigenous Australians.

Methods

Between 1 April and 30 August 2024, we reviewed public health legislation across Australian jurisdictions to assess the requirements for including Indigenous status in HCV notifications submitted by pathology providers. Additionally, an audit of pathology request forms from NATA-accredited pathology providers was conducted to determine the presence of Indigenous status fields.

Results

Five of eight jurisdictions (NT, SA, TAS, VIC, WA) mandate the collection and inclusion of Indigenous status for communicable disease notifications. Of the five jurisdictions, only two had public laboratories with Indigenous status fields on their request form, while no private laboratories did. Only six of forty-two pathology provider request forms reviewed included an Indigenous status field, with just one being a private laboratory.

Conclusion

Despite mandates in multiple jurisdictions, most private laboratories (which notify majority of HCV cases) failed to include Indigenous status fields, resulting in substantial data reporting gaps. This underreporting hinders our ability to track and respond to the HCV epidemic amongst Aboriginal and Torres Strait Islander people. In addition to ensuring clinicians record Indigenous status in patient management systems, Australian health authorities must ensure compliance with legislative requirements for including Indigenous status in disease notifications and ensure Indigenous status fields are on all pathology forms.

Blood-borne viruses and Australian health systems: challenges for Pacific Islander seasonal workers

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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Background: Many Pacific Islander seasonal workers (SWs) come from regions with a high burden of blood-borne viruses (BBVs) such as hepatitis B virus (HBV), yet there is a lack of understanding of their Australian health experiences. This study explores the lived experiences of SWs and service provider (SP) perspectives, focusing on healthcare interactions and challenges faced in addressing health issues, particularly HBV, other BBVs and sexual health.
Methods: Using a sequential mixed-methods design, we conducted 1) semi-structured interviews with 18 agricultural SWs and 27 SPs during 2023-2024 and 2) surveys related to SW knowledge and SP experience of providing BBV and sexual health care in regional Queensland. This presentation reports on the qualitative arm of the study. Interviews were thematically analysed, with four researchers reaching consensus on key themes.
Results: A complex interplay of factors impacting health and healthcare system navigation and access were described, revealing challenges beyond HBV and other BBVs. There were significant barriers for SWs in accessing general health, BBV and sexual health services, driven by Commonwealth-level system gaps, employment conditions, geographic isolation, inequitable resource distribution, health literacy and cultural factors. Access was often dependent on the goodwill of employers and SPs.
This study highlights the need for targeted interventions such as outreach clinics, culturally appropriate in-language resources, and universal health coverage including for BBV and sexual health services for SWs in regional Australia. These findings offer valuable insights for informing policy and healthcare program design for seasonal workers in Australia.
Conclusion: Seasonal workers have significant unmet healthcare needs and greater political will is required to prioritise equitable healthcare for this population. Working with key stakeholders, our research is developing recommendations to Government on improving access to BBV and sexual health care for seasonal workers in Queensland. This project aligns with National Hepatitis B and National Blood Borne Viruses and Sexually Transmissible Infection Research Strategies that identify culturally and linguistically diverse communities as priority populations requiring more effective and equitable support.

Trachoma elimination in WA: achievements and challenges

Prof Donna Mak[1,2], Ass Professor Marisa Gilles[3], Ms Jessica Curnuck[4], Mr Matthew Lester[1]
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2D - STIs and blood-borne viruses, Riverbank Room 2, June 10, 2025, 1:30 PM - 3:00 PM

Background
Trachoma is the leading infectious cause of blindness worldwide. Australia is the only high-income country with endemic trachoma. This presentation reviews trachoma prevention and control activities in Western Australia (WA) and their implications for sustainable trachoma elimination.

Methods
A statewide approach to trachoma control, consistent with the Communicable Disease Network Australia's Guidelines for the public health management of trachoma (2006), was established in Western Australia (WA) in 2006. Implementation of these guidelines involves trachoma prevalence and control activity data being collected and reported to the National Trachoma Surveillance and Research Unit.

Results
In 2006, trachoma was endemic in about 50 communities and towns in the four WA regions, with <15,000 people at risk of the disease; prevalence in these locations was 23%. By 2024, trachoma prevalence had reduced to less than 5% and was limited to six communities in two regions. Recognising that home is the most influential environment for children and family health, partnerships between WA Health's Environmental Health Directorate, local Shires and the State Housing Authority within the Department of Communities have enabled what started as Safe Bathroom checks by Aboriginal environmental health practitioners to transform into Healthy Homes Assessments. These assessments facilitate and prioritise repairs and maintenance of health hardware. Many schools in trachoma-endemic communities implement face-washing, nose-blowing, uniform laundering, and teeth-brushing programs. The 715 health-check includes trichiasis screening.

Conclusions
Over the past 18 years, trachoma control in WA has shifted from an emphasis on community-based screening and antibiotic treatment (often community-wide) to supporting behaviours and environmental conditions that protect people from trachoma and other infective and post-infective conditions such as otitis media, skin infections, post-streptococcal glomerulonephritis and rheumatic fever/heart disease.
Future challenges include maintaining environmental health improvements and health hardware, normalising facial cleanliness and accessing technologies suitable for trachoma surveillance after certification of trachoma elimination.

The results presented are not research findings; they were generated in the course of delivering a public health program overseen by the WA Trachoma Reference Group which comprises a variety of government, non-government, and Aboriginal Community Controlled Organisations including Aboriginal Health Council of WA and Aboriginal Community Controlled Health Services.

Effectiveness of nirsevimab in preventing RSV-hospitalisation among young children in Western Australia

Dr Ushma Wadia[1,2,3,4], Associate Professor Hannah C. Moore[1,5], Professor Peter C. Richmond[1,3,6,7], Avram Levy[9,10], Dr Lana Bell[11], Catherine Pienaar[1,2], Joanne Harvey[1,2], Caroline Finucane[1,2], Erin van der Helder[1,2], Lauren Bloomfield[8,12], Professor Allen C. Cheng[13,14], Professor Paul Effler[3,8], Professor Christopher C. Blyth[1,2,3,10]

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2A - Effectiveness of RSV prevention, Halls CD Lower Section, June 10, 2025, 1:30 PM - 3:00 PM

Background:
Respiratory Syncytial Virus (RSV) causes a significant burden of illness for children under 2 years of age. Nirsevimab, a long-acting monoclonal antibody, was registered for RSV prevention in Australia in 2023. In April 2024, Western Australia (WA) launched the country's first state-wide universal nirsevimab program for infants entering their first RSV season and high-risk children entering their second RSV season. This study describes the effectiveness of nirsevimab against laboratory-confirmed RSV hospitalisation over a single epidemic season.
Methods:
Between April 2024 and October 2024, children hospitalised with laboratory-confirmed RSV-associated acute respiratory infection (ARI; cases) and contemporaneous test-negative ARI controls were enrolled. Demographic variables, medical risk factors, symptoms and outcomes were assessed. Nirsevimab effectiveness in preventing RSV-associated hospitalisation was estimated using a test negative design.
Results:
Over 7 months, 284 children eligible for nirsevimab were enrolled including 184 RSV positive (cases) and 100 test negative controls. Coverage of nirsevimab in RSV cases and controls was 22.1% and 64.0% respectively. Of RSV positive cases, 153 (83.2%) were born at term and only 30 (16.3%) had medical risk factors. The overall adjusted estimate of nirsevimab effectiveness against RSV-associated ARI hospitalisation was 88.2% (95% CI: 73.5, 94.7). Effectiveness against RSV admission requiring oxygen/respiratory support was 61.8% (95% CI:16.4, 82.5). There were no significant differences in demographic, medical risk factors and outcomes observed among those that were immunised compared to the unimmunised RSV positive cases.
Conclusion:
This study is the first to provide estimate of nirsevimab effectiveness against hospitalisation in Australia and demonstrates that a single dose of nirsevimab was highly effective against RSV-associated hospitalisation in infants. In 2025, state funded nirsevimab and National Immunisation Program-funded Maternal RSV vaccine is available. This study will provide longitudinal effectiveness of hybrid programs in the coming years.

BPZE1, AN INTRANASAL LIVE ATTENUATED PERTUSSIS VACCINE, EVALUATED IN HEALTHY CHILDREN

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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

Background

BPZE1, a live attenuated intranasal pertussis vaccine, is designed to prevent Bordetella pertussis (Bp) infection (colonization), disease and transmission to address limitations of current vaccines. BPZE1 protects adults, primed with whole-cell pertussis vaccine in infancy, from colonization with virulent Bp. This study assessed BPZE1-induced immune responses, non-interference and safety when administered with or without tetanus-diphtheria-acellular-pertussis vaccine (Tdap; Boostrix™) in children 6-17 years old, primed in infancy with acellular pertussis vaccine (aPV).

Methods

366 healthy school-age participants were vaccinated after randomization 1:1:1 to 109 colony-forming-units (CFU) BPZE1+intramuscular-placebo, 109CFU BPZE1+Tdap, or Tdap+intranasal-placebo. Primary endpoints were geometric mean fold rise (GMFR) from baseline of nasal secretory immunoglobulin A (S-IgA) against whole cell B. pertussis extract (WCE) in BPZE1 and BPZE1+Tdap groups at Day 29 and solicited adverse events (AEs) through 7 days after vaccination. Key secondary endpoint was BPZE1+Tdap induction of serum IgG against tetanus, diphtheria, and aPV antigens compared with Tdap at Day 29.

Results

GMFRs of S-IgA against WCE were similar among BPZE1 and BPZE1+Tdap groups (3.8 [95% CI 3.1-4.7] and 3.5 [2.9-4.3]), but low in Tdap group (1.2 [1.0-1.5]). All participants in BPZE1+Tdap and Tdap groups had anti-tetanus and anti-diphtheria antibody levels ≥0.1 IU/mL and similar serum IgG responses to pertactin, filamentous hemagglutinin and pertussis toxin at Day 29. Solicited AEs were 50%, 52%, 45% (nasal/respiratory) and 42%, 50%, 55% (systemic) in BPZE1, BPZE1+Tdap and Tdap groups, respectively. Unsolicited AEs were similar between groups, no participants discontinued due to AEs, and no serious AEs were related to vaccination.

Conclusions

Intranasal BPZE1 vaccination with or without Tdap induced robust nasal mucosal and non-interfering systemic immune responses in school-age children who had been primed with aPV as infants with a favorable safety profile. In contrast to Tdap, BPZE1 has the potential to both protect against Bp colonization and reduce Bp transmission.

Pertussis resurgence in Queensland in 2024

Ms Gemma Devlin[1,2,3], Associate Professor Stephen Lambert[2], Dr Emma Field[1], Mohana Rajmokan[3]
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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

Background: A dramatic rise in pertussis cases was observed globally in 2023–2024. In Queensland cases in 2024 rose to the highest value since becoming notifiable. Pertussis epidemics occur every 3–4 years, influenced by waning immunity from acellular vaccine. Here we describe the epidemiology of pertussis in Queensland in 2024.

Methods: We extracted pertussis notifications of Queensland residents from 1991 to 2024, inclusive. Case counts and rates in 2024, overall and in specific age-groups, were compared with the 10-year mean incidence rates (2014–2023) and 2011 (previous annual peak).

Results: The total number of pertussis cases for 2024 (14,986) was more than 12 times higher than the 10-year mean (1,187 cases/year) and 67% higher than 2011 (8,985). Age-group specific incidence rates in 2024 were observed to peak at 10–14-years (1,300/100,000 persons) with those aged 10-, 11- and 12-years accounting for 25% of all cases, with those aged 13 years representing 3% of all cases.
Infants aged <6 months represented 1% of cases in 2024 with an incidence rate (403/100,000 persons), 6.9 times higher compared with the 10-year mean (58/100,000 persons) though 14% lower than 2011 (469/100,000 persons). In 2024, the incidence rate for infants aged <6 months was 61% and 69% lower than the 5–9 year and 10–14-year-old age groups, respectively. Maternal vaccination was given in pregnancy for 48% of cases aged <6 months.

Conclusion: We found overall and age-group specific rates are congruent with what is known about pertussis in the vaccine era, the vaccination schedule and waning immunity. Despite unprecedented case numbers overall, rates in infants were lower than older children and adolescents in 2024. The known protective benefit of the maternal vaccination and demonstration of the effect of the adolescent booster suggest the value of targeting these age-groups, particularly during pertussis epidemics.

Improving consumer messaging about Australian adult vaccination: insights from open-ended survey data

Dr Catherine Runge[1]
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2C - Mandates and messaging, Room E2, June 10, 2025, 1:30 PM - 3:00 PM

Introduction: Australia's adult vaccination coverage against respiratory infection is suboptimal. Heightened vaccine hesitancy and misinformation following the COVID-19 pandemic have exacerbated existing strategic, policy, access, and knowledge barriers to adult uptake. To better understand knowledge challenges, open-ended survey responses were examined to identify vaccination information needs and the nature of misinformation. These insights will inform improved health messaging.
Method: Survey data were collected in mid-2024, with participants (n=3,352) recruited from Lung Foundation Australia's client cohort and the general public. Forty percent of participants reported living with a lung disease. A qualitative content analysis is being conducted on responses to two open-ended questions: one on vaccination information needs and another allowing participants to raise any vaccination concerns (n=~2000 valid responses). Rigour will be sought through iterative analysis, with illustrative quotes provided to support credibility. Chi square tests of association will compare demographic and health characteristics of respondents who described information needs or who expressed views contrary to scientific evidence with those who discussed other topics or did not respond to the open-ended questions.
Results: A pilot analysis of a subset of responses revealed knowledge gaps on recommendations for adult vaccinations and vaccine frequency and timing, as well as misunderstandings around vaccine safety and efficacy. Categories of responses will be presented along with contextual information on Australia's adult vaccination schedule and policy.
Conclusion: Even among a health-engaged participant group (reflecting a large client cohort and evidenced by high self-reported respiratory vaccination rates) there is confusion, misunderstanding and distrust about adult vaccination. With new Australian immunisation strategies now including targets for adult vaccination coverage, effective community education initiatives are needed to drive improvement in uptake. Findings from this project will help shape consumer-informed communication strategies that enhance confidence in the benefit of adult vaccination.

Piloting Cultural Brokerage in the Management of Hepatitis B and C

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2D - STIs and blood-borne viruses, Riverbank Room 2, June 10, 2025, 1:30 PM - 3:00 PM

Increasing the proportion of hepatitis B and C (HBV and HCV) cases linked into care (LIC) is integral to eliminating these conditions in Australia. Cultural brokerage can be an effective way to engage with culturally and linguistically diverse (CALD) populations affected by HBV and HCV. To our knowledge, this has not been previously undertaken in Australia.

Using a mixed-methods retrospective cohort study, the South East Public Health Unit (SEPHU) sought to determine whether culturally-responsive management by a Cultural Liaison Officer (CLO) improved public health outcomes and consumer experiences for HBV and HCV cases.

Health undertaking notifications were used to identify cases of HBV and HCV from CALD communities. Rates of LIC, offering treatment, and provision of recommendations for HBV vaccination of close contacts were assessed. Data were compared prior to the introduction of the CLO (September 2022 to October 2023) and after CLO commencement (November 2023 to October 2024). Semi-structured interviews were undertaken to gauge consumer experience of working with the CLO.

205 HBV and 39 HCV cases were followed up during the study period. A significant association was seen between the introduction of the CLO and the proportion of HBV cases followed up until LIC (from 51.9% prior to CLO involvement to 97.9% , $Chi2 = 27.7$, $p<0.001$); known to be offered treatment (increased 6.4%, $Chi2 = 19.6$, $p=0.001$); and contacts being offered the HBV vaccine (increased 29.6%, $Chi2 = 11.25$, $p=0.001$). There were no significant associations regarding HCV cases.

Interviews identified three main themes regarding the cases' experiences with the CLO: self-perception; family and community; and institutions - demonstrating the beneficial contributions of the CLO.

Utilising a CLO was associated with improved public health follow-up of CALD cases with HBV. Cultural brokerage should be considered for future public health management of conditions, particularly where CALD communities are overrepresented.

Gonorrhoea antimicrobial surveillance: need for improvement

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4B - STI surveillance and prevention, Room E1, June 11, 2025, 1:30 PM - 3:00 PM

Background
Gonorrhoea notifications have been increasing in all Australian jurisdictions since 2009, apart from a brief decline in 2020, with notifications in 2024 being higher than in all previous years. This presentation reviews Western Australian (WA) systems for gonorrhoea antimicrobial resistance (AMR) surveillance and identifies gaps.

Methods
We analysed gonorrhoea AMR data recorded in WA Notifiable Infectious Disease Disease database (WANIDD) and obtained information from WA's public health laboratory (PathWest).

Results
Culture provides AMR data in relation to seven antibiotics including ceftriaxone, the recommended treatment. PathWest has tested PCR-positive gonorrhoea samples from all non-metropolitan areas and some metropolitan areas for plasmid-mediated penicillin resistance (PPNG) using an in-house molecular test since Nov 2011. From 2023, PPNG testing has been undertaken on PCR-positive gonorrhoea samples from two private laboratories providing services in three specific regions where oral penicillin-based gonorrhoea treatment is used. All clinics undertaking point of care testing send gonorrhoea positive samples to PathWest for PPNG testing.
The proportion of gonorrhoea notifications for which AMR data are available increased from 7% in 2015 to 35% in 2024. Between 2015 and 2024, AMR increased from an average of 0.7% to 6.2% in the three regions where oral penicillin-based gonorrhoea treatment is used. In 2024, 448 (9.3%) of gonorrhoea notifications were cultured and 90.4% of these were from metropolitan Perth.

Conclusions
WA's system of PPNG surveillance has enabled sustainability of oral-based gonorrhoea treatment in remote areas.
The small proportion of gonorrhoea notifications, especially from rural/remote areas, undergoing culture AMR testing represents a surveillance gap. Increasing prevalence of AMR gonorrhoea in South-East Asia and the frequency of direct travel between these countries and Australia, especially the resources sector workforce, mean that expansion of molecular AMR surveillance is required to prevent ceftriaxone and other AMR gonorrhoea strains becoming established in Australia.

A collaborative investigation of mastitis following COVID-19 vaccination to improve vaccine safety.

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4A - RSV and pregnancy vaccine safety, Halls CD Lower Section, June 11, 2025, 1:30 PM - 3:00 PM

Introduction
Mastitis, a condition predominantly affecting women, causes pain, swelling, and redness and can be lactational or non-lactational. In 2022, mastitis was flagged as being disproportionately reported with COVID-19 vaccines to the Therapeutic Goods Administration's (TGA) Australian Adverse Event Management System (AEMS) database. This led to a joint investigation between the TGA and Victoria's vaccine safety surveillance system SAEFVIC.

Methods
As part of the TGA investigation, mastitis reports post-COVID-19 vaccination were analysed as of January 2023. Reporting rates were calculated using Australian Immunisation Register dose data, with disproportionality analysis conducted locally and internationally. The regulatory landscape and published literature were also reviewed.
SAEFVIC analysed a large de-identified general practice (GP) dataset- POLAR (Population Level Analysis and Reporting) to identify consultations for a new mastitis diagnosis between 1 January 2021 and 31 October 2024. Using a self-controlled case series (SCCS) design, the relative incidence of mastitis 1–28 days post COVID-19 vaccination was calculated. Analysis was further stratified by vaccine type and sex.

Results
The AEMS database had 51 reports of mastitis following COVID-19 vaccination. The TGA's investigation found supportive evidence of an association between mRNA vaccines (Comirnaty® and Spikevax®) and mastitis and found no such evidence for Vaxzevria®.

The SCCS analysis found an increased risk of mastitis presentation in the 1-28 days following any COVID-19 vaccination (RI 1.63, 95%CI 1.39, 1.91 $p<0.001$) and specifically following mRNA vaccines (Comirnaty® and Spikevax®) (RI 1.74, 95%CI 1.48, 2.04 $p<0.001$) and females (RI 1.85, 95%CI 1.53, 2.24 $p<0.001$).

Conclusion
This collaborative investigation utilised regulatory spontaneous and jurisdictional surveillance, adverse event following immunisation reporting data and GP presentation data to detect and confirm a previously unrecognised adverse event and strengthen vaccine safety surveillance. It led to updates in product information documents for Comirnaty® and Spikevax® to include 'mastitis' as a potential vaccine-associated adverse event.

Global Epidemiology of Botulism Outbreaks from Open-Source Intelligence, 2016-2025

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Introduction:
Botulism is a rare, potentially fatal illness resulting from intoxication with a botulinum neurotoxin. Outbreaks are reported worldwide in humans, animals, and the environment. With toxin identification reliant on traditional surveillance methods conducted in laboratories. Open-source epidemic intelligence (OSINT) provides an alternative disease surveillance method in which outbreaks are reported from open sources such as news media, websites, or social media.

Methods:
Using the AI-driven OSINT early warning system EPIWATCH, we extracted a dataset published between 31 December 2016 and 1 January 2025 and filtered by our search terms to identify botulism outbreaks. Data collected included country, event date, location, symptoms, outbreak type (human/animal), case numbers, hospitalisations, antitoxin treatment, deaths, source and origin of outbreaks, botulism type, toxin strain, and time from exposure to symptom onset. Analyses were conducted using STATA/BE 17.0 and hotspot mapping in ArcGIS Pro v.3.1.

Results:
We identified 296 botulism outbreaks, affecting 28,634 individuals, with 27,334 deaths. Human outbreaks (87.5%, n = 259) resulted in 1,097 cases and 47 deaths, while animal outbreaks (12.5%, n = 37) accounted for 27,537 cases and 27,287 deaths. The highest number of human outbreaks occurred in Ukraine (56.0%, n = 145), the Russian Federation (10.8%, n = 28), and the United States of America (7.0%, n = 18). Common symptoms included dysphagia (11.0%), nausea (9.0%), and generalised weakness (8.8%). The primary transmission routes were foodborne (79.5%), unknown (13.5%), and iatrogenic (3.1%). The most frequently implicated sources were dried fish (33.2%), unknown (15.4%), and canned fish (5.4%). Toxin strain was rarely reported (97.7%), with strain B (1.2%), strain E (0.8%), and strain A (0.4%) identified. Symptom onset most often occurred within one day (8.1%) or the same day (5.0%) after exposure.

Conclusions:
There is no global surveillance system for botulism. OSINT-based surveillance provides a unique way to understand the global epidemiology of outbreaks, especially for diseases for which global surveillance systems do not exist, and to guide outbreak response.

Describing Australian listeriosis outbreaks, 2012 to 2022

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2B - Foodborne diseases, Room E1, June 10, 2025, 1:30 PM - 3:00 PM

Background
Foodborne outbreaks of listeriosis occur occasionally in Australia and can lead to severe outcomes for at risk populations. We identified invasive listeriosis outbreaks investigated in Australia from 2012 to 2022. We summarised the key features of these outbreaks and assessed the implications for food safety and future outbreak investigations.
Methods
Outbreak data was extracted from the national OzFoodNet Outbreak Register and described by year reported, size, severity, type of evidence, food implicated, setting the food was prepared and eaten, and likely cause of contamination.
Results
Twelve listeriosis outbreaks were identified. These outbreaks involved a total of 94 cases, with 20 deaths reported (an overall case fatality rate of 21.3%). The median number of cases per outbreak was three (range 2 – 34) and the median number of deaths was one (range 0 – 7). The median age per outbreak ranged from 62 – 92 years, except for one outbreak with a median age of 32 years. The most common food type implicated was pre-prepared composite foods (25%), including frozen meals and sandwiches. Emerging laboratory methods, such as whole genome sequencing, were used to investigate the relatedness of isolates from cases and suspected food vehicles, with ten outbreak investigations (83.3%) identifying the same aetiological agent in the cases and suspected food vehicle. Most outbreaks (ten outbreaks, 83.3%) were caused by contamination of the product in the production environment, with one outbreak associated with extreme weather events.
Conclusion
Use of novel microbiologic techniques has increased listeriosis outbreak detection and improved the ability to identify sources of outbreaks. It is important that public health communication emphasises the risks of consuming high-risk ingredients in composite foods, not just as standalone products. Food safety protocols should undergo ongoing review to ensure they are responsive to a changing climate.

Climate change and food safety: Investigation of a Vibrio parahaemolyticus outbreak,NSW,2024.

Zoe Baldwin[1], Anthony Zammit[2], Anne Mcintosh[2], Anne Watt[3], Basel Suliman[3], Qinning Wang[3], Geraldine Sullivan[3], Alexander Drew[3], Emily Fearnley[4], Barry Combs[5], Jane McAllister[6], Jenny Post[7], Stacey Kane[8], Alan Edwards[2], Roy Byun[1], Cheryl Jenkins[2], Vitali Sintchenko[3], Kirsty Hope[1], Mr Neil Franklin[1]

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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

Background

Foodborne Vibrio parahaemolyticus (Vp) outbreaks are uncommon in Australia. A marine heatwave (MHW) was observed along Australia's east coast in January 2024. In February 2024, NSW Health commenced an investigation into an increase of Vp foodborne infections in residents of other jurisdictions who had visited NSW.

Methods

Active case finding was conducted by requesting NSW laboratories to report identification of Vp in stool samples from 1 January 2024, and requesting other jurisdictions notify NSW of any cases with exposure in NSW. A descriptive case series was undertaken using a standard questionnaire. An outbreak case was defined as Vp isolated from stool, in a resident of NSW or VIC or ACT, or person who had travelled to NSW within their incubation period, with a specimen collection date on/after 9 January 2024, and the absence of travel overseas within 7 days prior to onset. Trace-back, food and environmental sampling were conducted by NSW Food Authority. Whole genome sequence analysis was completed for all cultured samples.

Results

Thirty-seven outbreak cases from four different jurisdictions were identified between 9 January and 27 March 2024. Thirty-three (89%) cases reported eating oysters during their incubation period. Trace-back identified the source of oysters consumed by cases as two growing areas in southern NSW. Testing of oyster meat samples yielded four positive cultures. Genomic analysis identified a cluster present with fourteen clinical and one oyster isolate. Closure, product withdrawal, sampling and monitoring, cool chain verification and relay requirements were control measures implemented prior to reopening of oyster growing areas.

Conclusion

Vp outbreak cases were associated with oyster consumption from two growing areas in NSW with a concurrent MHW occurring favouring the proliferation of Vp. MHW are predicted to become more frequent due to climate change, influencing Vp virulence and diversity. Vp outbreaks may consequently increase in frequency.

Let's talk about sex!

A/Prof Hazel Clothier[1,2,3,4], Dr Sedigh Khademi Habibabadi[1], Dr Aishwarya Shetty[1,2], Diana Vlesenko[1], Daneeta Hennessy[1,2], Dr Gerardo Luis Dimaguila[1], Prof Jim Buttery[1,2,4,5]
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4A - RSV and pregnancy vaccine safety, Halls CD Lower Section, June 11, 2025, 1:30 PM - 3:00 PM

Background
Vaccines save lives, but all is not fair between the sexes. Clinical trials frequently aggregate safety results across all sexes and post-licensure surveillance relies on equitable reporting of adverse events (AE) and SMS survey responses, leaving sex differences in access to safe vaccination underinformed.

Methods
We reviewed 52,262 AE reports to Victoria's vaccine safety surveillance system (SAEFVIC) from January 2020–2025 and considered sex-specific imbalances as reporting rates (RR) per 100,000 doses compared as ratios (RRR). We interrogated social media (X, formerly Twitter) using previously validated machine-learning topic modelling to identify vaccine-related reproductive-health mentions and compared with reported reactions.

Results
More AE reports were received for females than males (RRR 1.8, 95%CI 1,77–1.84), with disproportionality peaking at 40-49 years, and diminishing after 70 years of age. Reproductive biology alone did not account for differences as just 2.21% of adults reported reproductive-health-related reactions.

While expected sex-aligned signals of female vulval ulcers and male myo-pericarditis predominance were evident, many other AE had significant sex-imbalanced reporting rates. For reactions with count >10, 81 had >3.0 RRR for females and just 8 for males: only some with plausible clinical explanation.

The overall proportion of adult males self-reporting (10.9%) was two-thirds that of females, but conversely 25% more likely to be serious AE (20.2%, p<0.0001), suggesting surveillance captures only the tip of the iceberg of males' experiences.

These findings were affirmed by social media analysis identifying similar female vaccine-associated concerns, but several notable ones for males: notably swollen testicles, persistent erections and prostate cancer.

Conclusion
Females experience a wider range of vaccine adverse events than males and males appear to under-report. This underlines the importance of adjunctive active surveillance methodologies—including social media and large database analyses—to ameliorate these risks and create opportunities to redress inequities in safe vaccination and disease protection.

WA Syphilis Outbreak Response: Achievements and Challenges

Prof Donna Mak[1,2], Dr Paul Armstrong[2], Ms Lisa Bastian[2], Mr Stephen Boccaletti[2], Ms Kim Gates[3], Ms Rudie Marshall-Lang[2], Dr Caitlyn White[3]
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4B - STI surveillance and prevention, Room E1, June 11, 2025, 1:30 PM - 3:00 PM

Background
Since 2014, Western Australia (WA) has experienced a syphilis outbreak. Infectious syphilis notifications increased from 86 in 2013 to a peak of 846 in 2021 and 18 congenital syphilis notifications occurred between 2018 and 2023. This presentation describes WASORG's governance, implementation, achievements and challenges for syphilis control.

Methods
The WA Syphilis Outbreak Response Group (WASORG) was formed in 2018 to control the outbreak. WASORG is co-chaired by the Aboriginal Health Council of Western Australia and WA Health and includes representation from government, Aboriginal Community-Controlled Health Services, and non-government organisations. WASORG aims to reduce the incidence of syphilis among priority populations and prevent congenital syphilis.

Results
WASORG's achievements include:
- Formal partnership between WA Health and the Aboriginal Community Controlled Health Sector reflected in WASORG governance structure.
- Partnerships between policy makers, health service providers and affected communities, and activation of localised syphilis response teams ensured user-centred health promotion, and health professional development, and health service delivery.
- Syphilis point-of-care-testing in 43 sites across WA.
- 15% increase in syphilis testing rate and 32% decrease in test positivity since 2021 indicating reduction in disease transmission.
- 17% decrease in annual infectious syphilis notifications since 2022 and no congenital syphilis notifications in 2024.
- Plateauing of syphilis notifications in women of reproductive age.
- Mandatory reporting of syphilis testing in pregnancy at first antenatal visit, 28 and 36 weeks in the Midwives Notification System
- Published procedure for congenital syphilis case reviews (https://www.health.wa.gov.au/~/media/Files/Corporate/general-documents/Sexual-Health/PDF/Guidelines-for-review-of-congenital-syphilis.pdf)
- Proportion of pregnant people who underwent all syphilis tests appropriate to their gestation at delivery increased from 48% in July 2023 to 60% in Oct 2024.

Challenges include:
- Suboptimal syphilis testing in 40% of pregnant people.
- Although there were no congenital syphilis notifications in 2024, there was one near-miss, i.e. vertical transmission did not occur despite inadequate maternal syphilis treatment.

Conclusions
A sustained, multi-disciplinary, inter-sectoral partnership approach can reduce syphilis transmission and prevent congenital syphilis.

The Aboriginal Health Council of WA contributed to this abstract and approves its presentation. Results presented were generated in the course of outbreak control; they are not research findings.

Consumer engagement to improve cultural competency of the SaMELFS project

Mrs Selina Ward[1], Dr Helen Mayfield[1], A/Prof Benn Sartorius[1], Prof Colleen Lau[1]
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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Introduction: The Surveillance and Monitoring to Eliminate Lymphatic Filariasis and Scabies from Samoa (SaMELFS) project, is an ongoing operational research program to monitor and evaluate the effectiveness of triple-drug mass drug administration (MDA) on lymphatic filariasis (LF) transmission using a household-based questionnaire to collect data on demographics, and household and environmental characteristics. Misinterpretations can arise from direct translations and culturally inappropriate terminology, emphasizing the need for consumer engagement before, during, and after a survey. This survey aimed to identify challenges and issues raised when conducting questionnaire interviews with community members, and to clarify terminology.

Methods: In August 2024, the SaMELFS questionnaire was conducted by volunteers from the Samoan Red Cross. Based on individual experiences, they were invited to participate in an online survey, via Qualtrics. The survey focused primarily on clarifying challenges and issues involved with delivering the SaMELFS questionnaire and further clarification was also sought regarding terminology used and ways to improve this for the local Samoan context.

Preliminary Results: We received 26 unique responses from Samoan Red Cross volunteers. Most (73.1%) were directly involved in delivering the questionnaire to households. Interestingly, most (42.3%) participants thought the questionnaire was an appropriate length, however one participant felt this was too short, and six (23.1%) participants thought it was too long. When poised with the option of splitting the questionnaire into two components, most (53.8%) thought this would complicate delivery while some (30.7%) thought this would simplify delivery.

Conclusion: Our results underscore the need for continuous consumer engagement to ensure the appropriateness of data collection tools. The insights gained from this survey will inform future iterations of the SaMELFS questionnaire, improving data quality and enhancing relevance for the local Samoan context. Furthermore, there is potential for adaptability to other similar contexts, such as other pacific island countries and territories.

Implementing and Evaluating a Truncated Interview Approach for Rising Cryptosporidiosis Cases inVictoria

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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Background
Between November 2023 and August 2024, the North-Eastern Public Health Unit (NEPHU) experienced a sharp and prolonged increase in cryptosporidiosis cases, with notifications nearly doubling each month during this period. This surge in cases put additional strain on resources, affecting the timeliness of case interviews and outbreak detection. Cryptosporidiosis is typically spread by swallowing water contaminated with faecal matter containing Cryptosporidium oocysts. Most prior outbreaks in Victoria were linked to aquatic facilities. In response, a streamlined "truncated interview" process, focusing specifically on aquatic facility attendance, was introduced and evaluated.

Methods:On April 12, 2024, a truncated interview was introduced to screen for cryptosporidiosis cases linked to aquatic facility attendance. Data from the Public Health Electronic Surveillance System (PHESS) was used to conduct a time interval analysis to assess the duration between case notification and interview completion, as well as the time from exposure at the aquatic facility to outbreak escalation. A survey was also distributed to public health officers using the truncated interview to capture their experiences and feedback.

Results:Prior to implementation (October 25, 2023 – April 11, 2024), the proportion of cases interviewed within 7 days ranged from 10% to 45%. After the truncated interview was introduced, this increased to 50% to 100%, despite the continued high number of cases. The time between the last case exposure and outbreak escalation decreased from a range of 21 to 39 days to 25 days or fewer. The evaluation survey revealed unanimous satisfaction, with all participants (N=4) agreeing that the truncated interview reduced case completion time, eased the team's workload, facilitated timely outbreak escalation, improved efficiency, and was easy to use. The interview process reduced interview time by approximately 50%. However, it limited follow-up for cases that did not attend aquatic facilities, potentially reducing public health action in other areas.

Translational Outcomes:Adapting the interview process to fit the epidemiological situation streamlined data collection and improved response times. This approach offers public health benefits by increasing time for identifying common exposure patterns and detecting outbreaks. It will be implemented in the future when a rapid rise in cryptosporidiosis or other conditions is identified.

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Influenza vaccination for previously unvaccinated children. Are two doses better than one?

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5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

The World Health Organization recommends that influenza-vaccine-naïve children <9 years receive two doses, at least one month apart, in the first year of vaccination. This recommendation is based on immunological evidence.
To assess the real-world evidence for this schedule we conducted a systematic review and meta-analysis of studies of influenza vaccine efficacy and effectiveness by dose for children that were previously influenza-vaccine-naïve. To control for intra-seasonal variation, we calculated the pooled absolute difference of directly comparable vaccine efficacy and effectiveness estimates.
Our search of EMBASE, Medline OVID and CINAHL identified 49 papers that met the inclusion criteria. Sixteen papers reported the results of 13 randomised controlled trials (RCTs), 27 were inactivated influenza vaccine (IIV) effectiveness studies and six were monovalent 2009 pandemic effectiveness studies.
All seven of the live attenuated influenza vaccine (LAIV) trials assessed one-dose efficacy and three also assessed two-dose efficacy. Two studies reported directly comparable one and two dose efficacy and the pooled absolute difference between the directly comparable estimates of LAIV efficacy was 10% (95%CI: -1.6% to 21%).
Of the 27 IIV effectiveness studies, 13 were classified as naïve studies (used a population that was previously influenza-vaccine-naïve) and 14 were classified as mixed history studies (only children who received one dose were guaranteed to be previously influenza-vaccine-naïve). Pooled absolute difference between one and two doses of IIV effectiveness from naïve studies was 14%; (95%CI: -3.4% to 31%).
Existing studies are insufficient to assess the additional benefit of a second dose of influenza vaccine in the first year of vaccination. Half the identified VE studies did not adequately control for influenza vaccine history. Further high-quality observational studies or RCTs comparing the impact of one and two doses among influenza-vaccine-naïve children are required to guide immunisation policy.

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Going home: understanding enteric disease notifications in travellers visiting friends and relatives

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
Travellers visiting friends and relatives (VFR) have been shown globally to have a higher risk of acquiring infectious diseases compared to other travellers. Overseas-acquired infections place a burden on the person and their family on return and risk onward transmission in the community. We aimed to describe the characteristics of VFR travellers in routine surveillance data for food and waterborne conditions commonly associated with overseas travel in NSW residents, to inform surveillance and prevention strategies.
Methods
We extracted demographic and epidemiological data recorded for overseas-acquired infections of included food and waterborne conditions notified in NSW residents in 2024. Reason for travel is not routinely collected from overseas-acquired cases in NSW. Therefore, a VFR traveller was defined as a case with country of birth matching the country where they acquired their infection. VFR and non-VFR travellers were described and compared by condition, age group, sex, region of acquisition, place of residence and season of acquisition.
Results
Overall, 22.0% of overseas-acquired cases of included food and waterborne conditions were VFR travellers. VFR travel was most common in hepatitis A (OR 6.03, 95% CI 3.19, 11.40) and typhoid (OR 4.86, 95% CI 2.80, 8.44) cases. We found that VFR travellers were more likely to be aged 20-39 years (OR 2.01, 95% CI 1.30, 3.12), have been born in Central and South Asia (OR 12.06, 95% CI 7.13, 20.37), and reside in Western Sydney (OR 3.83, 95% CI 2.40, 6.11).
Conclusion
Our analysis identified risk groups for overseas-acquired infections associated with VFR travel by NSW residents. This will inform work with multicultural health colleagues to develop prevention strategies for these groups, who may not resonate with ‘holiday traveller’ campaigns. Surveillance could be improved by increasing completion of country of birth in surveillance data and asking cases their reason for travel.

Cost-effectiveness analysis of 20-valent pneumococcal conjugate vaccine for paediatric use in Australia

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Objective: The Australian paediatric National Immunization Program (NIP) currently includes a 2+1 schedule of the 13-valent pneumococcal conjugate vaccine (PCV13). The 15- and 20-valent pneumococcal conjugate vaccines (PCV15 and PCV20, respectively) are available, but not yet NIP funded in Australia. This study investigated the cost-effectiveness of implementing PCV20 compared with PCV13 and PCV15 in the Australian paediatric NIP.

Methods: The analysis utilised a population-based multi-cohort model over a 10-year horizon with costs and benefits discounted at 5% annually. The model considered direct vaccine effects for vaccinated cohorts (aged <2 years) and indirect effects for unvaccinated cohorts (all ages). Epidemiological, cost, and utility input data were obtained from Australian-specific sources and literature, while vaccine effectiveness estimates were derived from PCV13 real-world data, 7-valent pneumococcal conjugate vaccine (PCV7) trial data, and PCV7/PCV13 impact data. Model outcomes included pneumococcal disease cases (invasive pneumococcal disease, pneumonia, and otitis media), deaths, costs, and quality-adjusted life years (QALY), which were used to calculate incremental cost-effectiveness ratios. Sensitivity analyses were conducted to examine model robustness.

Results: Over 10 years, PCV20 was estimated to prevent more disease cases and deaths than PCV13 (642,804 and 8,308, respectively) and PCV15 (290,943 and 3,730, respectively). These greater health benefits translated into substantial QALY gains of 117,417 and 55,279, and total cost-savings of AUD 668,174,379 and AUD 312,296,604 with PCV20 versus PCV13 and PCV15, respectively. Therefore, the model predicted that PCV20 would be the dominant vaccination strategy versus both comparators in the base case. PCV20 was also dominant versus PCV13 in 97.40% of probabilistic sensitivity analysis iterations and versus PCV15 in 85.70% of iterations, suggesting robust results.

Conclusions: This cost-effectiveness analysis estimated that paediatric vaccination with PCV20 would be the dominant strategy, outperforming both lower-valent options – PCV13 and PCV15 – in terms of health benefits and cost-savings among the Australian population.

Influenza vaccination and cardiovascular events in individuals over 50

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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

We estimated the effectiveness of standard-dose influenza vaccine in preventing hospitalisation for cardiovascular disease (CVD) among New South Wales (NSW) residents aged ≥50 years in Australia during 2017, which was a severe A/H3N2 season.
We conducted a nested matched case-control study within the 45 and Up cohort study, linking data from the Australian Immunization Register, NSW Admitted Patient Data Collection and Pharmaceutical Benefits Schedule. Cases were individuals hospitalised for CVD (ICD-10 AM I00-I99) and controls were those hospitalised for gastrointestinal diseases (ICD-10 AM K00-K93). We balanced them using 1:1 propensity score matching based on age group (50-64, 65-74, 75-84, ≥85 years) and sex. After adjusting for confounders (smoking, body mass index and income), we calculated the adjusted odds ratio (aOR) for vaccination during the peak season using multivariable logistic regression. E-values were estimated to assess residual confounding. Vaccine effectiveness (VE) was calculated as (1–aOR) x 100.
There were 10,445 (4,452 cases and 5,993 controls) study participants. Following matching, 8,904 (85.2%) were identified (58.3% males, mean age of 76.4 ± 10.4 years). Following adjustment for confounders, the aOR of averting a CVD hospitalization was 0.15 (95% CI: 0.13 to 0.17; P <0.001). The estimated VE against CVD hospitalization was 85% (95% CI: 83 to 87). We found an E-value of 12.82, indicating strong evidence of minimal residual confounding.
In the severe 2017 influenza A/H3N2 season in Australia, we observed a high VE in preventing cardiovascular hospitalization despite low VE against influenza infection prevention. Improving vaccine uptake may reduce cardiovascular burden.

Shaping Education for Impact: Understanding Provider Learning Preferences to Support Program Changes

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
The National Immunisation Program is constantly evolving. The introduction of Abrysvo (RSV vaccination) onto the schedule for pregnant people, prompted MVEC (Melbourne Vaccine Education Centre, mvec.mcri.edu.au) to analyse the utility of current methods for disseminating information to the immunisation workforce. Access to and engagement with reliable, useful and timely education for vaccine providers is crucial for supporting the success of program changes. It gives clinicians the confidence to discuss vaccine recommendations with patients and encourage acceptance and uptake.

Aim
To better understand immunisation providers' preferences for vaccine education modalities in 2025.

Methods
In early 2025, we surveyed healthcare professionals on their perceived value of (5-point scale) and self-reported demand for (3-point scale) various vaccine education tools.

We collected information on frequency and motivations for seeking vaccine education, workplace support for education, their professional roles and geographic location.

Results
Of the 67 responses received from across Australia (as at 20 February 2025), interim findings indicate differences in the various tools: web-based resources (M(value)=4.71, M(demand)=1.92), eLearnings (4.46, 2.23), webinars (4.57, 2.14), face-to-face activities (4.11, 2.37), newsletters/alerts (4.62, 1.19), podcasts (3.69, 2.21), social media (3.45, 2.22) and direct contact with an immunisation authority (4.36, 2.22).

Further analysis showed that providers in regional areas (n=24) reported the lowest value in (M=4.19) and demand for (M=2.14) education overall compared with metropolitan respondents (M(value)=4.28, M(demand)=2.16). Across all locations, the education tool in highest demand by nurses was face-to-face activities (M=2.45), whereas doctors prefer education delivered via podcasts (M=2.60).

Conclusion
Understanding healthcare professionals' needs and preferred method of information delivery, noting this may change over time, can lead to more targeted education and communication. Recognising and acting on barriers to engagement with education tools will further support successful program changes across both metropolitan and regional areas.

Will I get shingles after Shingrix vaccine? Tiny risk before huge benefit.

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6B - Shingrix and COVID-19 vaccine safety, Room E1, June 12, 2025, 11:00 AM - 12:30 PM

Background
Following the introduction of a funded recombinant shingles (RZV, Shingrix®) vaccination program in people aged 65 and older in Australia, reports emerged of shingles presentations shortly after vaccination. We investigated whether there was an increased risk of shingles occurring immediately post RZV vaccination.

Methods
Two independent datasets—a general practice dataset (Outcome Health's Population Level Analysis and Reporting) and a statewide hospital and notifiable conditions linked dataset (Vaccine Safety Health Link)- were analysed using self-controlled case series (SCCS) with 21 days post-vaccination as the risk window. The pre-vaccination period only was used as a control to accommodate shingles being both an adverse event and an effectiveness outcome of vaccination. The observation period was 1 January 2023 to 15 September 2024. Adults ≥18 years old were included, with analyses stratified by age (<65 and ≥65 years) and sex. We calculated the rate of incident shingles in time periods relative to vaccination, along with attributable risk and the risk of postherpetic neuralgia (PHN).

Results
We found a 15-fold increase (relative incidence [RI] 15·49, 95% CI 14·46, 16·58, p <0·0001) in presentations of shingles to GPs within 21 days post-dose 1 of RZV vaccination in adults aged 65 and over, with a smaller increase detected in hospital presentations (RI 1·53, 95% CI 1·17, 1·98, p<0·01). Despite this increase in risk in adults aged 65 and over, PHN risk did not increase. No increase was detected in younger adults. Following 21 days, the risk of shingles dramatically decreased in all age groups, reaching an overall 83% reduction following 2 doses.

Conclusions
Shingles presentations transiently increase shortly after dose 1 of RZV vaccination in adults ≥65 years of age, followed by clear evidence of excellent vaccine effectiveness thereafter. While not changing the positive benefit-risk of vaccination, informing recipients of this possibility may support vaccine confidence.

A multi-serotype model of pneumococcal carriage to evaluate the impact of vaccination

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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

Commonly carried harmlessly in the nasopharynx, Streptococcus pneumoniae is a multi-serotype pathogen that causes a substantial global burden of invasive pneumococcal disease and community acquired pneumonia. Almost 100 serotypes have been identified, with multiple circulating serotypes competing for host resources in the same population. Pneumococcal conjugate vaccines have been implemented worldwide, protecting against colonisation and disease with selected high-burden serotypes, but in many settings, short-term effectiveness has been eroded by serotype replacement. Vaccines with broader serotype coverage have been developed, at the cost of immunogenicity against single serotypes. To determine the longer-term impact of these new formulations, we propose a novel modelling framework that evaluates the relationship between serotype-specific vaccine immunogenicity and effectiveness, comprising immunity, carriage and clinical models. Dynamics of individual serotypes are modelled over time, including between-serotype competition and heterogeneity of immunogenicity, advancing existing paradigms that group all serotypes according to vaccine type. This modelling framework is sufficiently flexible to consider diverse populations and vaccine implementation strategies. A retrospective analysis of sequential introduction of 7- and 13-valent pneumococcal conjugate vaccines in Australia validates and demonstrates the model.

Dengue rapid test use in an outbreak response in Torres Strait, Australia

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4C - Zoonoses & arboviruses, Room E2, June 11, 2025, 1:30 PM - 3:00 PM

Dengue is a vector borne viral infection which can become severe or fatal. Dengue rapid tests (DRT), a point of care test which can detect non-structural protein 1 (NS1) antigen, immunoglobulin G and immunoglobulin M were used to detect and respond to a dengue outbreak in a remote setting.
The Torres Strait is in Far North Queensland, previous outbreaks of dengue in the region have been associated with imported dengue cases arriving from Papua New Guinea. In November 2024, the Masig Island Primary Healthcare Centre in the Torres Strait reported seeing four patients with similar symptoms: fever, myalgia and headaches. Three cases were NS1 reactive indicating recent infection, and with no overseas travel reported, it was determined that this was a local outbreak of dengue. Whilst confirmatory laboratory testing was collected, a public health response was initiated immediately. Consultation with local leaders and community occurred and a response team travelled to Masig Island within 48 hours of the rapid test results. The response included vector control, active case finding and health promotion. The early detection of dengue allowed the vector control team to rapidly commence treatment and eliminate infected mosquitoes which prevented transmission of dengue virus to other residents. Active case finding identified four more cases, with a total of eight cases in the outbreak. Laboratory test results came five days after the rapid diagnostic test results. The DRT was an acceptable and easy-to-use test for the clinical staff and enabled a rapid response in a remote setting. The community supported the rapid public health response which enabled the prompt end of the dengue outbreak. The use of point of care tests such as the DRT in a remote setting can provide same day results and prevent delays in appropriate public health responses.

Features of mpox in fully vaccinated people: an outbreak investigation, NSW, 2024

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1C - Mpox response, Room E2, June 10, 2025, 11:00 AM - 12:30 PM

BACKGROUND
Since 2022, clade IIb mpox outbreaks have occurred in previously non-endemic countries, primarily amongst men who have sex with men. Two doses of modified vaccinia Ankara vaccine (MVA) are recommended for people at risk. Infections in fully vaccinated people have been infrequently described. Consequently, evidence that MVA-induced antibodies wane within a year remains of unclear clinical significance. We aimed to describe mpox cases arising during an outbreak in New South Wales (NSW), and to determine whether vaccination was associated with less severe disease.

METHODS
We included all mpox cases notified in NSW between 20 June – 20 November 2024 in this outbreak investigation. Cases and their clinicians were interviewed to obtain epidemiologic and clinical information. We used logistic regression to explore the relationship between factors indicative of exposure risk and/or likelihood of testing and being fully vaccinated. Risk ratios were calculated for clinical outcomes. Some specimens underwent whole genome sequencing.

RESULTS
There were 674 confirmed cases notified. All sequenced specimens (n=102, 15.1%) were clade IIb. Vaccination status was ascertained for most (n=663, 98.4%) with 37.9% fully vaccinated, 10.9% partially vaccinated, and 51.3% unvaccinated. Median time between vaccination and symptom onset was 21.8 months (IQR 19.5–23.0 months). Factors independently associated with being fully vaccinated included sex on premises venue attendance (aOR 1.69 [95%CI 1.15–2.48]) and having a sexually transmissible infection notified in the past year (aOR 1.63 [1.14–2.33]). Compared to unvaccinated cases, those who received two MVA doses were less likely to be hospitalised (RR 0.11 [95%CI 0.03–0.43]), have extragenital lesions (RR 0.45 [0.36–0.56]) or prodromal symptoms (RR 0.72 [0.64–0.80]).

CONCLUSIONS
Being fully vaccinated was associated with factors suggestive of greater exposure risk and/or likelihood of testing. Two MVA doses reduced the risk of disseminated disease and hospitalisation, including amongst cases vaccinated more than 1.5 years prior.

Therapeutic Goods Administration (TGA) expanded post-market safety surveillance of Shingrix

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6B - Shingrix and COVID-19 vaccine safety, Room E1, June 12, 2025, 11:00 AM - 12:30 PM

Background
On 1 November 2023, the shingles vaccine Shingrix replaced the live vaccine Zostavax on Australia's National Immunisation Program (NIP) schedule. During 2024, a record number of Australians were vaccinated against herpes zoster. Robust post-market safety surveillance is an essential pillar of vaccine pharmacovigilance, especially during the initial wide distribution of a vaccine. The TGA performed expanded safety surveillance of Shingrix between 1 November 2023 and 30 April 2024.

Methods
TGA expanded safety surveillance activities for Shingrix included reviewing Adverse Events Following Immunisation (AEFI) reports in the TGA's Australian Adverse Event Management System (AEMS) database and conducting disproportionality analysis reporting (DPAR) to identify potential safety signals. AEFI reporting rates were calculated using Australian Immunisation Register data. Reports of AEFI of special interest underwent detailed review. TGA surveillance reports also considered the results of active surveillance from AusVaxSafety. An independent expert panel, the Vaccine Safety Investigation Group (VSIG), was convened to assess AEFI reports deemed to have the potential to impact public confidence in Shingrix or shift its risk-benefit balance.

Results
From 1 November 2023 to 30 April 2024, the TGA received 633 AEFI reports with Shingrix in adults. 91.9% of reports were described as non-serious. Nine out of the 10 most frequently reported AEFI were expected and listed in the Shingrix product information (PI) document. The VSIG was convened once to discuss a report of meningoencephalitis with Shingrix and also considered the association between Guillain Barre Syndrome (GBS) and Shingrix. Investigations of identified safety signals resulted in Shingrix PI updates, with vertigo and GBS being added as recognised adverse events.

Conclusions
The TGA's expanded safety surveillance for Shingrix has played an important role in the timely detection, investigation and management of safety signals. Findings were reassuring and contribute to the safety profile of the vaccine.

Delivering awareness: using mailbox outreach to inform of local Buruli ulcer risk

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

Background

Since 2017, locally acquired cases of Buruli ulcer, caused by Mycobacterium ulcerans, have been reported in many inner Melbourne suburbs. Despite frequent health advisories and media releases, knowledge of this emerging condition among local residents and clinicians has been limited, potentially leading to delayed diagnosis and prolonged recovery.

Methods

To address this, the Western Public Health Unit (WPHU) delivered a targeted letterbox campaign in October 2024. WPHU delivered 4,825 flyers outlining key epidemiological risks and clinical features of Buruli ulcer to households in the areas at risk. Each flyer featured a QR code directing residents to a dedicated webpage containing additional information and prompted those with symptoms of concern to seek specific assessment from their doctor.

Results

Following the distribution of 4825 flyers, 1,026 unique visitors accessed the linked webpage, resulting in an engagement rate of 21.3%. Concurrently, Buruli ulcer notifications increased in epidemiological weeks 44 to 46 of 2024 among residents of the targeted, at-risk suburbs, aligning with the start of the campaign. During this period, WPHU received an average of four new notifications of Buruli ulcer per week, compared to one per week during the equivalent weeks in the previous five years.

Conclusion

The immediate increase in case notifications after distributing flyers indicates that numerous residents with undiagnosed lesions sought testing for and were diagnosed with Buruli ulcer because of this campaign. These findings demonstrate that a well-designed letterbox campaign that is targeted and provides direct communication with at-risk communities is a beneficial strategy for communicating emerging local public health issues. This approach should be considered as part of public health engagement strategies where appropriate.

Sexually Transmissible Infections Acquired Abroad: Insights from Australian Surveillance Data

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1C - Mpox response, Room E2, June 10, 2025, 11:00 AM - 12:30 PM

Abstract
Background: International travel is a significant contributor to the acquisition of sexually transmissible infections (STIs). Despite the high volume of outbound travel from Australia, peaking at 10.8 million travellers in 2023, limited data exist on the burden of overseas-acquired STIs.
Objective: To estimate the burden and trends of overseas-acquired STIs (gonorrhoea, syphilis, and chlamydia) in Australia.
Methods: This study analysed STI notifications from Australia's National Notifiable Diseases Surveillance System from January 2017 to December 2023. Geographical origins of overseas-acquired cases were visualised on a map, and temporal trends were assessed across pre-COVID-19, pandemic, and post-pandemic periods.
Results: Of 188,788 notified STI cases, 11,782 (6.2%) were acquired overseas. Males accounted for 63% of these cases, with young adults aged 20–24 years representing 24.6%. Overseas-acquired cases rose nearly three-fold from 1,444 (12.3%) in 2017 to 4,044 (34.3%) in 2019, before sharply declining during the COVID-19 pandemic (479 [4.1%] in 2020; 213 [1.8%] in 2021). Of all overseas-acquired STIs cases, 6,270 (53.2%) were chalmydia, 2,972 (25.2%) gonorrhea and 2,551 (21.6%) syphilis. Most cases with known countries of acquisition (n=5,431) were linked to Southeast Asia (n=2,390, 44.6%), the Americas (n=663, 12.4%), and Northwest Europe (n=580, 10.8%).
Conclusions: Overseas-acquired STIs were highest before the pandemic, primarily driven by travel to regions with high prevalence of STIs such as Southeast Asia. The variation of origins of acqusition and demogrpahic trends identified in this study highlight the critical need for tailored safer-sex advice during pre-travel consultations, particularly for males and young adults travelling to high-risk destinations.

Seroprevalence of diphtheria, tetanus and pertussis in Australian blood donors

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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

Introduction
Adults ≥50 years are recommended to receive a diphtheria-tetanus-pertussis (dTp) booster if their last vaccine was >10 years ago, but recorded uptake among older Australians is low (30% for diphtheria and 20% for pertussis on the Australian Immunisation Register [AIR]), and the vaccine is not funded by the National Immunisation Program. This is despite most tetanus deaths occuring in adults ≥65 years and in 2024 Australia experiencing the highest ever pertussis cases on record. As immunisation data are incomplete and seroprevalence data outdated, this study aimed to estimate the prevalence of antibodies to diphtheria, tetanus and pertussis in adult blood donors.

Methods
Stored de-identified residual whole blood samples from blood donors aged ≥18 years were collected as part of a 2022 serosurvey for SARS-CoV-2 (COVID-19) (n = 21,000) and 1,945 were randomly selected for this study. A total of 1,881 were tested using commercial Virion enzyme immunoassays (IgG) to pertussis, diphtheria, and tetanus toxin. Results were analysed in the following age cohorts: 18-34 years, 35-49 years, 50-64 years, 65-74 years, 75-85 years.

Results
Of the tested samples, 1407 (74.8%) donors were born in Australia and 1,097 (58.3%) were male. Preliminary data indicates that 120 (6.4%) donors had diphtheria antibody levels (≥1.0 IU/mL), 1817 (96.6%) donors had tetanus antibody levels (≥0.1 IU/mL) and 1249 (66.4%) donors had pertussis antibody (XX) levels >5 IU/mL. Further analysis is underway and more results will be presented.

Conclusion
Detailed data on antibody seroprevalence in older donors compared to younger blood donors, will provide essential information to assess population immunity gaps against these three pathogens and inform the need for targeted strategies to promote vaccination in older Australians.

Learning from government communication strategies to promote RSV immunisation: A cross-national study

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5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

In April 2024 the Government of Western Australia commenced a state-funded program to provide infant RSV (respiratory syncytial virus) immunisation, following TGA approval (in November 2023) for use of the immunisation Nirsevimab in Australia. Studies have shown that Nirsevimab provides substantial passive immunity against the infection for at least 5 months after immunisation and is up to 80% effective at preventing RSV associated hospitalisations in infants; its introduction is therefore significant to protecting child health in WA.
Several other jurisdictions around the world rolled out Nirsevimab in 2023; this study engages in a comparative analysis of RSV immunisation communication strategies advanced by governments in Spain, France, Luxembourg, and Australia, comparing materials provided to the public and to healthcare professionals. We aim to understand how messaging relating to RSV immunisation was framed and presented in various countries, specifically through uncovering and comparing the key themes and values expressed in promotional materials. For example, does messaging contain language laden with appeals to specific values held in the community, focus on mitigating parental hesitancy, or adopt a factual, non-emotive approach? By comparing the strategies employed across different national, linguistic, and epidemiological contexts, we provide insight as to how successful strategies and approaches could be translated and tailored to develop communication strategies supporting infant RSV immunisation implementation and uptake (as well as other prospective immunisation programs) in Australia into the future.

Comparison of multiplexed and non-multiplexed antibody assays against SARS-CoV-2 spike and nucleocapsid

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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

Introduction
SARS-COV-2 anti-spike and anti-nucleocapsid antibody assays are central to COVID-19 vaccine development, surveillance, and policymaking. It is important to assess relative performance between different assays to ensure consistent reliable measurements of antibody response. This study evaluates the concordance of commercially available assays.

Methods
We compared two anti-spike antibody (Anti-S) assays using 1741 paired samples: MesoScale Discovery (MSD) V-PLEX SARS-CoV-2 Panel 29 and Elecsys® Anti-SARS-CoV-2 S (Roche Diagnostics); and two anti-nucleocapsid antibody (Anti-N) assays using 92 samples: MSD COVID-19 Respiratory Panel 2 and Elecsys® Anti-SARS-CoV-2 N.
Samples were obtained from PICOBOO randomised adapative trial (ACTRN12622000238774) participants >18 years-old receiving their 3rd, 4th or 5th COVID-19 vaccine (Pfizer, Moderna, or Novavax) between March 2022-May 2023. Serum was collected pre-randomisation, 1w, 1m, 6m, and 1y post-vaccination.

Deming regression and Pearson's correlation measured concordance. Geometric mean ratios and Bland-Altman plots estimated differences in titres.

Results
The Anti-S titres from Elecsys® were 6.91-fold (95%CI 6.21-7.68) higher than MSD. This difference was largest at 7 days (GMR 8.20, 95%CI 6.39-10.53) and 1 month (GMR 7.02, 95%CI 6.04-8.17) when mean titres were highest. Both assays were highly correlated overall (r 0.92; slope 1.092, 95%CI 1.071-1.113) and across all timepoints.

The Anti-N titres from Elecsys® were lower than MSD (GMR 0.18; 95%CI 0.09-0.35), but this difference diminished as mean titres increased. For lower antibody levels, MSD detected a wider range of values compared to Elecsys®. The Anti-N assays were less correlated (r 0.68; slope 1.48, 95%CI 1.12-1.85) than the Anti-S assays.

Conclusion
The Anti-S assays were strongly correlated, while the Anti-N assays were less concordant. Both comparisons showed constant and proportional titre differences which may be attributed to varied methodologies, cross-reactivity, or higher sensitivity of the MSD assay. This highlights the need for standardisation of SARS-COV-2 assays to enable serologic data harmonisation at a population level.

RSV prevention among pregnant people and healthcare professionals in Aotearoa New Zealand

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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Respiratory Syncytial Virus (RSV) is a leading cause of hospitalization amongst young children in Aotearoa New Zealand (NZ). An antenatal RSV vaccine and monoclonal antibody (mAB) injection are used overseas and may soon be introduced in NZ. To inform a future roll-out, our study explored healthcare professionals' (HCPs) and pregnant people's knowledge, perceptions, and recommendations regarding RSV prevention. We employed a convergent parallel mixed-methods design and were guided by a study Advisory Group. A cross-sectional survey was undertaken with 200 HCPs and data were analyzed using Stata. Preliminary findings indicate that most HCPs (79%) had a good understanding of RSV and its severity. Most HCPs (n=157; 79%) thought there was a high need for an antenatal RSV vaccine and 147 (74%) ranked it as their preferred option. Safety and efficacy of the preventative options were their top concerns. Most HCPs recommended information pamphlets for families and training modules for HCPs to support the roll-out. A qualitative interpretive descriptive methodology guided data generation among pregnant people (n=13) in Auckland and Dunedin. With a focus on equity, we recruited people who are pregnant or have recently delivered who self-identified as Māori, Pacific, or an ethnic minority migrant. A directed content analytic approach was used to construct categories. Participants preferred the option that would be most protective for their infant for the longest time. Recommendation from trusted HCPs and access to clear information from credible health authorities would encourage uptake, though some needed reassurance about safety. Accessible, trusted, and safe administration venues would be critical to supporting vaccine or mAB acceptance. These findings shed important insights to inform a comprehensive and inclusive roll-out programme to support equitable access to preventative options to reduce the risk of RSV.

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Assessing the impact of RSV-prevention strategies through hospital-based surveillance

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2A - Effectiveness of RSV prevention, Halls CD Lower Section, June 10, 2025, 1:30 PM - 3:00 PM

Background: In 2024, immunisations strategies against Respiratory Syncytial Virus (RSV) became available for children <2years and adults aged >60 years. Some states introduced RSV-prevention programs for young children including whole-of-population nirsevimab (long-acting RSV Mab) programs in Western Australia and Queensland. Vaccines for those >60 years were available on the private market. Hospital-based surveillance for laboratory-proven RSV, undertaken by the inFLUenza Complications Alert Network (FluCAN) and Paediatric Active Enhanced Disease Surveillance (PAEDS), commenced nationwide in April 2024.

Methods: Hospitalised children and adults with laboratory-proven RSV were prospectively recruited from 20 hospitals (including six tertiary paediatric hospitals). In addition, controls hospitalised with acute respiratory illness who tested negative for RSV were recruited contemporaneously. Risk factors, outcomes and immunisation status was determined from the medical records and Australian Immunisation Register. Immunisation effectiveness was estimated using the test-negative design.

Results: 3998 hospitalised RSV cases were reported from April-December 2024 (3416 children; 582 adults). Overall, 41.5% had risk factors for severe RSV (children: 33.9%; adults: 86.6%). Admission to ICU/HDU was required in 6.6% (children: 6.1%; adults: 9.4%). Median stay was longer in adults (4 days [IQR:3-9]) compared with children (2 [1-3]). Twenty eight in-hospital deaths occurred (children: 4 [0.12%); adults: 24 [4.12%]). 113 children aged <1 years (64 in WA; 31 in Qld; 18 in other states) received nirsevimab (40/1208 RSV-positive cases [2.61%]; 73/442 RSV-negative controls [16.51%]). Nirsevimab effectiveness against RSV-hospitalisation in infants <1 year was 83.15% (95%CI: 67.43,91.28). Only eight adults >60 years were vaccinated (3/221 RSV-positive cases; 5/622 RSV-negative controls).

Conclusions: Surveillance from 20 FluCAN/PAEDS hospitals in 2024 demonstrated capacity to assess the impact of evolving RSV-prevention strategies. Analysis of 2025 data will be critical to inform future prevention policies, given recent commencement of National Immunisation Program-funded maternal RSV vaccination in addition to state and territory-funded nirsevimab and RSV vaccine programs for older Australians.

Integrating WGS in NSW public health systems: From sequence to disease control

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6E - One Health preparedness, Riverbank Room 3, June 12, 2025, 11:00 AM - 12:30 PM

Whole Genome Sequencing (WGS) has been used for routine surveillance of notifiable pathogens in NSW since 2016 with results discussed directly with operational teams for public health action. As WGS has grown in application there is a need for results to be accessible in statewide public health systems. Operationally, WGS data differs from conventional diagnostic notifications as they are dynamic, results, particularly relationships can change as more data is analysed. Data management systems such as Laboratory Information Management Systems and the NSW Notifiable Conditions Information Management System (NCIMS) were designed to process the traditional, static, diagnostic reports so careful consideration is needed to integrate WGS results in these systems.

To facilitate the integration of WGS, a working group was established between the genomics laboratory at the Institute of Clinical Pathology and Medical Research-NSW Health Pathology, and Health Protection NSW to enable the integration of routine WGS results into NCIMS. The objective was to establish a system where WGS results are integrated and readily reportable with epidemiological data. The group identified key WGS data required, development of methods for data importation and limitations for future system enhancements. To ensure operability, training sessions on how to access and interpret the results were provided to the network.

From August 2024 WGS has been routinely imported into NCIMS with successful integration of key data fields. Limitations that arose fell into three themes: data capture and management; ability to interpret aggregate WGS data; and tools for the interpretation and reporting of data. Key system requirements identified were: repeatable data fields; systems to aggregate data; and automation of reports for WGS interpretation. Future systems should be developed with WGS results in mind to ensure optimal use of genomics for public health action, facilitating readily accessible data and knowledge between epidemiologists, clinicians, laboratory scientists and decision makers.

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Expanding Spleen Australia: Progress, Challenges, and Opportunities in Western Australia

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background

Spleen Australia supports individuals with asplenia and hyposplenism, who are at lifelong risk of severe infections. The program provides vaccination guidance, education, and long-term support, with registration linked to a 69% reduction in serious infections. Funded by Queensland, Victoria, and Tasmania, Western Australia (WA) joined most recently. This study evaluates WA's enrolment and barriers to participation.

Methods

The Spleen Australia registry (12,541 active patients) was reviewed to analyse enrolment trends. Eligible individuals were estimated using a prevalence of 0.2% of the population. A qualitative evaluation was conducted with WA health stakeholders to assess implementation challenges.

Results

Since WA began registering patients in April 2023, 380 of an estimated 6,000 (6%) have enrolled, compared to 57% in Victoria (8,039/14,000), 31% in Queensland (3,418/11,000), and 57% in Tasmania (633/1,100).
WA's indications for splenectomy were comparable to other states, except for a higher proportion of cancer-related cases and fewer trauma-related splenectomies (13% vs. 28%, $P<0.001$). Targeted follow-up with trauma surveillance systems and key stakeholders are needed to identify these patients. Strengthening engagement with general surgeons, haematologists, GPs, and immunisation nurses will be essential for improving registration.

Conclusion

WA is in the early stages of Spleen Australia's implementation, focusing on building awareness, increasing registrations, and partnerships. Limited awareness and engagement have been addressed through collaborations and educational outreach to medical specialists, general practitioners, clinic nurses and immunisation providers. Future efforts will prioritise identifying historical splenectomies, especially trauma cases—and strengthening outreach to healthcare providers to improve registration and long-term program impact.

Therapeutic Goods Administration Respiratory Syncytial Virus prevention products vaccine safety surveillance 2024

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4A - RSV and pregnancy vaccine safety, Halls CD Lower Section, June 11, 2025, 1:30 PM - 3:00 PM

Background
Three respiratory syncytial virus (RSV) prevention products were approved by the Therapeutic Goods Administration (TGA) and became available for use in 2024. The RSV vaccines Arexvy and Abrysvo were approved in adults ≥60 years, with Abrysvo also approved for pregnant women. The RSV monoclonal antibody Beyfortus was approved for neonates, infants, and children <24 months of age with specific risk conditions.

Process
Expanded safety surveillance of RSV prevention products was implemented by the TGA in 2024. Adverse events following immunisation (AEFI) reports to the TGA and dose administrations recorded in the Australian Immunisation Register (AIR) were systematically reviewed. Expanded surveillance included increased frequency of disproportionality analyses, lower signal thresholds, review of AEFI and reporting rates, monitoring AEFI of special interest, and consideration of global reports to the World Health Organization's VigiBase. Notifications from pharmaceutical companies, international regulators, and AusVaxSafety were also reviewed.

Analysis
During 2024 there were 68 AEFI reports for Arexvy, 3 for Abrysvo, and 62 for Beyfortus. Cumulative reporting rates for these 3 products were 147, 47 and 102 reports per 100,000 doses, respectively. The most frequently reported reactions were generally expected, listed within their relevant Product Information documents, and consistent with global AEFI reports. Safety signals of urticaria and product administration error for Beyfortus were identified. Although there were no Australian reports, Guillain-Barre Syndrome was identified as a safety signal for Arexvy and Abrysvo based on post-marketing surveillance data in the United States. Inadvertent administration to pregnant women was identified as a safety signal for Arexvy.

Conclusions
Expanded safety surveillance in 2024 played an important role in the timely detection and investigation of potential safety signals for new RSV prevention products. This surveillance provides a solid foundation for continued monitoring in 2025 when national usage of RSV prevention products is anticipated to increase further.

Establishing the National Wastewater Surveillance Program

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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

The interim Australian Centre for Disease Control is establishing a National Wastewater Surveillance Program for public health. This program will monitor priority pathogens such as SARS-CoV-2, influenza, polio, and respiratory syncytial virus, and provide capacity for early detection of emerging pathogens with epidemic and pandemic potential such as Japanese encephalitis virus and mpox virus. The program aims to contribute novel surveillance data in near real-time to enhance agile public health response, in line with recommendations from the COVID-19 Response Inquiry Report.
The National Wastewater Surveillance Program commits to three years of national wastewater surveillance and capacity building. During the COVID-19 pandemic, all Australian states and territories implemented wastewater surveillance programs for SARS-CoV-2. The program will collaborate with jurisdictions to develop national capacity and provide opportunity to contribute to international sentinel surveillance networks like the Global Consortium for Wastewater and Environmental Surveillance for Public Health (GLOWACON). Ongoing evaluation of the program will build evidence for the utility of wastewater surveillance data in public health decision-making and policy development.
This session will provide updates on the development of the National Wastewater Surveillance Program, and describe key stages of engagement, design, analysis, and evaluation of the program. By the end of the session, participants will understand how the National Wastewater Surveillance Program is being developed and recognise how the program will contribute to surveillance of infectious diseases in Australia.

Genomic characteristics of Campylobacter in regional and urban NSW

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2B - Foodborne diseases, Room E1, June 10, 2025, 1:30 PM - 3:00 PM

Campylobacter is the leading cause of bacterial gastroenteritis globally and is an established food-borne and animal pathogen. It is part of the normal flora of avian species, and poultry is a major reservoir and transmission source to humans. Campylobacter infections are typically self-limiting, but vulnerable populations can develop severe illness. In New South Wales, approximately 13,000 laboratory confirmed Campylobacter cases are reported annually, with a notification rate approaching 150 per 100,000 people. Despite the high incidence of human infections, there are no surveillance strategies to inform rapid detection, genotype distribution or infection prevention.

This cross-sectional study aimed to determine the epidemiological and genomic characteristics of human and poultry Campylobacter isolates from urban and regional NSW. Using whole genome sequencing, we performed in silico speciation, genotyping and identification of antimicrobial resistance markers among poultry and human isolates collected in 2023-2024. Genomic analysis identified two Campylobacter species from poultry sources – C. jejuni and C. coli, and three Campylobacter species from human sources – C. jejuni, C. coli and C. lari. Notably, C. coli was over-represented in poultry sources compared with the human cohort. In all cases, the in silico predicted species was consistent with phenotypic speciation performed with PCR and MALDI-TOF. Genomic markers of resistance were detected for quinolones, macrolides and aminoglycosides in the human and poultry cohorts.

This research has enhanced the understanding of Campylobacter diversity across clinical and poultry isolates, and between urban and regional communities in NSW. The high incidence of Campylobacter infections in NSW highlights the need for more targeted control strategies with genomic characterisation offering a foundation for improving surveillance, molecular typing, source attribution and intervention approaches in Australia. The identified antimicrobial resistance markers underlines the need for an integrated One Health approach to surveillance and management across Australia, particularly in remote and regional communities.

Evaluating the safety of South Australia's Meningococcal B Vaccination Program

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2F - Improving vaccine safety surveillance, Riverbank Room 4, June 10, 2025, 1:30 PM - 3:00 PM

Background:
South Australia (SA)'s ongoing statewide Meningococcal B Vaccination Program (the Program) commenced in 2018 and provides 4CMenB (Bexsero) to children aged six weeks to 12 months, and young people aged 15 to 17 years. Our retrospective study aimed to evaluate the safety of 4CMenB, using routinely collected data on adverse events following immunisation (AEFI).

Methods:
We collated and classified AEFI reports relating to 4CMenB received by the Communicable Disease Control Branch (CDCB) of SA's Department for Health and Wellbeing between the Program's commencement on 1 October 2018 and 30 June 2022. Reports were included if they related to participants in the Program or those who received 4CMenB through the National Immunisation Program (NIP).

Learning objectives:
- Understand SA's vaccine safety surveillance system, with particular reference to the 4CMenB vaccine.
- Evaluate the characteristics of the AEFI reports received for the Program/NIP.
- Appreciate the opportunities and challenges presented by using routinely collected surveillance data for research.

Results:
306 AEFI notifications were received during the study period, equating to a reporting rate of 69.9 notifications per 100,000 doses. Most reported AEFI were known, common, non-serious, adverse events (85% of reports), followed by serious AEFI (13%) and suspected unexpected serious adverse reactions (SUSAR) (2%). No new safety signal was ascertained from review of serious AEFI and SUSAR. A high proportion (83%) of children under two years with reported AEFI were administered prophylactic acetaminophen.

Conclusion:
These results are consistent with existing safety data and provide further support for the safety of the 4CMenB vaccine. Challenges encountered in using data collected for routine surveillance for research could be mitigated by designing data collection instruments with future research applications in mind.

Extended Typhoid Incubation Periods: Surveillance challenges and Public Health Response in NSW

Mr Neil Franklin[1], Dr Anne Watt[1,2], Dr Kirsty Hope[1], Keira Glassgow[1]
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2B - Foodborne diseases, Room E1, June 10, 2025, 1:30 PM - 3:00 PM

Background:
Typhoid fever, caused by Salmonella Typhi, is a nationally notifiable disease in Australia. The incubation period is typically cited as 6 to 30 days, with approximately 90% of cases developing symptoms within 14 days of exposure. In Australia, cases with onset within 28 days of returning are classified as overseas acquired. The proportion of cases with longer incubation periods (than 28 days) is poorly documented, complicating case classification and understanding of public risk. This study aims to better characterize incubation periods beyond 28 days in typhoid cases in NSW to inform more effective public health surveillance.
Methods:
We conducted a retrospective analysis of notification and travel history data for typhoid cases in NSW between 2019 and 2024. For cases likely acquired overseas, we calculated the time between last potential overseas exposure and symptom onset to estimate incubation periods. Statistical analysis included percentile distributions of incubation period, stratified by demographic details. Whole genome sequencing (WGS) was used to compare genomic relatedness and support source attribution.
Results:
Among 312 typhoid cases notified from 2019-2024, 287 (92.0%) were classified as overseas acquired, and 3 (1.0%) were suspected long-term carriers. Among acute overseas-acquired cases, 4.9% (n=14) had an incubation period exceeding 28 days, with the longest period 65 days. In cases with unclear acquisition sources, WGS successfully linked the infection to a probable overseas exposure location in in all but one case which lacked associated contextual data.
Conclusions:
This study highlights the variability in typhoid incubation periods, with approximately 1 in 20 cases exceeding the traditionally accepted 28-day limit. Public health staff should be cognisant of the variability in incubation periods for typhoid fever and prepared to employ thorough risk assessments that go beyond the typical 28-day period. WGS can play a critical role in supporting risk assessment and source attribution investigations.

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ADAPTIVAX: a national adaptive platform trial for evaluating immunisation strategies in Australia

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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

Our vision is to establish ADAPTIVAX – an investigator-led national adaptive platform for evaluating the comparative immunogenicity, reactogenicity, +/- effectiveness (including cost) of different immunisation strategies targeting preventable disease(s). We will build on existing collaborations and infrastructure established from the MRFF funded Adaptive Platform Trial In COVID-19 BOOsting (PICOBOO) trial (2014690/2016473) to establish a platform to allow the coordination of large-scale, high-impact vaccine trials. ADAPTIVAX will address key priorities of consumers and policymakers and will generate evidence to inform safe, effective, and value-informed immunisation strategies, including for high-risk populations, across the lifespan. These groups will include children, immunocompromised individuals, Aboriginal and Torres Strait Islander people, pregnant women, the elderly and culturally and linguistically diverse populations. Trials will be equitably integrated into healthcare systems and service delivery where possible to optimise research efficiency and to enable inclusion of high-risk populations across jurisdictions and diverse healthcare settings. Research nested within this platform will be prioritised and overseen by an independent scientific steering committee with input from the National Consumer Advisory Group for Vaccine Trials (chaired by CI Hughes) and the National Aboriginal Advisory Group for Vaccine Trials (chaired by CI Crooks). We will discuss key enablers for achieving this vision which will include (i) a governance framework designed to foster multi-institutional collaboration and shared access to central resources, opportunities and academic credit; (ii) collaboration with all end-users of clinical trial evidence including industry partners and (iii) enabling research infrastructure. We will also present the first two proposed research domains, which comprise an evaluation of different (i) pneumococcal vaccination strategies across the lifespan and (ii) immunisation strategies to optimise protection from respiratory syncytial virus (RSV) for mothers and their infants.

Raising community awareness of RSV for those at-risk: A STAMP RSV Project

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6A - RSV prevention, Halls CD Lower Section, June 12, 2025, 11:00 AM - 12:30 PM

Specific population groups are at an increased risk of severe infections from respiratory syncytial virus (RSV) including Aboriginal and/or Torres Strait Islander infants and children, those with medical conditions like chromosomal abnormalities, congenital heart and lung conditions and those born very preterm. Two strategies to reduce the RSV infant burden are now available: a single-dose monoclonal antibody for infants and a maternal vaccine; available in 2025 in a hybrid program. Understanding levels of disease awareness in high-risk groups and those from culturally and linguistically diverse (CALD) backgrounds is critical to develop appropriate communication strategies.

Through the holistic STAMP RSV program of work, we aimed to identify gaps in RSV awareness and perceived barriers to RSV immunisation to inform communication strategies across three population subgroups: Aboriginal and/or Torres Strait Islander, medically at-risk, and CALD (incorporating both immigrants and refugees).

We conducted a series of community pre-engagement activities to discuss the practicalities and desire for our proposed research. These activities identified a mix of one-on-one interviews and group discussions would be most appropriate. Building on interactions with community, we developed a program of proposed work consisting of in-depth interviews, focus groups and World Cafes with participants from the population subgroups across metropolitan and regional Western Australia. Working with community partners for recruitment, these interviews and group discussions will gather data on knowledge and awareness of RSV disease and immunisations, attitudes and willingness to accept RSV immunisation and types of educational resources wanted. Data collection is expected to be completed by May 2025.

Our findings will be used to develop and disseminate health education materials for RSV awareness and immunisation, specifically tailored to our three population subgroups. These findings will be vital for successful implementation of RSV immunisation programs, uptake of immunisations and increasing community literacy on a significant cause of infection in children.

Consultation for this project occurred through the Aboriginal Research Projects Forum, Our Children's Health Research Aboriginal Advisors (OCHRAA), and community members in the Goldfields and Midwest regions. Ethical approval was obtained from the WA Aboriginal Health Ethics Committee and the Child & Adolescent Health Service Human Research Ethics Committee.

A cohort study assessing 4CMenB effectiveness against gonorrhoea in the Northern Territory

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6D - Zoster and cocci, Riverbank Room 2, June 12, 2025, 11:00 AM - 12:30 PM

Background: Emerging evidence indicates that the four-component serogroup B meningococcal (4CMenB) vaccine may offer protection against gonorrhoea due to genetic similarities between Neisseria meningitidis and Neisseria gonorrhoeae. The 4CMenB vaccine was provided for all 14-19 year olds as part of the B Part of it NT study, from March 2021 in the Northern Territory (NT), which has the highest notification rate of gonorrhoea in Australia. Vaccine effectiveness (VE) against gonococcal infection was evaluated three years after commencement of the study.

Methods: We undertook a time-to-event analysis, of all individuals recorded as born in the NT between 1 January 2001-31 December 2009 and gonococcal notifications reported in the NT from 1 March 2021 to 29 February 2024. The Australian Immunisation Register (AIR), a national database recording vaccinations administered to all individuals in Australia, was used to link to gonococcal notifications obtained from the NT Notifiable Disease System. Cox regression analysis was performed to estimate VE, stratifying by age and socio-economic status and adjusting for sex at birth, with time to gonorrhoea notification as the outcome and vaccine status as a time-dependant variable.

Findings: Of 34261 individuals, 42.1% identified as Indigenous, 49.9% resided in low socio-economic areas, 48.1% were female, and 7.9% were fully vaccinated. Of 1308 gonococcal cases, 97.3% occurred in Indigenous young people, 60.6% were in females and 77.9% in people from low socio-economic areas. The incidence of a first notification of gonococcal infection was 0.19 per 10,000 person-years (42 events in 2701 individuals) in the fully vaccinated group and 0.37 per 10,000 person-years (1234 events in 30674 individuals) in the unvaccinated vaccinated group. VE=45% (adjusted Hazard Ratio=0.55 [95% CI 0.40–0.75]; p<0.001).

Interpretation: Based on notification rates, 4CMenB had moderate effectiveness with a reduced risk of gonococcal infection in vaccinated young people. However the analysis did not take account of differential exposure to gonorrhoea risk and to the uptake of diagnostic testing, both of which may differ by vaccination status. A 4CMenB vaccine program has now been introduced in the Northern Territory for infants and adolescents.

Immunisation Education: How can public health best support general practice?

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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

Context:
This presentation addresses the crucial role of public health units in improving immunisation practice and coverage through face-to-face education for general practice providers.

Aim and process:
Boorloo (Perth) Public Health Unit has conducted tailored training sessions, in collaboration with the WA Primary Health Network, to support general practice immunisation nurses. These sessions aim to empower nurses through targeted face-to-face education, addressing their concerns and knowledge gaps. The presentation will describe effective strategies that enhance the capabilities of general practice providers in managing vaccine catch-up, overcoming vaccine hesitancy, understanding, and adhering to complex immunisation guidelines.

Analysis:
Education sessions have identified an apparent recent increase in new graduate nurses working in general practice in Perth. Challenges faced by frontline staff include managing patient catch-up schedules and rules, interpreting overseas records, opportunistic immunisation, and recall, tackling vaccine hesitancy, managing cold chain and navigating complex immunisation guidelines. Ongoing support mechanisms, like regular check-ins with practice nurses, provide ongoing support and guidance. Additionally, clear, user-friendly materials that simplify complex immunisation guidelines make it easier for practice nurses understand and prepare immunisation plans.

Outcome:
Based on observations and interactions with healthcare providers during education sessions, public health should develop and advocate for user-friendly resources, such as easy-to-follow guides for catch-up planning and the use of AIR. Face-to-face practice nurse support will continue with locally developed resources to address knowledge gaps.

Emerging Climate Risks, Urgent Action: Victoria's Japanese Encephalitis Vaccination Response

A/Prof Hazel Clothier[1,2,3,4], Megan Beasley[5], John Mallard[1,2], Dr Rebecca Gang[5], Catherine Radkowski[5], Josie Cichello-Sanderson[5], Prof Jim Buttery[1,2,3]
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4C - Zoonoses & arboviruses, Room E2, June 11, 2025, 1:30 PM - 3:00 PM

Background
Global health impact of climate change is reshaping infectious disease ecosystems, spreading infectious disease regions, and increasing human susceptibility. Japanese encephalitis (JE)—now entering its fourth season of domestic endemicity—highlights this evolving health-risk landscape, as warmer weather and flooding create ideal conditions for mosquito breeding. In response, the once exotic JE vaccination swung from an expensive option for intrepid international travellers to a government-funded domestic disease prevention strategy targeting people in the newly endemic JE-affected areas of South-eastern Australia. Maintaining vaccine uptake, initially hampered by global supply shortages, naïve local immunisation workforce and uncertain community acceptance, is critical as local transmission and emergent clinical cases continue.

Methods
Safe vaccination was supported through self-paced eLearning modules developed to rapidly upskill and bolster Victoria's immunisation workforce in the public health response. Adverse events were captured through active and passive reporting to enhanced surveillance systems, calculated as reporting rate per 1,000 doses recorded in the Australian Immunisation Register.

Results
Over 1,000 health professionals completed eLearning within 3-months, enabling timely communication of evolving clinical advice, program changes and expansion of eligible risk cohorts.

JE vaccination in Victoria has seen a 7-fold increase from a pre-outbreak (2016–2021) average of 2,280 doses-per-year to over 48,900 outbreak doses delivered since 2022, with live chimeric Imojev® the dominant brand. Notified adverse events (rate 0.4 per 1,000 doses) were mostly mild with no specific safety signals observed. However, seven reports indicated vaccine administered in contraindication to immunocompromised persons, fortunately with no detrimental outcome.

Conclusion
Australia's domestic JE vaccination program demonstrates agility and flexibility crucial for public health response amidst climate-change driven shifts in vector and disease epidemiology. Ensuring effective immuniser education—including brand-specific contraindications and undertaking adequate patient questioning—is essential to minimise avoidable risks and encourage vaccine uptake in an otherwise safe vaccination program.

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A Naïve Bayes Network Model for Efficient Vaccine Safety Signal Detection

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2F - Improving vaccine safety surveillance, Riverbank Room 4, June 10, 2025, 1:30 PM - 3:00 PM

Background:
Sensitive and specific signal detection in vaccine safety surveillance is essential for timely responses to adverse events. Individual statistical methods and data sources typically emphasise sensitivity or specificity at the other's expense. We propose a Naïve Bayes model (NB) to address this.

Methods:
Four signal detection methods, Proportional Reporting Ratio (PRR), Bayesian Confidence Propagation Neural Network (BCPNN), Farrington and Maximized Sequential Probability Ratio Test (MaxSPRT), were compared with the NB incorporating all methods.

The NB models probabilistic relationships between the signal and detection methods, using expert-estimated parameters. NB leaf nodes (one for each detection method) indicate whether a signal is present, and a target node (parent to all leaves) reflects the overall signal likelihood. When a signal is detected by any method, the NB computes the signal's probability based on all four detection methods. This is tested against an expert-specified threshold indicating a minimum probability of concern, reporting a signal if the threshold is exceeded.

We compared the NB and the four methods using POLAR-GP general practice data for menstrual changes after the introduction of COVID vaccines from 01/01/2021 to 28/03/2023.

Results:
Of 117 weeks, signals were detected by PRR (weeks 12 and 14), BCPNN (weeks 11-16, 27-30), MaxSPRT (weeks 26-117) and Farrington (weeks 16-18, 72-75).
The NB, with threshold set at 2% (highly signal sensitive), reports signals on weeks 16-18, 26-117 and in 24 out of 31 possible combinations of evidence of the methods. With a 20% threshold (highly conservative), NB reports signals on weeks 16, 27-30, 72-75 and in 20 out of 31 combinations.

Conclusion:
Our model predicts signals through probabilistic inference based on expert prior knowledge, available evidence, and the characteristics of each method. The BN provides a potentially powerful tool for synthesising diverse data sources, supporting more reliable signal detection to help decision-makers assess risks.

Tracking Confidence in Institutions and Vaccines pre-and post-COVID-19: Country level Analysis

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
Confidence in vaccination is essential for high uptake and robust public health systems. A rapid drop in vaccine confidence is triggered by events such as controversies over vaccine safety, misinformation, and negative media coverage. The changes in confidence in institutions and vaccines have not been well-explored over time at the country level. We aimed to analyse trends in confidence in institutions and vaccines before and after the COVID-19 pandemic, as well as the correlation between these factors after the pandemic in three selected countries.
Methods
We analysed national-level data from India, Morocco, and the Netherlands, which were selected for their consistent public data in two databases before and after the COVID-19 pandemic. The data cover confidence in vaccines and institution confidence (government, media, UN agencies) from the Vaccine Confidence Project and the World Value Survey. Findings were presented through three case studies using an adapted social-ecological framework.
Results
Our findings revealed statistically significant change in confidence trends in the institutions, and vaccines before, during and after the COVID-19 pandemic across these countries. Public confidence in childhood vaccines and their perceived safety decreased significantly pre and post-COVID-19 pandemic; India saw a 16% decline, the Netherlands a 30.2% decline, and Morocco experienced a notable 68% increase in strong support for vaccines. Trust in governments declined in Morocco (26%) and the Netherlands but increased in India by 14.8%. Confidence in the press varied, with India showing an 8.1% rise in scepticism and Morocco a 25.8% decline, while the Netherlands showed no significant change. No correlation was found between confidence in the institutions and vaccine confidence at the country level in the post-pandemic context. A global study supports this finding, revealing that while trust in institutions generally positively correlated with vaccine confidence, this effect is less significant in countries with higher levels of religiosity, such as India and Morocco, or individualism, like the Netherlands.
Conclusions
We recommend strengthening the ongoing monitoring of public sentiment towards vaccination in each country to help timely detection of changes in public trust and guide strategies to improve vaccine confidence and its consequences.

Understanding the Rationale Behind Malaysia's COVID-19 Vaccination Policy: Voluntary vs Mandate

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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

Many countries around the world implemented vaccine mandates to increase COVID-19 vaccine uptake during the pandemic. Malaysia officially stated that its COVID-19 National Immunisation Programme was voluntary but has been identified as having implemented various types of vaccine mandates across its population. No studies have examined why the Malaysian government acted as it did regarding vaccination policy during the COVID-19 pandemic. This study aims to understand the rationale behind the Malaysian government's mandate decision-making during the pandemic by employing a qualitative research methodology. Data were collected through semi-structured interviews with purposively identified policymakers, including health and security agencies of the Malaysian government. The data was analysed using inductive coding and categorised according to four key themes that underpinned the government's decision-making: (1) ensuring national stability, (2) minimising public health risks and mortality, (3) balancing personal choice, collective responsibilities, and compliance strategies, and (4) legal and constitutional constraints on government actions. The results indicate that the Malaysian government's decision-making during the COVID-19 pandemic was not arbitrary but rather influenced by a complex interplay of factors and resembles a principled approach. This study concludes that Malaysia's COVID-19 National Immunisation Programme was formally a voluntary policy due to legal and constitutional constraints. However, the goals of ensuring national stability, minimising public health risks and mortality, and balancing personal choice, collective responsibilities, and compliance strategies led to the implementation of vaccine mandates in Malaysia. Thus, this study provides valuable insights for future policymaking in the context of pandemic crises, particularly in a Southeast Asian context.

mRNA and protein subunit COVID-19 vaccines generate divergent SARS-CoV-2-specific B cell phenotypes

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1A - COVID-19, Halls CD Lower Section, June 10, 2025, 11:00 AM - 12:30 PM

Background: Memory B cells (MBC) are effectors of rapid and cross-reactive antibody responses following re-exposure, critical to long-term protection. MBCs comprise of diverse cellular phenotypes that include 'classical' (CD21+CD27+) and 'non-classical' (CD21LoCD11c+CD27+) subsets. There is little known of the types of MBC induced when different vaccine platforms (adenoviral-vector, mRNA and protein) are combined within a schedule. We characterised SARS-CoV-2-specific MBCs generated by homologous and heterologous combinations of adenoviral-vector, mRNA and protein COVID-19 vaccines in Australian adults enrolled in the Platform Trial in COVID-19 Boosting (PICOBOO).

Methods: Cryopreserved peripheral blood mononuclear cells from a subset of 50-69-year-old PICOBOO participants were assessed. Individuals were primed with either Oxford-Astrazeneca Vaxzevria (AZ; n=55) or Pfizer Comirnaty (Pf; n=59) and subsequently randomised 1:1:1 to receive 4th dose Pf, Moderna Spikevax (Mod) or Novavax Nuvaxovid (Nvx) monovalent ancestral booster. PBMC were analysed using 29-parameter full-spectrum flow cytometry incorporating Ancestral SARS-CoV-2 Spike and Influenza HA (A/Darwin/2021; negative control) tetramers, to assess the antigen-specific MBC response. Vaccine booster arms were compared using the Kruskal-Wallis test.

Results: Computational cytometry analysis of 279,408 antigen-specific B cells yielded 14 phenotypically distinct subsets reactive to SARS-CoV-2-Spike or Influenza HA. In both AZ- and Pf-primed adults, boosting with Pf and Mod resulted in an expansion of Spike-specific non-classical CD21loCD11c+CD27+IgG1+ MBC bearing an activated (CD71hi) phenotype at day 7 and 28 post-boost, which was not observed in Nvx-boosted individuals. In contrast, Nvx generated similar Spike-specific classical MBCs (CD21+CD27+CD45RB+IgG1+) compared to Pf and Mod boosters. IgG4+ MBC frequencies were higher in Pf-primed individuals compared to AZ-primed individuals, irrespective of booster type. MBC subsets specific for the control Influenza HA were similar over all study timepoints and priming schedules.

Conclusion: We demonstrate quantitative differences in the MBC response elicited by both homologous and heterologous COVID-19 vaccination, which have implications in vaccine strategies for COVID-19 and beyond.

Effects of High-Dose vs Standard-Dose Quadrivalent Influenza Vaccine Among Patients with Diabetes

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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

Aim : High-dose quadrivalent influenza vaccine (QIV-HD) has been shown to be more effective than standard-dose (QIV-SD) in reducing influenza infection, but whether diabetes status affects relative vaccine effectiveness (rVE) is unknown. We aimed to assess rVE on change in glycated haemoglobin [HbA1c (ΔHbA1c)], incident diabetes, total all-cause hospitalizations (first + recurrent), and a composite of all-cause mortality and hospitalization for pneumonia or influenza via a post-hoc analysis of the DANFLU-1 trial.

Methods: DANFLU-1 was a pragmatic, open-label trial randomizing adults (65-79 years) 1:1 to QIV-HD or QIV-SD during the 2021/22 influenza season. Follow-up ended on May 31, 2022Cox proportional hazards regression was used to estimate rVE against incident diabetes and the composite endpoint, negative binomial regression to estimate rVE against all-cause hospitalizations, and ANCOVA when assessing rVE against ΔHbA1c.

Results: Of the 12 477 participants, 1162 (9.3%) had diabetes at baseline. QIV-HD, compared with QIV-SD, was associated with a reduction in the rate of all-cause hospitalizations irrespective of diabetes [overall: 647 vs. 742 events, incidence rate ratio (IRR): 0.87, 95% CI (0.76-0.99); diabetes: 93 vs. 118 events, IRR: 0.80, 95% CI (0.55-1.15); without diabetes: 554 vs. 624 events, IRR: 0.88, 95% CI (0.76-1.01), pinteraction = 0.62]. Among those with diabetes, QIV-HD was associated with a lower risk of the composite outcome [2 vs. 11 events, HR: 0.18, 95% CI (0.04-0.83)] but had no effect on ΔHbA1c; QIV-HD adjusted mean difference: Δ + 0.2 mmol/mol, 95% CI (−0.9 to 1.2). QIV-HD did not affect the risk of incident diabetes [HR 1.18, 95% CI (0.94-1.47)].

Conclusions: In this post-hoc analysis, QIV-HD versus QIV-SD was associated with an increased rVE against the composite of all-cause death and hospitalization for pneumonia/influenza, and the all-cause hospitalization rate irrespective of diabetes status.

Funding: The trial was funded by Sanofi.

Hospital-based surveillance of Respiratory Syncytial Virus in Central Queensland

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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

Context and aim: Respiratory syncytial virus (RSV) is a leading cause of acute lower respiratory tract infections, especially in young children and older adults. Despite its global impact, comprehensive epidemiological data on RSV testing and hospital burden are limited, particularly in regional Australia. Central Queensland (CQ), with its subtropical climate, provides a unique setting to study RSV testing patterns and burden.
Methods & analysis: This study analysed hospital-based RSV surveillance data from CQ, with data collected retrospectively from 2019 to 2021 and prospectively from 2022 to 2024. Individuals admitted to hospitals with laboratory-confirmed RSV or RSV-related diagnoses based on ICD-10-AM codes were included. Descriptive statistics and incidence rate ratios (IRR) were calculated.
Research findings: Between 2019-2024, 43,651 RSV-PCR tests were conducted in CQ, with 5.3%(n=2,344) testing positive. RSV testing and positive cases increased significantly, from 2,633 tests and 130 positive cases in 2019 to 12,389 tests and 658 positive cases in 2024. There were 1,605 RSV-related hospitalisations, with a median age of 1.6 years (IQR: 0.6–46.1 years), 47.9% female, and 34.7% of admissions from infants under 12 months. The hospitalisation rate among infants rose significantly from 15.6 per 1,000 infants in 2019 to 41.2 per 1,000 in 2023 and 2024 (IRR:2.1, 95%CI: 1.8-2.6, $p<0.001$). The Indigenous population had a significantly higher hospitalisation rate compared to the non-Indigenous population (IRR:2.7, 95%CI: 2.4-3.1, $p<0.001$). The median length of stay was 2 days, with 20.9% requiring ventilation, 2.1% needing ICU care, and 0.7% resulting in death, mostly among individuals aged 60 and above (83.3%).
Outcomes and future actions: RSV admissions were underreported due to limited testing. Increased awareness and widespread testing during prospective surveillance revealed a significant rise in RSV-related admissions. These findings highlight the need for enhanced RSV testing, better resource allocation, and expanded immunisation efforts to manage the RSV burden effectively.

Paediatric Assisted Vaccination Clinic: A Clinical Service Review of Patient Outcomes

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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Background
The Assisted Vaccination Clinic (AVC) at The Children's Hospital Westmead has been operating for over a decade, providing an individualised multidisciplinary vaccination service for children who are unable to be vaccinated in the community. Over this time the immunisation schedule has changed, and practices have been modified. We aim to review the AVC service so that it can be better understood weather there are interventions which are associated with greater or lesser success in vaccination amongst this population.

Methods
From 30 June 2015 to 31 December 2024, children who presented to the AVC at the Children's Hospital at Westmead were included. Study data was extracted from electronic medical records and entered into a REDCAP database. Long term follow-up of patients who had reached 17 years of age was conducted by reviewing their vaccination status recorded on the Australian Immunisation Register.

Results
137 participants were enrolled in the study, over 183 clinic visits. The median age was 13.3 years (IQR 1.6 years) and the most common comorbidities reported were needle phobia 142/183 (77.6%), autism spectrum disorder 64/183 (35%), and anxiety 44/183 (24%). Of the visits, 89/183 (48.6%) involved a patient with >1 underlying medical condition and 151/183 (82.5%) visits resulted in successful vaccination of the patient. By 31 December 2024, 53/137 (38.7%) patients had turned 17 years of age, of which 36/53 (67.9%) were up to date with their immunisations.

Conclusions
The AVC is a valuable resource which has been able to vaccinate children who would otherwise remain unvaccinated, with a high success rate. The proportion of children who attended clinic and remain up to date with the immunisation program aligns with vaccine coverage rates (65%) for this age group across the Australian population.

One Health in Practice: Lessons from NSW Avian Influenza Outbreak and Preparedness

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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

In 2024, high pathogenicity avian influenza (HPAI) H7 was detected in three Australian jurisdictions. In NSW, HPAI H7N8 was detected in birds in two commercial properties and four private properties in the Hawkesbury region. Given the clinical symptoms and detections, the virus likely spilled over from commercial properties to domestic birds within the established biosecurity zone.

NSW Department of Primary Industries and Regional Development (DPIRD) led the NSW outbreak response, supported by NSW Health.

NSW Health risk assessed people exposed to the infected poultry and material, facilitated fast-tracked testing for those who developed symptoms, and recommended seasonal flu vaccination and antiviral prophylaxis and advice. Risk assessment tools were adapted to consider the varying ways and settings people interact with domestic, commercial and wild birds. Similarly, a scalable contact management system was needed to better address the types of exposures.
Of 62 contacts assessed, 25 were considered high risk and monitored for 10 days via SMS survey. None were positive for influenza A virus. There was nil uptake of antiviral prophylaxis.

Challenges included contacts voicing concerns about influenza vaccine effectiveness and reflecting a potential lack of trust in vaccine recommendations and of public health control measures.

The outbreak identified the need for improved public health guidance, and targeted prevention communication to people at greater risk, including those in the poultry, biosecurity, wildlife, and environment industries.

The spillover of the virus into private residential settings presented new challenges, such as the adaptation of the risk assessment tool to consider how people interact with birds and a scalable contact management system to facilitate public health management of contacts in future outbreaks.

Lessons from the response have been incorporated into revised national guidelines for avian influenza for public health units. These lessons are valuable to inform preparations for the potential incursion of H5N1.

School holidays as a circuit breaker for pertussis transmission during an epidemic

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6F - Pertussis, Riverbank Room 4, June 12, 2025, 11:00 AM - 12:30 PM

Background

From early 2024 Tasmania experienced an increase in Bordetella pertussis notifications, consistent with national trends and previous epidemics. We analysed notifications from January 2024 to February 2025 to explore if school holidays were associated with reduced transmission.

Methods

We compared the average number of weekly notifications in school-aged children (5-17 years) and all ages in term and holiday periods (29 vs 18 weeks respectively) using an independent T-test. Additionally, we compared notifications in school-aged children in the 3 weeks before and 3 weeks after commencement of school holidays for the holiday periods within the established epidemic. Holiday and term periods were defined using public school dates, adjusted by 7 days to account for the pertussis incubation.

Results

In total there were 1055 cases, with 623 (59%) aged 5-17 years. The average weekly number of cases in holiday periods compared with term periods was 43% lower in children 5-17 years (7.2 vs 12.7, $p<0.05$), and 58% lower among children 12-17 years (2.2 vs 5.3, $p<0.01$). For cases 18 years and over, differences were negligible (6.2 vs 6.1, $p=0.9$).
Among children 5-17 years, the period following commencement of school holidays was associated with fewer cases than the preceding school term period with a reduction in total cases from 28 to 13 (54%), 93 to 73 (22%) and 78 to 36 (54%) across the 3 holiday periods respectively.

Discussion and conclusion

School holidays were associated with reduced pertussis notifications in school-aged children, with fewer weekly average notifications in holidays and a reduction immediately following commencement of holidays. This may be due to school holidays acting as a ‘circuit breaker’, with reduced mixing of these age groups leading to decreased transmission. These finding prompt consideration of the specific settings that contribute most to pertussis transmission, and interventions that may reduce this risk.

Area-based Emerging Hotspots on Mpox Outbreaks in Europe and Africa, 2021–2023

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

The largest-ever Mpox outbreak in history began in May 2022, raising significant global concern. What distinguishes this outbreak from previous ones is its extensive reach across vast regions and high case numbers, particularly in countries where community transmission of the disease had not been reported before. To examine the spatiotemporal distribution of Mpox outbreaks in Europe and Africa since 2022, we conducted an area-based emerging hotspot analysis by developing a space-time cube of the occurrences. We aggregated data from 2021 to 2023 using EPIWATCH®, an early warning system for epidemics, and applied the Getis-Ord Gi* algorithm to monthly time slices across Europe and Africa. The results revealed a pattern of Mpox spread along the latitude line in Europe. The 2022 outbreak in Africa was more widespread than the 2017 outbreak, extending across Central Africa and the Gulf of Guinea. Additionally, we assessed the performance of EPIWATCH® as a surveillance database and found it to be a robust and effective tool for early detection and rapid reporting of Mpox. This paper offers valuable insights into the characteristics of Mpox transmission, which can inform policy-making for epidemic control and prevention.

Caregiver and Healthcare Perspectives on Drivers of Routine Immunisation: East New Britain

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4D - Vaccine programs for the region, Riverbank Room 2, June 11, 2025, 1:30 PM - 3:00 PM

Background: In East New Britain Province (ENB) Papua New Guinea, 41% of children were considered "zero-dose" (did not receive the first dose of Diphtheria-Tetanus-Pertussis (DTP1) containing vaccine) and 55% were under-immunised (did not receive DTP3) in 2023. This study examined barriers and enablers to routine immunisation in un(der)-vaccinated areas in ENB.

Methods: Face-to-face semi-structured interviews were conducted with caregivers of children aged 12-23 months and healthcare professionals in ENB. Five local research officers conducted the interviews following comprehensive in-country qualitative research training. Data were thematically analysed and mapped across the six UNICEF Journey to Immunisation framework stages. Strategies to address identified immunisation barriers were also discussed.

Results: Thirty-three caregivers and 28 healthcare professionals were interviewed. All caregivers reported that their child had received DTP1, and 91% reported DTP3 vaccination (9% through verbal recall, 12% through record book check and 79% through both). However, they noted barriers including lack of immunisation knowledge, financial and travel challenges, limited availability of healthcare professionals and healthcare professionals not adequately explaining why children should be vaccinated. Vaccination enablers reported by caregivers included support provided by families and accessible services. Barriers reported by healthcare professionals included service delivery costs, non-functioning aid posts and vaccine stock-outs. Healthcare professionals reported that working with community leaders and providing vaccine education sessions facilitated vaccination uptake. Suggested strategies for improving immunisation uptake included developing tailored immunisation communication materials, engaging community members to support routine immunisation promotion activities, and strengthening coordination between communities and healthcare professionals.

Conclusion: Focusing on the identified barriers and enabling factors to implement locally informed strategies for community members and healthcare professionals is critical to increasing childhood routine immunisation coverage. These findings have informed the implementation of interventions including the development of routine immunisation communication materials and community leader and healthcare professional immunisation training.

Who is at risk of an RSV hospitalisation?

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2A - Effectiveness of RSV prevention, Halls CD Lower Section, June 10, 2025, 1:30 PM - 3:00 PM

Background
Respiratory syncytial virus (RSV) is a major cause of acute lower respiratory infections globally in children under the age of five years. With the development and implementation of RSV prevention strategies, it is important to identify children at high risk of hospitalisation due to RSV in order to ensure public health interventions are targeted to those most in need.
Methods
We used a probabilistically linked population cohort born in Western Australia between 2010 and 2020 and hospitalised before the age of 5 years. The primary outcome was the first laboratory-confirmed RSV-hospitalisation. Risk factor exposures included a range of perinatal, socio-demographic, household, environmental, congenital, and comorbid conditions antecedent to RSV-hospitalisation. Incidence rates, adjusted hazard ratios, and population attributable fractions (PAFs) were calculated using survival analysis techniques and Cox regression.
Results
From a cohort of 365,582 births, there were 8,316 RSV-hospitalisations before age 5 years. Risk factors for RSV-hospitalisation included demographic (male sex, Aboriginal ethnicity, maternal history of asthma), perinatal (younger maternal age, prematurity, maternal smoking during pregnancy), household/environmental (increasing number of siblings, season of birth), and comorbid and congenital conditions (cardiovascular defects, Trisomy 21 and cerebral palsy). The presence of two or more older siblings in the household and being born moderate to late preterm (32-36 weeks) had the highest PAFs (28.87% [95% CI: 26.25%, 31.39%] and 7.40% [95% CI: 6.75%, 8.04%]). While the risk of hospitalisation for children with some comorbid and congenital conditions was high (immunological conditions, aHR 3.94 [95% CI: 2.98, 5.23], respiratory system defects, aHR 3.13 [95% CI: 1.87,5.25]), the PAFs were relatively small (1.70% [95% CI: 1.53%, 1.86%] and 0.40% [95% CI: 0.30%, 0.49%]).
Conclusions
Our analysis has provided information on RSV risk factors that could assist public health authorities to identify high risk populations and prioritise the allocation of RSV prevention strategies.

Integration of wastewater testing into One Health surveillance for emerging flaviviruses

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6E - One Health preparedness, Riverbank Room 3, June 12, 2025, 11:00 AM - 12:30 PM

Emerging infectious diseases caused by novel or neglected pathogens, such as flaviviruses, pose a significant global health risk, exemplified by the Japanese encephalitis virus (JEV) outbreak in southern temperate Australia in early 2022. Strengthening pandemic preparedness and prevention requires integrated healthcare and surveillance frameworks, emphasizing a One Health approach. This approach employs a multipronged strategy to monitor human, animal, and environmental health. We assessed the utility of wastewater for environmental surveillance for early warning of JEV as a proof-of-concept for human disease outbreaks, using mosquito surveillance and human cases as benchmark controls.

We developed real-time PCR-based assays to detect JEV and Murray Valley encephalitis virus (MVEV) in wastewater using retrospective passive sampler (PS) membranes collected from riverine Victorian catchments between January and February 2022. The analytical performance of detection assays for MVEV-G2 and all five JEV genotypes was assessed through wastewater spiking experiments, using varying quantities of viruses and evaluating their respective recoveries with PS membranes. Our results indicate that the assays' lower limit of detection (copies/mL) ranged between 2,550 for MVEV-G2, 780 for JEV-GI, 2,760 for JEV-GII, 3,034 for JEV-GIII, 472 for JEV-GIV and 1,170 for JEV-GV, with viral recoveries around 5-40%. A total of 88 remnant stored PS membranes and cotton bud "Q-tips" were selected by location to known human cases, mosquito detections and flavivirus seroprevalence. Among these samples, JEV was detected in 23 (26.1%) PS, while MVEV was detected in 2 (2.3%) PS.

Furthermore, wastewater testing overlaid with complementary surveillance data from the same period revealed evidence of JEV in wastewater and mosquitoes up to 41 days before human cases. Conversely, timelines of MVEV did not align between sample types.
Our findings highlight wastewater testing has a complementary role in One Health surveillance with a potential to serve as an early warning system for broader flavivirus infections.

Are antivirals still effective for COVID-19 in the post-vaccine, Omicron era?

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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Oral antivirals have been available in Australia since 2022 to treat people with COVID-19 at risk of severe disease. Early clinical trials demonstrated that they were effective in unvaccinated people if taken early. However, subsequent trials and observational studies had mixed results. Evaluating evidence since the emergence of the Omicron variant among vaccinated populations is needed.

We conducted a systematic review and meta-analysis of studies of the effectiveness of 1) nirmatrelvir-ritonavir compared with no treatment, 2) molnupiravir compared with no treatment and, 3) nirmatrelvir-ritonavir compared with molnupiravir in adults. Our primary outcomes of interest were hospitalisation and death. We included RCTs from 2020 onwards, and observational studies conducted since January 2022 among populations where vaccination coverage was >70%.

We identified 49 studies (8 RCT, 41 observational) that presented 64 comparisons of 3,336,305 participants who had 6709 hospitalisations and 1660 deaths. Most studies (n=46) included high risk participants only. Compared to no treatment, nirmatrelvir-ritonavir was associated with reduced hospitalisations (13/16 comparisons; 81%), mortality (10/17; 59%), and hospitalisation or death (11/13; 85%), and molnupiravir was associated with reduced hospitalisations (3/4; 75%), mortality (7/11; 64%), and hospitalisation or death (2/6; 33%). Compared to molnupiravir, nirmatrelvir-ritonavir was associated with a lower risk of hospitalisation in 2/5 (40%) comparisons, mortality in 4/4, and hospitalisation or death in 0/4. Of the three RCTs that included vaccinated participants, none reported significant effects of antivirals on reducing hospitalisations or mortality.

Most observational studies suggest that antivirals are effective in reducing hospitalisation and mortality in high-risk groups, but these are subject to higher risk of bias. Further analysis to evaluate the utilisation and cost effectiveness of oral antivirals in Australia, and to confirm the age groups and risk factors most likely to benefit will determine whether the current eligibility criteria are appropriate.

Community and Hospital onset Clostridioides difficile Infections in a Regional Victorian Hospital.

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
Clostridioides difficile infections (CDI) have been traditionally considered as hospital associated infections. However, recent Australian data shows an increase in community onset cases (>80%)(1).
Methods
In this retrospective study, information on potential risk factors was collected from 88 patient records with CDI diagnosis. These patients were admitted to a regional public hospital in the Goulburn Valley region, Victoria from 01/01/2022 to 31/12/2023.
Results
Mean age of the study population was 72 years. Majority were aged ≥65 years (73.8%). Males had higher incidence (56%) and 81.8% were born in Australia.
According to the timing of symptoms(2), cases included healthcare associated healthcare facility onset CDI (n=35, 39.8%), healthcare associated community onset CDI (n=23, 26.1%), community associated CDI (n=23, 26.1%), and indeterminate onset CDI (n=7, 8.0%). Community onset cases (CCDI) (n=53, 60.2%) included healthcare associated community onset CDI, community associated CDI, and indeterminate onset CDI.
Healthcare onset cases (HCDI) were more common among those >=65 years of age (89%) compared to CCDI (66%) ($P<0.05$). Higher number of HCDI had recent surgery (34%) compared to CCDI (11%) ($P<0.05$). Hypoalbuminaemia was more common among HCDI (75%) than CCDI (45.6%) ($P<0.05$).
Antibiotics were used prior to admission in 28(53%) of CCDI and in 11(31%) of HCDI ($P=0.05$).
Prescriptions by general practitioners contributed to 28.9% of antibiotic usage prior to admission and hospital prescriptions during/after past hospital stays contributed to 60.5%.
Higher number of CDI occurred in November and December.
Conclusions
Preliminary data from this study highlighted a higher number of CCDI than HCDI. Older age, hypoalbuminaemia and recent surgery were associated with HCDI. Further study is being conducted on seasonality and association of other risk factors.
References
1. ACSQHC. Clostridioides difficile infection Data snapshot report: 2020 and 2021. Sydney(AU). ACSQHC; 2023
2. ACSQHC. Implementation Guide for the Surveillance of Clostridioides difficile Infection. Sydney(AU). ACSQHC; 2023

An Invasive Meningococcal Disease Outbreak in a Regional Residential Aged Care Facility

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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

In January 2025, the Hunter New England Public Health Unit (HNEPHU) investigated an outbreak of invasive meningococcal disease (IMD) amongst residents of a residential aged care facility (RACF) in regional NSW. Two residents from the same wing of the facility were diagnosed with IMD six days apart. Both were serogroup Y and genomically identical on whole genome sequencing. Despite residing in the same wing, the second case was not identified as a close contact of the index case during a thorough risk assessment.

Outbreak management and a coordinated response by the HNEPHU, facility and primary health care providers involved provision of clearance antibiotics to all residents in the affected wing and staff members identified as high-risk. Vaccination was offered to all residents of the facility and identified high-risk staff. Messaging was provided to residents, resident's representatives, and staff at information sessions, and the community was alerted through a media statement. Finally, enhanced surveillance and infection prevention and control (IPC) measures were instituted to reduce ongoing risk. The outbreak was closed four weeks after the last case and no further cases were identified.

To our knowledge, this is the first IMD outbreak in a RACF reported in Australia and demonstrates important learnings. Firstly, leveraging outbreak management knowledge and skills refined by RACF staff during the COVID-19 pandemic proved to be effective in facilitating: evolving complex risk assessments; communication with residents, families and staff; and timely implementation of infection prevention and control measures.

Secondly, this outbreak identified several key strategies used by HNEPHU that supported a timely and efficient response despite being remote from the RACF.

We will discuss how these learnings can be adapted and used to better manage infectious disease outbreaks in RACFs, particularly in rural and regional areas of Australia.

Development of a National Aboriginal and Torres Strait Islander Group at NCIRS

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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

Background: A major component of work at the National Centre for Immunisation Research and Surveillance (NCIRS) relates to Aboriginal and Torres Strait Islander people. It is known that benefits to individuals and their communities are strengthened by involving community in all stages of Aboriginal and Torres Strait Islander health research and decision making. Therefore, this project describes the establishment of a broadly representative Aboriginal and Torres Strait Islander Group at NCIRS.

Methods: An internal NCIRS quality improvement project was undertaken. This involved a literature review and investigating staff's experience and needs with respect to engaging with Aboriginal and Torres Strait Islander communities. Staff perspectives were gathered through a questionnaire and semi-structured interviews. A public expression of interest for membership was disseminated nationally through websites, newsletters, community-controlled organisations, professional networks and word-of-mouth. The draft Terms of Reference, developed from the findings of the project, were provided to interested applicants and membership was subsequently confirmed.

Results: There was strong support for the Group and a recognised need to expand engagement with Aboriginal and Torres Strait Islander people. Embedding Aboriginal and Torres Strait Islander voices, priorities and data sovereignty were identified as key priorities. As of 27 Feb 2025, membership is comprised of 34 Aboriginal and Torres Strait Islander professionals with diverse experience and skills from all jurisdictions, including urban, rural and remote areas, with academic, clinical and public health backgrounds in university, government and Community Controlled Health Organisations.

Conclusions: The development of a national Aboriginal and Torres Strait Islander Group at NCIRS is important for strengthening community engagement and embedding Aboriginal and Torres Strait Islander voices in the immunisation field. Moving forward, collaboration and meaningful relationships will be essential to the sustainability of the group and the health of Aboriginal and Torres Strait Islander people.

All research findings presented will be approved by the NCIRS National Aboriginal and Torres Strait Islander Group.

Targeted culture-independent sequencing identifies emergence of macrolide-resistant Bordetella pertussis in Australia

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Bordetella pertussis continues to circulate globally despite wide-spread vaccination, with an emergent international epidemic in 2024. The resurgence of disease is confounded by the emergence of pertactin-deficient, macrolide-resistant B. pertussis (MRBP) strains in Asia and Europe, which are under-recognised using traditional diagnostic and surveillance methods. This study addressed these gaps by applying a probe-capture hybridisation technique, which enables targeted culture-independent sequencing of genomes (tNGS) directly from respiratory specimens. Seven co-circulating lineages of B. pertussis were identified in Australia, including two associated with MRBP. Eight epidemiologically unrelated and geographically dispersed cases of MRBP in Australia with a A2037G mutation in all three copies of 23S rRNA were documented, three of which were confirmed by phenotypic testing and sequencing of corresponding isolates. The estimated rate of MRBP among B. pertussis PCR positive cases was 4.4%. This study demonstrated the value of tNGS based on target enrichment and probe capture sets designed for respiratory pathogens for public health laboratory surveillance of pertussis. This approach can improve the resolution and completeness of B. pertussis surveillance given the increasing diversity and vaccine evasion capability of this pathogen.

Humour in vaccine messaging: opportunities for consumer engagement

Dr Babatunde Balogun[1], Dr Anne Hogden[2], Dr Maria Agaliotis[3], Dr Lin Yang[1], Prof Nenagh Kemp[1]
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1B - Vaccine practice, Room E1, June 10, 2025, 11:00 AM - 12:30 PM

Introduction
Social media present an opportunity for public health service organisations (PHSOs) to promote vaccination directly to the public. Additionally, social media can facilitate real-time audience engagement, enabling PHSOs to continuously support the audience to make informed choices about vaccination. However, PHSOs' social media public service announcements (PSAs) promoting vaccination often go unnoticed, thereby missing the objectives set for such PSAs. Through the lens of three humour theories, this study explored PSAs promoting COVID-19 vaccination posted by Australia's health departments to identify the potential of humorous health messaging to influence audience engagement.

Methods
The accounts of Australia's nine health departments on Facebook, X, and YouTube were scanned for humorous PSAs promoting COVID-19 vaccination posted between October 2021 and May 2023. Twenty-three unique humorous PSAs posted by six health departments generated high audience engagement and were extracted for our content analysis. The six health departments were ACT Health, Queensland Health, SA Health, TAS Health, VIC Health, and the Australian Government Department of Health and Aged Care.

Results
The health departments used five humour types, namely comic wit, sentimental humour, sentimental comedy, solidarity, and full comedy, to promote COVID vaccination. The PSAs reinforced the benefits of COVID vaccination through gain-framed messages. A quarter of the PSAs promoted vaccination for self-protection, while the remaining prioritised community protection.

Conclusion
PHSOs may adopt a range of health messaging strategies, aiming to obtain optimal audience attention and engender high audience engagement. Humour appeal in PSAs promoting vaccination has the potential to influence audience engagement, creating opportunities for public acceptance of vaccination practices. This study establishes the relevance of a range of humour types for promoting vaccination via social media. PHSOs should consider infusing their social media promotion of vaccination with a variety of humour types, leveraging on the conviviality of the social media environment to achieve audience engagement.

Superior effectiveness of cell- versus egg-based influenza vaccines, 2023-24 season, United States

Dr Alicia N. Stein[1], Dr Anusorn Thanataveerat[2], Dr Kimberly W. McDermott[2], Mr Alex Dean[2], Ms Stephanie Wall[2], Mr Cory Pack[2], Dr Sheena Sullivan[3], Dr Mendel Haag[4]
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1D - Preventing respiratory infections, Riverbank Room 2, June 10, 2025, 11:00 AM - 12:30 PM

Background: Egg-adaptive mutations occurring during egg-based influenza vaccine manufacturing can alter the antigenicity of the vaccine virus and reduce recipients' immune response to circulating viruses, contributing to reduced vaccine effectiveness. We previously demonstrated improved effectiveness of cell-based (QIVc) versus egg-based (QIVe) quadrivalent influenza vaccines against test-confirmed influenza in populations aged 4 to 64 years during the 2017-18 to 2019-20 influenza seasons and aged 6 months to 64 years during the 2022-23 season in the United States. With increasing uptake of QIVc in the paediatric population, the 2023-24 season offered the opportunity to estimate the relative vaccine effectiveness (rVE) of QIVc versus QIVe for preventing test-confirmed influenza specifically in paediatric and adult subpopulations.
Methods: We used linked data from multiple sources, combining electronic health records, medical and pharmacy claims, and laboratory tests in the United States. A retrospective test-negative design was applied among individuals aged 6 months to 64 years vaccinated with either QIVc or QIVe in 2023-24, who had an influenza test obtained within 7 days of an acute respiratory or febrile illness. rVE was estimated using a doubly robust analysis with inverse probability of treatment weighting and multivariable logistic regression. Analyses were performed in the full population and stratified by age: 6 months to 17 years (paediatric) and 18 to 64 years (adult).
Results: The final dataset included 106,779 vaccinated and influenza-tested patients, of whom 57% were classified as paediatric and 43% as adult. QIVc was significantly more effective than QIVe in preventing test-confirmed influenza with estimated rVEs of 19.0% (95% CI: 14.9 – 23.0%) in the full population, 14.7% (8.7 – 20.3%) in paediatric and 18.1% (11.7 – 24.0%) in adult subpopulations.
Conclusions: This study demonstrates improved effectiveness of QIVc compared to QIVe in preventing test-confirmed influenza in both paediatric and adult populations during the 2023-24 season.

Identifying high risk contacts in a pertussis epidemic: a digital solution

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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Background
In a Bordetella pertussis epidemic, identifying which cases to prioritise for follow up is challenging. Tasmania supplemented standard processes with a digital survey designed to manage the increased burden of cases and contacts from June 2024. We analysed survey response rates and identification of high-risk contacts using this method to assess its value in outbreak response.
Methods
We describe the integration of digital surveys for pertussis case and contact management from June 2024 to January 2025. Confirmed cases aged >6 months were sent SMS messages containing a factsheet and survey to identify those associated with potential high-risk scenarios, including pregnancy, high risk contacts and high-risk settings; these were then prioritised for individual contact, as were those <6 months, and non-responders <5 years. Those 18+ were contacted as capacity allowed; those aged 5-18 were not further followed-up. We assessed survey response rates, the number of high-risk contacts managed via digital survey compared to all contact tracing methods, and the impact on prophylaxis recommendation and resources.

Results
Of 958 confirmed cases >6 months, 839 received [were sent?] the survey and 444 responded (53%). Survey responses identified 14 cases with potential high-risk contacts and 38 potential high-risk facility exposures. Individual follow-up of these 52 cases identified 25 high-risk contacts, 22 of whom were recommended prophylaxis. Considering all contact tracing methods combined, of 958 cases, 115 high risk contacts were identified, with 85 recommended for prophylaxis. Surveys expedited and focused contract tracing effort, identifying 12% (n=52) of responders requiring priority follow-up, and 88% (n=392) who did not.

Discussion
Digital surveys facilitated timely information dissemination and identifying high-risk scenarios requiring individualised follow up, improving outbreak response efficiency. This approach enhances existing contact tracing when resources are limited. Further effort to understand predictors of responsiveness may help increase response rates.

Young Hospitality Workers' Experiences Enforcing COVID-19 Public Space Vaccine Mandates in WA

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2C - Mandates and messaging, Room E2, June 10, 2025, 1:30 PM - 3:00 PM

During the COVID-19 pandemic, the Western Australian Government employed public space vaccine mandates to promote vaccine uptake. Individuals had to show proof of vaccination to enter service and hospitality venues, including coffee shops, bars, and cinemas. Checking proof of vaccination became the duty of venue employees, many of whom were young workers. The impact of this operational responsibility for vaccination governance upon young hospitality workers has not been explored.

This paper presents findings from a qualitative interview study conducted in WA exploring how being functional public health governance officials impacted young workers and overall mandate efficacy. Employing the theoretical lens of Kasperson et al.'s 1988 'risk amplification framework', it analyses how experiences with mandate enforcement shaped young workers' perceptions of public health and other risks; their compliance with their enforcement role; and the strategies they used to cope with competing risk signals and burden.

We found that young workers were subject to several secondary risks by virtue of their enforcement role, including negative interaction with customers; an increased time pressure and responsibility at work; and burden fatigue. They exercised significant discretionary power in their enforcement roles, and often prioritised the immediate alleviation of these frontline secondary risks over a strong commitment to enforcing mandates and promoting public health.

This paper contributes insight into the challenges of appointing young, untrained workers to act as informal public health officers, and its ultimate impact on communication, implementation, and effectiveness of public space mandates. The study further contributes knowledge by making recommendations to policymakers to improve future mandate design, emphasising a stronger focus on supporting young workers in their enforcement role.

Our recommendations are important not only to improving the efficacy of public space vaccine mandates, but also to socially constructing a positive citizen-government relationship as a foundation for future public health policy compliance.

Shingrix post-licensure safety and surveillance in Western Australia

Dr Carla Drake-Brockman[1], Dr Timothy Ford[1,2], Dr Dale Carcione[3], Dr Kaija Strautins[3], Grace Pettigrew[3]
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6B - Shingrix and COVID-19 vaccine safety, Room E1, June 12, 2025, 11:00 AM - 12:30 PM

Shingrix® (GlaxoSmithKline) is an adjuvanted recombinant Varicella Zoster virus vaccine. It replaced Zostavax on the National Immunisation Program (NIP) on 1st November 2023 due to its superior immunogenicity and safety profile. It is recommended as a two-dose schedule, 2-6 months apart, for immunocompetent adults aged ≥50, and immunocompromised adults (or those shortly expected to be immunocompromised) aged ≥18 years to prevent herpes zoster and its complications, including post herpetic neuralgia.

Post-licensure surveillance of vaccines is vital for monitoring of rare, late onset, severe, and unexpected adverse events, and maintaining public confidence in immunisation programs. The Western Australian Vaccine Safety Surveillance (WAVSS) system receives passive reports from individuals and vaccine providers, as well as active reports through SmartVax and data linkage by the WA Health Vaccination Linked Data Repository (VLDR).

In the first year Shingrix was included on the National Immunisation Program schedule (01 November 2023 to 31 October 2024), 144 reports were submitted to WAVSS with 123 reports of adverse events following immunisation (AEFI) and 21 reports of vaccine administration errors. Of these, 71% were reported via passive reporting and 29% via active reporting, including 5% through VLDR. Coadministration with another vaccine occurred in 3% of AEFI reports. The top 10 reported reactions included expected reactogenic symptoms and vaccine administration errors. Severe adverse events included 4 reports of Guillain-Barre Syndrome, one report of encephalopathy, and one report of aseptic meningoencephalitis, all of which were detected through VLDR active surveillance. Two-thirds of the severe adverse events occurred after dose 1. These patients were all offered clinical follow up to discuss their adverse event and implications for future vaccination. Our findings support the favourable safety profile of Shingrix, and the vital role data linkage has in vaccine safety surveillance.

Impact of vaccine type, region, and schedule on immunogenicity of pneumococcal vaccine

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Pneumococcal disease (PD) remains a major public health concern, with Streptococcus pneumoniae responsible for both invasive pneumococcal disease and community-acquired pneumonia. Over 100 distinct pneumococcal serotypes have been identified globally, and those associated with the highest disease burden have been included in pneumococcal conjugate vaccines (PCVs). The introduction of PCVs into paediatric and, subsequently, adult vaccination schedules has led to reductions in PD caused by vaccine serotypes. However, this has been accompanied by an increase in PD caused by non-vaccine serotypes, a phenomenon known as serotype replacement. To address this, higher-valency PCVs have been developed. Immunogenicity assessments of these new PCVs typically compare antibody responses to established vaccines, such as PCV13 in adults and PCV7 in children, where clinical efficacy has been demonstrated. However, the impact of vaccine products, dosing schedules, and regional factors on immunogenicity in paediatric populations remains incompletely understood. To address this gap, we conducted a systematic review and meta-analysis to quantify serotype-specific immunogenicity following pneumococcal vaccination in paediatric populations. We synthesised data on vaccine-induced immune responses across different vaccine products and schedules, estimating immunogenicity-based vaccine efficacy parameters for integration into disease transmission models. By identifying serotype-specific immune response variations, this study provides critical evidence to inform pneumococcal vaccine evaluation and future immunisation strategies.

Non-specific effects of maternal influenza vaccine against RSV-hospitalisations in young infants

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6A - RSV prevention, Halls CD Lower Section, June 12, 2025, 11:00 AM - 12:30 PM

Background: Non-specific benefits of maternal seasonal influenza vaccine on all-cause acute lower respiratory infection (ALRI) hospitalisations have previously been reported. We examined non-specific effects of maternal seasonal influenza vaccine on respiratory syncytial virus (RSV) hospitalisations in Western Australian infants.
Methods: We conducted a population-based cohort study of births during 2010-2020 using individual-level, linked, longitudinal data on births, deaths, hospitalisations, antenatal immunisation records and routine respiratory viral testing. We performed Cox proportional hazard models with inverse probability treatment weighting, with maternal receipt of seasonal influenza vaccine during pregnancy as the exposure against the first RSV-confirmed hospitalisation in infants aged <6 months, adjusting for sociodemographic and perinatal factors.
Results: The cohort comprised 289,699 mother-infant pairs. Overall, 88,917 women (30.4%) received a maternal influenza vaccine. During the 10-year study period, there were 2,764 RSV-confirmed hospitalisations in infants aged <6 months, the majority (73.2%) occurring in infants whose mothers were unvaccinated. In unadjusted analyses, infants of vaccinated mothers had a higher RSV hospitalisation rate (20.3 per 1000 child-years [95% confidence interval, CI:91.4-21.2]) than those of unvaccinated mothers (16.8 per 1000 child-years [95%CI:15.6-18.0]). In adjusted analyses, receipt of maternal influenza vaccine was associated with a 14% reduction in RSV-hospitalisations (adjusted hazard ratio: 0.86 [95%CI:0.79-0.94]) compared with infants of unvaccinated mothers. After controlling for maternal health seeking behaviours, the point estimate suggested a reduction, but did not reach statistical significance (aHR: 0.98 [95%CI:0.87-1.10]). Analysis by trimesters and on pneumonia, bronchiolitis and all-cause ALRI-hospitalisations are ongoing.
Conclusion: Our findings suggest that maternal influenza vaccine may provide a beneficial non-specific effect against RSV-hospitalisations in infants and additional value of vaccines. Understanding the full public health value of a vaccine is important for policymakers and community to achieve maximum confidence in immunisation. These findings are particularly important with the ongoing implementation and future evaluation of RSV maternal vaccines.

Revaccination following cold chain breaches: Lessons after response to multiple large incidents

Dr Anastasia Phillips[1,2,3], Dr Tim Ford[4,5], Dr Ushma Wadia[3,5,6], Dr Andrew McLean-Tooke[7], Dr Carla Drake-Brockman[4], Professor Christopher Blyth[3,4,5,8], Mr Darren Westphal[9], Ms Jodie Robins[10], Ms Susan Ridderhof[1], Ms Terri-Ann McLarty[1], Ms Ellie Darcey[1], Ms Tracie Chong[1], Dr Benjamin Scalley[1], Assoc Professor Peter Richmond[3,5,6]

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6B - Shingrix and COVID-19 vaccine safety, Room E1, June 12, 2025, 11:00 AM - 12:30 PM

Context: Unidentified cold chain breaches can result in vaccination with potentially compromised vaccines. Responding to these scenarios is challenging for public health units, immunisation providers and consumers. Several unreported breaches have been identified in Perth since 2023.

Aim: To provide timely, evidence-based advice and support to general practices and consumers affected by vaccination during a cold chain breach.

Process: Since November 2023, Boorloo (Perth) Public Health Unit (PHU) and the WA Vaccine Safety Surveillance (WAVSS) system have responded to five large cold chain breaches within primary care. The number of patients vaccinated at each clinic during the breach period ranged from 57 to 675, excluding influenza vaccines. Given these large volumes, Boorloo PHU used automated methods to analyse temperature excursions and assess vaccine viability based on time of administration. An Expert Panel was then convened for each breach to determine specific revaccination advice for affected patients, including infants with multiple affected doses. Advice was communicated to patients via the affected clinic's staff, with relevant consumer information provided by Boorloo PHU.

Outcome: The proportion of patients who had received at least one vaccine that was considered compromised (based on thermostability guidelines and manufacturer advice) ranged from 27% to 100%, depending on the nature of the breach. All practices have commenced contacting patients to offer revaccination where required. It is challenging for both general practice and public health to respond to these events. Advice developed by the expert panels has now been standardised for most scenarios. Processes to support general practice, including site visits, revaccination plan templates and consumer fact sheets, have streamlined the response. Reflections on successes and lessons learned will be shared.

The Well Nest: Health Education for parents & teens

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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

Background
Social media is a powerful health education tool but poses challenges in combating healthcare misinformation. This is particularly concerning in paediatric health, where myths around immunisations and vaccine preventable diseases fuel vaccine hesitancy and unproven practices. In today's digital age, differentiating credible health information from misleading content is crucial – as misconceptions can lead to serious health risks

Embracing a holistic approach to health promotion and education, The Well Nest (thewellnest.space) is a digital platform focused on enhancing health literacy and addressing misinformation in paediatric and adolescent health. With content curated by health professional, The Well Nest adopts a two-pronged approach targeted at parents of young children and adolescents via digital platforms TikTok and Instagram (@thewellnest_space). The platform leverages popular social media channels to promote informed health behaviours in a direct-to-consumer methodology emphasising two-way engagement.

Methods
The Well Nest addresses health issues from multiple perspectives – with all content selected and validated by clinicians. The multi-prong approach recognises that comprehensive health understanding is key to empowering individuals and communities.

The digital platform dissects complex health topics into accessible, digestible content forms and facilitates deeper engagement. The platform features short form video content and is delivered in three main styles – science explainer videos, common disease descriptions and current or topical health issue features addressing common questions.

Results
Since its launch in August 2024, The Well Nest has established a robust online presence for health literacy in the target demographic seeking information around common paediatric illnesses and drivers of health to promote positive behaviour change.

It has reached over 16k accounts on Instagram and 45k accounts on Tiktok, with over 1.5k unique engagements with our content. Since its inception, the audience has been predominately female, with 47% in the age range of 18-24yo, and 41.1% in the 25-34 yo age range.

Conclusion
Through fostered engagement and knowledge sharing, The Well Nest has adopted a new approach to information sharing – combating misinformation and creating a relevant and lasting impact in paediatric health education.

Communicable Diseases Platform: Real-Time Clinical Analytics

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2E - Public health in practice, Riverbank Room 3, June 10, 2025, 1:30 PM - 3:00 PM

Background

Communicable diseases encompass a large proportion of acute paediatric presentations and admissions to hospital. These include both seasonal respiratory illnesses such as influenza as well as emerging infections such as COVID-19.

Existing surveillance systems for these diseases are often retrospective in nature, require manual data collation and contain one of demographic data or clinical data – but usually not both. We designed the Communicable Disease Platform (CDP) to aggregate dynamic clinical, laboratory and demographic data into a single platform for all communicable disease presentations to The Royal Children's Hospital (RCH).

Methods

In the pilot phase, the CDP was tested on ten common respiratory infections. Using automated extraction from the hospital electronic medical record, demographic data including age, sex, length of stay for patients with positive laboratory results for each infection were linked with clinical data (ICU admission, use of ventilation, ECMO, vasodilators or inotropes, presence of any secondary infection) in a de-identified aggregated fashion. All data was displayed on a Microsoft PowerBI dashboard.

Results

Pilot phase results yielded data for respiratory pathogens ranging from 2016 to 2025. For each pathogen, trends for positivity rate, positivity rate by hospital admission and total hospital admission trends were trended by week/year. Clinical filters allowed result visualisation or segmentation by age group, type of hospital presentation (including ICU), clinical interventions and severity of disease.

Discussion & Conclusion

The flexibility and adaptability of the CDP allows aggregation and visualisation of historical and dynamic data of any known or emerging communicable disease presentations. It can also be used to describe clinical profiles, disease burden and seasonal peaks to allow for better prediction of outbreaks and patient flow. Future developments combining the CDP with immunisation data and evaluation using machine learning algorithms will allow estimations of both real-world vaccine effectiveness and predictive modelling of respiratory patterns in real-time.

The challenges in responding to an ongoing tuberculosis outbreak in regional Queensland

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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

Background: Tuberculosis (TB) is a global public health problem and can present unique challenges where community outbreaks occur. We report a prolonged outbreak of TB with an unusual MPT64 negative status, first detected in North Queensland in 2017-2018.
Methods: A retrospective epidemiological and laboratory investigation (including whole genome sequencing, WGS) into potentially linked cases was undertaken. The aim of this study was to describe the outbreak, identify possible transmission settings and outline the challenges in the outbreak response.
Results: WGS provided evidence of serial transmission between 3 or more cases, fulfilling the TB outbreak definition. Between 2002-2023, a total of 47 outbreak cases were identified; 44 were closely linked by WGS and 3 were epidemiologically linked. Cases were all adults with a median age of 42 years (range 18-68 years). 64% of cases were male and 87% were First Nations Queenslanders. A median of 2 cases per year (range 0-6) were identified. More cases occurred in the northern Queensland regions of Cairns (0-4 per year) and Townsville (0-2 per year); however, cases were dispersed across 6 health areas during the 21-year period. A cluster that had been earlier identified in 2011-2015 was discovered to be a subset of this outbreak. The public health response focussed on active case finding and follow up of their close contacts as per national guidelines. Contact tracing was expanded in high-risk settings, such as homeless shelters.
Conclusion: The public health response to this outbreak has been challenged by prolonged transmission and geographically dispersed cases. WGS confirmed the outbreak and informed the extent of cases. This outbreak highlights an opportunity to reconfigure and partner TB prevention efforts with local communities for a broader approach to reduce TB transmission.

Longitudinal Measles and Rubella Sero-surveillance in Timor-Leste -impact of a 2023 SIA

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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

Background

Timor-Leste has declared elimination of measles and rubella. A nationally representative serosurvey in 2022 identified a measles immunity gap (IgG seroprevalence 59.6% in those aged <5 years). The Timor-Leste Ministry of Health responded with a Supplementary Immunisation Activity (SIA) in March 2023, which aimed to provide Measles Rubella (MR) vaccination (one dose) to all children aged <5 years. This study aimed to measure the impact of the SIA on measles and rubella seroprevalence in five municipalities in Timor-Leste.

Methods

5/13 municipalities were chosen to represent different geographic regions of Timor-Leste, and around 600 children aged <10 years who had participated in the baseline survey were eligible. The original selection of participants was based on a three-stage cluster random sample of census-enumerated households. Serum was tested for measles IgG (Euroimmun enzyme-linked immunosorbent assay (ELISA)) and rubella IgG (VITROS immunoassay) in the National Health Laboratory. Seropositivity was calculated using cut-off value of >=120IU/L for measles and IgG≥10IU/L for rubella. Data regarding routine childhood immunisation and SIA participation were collected.

Results

434/486 (89%) eligible children participated. Among those who were SIA-eligible (aged <5 years at time of SIA), 32/103 (31.1%) received 'validated doses'; 29/103 (28.2%) received 'non-validated doses' ('crude uptake' 59.3%); 42/103 (40.8%) did not receive a dose. MR SIA uptake was higher in previously vaccinated individuals (58/88, 65.9%) compared to unvaccinated children 3/15, 20.0%; p=0.0013). Measles seropositivity increased from 41.9% to 47.5%; rubella seropositivity did not significantly increase (85.0% to 86.2%). Of those who were measles seronegative at baseline, 10/15 (66.7%) became seropositive after a validated SIA dose. Reasons for non-participation in the MR SIA included being unaware of the campaign (24/42, 57.1%) and being too busy (5/42, 11.9%).

Conclusions

The SIA achieved modest improvement in measles seroprevalence in eligible children in Timor-Leste, where there is an ongoing immunity gap and associated risk of measles transmission. Effective strategies are needed to improve immunisation coverage.

Tuberculosis among Syrian Refugees: How the global community must respond

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background: Tuberculosis (TB) is a leading cause of morbidity globally. Since the outbreak of the Syrian war in 2011, millions of Syrian refugees (SRs) have been predisposed to the transmission of TB and development of resistant strains along the entire migration pathway. Countries that host SRs, including those in the neighbouring region, Europe and Australia, carry the high TB case burden.
Aim: To explore and analyse health policy of Syria's neighbouring countries, Europe, and Australia in addressing TB control in SRs.
Methods: An in-depth web search of the literature (PubMed, Scopus), government and non-government health organisations, and news outlets was conducted into the global response towards TB in SRs from 2011 to present.
Results: Jordan and Lebanon's National TB Programs (NTPs) increased TB screening, diagnosis, and treatment in SRs, while providing education and addressing TB stigma among SRs and healthcare workers. Their NTPs, respectively, exceeded (91%) and approached, WHO's End TB Goal of 90% TB treatment success. However, Türkiye's NTP only achieved 63% TB treatment success due to high mobility between and within provinces, loss to follow-up and lower directly-observed-therapy rates. There is very limited information available regarding TB health policy in Europe and Australia among SRs.
Conclusion: The global community must mobilise and advocate for the SR TB crisis. High-income countries should invest time and funds into TB programs and research to further understand the challenges of TB control. With a highly mobile cohort, additional support must be provided for diagnosis, follow-up and uninterrupted treatment to avoid disease spread and resistance. Strategies to address this include cross-border communication, 'runaway bags' and employing laypeople for directly-observed-therapy. TB care needs to be culturally sensitive and individualised, adopting a culture akin to HIV programs that promote community empowerment, patient education, voluntary and consensual testing, confidentiality and treatment adherence counselling.

Impact of Antenatal Care on Newborn Health and Immunization in Sindh, Pakistan

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
Newborns are at greatest risk of mortality at birth due to neonatal complications. To reduce maternal and neonatal complications, the World Health Organization recommends ≥4 antenatal care (ANC) visits. In Pakistan, only 51% of women receive ≥4 ANC visits, a rate lower than that of other middle-income countries. Limited research in Pakistan explores how ANC visit frequency affects newborn health and immunization.

Objective
To evaluate the impact of recommended ANC visits on newborn health outcomes and immunization coverage in Sindh, Pakistan

Methodology
Using a pregnant women birth registry program, we analyzed data of women visiting healthcare facilities between November 2020 and December 2021. Women were stratified into Group-1 (≥4 ANC visits) and Group-2 (<4 ANC visits). Two-sample proportion tests were applied to compare birth weight, gestational age, and full immunization coverage (FIC) between groups.

Results
Among 33,137 enrolled pregnant women, for all 15 sites, 75% received at least one ANC visit. The proportion of women receiving four or more ANC visits increased in all sites. Low birth weight was lower in Group-1 (0.57%) than in Group-2 (1.02%) ($p<0.05$), preterm birth was lower in Group-1 (0.80% vs.1.61%, $p<0.001$) FIC was higher in Group-1 (51.43%) compared to Group-2 (41.22%) ($p<0.001$). Antigen-wise coverage for Group-1 vs. Group-2 was: BCG (86.46% vs. 76.25%), OPV-0 (96.32% vs. 94.02%), HepB0 (18.31% vs. 16.42%), Penta-1 (77.27% vs. 68.65%), Penta-2 (70.10% vs. 60.95%), Penta-3 (65.65% vs. 56.78%), Measles-1 (65.17% vs. 56.01%), and Measles-2 (53.25% vs. 42.92%).

Conclusion
This study highlighted that utilization of ANC ≥4 visits has significantly lowered the rate of low birth weight, preterm birth and improved FIC coverage from 41% to 51%. Strengthening interventions to increase ANC visits may contribute to better newborn health outcomes and immunization coverage.

Keywords: Antenatal care, longitudinal study, Immunizations, Pregnant Women, Birth Registry

Strengthening sense of purpose among Frontline Health Workers in Sindh, Pakistan

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background:
Pakistan persistently faces high maternal mortality (186 per 100,000 live births) and under-five child mortality (67 per 1,000 live births), emphasizing the need for improved healthcare delivery in underserved regions. Frontline Health Workers (FHWs) play a critical role in addressing these challenges but they often face significant physical and mental burdens at work, including long working hours, low compensation, disrespect from communities, and other adverse working conditions, leading to demotivation, burnout, decreased performance and diminished sense of purpose.

Objective:
This study evaluates the impact of strategies to empower FHWs sustainably, through a humanities-based training curriculum designed to strengthen their character virtues and sense of purpose.

Method:
We conducted a mixed-methods study design with both quantitative and qualitative components. A group of 112 FHWs, comprising Lady Health Workers and Vaccinators working in two high risk districts (Korangi and Badin) of Sindh, participated in the study. The quantitative data was collected by administering the Claremont Purpose Scale (CPS) pre- and post-intervention with FHWs. Whereas for the qualitative component, in-depth interviews were conducted with a group of randomly selected FHWs and their supervisors to gather insights into their experiences with the training 3 months post intervention. A thematic analysis of the IDIs was conducted using NVivo.

Results:
The training significantly improved participants' sense of purpose, meaningfulness, and goal orientation (CPS baseline 48; endline 53; $p < 0.001$), with sustained effects three months post-training. Qualitative feedback indicated increased resilience, emotional strength, and self-confidence, as well as improved work productivity and community engagement.

Conclusion:
This approach shows promise as a replicable model for fostering resilience and empowerment among FHWs, though further research is needed to test its scalability. This intervention significantly enhanced FHWs' sense of purpose, potentially improving motivation and engagement in service delivery.

Keywords: Sense of purpose, transformative impact, humanities-based curriculum, Frontline Health Workers (FHWs)

Understanding the Behavioral and Social Drivers in Influenza Vaccination in Older Adults

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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

Background and Objectives:
Influenza vaccination is vital for healthy aging, yet coverage among older adults remains below the WHO's 75% target in many countries. The WHO's Behavioral and Social Drivers (BeSD) framework offers a comprehensive lens to identify factors influencing vaccine uptake: thinking and feeling, social processes, motivation, and practical issues. This scoping review synthesizes current evidence on these drivers among adults aged 60 and older to inform interventions aimed at boosting vaccine coverage.
Methods:
Following Arksey and O'Malley's framework and PRISMA-ScR, we searched MEDLINE, EMBASE, Web of Science, CINAHL, and Cochrane for studies published before December 31, 2024. We identified 46 studies (1999–2024) from 20 countries, mostly quantitative (n=40), along with 4 qualitative and 2 mixed-methods. Sample sizes ranged from 15 to 724,276 participants, reflecting diverse healthcare contexts and influenza patterns.
Results:
Six key themes emerged under the BeSD framework. Socio-Demographic Factors (gender, age, and living environment) showed inconsistent influences on vaccination, though large-scale studies highlighted the importance of socioeconomic status. Health and Medical Factors, including chronic conditions, prior vaccination, and healthcare interactions, generally facilitated uptake, while frailty and comorbidities sometimes posed barriers. Thinking and Feeling—notably high perceived influenza risk and strong vaccine confidence—promoted acceptance; however, fear of adverse effects and doubts about efficacy impeded it. Social Processes, such as encouragement from family and healthcare providers, aided vaccination, while misinformation and low institutional trust undermined it. In addition to vaccination intention and vaccine hesitancy, self-efficacy, certainty and herd mentality of decision-making can also influence vaccination motivation. Finally, Practical Issues (cost, limited access, and language barriers, especially in rural areas) were frequent obstacles to obtaining the vaccine.
Conclusions:
By mapping these themes within BeSD domains, our review underscores how multifaceted drivers—spanning belief systems, social influence, and practical obstacles—converge to shape vaccination decisions. Tailored, evidence-based strategies addressing these drivers are crucial for raising influenza vaccination rates and promoting healthier aging.

Uncovering Predictors of Vaccine Hesitancy Among Chinese Elderly: A Machine Learning Approach

Ms Enming Zhang[1,2], Dr Holly Seale[1], Dr Qiong Fang[2], Ms Shuhui Shang[2], Mr Xiaolong Wang[2]
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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Background and Objectives:
The suboptimal vaccination rates seen among the elderly population in China highlight the pressing need for immediate intervention to expedite the immunization campaign and alleviate the repercussions stemming from the termination of the Zero-COVID strategy. Fewer studies identify vaccine hesitancy using machine learning techniques. To research the proper parameters for predicting and assessing vaccination hesitancy and discover the best results using machine learning techniques, this study takes data from a sizable cross-sectional study in China.
Methods:
From January to March 2023, we conducted a cross-sectional survey at community health centers across 15 provinces in eastern, central, and western China. A total of 647 adults aged ≥60 participated. We applied LASSO regression and Random Forest (RF) algorithms for variable selection and model construction, respectively. We then used SHAP (SHapley Additive exPlanations) to interpret the relative contribution of each predictive factor in an interpretable ML model.
Results:
Over half of respondents (53.32%) reported vaccine hesitancy, with a mean age of 68 years. Of the original predictors, 11 were statistically significant in LASSO. The RF model showed strong performance (AUC=0.800) in classifying vaccine hesitancy. SHAP analysis revealed that higher levels of confidence, collective responsibility, fear of COVID-19, prior vaccination status, and certain regions were associated with reduced hesitancy. Conversely, constraints, complacency, lower education levels, and poorer health status increased hesitancy risk.
Conclusions:
This study offers robust and trustworthy evidence regarding the factors that contribute to vaccine hesitancy among the elderly population in China. It is noteworthy that this study is the first attempt to employ ML algorithms for constructing a predictive model for COVID-19 vaccine hesitancy in the elderly population. Furthermore, the findings are elucidated through the utilization of the visualization SHAP algorithm, which enhances the credibility of quantitative evaluation and the formulation of tailored interventions aimed at mitigating vaccine hesitancy among the elderly population.

Maternal RSVpreF vaccine effectiveness against lower respiratory tract hospitalisation due to RSV

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2A - Effectiveness of RSV prevention, Halls CD Lower Section, June 10, 2025, 1:30 PM - 3:00 PM

Background: In March 2024, Argentina became the first country to implement a national maternal RSVpreF vaccination program for pregnant individuals as the primary strategy to prevent respiratory syncytial virus (RSV) disease among infants. We evaluated RSVpreF vaccine effectiveness (VE) against RSV-associated lower respiratory tract disease (LRTD) and severe RSV-LRTD leading to hospitalisation among infants ≤6 months of age.

Methods: A multicentre, retrospective, test-negative case-control study was conducted during the 2024 RSV season in 12 hospitals across Argentina. Infants ≤6 months (≤180 days) hospitalised with LRTD and tested for RSV were included—those testing positive were cases and those testing negative were controls. Infants were considered born to an RSVpreF-vaccinated mother if RSVpreF was received between 320/7 and 366/7 weeks' gestation and ≥14 days before delivery. We estimated VE by comparing the odds of maternal RSVpreF vaccination among infant cases versus controls, using multilevel logistic regression with several approaches to address confounding.

Results: Of 505 infants, 17.8% of cases (51/286) and 49.8% of controls (109/219) were born to RSVpreF-vaccinated mothers. Median age in days at hospitalisation among cases and controls was 71 and 69, respectively. VE against RSV-associated LRTD leading to hospitalisation from birth through 3 months was 78.6% (95% confidence interval: 62.1-87.9) and from birth through 6 months was 71.3% (53.3-82.3). VE against RSV-associated severe LRTD hospitalisation was 76.9% (45.0-90.3) from birth through 6 months. Three RSV-LRTD in-hospital deaths occurred, all among infants whose mothers did not receive RSVpreF during pregnancy.

Conclusions: These real-world estimates demonstrate high RSVpreF effectiveness against hospitalisation due to RSV-LRTD and severe RSV-LRTD from birth and sustained through 6 months of life. These results corroborate phase 3 efficacy findings and expand on trial results by evaluating hospitalised RSV-LRTD endpoints, a more diverse and clinically complex population of infants, and a different RSVpreF administration window.

The Role of Equitable Participation and Resource Distribution in Mitigating Biological Risks

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Biosecurity is inherently a cooperative issue: biothreats in the form of communicable diseases readily affect and spread between all communities. There are many interrelated axes of inequity including wealth disparity, racial inequalities, and gender discrimination. Heightened vulnerability to biosecurity risks within any community increases the risk for all communities. As a result, equity is a fundamental consideration for effective biosecurity investment.

We analyze inequity through the lenses of biosecurity resource allocation and participation. Through the analysis of case studies on interventions like the COVID-19 Vaccines Global Access (COVAX) vaccine initiative and a comprehensive data review of models about biothreats, it becomes evident that investments in cooperative technology and research yield significant benefits. Retrospective analyses of successful attempts to incorporate Indigenous engagement and peer-to-peer training programs demonstrate paths forward for equitable biosecurity participation.

To improve equity in biosecurity intervention resource distribution, we recommend that the World Health Organization (WHO) implement explicit compliance mechanisms to bolster technology sharing. In addition, we recommend that biosecurity funding entities create grants specific for research elucidating biothreat presentation and treatment in under researched populations. These recommendations are intended to increase the availability and effectiveness of treatments for vulnerable populations and additionally benefit non vulnerable populations through increased efficiency in resource use.

To improve equity in biosecurity participation, we recommend a new Biological Weapons Convention (BWC) Confidence Building Measure (CBM) promoting equity and urge the inclusion of equity commitments across international health and biosecurity organizations. These measures from large international biosecurity bodies would result in improved commitment and discussion surrounding the importance of equity. We additionally propose that the BWC expand upon its Sponsorship Program to include more financially excluded participants. Furthermore, we recommend the uptake of the Implementation tool of Practical Interventions and Measuring Progress by biosecurity organizations to improve equity practices across the professional sector.

Seroprevalence of Vaccine-Preventable Diseases in Samoa in 2018-2019: Epidemiological and spatial analysis

Mrs Selina Ward[1], Dr Harriet Lawford[1], A/Prof Benn Sartorius[1], Dr Helen Mayfield[1], Dr Filipina Amosa-Lei Sam[2], Dr Tito Kamu[3], Dr Robert Thomsen[4], Prof Satupaitea Viali[5], Prof Colleen Lau[1]
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4D - Vaccine programs for the region, Riverbank Room 2, June 11, 2025, 1:30 PM - 3:00 PM

Introduction: Seroepidemiology enables the measurement of biomarkers of vaccination or infection with vaccine-preventable diseases (VPDs) and can provide an accurate estimate of population-level immunity compared to vaccination coverage data alone. This study aimed to examine the seroprevalence of VPD immunity and the spatial distribution in Samoa from 2018-2019.

Methods: Dried blood spots (DBS) were collected from two community-based serosurveys of participants aged ≥5 years during the Surveillance and Monitoring to Eliminate Lymphatic Filariasis and Scabies from Samoa (SaMELFS) project. DBS were tested using multiplex bead assays (MBA) to measure the presence of antibodies against diphtheria, measles, rubella, and tetanus. Village-level seroprevalence estimates were adjusted for study design, age, and gender. Spatial analysis was conducted using SatScan.

Preliminary Results: Overall, 6,938 (3,851 in 2018 and 3,087 in 2019) valid MBA results were analysed across 35 villages. The highest seroprevalence estimates were observed for tetanus in 2018 (90.6% [95% Confidence interval (CI):89.3-92.0]) and 2019 (90.9% [95% CI:89.6-92.0]), followed by diphtheria in 2018 (84.5%, [95%CI:83.0-85.9]) and 2019 (81.1% [95%CI:79.4-82.7]) rubella in 2018 (78.7% [95%CI:77-80.3]) and 2019 (79.9% [95%CI:78.1-81.5]), and measles in 2018 (43.7% [95%CI:42.2-45.3] and 2019 (47% [95%CI:45.3-48.7]). Seropositivity to tetanus ranged from 100% seropositivity in Musumusu (2018 and 2019) to 72.9% seropositivity (in 2019) in Utulaelae. Only seven villages had a seropositivity rate over 34% to all four VPDs, and 30 villages had at least one participant seronegative to all VPDs. SatScan identified clusters of low immunity for tetanus (Log likelihood ratio (LLR): 8.5) and measles (LLR: 4.62).

Conclusion: Significant variations in VPD immunity were seen across Samoa in 2018-2019. Considering that measles and rubella vaccines are administered together, the relatively high seroprevalence of rubella compared to measles suggests local transmission of rubella. Identifying clusters of low immunity can inform targeted vaccination strategies to reduce the risk of outbreaks.

Bays, Bridges and Buruli ulcer: An emerging pocket in NSW

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4C - Zoonoses & arboviruses, Room E2, June 11, 2025, 1:30 PM - 3:00 PM

Background: Within Australia, Buruli ulcer has traditionally been limited to defined areas of Victoria, Northern Territory and Northern Queensland. Evolving evidence suggests that the causative organism, Mycobacterium ulcerans, likely transmits from possums to humans via mosquitoes. In 2023 NSW Health was alerted to a Buruli ulcer case in a NSW resident without travel to known endemic areas. The condition was not notifiable in NSW at the time.

Methods: Enhanced case finding was instigated to identify any further local cases. Laboratory data was used to review Buruli ulcer cases in NSW residents from 2006-2023, which were examined for evidence of travel to endemic areas. Where possible, sequencing was sought for cases determined to be NSW-acquired. Possum faecal surveys were also undertaken in the relevant area to investigate the presence of M. ulcerans. Local community and clinical alerts were released to highlight the emerging risk and support early case identification.

Results: In 2023, two additional historical cases were identified in NSW residents without travel to known endemic areas. These first three cases occurred between 2021-2023 in Bateman's Bay. Two cases' isolates were sequenced and found to be highly related but distinct from Victorian sequences, supporting NSW acquisition. Possum faecal surveys in Bateman's Bay also identified M. ulcerans. In early 2025, a fourth case was identified 30km away from the previously identified cases. This was in a geographically distinct area, separated by bushland and bridges that cross a river and bay area.

Conclusion: Buruli ulcer can be acquired in a discreet area of NSW. Our understanding of the distribution and transmission pathway is evolving. Increasing awareness of the presence of M. ulcerans in NSW among clinicians is paramount to ensuring consideration in differential diagnoses. Likewise, increasing vigilance against mosquito-borne disease among residents of, and visitors to, the NSW South Coast is important.

The genomic surveillance of Neisseria gonorrhoeae in South Australia

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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

Gonorrhoea, caused by the bacterial etiological agent Neisseria gonorrhoeae, is routinely treated with a single dose of azithromycin and ceftriaxone as single- or dual-therapy. However, since the introduction of antibiotics, N. gonorrhoeae strains have developed resistance to nearly all antimicrobials used to treat gonorrhoea. SA Pathology began genomic surveillance of all culturable clinical N. gonorrhoeae in October 2021, just prior to the end of the COVID-19 social and travel restrictions. This study describes the genomic epidemiology of N. gonorrhoeae in South Australia (SA) during and immediately following the cessation of the COVID-19 public health restrictions.

Approximately 1,208 N. gonorrhoeae isolates from three specimen types (ie. oropharygeal, genital, rectal swabs) were referred to SA Pathology for sequencing between October 2021 and December 2024. Genomes that passed the quality check were further subtyped and characterised. Phenotypic susceptibility testing, performed on all isolates, was compared to genotypic results.

As the state emerged from the pandemic-directed restrictions in November 2021, the N. gonorrhoeae population in SA was dominated by three main sequence types (STs) of susceptible N. gonorrhoeae: ST-7363, ST-7359 and ST-8156. After overseas travelling resumed and increased in 2023, the diversity of N. gonorrhoeae STs also increased. There was a quick expansion followed by the disappearance of N. gonorrhoeae ST-7827 (NG-STAR ST-38) with decreased susceptibility to ceftriaxone, mostly isolated from cases associated with increased risk for infection. In addition, the rpsJ:V57M mutation was associated with a large range of N. gonorrhoeae STs, whereas tetM gene was only identified in N. gonorrhoeae ST-7363 and ST-16676. The change in the genomic epidemiology of N. gonorrhoeae within SA during the study period provides valuable insights to the treating physicians and public health officers and highlights the risk of the emergence and spread of antimicrobial resistance in gonorrhoea in Australia.

Enhancing Vaccination Rates in Aged Care: A Quality Improvement Initiative

Ms Courtney McGregor[1], Ms Lisa Maude[1], Ms Lauren Tillman[1], Dr Karen Chee[4], Dr Caitlin Swift[1], Dr Brendan Goodger[2], Ms Kira Wright[2], Dr Vicky Sheppeard[1,3]
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1B - Vaccine practice, Room E1, June 10, 2025, 11:00 AM - 12:30 PM

Context: South Eastern Sydney Local Health District (SESLHD) Public Health Unit received funding from the Central and Eastern Sydney Primary Health Network to improve vaccination coverage in SESLHD residential aged care homes between June and December 2024. The project targeted four recommended and funded vaccines for residents: COVID-19, influenza, pneumococcal, and shingles.

Aim: To increase vaccination coverage in SESLHD residential aged care residents.

Methods: Barriers to vaccination were identified via surveys and interviews with geriatricians, GPs, care staff, residents and their families, and used to develop tailored action plans for the 90 participating care homes and other resources including staff education sessions. Australian Immunisation Register (AIR) data was downloaded to create a vaccination tracker for each resident in each home. Vaccination coverage was compared pre- and post-intervention. An evaluation survey was distributed to participating facilities.

Results: Barriers included difficulties accessing and tracking resident vaccination histories, finding vaccination providers, lack of simple or translated vaccine information, and complex consent processes. Changes in vaccination coverage pre- and post-intervention varied between facilities, with a median (and range) of 8.2% (-64% to 88%) for COVID-19, 4.4% (-4.7% to 79%) for pneumococcal, and 20.8% (-5.4% to 85%) for shingles. Influenza coverage remained unchanged due to timing of the intervention after the 2024 season.

The evaluation survey had 25 responses, with 84% very satisfied with the project. Notably, 92% found the vaccination tracker useful, and 45% identified incomplete vaccination records in the AIR.

Conclusion: Addressing barriers like access to resident vaccination histories and vaccination providers are crucial for improving vaccination coverage in aged care homes. Longer evaluation periods are needed to assess the sustained impact of this initiative. This project demonstrates the need for continuous support, including education and advocacy, for staff working with vulnerable populations to ensure high vaccination coverage can be achieved.

Leveraging Technology to Enhance State and National Immunisation Strategy Implementation

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2E - Public health in practice, Riverbank Room 3, June 10, 2025, 1:30 PM - 3:00 PM

Achieving and maintaining high immunisation coverage is critical to protecting public health and preventing disease outbreaks. Although progress has been made, coverage rates still frequently fall short of strategic targets.

Digital technology offers an opportunity to revolutionise how immunisation strategies are executed, making vaccination program delivery more efficient, equitable, and responsive to emerging challenges.

Vitavo has demonstrated technology's impact on increasing uptake:
- 61.2% uptake of influenza vaccine in children under 5yrs (Australian average in 2023 was 16.8%)
- 93% average ATSI uptake of MenB (3 doses)
- 97% average ATSI uptake of HepA (2 doses)
- Up to 23% increase in school vaccination uptake

Technology can drive even greater impact. This presentation covers:

- The biggest mistakes health departments and immunisation providers make when going digital
- Five practical ways technology can be used to implement State and National Immunisation Strategies:

1. School Immunisation Programs: A highly underutilised delivery model which may also provide the solution to shrinking state budgets and rising operational costs.

2. Automated communications: Can be used to deliver promotional education campaigns, recalls and eligibility notifications needed to improve access and uptake of vaccinations for all Australians. Used to drive highly targeted campaigns and education for medically at-risk, maternal, indigenous, linguistically diverse groups and more. Ultimately ensuring people get the right information, at the right time, via the right delivery communication method.

3. Real-time data: Inform strategic decision-making and identify gaps with real-time data relating to coverage rates, at-risk groups, and eligibility reports. Data-driven insights support more effective policy and program delivery decision-making, with significantly enhanced data beyond what AIR provides.

4. Hospitals and newborn vaccinations: Could be the key to solving declining childhood vaccination coverage rates.

5. Community programs: Leverage technology to streamline delivery, reduce costs, enhance public health, aid outbreak response, ease GP workloads, and lower hospitalisation rates.

Paediatric respiratory syncytial virus (RSV) associated hospitalisations in Sydney: Enhanced surveillance

Dr Gemma Saravanos[2], Mrs Kathryn Meredith[1], Mrs Shirley Wong[1], A/Prof Nusrat Homaira[3], Dr Adam Bartlett[4], Prof Nicholas Wood[1,2], A/Prof Philip Britton[1,2], Dr Rama Kandasamy[1,2]
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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

Background
Respiratory syncytial virus (RSV) is the leading cause of acute lower respiratory infection in young children and a major contributor to paediatric hospitalisations. Comprehensive, population-specific clinical data on Australian children experiencing RSV disease are needed to inform cost-effectiveness analyses, guide policy recommendations, and assess the impact of future interventions. We aimed to describe the burden of RSV-associated hospitalisations and risk factors for severe disease in children admitted to Sydney Children's Hospitals Network.

Methods
Children under 2 years of age with laboratory confirmed RSV, admitted to The Children's Hospital at Westmead and Sydney Children's Hospital, Randwick from 2019 to 2023 inclusive were identified for enrolment. A random sample of 200 children admitted to hospital with RSV but not admitted to ICU were enrolled from each year. All ICU admissions were enrolled. Enhanced clinical data were extracted from hospital medical records. Descriptive statistics, rates and risk indicators were reported and compared between groups.

Results
Between January 2019 and December 2023, 4414 children under 2 years of age were hospitalised with RSV. Of these, 1000 non-ICU and 499 ICU cases were enrolled into the study. ICU admissions represented 11.3% of all RSV-confirmed admissions. Estimated hospitalisation rates among children < 2 years for 2023 were 1504/100,000 and 61/100,000 for non-ICU and ICU respectively. Compared to non-ICU admissions, children in ICU had a lower median age (3 vs 7 months, $p<0.001$), and a higher proportion children, were born premature (28.0 vs 14.1%, $p<0.001$), had cardiac (10.0 vs 3.2%, $p<0.001$) and genetic diseases (6.5 vs 2.4%, $p<0.001$), or identified as Indigenous (8.6 vs 2.0%, $p<0.001$).

Conclusions
RSV was responsible for a large number of admissions with a substantial proportion of children under 2 years of age requiring high acuity care. Preventative interventions should be prioritised for children who have characteristics which are overrepresented amongst those with severe disease.

Automated Communication Tools: Breaking Down the Barriers to Immunisation

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

The adoption of automated communication tools in immunisation services presents a transformative opportunity to overcome known barriers to vaccination.

This presentation addresses how automated communication tools can effectively address known barriers to immunisation in Australia, as identified by the National Centre for Immunisation Research and Surveillance (NCIRS):

1. Access barriers:
   a. Appointment accessibility: Automated communication can enhance appointment accessibility by providing flexible scheduling options, sending timely reminders, and notifying individuals about upcoming or overdue vaccinations.
   b. Language barriers: By offering digital communication content, automated systems ensure that non-English speakers can utilise available translation technology to support interpretation
2. Acceptance barriers:
   a. Misinformation: Automated communication can disseminate accurate, evidence-based information, countering myths and misconceptions that may deter individuals from vaccinating. Providing information about the benefits of vaccines and potential side-effects can alleviate parental anxiety and distress.

Immunisation providers face additional barriers to service delivery which can also be addressed with automated communication:

1. Administrative burdens: Automating appointment reminders, recalls, and follow-ups alleviates the workload on healthcare providers, allowing them to redirect capacity toward program expansion and targeted campaigns.
2. Data completeness: Automated reporting enhances the accuracy and completeness of immunisation data, addressing issues like missing Indigenous status or medical information on health records

Vitavo is a fully digital immunisation management platform that highlights the impact of automated communication. Qualitative surveys which polled end-users from Victorian LGAs using Vitavo demonstrate this impact:

- 56% of responders weren't aware of vaccines they were eligible for: 96% of these people found this information helpful when displayed to them
- 95% of responders perceived email and SMS appointment reminders to be helpful
- 95% of responders were very satisfied with the information provided to them pre-vaccination

The integration of automated communication tools in immunisation services presents a significant opportunity to address both access and acceptance barriers to vaccination.

Reaching Families: Evaluating Child & Family Immunisation Clinics in Central Coast, NSW

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5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

Australia has seen a concerning decline in childhood vaccination coverage since the COVID-19 pandemic. Recent research within the National Vaccination Insights Project has found 2 of the 3 most common childhood vaccination barriers reported by parents relate to practical access: lack of affordability and not easy to get a vaccination appointment when due. In addition, significantly more parents living in metropolitan-regional areas reported cost as a vaccination barrier compared with parents living in rural-remote areas.

We present the preliminary findings of a mixed-methods evaluation of a unique initiative aimed at increasing childhood vaccination rates.

For over 20 years, the Central Coast Local Health District (CCLHD) has provided free childhood immunisation drop-in clinics at various locations. The community-based, nurse-led clinics offer a walk-in service, operate across weekdays and Saturdays and are staffed by experienced authorised nurse immunisers from the CCLHD Child and Family Health Service.

Analysis of over 29,000 clinic visits during the past 10 years has found a four-fold increase in service encounters, with growth in both number of individuals and repeat users accessing the service. Saturday clinics saw the highest increase in demand and have been the most popular day since 2022. The proportion of Aboriginal and/or Torres Strait Islander families using the service steadily increased from 2.5% in 2015 to 14.7% in 2024. Those living in the most socio-economically disadvantaged areas of the Central Coast were 1.37 times more likely to use the service than those in the least disadvantaged areas, a trend that has increased over time. These results indicate this type of service has been effective in overcoming some access barriers to vaccination that families experience. Further research is planned to better understand barriers and drivers for service use and where improvements to childhood vaccination coverage on the Central Coast can continue to be made.

Prevalence and Serotype Distribution of Nasopharyngeal Carriage of Streptococcus Pneumoniae in Vietnam

Dr Xuanchen Tao[1], Dr Ketaki Sharma[1], Dr Catherine King[1], Prof Thu-Anh Nguyen[2], Dr Huyen Thi Thanh Dang[2], Dr Toan Trong[3], Dr Linh Duong[2], Dr Mai Duong[3], A/Prof Phoebe Williams[1], Dr Sanjay Jayasinghe[1], Dr Beth Temple[4], Prof Kim Mulholland[5], Prof Kristine Macartney[1]
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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background:
Streptococcus pneumoniae (S. pneumoniae) is a leading cause of bacterial pneumonia, meningitis, sepsis, and other severe infections in young children, and is associated with high rates of morbidity and mortality. While pneumococcal conjugate vaccines (PCVs) have significantly reduced pneumococcal disease globally, Vietnam has yet to introduce PCV into its national immunization program (NIP). Additionally, data on invasive pneumococcal disease (IPD)-causing serotypes in Vietnam remain limited.

Objectives:
The primary aim of this systematic review and meta-analysis was to assess the overall prevalence and serotype distribution of nasopharyngeal carriage of S. pneumoniae among children in Vietnam. The secondary aim of this review was to describe antimicrobial resistance patterns of the included S. pneumoniae isolates.

Methods:
We conducted a systematic search across multiple databases, including Ovid MEDLINE, Ovid EMBASE, Ovid Global Health, Scopus, Web of Science, Global Index Medicus, and the Cochrane Library. Additionally, key Vietnamese journals were handsearched to identify published articles not indexed in biomedical databases. Tailored search strategies were developed, tested, and applied by an experienced information specialist for each database to ensure comprehensive retrieval of relevant literature. No language or publication date restrictions were applied. The entire systematic review process was informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guideline. A detailed description of the study methods is available in the PROSPERO registry (Registration ID: CRD42024612665).

Results:
This systematic review included fifteen studies. The pooled prevalence of S. pneumoniae nasopharyngeal carriage was 33% (95% CI: 28%–39%). The most common serotypes—6A, 19F, 6B, 23F, and 14—aligned with those frequently identified in invasive pneumococcal diseases in Vietnam. Additionally, we summarised the antimicrobial resistance patterns for penicillin, macrolides, sulfamethoxazole–trimethoprim, third-generation cephalosporins, tetracycline, and other antibiotics.

Who's at-risk from the tripledemic? Medical risk factors for COVID-19, influenza, RSV.

Ms Anjali Kannan[1], Mrs Saskia van der Kooi[1], Mrs Ye Jin Joo[1], Dr Ketaki Sharma[1], Dr Anna Ali Bachlani[1], Dr Zhicheng Wang[1], Ms Katrina Nicolopoulos[1], Dr Tran Nguyen[1]
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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

Background & aim: Viral respiratory vaccine preventable diseases cause significant morbidity and mortality, especially among those with underlying medical conditions. Identifying such conditions associated with severe disease informs effective vaccination policy. We aimed to conduct an updated evidence review of the medical risk conditions for severe COVID-19, influenza and RSV disease and propose updates to existing vaccination guidance.

Methods: A targeted literature search was conducted in PubMed, Medline and Embase for medical risk conditions (as listed in the Australian Immunisation Handbook) associated with severe outcomes (hospitalisations, intensive care admissions or mortality) from COVID-19, influenza and RSV. The search included English full-text articles from the Omicron period (2021–present) for COVID-19 and from 1946–present for influenza and RSV.

Results: Across all three diseases, immunocompromising conditions, cardiac disease, chronic respiratory conditions, chronic neurological conditions and chronic kidney disease had the highest relative risks of severe disease. Depending on age and disease definition, risk ratios varied within and between some conditions, such as immunocompromise (aRR 5.8 for COVID-19, OR 13.6 for influenza, OR 2.0 for RSV), asthma (aRR 1.36 for COVID-19, OR 2.4 for influenza, OR 10.9 for RSV) and obesity (aRR 1.35 for COVID-19, OR 1.45 for influenza, OR 0.68 to 3.05 for RSV). Limited evidence was available for some conditions associated with severe COVID-19 or influenza, including non-diabetic chronic metabolic conditions, autoimmune hepatitis, non-alcoholic fatty liver disease and splenic dysfunction. There was no published evidence that identified chronic metabolic conditions, haematological disorders or chronic liver disease as risk factors for severe RSV disease.

Conclusion: Although there are some limitations, our review provides updated guidance on the medical risk conditions associated with severe COVID-19, influenza and RSV disease. Several key risk conditions were common across all three respiratory viruses, and some conditions, having limited evidence, were disease specific.

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A process of introducing Pneumosil (SII) in Timor-Leste

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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

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Background
Timor-Leste introduced Pneumosil, a low-cost pneumococcal conjugate vaccine (PCV) manufactured by the Serum Institute of India, in 2023. This was the first occasion Pneumosil was used in a PCV-naïve setting. This case study analyses the evidence to recommendation pathway that led to this vaccine policy decision.
examines the decision-making process behind its introduction, including key stakeholders, evidence-based considerations, and implementation challenges.

Methods
A structured assessment of the decision-making framework was conducted, including a review of national immunization policies, epidemiological data, cost-effectiveness analyses, and stakeholder involvement.

Results
Local disease burden, cost considerations, and global recommendations provided strong support for the decision to introduce Pneumosil. Timor-Leste's National Immunization Technical Advisory Group (NITAG) played a central role in evaluating clinical evidence, comparative assessments, financial sustainability, and logistical feasibility. Stakeholder engagement with government bodies, technical advisory groups, and international health organizations informed suitability and acceptability. Strategic partnerships with global health agencies facilitated procurement and technical support, ensuring a smooth implementation process.

Conclusion
The introduction of Pneumosil in Timor-Leste underscores the importance of a structured decision-making approach in vaccine policy. Evidence-driven recommendations, stakeholder collaboration, and financial sustainability assessments were crucial in selecting a preferred vaccine. This approach can assist other low resource settings and ongoing reviews of PCV immunisation strategies in Timor-Leste.

Keywords: Pneumosil, PCV-10, pneumococcal vaccine, decision-making, immunization policy, Timor-Leste.

The Gaps in Comprehensive CALD Data Collection in Health Research in Australia

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2E - Public health in practice, Riverbank Room 3, June 10, 2025, 1:30 PM - 3:00 PM

Background: The Australian Bureau of Statistics (ABS) presents a nationally consistent framework for the collection and dissemination of data on cultural and linguistic diversity (CALD). While these standards exist, it is not clear if they are being used and applied consistently.
Aim: We aimed to undertake a systematic review to understand what indicators of cultural, ethnic, and linguistic diversity are collected in routinely collected administrative datasets and research studies in Australia, and if the variables collected align with ABS standards.
Methods: We undertook a systematic review of published and grey literature research articles to capture studies of CALD populations in Australia, using three databases (Medline, Embase, CINAHL), for the period 1 January 2013 to 31 March 2024. A grey literature search for the same time-period was undertaken using Google Advanced Search and Dimensions, to capture government reports and documents.
Results: Initial search yielded 1843 articles. After removal of 659 duplicates, 1184 titles and abstracts were screened. 810 irrelevant articles were excluded, and 374 articles were screened for eligibility. 169 articles were eligible for the data extraction; 97 studies used routinely collected health datasets and a further 72 studies used data specifically collected for research purposes. ‘Country of birth’ was the most common variable collected (n=41, 42% in routinely collected datasets, n=22, 30% in research studies). A combination of ‘Country of birth’ and ‘language spoken at home’ was the second most common variables used in research studies to define CALD status. Data on ‘proficiency in spoken English’ was not collected routinely. Five articles, using routinely collected datasets, used ‘Interpreter required’, as proxy for ‘proficiency in spoken English’ (n=5, 9%). The most common utilisation of CALD variables was to determine epidemiological trends, however there are opportunities for wider application of CALD variables and alignments with ABS recommended standards.
Conclusions: There was significant inconsistency in CALD variables collection in health research studies which did not align with the ABS standards. No studies included all the ABS recommended standards.
Implications: Not including appropriate indicators while collecting CALD data can underestimate the disease burden and hence misinform health policies and interventions for CALD communities.

Trends in serotype 3 invasive pneumococcal disease in Australia in13vPCV era

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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

Introduction

In pre-licensure trials, 13 valent Pneumococcal Conjugate Vaccine (13vPCV) elicited lower immune responses against serotype 3 (ST3). In post-licensure studies, IPD due to ST3 has continued to occur in fully-vaccinated children. We explored changes in ST3 disease epidemiology since the introduction of 13vPCV to Australia's National Immunisation Program.

Methods

We identified all IPD cases caused by ST3 from the National Notifiable Disease Surveillance System from 1 January 2012 to 31 December 2023. The clinical profile of ST3 IPD cases, and trends comparing the early 13vPCV implementation period (2012–2014) to two recent years (2022–2023) were assessed using relevant proportions, age-specific IPD incidence rates and incidence rate ratios (IRR) with 95% confidence interval (CI).

Results

Overall ST3 accounted for 12% of all IPD cases (n=2,586/20,841) and 17% (n=262/1,591) of IPD-related deaths. The proportion was higher in 2022-23 (23% child, 14% adults IPD cases). The most common clinical presentation was pneumonia (79% of total ST3 IPD cases in children <5 years, 75% in adults ≥65 years), with 37% of paediatric ST3 IPD cases complicated by empyema or pleural effusion. Overall, ST3 meningitis was rare (4%, of total ST3 IPD cases). From 2012 to 2023, ST3 IPD incidence rose from 0.8 to 4.0/100,000 (children), and 2.2 to 2.6/100,000 (adults); resulting in IRRs (2022-23 vs. 2012-14) of 3.5 (95% CI: 2.5-4.9) in children <5 years, 7.5 (95% CI: 4.2-14.3) in children 5-14 years, and 1.2 (95% CI: 0.9 to 1.5) in adults.

Conclusion

Since the introduction of 13vPCV, the progressive rise in the incidence of ST3 IPD highlights a key ongoing challenge for pneumococcal disease prevention. Immune responses against ST3 in newer generation PCVs vary, and clinical effectiveness remains uncertain. Efforts need to continue to gain further understanding of ST3 IPD. including genomic analyses and the development of new vaccine technologies to improve IPD prevention.

Cumulative population prevalence of medical risk factors for vaccine-preventable respiratory viral diseases

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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Background: Population-based data on the prevalence of risk factors for vaccine preventable diseases (VPDs) are essential for informing immunisation policy development. Prevalence estimates by selected individual risk-factor conditions for viral respiratory VPDs are available in published data from national health surveys. However, these conditions quite commonly occur as comorbidities in older persons. We aimed to estimate the cumulative prevalences of individuals with at least one of these conditions in the Australian population.

Methods: Data on participants' self-reported chronic medical conditions from the 2017-18 National Health Survey (NHS) and 2018-19 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) were sourced from the Australian Bureau of Statistics. Using a published method (with more details to be presented), those coded medical conditions were best matched to the set of shared major medical risk conditions associated with severe influenza, respiratory syncytial virus (RSV), and COVID-19, as stipulated in the Australian Immunisation Handbook. The cumulative prevalence of at least one of the included conditions within each age and population stratum were calculated.

Results: Among non-Indigenous adults, for age groups of 18–34, 35–49, 50–64, 65–74, and ≥75 years respectively, the estimated cumulative prevalence of risk conditions was: 3.8%, 8.0%, 21.5%, 35.8%, and 43.0%. For Aboriginal and Torres Strait Islander peoples, the estimates were 7.4%, 28.2%, 51.4%, 59.5%, and 55.9%, respectively, for these age groups. These estimates were broadly comparable to findings in the previous ABS 2011–2012 NHS and 2012–2013 NATSIHS, using the same method though with minor differences in algorithms for inclusion of medical conditions.

Conclusion: Our method enables the estimation of the national cumulative prevalence of medical conditions associated with several viral respiratory VPDs, using data from two Australian health surveys. These national-level estimates, not readily available without dataset linkage, are crucial to inform risk-based immunisation strategy deliberations.

Integrated serological surveillance for multiple infectious diseases in Vanuatu

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4D - Vaccine programs for the region, Riverbank Room 2, June 11, 2025, 1:30 PM - 3:00 PM

Vanuatu's population is at risk of neglected tropical diseases (NTDs) and vaccine-preventable diseases (VPDs). Serological surveys that measure the prevalence of antibodies are a strategy for monitoring current or past exposure to infectious pathogens. Integrated serosurveillance using novel multi-bead assays that can detect ~100 different disease-specific antibodies from a single dried blood spot, and has the potential to provide information on the distribution of a wide range of infections, including estimating vaccine coverage.

Between 2021 and 2023, we conducted integrated serological surveys to assess the seroprevalence of IgG antibodies against multiple VPDs, NTDs, and other infectious diseases in 92 villages in Vanuatu's Tafea, Sanma and Shefa provinces. After obtaining informed consent, approximately 2000 participants aged >1 year of age provided a finger prick blood sample to prepare a dried blood spot (DSB) that was analysed using the Luminex technology. Seroprevalence was defined as the proportion of patients with positive IgG results in DBS specimens.

Here, we report the overall estimated cluster-adjusted seroprevalence in 2048 participants across Tafea (N=467), Sanma (N=624), and Shefa (N=957) for 32 antigens. Of note, the seroprevalence of Chlamydia trachomatis ranged from approximately 35% (95% CI: 21.86–50.29%) in Tafea to 43% (95% CI: 33.75–54.32%) in Shefa; For yaws, seroprevalence of anti-rp17 ranged from 3.52% in Sanma to 16.17% in Tafea across all age groups. The seroprevalence of anti-TmpA ranged from 0.68% in Sanma to 5.67% in Tafea.

Overall, seropositivity of anti-MeV antibodies for measles in children (1-14 years) ranged from 39.45% in Tafea to 50.92% in Shefa, below the reported WHO measles vaccination coverage for 2021-2023. Rubella seroprevalence ranged from 70.38% (95% CI: 52.79–82.92%) in Tafea to 90.33% (95% CI: 81.71–94.84%) in Shefa.

Our results provide a promising measure of effective population-level immunity and exposure to multiple infectious diseases, with the advantage of being cost-effective, scalable, acceptable, and able to target hard-to-reach and high-risk populations. Additional analysis by age groups has been conducted, and comparisons with national immunisation coverage surveys and case reportings is underway.

Scroll, Like, Vaccinate: The Role of Visual Content in Shaping Vaccination Practices

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2F - Improving vaccine safety surveillance, Riverbank Room 4, June 10, 2025, 1:30 PM - 3:00 PM

Introduction

Vaccine administration errors, particularly those involving incorrect site and route, pose a significant concern for vaccine efficacy and patient safety. Research indicates that some healthcare providers pinch the skin before injection, which prevents the vaccine from reaching muscle tissue as intended, potentially resulting in subcutaneous administration instead. Another common issue is administering the vaccine at the wrong site, such as the shoulder, biceps, triceps, or regions above or below the deltoid muscle. These errors can lead to clinical consequences like the formation of lumps, nerve damage, shoulder injury related to vaccine administration (SIRVA), and reduced immunity. They can inadvertently shape public understanding of proper immunization practices and confuse untrained immunizers. Furthermore, such errors may erode patient confidence in vaccination.

Since vaccine administration errors can impact patient safety, it is essential for vaccine training materials to be accurate. This includes accurate depictions of vaccine administration, given that images play a key role in how people learn, and in providing context and guidance in professional practice, including in medical education.

Methods

Internet images illustrating the immunization process in the upper limb area were retrieved from vaccination-related websites with no restrictions on age, sex or location of vaccinees. NVivo14 software was used to code images by two independent coders, according to 3 main categories: vaccination site, injection angle, and whether the vaccinator was wearing gloves, with detailed subcategories where needed. Krippendorff's alpha reliability coefficient of >0.8 was achieved.

Results

In this study, we investigated 372 images, retrieved from 34 Vaccine Safety Net (VSN) member websites, 12 international health organizations, 11 international news websites, four medical websites and two government health websites. It was found that images of vaccine administration frequently contained errors. This study discusses potential factors contributing to improper administration and recognises the importance for health institutions and media to incorporate visuals that reflect best practices in healthcare and health communication.

Conclusion

Our findings suggest that incorrect vaccination techniques are widespread across trusted online resources. Identifying common missteps in visual representations of vaccination could facilitate the development of automated tools to detect misleading content, ultimately promoting safe vaccination practices.

The evolving landscape of COVID-19 antiviral access in NSW: identifying inequities

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1A - COVID-19, Halls CD Lower Section, June 10, 2025, 11:00 AM - 12:30 PM

Objectives
Oral COVID-19 antivirals are important for prevention of severe outcomes from COVID-19, in particular for older people. Molnupiravir and nirmatrelvir/ritonavir, which have different effectiveness and suitability profiles, are currently available in NSW. Our study investigates the characteristics of COVID-19 antiviral dispensing rates over time in people aged 70 and over in NSW.

Methods
This observational population-based study used COVID-19 antiviral dispensing data from the Pharmaceutical Benefits Scheme (PBS) and demographic data from the Medicare Consumer Directory (MCD) for NSW residents aged 70 and over, from 1 March 2022 to 29 September 2024. Dispensing rates were calculated by sex, age group, local health district (LHD) region, and socioeconomic disadvantage using the Index of Relative Socioeconomic Disadvantage (IRSD) quintiles for postcode of residence. The association of socioeconomic disadvantage on sex, age and LHD region adjusted relative rates of antiviral dispensing (aRR) and sex, age, residential aged care facility (RACF) status and LHD region adjusted odds ratios (aOR) for type of antiviral dispensed were calculated.

Results
Antiviral dispensing was greater in females (aRR 1.11, 95% CI 1.09-1.14), metropolitan areas (aRR 1.19 95% CI 1.15-1.23) and in areas of least disadvantage (aRR least v highest 1.39, 95%CI 1.32-1.46). The relative difference in dispensing rate between least and most disadvantaged areas increased significantly over time ($p<0.001$). Of the 334,232 doses dispensed, 70.3% were molnupiravir and 29.7% were nirmatrelvir/ritonavir. Nirmatrelvir/ritonavir was more likely to be dispensed in the areas of least disadvantage (aOR least v highest 1.89, 95%CI 1.84-1.94).

Conclusions
The association between socioeconomic disadvantage and lower antiviral dispensing highlights the inequity in provision of COVID-19 antivirals. Higher prevalence of contraindicated conditions, reduced access to primary care and cost barriers are likely to be contributing factors. These findings provide valuable evidence to inform public health strategies aimed at ensuring equitable access to antiviral treatments.

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Mpox in Victoria: A public health laboratory response to guide outbreak management

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1C - Mpox response, Room E2, June 10, 2025, 11:00 AM - 12:30 PM

Background: In 2022, an unprecedented global outbreak of mpox (formerly monkeypox) occurred, with over 70,000 cases reported worldwide by October. Victoria, Australia experienced its own outbreak first in 2022, then a re-emergence in 2024 with sustained local transmission, prompting a comprehensive public health response. The Victorian Infectious Diseases Reference Laboratory (VIDRL) played a crucial role in the diagnostic and genomic surveillance efforts during this outbreak.

Findings: VIDRL's response to the mpox outbreak in Victoria, which has resulted in over 400 cases since 2022 has encompassed three key areas: 1) Outbreak characterisation: Clinical studies in collaboration with Melbourne Sexual Health Centre assessed viral culture infectivity across different sample types and infection durations, informing isolation guidelines for individuals. 2) Diagnostics: VIDRL evaluated commercial RT-PCR assays for Orthopoxvirus and monkeypox virus (MPXV) detection and assessed a syndromic viral vesicular panel for simultaneous detection of MPXV and other causative pathogens of vesicles. VIDRL developed and implemented multiplex MPXV testing for diagnosis with clade differentiation and have developed a CRISPR-Cas diagnostic with potential point-of-care application. 3) Genomic characterisation: Surveillance in 2022 and 2024 identified multiple clade IIb lineages, suggesting repeated virus introductions from 2022-2024, and subsequent local transmission. Genomic analysis revealed within-host diversity and confirmed the continued efficacy of existing vaccinia virus vaccines against new MPXV variants as part of vaccine immunogenic prediction studies.

Conclusion: The work performed at VIDRL contributed to understanding MPXV transmission, diagnostics, and genomic epidemiology in the Victorian context and played a crucial role in informing public health strategies for mpox management in Victoria. As mpox epidemiology continues to evolve, VIDRL's ongoing efforts in assay standardisation, adaptation of innovative testing approaches, and integration of genotypic and phenotypic viral characterisation will be critical for maintaining an effective and adaptive public health response for emerging infectious disease threats.

Multidimensional molecular mimicry in SARS-COV2

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1A - COVID-19, Halls CD Lower Section, June 10, 2025, 11:00 AM - 12:30 PM

COVID-19 disease can result in multi-organ pathologies including autoimmune-like complications, and persistent debilitating post-acute COVID19 sequalae (PASC). Autoantigen arrays for over 103 human proteins identified new autoreactive targets increased post COVID19 present up to 8 months after a single infection. To determine if molecular mimicry was able to drive autoreactivity, we predicted bioinformatically 11 novel B cell-epitopes (12-20 aa long), within human proteins, with potential to be cross-reactive with SARS-CoV-2 and explain aspects of COVID-19 pathology. Plasma or sera collected from cohorts of both COVID-19 negative and convalescent volunteers, from Victoria and Tasmania (n=290), was tested by ELISAs to measure IgG to the SARS-CoV-2 epitopes and their corresponding human protein homologues. Seven new SARS-CoV-2 specific epitopes and six corresponding epitopes in human proteins showed substantial reactivity. Four were significantly elevated post-COVID19. While most individuals responded to either the SARS-CoV-2 or it's corresponding homologous human protein derived epitope, a percentage (1-27% depending on epitope region) reacted strongly to both. Two novel SARS-CoV-2 epitopes from the Nucleoprotein (NP) were recognised in most of the cohort, regardless of COVID-19 status (>83% positive), indicating potential environmental cross-reactivity. IgG levels to one of these abundant epitopes (NP4) showed a strong correlation ($p<0.0001$) to a homologous self-epitope in an autoantigen at lower reactivity levels. Given the frequent antibody recognition of the NP4 epitope pre-COVID19 we further tested its potential to cross-react with environmental microbes. We found and validated new NP4 homologous B-cell epitopes in proteins of Pseudomonas and Aeromonas bacterial species. Overall, these studies identify novel B cell epitopes within SARS-COV2 with potential to cross-react with both autoantigens and bacteria, indicating antibody reactivity to SARS-COV2 may be multidimensionally driven and modulated through molecular mimicry to the human host, as well as environmental microbes. These studies may have direct implications for understanding the initiation and persistence of PASC, as well as for the design of next generation vaccines using proteins beyond Spike.

New South Wales experience of the largest Australian mpox outbreak to date

Ms Ellen Donnan[1,2], Ms Jennifer Pett[1], Dr Ned Latham[1], Dr Jessica Wells[1], Ms Erin Sullivan[3], Ms Bianca Prain[3]
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1C - Mpox response, Room E2, June 10, 2025, 11:00 AM - 12:30 PM

Background
In 2022, there was a global outbreak of clade IIb mpox predominantly affecting gay, bisexual and other men who have sex with men (GBMSM). Australia reported relatively few mpox cases in 2022 compared to other countries. In 2024, Australia experienced a much larger outbreak of mpox (1,412 notifications) of which more than half (726) were NSW residents.

Methods
We report on the NSW 2024 mpox outbreak and response. All monkeypox virus PCR positive cases notified to NSW Health during 2024 were included. Cases were interviewed allowing the collection of demographic, clinical and risk factor data. Actions taken by NSW Health to respond to the outbreak were reviewed.

Results
NSW reported 726 mpox cases in 2024; the majority were in GBMSM. Most were acquired in NSW. Notifications peaked in September 2024, with 226 notifications and decreased to 30 notifications in December 2024. 39% had received two doses of JYNNEOS vaccine. The NSW outbreak was managed through case and contact follow-up, awareness raising and promotion of vaccination. Clinical alerts were utilised to increase awareness of symptoms (including that symptoms may be attenuated or mimic other conditions) with GPs and hospitals. Targeted campaigns and public alerts were run in conjunction with community partners, urging at-risk people to get vaccinated, recognise the symptoms and seek testing. NSW Health also expanded vaccination providers and sites, including at sex on premise venues, to increase accessibility to at-risk groups.

Conclusion
Despite current control, there is ongoing risk of transmission with low levels of circulating virus in the community leading up to potential amplification events such as the Sydney Mardi Gras. Ongoing overseas importation of both clade I and clade II remains a risk. Balancing risk communication and potential stigma were paramount. Ongoing public health action, including vaccination promotion and awareness raising is critical to mpox prevention.

HIV notifications among people from Culturally and Linguistically Diverse backgrounds in Australia

Ms Ela Naruka[1], Dr Skye McGregor[1], Dr Jonathan King[1], Dr Richard Gray[1], Dr Laila Khawar[1]
[1]The Kirby Institute, Sydney, Australia

1C - Mpox response, Room E2, June 10, 2025, 11:00 AM - 12:30 PM

Background:
Australia has a large culturally and linguistically diverse (CALD) population with 30% of the population born overseas and 22% speaking a language other than English at home. People born overseas are contributing increasingly to notifications of HIV. We analysed data from the National HIV Registry to determine trends in HIV new diagnoses in Australia among people from CALD backgrounds.

Methods:
We defined people from CALD backgrounds as 'people who were born in non-main English-speaking countries AND/OR spoke non-English language at home'. We analysed HIV notifications data between 2014-2023, and described demographics, HIV exposure risk, CD4+ count, HIV subtypes, stages of HIV and time between year of arrival and HIV diagnosis for the CALD population.

Results:
The number of HIV notifications among people from CALD backgrounds declined by 21.5% over the study period, however the decline between 2019 - 2021 was likely to be influenced by restrictions due to COVID-19. The proportion of HIV notifications were highest among people born in Southeast Asia (55%) and attributed to exposure risk category of men who have sex with men (MSM) (61%), during the study period.
The percentage of notifications diagnosed late (CD4+ count <350cells/µL at diagnosis) among people from CALD backgrounds increased from 36% in 2014 to 45% in 2023. The proportion of late diagnosis increased in both exposure risk categories: MSM (from 26% in 2014 to 39% in 2023) and heterosexual exposure (from 48% in 2014 to 57% in 2023).

Conclusion:
This is a novel analysis of HIV notifications among people from CALD backgrounds in Australia. During the study period, HIV notifications among people from CALD backgrounds have slightly declined in Australia, however late diagnosis has increased especially among people reporting heterosexual exposure as risk category, suggesting a lack of services targeting people from CALD backgrounds and initiatives to raise awareness about HIV testing.

Social and behavioural insights from the Fiji National Immunisation Coverage Survey

A/Professor Jane Frawley[1,4], Ms Luisa Vodonaivalu[2], Sr Litiana Vodovodo[3], Dr Rachel Devi[3], Professor Andrew Hayen[1]
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6C - Vaccine policy for the region, Room E2, June 12, 2025, 11:00 AM - 12:30 PM

Background: A Fiji National Immunisation Coverage Survey was conducted in September and October 2024. One of the objectives of this survey was to understand the social and behavioural drivers of immunisation.
Methods: The survey was conducted across 30 enumeration areas (EAs) in each division, as selected by the Fiji Bureau of Statistics (120 EAs nationwide). Teams used Computer Assisted Personal Interview devices for random selection of households and to conduct the interviews.
Results: In total, 1,488 parents completed the 'Knowledge, Attitudes and Practices sub-survey. During the COVID-19 pandemic, 80.5% of parents questioned childhood immunisation after hearing concerning information about the COVID-19 vaccines, 25.7% hesitated to vaccinate their child and 21.9% rejected a vaccine for their child. Children aged 24-35 months, were more likely to be vaccinated if their parents wanted them to receive all vaccines ($p = 0.010$). Parents who believe vaccines are important ($p = 0.034$), and safe ($p = 0.0313$) were more likely to have their children vaccinated. Trust in health workers ($p = 0.049$), a recommendation ($p = 0.020$), and the belief that most of their close family and friends wanted them to vaccinate their child ($p = 0.005$) were also associated with uptake. No statistical differences were found in motivation or thinking and feeling and vaccine uptake in Class 1 or Class 6. Parents who believed their close family and friends wanted them to vaccinate their child had higher up-to-date vaccination rates in Class 6 ($p = 0.036$). Similarly, a community leader's influence was also significant ($p = 0.038$). HPV vaccine uptake was higher for parents who wanted their children to receive all recommended vaccines ($p = 0.013$) and there was a marginally significant association ($p = 0.051$) in HPV vaccine uptake if parents believed vaccines were safe.
Conclusion: The survey identified social and behavioural factors related to vaccine uptake that can inform advocacy, policy and tailored interventions.

Challenges, progress and opportunities towards tuberculosis elimination in New South Wales, Australia

Ms Ellen Donnan[1,2], Ms Catriona Furlong[1], Ms Jennifer Pett[1], Mr Evan Ulbricht[1,3], A/Prof Peter Massey[4,5], Prof Vitali Sintchenko[2,6], Prof Ben Marais[2,7]
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1D - Preventing respiratory infections, Riverbank Room 2, June 10, 2025, 11:00 AM - 12:30 PM

Introduction
Australia is a low tuberculosis (TB) incidence country, with a World Health Organization (WHO) incidence estimate of 5.6 cases per 100,000 population in 2022. For more than 30 years, Australia, has maintained TB incidence rates of <10/100,000 population, but progress toward TB elimination and 'zero local TB transmission' remains challenging. The WHO 'Towards tuberculosis elimination: an action framework in low-incidence countries' provides eight priority actions for TB elimination.

Methods
We critically evaluated different elements of the WHO elimination framework in the context of New South Wales (NSW), Australia. We analysed population and migration, notifiable conditions, and programmatic TB data for NSW and critically reflected on challenges and opportunities for TB elimination.

Results
There were 523 TB cases in NSW in 2024 corresponding to a notification rate of 6.3 per 100,000 population. Ninety-one percent of cases were born overseas, with notification rates tied closely to changes in migration patterns from high TB incidence countries. Pre-elimination rates of TB in the Australian-born non-Indigenous population have been maintained, but the rate of TB in Aboriginal and Torres Strait Islander people in NSW has increased. Approximately 5% of cases per year are likely locally acquired. NSW has made progress against the WHO framework actions including contact investigation, TB treatment in migrants, optimising care for drug-resistant TB, and improved surveillance and programme monitoring.

Conclusion
Most WHO key priorities and actions are embedded in NSW Health policy, but TB elimination remains out of reach in NSW mainly due to migration from high-TB incidence settings. Important opportunities include minimising TB disease risk through increased TB preventive treatment (TPT), early detection of TB disease to minimise local transmission, and understanding how best to improve community engagement.

The technology revolution improving access and uptake of School Immunisations across Australia

Mr Luke Renehan[1]
[1]Vitavo, Melbourne, Australia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

The Tasmanian State Government, Public Health Units and Local Governments across Australia are using Vitavo to evolve their School Immunisation Programs.

Vitavo is a fully digital end-to-end immunisation management platform which showcases how technology is enabling:

- an increase in both response and coverage rates for routine vaccinations by up to 23%
- the expansion of school programs beyond national or state funded vaccines to include parent paid influenza and meningococcal B vaccinations
- automated communications to promote school immunisation programs to parents and legal guardians to improve response and consent rates
- and more…

This presentation will share:

- the latest practical technology examples from immunisation providers across Victoria, Queensland, Tasmania and South Australia
- additional opportunities for expansion of school programs to improve community health
- insights into future technology developments to improve access and uptake of school vaccinations and service delivery

"Boosting mpox Immunisation: Lessons from Midsumma Festival: Awareness, Motivation, and Uptake Challenges"

Miss Philippa Holland[1]
[1]City Of Melbourne, Melbourne, Australia

3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

A targeted mpox outreach immunisation pop-up session was held at the LGBTQI+ Midsumma Festival in Victoria to boost vaccine uptake and increase mpox disease awareness. The session successfully immunised 105 individuals, with an additional 100 seeking information. A survey of 77 participants revealed key insights into the barriers and motivations surrounding immunisation. 40% of those seeking vaccination had previously attempted to get immunised but faced obstacles. Additionally, 73% of those immunised were unaware of other providers offering the vaccine. Despite these challenges, motivation to get vaccinated was notably high. This session will also explore the practical aspects of running culturally sensitive pop-up clinics at festivals during summer. These findings underscore the need for clearer communication on disease prevention, better access to vaccination services, and a more progressive approach to overcoming barriers. Addressing these factors can significantly improve immunisation rates within the LGBTQI+ community and beyond.

Novel pneumococcal conjugate vaccine schedules and outcomes: the PREVIX trials

Professor Amanda Leach[1], Ms Nicole Wilson[1], Ms Beth Arrowsmith[1], Dr Jemima Beissbarth[1], Professor Kim Mulholland[2,3,4], Professor Mathuram Santosham[5,6], Professor Paul Torzillo[7,8], Professor Peter McIntyre[9,10], Professor Heidi Smith-Vaughan[1], Associate Professor Sue Skull[11], Dr Victor Oguoma[1], Associate Professor Mark Chatfield[12], Associate Professor Deborah Lehmann[13], Associate Professor Christopher Brennan-Jones[13,14], Associate Professor Michael Binks[1,15], Associate Professor Paul Licciardi[3,4], Professor Tom Snelling[16], Associate Professor Vicki Krause[17], Professor Jonathan Carapetis[11,13], Professor Anne Chang[1,18], Professor Peter Morris[1,19]

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Australian First Nations children living in remote communities have among the highest reported rates of otitis media (OM). Streptococcus pneumoniae and non-typeable Haemophilus influenzae (NTHi) are major pathogens. The prevalence of chronic suppurative OM (CSOM) declined post 7-valent pneumococcal conjugate vaccine (PCV7), from 24% to 17%, but remains a major public health emergency (>>4%) post PCV13 (12%). Furthermore, the prevalence of bilateral healthy ears persists at only ~10%.

Surveillance during 2 years of government funded NTHi protein D-conjugated 10-valent PCV (PHiD-CV10) in the Northern Territory showed a decline in culture of NTHi from ear discharge and a decline in prevalence of AOM, compared to the PCV7 era.

In two randomised controlled trials of primary and booster dose mixed schedules (the PREVIX – PREVenar and SynflorIX trials) we found:

1. below threshold immunogenicity of first dose PCV13 compared to a strong first dose PHiD-CV10 response
2. a similar immune response following one versus three doses of PCV13
3. no difference in nasopharyngeal carriage or any type of OM at any timepoint for any schedule
4. significantly less hearing loss post-PCV13 booster versus post-PHiD-CV10 booster

These RCTs confirm first evidence and importance of data from mixed and novel PCV schedules. Lack of response to PCV13 at age 2 months suggests that for high-risk or naive populations, a 1+1 PCV13 schedule may increase risk compared to PHiD-CV10. The anticipated benefit for OM from PHiD-CV10 was not shown, whereas potential for PCV13 to impact hearing via unsubstantiated mechanisms, needs investigation.

Investigating Hepatitis E Resurgence in Australia using Whole Genome Sequencing

Ms Jacinta O'Keefe[1], Dr Ammar Aziz[1], Dr Eike Steinig[1,2], Ms Ivana Savic[1], Dr Alicia Arnott[1], Dr Doris Chibo[1], Dr Neil Franklin[3], Dr Russell Stafford[4], Dr Avram Levy[5], Dr Alyssa Pyke[6], Dr Mark Turra[7], Dr Jen Kok[8], Clinical Associate Professor David Speers[5], Dr Leon Caly[1], Dr Kathy Jackson[1], Dr Chuan Kok Lim[1,2]

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2B - Foodborne diseases, Room E1, June 10, 2025, 1:30 PM - 3:00 PM

Background
Genomic surveillance of HEV is currently limited to single gene sequencing (ORF2), which provides limited differentiation and geographical resolution between highly diverse HEV genotypes. We investigated the utility of WGS to characterise a recent multi-state surge of locally-acquired HEV infections in Australia.

Methods
Whole genome sequencing (WGS) was performed using target-enrichment and compared with ORF2 sequencing using samples collected from two study cohorts. Cohort A consisted of recent clinical specimens collected from patients with acute HEV (n=30, Oct 2022-Dec 2023) and Cohort B comprised of archived clinical specimens (n=21, Jan 2013 to Sep 2022) with robust epidemiological data. We analysed HEV relatedness (phylogeny, mutual nearest-neighbour clustering), subtyping and vaccine amino acid mapping, to explore the concordance between partial ORF2-490bp, full-length ORF2 and whole-genome analyses. Additionally, we assessed the HEV-3 SNP distance threshold appropriate for cluster assignment.

Findings
Fifty-one samples (14 HEV-1, 35 HEV-3, 2 HEV-4) were subjected to WGS and ORF2 sequencing, with whole-genomes obtained from 78% (n=40) of samples. WGS and ORF2-490bp demonstrated high genotyping agreement, although 97% (34/35) of HEV-3 samples were not able to be classified into a known subgenotype using either method. Global co-phylogenetic analysis demonstrated high level of congruence between ORF-490bp, full-length ORF2 and whole-genome sequences. Australian HEV-3 sequences analysed using phylogenetic and mutual nearest-neighbour approaches support the presence of unique subgenotypes with different common ancestries. An outbreak cluster demonstrated a median SNP distance of 10 (IQR 6-11) compared with 1304 (IQR 1281-1313) for an overseas acquired case. High amino acid variability was seen between Australian HEV-3 sequences and two vaccine targets.

Findings of our study suggest the recent increase in Australian cases of HEV genotype 3 is geographically distinct, with plausibility of either endemic circulation or from consumption of contaminated imported product. WGS of HEV is useful for global contextualization of HEV-3 outbreaks.

Maternal Tdap history shapes infant immune trajectories across pertussis vaccination schedules

Dr Sonia McAlister[1,2], Dr Anita van den Biggelaar[1,2], Dr Ruth Thornton[1,2], Dr James Totterdell[1,4], Dr Marie Estcourt[1,4], Dr Gladymar Perez[1,4], Professor Tom Snelling[1,4], Professor Peter Richmond[1,2,3]
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5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

Maternal immunisation is critical to protect young infants from severe pertussis. However, maternal antibodies may influence how well infants respond to their routine childhood vaccinations (immune interference). There is limited data on whether the number of adult Tdap boosters a woman has received further impacts infant vaccine responses.

We evaluated the immunogenicity, and antibody persistence of immunisations in infants born to mothers who received either their first or second adult Tdap booster during pregnancy. We further examined whether this varied if infants were primed with acellular pertussis (aP1) or whole-cell pertussis (wP1) containing vaccines as their first dose followed by 2 doses of DTaP-IPV-HBV/Hib vaccine at 2-4-6 months of age as part of the Optimum study (ANZCTRN12617000065392p). All infants received 3 doses of 13-valent pneumococcal conjugate vaccine (PCV13) at 2-4-12 months of age and a DTaP-IPV booster at age 18 months.

Serum IgG concentrations specific to diphtheria, tetanus, pertussis, Hib, hepatitis B and PCV13 antigens were measured at ages 6, 7, 18, and 19 months using multiplex fluorescent bead-based immunoassays.

At 6 months, repeat maternal Tdap immunisation was associated with enhanced immune interference in both aP1- and wP1-primed infants. At ages 7 and 18 months, aP-primed infants whose mothers received two Tdap boosters tended to have higher IgG concentrations to some vaccine antigens, however, wP-primed infants whose mothers received two Tdap boosters generally had lower IgG concentrations than those born to mothers who had their first booster. The impact of repeat maternal Tdap was both antigen and temporally dependent.

Our data suggests repeat maternal Tdap immunisation shapes the long-term immune trajectory of infants, and this differs across priming schedules (aP1/ wP1). As fully aP-primed cohorts reach childbearing age, ongoing surveillance is needed to understand the broader implications of repeat maternal Tdap boosting on infant vaccine protection.

Increasing Adverse Events Following Immunisation among Infants in Timor-Leste

Dr Celeste Xavier Cham[1,2], Dr Helio Sarmento Freitas Guterres[3], Mrs Liliana dos Santos Varela[4], Dr Bendito Xavier de Almeida[4], Dr Angelina da Costa Rangel Barreto[4], Dr Madeleine Marsland[5], Dr Ann Burton[5], Dr Sarah Sheridan[5]
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2F - Improving vaccine safety surveillance, Riverbank Room 4, June 10, 2025, 1:30 PM - 3:00 PM

Introduction:
Serious adverse events following immunisation (AEFI) are rare but require investigation to identify causes to enable appropriate responses and maintain public confidence in vaccine safety. Timor-Leste has observed an increase in reported AEFI, from less than 5 annually before 2020, to ≥30 cases annually from 2020 reaching a peak of 59 cases in 2024. We examine 2024 AEFI trends, potential causes, and recommendations.

Methods:
Serious AEFI are reported to the Ministry of Health and National Immunization Technical Advisory Group for investigation. AEFI surveillance is paper-based, supplemented by WhatsApp notifications. Causality assessments are conducted for select cases.

Results:
In 2024, 59 AEFI were reported, all in infants (aged <1 year) following routine immunisations. Of these, 56 (95%) were classified as serious, including 52 classified as abscesses, resulting in one fatality. Cases were distributed nationwide and occurred throughout the year. Two clusters of two events were identified in two different municipalities. Most of the cases (47 cases; 80%) occurred following hepatitis B birth dose vaccination. Nine cases underwent thorough investigation, with seven causality assessments completed. Findings indicated vaccination technique errors, with three involving recent health worker graduates volunteering to deliver vaccination. Two cases were linked to traditional medicine use, though this occurred post-symptom onset. Three events were considered coincidental. Limited testing was conducted with one sample testing positive for Staphylococcus aureus.

Discussion:
The increase in reported AEFI may partially reflect improved surveillance, but further investigation is needed. Potential causes include vaccine administration errors and improper handling of multi-dose vials resulting in contamination. Corrective actions include onboarding and refresher training, restricting vaccine administration to trained staff, and reinforcing sterile practices. Health education and risk communication are required to improve the timeliness of case detection and reporting. Sustainable funding is needed to intensify AEFI surveillance efforts and facilitate prompt investigations and response.

Interior redesign of the SAFEVAC multi-jurisdictional vaccine safety surveillance platform

Dr Gerardo Luis Dimaguila[1,3,4], Isabella Lagamba[3], A/Prof Hazel Clothier[1,3,4], Dale Carcione[2], Dr Carla Drake-Brockman[2], Georgina Lewis[1], Dr Kaija Strautins[2], Daneeta Hennessy[1,3], Prof Nigel Crawford[1,4], Prof Paul Effler[2], Prof Jim Buttery[1,3,4,5]
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2F - Improving vaccine safety surveillance, Riverbank Room 4, June 10, 2025, 1:30 PM - 3:00 PM

SAFEVAC is a critical multi-jurisdictional network to monitor adverse events following immunisation (AEFI) and hosts the online spontaneous vaccine safety surveillance reporting systems of Victoria (SAEFVIC) and Western Australia (WAVSS). Launched in 2012 the platform has undergone continuous improvements, however the challenges of the COVID-19 roll-out highlighted limitations in intuitive and consistent data entry; standardisation of AEFI reaction terms and data entry fields; and efficient management of rapid, high volume of reports that required workarounds, such as R programming, to prioritise AEFI of specific interest.

To address these challenges, we embarked on a phased redesign of the SAFEVAC platform, through a commitment to strengthen vaccine safety systems from the Victorian and Western Australian Departments of Health. Following hybrid cloud infrastructure enhancement completion in 2024, the next phase aims to modernise the user interface for intuitive and efficient data entry, enhancing capacity during high-volume periods, reducing reporting errors through standardised terminology, and improving interoperability with health information systems. Machine learning will be integrated for automated alerts of priority AEFIs, ensuring efficient workflows and timely response.

Stakeholder engagement — including interviews and workshops with clinicians that assess AEFI reports, epidemiologists conducting surveillance, and AEFI reporters — informed wireframes, user story maps, prototypes, and visual identity. A development task resource was created to address current challenges, and collaboration with legal and IT teams ensured ethical and security compliance. As the platform redevelopment progressed, we apply a hybrid agile process that integrates regular feedback cycles into the build process.

Ultimately the interior redesign of SAFEVAC's digital house ensures the platform continues to meet the growing demands of public health, allowing for faster, more accurate reporting of vaccine safety events. With improvements in user experience, scalability, and system integration, SAFEVAC will provide a robust, future-proof solution for vaccine safety monitoring and safer immunisation practices across Australia.

Community Driven Success: Lessons from Timor-Leste's National HPV Vaccination Rollout

Ms Madalena Gomes[1], Dr Angelina Barreto[1], Ms Natalia de Araujo[1], Dr Madeleine Marsland[2]
[1]Ministry of Health, , Timor-Leste, [2]National Centre For Immunisation Research and Surveillance, , Australia

6C - Vaccine policy for the region, Room E2, June 12, 2025, 11:00 AM - 12:30 PM

Introduction:
Cervical cancer is the second most common cancer among women in Timor-Leste, with an estimated incidence of 14.8 and an age-standardised mortality of 7.9 per 100,000 women. High-risk human papillomavirus (HPV) causes 99% of cervical cancers. Global WHO targets aim for 90% HPV vaccination coverage, 70% screening coverage, and 90% access to treatment by 2030. Timor-Leste needs to vaccinate 77,861 girls aged 9-14 years and screen 49,522 women aged 35-45 years to achieve this target. In 2024, the Government of Timor-Leste launched a national single dose HPV vaccination program.

Methods: The program targeted girls aged 11–14 years through a free of charge mass school-based vaccination campaign, aiming to reach 62,000 girls. Nearly 1,700 health workers received training to support the rollout. National advocacy meetings engaged stakeholders, including government officials, civil society organisations, and religious leaders. A nationwide public communication campaign leveraged community, school and church networks to promote vaccine uptake. Health education sessions were conducted in schools and religious settings to counter misinformation and address safety concerns.

Results:
Within three weeks, 56,350 girls (90% of the target population) were vaccinated. No significant adverse events following immunisation were reported. Key challenges included reaching remote communities, particularly due to challenging terrain and distance, and addressing vaccine hesitancy. Other barriers that may have influenced student participation include rumours and bureaucratic processes that affect timely implementation.

Discussion:
The program achieved high coverage through strong community engagement, multi-sectoral collaboration, and strategic communication. The involvement of leaders including the Prime Minister, Ministry of Education, and other agencies, encouraged the community especially parents to support HPV vaccination. Partnerships with religious and community leaders and the participation of volunteers was instrumental in overcoming vaccine hesitancy. Lessons from this program can inform future school-based vaccination programs and supplemental immunisation activities in Timor-Leste and similar settings.

VaxPulse Learning Health System for Vaccine Infodemic Risk Assessment and Response

Dr Gerardo Luis Dimaguila[1,2,3], Dr Muhammad Javed[1,2,3,4], Dr Sedigh Khademi[1,2,3], A/Prof Hazel Clothier[1,2,3,4], Prof Jim Buttery[1,2,3,4,5]
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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

The vaccine infodemic has emerged as a significant challenge in recent years, driven by increased online discussions about vaccines. In Indonesia, despite a robust history of vaccine development, the COVID-19 pandemic led to a decline in vaccination rates and public confidence, with unvaccinated infants rising to 26% in 2021 due to fears related to multiple immunisations and adverse events following immunisation (AEFI). Similarly, in the Philippines, misinformation about the dengue vaccine in 2017 caused a sharp drop in vaccine trust. To tackle this issue, VaxPulse—a regional platform for assessing and responding to vaccine-related infodemics—is being developed for East Asia.

VaxPulse uses the learning health system framework to generate Vaccine Infodemic Risk Assessment Lifecycle (VIRAL) by continuously monitoring and analysing multi-lingual content from social media, search engines, and news platforms. These insights are combined with expert input and established infodemic strategies to identify risks and develop targeted responses, which are evaluated in controlled settings. Feedback from these interventions is used to refine VIRAL and response strategies, completing the LHS cycle.

We are currently collaborating with institutions in Australia, Indonesia, the Philippines, Hong Kong SAR, Switzerland, and Canada. Machine learning models have been trained to detect social bots, adverse event mentions, and vaccine-related discussions in multiple languages (Filipino, Bangla, Spanish, Urdu, Farsi). Data is collected from platforms like X (Twitter), Facebook, Reddit, YouTube, and Google Trends. In Australia, VaxPulse has provided recommendations for improving vaccine safety communication on public websites and supported educational content creation for TikTok and Instagram.

VaxPulse’s real-time VIRAL insights can help governments and health organizations in East Asia address vaccine-related concerns swiftly, protecting immunisation programs. The platform’s machine learning models allow rapid adaptation to emerging threats, enhancing the resilience of vaccination efforts across diverse settings.

Moorditj (Strong) Start: two years of immunisation support for Aboriginal children

Ms Naomi Nelson[1], Ms Dannielle Nelson[1], Ms Tamara Thompson[1], Ms Rebecca Labruyere[1], Mrs Tracie Chong[1], Mrs Rashmi Vinogradov[1], Dr Ben Scalley[1], Dr Anastasia Phillips[1]
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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Background: Delayed vaccination is more common among Aboriginal children and leads to delay in the receipt of subsequent vaccines. Evidence supports the effectiveness of reminders for Aboriginal families, particularly when undertaken in a culturally appropriate manner by Aboriginal Health Workers (AHW) and combined with practical supports.

Program: The Boorloo (Perth) Public Health Unit (PHU) Moorditj Start program commenced in March 2023. It comprises an early intervention phone call from a Boorloo PHU AHW to all families of Aboriginal infants in Perth at 5 weeks of age. The call provides the opportunity to discuss immunisation and support to book appointments. Transport assistance is offered, and home visits are available for families who cannot access a clinic. Ongoing reminders are provided by SMS or phone at each immunisation schedule point and families can opt out at any time.

Outcomes: From 1 March 2023 – 31 December 2024, 1,710 infants were included in the program. At 5 weeks of age, successful contact was made with 69% of parents/carers, with further attempts leading to 79% success by 6 months of age. Of those contacted successfully at 5 weeks, 26% requested that the Boorloo PHU AHW link them with a service provider of which 82% requested the AHW book the immunisation appointment on their behalf. To date, 88% have received DTPA 1 6-8-week vaccine on time, compared to 64% of those who could not be contacted and 82% received MMR on time compared to 76% of those who could not be contacted. Calls are well received by families and assistance with booking and transport was considered helpful.

Conclusion: An early phone call from an AHW to carers of 5-week-old Aboriginal infants was an effective and well received intervention to promote timely immunisation uptake in Perth. The program continues to operate in 2025.
Community consultation: Aboriginal Principal Project Officer (WA Department of Health), and the Boorloo PHU, Aboriginal Health team support sharing the outcomes of the Moorditj Start program.

Moorditj Kids – a home visiting immunisation service for overdue Aboriginal children

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3D - Vaccination for priority groups, Riverbank Room 2, June 10, 2025, 3:30 PM - 4:55 PM

Background: Immunisation coverage among Aboriginal children in Perth is among the lowest in Australia with notable gaps in coverage at both 12 and 24 months of age. Aboriginal children are at higher risk of acquiring a vaccine preventable disease and more likely than non-Aboriginal children to present to hospital for these diseases. Barriers for Aboriginal Australians in accessing healthcare include logistic barriers and the availability of culturally safe services. Evidence shows that home visiting interventions, while resource intensive, improve access and vaccination coverage.

Program: Boorloo (Perth) Public Health Unit implemented a home visiting vaccination service in 2018. The home visiting program is now offered 3 days per week to families of Aboriginal children up to 24 months of age who are overdue for immunisation but are unable to access a healthcare provider. Vaccination is also offered in childcare and community centres for some families. Contact is made with families by an Aboriginal Health Liaison Officer (AHLO) and home visits are attended by the AHLO and immunisation nurse.

Outcomes: In 2024, the Boorloo PHU AHLO contacted 902 families whose children were overdue for immunisation up to 24 months of age. Many children were overdue for multiple schedule points and also had overdue siblings. Contact attempts were successful in 82% of cases following up to three attempts. A total of 298 home visits were conducted in 2024 with 341 vaccine encounters, including opportunistic vaccination of family members. Of all overdue children identified, 2.9% of families stated that they did not want to vaccinate their child. Families included in the program often have significant other life challenges and in-home support is generally very well received.

Conclusion: A home visiting service is a culturally safe alternative for overdue Aboriginal children and is well utilised and well received by families. It resulted in opportunistic vaccination of household members.

Community consultation: Aboriginal Principal Project Officer (WA Department of Health), and the Boorloo PHU, Aboriginal Health team support the publicising of the outcomes of the Moorditj Kids program.

Innovative communications strategies to increase immunisation demand in Papua New Guinea

Miss Clare Valaki[2], Ms Antonia Pannell[1], Ms Gerarda Vinia[3], Ms Ashwin Lau[3], Mr Raphael Lainda[2], Ms Lisa Davidson[1], Dr Patrick Kiromat[3], Mr Hadlee Supsup[3], Ms Dana Iselin[2], Mr Ben Sanderson[1], Dr Stefanie Vaccher[1]
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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

Background: Papua New Guinea has some of the lowest immunisation coverage rates globally. In East New Britain (ENB) province in 2023, 41% of children were estimated to be 'zero-dose' (not receiving the first dose of Diphtheria-Tetanus-Pertussis (DTP) vaccine) and 55% were 'under-immunised' (not receiving the third dose of DTP). This project was designed to identify barriers to vaccine coverage and develop tailored behaviour change and communications tools to increase immunisation awareness, demand, and ultimately coverage.

Methods: Together with ENB Provincial Health Authority (ENBPHA), five local-level government areas with high numbers of under-immunised children were identified. Quantitative and qualitative information was gathered from caregivers, healthcare workers and community and religious leaders to understand barriers contributing to low immunisation coverage.

A co-design process with community members, community and religious leaders, healthcare workers and ENBPHA incorporating a novel 'vision fish' methodology was used to develop culturally appropriate solutions to identified immunisation barriers. Innovative behaviour change communications tools were also co-designed to ensure that immunisation messages were delivered in a manner that would resonate best with communities.

Results/discussion: Three specific communications tools were developed: 1) A community flipchart which provides key messages around immunisation and accompanying images, together with facilitators' notes; 2) a 'cube' which depicts the science behind vaccines using simple imagery to allay concerns about vaccination and legitimise vaccine safety; and 3) a swaddle blanket with the image of a frangipani flower, with each petal displaying an image of the number of vaccines to be received in each month of an infant's life, to serve as a simple visual prompt and incentive for the caregiver.

Conclusion: Health information must be delivered in a manner that is culturally sensitive and easily understood. Co-designing materials with end-users offers a viable approach to ensure information is tailored to the local context.

The SIRVA Puzzle: Piecing Together a Global Case Definition

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Introduction

Shoulder Injury Related to Vaccine Administration (SIRVA) is an adverse event following immunisation that can lead to long-lasting shoulder dysfunction. SIRVA has gained global attention and interest over the past few years, particularly since the rollout of COVID-19 vaccination programs. Current inconsistencies in SIRVA terminology, without a global standardised case definition make accurate diagnosis and patient care, accurate reporting, and improvements in vaccine safety challenging. To inform the development of an international Brighton Collaboration standardised case definition, we conducted a systematic review and compiled relevant published evidence of shoulder injury related to vaccine administration.

Methods

A comprehensive search of four databases (MEDLINE, PubMed, Embase, Web of Science) was conducted from inception to 6 October 2024, with no restrictions on date, language, geographical region or study design. Published observational epidemiological studies on any isolated ipsilateral shoulder injury presentations after vaccine administration with no prior or concomitant origin other than recent immunisation, were eligible for inclusion. This systematic review used narrative synthesis by mapping reported signs and symptoms to each potential SIRVA case. This review adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and was registered with PROSPERO: CRD42024552827.

Results

Of 3,288 references identified, 157 studies met the inclusion criteria after the screening process. Shoulder pain and restricted range of motion were the most common symptoms, followed by neurological signs such as loss of sensitivity, muscle weakness and paraesthesia. Less common were infection-associated symptoms such as abscesses and septic arthritis. Time of onset predominantly fell within 0 to 7 days after immunisation, with symptoms lasting more than 6 weeks.

Conclusion

Our systematic review addressed the issue of highly heterogeneous terminology used to define SIRVA. It has shown consistent findings to provide a clearer framework for developing a global case definition. By summarising key reaction descriptions, our review ensures all cases can be counted, enabling timely and effective interventions. Establishing a standardised case definition will enhance diagnostic accuracy, improve patient outcomes, and strengthen vaccine safety monitoring worldwide.

POTENTIAL NASOPHARYNGEAL CARRIAGE IMPACT OF NEW PNEUMOCOCCAL CONJUGATE VACCINES IN NORTHERN AUSTRALIA

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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

Background
Despite pneumococcal conjugate vaccine (PCV) introduction and high uptake, First Nations children in remote northern Australia have a high prevalence of pneumococcal carriage and serotype diversity, beginning early in life. Non-vaccine serotypes dominate, and rates of all-cause otitis media persist from a very young age. Currently, the 13-valent PCV, Prevnar13 (PCV13) is used in a 3+1 series at 6 weeks, and 4, 6, and 12 months. Three PCV's- PCV15, PCV20 and PCV21, are potentially entering the Australian market.
Methods
Using nasopharyngeal carriage, serotype and antimicrobial resistance data from 2013 – 2019 during a pneumococcal vaccine trial, the potential impact of increasing valency vaccines on serotype-specific carriage and resistance will be estimated (% carried serotypes included).
Results
The estimated change in proportion of carried and resistant serotypes potentially impacted by additional serotypes in PCV15, 20 and 21 will be reported by age and pre- and post- each primary and booster dose.
Conclusions
The current serotype population is dominated by non-PCV13 serotypes, the potential of higher valency vaccines to reduce disease will be estimated and described. This data is the only pneumococcal carriage data available to inform vaccine policy in Australia.

Co-designing adolescent vaccine uptake strategies with youth through a Nudgeathon

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2C - Mandates and messaging, Room E2, June 10, 2025, 1:30 PM - 3:00 PM

Background:
A school-based immunisation program for adolescents has been in place in Australia since the 1970s. Adolescent vaccine uptake has been steadily declining with the COVID-19 pandemic further exacerbating this decline. This trend mirrors national adolescent vaccine uptake. The study aims to co-design potential nudge interventions to inform community-led communication strategies and optimise school immunisation uptake in adolescents.
Methods:
The nudgeathon actively involved all stakeholders including young people from schools in areas with low vaccine uptake in the co-design process. This nudgeathon incorporated expertise in behavioural science, nudging and health policy, and developed the evidence-based "nudge" interventions.
Results:
On 16 and 17 December 2024, a Nudgeathon was conducted in Adelaide. There were 58 participants from various organisations, including SA Health, the Department for Education, private vaccination and health service providers, local councils, schools, academia, and representatives of target populations such as Year 7–10 students and their parents, representing a range of ethnicities and culturally and linguistically diverse backgrounds. The following nudge interventions were co-designed by participants:

- Toolkits with tailored communication materials for school principals, administrative staff, and teachers.
- Communication campaigns for delivering vaccination-related information to students and parents through videos, school assemblies, and text messages.
- Integration of immunisation materials within school enrolment packs and implementation of a one-time consent process.
- Education sessions with incentives to promote the timely return of consent forms.
- A default opt-out consent model to streamline the consent process.
- A multi-faceted approach combining informational, educational, and vaccination-focused interventions delivered through multiple engagement points.
- Including immunisation into the school curriculum.

Conclusions:
This nudgeathon engaged diverse stakeholders to co-design nudge-based interventions aimed at improving school-based immunisation uptake by enhancing communication, streamlining consent processes, and increasing engagement. Future evaluation of these strategies will be essential to assess their effectiveness and inform broader implementation.

Young people's awareness of HPV vaccination and cervical screening: the THRIVE-25 study

Ms Lucy Boyd[1], Bethany Harrick[1], Associate Professor Claire Nightingale[1], Kristy Meiselbach[1], Brittany Wilson[2], Claire Zammit[1], Dr Cristyn Davies[3], Professor Rachel Skinner[3], Kathleen Prokopovich[2], Kate Broun[4], Dr Javiera Martinez-Gutierrez[1], Professor Jon Emery[1], Dr Tamara Butler[5], Associate Professor Lisa Whop[5], Professor Julia Brotherton[1]
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3E - Communications & engagement, Riverbank Room 3, June 10, 2025, 3:30 PM - 4:55 PM

Introduction: Human papillomavirus (HPV) vaccines protect against cervical and other HPV-related cancers and have been offered in Australia's school-based program since 2007. However, by age 25, only 75% of women and 57% of men are vaccinated. When the schedule moved to a single dose in 2023, funded HPV vaccine eligibility was extended from 18 up to 25 years, potentially increasing reach and newly overlapping with the start age of cervical screening (25).

Aim: To understand young people's awareness, attitudes and information needs relating to HPV vaccine and cervical screening

Methods: Semi-structured online focus group discussions were conducted with young people aged 20- 25 years in Victoria recruited to discuss 'cancer prevention' in 2024/2025. Topics included HPV, cervical cancer and its prevention including vaccine and screening. Participants were shown existing print and video resources to elicit feedback and generate ideas regarding effective communication materials for young people. We used thematic/framework analysis.

Results: There was a marked lack of awareness about HPV vaccination and screening across the gender spectrum. Almost all were unaware of the free HPV vaccine for their age group. Participants emphasised the need for clear, accessible information, particularly for people from diverse backgrounds. Young people from culturally and linguistically diverse backgrounds, including international students, faced additional challenges in navigating the healthcare system. Some had received different messaging from varied cultural contexts which increased stigma about the vaccine. Future resources should incorporate personal voices and perspectives in short informational videos with diverse representation.

Conclusions: Participants underscored the need for relatable, engaging, and accessible health education materials developed by/with young people. Wider system issues, such as the cost of GP visits, are likely to adversely impact the uptake of HPV vaccine and cervical screening among young people. Promotion of HPV vaccination and screening at university/workplace clinics and pharmacies may increase uptake.

Sepsis Awareness Campaign

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2E - Public health in practice, Riverbank Room 3, June 10, 2025, 1:30 PM - 3:00 PM

Context
The NSW Health Sepsis Public Awareness Campaign aims to empower people to recognise the symptoms of sepsis, deterioration and obtain urgent medical assistance through a targeted stakeholder engagement approach.
Process

In September 2023, the NSW Urgent Sepsis Expert Advisory Group was assembled, comprising multidisciplinary clinicians across relevant specialty groups. This group facilitated the exploration of strategies for enhancing sepsis care in response to a surge in paediatric sepsis cases.
Learnings from this group, along with extensive consultation with key stakeholders, including Sepsis Australia, the NSW Health Clinical Excellence Commission, NSW Ambulance, healthdirect, the Australian Commission on Safety and Quality in Healthcare and the Royal Australian College of General Practitioners informed the campaign's development. In partnership, NSW Health ensured the campaign materials aligned with clinical best practices and tailored to the needs of both clinicians and the public.

Analysis
The campaigns educational component targeted the high-risk groups of developing sepsis and priority populations including Aboriginal and Torres Strait Islander people and culturally and linguistically diverse communities. Key messaging highlighted the serious nature of sepsis and empowering the public to ask their doctor 'could it be sepsis?' if concerned and sicker than ever before.

Outcomes
This is the first sepsis public education and awareness campaign to be launched in NSW and has run over 2 consecutive years. Through a collaborative effort, a suite of resources were developed, including a website landing page with a public-facing sepsis fact sheet, social media tiles, clinician-led educational videos, and translated materials to reach diverse audiences. Campaign outcomes showed social posts were shared (a total of 34 posts) across a campaign period (17 March to 30 June 2024) and it was seen a total of 1,326,160 times (total impressions). The landing page was viewed 53,071 times. Further results are forthcoming.

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Capabilities for operationalising One Health: A survey of stakeholders in South Australia

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

Context and aim
The Australian Government has recently established a national Centre for Disease Control, adopting a One Health (OH) approach to respond to health challenges. However, limited knowledge of key stakeholders' attitudes, practices and capacity regarding OH strategies across human, animal, and environment sectors may hinder effective implementation and compromise responses to emerging threats.

Methods & analysis
An online survey with stakeholders from government and non-government organisations across OH-related disciplines and sectors was undertaken in South Australia. Of the 45 respondents, 48.7% were from environmental sciences and 23.5% from human health.

Results
Although 60% reported limited OH knowledge, over half indicated involvement in cross-sector collaborations. Current OH activities focused on prevention and preparedness, surveillance, and managing zoonotic and emerging infectious diseases. Major challenges included insufficient funding, inadequate staffing, and poor inter-sectoral communication. Clear stewardship and leadership from local and state governments were considered crucial for implementing initiatives and delivering services.

Conclusions
Gaps in knowledge and practices for operationalizing OH in South Australia were identified, emphasising the need for sustainable funding and training to build expertise among future OH staff.

Implications for Public Health
The insights enable the prioritisation of planning efforts to enhance capacities for prevention and preparedness using a OH approach.

Preterm birth and the risk of RSV infection in the Northern Territory

Associate Professor Michael Binks[1,2], Dr Tejal Shah[1], Dr Jemima Beissbarth[1], Dr Bianca Middleton[1,3], Dr Kiarna Brown[1,3]
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6A - RSV prevention, Halls CD Lower Section, June 12, 2025, 11:00 AM - 12:30 PM

Background: The Northern Territory (NT) has some of the highest reported rates of both preterm birth and respiratory syncytial virus (RSV) infections globally. The aim of this study was to determine the influence of preterm birth on the risk of hospitalisation for RSV associated acute respiratory infection (RSV-ARI) among NT infants in their first year of life.
Materials and Methods: We assembled a retrospective NT population-based cohort of mother-infant pairs using perinatal and hospital inpatient datasets spanning a 10-year period from January 1st 2008 to December 31st 2017. Preterm birth was defined by a gestation of <37 weeks. RSV-ARI was defined by ICD-10-AM codes (J00-J22 or A37-A37.9 or H65-H67.8 or H72-H72.9). RSV-ARI risk was compared between preterm and term infants using a generalised linear regression model.
Results: The cohort comprised 31,513 babies born to 22,294 mothers. Overall, 9% were born preterm and these infants had approximately twice the risk of RSV-ALRI hospitalisation (4% versus 2%) compared to term born infants (RR 1.95, 95% CI 1.62-2.35). This finding remained significant after adjustment for demographics (e.g. remoteness, geography, age), obstetric complications, birth and infant characteristics (aRR 1.53, 95% CI 1.26-1.87). In the multivariate model, First Nations infants, infants of young mother (<19 years), those living remotely or in the central desert region also had a significantly higher risk of RSV-ALRI. In contrast, female infants, infants of women having their first pregnancy or receiving antenatal care in the first trimester had a significantly lower risk of RSV-ALRI.
Conclusion: Preterm birth is a substantial risk factor for infant RSV infections. Mothers at high-risk of preterm birth should consider earlier maternal RSV vaccination.

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Improving the readability of written public health consumer resources

Dr Gabriela Willis[1], Naomi Nelson[1], Dr Ben Scalley[1]
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2C - Mandates and messaging, Room E2, June 10, 2025, 1:30 PM - 3:00 PM

Context:

Boorloo (Perth) Public Health Unit regularly provides written information to consumers to assist with public health management of communicable disease. We recently undertook a project to improve the readability and comprehension of our consumer resources to ensure our consumers were making informed decisions about their health care and to improve health literacy. We used plain language, visual aids and bright colours, and simplified information where possible, incorporating feedback from consumers and key stakeholders including the Aboriginal Health Council WA, Derbarl Yerrigan Health Service, and staff from our Aboriginal Health Team.

Aim:
We aimed to assess old and new consumer resources using word count, number of words per sentence, Flesch Reading Score, Flesh-Kincaid Grade Level, and an adapted Patient Education Materials Assessment Tool for Printable Material (PEMAT-P). We are also seeking qualitative feedback from key stakeholders, including the North Metropolitan Health Service Aboriginal Cultural Advisory Group.

Analysis and Outcome:
Objective measures of readability were higher in the new resources as compared to the previous resources, with a mean reduction in number of words of 97.9, an increase in Flesch Reading Ease Score from a mean of 53.7 to 70.1 (a higher score indicates content is easier to read and understand), a decrease in mean Flesch-Kincaid Grade Level from 9.8 to 6.3 (Grade level of 7 or below is advised for consumer health resources). The PEMAT-P scores also demonstrated an improvement in readability and comprehensibility with the new resources. We will also aim to present qualitative findings at the conference if accepted.

Conclusion:
Written public health resources should be readable, engaging, and easily understood by consumers, in order to facilitate informed health decision-making. This evaluation demonstrates that our new resources are more readable and more understandable for consumers.

Aboriginal Community Engagement
If any of the feedback sought from the North Metropolitan Health Service Aboriginal Cultural Advisory Group is included in the presentation, we will consult with them and seek endorsement prior to the presentation. Additionally, the Boorloo PHU Aboriginal Health Team supports presenting the findings.

A Decade Apart: Epidemiology of Pertussis Epidemics in NSW, 2015 and 2024

Ms Ella Madden[1], Dr Andrea Parisi[1,2], Dr Sally Ellis[1], Dr Christine Selvey[1], Professor Janaki Amin[1,3]
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6F - Pertussis, Riverbank Room 4, June 12, 2025, 11:00 AM - 12:30 PM

Introduction
Pertussis notification rates were at an all-time low during the COVID-19 pandemic. There was a resurgence of cases in Australia in 2024, with NSW recording the most cases since it became notifiable in 1991. We compared the characteristics of the epidemic of 2024 to the previous NSW epidemic in 2015.
Methods
A retrospective observational analysis was conducted using data from the NSW notifiable conditions database (NCIMS). Notification rates in 2015 and 2024 were compared by age group, sex, and remoteness as defined by the accessibility/Remoteness Index of Australia Plus (ARIA+) and incidence rate ratios (IRR) were calculated.
Results
In 2024, there were 25,694 pertussis notifications, more than double the 12,007 in 2015. The annual rate per 100,000 population doubled from 158 in 2015 to 315 in 2024 (IRR: 2.00, 95% Confidence Interval (CI): 1.95 - 2.04).
In 2015, the highest rates were in the 5-9 and 10-14-year age groups (617 and 594 per 100,000 population, respectively). In 2024, rates increased across all age groups, with the highest rates observed in the 10-14 age group (1,904 per 100,000), followed by the 5-9 age group (1,187 per 100,000). The largest increase was in the 10-14-year age group (IRR: 3.21, 95% CI: 3.07 - 3.35).
In 2015, rates were higher for females than males (166 vs. 149 per 100,000). In 2024, rates increased for both groups, with a more pronounced increase in males (317 vs. 312 per 100,000 population; IRR: 2.14 vs. 1.87).
Conclusion
We quantified a shift in pertussis notifications to older children between the epidemics of 2015 and 2024. Reduced pertussis circulation during the COVID-19 pandemic extended the duration between cyclical epidemics that naturally occur due to waning immunity. This disruption in exposure timing likely contributed to older children having lower-than-expected immunity and consequently higher rates of disease.

Immune impacts of infant whole-cell and acellular pertussis vaccination on co-administered vaccines

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6F - Pertussis, Riverbank Room 4, June 12, 2025, 11:00 AM - 12:30 PM

Background
Combination vaccines incorporating antigens that protect against multiple diseases reduce the number of injections infants need to receive and have been shown to be safe and highly effective. To efficiently protect infants over a short time frame, Australia's immunisation schedule involves co-administration of a variety of combination vaccines over the first months of life.

There are two main types of combination vaccines that protect against pertussis - whole-cell (wP) which contains inactivated pertussis bacteria and acellular pertussis (aP), which is a subunit vaccine. wP is more reactogenic but more protective against pertussis infection than aP. The two vaccine types also induce different immune profiles.

Stage 1 of OPTIMUM, a blinded, adaptive, randomised, controlled trial (ACTRN12617000065392), randomised Australian infants in a 1:1 ratio to receive either wP- or aP-containing vaccines as their first pertussis dose, co-administered with other scheduled vaccines.

This study investigated the immune impact of wP and aP as a first pertussis dose on the response to co-administered antigens of pneumococcal (13vPCV), Haemophilus influenzae type b (Hib-PRP) and hepatitis B (HBsAg).

Results and Outcomes
Between March 2018 and January 2020, 150 infants were randomised (75 per study arm). In infants receiving wP, antibody responses (IgG GMR) to all 13vPCV serotypes and Hib-PRP at 6, 7, 18, and 19 months old, as well as to HBsAg at 6 and 7 months old were non-inferior (>90% probability) to those in aP-receiving infants. In many instances, responses were superior in the wP-primed group for 13vPCV serotypes, Hib-PRP, and HBsAg compared to the aP-primed group.

Conclusion
This study provides evidence of the differing immunomodulatory effect of a wP primed schedule on co-administered vaccine responses compared to the standard schedule. While the impact of these effects remains uncertain, they highlight the possibility of harnessing co-administration of vaccines for the augmentation of vaccine immunity.

Ethnic inequalities in recent COVID-19 vaccination uptake among older adults in Australia

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1A - COVID-19, Halls CD Lower Section, June 10, 2025, 11:00 AM - 12:30 PM

Background
Australia achieved 99% coverage for the first two doses of the COVID-19 vaccine among those aged 70 and older in 2022, but uptake of 2023 pre-winter COVID booster vaccinations was lower. Recent COVID-19 vaccination rates are lower among overseas-born individuals and those with limited English proficiency, but no research has identified which specific ethnic groups have the lowest uptake.

Methods
We created a population-based cohort study by linking the Census and the Australian Immunisation Registry to examine COVID vaccination uptake 01/01/2023 to 30/06/2023. The study sample included all those aged 65 years and over who responded to the Census and were still alive and in Australia by the end of the study period (N= 4047320). Ethnicity was based on self-reported ancestry in the Census. We calculated the age-standardised percentage receiving a recent COVID-19 vaccine dose by ethnicity stratified by sex.

Results
Preliminary results found an overall recent vaccination uptake of 44.5% for males and 44.3% for females. However, the recent vaccination rate was 20% or lower in those of North African and Middle Eastern, Central Asian, South Eastern European, Central American and Pasifika ethnicity. There were also important differences by sex. Lower vaccination rates in females tended to be observed in ethnic groups with the lowest overall vaccination rates (12.0-26.6%). In contrast, lower vaccination rates in males were observed in those of Latin American, Caribbean or North American ethnicity who had vaccination rates of 28.4-47.5%.

Conclusions
We found large ethnic inequalities in recent COVID-19 vaccination uptake in older Australians. We also found important intersections between sex and ethnicity in vaccination rates. We will be further exploring intersections with migration-related factors and socioeconomic position in the work. These findings highlight the need for targeted public health strategies that actively engage with priority communities to address these vaccination inequalities.

Scabies and soil-transmitted helminth epidemiology throughout an integrated control program in Vanuatu

Dr Adam Bartlett[1], Elizabeth Nguyen[1], David Kennedy[1], Saiful Islam[1], Gladymar Perez Chacon[1], Clare Dyer[1], Stephanie Tabe[2], Garae Mackline[2], Fasihah Taleo[3], Julie Jacobson[4], Susana Vaz Nery[1]
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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Background: The Vanuatu Ministry of Health, supported by the Pacific Integrated Neglected Tropical Diseases Elimination (PINE) project, aimed to deliver two rounds of mass drug administration (MDA) to accelerate the control and elimination of scabies, yaws and soil-transmitted helminths (STHs) in Tafea, Sanma and Shefa provinces. Prevalence surveys were integrated with MDA activities to assess the prevalence of scabies and STHs, as well as evaluate self-reported yaws.
Methods: Cluster prevalence surveys in a random selection of villages were integrated with the first round of MDA in Tafea (November 2021), Sanma (August 2022) and Shefa (April 2023) (pre-MDA surveys); and with the second round of MDA in Tafea (December 2023) and Shefa (May 2024) (post-MDA surveys). Cluster adjusted prevalence estimates for scabies and STH species were calculated for each area council and province for the pre- and post-MDA surveys.
Results: Scabies was most prevalent in Tafea with a prevalence of 14.1% (area council range 0.4, 28.1) and 11.9% (range 0, 20.0) at pre- and post-MDA surveys, respectively. At follow-up there were 4 area councils with a scabies prevalence >10%. In Sanma, the pre-MDA scabies prevalence was 2.6% (range 0, 7.8), and in Shefa the pre- and post-MDA prevalence was 3.9% (range 0, 13.7) and 4.4% (range 0, 6.8), respectively. Soil-transmitted helminths were most prevalent in Tafea with a prevalence of 67.3% (range 0, 79.2) and 43.9% (range 8.9, 100) at pre- and post-MDA surveys respectively. At follow-up there were 5 area councils with a STH prevalence >50%. In Sanma, the pre-MDA STH prevalence was 22.5% (range 3.1, 44.8), and in Shefa the pre- and post-MDA prevalence was 40.9% (range 16.7, 73.3) and 21.7% (range 0, 31.1), respectively.
Conclusion: There remain several area councils in Tafea with scabies prevalence above the World Health Organization (WHO) MDA threshold of 10% and at high risk for STHs (prevalence >50%). Monitoring and evaluation should continue with ongoing MDA programs to inform targeted interventions and track progress toward control and elimination targets.

3,2,1 HPV on trend – the SAEFVIC experience

Ms Georgina Lewis[1,2], Mrs Adele Harris[1,2], Ms Daneeta Hennessy[1,3], A/Professor Hazel Clothier[1,3,4], Professor Nigel Crawford[1,2,4]
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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
The human papillomavirus (HPV) vaccine was included in Australia's National Immunisation Program (NIP) school-based program for females in 2007 and males from 2013. Since then, the program has undergone several changes. Initially recommended as a 3-dose schedule using 4-valent HPV vaccine (Gardasil™), in 2018 the HPV vaccine moved to a 2-dose schedule, and replaced with the 9-valent vaccine (Gardasil®9). In February 2023, based on emerging evidence, the program moved to a single dose schedule for immunocompetent adolescents aged 12–13 years.

Methods
SAEFVIC is the reporting service in Victoria for Adverse Events Following Immunisation (AEFI) and integrated with clinical services. A search of the SAEFVIC database was undertaken for the period 2007 to 31 December 2024 for individuals aged 11-16 years following HPV vaccination.

Results
1,734 AEFI reports were identified, corresponding to 2,869 adverse events. 61% of reports were following dose 1 with median age 12 years old and 61% relating to females. 884 (51%) had a concomitant vaccination (i.e. Boostrix). The most frequently reported AEFI were urticaria/rash (14.7%) followed by vasovagal (syncope) (12.6%), injection site reaction (8.9%) and headache (7.7%). 438 (25%) of individuals were seen in a specialist Immunisation clinic (SIC) with main reason for consult being rash/urticaria and vasovagal episodes. Since moving to a single dose schedule, SAEFVIC has only received 75 reports following HPV vaccination and 7 individuals seen in a SIC.

Conclusion
As expected with the introduction of a new vaccine, AEFI reporting volume was high in 2007/2008 as demonstrated by the 26 cases of 'mass psychogenic response' reported at a Melbourne school shortly after the program commencement. Reporting increased again in 2013 with the introduction for males before stabilising in line with dosing schedule changes. Over the past 18 years, SAEFVIC has supported uptake of the 9-valent HPV vaccine through safety messaging for healthcare providers and consumers via phone counselling and specialist clinic referral where required.

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Cost-effectiveness of alternative hepatitis C diagnostic pathways for people who inject drugs

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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Background: Eliminating hepatitis C virus (HCV) requires efficient testing and treatment strategies. We evaluated cost-effectiveness of alternative approaches to HCV diagnosis and treatment initiation for treatment-naive people who inject drugs attending Australian community settings.

Methods: We compared seven strategies differing by use of antibody screening, laboratory and/or point-of-care tests; and the stage at which treatment was commenced. Outcomes were treatment initiation and completion. We considered costs from a healthcare sector perspective at a one-year time horizon. We used decision analytical models parametrised with publicly available estimates, assuming equivalent probabilities of treatment completion given RNA confirmation across strategies.

Results: Standard of care laboratory antibody then RNA testing on separate samples (33% treatment uptake, 95%CI: 32-34%) was cheapest but least effective per person screened. Laboratory antibody then reflex RNA testing on one sample (47% uptake, 95%CI: 46-48%) provided higher effectiveness and was the only strategy to reduce average cost per completion. Combined point-of-care antibody and RNA testing (57% uptake, 95%CI: 46-66%), point-of-care RNA alone (61% uptake, 95%CI: 50-70%), and point-of-care antibody with immediate treatment initiation (90% uptake, 95%CI:80-95%) in turn provided incremental improvements in completion at higher average costs per completion. The lower cost per completion for reflex laboratory testing was insensitive to RNA prevalence; changes in treatment uptake of at least 16 percentage points were required to achieve equivalence with point-of-care strategies. Although treatment of non-viraemic individuals contributed substantially to the higher costs of point-of-care strategies at the base-case medication cost (63% discount to the Australian list price), reflex laboratory testing remained less costly per completion at generic medication prices.

Conclusions: Reflex RNA testing was the most efficient strategy and could be implemented within the existing Australian laboratory framework. Point-of-care approaches may provide additional benefit at higher near-term costs. Studies accounting for transmission and disease sequelae are needed to understand cost-effectiveness in the longer term.

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Enhancing Public Health Interventions: Innovative Communication Strategies for Disease Outbreak Management

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3C - Outbreak response, Room E2, June 10, 2025, 3:30 PM - 4:55 PM

In response to emerging diseases and the growing need for timely public health interventions, the Liverpool Public Health Unit (PHU) in South Western Sydney District (SWSLHD) implemented innovative communication strategies. Throughout 2024, SWSLHD observed significant spikes in notifications of cryptosporidiosis and pertussis. Cryptosporidium notifications in the three months ended 31 March 2024 ("Q1 24") increased 1,439% over the three months ended 31 March 2023, with 200 notifications in Q1 24 compared to 13 notifications in Q1 23. Pertussis notifications in the three months ended 30 September 2024 ("Q3 24") increased 4,268% over the three months ended 30 September 2023 ("Q3 23"), with 1,354 notifications in Q3 24 compared to 31 notifications in Q3 23. Following these increases, Liverpool PHU adopted a targeted survey aimed at identifying infection sources and ensuring efficient follow-up. This proactive strategy resulted in an over 60% response rate, significantly enhancing the identification and management of cases.

The survey method has since been expanded to address other public health concerns, such as foodborne illness outbreaks, highlighting its versatility and adaptability in managing various disease outbreaks. A key advantage of this system is the integration of secure survey forms, replacing traditional methods of phone calls, fax and email for communicating sensitive health information. This transition has improved confidentiality when following up on cases such as syphilis, particularly when liaising with health professionals in Sexual Health Clinics or general practices.

This innovative communication strategy has proven to be highly effective in facilitating rapid case follow-up, identifying sources of infection, and fostering public engagement in health initiatives. These advances underscore the potential for technology-driven solutions in enhancing public health responses and improving outcomes during disease outbreaks.
By integrating these modern communication tools, Liverpool PHU exemplifies how health services can adapt to evolving challenges, ensuring timely and effective public health interventions.

Reduction in RSV hospitalisations following implementation of infant nirsevimab program, Western Australia

Dr Lauren Bloomfield[1,8], Dr Nevada Pingault[1], Dr Rachel Foong[1], Ms Sarah French[1], Ms Jo-Anne Morgan[1], Dr Ushma Wadia[2,3,4,5], A/Prof Hannah Moore[3,7], Prof Christopher Blyth[2,3,5,6], Prof Peter Richmond[2,3,5], Dr Paul Armstrong[1], Prof Paul Effler[1,5], Dr Kaija Strautins[1]
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2A - Effectiveness of RSV prevention, Halls CD Lower Section, June 10, 2025, 1:30 PM - 3:00 PM

Introduction: Respiratory syncytial virus (RSV) is a major cause of lower respiratory tract infection in children and a leading cause of infant hospitalisation in Australia. Nirsevimab, a monoclonal antibody, provides protection against RSV-associated lower respiratory tract disease and was registered for use in Australia in November 2023. The Western Australia (WA) Department of Health commenced roll-out of the most age-inclusive universal program in Australia on 2 April 2024; all WA infants born from 1 October 2023 through 30 September 2024 were eligible nirsevimab to receive immunisation. This evaluation assesses the real-world impact of nirsevimab on RSV-associated hospitalisations among a cohort of infants entering their first RSV season.
Methods: The number of births during 2022-2024 were obtained from WA Registry of Births and the number of infants who received nirsevimab prior to 12 months of age were extracted from the Australian Immunisation Register. Laboratory-confirmed RSV infection is notifiable in WA and patient admissions are matched weekly to notifications. An RSV-associated hospitalisation was defined as a specimen positive for RSV collected 10 days before through 7 after days the individual's admission date during. The mean number of RSV-associated hospitalisations in 2022 and 2023 was defined as the 'expected' number for 2024.
Results: Of 30,920 eligible infants, 21,922 (71%) received nirsevimab. In 2024 there were 505 fewer RSV-associated hospitalisations than expected among infants aged <1 year (378 observed vs 883 expected). There was no reduction in RSV-associated hospitalisations observed in cohorts aged 1 to < 5 years (1,011 observed vs 847 expected), suggesting the decrease in infants was attributable to nirsevimab immunisation rather than lower overall RSV transmission in 2024.
Discussion: With approximately 70% of all nirsevimab-eligible infants immunised WA observed a 57% reduction in the expected number of RSV-associated hospitalisations. This equates to one hospitalisation prevented for every 43 infants immunised.

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Epidemiology of COVID-19 and influenza outbreaks in Perth residential aged care homes

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
There are over 200 residential aged care facilities (RACH) in metropolitan Perth who are required to report COVID-19 and influenza outbreaks to Boorloo (Perth) Public Health Unit (Boorloo PHU). While a key priority area when COVID-19 transmission commenced in WA, COVID-19 outbreaks in RACH are now managed alongside business-as-usual processes in PHU's. We aimed to describe the epidemiology of RACH outbreaks reported to Boorloo PHU since this transition has occurred, to inform future public health management and support.

Methods
We extracted outbreak data from the Boorloo PHU COVID-19 and influenza outbreaks REDCap database between 01/04/2023 and 31/12/2024 and descriptively analysed these data using R and R Studio.

Results
A total of 830 COVID-19 (94.9%) and 45 (5.1%) influenza RACH outbreaks were reported in the 21-month period 01/04/2023 to 31/12/2024 (mean 41.5 outbreaks/month). The median duration of outbreaks was 17 days (range 7-96). For COVID-19 outbreaks, the median number of resident cases was 9 (range 2-78) and median attack rate was 11.7% (range 0.5-93.7%), with ≥1 hospitalisation and ≥1 death being reported in 28.8% and 19.5% of outbreaks respectively. For influenza outbreaks, the median number of resident cases was 4 (range 2-17), and median attack rate was 6.4% (range 1.0-26.6%) with ≥1 hospitalisation and ≥1 death being reported in 51.1% and 20.0% of outbreaks respectively. Data presented at the conference will include a 24-month period from 01/04/2023 to 31/03/2025.

Conclusion
COVID-19 outbreaks in RACH are common and have significant impact on residents, staff, and visitors. Due to the high volume of outbreaks being reported and limited resources, PHU support for RACH is less than previously offered during the pandemic years. These data will inform a more detailed evaluation to better understand the impact of COVID-19 outbreaks on RACH and how we can optimise public health support provided.

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2024 Evaluation of the Pacific Public Health Surveillance Network

Associate Professor Meru Sheel[1], Ms Adeline Tinessia[1], Dr Ikram Abdi[1], Dr Adam Craig[The University of Queensland], Dr Peta-Anne Zimmerman, Dr Rebecca Rocket[1], Dr Sajani Nadeeka
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4D - Vaccine programs for the region, Riverbank Room 2, June 11, 2025, 1:30 PM - 3:00 PM

The Pacific Public Health Surveillance Network (PPHSN) is a Pacific regional health network that aims to build capacity for infectious diseases surveillance, laboratory testing, hospital infection prevention, and response. It operates through five themed sub-networks. The core objectives of PPHSN include enhancing the capacity of Pacific Member States for effective health surveillance, fostering the development of adequate surveillance systems, harmonising health data needs, and facilitating information sharing and communication within the region.

In March 2019, Pacific Member States requested an external evaluation of PPHSN. This evaluation aimed to examine the purpose, strengths, and limitations of the PPHSN, and its support of Pacific States progress towards International Health Regulation (IHR) 2005 core capacities compliance.

A Pacific-based technical advisory group was established to guide the evaluation. We conducted a document review, administered an online survey and conducted seven focus-groups to examine how PPHSN is meeting its objectives.

Twenty-seven documents were reviewed, 149 PPHSN users responded to the survey and 38 stakeholders were interviewed from across 22 Pacific Member States.
The review found key strengths and weaknesses in PPHSN's governance, performance, and perceived acceptability and usefulness of the network. The survey highlighted PPHSN's critical role of facilitating communication (75%; 45/60), timely surveillance (78%; 47/63), and effective capacity building in enhancing outbreak responses (86%; 31/36), while also identifying barriers such as unmodern communication channels (30%; 18/60) and the need for real-time data-sharing improvements (70%;12/42).

PPHSN's strengths lied in supporting regional communication and coordination of surveillance and outbreak response. It is well aligned to support implementation of IHR2005. However, the network experiences persistent challenges related to governance and funding structures, roles and responsibilities, and stretched public health workforce. Findings will inform the 5-year strategy for PPHSN to support PICTs strengthen outbreak preparedness and response activities.

From Evaluation to Action: Strengthening ARF and RHD CCHO Care

Dr Matthew O'Bryan[1,4], Dr Janika Dobbie[2], Louise Lawrie[1], Melinda Pascoe[1], Tanisha Ahmat[1], Dr Malcolm McDonald[1,3]
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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Community Controlled Health Organisations (CCHOs) play a vital role in delivering culturally safe and community-driven care. Acute rheumatic fever (ARF) and rheumatic heart disease (RHD) disproportionately impact Aboriginal and Torres Strait Islander communities. Since 2024, an integrated ARF/RHD service has been operating at Wuchopperen Health Service in Cairns, Far North Queensland. Aboriginal Health Workers and Practitioners (AHWs and AHPs) play the primary role in primordial and primary prevention activities, delivering these via outreach and in-reach services. These initiatives include household-level interventions that address home health hardware needs, delivering culturally safe healthy living education, and advocating for governmental agency action. In-reach activities focus on delivering culturally safe practices within the clinic, identifying and overcoming barriers to healthy skin practices and improving detection and treatment of skin infections that likely contribute to ARF risk.

Objective: To conduct a retrospective evaluation of the Wuchopperen ARF/RHD clinical service, assessing activities around primary, secondary, and tertiary prevention, service access and engagement, and patient loss to treatment or follow up. Findings will inform targeted quality improvement (QI) interventions.

Methods: A retrospective analysis of key performance indicators will be conducted using data reported to NACCHO. The evaluation will focus on four areas: (1) workforce capacity, (2) primary prevention activities, (3) incidence and prevalence of ARF/RHD, and (4) secondary and tertiary prevention activities. Descriptive statistics will assess clinic engagement rates, loss to treatment, and health outcomes. Identified service gaps will guide future QI initiatives.

Expected Outcomes: Findings will establish a baseline assessment of the ARF and RHD service activities and performance, highlighting strengths and identifying areas for further development. This evaluation will inform Phase 2 of the project, which will implement targeted QI interventions to enhance ARF/RHD care, including primary and primordial prevention activities.

Conclusion: By evaluating services, this study will generate insights to strengthen ARF/RHD care in CCHO-led clinics. Implementing data-driven QI initiatives will enhance patient outcomes, service efficiency, and sustainability in community-driven healthcare models.

Community Permissions: Permission for this service evaluation has been obtained from the Wuchopperen Director of Medical Services and is part of a wider project that has received CCHO board and ethics approval.

Solomon Islands HPV Big CatchUp vaccine campaign for Girls 9-14 years 2025

Ms Jennifer Anga[1], Dr Sarah Habu[1], Dr Divinal Ogaoga, Dr Patrick Cashman[2], Dr Tonia Marquardt[2]
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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
Solomon Islands has a population of 297,000 women aged 15 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 65 women are diagnosed with cervical cancer and 40 die from the disease in Honiara.
Gardasil HPV vaccine was introduced in 2019 and the coverage of 9 – 14 you girls that year was 52% (25,773/49,423). However, with the COVID-19 pandemic and subsequent lock down, school closures and staff diverted to Covid vaccination the HPV vaccine services were affected resulting in the coverage for 2021 and 2022 being 6.3% (3268/51540) and 6.5% (3413/52803) respectively.
Methods
A nationwide big catch-up (BCU) campaign for HPV vaccine for school girls 9-14 years with integrated community outreach is planned for April 2025. The Solomon Islands plans to conduct intensified outreach for a period of 3 weeks covering around 854 schools and selected communities. It is estimated that 30% of community outreach involves a team camping at the sites in the outer Islands. Provincial Teams mostly consist of 2 Health workers and a Community mobiliser.
Results
The target population for school girls 9-14 years of age in 2025 is 55,242 with approximately 27,000 unvaccinated for HPV who will be the target for this campaign. There are estimated to be 14,550 girls in the 9-14 year cohort out of school who need to be identified and vaccinated through local clinics. There will be an extensive health promotion campaign prior targeting teenage girls and their families, teachers and community leaders with HPV messaging and that vaccines are for all of the life course.
Conclusion
The coverage of the Solomon Islands Big Catch Up Campaign April 2025 will be reported with a focus on operational challenges.

New-onset diabetes following SARS-CoV-2 Omicron infection: a matched cohort study

Dr Jiahui Qian[1,2], Ms Sandrine Stepien[1], Dr Allen Cheng[3], Dr Anthony Newall[2], Dr James Wood[2], Dr Stacey Rowe[4,5], Dr Kelly Thompson[6,7], Ms Bronte O'Donnell[8], Dr Gregory Dore[9], Dr Kristine Macartney[1,11], Dr Bette Liu[1,2]

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6B - Shingrix and COVID-19 vaccine safety, Room E1, June 12, 2025, 11:00 AM - 12:30 PM

Background

Earlier studies have suggested that infection with ancestral and earlier SARS-CoV-2 variants increased the subsequent risk of developing diabetes. However, evidence on the Omicron variant and the impact of COVID-19 vaccine boosters remains limited.

Methods

A population-based, matched cohort study was conducted using linked data from the AIHW COVID-19 Register. Individuals 16+ years diagnosed with COVID-19 between 15 December 2021 and 31 December 2022 were matched to those without COVID-19 by age, sex, and COVID-19 vaccine recency. The primary outcome was the initiation of diabetes treatment, with negative control outcomes including emergency department presentations for acute injuries and new trimethoprim dispensing. Cox regression with inverse probability of treatment weighting (IPTW) was used to estimate the association between COVID-19 and the outcomes.

Results

There were 5,736,501 matched pairs with and without COVID-19 exposure followed an average of 200 days during which 45,816 initiated diabetes treatment. Individuals with COVID-19 had a 15% higher risk of initiating diabetes treatment (HR 1.151[95%CI 1.136; 1.167]). Higher risk was observed among those hospitalised due to COVID-19 (HR 2.952 [95%CI 2.704; 3.221]) and those who received ≤2 COVID-19 vaccine doses (HR 1.250 [95%CI 1.226; 1.275]). The lowest risk was observed among individuals who received a booster within the past 90 days (HR 1.055 [95%CI 1.026; 1.085]. Negative control outcomes showed a positive association with COVID-19 exposure.

Conclusion

Our findings are consistent with previous research showing an increased risk of diabetes following COVID-19 and further extend the evidence to the Omicron period and show the protective effect of COVID-19 boosters. However, the increased diabetes risk should be interpreted with caution, given analyses of negative control outcomes suggest the existence of potential unmeasured confounding factors.

Parental Attitudes Towards Immunisation and Vaccination against Respiratory Syncytial Virus (RSV), WBHHS

Dr Matthew O'Bryan[1,2], Dr Arif Khan[1,3], Dr Alan Lam[1], Fiona Taylor[1], Dr Josette Chor[1]
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5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

Respiratory Syncytial Virus (RSV) is a leading cause of severe respiratory infections in infants, resulting in significant paediatric hospitalisations and placing a substantial healthcare burden in Australia. In Queensland, despite the availability of effective prevention strategies, including infant immunisation and antenatal maternal vaccination, uptake remains suboptimal. Understanding parental attitudes and barriers to acceptance is critical for enhancing immunisation coverage.

In 2024, Queensland, Australia, experienced approximately a 40% increase in RSV cases compared to the previous year, with confirmed diagnoses rising by over 11,000 to exceed 40,000 cases.1,2 Among these, more than 10,600 children under the age of 2 were diagnosed with RSV, accounting for about a quarter of all infections.2 Additionally, 2,000 children under 2 years old with RSV infection required hospitalisation, highlighting the substantial burden on healthcare services and the potential severity of disease.2

This study aims to explore the demographic, socio-economic, and informational factors influencing parental acceptance of RSV immunisation (Nirsevimab) for infants and antenatal RSV vaccination (Abrysvo) in Wide Bay, Queensland, Australia. The study also compares parental preferences between RSV immunisation and other early-life vaccinations.

A cross-sectional survey will be conducted among parents who delivered at Wide Bay Hospital and Health Service (WBHHS) facilities between February and November 2024. Eligible participants will be invited via SMS to complete an anonymous online questionnaire hosted on REDCap. A case-control approach will be employed, defining parents who accept RSV immunisation as controls and those who decline as cases, with a 4:1 matching ratio based on demographic characteristics. Statistical analyses, including logistic regression, will identify key predictors of immunisation acceptance.

This study will provide insights into factors shaping parental decisions regarding RSV immunisation, including healthcare provider influence, perceived vaccine safety, and socio-economic determinants. Findings will highlight potential barriers and facilitators, guiding targeted interventions to improve vaccine uptake.

1. Queensland Health Epidemiology: Queensland Acute Respiratory Infection Surveillance Report 2023.
2. Queensland Health Epidemiology: Queensland Acute Respiratory Infection Surveillance Report 2024.

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Optimisation of Cultured ELISpot for investigation of SARS-CoV-2 reactive central memory T-cells.

Dr Jack Jerome[1], Dr Kirsty Wilson[1], Mr Joshua Fialho[1], Ms Georgia Goodchild[1], Dr Monica Prakash[1], Dr Charlie McLeod[2,3,4,5], Professor Peter Richmond[2,5,6,7], Professor Vasso Apostolopoulos[1], Professor Katie Flanagan[1,8,9], Dist Professor Magdalena Plebanski[1]
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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

The numerous and ever evolving prevalence of SARS-CoV-2 variants post-pandemic stresses the importance of vaccination strategies to consider the breadth and longevity of the protection conferred. Despite the significance of central memory T-cells in vaccine conferred immunity, the leading functional assay, the cultured ELISpot, has varied protocols between laboratories with no systematic investigation for its implementation in analysing SARS-CoV-2 immune responses. Our study presents an optimised cultured ELISpot protocol for detecting central memory T-cell interferon gamma (IFNγ) responses against SARS-CoV-2 peptides following an initial priming with either peptides, or whole spike protein. Key variations optimised include the culture length, timing of exogenous survival signals (IL-2), endpoint analysis modality (chromogenic vs fluorescent) and cell density to enhance assay sensitivity without compromising specificity for central memory T-cell IFNγ recall responses to cognate antigen.

With regards to lower-frequency T-cell interactions, as observed with our donor SARS-CoV-2 epitope responses, we describe Fluorospot (Fluorescent ELISpot) to be preferable to the chromogenic ELISpot modality, enhancing assay sensitivity and specificity for cognate antigen recall responses while minimising the generation of visual artefacts. In-line with current papers within the literature, we utilised CCR7+ depleted PBMC fractions to validate our assay to selectively detect central memory T-cell driven responses.

Lastly, we provide preliminary evidence for the capacity of our assay to delineate individual responding peptides following peptide pool priming, and to explore cross-reactivity between viral variant peptides (Wuhan vs XBB.1.5) at an individualised donor level. This study advances the methodology for investigating central memory T-cell immunity, particularly in the context of SARS-CoV-2, and emphasises the balance between enhancing specific cognate central memory responses while limiting non-specific activation. Further implementation of our methodology within the literature may serve to enhance our understanding of central memory responses to specific peptide antigens, and further explore vaccine induced cross-reactivity to viral variants.

Acute Childhood Encephalitis Surveillance in Australia: insights into causes and outcomes

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4C - Zoonoses & arboviruses, Room E2, June 11, 2025, 1:30 PM - 3:00 PM

Background: Encephalitis is inflammation of the brain parenchyma with heterogenous aetiology and presentation. In children, it often leads to adverse neurological outcomes. The Australian Childhood Encephalitis (ACE) study is a multi-centre prospective cohort study that aimed to describe the clinical features and long-term outcome of all-cause childhood encephalitis in Australia. It was undertaken through the Paediatric Active Enhanced Surveillance (PAEDS) network, and transitioned from a grant funded cohort study (2014-2018) to public health surveillance in 2019.

Methods: Cases of suspected encephalitis were actively identified from 5 paediatric tertiary hospitals 2013 to 2018 , then expanded progressively to 8 hospitals from 2019. An expert panel categorised cases into aetiological subgroups. Under the cohort study, follow-up was conducted at discharge and 12 months using the Liverpool outcome score for encephalitis as the primary outcome. Univariate logistic regression was used to determine predictors of adverse outcome, and a multivariate logistic model constructed. Additionally, we compared causal distributions across sites from the cohort period (2014-18) and subsequent surveillance period (2019-).

Results: From the cohort study (2013-18), of 724 suspected cases identified, 408 were confirmed as having encephalitis (58% infectious, 23% immune mediated, 19% of unknown aetiology). Recovery was incomplete in 58% of children at 12 months. Children with infectious encephalitis presented younger and showed divergent outcome progression from discharge to 12-month follow-up. Immune mediated encephalitis showed improved neurological outcome at 12 months relative to discharge. Several clinical and aetiological features predicted worse neurological outcomes at 12 months in a multivariate model. Since 2019, following transition to surveillance only, of 1027 suspected cases identified, 669 were confirmed as having encephalitis (59% infectious, 24% immune mediated, 16% of unknown aetiology).

Conclusions: Encephalitis in children results in a considerable ongoing disease burden with clinical features and outcome differing based on disease aetiology. Neurological deficits may evolve over time and close monitoring of children for at least 12 months is warranted. Surveillance causal distributions closely resemble those identified in an earlier cohort study.

Establishing comprehensive safety surveillance for RSV immunisations in Victoria

Ms Daneeta Hennessy[1,2], Mr John Mallard[1,2], Dr Aishwarya Shetty[1,2], Dr Jim Black[3], Dr Sedigh Khademi[1], Prof Jim Buttery[1,2,4,5], A/Prof Hazel Clothier[1,2,4,6]
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4A - RSV and pregnancy vaccine safety, Halls CD Lower Section, June 11, 2025, 1:30 PM - 3:00 PM

Respiratory syncytial virus (RSV) prevention in Victoria in 2025 comprises three newly introduced products: a long-acting monoclonal antibody for infants, and vaccines targeted to pregnant women and older adults. Phase IV post-licensure safety surveillance is essential to confidently describe the benefit-risk profile of these products, but no single data source captures the full spectrum. We describe the development of comprehensive real-world RSV safety surveillance in Victoria.

Methods
We combined passive surveillance reporting of adverse events following immunisation (AEFI) and secondary use of administrative health datasets to assess AEFI associated with RSV immunisation at all levels of healthcare:
-Spontaneous reporting (SAEFVIC)
-Immunisation records linked to emergency department presentations, hospital admissions, notifiable conditions and mortality records for the whole Victorian population (Vaccine Safety Health Link, VSHL)
-General practice immunisation and diagnosis data from practices in Victoria and NSW (SAFESIG-GP)
-Victorian emergency department presentations and Nurse on Call (telehealth) calls related to immunisation, identified using natural language processing of triage notes (SynSurv-AEFI)

Key case definitions and epidemiological measures were harmonised across data sources, with additional metrics developed where individual data sources can address AEFI of concern (eg. pregnancy outcomes in VSHL). Analysis involves description of the safety profile, comparison against background rates and other vaccines, and rapid cycle analysis for signal detection for each product.

Results
Information derived from each data source (updated daily, weekly, or monthly) feed dynamically into a single consolidated report.
At 28 February, three weeks into the RSV program, vaccination error was the most frequent report to SAEFVIC (n=10, 43% of reports). SynSurv-AEFI identified four emergency department presentations within 24 hours of presentation, demonstrating the system’s potential for rapid signal detection.

Conclusion
Surveillance utilising multiple data sources across the healthcare spectrum overcomes limitations with individual data sources to provide essential timely intelligence, informing the safety of new immunisation programs.

VaxPulse Query-Corner: Vaccine Discourse Analysis Through Bot Detection and Retrieval Augmented Generation

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Vaccine hesitancy is a serious threat to public health, leading to vaccine rejection or delayed vaccine coverage. Social media (SM), a quick information source, has been a source of vaccine misinformation, which negatively impacts global vaccination rates. It has become essential for identifying vaccine public sentiments, concerns, and topics of discussion. Moreover, the information on SM is not driven exclusively by genuine human-run accounts. The contribution of social bots in vaccine-related discussions complicates the reliability of social media data.
To address these challenges, we developed VaxPulse Query Corner (VaxPulse QC), a Retrieval Augmented Generation-based tool designed to enhance the reliability of social media analysis for vaccine-related discussions. This tool answers complex queries from public health administrators and other stakeholders, helping them understand public concerns regarding vaccines on various online platforms by bridging the knowledge gap.
While Large Language Models (LLMs) can answer queries, they lack real-time awareness of events and anxieties, and are prone to hallucination, a critical risk in public health messaging. Recognising these limitations, VaxPulse QC is a Retrieval Augmented Generation-based tool to overcome the challenges of traditional methods and LLMs.
The same tool could be used to segregate human and bot-generated SM comments to provide us with crucial insights into the spread of misinformation and genuine public concerns. For instance, conducting a temporal analysis could help us to understand the transfer of concerns from bots to humans. VaxPulse QC segregates bot and human concerns using our bot detection tool, followed by an iterative process: (a) extracting and ranking relevant comments, (b) compressing context, and (c) generating differentiated outputs. Analysing 7,847 Shingrix® zoster vaccine posts, it achieved 90% recall, with average answer faithfulness and relevancy scores of 0.96 and 0.94.

Effectiveness of nirsevimab against RSV infection in Queensland infants: A descriptive study

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2A - Effectiveness of RSV prevention, Halls CD Lower Section, June 10, 2025, 1:30 PM - 3:00 PM

Background

Respiratory syncytial virus (RSV) is a leading cause of hospitalisations for acute lower respiratory tract infections in Australian infants. In April 2024 nirsevimab, a long-acting RSV-specific monoclonal antibody, was made available free of charge to all newborn infants in Queensland. Here we explore the community-level effects of nirsevimab introduction on RSV incidence at the population level.

Methods

A retrospective analysis was conducted of laboratory data collected prospectively by Sullivan Nicolaides Pathology (SNP) as part of routine surveillance. SNP is a network of private referral diagnostic laboratories; it undertakes about 40% of community laboratory tests in Queensland. We descriptively analysed monthly counts of RSV for children aged <1-year from January 2022 to October 2024.

Results

In total 21,921 tests were analysed (2022: 6,183; 2023: 5,618; 2024: 10,120), with 3,221 (14.7%) RSV-positive. The percentage of RSV positive tests declined from 15.8% in 2022 and 16.0% in 2023 to 13.3% in 2024. RSV detections were more common in males (1,713, 53.2%), with similar distributions across years.

Positive test percentages were compared across years during the peak RSV season (May to October). Of 15,574 tests in this period 2,216 (14.2%) were positive. Following the introduction of nirsevimab, monthly RSV-positive tests decreased among children aged 0–6-months (2022: 337/1,809 (18.6%); 2023: 207/1,287 (16.1%); 2024: 308/2,972 (10.4%)). A similar decline was observed in children aged 7–11-months (2022: 518/2,623 (19.8%); 2023 321/2,107 (15.2%); 2024: 525/4,776 (11.0%)).

Discussion

Nirsevimab introduction in Queensland coincided with a notable decline in RSV test positivity among infants in the first year of life. An interrupted time series analysis is underway to better understand the impact of nirsevimab and observed changes in disease metrics data.

Acknowledgment

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A comparative analysis of Victorian mpox outbreaks 2022-2025

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1C - Mpox response, Room E2, June 10, 2025, 11:00 AM - 12:30 PM

Introduction

A global outbreak of the viral disease mpox commenced in 2022. Australia experienced two distinct outbreak periods in 2022 and 2024, mainly affecting Victoria and New South Wales.

Aim

We aimed to compare the epidemiological features of Victorian cases between the two outbreak periods to inform control efforts.

Methods

We extracted records of confirmed mpox cases in Victoria from the Public Health Event Surveillance System (PHESS) and categorised cases by notification date: pre-2024 outbreak (May 2022 to March 2024), and 2024 outbreak (April 2024 to January 2025). Demographic, clinical and risk characteristics were compared across these periods.

Results and discussion

Between May 2022 and January 2025, 578 mpox cases were notified in Victoria; 499 were during the 2024 outbreak. In both outbreaks, cases had a median age of 36 years and 99% were male, with 6 female cases and one child case in the 2024 outbreak. Local transmission dominated the 2024 outbreak; imported cases decreased from 44% to 3%. Geographic distribution of cases shifted from northern to central and western Melbourne. Male-to-male sexual contact was identified in 90% of cases in both time periods.

The 2024 outbreak saw an increase in cases living with HIV (13% to 23%) and cases on HIV pre-exposure prophylaxis (PrEP) (43% to 61%), reflecting rapid community uptake of PrEP. Vaccination rates (two doses) among cases rose from 11% to 41%.

No deaths were reported. Hospitalisation and emergency department presentations decreased from 11% to 9% and 15% to 10% respectively, likely due to increased vaccination uptake or reduced case ascertainment.

Conclusion

This analysis highlights the shifting epidemiology of mpox in Victoria since its emergence. The 2024 outbreak was larger, with broader geographic and demographic distribution and decreased case severity. Increased involvement of people engaged in HIV prevention and care demonstrates an opportunity to improve vaccination uptake in these cohorts.

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Japanese encephalitis live attenuated chimeric vaccine administered intradermally versus subcutaneously: 6-month seroprotection

Dr Clementine David[1], Dr Emma Goeman[1,2], Dr Narayan Gyawali[4], Dr Nirupama Nammunige[4], Dr Tom Douch[6], Alison Nikitas[7], Isabel Li[3], Professor Ian Marschner[3], Keira Glasgow[8], Jennifer Case[8], Dr Kerry Chant[8], Associate Professor Gregor Devine[4], Associate Professor Luis Furuya-Kanamori[5], Professor Colleen Lau[5], Professor Nicholas Wood[1,2]

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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

Background: Japanese encephalitis virus (JEV) caused 45 human cases and 7 deaths on mainland Australia in 2021-22(1) and has resurged since December 2024(2). Live-attenuated chimeric (Imojev®) and inactivated (JEspect®) vaccines are available. The JEVID-2 study evaluated immunogenicity and safety of fractional intradermal (ID) Imojev® in comparison with subcutaneous (SC) administration.

Methods: JEVID-2 was a randomised controlled trial of single-dose ID (0.1 mL) versus SC (0.5 mL) Imojev® in healthy, non-pregnant individuals aged ≥5 years in rural New South Wales. Plaque reduction neutralisation serum antibody titres (PRNT50 using JEV Nakayama strain) were performed before, and 1 week, 1 month, and 6 months after, immunisation. Seroconversion was defined as PRNT50 ≥ 1:10 at one month if seronegative at baseline, or a ≥ 4-fold rise in titre if seropositive at baseline.

Results: 236 eligible participants, median age 63 (IQR 50-70), were vaccinated (SC n= 120; ID n=116). One-month seroconversion rates were non-inferior ID (96.5% [95% CI: 91.2%, 99.0%]) compared with SC (99.2% [95.4%, 100.0%]); difference -2.7% [-7.3%, 1.9%].(3)

Overall JEV seropositivity after 6-months was 95.6%, with no significant difference between ID (97.3% [92.0%, 97.9%]) and SC (94% [88.0%, 97.5%]); difference 3.3% [-2.9%, 9.5%]. From >1 to ≤6 months of follow up, 11 serious adverse events were reported, 6 in the ID group (6/116 patients, 5.2%) compared to 5 in the SC group (5/120, 4.2%). None of the SAE were considered vaccine-related.

Conclusion: ID administration of Imojev® remains non-inferior to SC in terms of seroprotection at 6-months. Intradermal administration may be a suitable dose- and cost-saving strategy during the current JEV resurgence in Australia and in other endemic settings.

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Report from Solomon Islands 2024 Hexavalent Switch Workshop

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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

Background
A six-in-one vaccine that combines pentavalent vaccine (diphtheria, tetanus, whole-cell pertussis [DTwP], hepatitis B and Haemophilus influenzae type b) with inactivated polio vaccine (IPV) was prequalified by WHO in March 2024. The Solomon Islands currently offers OPV & Pentavalent vaccine at 6,10 & 14 weeks with a single IPV at 14 weeks and two doses of Measles Rubella at 12 and 18 months. In order to align with WHO recommendations a second dose of IPV and a booster for DTPw should be included. Solomon Islands is one of eight bOPV-using countries in the Pacific that are yet to introduce IPV2 into the immunization program.
Methods
A Hexavalent Switch three-day Workshop was conducted in Honiara in August 2024 with lead staff from Solomon Islands EPI, Finance, Public Health & Paediatrics with country based staff and visiting experts from NCIRS, WHO, World Bank & UNICEF to optimize the immunization schedule and align with WHO recommendations. The workshop considered a range of implications in schedule changes including impact on the community, the EPI Program, HR and logistics; as well as polio risk and the supply and cost of the Hexavalent vaccine.
Results
The workshop determined that Solomon Islands is not eligible to switch to an IPV-only regime as it is at medium risk of polio reintroduction, the routine immunization coverage of DTP3 is < 90% and it has not yet introduced the 2nd IPV dose.
While the use of the Hexavalent vaccine would result in 2 less injections for the child, there were concerns with duplication in the presence of continuing bOPV vaccine and the additional cost
Conclusion
The preferred option for Solomon Islands at this time was to optimize the current schedule with the addition of a second dose of IPV with MR1 and introduction of DTP booster with MR2. This would align with WHO recommendations. It is also the cheapest option. There is sufficient capacity in the current cold chain network. Hexavalent vaccine is planned to be reconsidered in time with the oral polio vaccine cessation likely in 2030 with the polio endgame strategy.

Adapting and evaluating an Arabic-language online game to combat vaccine misinformation

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1B - Vaccine practice, Room E1, June 10, 2025, 11:00 AM - 12:30 PM

Introduction: The amplification of vaccine misinformation has had demonstrable effects on vaccine trust and confidence in Australia. During the COVID-19 pandemic, vaccine misinformation was particularly prevalent among Arabic-speaking communities in Victoria. Psychological inoculation, which teaches people to recognise techniques used to mislead, is one promising intervention to address misinformation. With guidance from an Arabic-speaking community advisory group, this study aimed to co-design an Arabic-language adaptation of an online psychological inoculation game, and to evaluate the game's effectiveness in improving misinformation discernment, vaccine attitudes and institutional trust.
Methods: We conducted a three-phase mixed-methods study comprising a) online focus groups (n=16), b) co-design workshops to adapt the game (n=65), and c) a randomised controlled trial (ncontrol=98; nintervention=100). Participants were recruited through online and face to face Arabic-language social groups and networks. Translators and bilingual facilitators assisted in the focus groups and workshops. All participant-facing materials were written in Modern Standard Arabic. The psychological inoculation game was Cranky Uncle – Vaccine, originally developed and adapted in several African countries. In this online game, misinformation is shared by a 'Cranky Uncle' character, and a healthcare professional refutes him and educates the player. Players complete interactive quizzes before progressing a level.
Findings: Focus group and workshop participants reported that vaccine misinformation was easily recalled, pervasive and more accessibly delivered than official information. Fear and uncertainty of vaccine side-effects were more salient than mistrust of authorities. Game characters and scripts were adapted to reflect the Victorian Arabic-speaking community. The trial showed no statistically significant improvement in discernment, attitudes and trust, but there was support and appreciation for the game among community members.
Conclusion: While the trial did not produce significant findings, our experiences in all phases of this study provided valuable insights to support future implementation and evaluation of psychological inoculations like Cranky Uncle - Vaccine.

Syndromic Surveillance of Vaccine Safety Using Emergency Triage Notes and Helpline Data

Dr Sedigh Khademi[1,2], Mr Christopher Palmer[1], Dr Gerardo Luis Dimaguilaa[1,2], Dr Muhammad Javed[1], A/prof Hazel Clothier[1,2], Prof Jim Buttery[1,2], Dr Jim Black[3]
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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Introduction
Real-time vaccine safety surveillance is critical for detecting adverse events following immunization (AEFIs) and maintaining public confidence in immunisation programs. Emergency department (ED) triage notes and helpline records offer valuable yet underutilized data sources capturing early patient-reported symptoms. Our study leverages artificial intelligence (AI) and natural language processing (NLP) to enable automated detection of AEFI signals from these unstructured clinical narratives.
Methods
We developed an NLP pipeline using active learning strategies to efficiently train models with minimal annotated data. By integrating RoBERTa-based deep learning with guided annotation and data augmentation, we optimized model performance while addressing challenges of diverse terminology and limited training data.
Results
Our model achieved an F1-score of 0.97 with just 1,500 labeled samples, demonstrating the feasibility of developing accurate surveillance with minimal manual effort. The system effectively detects both common and rare AEFI signals across diverse populations and is now implemented in state-wide real-time vaccine safety monitoring, providing timely evidence-based information to support immunisation programs and address vaccine hesitancy.
Conclusion
The integration of advanced NLP techniques and machine learning models into vaccine safety surveillance offers a highly efficient and rapid approach for detecting AEFI signals in real-time. Given the increasing availability of electronic health records (EHRs) and the need to strengthen vaccine safety monitoring, this approach offers a scalable, low-cost solution for active AEFI surveillance. By integrating these technological innovations into practice, we can develop more responsive, data-driven strategies that maintain vaccine confidence through improved safety monitoring.

Social Media and Large Language Models for Scalable Vaccine Safety Surveillance

Dr Sedigh Khademi[1,2], Mr Christopher Palmer[1], Dr Gerado Luis Dimaguila[1,2], Dr Muhammad Javed[1], Prof Jim Buttery[1,2]
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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Introduction
Social media platforms generate real-time, valuable health data, offering insights into vaccine reactions crucial for monitoring vaccine safety and early intervention. However, the volume, diversity, and informal nature of this content pose significant challenges for automated detection. This study explored the use of large language models (LLMs) to identify personal health mentions (PHMs) related to vaccine reactions and assessed the role of LLMs in accelerating the development of lightweight, high-performance classifiers for scalable surveillance systems.
Methods
We evaluated different prompting strategies (zero-shot, few-shot, chain-of-thought) across two LLMs (GPT-3.5, GPT-4) using Reddit data focused on shingles vaccines. Additionally, we compared LLMs against a traditional fine-tuned transformer-based model for vaccine-related PHM detection. We also examined how LLMs can complement traditional models by identifying missed cases and generating high-quality synthetic training data, enabling rapid and resource-efficient classifier development.
Results
Chain-of-thought prompting significantly improved LLM performance, with GPT-4 achieving an F1-score of 0.90 using a few-shot approach. While the fine-tuned transformer-based model outperformed LLMs in classification accuracy, LLMs excelled at identifying previously missed cases (false negatives) and generating synthetic data, accelerating the development of more accurate, lightweight models with minimal labelled data.
Conclusion
This study highlighted the potential of LLMs in rapidly developing efficient, high-performing classifiers for vaccine safety surveillance. By leveraging LLM-generated training data, smaller and more precise models can be trained with minimal resources, making surveillance systems more scalable and accessible. This approach is particularly valuable for real-time adverse event detection in resource-limited settings. By improving vaccine safety monitoring, these advancements can strengthen public confidence in immunisation programs, ultimately supporting higher vaccine uptake and better communicable disease control.

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Record pertussis notifications in 2024: analysis of trends from 1995-2024 in Australia

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6F - Pertussis, Riverbank Room 4, June 12, 2025, 11:00 AM - 12:30 PM

Background: Pertussis is a highly contagious, endemic respiratory disease in Australia, with cyclical increases every two to five years despite high levels of vaccination coverage. Low pertussis activity was reported from 2020-2023. From March 2024, there was a pertussis epidemic in Australia with the highest number of cases reported to National Notifiable Diseases Surveillance System (NNDSS) in a single year.
Methods: We analysed pertussis cases reported to the NNDSS between 1 January 1995 and 31 December 2024 by age groups and single year of age.
Results: Of 57,134 pertussis notifications in 2024, rates were highest in adolescents aged 10-14 years and children aged 5-9 years, with the highest notification rate by single year of age being in children aged 11 years (1,890.7 notifications per 100,000 population). The proportion of pertussis cases in adolescents aged 10-12 years was substantially higher in 2024 (29.4%) compared with recent epidemic peaks 2009-2011 (9.2%) and 2015-2016 (14.9%). Infants less than 6 months accounted for a lower proportion of cases (0.9%) than in previous epidemic years from 1995 (range 1.4%-4.3%), representing shifting trends where the highest rates were observed in this age group prior to 2014.
Conclusion: The record number of pertussis notifications in 2024 may be partly due to reduced pertussis activity during 2020-2023 resulting in a higher proportion of susceptible individuals in the population. This coupled with waning immunity in adolescents aged 10-14 years who were last eligible for a funded booster at 4 years may have driven the highest rates reported in this age group. Other factors include decreasing vaccination coverage post-COVID-19 and changing testing practices. Australia boasts relatively high vaccination coverage in pregnant people with a funded vaccine available since 2015 in all states and territories. The lower proportion of pertussis in infants in 2024 compared with previous periods likely indicates the success of this strategy in protecting this vulnerable age group.

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Operational Insights from PICOBOO: Managing a Multi-Site Adaptive Platform COVID-19 Vaccine Trial

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1A - COVID-19, Halls CD Lower Section, June 10, 2025, 11:00 AM - 12:30 PM

Background

The Platform Trial In COVID-19 Vaccine priming and BOOsting (PICOBOO) is an MRFF-funded, multi-site, Bayesian adaptive platform trial evaluating COVID-19 booster strategies across 3 sites in Australia. Its flexible design allows for agile responses to the evolving vaccine landscape while improving efficiency and delivering impactful results. Since starting in March 2022, the trial has studied 9 different vaccine boosters and enrolled 1112 participants, with 22 ethics submissions, conducting over study 4800 visits and processing over 70,000 samples. This presentation will reflect on PICOBOO's implementation, identifying key operational challenges, infrastructure limitations, successful adaptations, and areas for improvement.

Key Operational Challenges

- Adapting to a Changing Vaccine Landscape: Frequent protocol amendments increased workload and delays; regulatory, ethics, and contract complexities arose; and limited time and funds hindered bespoke electronic data capture (EDC) development during an emerging pandemic.

- Multi-Layered Approvals: Distinct ethics and multi-jurisdictional governance bodies across various platforms led to inconsistent timelines and implementation delays.

- Fragmented Data & Documentation Systems: Lack of integration between Research EDC (REDCap) and tracking logs increased manual reconciliation efforts and compliance risks.

- Disparate Institutional & Site-Level Infrastructure: Varying governance/documentation methods caused oversight issues and duplication of effort.

Recommendations

- Standardise ethics/governance platforms to streamline approvals.
- Secure funding for a harmonised clinical trial management system (CTMS) to enhance coordination, compliance, and data integrity.
- Implement integrated electronic trial master files within a broader CTMS framework to improve trial documentation.
- Evaluate trade-offs between REDCap, commercial solutions and bespoke EDCs to balance costs with monitoring, database modification and reporting efficiency.

Conclusion

The PICOBOO study highlights the operational complexities of adaptive platform trials in Australia's current clinical research landscape. Future trials should prioritise coordinated infrastructure improvements to enhance efficiency and scalability to deliver responsive public health impacts and prepare for potential future pandemics.

Post-MMR3 measles, mumps, and rubella antibody level changes in seronegative young adults

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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

TITLE
Post-MMR3 measles, mumps, and rubella antibody level changes in seronegative young adults.

ABSTRACT
Introduction
Waning vaccine-acquired immunity post 2-doses of measles, mumps, and rubella (MMR) vaccine is well documented, but commercial assays have limited sensitivity and specificity. We measured measles (Me), mumps (Mu) and rubella (Ru) antibody pre and post a third MMR (MMR3) using more sensitive assays.
Methods
Eligible participants were health science students seronegative by manufacturer thresholds (DiaSorin) to ≥1 of Me, Mu and Ru. In-house bead-based multiplex immunoassay (MIA) and Me neutralization (PRNT) assays were done at RIVM, Netherlands. The GMT and proportion reaching cut-offs were measured by MIA (Me: 0.12 IU/ml; Mu: 102.0 RIVM units (RU)/ml; rubella: 10 IU/ml).
Results
Of 725 students screened in 2021, 175 (24.1%) required MMR and 69 (39.4%) had pre- and post-MMR3 sera available [seronegativity by DiaSorin: Me: 34 (49.2%), Mu: 40 (57.9%); by MIA: Me: 5 (7.2%), Mu: 51 (73.9%), Ru: 13 (18.8%); by PRNT: Me: 7 (10.1%)]. Pre-MMR GMT (by MIA): Me: 0.4 IU/ml (95% CI 0.4, 0.6), Mu: 62.0 RU/ml (95% CI: 48.8, 78.8); Ru: 30.4 IU/ml (95% CI: 23.5, 39.4). Post-MMR GMT (by MIA; all seropositive except 2 (2.9%) for Mu): Me: 1.4 IU/ml (95% CI: 1.2, 1.6), Mu: 334.8 RU/ml (95% CI: 284.9, 393.5) and Ru: 104.7 IU/ml (95% CI: 89.9, 121.9). GMT ratio, post-MMR vs pre-MMR was significantly higher for lowest tertile of pre-MMR antibody, but absolute post-MMR GMT was highest in the highest pre-MMR tertile.
Conclusion
Post-MMR3, participants seronegative by any assay were measles seropositive on MIA and PRNT. Discrepancies between assays and the high prevalence of seronegativity for at least one of Me and Mu have implications for the value of serological screening versus universal MMR3 among young adult healthcare trainees in countries with long-standing elimination. More data needed on antibody persistence and its correlation with protection post-MMR3.

Patterns of measles seronegativity in health professional students at University of Otago

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3A - Vaccine preventable diseases, Halls CD Lower Section, June 10, 2025, 3:30 PM - 4:55 PM

INTRODUCTION
University of Otago (UoO) has required routine serological screening for measles (Me), mumps (Mu) and rubella (Ru) antibody for the last two decades for entry into health professional courses, irrespective of prior vaccination with measles-containing vaccine (MCV). Students seronegative for Me, Mu, or Ru received MMR vaccine. We examined patterns of seronegativity among UoO health professional students between 2015-2020.

METHODS
Ethical approval was obtained for analysis of de-identified pre-enrolment data on seroprevalence to Me, Mu, and Ru based on thresholds from the Trinity test. Odds ratios (ORs) were calculated for the following predictor variables of seronegativity by logistic regression: residency status (international vs domestic), age, gender, MCV status (from records or declaration), and for domestic students: ethnicity (European, Māori, Pacific, and Asian/Other).

RESULTS
Of 4,479 students, 4,408 (98.4%) had complete data (median age: 19 years; 63.0% female; 90.5% MMR2, 90.0% domestic). 963 were measles seronegative (21.9%; 95% CI: 20.7, 23.1); 3.6-fold greater in 331 (34.4%) seronegative to Mu and Ru (171; 51.7%) than 3,017 seropositive to both (438; 14.5%). Seronegativity was similar in 3,001 (68.1%) with MCV2 verified by records (20.8%) and 953 by declaration (23.3%). Seronegativity predictors (multivariate): age <30 years (OR: 1.7, 95% CI: 1.0, 2.8); male (OR: 1.3; 95% CI 1.2, 1.5); international student (OR: 1.4; 95% CI: 1.1, 1.7); among domestic students: Pacific (OR: 2.0; 95% CI: 1.4, 2.9) and Asian or other ethnicity (OR: 1.7; 95% CI: 1.5, 2.1); presumptive non-NZ born (international and domestic Pacific, Asian/other) vs European or Māori (OR: 1.8; 95% CI: 1.5, 2.0).

CONCLUSION
Measles seronegativity was common in health professional students with vaccine-acquired immunity, significantly lower with age >30 years and significantly higher in males, if seronegative to Mu and Ru, and with presumptive vaccination outside NZ.

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Travel-related Influenza Transmission in Western Australia

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5B - Infectious diseases, Room E1, June 11, 2025, 3:30 PM - 4:55 PM

Background
Since late December 2024, an unseasonal increase in influenza notifications in WA has been observed, coinciding with a severe 2024/2025 influenza season in the Northern Hemisphere. This study aimed to determine whether increased influenza notifications in WA is driven by international travel to countries in the Northern Hemisphere and to assess household and close-contact transmission among non-travellers.

Methods
Data from laboratory-confirmed influenza cases were extracted from the WA Notifiable Infectious Diseases Database (WANIDD) from 23/12/2024 to 04/02/2025. A mobile survey was distributed via Essendex to influenza cases and data were analysed using Microsoft Excel.

Results
The survey was successfully sent to 1,030 individuals with a response rate of 65% (n=668). Among respondents, (n=346, 52%) reported recent travel, with most (n=306, 88%) having travelled internationally. Nearly all (n=294, 96%) visited countries in the Northern Hemisphere, primarily in Asia (n=183, 59%) and Europe (n=77, 25%). One-third (n=105, 34%) of international travellers also reported having close contacts with influenza-like illness, with most having travelled to the same country as survey respondents.
Among non-travellers (n=320, 48%), 26% (n=83) reported close contacts with influenza- like illness. Most of these contacts either remained in WA or travelled interstate (n=43, 52%), while (n=29, 35%) had contacts who travelled to the Northern Hemisphere. Influenza A predominated in both groups.

Discussion and Conclusions
International travel, particularly to the Northern Hemisphere, was a major driver of influenza transmission in WA. Household and close-contact transmission also played a role, albeit survey limitations underestimating the true impact. Pre-travel vaccination and targeted public health interventions to Northern Hemisphere travellers could mitigate travel-related influenza transmission and associated influenza risks.

First national characterisation of Mycobacterium tuberculosis genomic epidemiology in Australia

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1D - Preventing respiratory infections, Riverbank Room 2, June 10, 2025, 11:00 AM - 12:30 PM

Background - Tuberculosis is a global public health concern. Genomic analysis of Mycobacterium tuberculosis (Mtb) has been at a jurisdictional level, and cross-jurisdictional epidemiology of Mtb in Australia remains poorly understood. We present the first national assessment of Mtb drug resistance and genomic clusters using a decade of genomic data from Australian jurisdictions, as a part of the Australian Pathogen Genomics program.

Methods - Our national dataset of Mtb sequences included retrospective (2015-2022) and 2023 snapshot data, aiming to represent Mtb notifications of culture-confirmed disease. Mtb genomic surveillance was established on AusTrakka, allowing Public Health Laboratories to securely contribute Mtb genomes and metadata. Hierarchical (0, 5 and 12 SNPs) single linkage clustering from pairwise SNP distances were used to identify genomic clusters, and the tbtAMR tool was used for drug resistance prediction. Metadata was combined with genomic analysis to identify Mtb clusters of national public health significance.

Results - 6,670 Mtb sequences (retrospective=5,915; snapshot=692) representing cases across all states and territories were examined and comprised 55.49% of all notified cases in Australia from 2015-2023. Mtb lineages 1-4 were detected, with Lineage 2 being the most prevalent and drug resistant. At the 5-SNP threshold, 373 genomic clusters were identified, with the number of genomic clusters increasing to 422 when a relaxed threshold of 12 was applied. Of the 373 genomic clusters, 48 were identified as having public health significance. 31 Mtb genomic clusters spanned multiple jurisdictions with many persisting for >5 years and those with >15 sequences all multijurisdictional. Genotypically inferred drug susceptibility revealed low rates of multidrug resistance in Australian Mtb.

Conclusions - This first-of-a-kind study on Australian Mtb highlights the benefits of undertaking coordinated national sequencing in Australia. Real-time cluster and AMR identification can enhance Mtb control and surveillance in Australia and are essential to minimise Mtb transmission events in a low-incidence country.

To mandate or not to mandate? Preferences for vaccine mandates in Australia

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2C - Mandates and messaging, Room E2, June 10, 2025, 1:30 PM - 3:00 PM

Background: Governments worldwide implemented vaccine mandates during the SARS-CoV-2 pandemic, impacting public health and societal norms. In Australia, these mandates affected a large workforce segment, yet public preferences for their design remain unclear. This study explores public preferences to inform evidence-based policy decisions for future health emergencies.

Aim: To quantify public preferences for vaccine mandates in Australia, France, and Italy to guide future policy-making.

Methods: A multi-country Discrete Choice Experiment (DCE) will survey individuals aged 18+ in the three countries. The study examines five key attributes: 1) Mandate scope, 2) Infection threshold for activation, 3) Coverage requirement for lifting, 4) Incentives/benefits, and 5) Exemptions. Online surveys will assess demographic, political, and moral influences on preferences. Statistical analysis will predict acceptance rates and assess socio-demographic effects. An online Decision Aid Tool (DAT) will allow users to explore cost-benefit analyses of vaccine mandates (https://drgenie.github.io/VaxMandateDecisionAid/).

Results: Preliminary interviews with a community advisory group reveal diverse rankings of mandate attributes, reflecting societal values and past experiences. Detailed findings on trade-offs related to scope, exemptions, and enforcement strategies will be presented.

Conclusions: Understanding public preferences is key to designing effective, equitable, and socially acceptable mandates. Insights from this study will aid policymakers in improving public trust and compliance, strengthening societal resilience against future pandemics.

Policy Implications: Findings will help develop policies that balance public health benefits with individual freedoms, strengthening more sustainable and publicly accepted health strategies.

Burden of pertussis in adults attending primary health care in Australia, 2008-2019

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3B - Adult vaccination, Room E1, June 10, 2025, 3:30 PM - 4:55 PM

Background: The burden of pertussis or whooping cough in adults is underdiagnosed and underreported. This study aimed to determine the cumulative incidence of pertussis and vaccination coverage in adults in a primary care setting in Australia.

Methods: De-identified, aggregated data were extracted electronically from participating clinics using Medical Director (MD) primary care software for patients aged >=18 years, 2008-2019. MD is utilised by ~50% of General Practices in Australia. Eligible participants (active patients) were defined, and we estimated the cumulative incidence of diagnosed pertussis in adults by age group, at-risk populations, vaccine coverage and presence of pertussis complications in the study. We also examined the incidence of undiagnosed coughing illness in the study population.

Results: Diagnosis of pertussis was identified in 1,788 (0.2%) of all 764,864 active patients, with an average annual incidence of 76.9 per 100,000 population. The incidence rate varied by year and age group. The highest incidence was seen in 2011 (125.1 / 100,000). Western Australia had the highest incidence rate of pertussis, followed by New South Wales and Queensland. Pertussis incidence was slightly higher in adults aged 18-44 and 45-64 years, and among females (63.3%). Of cases with pertussis, 58.7% had comorbidities including asthma and COPD (24.9%), CVD (13.8%), diabetes (11.2%) and obesity (8.7%). 4.4% of cases had pertussis complications; the most common was pneumonia. Overall, Tdap vaccine coverage among cases was below 20%, and increased with age but was lower than the influenza vaccine coverage (53.4%). There were 31,110 (4.1%) adults with a coughing illness who were not diagnosed with pertussis during the years studied. The trends mostly followed that of pertussis.

Conclusion: In the primary care setting, a high burden of pertussis and low vaccination rates were seen in adults. The incidence of an unspecified coughing illness was also high in that setting, and a proportion of these may be undiagnosed pertussis.

"Access to COVID-19 Vaccines in Indonesia: A Scoping Review"

Ms Yuyun Yuniar[1,2], Ms Aryati Yashadhana[1], Ms Stephanie Topp[3], Mr Anthony Zwi[1]
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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

"COVID-19 vaccines played a crucial role in mitigating the impact of the pandemic, and understanding factors influencing vaccine access is essential for effective public health strategies. This scoping review explored access to COVID-19 vaccines among the Indonesian population using Levesque's framework of access to healthcare. A systematic search was conducted across five databases using the PRISMA guidelines for publications from January 1, 2019, to May 5, 2023. This yielded 89 studies that met the inclusion criteria and were analysed using NVivo-14 software. More than half of the studies were published by 2022 (n=58), with most studies using data collected in 2021 (n=55). The majority of the identified studies employed a quantitative approach (n=74) and utilised online survey methods (n=50). A focus on user factors predominated over those on health system issues. Several personal factors, such as trust, beliefs, and perceptions, emerged as the primary determinants of vaccine acceptance. The halal status of vaccines and information from social media played crucial roles in shaping perceptions. Sociodemographic factors such as age, gender, education, marital status, and occupation were identified as important variables, along with COVID-19-specific factors such as comorbidity and prior infection history. Notably, financial aspects received less attention in the existing literature. The study also uncovered gaps in research regarding health system factors, particularly concerning vaccine availability and distribution logistics. These findings underscore the importance of addressing user perceptions, leveraging social media for information dissemination, ensuring equitable access, and considering religious and cultural factors in vaccine-distribution strategies. By integrating community perspectives with health system approaches, policymakers can enhance vaccine acceptance and reduce hesitancy, ultimately contributing to more effective pandemic preparedness and responses in Indonesia."

Geospatial analysis of open-source intelligence data to early detect laboratory-acquired infections

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background: Biosafety laboratories, including those found in vaccine-producing companies, are vital in producing vaccines to control and eliminate infectious diseases. However, they can be a source of unnatural outbreaks through accidental or incidental escapes of pathogens handled in these facilities. One of the largest laboratory leak-related brucellosis outbreaks occurred in 2019 from the Lanzhou Biopharmaceutical Plant, which produced animal brucellosis vaccine using live attenuated brucella bacteria. This laboratory leak has sickened over 10,000 people, including the laboratory workers and the community.1 Detecting such laboratory leaks is vital yet highly challenging. Given the endemicity of brucellosis in China, with known laboratory accident-related outbreaks, this study focuses on China's brucellosis accident to examine geospatial techniques' capability to red-flag laboratory accidents early.
Aims: This study aimed to examine the capability of geospatial analysis of open-source intelligence data from EPIWATCH@ to detect laboratory acquired infections early.
Methods: We retrieved data on brucellosis outbreak signals collected in EPIWATCH@ from 2016 to 2024. EPIWATCH@ is an artificial intelligence based system that monitors global infectious disease outbreaks using open source data worldwide. To examine the capability of geospatial analysis of open-source intelligence data to early detect brucellosis leak in China, we identified and flagged brucellosis outbreak signals proximal to the Lanzhou Biopharmaceutical Plant, which caused the 2019 brucellosis outbreak.
Preliminary result: Open-source intelligence brucellosis outbreak signals data were available earlier than the government reported. We detected signals within 10 kilometres of the Lanzhou Biopharmaceutical Plant, and a nearby Lanzhou Animal Research Institute. This indicates that geospatial analysis of open-source intelligence data can enhance the early detection of laboratory-acquired infections that cause community outbreaks. Further advanced geospatial analysis will be implemented.
Conclusion: Geospatial analysis of open-source intelligence data can be used to red flag laboratory accidents/incidents earlier than the usual traditional surveillance.

Enhancing Vietnam's NITAG capacity and functionality in response to public health priorities

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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

Background: National Immunisation Technical Advisory Groups (NITAGs) play a critical role in providing evidence-based and locally tailored recommendations to achieve the maximum public health benefit from vaccines. The Vietnamese Ministry of Health plans to introduce pneumococcal and human papillomavirus vaccines to their Expanded Programme on Immunisation (EPI), and our prior collaboration identified an opportunity to provide technical support on these vaccines and to strengthen the operations and decision-making processes of their NITAG.

Aims: This project aims to strengthen the capacity of Vietnam's NITAG through developing and implementing Standard Operating Procedures (SOPs), strengthening research capacity, facilitating twinning with other NITAGs and providing technical support for new vaccine introductions.

Method: A needs assessment survey, key informant interviews and baseline NITAG Maturity Assessment Tool were conducted. A program of activities was co-designed during a NITAG secretariat visit to Australia. Three workshops were delivered in 2024 with themes including evidence-based decision-making for vaccine policy; sharing lessons learnt between various NITAGs; identifying research needs, and global & regional support for NITAGs. All partners collaborated in developing SOPs, including an adapted Evidence-to-Recommendation Framework. Evaluation surveys were completed following each workshop and NITAG members reported increased knowledge and confidence. Partnership enabled sharing of key tailored data to inform upcoming policy decisions. An external evaluation is planned in 2025.

Results: Through the workshops we conducted several case studies on policy questions, identified relevant national data and evidence gaps. The SOPs has since been used within NITAG's evidence-based decision-making process to give recommendations towards the integrating vaccination programmes within EPI, e.g., the application of HPV/PCV vaccinations, thereby improving coordination, service quality, and timely vaccine distribution. This has reduced vaccine-preventable diseases and strengthened healthcare workers' preparedness.

Conclusion: This collaboration has created a sustainable immunisation model that can be adapted to other countries in the region.

Epidemiology of Carbapenemase-producing Enterobacterales: Insights from Routine Genomic Surveillance in South Australia

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2E - Public health in practice, Riverbank Room 3, June 10, 2025, 1:30 PM - 3:00 PM

Carbapenemase-producing Enterobacterales (CPE) are among the most concerning antibiotic-resistant organisms. In South Australia, colonisation or infection with CPE has been a notifiable condition under the South Australian Public Health Act, 2011 from April 2020, since which all CPE-positive isolates have been referred to the SA Pathology Public Health Laboratory (PHL) for Whole Genome Sequencing (WGS).

Between 2020 and February 2025, SA Pathology PHL sequenced 277 CPE isolates, with year-on-year increases in the number of CPE isolates sequenced. Carbapenem-producing genes were predominately detected in Klebsiella pneumoniae and Escherichia coli species, with genomically linked isolates associated with healthcare transmission more common among K. pneumoniae sequence types (STs). High-risk E. coli STs considered a risk to community spread, including ST410, ST131, ST361 and ST648, were also detected with increasing frequency. The most frequently acquired carbapenemase genes were NDM metallo-beta-lactamases, detected in over 60% of sequenced isolates. These genes were predominately blaNDM-5 and blaNDM-4, both associated with local plasmid-mediated and clonal transmission. Extended-spectrum beta-lactamases (ESBLs) genes were also found on over half of the sequenced CPE isolates. Concerningly, 20 isolates had acquired two carbapenem-producing genes, increasing from two isolates in 2020 to seven in 2024.

Consistent with recent data describing the deteriorating CPE situation in the European Union, the epidemiological changes observed in South Australia are concerning and likely an indication of the growing problem in Australia. These trends underscore the critical need for adequate laboratory capacity and the value of genomic surveillance in identifying emerging threats, distinct outbreaks, and community transmission, essential for tailoring effective infection control responses. Beyond surveillance, WGS can help interpret phenotypic data and optimise drug therapy by detecting the presence of multiple genes (e.g. carbapenemase, ESBL and AmpC genes) whose combined effect on susceptibility to beta-lactam antibiotics is different from that predicted by carbapenemase gene carriage alone.

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Community Pharmacy Vaccination Service Provider Quality Improvement Initiative

Mr Thomas Clayton[1], Ms Sarah Risdale[1], Ms Laurelle Nelson[1], Ms Linda Bertram[1]
[1]Queensland Health Immunisation Program , Brisbane, Australia

Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background
In 2024, the Australian Government launched the National Immunisation Program Vaccinations in Pharmacy (NIPVIP) Program, enabling eligible people to access free National Immunisation Program (NIP) vaccines in community pharmacies. The state Department of Health, in collaboration with Hospital and Health Service Public Health Units (PHUs), provides governance and clinical support to ensure safe, effective, and timely immunisation services in primary care settings.

Objective
The 2023-2024 Pharmacy Vaccination Service Provider (VSP) Quality Improvement Initiative aimed to provide direct support to registered community pharmacies in delivering safe, effective, and timely NIP immunisation services, in partnership with peak pharmacy professional associations.

Methods
The Department collaborated with PHUs and pharmacy peak bodies to engage community pharmacies to undertake a quality assurance process, including development of a Vaccine Management Protocol and a detailed cold chain management plan. A non-recurrent state immunisation program investment enabled PHUs to enhance their capacity to support pharmacies during the process of NIP expansion planning and readiness.

Results
By 1 January 2024, over 300 community pharmacies had undertaken this process and were registered with the state's immunisation program. This number increased significantly in the 6-month period to 30 June 2024, with more than 760 community pharmacies registered.

Discussion
The initiative demonstrated successful collaboration between government, the pharmacy peak bodies and the pharmacy sector in expanding NIP vaccination services. The rapid increase in pharmacies registered suggests effective implementation of the program, improving vaccine accessibility and choice of provider for the public. Future evaluations should assess the impact on vaccination rates, consumer satisfaction, and the overall impact on the healthcare system.

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Queensland's Paediatric RSV Prevention Program: Implementation and Impact

Ms Sarah Risdale[1], Mr Thomas Clayton[1], Mr Scott Brown[1]
[1]Queensland Health Immunisation Program , Brisbane, Australia

5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

Background
Respiratory syncytial virus (RSV) is a major cause of early childhood respiratory illness and hospitalisation, particularly in infants under 6 months of age. In tropical regions, RSV circulates year-round, contrasting with more seasonal peaks in temperate areas. In late 2023, the Australian Therapeutic Goods Administration approved nirsevimab, a long-acting monoclonal antibody for the prevention of severe RSV disease in infants and young children.

Objective
To reduce paediatric RSV hospitalisations through the implementation of a state-wide immunisation program for newborns and other at-risk cohorts.

Methods
A multidisciplinary team developed and implemented the program, considering public health priorities, cost-effectiveness, product availability, clinical recommendations, and state-specific epidemiology. The Queensland Paediatric RSV Prevention Program launched on 15 April 2024, providing free RSV immunisation to eligible infants born on or after 1 February 2024 and for select at-risk cohorts.

Results
There were 406 less RSV-hospitalisations (a 48% reduction) and a 30% reduction in RSV-notifications in infants under 6 months of age since the program commenced (15 April to 31 Dec 2024) compared to the same period in 2023.

Discussion
The implementation of the Queensland Paediatric RSV Prevention Program resulted in a significant reduction in infant RSV hospitalisations for infants under 6 months of age. Key implementation challenges, such as the rapid rollout and timely reporting of birth doses to the Australian Immunisation Register, offered valuable lessons for future public health initiatives. These challenges highlighted the importance of efficient and effective program awareness campaigns and streamlined immunisation data reporting processes. The program's expansion to include maternal RSV vaccination represents a strategic step towards comprehensive newborn protection against severe RSV disease.

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‘Healthy Skin, Strong Hearts’: a community approach to reducing Strep A infections

Dr Janika Dobbie[1,2], Ms Melinda Pascoe[1], Ms Louise Lawrie[1], Ms Tanisha Ahmat[1], Dr Matthew O'Bryan[1], Dr Nicolette Roux[1], Dr Jacki Mein[1,3], Dr Malcolm McDonald[1,4], Mr Bevan Bingarape[1], Ms Fiona Filewood[1], Ms Amelia Cahill[1]
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5E - Public health in practice, Riverbank Room 3, June 11, 2025, 3:30 PM - 4:55 PM

Acute Rheumatic Fever (ARF) and Rheumatic Heart Disease (RHD) disproportionately affect Aboriginal and Torres Strait Islander communities. In Cairns, North Queensland, Wuchopperen Health Service (WHS), an Aboriginal and Torres Strait Islander Community-Controlled Health Organisation (ATSICCHO), has provided primary health care for 40 years, including for over 150 RHD patients. Recurrent skin infections, such as impetigo and scabies, are common among children at WHS and are strongly implicated with an increased risk of developing acute rheumatic fever (ARF) and rheumatic heart disease (RHD).
The 'Healthy Skin, Strong Hearts' program was co-designed with local clinic staff and the community to prevent Strep A infections—and consequently ARF and RHD—in First Nations children and families.

Objective
To evaluate the sustainability and acceptability of a community-driven Healthy Skin outreach program.

Methods
This study is a co-designed intervention developed through Working Group meetings with First Nations Health Workers, nurses, Wellbeing workers, and non-Indigenous clinical staff. A multicomponent implementation approach, including supportive activities, will be assessed. WHS Aboriginal and Torres Strait Islander Health Workers (AHWs) and nurses lead outreach visits, health education, and environmental support, focusing on early intervention, education, and follow-up for skin infections. In-reach activities ensure culturally appropriate care within the clinic, improve detection and treatment, and address barriers to healthy skin practices. Acceptability data will be collected via questionnaires from both participant-households involved and participating AHWs.
Expected Outcomes
The primary outcome assessed will be the acceptability, cultural safety and sustainability of this approach. Secondary outcomes involve identifying barriers to strengthening Strep A infection prevention and increasing Aboriginal and Torres Strait Islander voices in research and implementation.
Findings will contribute to WHS service improvements and innovations in Strep A infection prevention. Successful strategies may inform other settings across regional and remote Australia where Strep A infections and RHD are prevalent. The long-term goal is to establish this approach as standard practice.
Community Permissions: Permission for this service evaluation has been obtained from the Wuchopperen Research Subcommittee and has received ACCHO board approval. Several members of the project team identify as Aboriginal and/or Torres Strait Islander and will co-present on the day.

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A standard format for national communicable disease surveillance plans in Australia

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6E - One Health preparedness, Riverbank Room 3, June 12, 2025, 11:00 AM - 12:30 PM

There are many approaches to communicable disease surveillance implemented in Australia, including (but not limited to) case-based reporting, hospital-based surveillance, syndromic surveillance, and surveys of infection markers. However, for most communicable diseases we do not currently have a national process for deciding which of these resources to prioritise and how to bring them together to support the public health goals underpinned by surveillance activities. A standardised process would provide a basis for determining how to make the best use of existing data systems, and what additional systems require resourcing, to achieve public health goals.

The Communicable Diseases Network of Australia (CDNA) has recently tasked a working group of researchers and public health practitioners to initiate, and then develop through iterative consultation with CDNA, such a standardised process. Here we describe the project goals and work plan, show preliminary outputs (including its application to test case scenarios), and invite feedback from conference attendees.

Our goal is to produce standardised and easy-to-follow checklists, accompanied by guidelines, that can be used to generate national surveillance plans tailored to the specific public health needs of individual diseases. The guidelines will support public health teams to identify and prioritise surveillance objectives, indicators, data sources, and analysis needs for each disease or group of diseases. With such a national process in place, we will be able to more rapidly and effectively develop surveillance plans for communicable diseases, supporting decision making and engagement with stakeholders, including the public.

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Gonococcal Infections in the ACT: Behavioural Patterns and Public Health Implications

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6D - Zoster and cocci, Riverbank Room 2, June 12, 2025, 11:00 AM - 12:30 PM

Background:
Gonococcal infection notifications have more than doubled over the last decade in Australia. Historically, gonococcal infections have been notified predominantly in men who have sex with men (MSM) and active public health messaging and testing practices have targeted this priority group. Between 2013 and 2021 the ACT has seen a greater than five-fold increase in notifications of cases in females. Given the asymptomatic nature of many of these infections combined with the more severe outcomes for females and persons who are pregnant, the increase in disease in this group is of concern. This study aimed to understand behaviours associated with gonococcal transmission to inform appropriate interventions and health promotion tools to reduce ongoing risks.

Methods:
Since February 2022, the online self-administered Gonococcal Enhanced Case Questionnaire (GECQ) has been distributed to ACT cases with notified gonococcal infection. This descriptive analysis of GECQ data compared differences between MSM and different-sex exposed males and females who completed the questionnaire between February 2022 and January 2025.

Results:
During the study period there were 1356 gonococcal infection notifications in the ACT and 461 responses to the GECQ, including 83 female, 65 men who have sex with women (MSW) and 269 records for MSM. Compared with MSM, a greater proportion of female cases reported having five or fewer sexual partners, meeting partners through friends and face-to-face social settings, and that they likely acquired their infection from a long-term partner. All groups most commonly report using condoms sometimes or never, with less than 15% in any group reporting always using condoms.

Conclusion:
This study shows differences in behaviours between MSM and female cases, particularly in meeting partners, and types of relationships. These differences should be considered when interventions and health promotion tools are designed and implemented.

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Analysis of AEFI During the 2024-2025 Nationwide School-Based Immunization Campaign

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5C - Immunisation programs, Room E2, June 11, 2025, 3:30 PM - 4:55 PM

The Department of Health launched a nationwide school-based immunization (SBI) campaign from October 7, 2024, to January 15, 2025, to address immunization gaps from the COVID-19 pandemic. The campaign administered Measles-Rubella, Tetanus toxoid, and Human Papilloma Virus vaccines, ensuring vaccine safety through an Adverse Event Following Immunization (AEFI) surveillance system. This investigation aims to analyze AEFI cases, identify serious cases and clusters, and recommend improvements to the surveillance system.

This descriptive study analyzed data on AEFI cases gathered through VigiFlow, a passive surveillance information system, and analyzed using Google BigQuery. AEFI cases were categorized as serious, non-serious, or clusters. Serious cases are assessed for causality by the Regional AEFI Committee (RAEFIC), using available information and expert review, and classified as consistent, inconsistent, or indeterminate.

The campaign administered 2,089,615 MR, 2,082,495 Td, and 526,272 HPV vaccines. Of the vaccinated individuals, 291 reported AEFI cases, 96.22% of which were non-serious, with symptoms such as pyrexia, dizziness, rash, headache, and pain. These were classified as very rare and within WHO-established rates. A peak in cases was observed during morbidity week 45 (November 3-9, 2024). Region IV-A had the highest number of cases (61.86%), with several non-serious clusters. Of 11 identified clusters, only one was investigated, revealing chickenpox as the cause. RAEFIC classified the two suspected death cases and two others as "Coincidental." One case was excluded due to a confirmed dengue diagnosis, and six cases remain unassessed.

The SBI campaign has successfully increased vaccine coverage among school-aged children, protecting them against vaccine-preventable diseases. Surveillance data confirms that most AEFI cases were non-serious, and the causality assessment found that the reported deaths were coincidental, not vaccine-related. Strengthening surveillance and reporting will ensure continued vaccine safety and uphold public trust in the immunization program.

Evaluating seasonal respiratory virus forecasts for Victoria 2024

Dr Alec Henderson[1], Elizabeth J Robinson[2], Janet Strachan[2], ACEFA forecasting teams, Emma McBryde[1], Freya Shearer[3]
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5D - Surveillance, Riverbank Room 2, June 11, 2025, 3:30 PM - 4:55 PM

Seasonal influenza and other respiratory viruses such as respiratory syncytial virus (RSV) and SARS-CoV-2 result in substantial annual public health burden worldwide. The magnitude and timing of respiratory virus epidemics is highly variable and difficult to predict. In temperate winter seasons, they can place significant demands on hospital services, particularly if multiple epidemic peaks occur simultaneously. Accurate forecasts of disease burden have the potential to enable a rapid understanding of the status of concurrent epidemics and inform public health responses.
The Australia–Aotearoa Consortium for Epidemic Forecasting and Analytics (ACEFA), ran a pilot multi-team forecasting initiative across the 2024 winter period (9th May 2024 – 12th September 2024) in collaboration with the Department of Health, Victoria. We solicited weekly forecasts from multiple research teams of daily reported cases of influenza, COVID-19, and RSV over a four-week horizon. Four component model forecasts were contributed by three different research groups from across Australia, with a fourth team utilizing the component forecasts to generate ensemble forecasts (making a total of six models, four component models and two ensembles). The performance of each forecast was statistically evaluated against the observed case data.
In this presentation, we first discuss the different approaches each group used to forecast the three diseases. We then present an analysis of the performance of the different models submitted by each team during the winter forecasting period. This analysis includes a discussion of the strengths and weaknesses of the different models throughout the season e.g. if a model performs best during specific phases of an outbreak. Finally, we show how these results can be interpreted, and the implications of the different evaluation metrics used for communicating the results.

Evaluation of Expanded Case Follow-Up during Pertussis Epidemic in Regional Victoria, Australia

Ms Mashael Alghamdi[1], Dr Elizabeth Peach[1,2], Ms Holly Caldwell[1], Ms Hirukshi Bennett[1], Ms Terri Gallacher[1], Ms Samantha Percy[1], Ms Emily Ozolins[1], Ms Jessica Ceeney[1], Ms Jenny Keogh[1], Mr Michael Enright[1], Dr Anthony Zheng[1,2]
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6F - Pertussis, Riverbank Room 4, June 12, 2025, 11:00 AM - 12:30 PM

Background: For pertussis, public health follow-up of children <10 years of age is standard practice in Victoria. In response to epidemic levels of pertussis in 2024, the Ovens Murray Public Health Unit (OMPHU) expanded follow-up to include a convenient sample of cases aged ≥10. We assessed the implications of this expanded follow-up on identifying high-risk contacts and outbreaks

Methods: All OMPHU-catchment pertussis cases and outbreaks reported between 1 January 2024 and 24 January 2025 to Victoria's notifiable diseases database were extracted. The presence of a risk factor (defined as either having a high-risk contact or attending a high-risk setting while infectious) was compared by age group (<10 or ≥10). High-risk contacts were defined as children <6 months or pregnant women, and high-risk settings were defined as maternity or neonatal units.

Results: 272 cases were followed up by OMPHU. Of these, 121 (44.5%) were followed up according to protocol (i.e., <10 years of age), while 151 (55.5%) were part of the expanded follow-up response. Among cases <10 years, 36.4% (n=44) had an identified risk factor, while 26.5% (n=40) of cases ≥10 years had an identified risk factor (Chi² test: p=0.080). Nine school outbreaks were detected during the follow-up of cases aged ≥10, with the first cases in each outbreak being ≥10, in addition to seven outbreaks identified through routine follow-up. Region-specific issues, including limited testing capacity and treatment shortages, were identified and addressed.

Conclusion: Expanding pertussis case follow-up to cases aged ≥10 years was effective for identifying high-risk contacts and additional outbreaks, particularly outbreaks in school settings. No significant difference in the identification of risk factors between age groups was found, meaning that older cases were just as likely to have a high-risk contact or have attended a high-risk setting while infectious. Although resource-intensive, expanded follow-up could be considered during epidemics.

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Vector borne disease forecasting and tooling

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

Ross River virus (RRV) is the most reported and widespread vector (mosquito) borne disease in Australia, with 1000s of cases annually and an estimated economic effect of 4.3 million dollars per year. Due to the complex relationship vector borne diseases have with the natural world, they can be difficult to predict. For example, RRV has been found in over forty different mosquito species, can be vertically transmitted (mosquito vertical transmission) and has a variety of reservoir hosts e.g. possums, and kangaroos.
In this presentation we present our work on four week ahead local government area (LGA), RRV case count forecasts, across Queensland and Victoria from 2009 to 2020. We demonstrate how our models integrate weather data, human case data, and where available mosquito abundance data (where the resolution and detail vary across sites). We present both mechanistic, and data-driven models, and discuss the assumptions that we have made based on data availability and parsimony. We then present the different insights our modelling techniques have given and the trade-offs of the different techniques.
Following the discussion on effective forecasting of RRV, at the LGA level across Queensland and Victoria, we present our forecasting tool. The tool will demonstrate how our models can be used with an extensible and user-friendly design. We discuss how the tool can be used in other locations and for other diseases. We place an emphasis on the outputs and how these can be interpreted.

Human-bat competition on cultivated food resources promotes Nipah virus spillover to humans

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3F - Emerging public health challenges, Riverbank Room 4, June 10, 2025, 3:30 PM - 4:55 PM

Understanding the bat roosting and feeding ecology in a rapidly changing landscape like Bangladesh is critical to designing effective interventions for Nipah virus (NiV) spillover to humans. Hence, this study aimed to determine how land use change drives bat roosting ecology and human-bat food competition on cultivated food resources promotes viral transmission to humans in Bangladesh. We performed an ecological and qualitative study in eight NiV outbreaks and non-outbreak districts in Bangladesh between 2021 and 2022. We conducted an observational study on bat roost ecological characteristics, human-bat interactions, and 65 ethnographic interviews with fruit orchard owners, raw date palm sap (RDPS) harvesters, consumers, and bat hunters. We identified 108 bat roosts, with 87.9% located within 30 meters of human dwellings. Domestic animals graze underneath 85% of bat roosts. We observed a scarcity of wild fruit trees in the community that made bats rely heavily on human-cultivated fruits and raw date palm sap. Community people preferred planting timber trees over fruit trees for economic reasons. Moreover, 26% of roosts were disturbed by tree cutting and bat hunting. Hunters hunt bats for their own protein needs, for sale, and for traditional medicinal purposes. The participants reported rapid conversion of forest areas to agricultural land, human settlements, and urbanization. Consequently, bats are heavily dependent on human cultivated fruit resources and RDPS drinking and roosting close to human residences. Participants reported declining local bat populations due to hunting and ecological changes. People reported eating unwashed, dropped fruits and bat-bitten fruits and occasionally feeding them to their household animals. Orchard owners use a mist net to protect bats visiting in their garden, and bats entangled on the net and died. The findings of the study underscore the significance of human-bat competition on cultivated fruit resources in modified landscapes, together with shared RDPS consumed by bats and people, as critical pathways of NiV spillover in Bangladesh. We recommend future study on ecological and behavioural interventions to prevent bat-borne viral spillover from bats to humans and domestic animals in Bangladesh

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Optimising antigen-specific analysis of SARS-CoV-2 IFN-γ and IL-10 producing T-cells

Dr Kirsty Wilson[1], Dr Jack Jerome[1], Georgia Goodchild[1], Joshuah Fialho[1], Dr Monica Prakash[1], Charlie McLeod[2,3,4,5], Peter C Richmond[2,5,6,7], Katie L Flanagan[8,9], Professor Magdalena Plebanski[1]
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4E - Novel tools for communicable disease control, Riverbank Room 3, June 11, 2025, 1:30 PM - 3:00 PM

Understanding the balance of immune-stimulatory and immune-suppressive antigen specific responses to SARS-CoV-2 antigens is crucial for gaining insight into COVID19 pathology, as well as for designing effective vaccine strategies. T cell responses to the SARS-CoV-2 Spike protein have proven to be long-lasting and protective in some human vaccine clinical trials. The Enzyme Linked Immuno Spot (ELISpot) assay is a powerful and sensitive tool to study antigen specific functional T cell responses. By using the Fluorospot method of the ELISpot, which incorporates multiple fluorescent readouts, we can not only assess individual T cell reactivity but also distinguish between immune-stimulating and immune-modulatory or suppressive responses by simultaneously measuring IFN-γ and IL-10. Preference for IFN-γ or IL-10 induction to Spike antigens could affect the overall strength, and protective potential, of vaccine induced responses. T cell responses to Spike ancestral and variant peptide pools (including novel and cross-reactive T cell epitope regions) were optimised in healthy blood donors using duo-colour Fluorospot assay. Donor specific IFN-γ responses were observed to both CD8 and CD4 peptide pools. Surprisingly, there was a preferential IL-10 induction to specific CD4 T cell epitopes within the pools, suggesting an intrinsically immunosuppressive bias. Immunogenicity to Spike peptide pools were optimised in healthy blood bank donors, and further studies will examine vaccine induced T cell responses in the Platform Trial In COVID-19 vaccine BOOsting clinical trial (PICOBOO), which aims to evaluate the effectiveness, safety, reactogenicity and immunogenicity of different booster vaccination strategies against SARS-CoV-2 ancestral and variant strains in the Australian population. Understanding the vaccine induced immune response to optimised SARS-CoV-2 Spike peptide epitope pools, with an intrinsic biological IFN-γ or IL-10 induction bias, will further our knowledge of antigen-specific and cross-reactive immune-modulation by SARS-CoV-2 antigens and help inform future booster vaccination strategies.

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EpiDefend: Early Detection of a Biological Attack at Low False Alarm Rates

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

This presentation describes innovative work done in collaboration between the Defence Science and Technology Group and university partners on EpiDefend, an electronic surveillance system designed to detect biological attacks and disease outbreaks.

Following the 2001 anthrax laced letter attacks in the US, significant efforts around the world were put into syndromic surveillance systems that monitor health data feeds for early signs of a biological attack. While these systems are capable of detecting a biological attack in syndromic data, in general they cannot do so in a timely fashion without increasing sensitivity to the point that such systems are swamped with false alarms.

Previous work on EpiDefend showed it could detect attacks in simulated medical data at a significantly lower false alarm rate than the best currently deployed system, ESSENCE. The authors improved upon this previous work by simulating in more detail Q-Fever, Tularaemia, Pneumonic Plague and Inhalational Anthrax aerosol dispersal attacks over Sydney, and then inserting the simulated events amongst real, NSW health data, in the PEARL database. PEARL is an anonymised, retrospective database of linked, line listed case data tracking ambulance and hospital data of respiratory patients over a 15 year period.

The previous generation of EpiDefend was modified significantly to meet the challenges presented by real health datasets. The result of the collaboration is an algorithm that in particular should be able to detect biological attacks using Q Fever and Tularaemia significantly before the hospital system could, at low false alarm rates.

Increasing cases and unresolved transmission of carbapenemase-producing organisms in Victoria, 2024

Ms Catherine Glover[1], A/prof Norelle L. Sherry[1,2], Dr Jake Lacey[1], Ms Raquel Cooper[1], Mr Himal Shrestha[1], Ms Tilda Thomson[1,2], Ms Mathilda Wilmot[1], Ms Donna Cameron[1,3], Mr Thomas Teoh[3], Ms Eliza Schioldann[Presenting on behalf of co-authors], Ms Georgia Shering[3], Ms Paula Roydhouse[1], Mr James Merrett[1], Dr Courtney Lane[1,2], Prof Benjamin P. Howden[1,2]
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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Carbapenemase-producing organisms (CPOs) are a major threat to public health and patient safety, with carbapenemase-producing Enterobacterales notifiable in Victoria since 2016, and Acinetobacter and Pseudomonas species from 2019. Together with the Victorian Department of Health, local public health units, and health services, MDU PHL integrates prospective genomic and epidemiological investigation of CPO cases to detect local transmission. Here we report on the evolving epidemiology of CPOs in Victoria.

In 2024, 450 cases were notified (0.64 notifications per 100,000 population), the highest in nine years of surveillance and 30% more than 2023. About half (57%) of cases were likely acquired overseas; of the remainder, only one-third were attributable to a known local cluster or outbreak, and two-thirds were unknown source. Twenty-six transmission risk areas (TRAs) were declared across one regional and five metropolitan health services; 14 TRAs occurred in one health service with six distinct outbreaks. Most local outbreaks involved blaNDM (50%) and blaIMP (30%). Overall, blaNDM-5 has emerged as the most common carbapenemase gene, reported in one in three cases in 2022-2024, compared to fewer than one in five cases from 2016-2021. The prevalence of blaNDM-1 has also increased from just over 10% of cases before 2022 to 25% in 2024. Surveillance is also detecting novel carbapenemase genes, including blaOXA-1205 and blaOXA-1207.

The World Health Organization highlighted CPOs as the most critical bacterial priority pathogens in 2024. CPO epidemiology in Victoria has notably evolved, with increasing complex transmission patterns in recent years. Consistently high case numbers reflect increased importation of blaNDM-5 and multiple local outbreaks of blaNDM-1 transmission, likely via mobile genetic elements (MGEs). Comprehensive national surveillance and response is required to reduce impact of CPO importation. Current surveillance and response protocols do not account for MGE transmission; novel methods are essential to adequately respond to these outbreaks.

Gradual gains – a consistent approach to reduce overdue childhood immunisations

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5A - Child & maternal vaccination, Halls CD Lower Section, June 11, 2025, 3:30 PM - 4:55 PM

Context: Childhood vaccination is a critical public health measure that prevents the spread of infectious diseases. Despite its significance, Australia's childhood vaccination coverage rates have fallen for the third consecutive year, partly due to challenges in delivering actionable insights from the complex Australian Immunisation Register (AIR) data reports, among other factors.

Aim: This project aims to improve childhood vaccination rates in Central and Eastern Sydney PHN (CESPHN) region by leveraging data from AIR to deliver a targeted quality improvement activity for general practices.

Process: The project involves extracting data from the AIR to produce tailored reports for general practices, highlighting children overdue for vaccinations. Framed as a quality improvement (QI) initiative, the project provides clear and actionable guidance for timely follow-ups with parents and guardians. Monthly reports help establish this QI activity as a routine task for the 345 participating general practices.

Analysis: In 2024, the project achieved a 18.46% reduction in children overdue for vaccinations within CESPHN general practices, reducing from 5,200 in January to 4,240 in December. This improvement demonstrates the effectiveness of providing general practices with regular, accessible and actionable reports derived from AIR data to manage overdue childhood vaccinations.

Outcomes: By improving the accessibility and utilisation of vaccination data, this project has not only enabled practices to easily identify and follow-up overdue children but has also driven significant changes in practice behaviour. Embedding data-driven approaches into routine workflows has facilitated a system-wide shift towards proactive immunisation management, ensuring sustainability. These changes contribute to better public health outcomes by reducing the risk of vaccine-preventable diseases among children and strengthening the overall resilience of immunisation programs.

Limitations: A key limitation is the lack of a system to track overdue children to measure intervention and demonstrate an increase in childhood vaccination. This is due to the five-month delay in the release of childhood vaccination coverage data by the Department. Quarterly cohort changes and the absence of practice-specific coverage rates further hinder monitoring progress at the practice level.

Understanding the epidemiology and evolutionary ecology of Nipah virus spillover in Bangladesh

Dr Ariful Islam[1], Dr Sharmin Sultana[2], Dr Wasik Rahman Aquib[3], Mr Md Mahfuzur Rahmam[3], Dr Shusmita Dutta Choudhury[2], Dr AKM Dawlat Khan[2], Mr Monjurul Islam[2], Ms Emama Amin[2], Dr Nabila Nujhat Chowdhury[2], Dr Pronesh Dutta[2], Dr. Mohammad Enayet Hossain[3], Dr Kwe Claude Yinda[4], Dr Maryska Kaczmarek[5], Dr Md Ziaur Rahman[3], Professor Jade Forwood[1], Dr Vincent Munster[4], Dr Jonathan H Epstein[5], Dr Syed Moinuddin Satter[3], Professor Tahmina Shirin[3]
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4C - Zoonoses & arboviruses, Room E2, June 11, 2025, 1:30 PM - 3:00 PM

Nipah virus (NiV) is an emerging bat-borne virus causing fatal encephalitis outbreaks in Bangladesh. Hence, we conducted this study to understand the epidemiology and evolutionary ecology of NiV spillover patterns in Bangladesh. Between 2001 and 2023, Bangladesh experienced 339 human cases of NiV infection across 221 spillover events in 32 districts, with a case fatality rate of approximately 70%. Notably, 40.72% of these events occurred in Faridpur and 27.15% in Naogaon, accounting for 150 spillovers from these two districts alone, indicating a higher prevalence of NiV in these regions. Both districts are known for their intense date palm sap (RDPS) production, a suspected source of NiV transmission, as 45.72% (155/339; 95% CI: 40.33–51.19) of cases were linked to RDPS consumption and bat exposure. Furthermore, 66.37% (225/339; 95% CI: 61.08–71.40) of cases were associated with cluster events, suggesting significant human-to-human transmission. We conducted environmental investigations to assess potential spillovers from bats to humans. We identified 117 Indian flying fox (Pteropus medius) bat roosts within 10 km radius of 51 outbreak epicenters across 19 districts. Environmental samples, including roost urine and bat swabs, were collected over three days per site. In 33.33% (17/51; 95% CI: 20.32–47.10) of spillover events, we identified nearby bat roosts, while 18.80% (22/117; 95% CI: 12.18–27.07) of the roosts tested positive for NiV, either through individual bat samples or roost urine. We further performed phylogenetic analysis of Nipah virus phosphoprotein of our 4 newly generated NiV sequences and publicly available sequences from Bangladesh and reference sequences from other countries. This revealed two distinct clades in Bangladesh (Clade 1 and Clade 2) that have intermingled geographically over time. Additionally, four amino acid sites under positive selection were identified, differentiating Malaysian and Bangladeshi strains, which cannot be explained by simple divergence over time, highlighting special evolutionary pressure. The analysis suggests a potential bat-to-human transmission pattern, with human NiV strains genetically closer to bat strains. This study highlights the role of bats in the transmission of NiV to humans in Bangladesh and underscores the importance of environmental monitoring, phylodynamics, molecular characterization, pathogenicity in understanding the virus's spread and evolution.

Paediatric IPD After COVID-19: Emerging Trends and Implications for Vaccine Strategies

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1A - COVID-19, Halls CD Lower Section, June 10, 2025, 11:00 AM - 12:30 PM

Background: Despite nearly two decades of high pneumococcal conjugate vaccine (PCV) coverage in Australia, invasive pneumococcal disease (IPD) continues to cause a significant disease burden. The epidemiology of IPD changed with the non-pharmaceutical interventions (NPIs) used to control the coronavirus disease (COVID-19) pandemic. We assessed the impact of these NPIs on viral co-infection rates, serotype distribution, and clinical characteristics of IPD in Australian children before and after NPI implementation.
Methods: We retrospectively reviewed IPD cases in children <18 years at four Australian children's hospitals, identified via two state reference laboratories, incorporating two-year periods pre- (2017–2018) and post-NPI (2021–2022).
Results: We analysed 220 cases (116 in pre-NPI and 104 in post-NPI cohorts). More than half (n=120) had a viral co-infection, commonly rhinovirus (n=26), RSV (n=21), and influenza (n=7). Children with antecedent or concurrent viral co-infection were younger at the time of IPD presentation (3.4y vs 4.3y, p=0.05), had longer hospital stays (15.3 vs. 10.4 days, p=0.01), and prolonged duration of fever (>14 days; 11% vs. 1%, p=0.04) compared to those without viral co-infection. Serotype 3 was the most frequently identified cause of IPD (25.0%, 44/176), and one-quarter of serotyped cases (25.6%, 45/176) were due to serotypes included in newer PCVs. No significant differences were observed in mean age, fever duration, or markers of inflammation between pre- and post-NPI cohorts. However, a higher proportion of cases presenting with meningitis (3.4% vs 13.5%, p=0.001) was observed post-NPI. Bacteraemia occurred in 25.0% (29/116) of pre-NPI cases and 31.7% (33/104) post-NPI.
Conclusions: Our study reveals unique insights into the changing epidemiology of paediatric IPD in Australia. We highlight the substantial contribution of newer PCVs in covering serotypes causing IPD and the potential role of enhanced immunisation in reducing severe IPD in children with viral co-infections.

Evaluating the performance of LLMs in abstract screening for systematic review

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2F - Improving vaccine safety surveillance, Riverbank Room 4, June 10, 2025, 1:30 PM - 3:00 PM

Background:
The abstract screening process in systematic reviews is time-consuming and labor-intensive, involving a high volume of literature and complex reporting standards. This research aims to evaluate the performance of large language models (LLMs) in automating abstract screening for a systematic review on prevalence and serotype distribution of nasopharyngeal carriage of Streptococcus pneumoniae in Vietnam. A total of 286 abstracts were screened, of which 27 were selected for full-text review.

Method:
A standardized prompt structure, simulating a typical senior-junior researcher interaction, was developed to assess the performance of eight proprietary LLMs (OpenAI GPT-4o, o1, and o1-mini; Google Gemini 2.0-flash and 1.5-pro; Anthropic AI Claude 3.7-sonnet and 3.5-haiku). The LLMs' screening results were compared against the consensus results of the human expert screening process, which served as the ground truth. Performance metrics included Pearson R correlation coefficient, Cohen's Kappa, sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), proportion missed, and workload saving. Total time and cost (USD) for prompt generation and screening were also calculated.

Result:
LLMs demonstrated varying performance in abstract screening. Sensitivity ranged from 0.333 to 0.889, specificity from 0.888 to 0.992, PPV from 0.396 to 0.818, and NPV from 0.935 to 0.986. Cohen's Kappa values ranged from 0.439 to 0.702, indicating moderate to substantial agreement with human experts. The proportion missed ranged from 1.2% to 6.5%, while workload saving ranged from 0.804 to 0.899. The total cost was minimal (less than $1) for 6 out of 8 models, with only one model (OpenAI's o1) exceeding $31. Total time for screening ranged from 380.1 to 5987.4 seconds.

Conclusion:
LLMs show potential for automating abstract screening for systematic reviews, significantly saving time and resources. However, their performance varies, and careful consideration is needed when selecting and implementing LLMs for this purpose. Future research should focus on optimizing LLMs as well as prompt engineering for specific topics and exploring their integration into existing workflows.

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The design of a hub for short-term forecasting of epidemic activity

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Government agencies, academic researchers, and varied teams and individuals participate in producing forecasts and scenario projections for viral respiratory infections. The Australian Consortium of Epidemic Forecasting and Analytics created a forecasting hub to streamline input data and short-term forecast outputs. In a given respiratory infection season, multiple epidemics may be spreading concurrently. Different data sources and modelling approaches impact modelled outcomes, so a collaborative, hub based approach is useful to best guide decision makers to make rapid risk assessments regarding concurrent epidemics. Technical infrastructure and best practices have been developed within the consortium to improve the quality of both individual and ensemble forecasts. In this presentation, we will introduce the pipelines and tools designed to distribute streamlined data to modelling teams and integrate model outputs. The tools described tie in with a wider global effort to build collaborative forecasting platforms borne out of the COVID-19 experience.

Public-Private Schools' Differential in Seasonal Influenza Vaccine Uptake among School-aged Australian Children

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1D - Preventing respiratory infections, Riverbank Room 2, June 10, 2025, 11:00 AM - 12:30 PM

Background: Seasonal influenza vaccine (SIV) is the most effective tool to prevent influenza infection and associated hospitalisations and deaths. Despite this, coverage remains sub-optimal, especially in school-aged children. We investigate SIV uptake among school-aged Australian children in 2023, compare the uptake between public and private school students, and assess the role of socio-economic inequality in influencing SIV uptake inequity.

Method: We analysed the whole-of-population Person-Level Integrated Data Asset (PLIDA). Vaccination records were extracted from the Australian Immunisation Register, and school type was identified from linked Census 2021. The Oaxaca-Blinder decomposition was used to identify factors driving inequity in SIV uptake between public and private school students.

Results: In 2023, Australia's population was 27.4 million. Of 9.5 million SIV doses administered, only 0.7 million (7%) went to school-aged children (5-<18 years), despite them comprising 16% of the population. SIV coverage among school-aged children was low (<15% for secondary, and <18% for primary), well below overall population coverage (33%).
Private school students have notably higher SIV uptake than public school peers, with a wider gap at higher education level (coverage is 19.6% in private secondary schools vs. 14.2% in public schools). Private school students, on average, demonstrate greater socio-economic advantage. Differences in observed child, parental, family, and residential-area characteristics explain >60% of total SIV uptake gap among children in the two school types. Of note, parental education, parental income, and socio-economic characteristics of residential area play the most important role.

Implications: SIV uptake among school-aged Australian children is low and unevenly distributed. Addressing socio-economic inequality could reduce vaccination inequity. Further research into the impact of state/national funded SIV policies and alternative methods of SIV delivery for school-aged children, such as live attenuated SIV in a nasal spray and a school-based SIV program, on improving uptake and reducing this inequity could be explored.

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Seasonal influenza virus seropositivity in two Australian populations before/during/after the COVID-19 pandemic

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Introduction

The introduction of SARS-CoV-2 in Australia resulted in the closure of international borders from March 2020, along with introduction of non-pharmaceutical interventions. Influenza virus circulation in Australia dropped dramatically, until international borders reopened from November 2021, and Western Australia (WA)'s border in March 2022.

Methods

Virological surveillance data and residual sera from two laboratories, in WA and Victoria, were used to examine influenza virus circulation and seropositivity over this time. Inter-seasonal periods examined were: pre-COVID–19 introduction (Dec 2019-Mar 2020); during COVID19 restrictions (Dec 2020-Mar 2021, Dec 2021-Mar 2022); and after international borders reopened (Dec 2022-Mar 2023). 200 sera from each site at each time period were tested by haemagglutinin inhibition assay (HI) for antibodies to influenza A and B viruses commonly circulating or used in vaccines across these periods.

Results

Overall, seropositivity (% with HI titre >40) to various H1N1pdm09 and H3N2 viruses was similar across the states, or slightly higher in WA. Seropositivity was higher in those aged 5-19y and 20-64y in WA for most H1N1pdm09 viruses. An increase in geometric mean titres (GMT) over time was seen for H1N1pdm09 in 5-19y in WA. Changes in seropositivity related to the strains included in the seasonal vaccine were not generally observed, although the H3N2 A/Darwin/6/2021 virus was included for the 2022 season, and seropositivity increased from 17% (2021-2022 period) to 42% (2022-2023) in Vic and 16% to 39% in WA. While B/Yamagata became globally extinct in April 2020, seropositivity averaged 60% across subsequent interseasonal periods.

Conclusion

Impacts of influenza infection or vaccination with different influenza virus strains were not always clear in this study, which may suggest that residual sera may not be a sensitive enough method to distinguish annual variation in influenza epidemics and current levels of vaccination, and more targeted or larger serosurveys may be required.

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Whole transcriptome Analysis of Sex-Specific Vaccine Effects

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Vaccines exert non-specific effects (NSEs) on the immune system, impacting immunity beyond targeted pathogens. These effects often exhibit sex-specific differences, with females frequently displaying more pronounced responses. While primarily studied in infants, NSEs likely influence vaccine impact across all ages, offering potential for modulating immune homeostasis and mitigating immunosenescence. This study investigates sex-specific NSEs of seasonal influenza vaccines in senior (>65) adults participating in the VITAL trial. RNA sequencing was performed on blood samples at baseline and 24 hours post-vaccination. Initial analysis of 90 VITAL older participants focused on the impact of Influenza vaccination (FluZone, FluAd or FluQuad) on gene expression. Using statistical modelling through Bioinformatics pipelines to understand sex differences emerging within the different influenza vaccine types, we investigated differentially expressed genes (DEGs) and their biological functions via pathway enrichment analysis (Panther, GSEA, KEGG, DAVID, REACTOME). Controlling for sex, no significant DEGs were associated with vaccine type. However, stratification by seasonal influenza vaccine revealed sex-specific DEGs in the FluAd, FluZone and FluQuad group (35 in males, 219 differentially expressed between sexes). Using a variety of readouts, initial data suggests important sex differential reactivity to the three different influenza vaccines. The results from this study may help inform vaccine policy and strategy for recommended vaccines in different age groups stratified by sex, particularly for older individuals.

An RCT of 4CMenB and MenB-fHbp vaccination on meningococcal carriage in adolescents

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Poster Displays - Morning Session, Halls FG, June 11, 2025, 10:30 AM - 11:00 AM

Background

The "Be on the TEAM" study evaluated the impact of 4CMenB (Bexsero) and MenB-fHbp (Trumenba) on meningococcal carriage and their potential to provide indirect population protection. The indirect (herd) protective effects of the conjugate capsular meningococcal vaccines cannot be extrapolated to the subcapsular protein-based capsular group B vaccines.

Methods

A cluster RCT of UK adolescents 16-19 years-old in 155 schools across 16 sites assigned by study site to (i) 4CMenB vaccination (ii) MenB-fHbp vaccination or (iii) control (deferred vaccination). Oropharyngeal swab samples were taken at baseline and at 12-months in all groups. The primary outcome was carriage of genogroup B, C, W, X or Y meningococci at 12-months. Secondary outcomes included carriage of genogroup B, other genogroups, hyperinvasive strains, new acquisition and, analysis by MenDeVar Index. Carriage was identified by culture and characterised by WGS. A secondary carriage endpoint using PorA culture-amplified PCR was added. A sample size of 8000 per group was estimated to provide 80% power to detect a 30% reduction in carriage in each vaccine group. Group comparisons used a GEE model adjusted for school clustering, demographics, carriage risk factors and baseline carriage. EudraCT: 2017-004609-42

Results

24098 Participants were recruited between March 2018 and November 2019. The study was discontinued early due to Covid-19 restriction measures and the closure of UK schools in March 2020. Swabs were available from 11,427 participants (control n=3917, MenB-fHbp n=3870, 4CMenB n=3640) with completion of all laboratory processing and statistical analysis.

Conclusions

Final results for the primary outcome and all secondary outcomes for carriage assessed by conventional culture and culture-enhanced PCR will be presented.

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