

Evaluating vaccine coverage in high-risk populations at Northern Health

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INSPIRED RESEARCHERS

Northern Health

Background

Vaccination is highly effective in preventing infection with and transmission of vaccine-preventable diseases (VPD) in vulnerable patients (1). In high-risk populations, such as immunocompromised patients, VPDs are associated with higher rates of adverse outcomes and substantial healthcare costs (2). This study aimed to assess vaccination coverage amongst high-risk patients managed in a metropolitan hospital.

Methods

- This retrospective study reviewed receipt of vaccination amongst high-risk populations during a one-month period (1st to 31st of March 2025) at Northern Health.
- High risk populations were defined as patients with solid-organ and haematological malignancies, chronic respiratory conditions, human immunodeficiency virus (HIV), end stage renal failure (ESRF), and geriatric patients (aged over 65).
- During the study period, up to 100 outpatients from each high-risk population were reviewed. Where fewer than 100 outpatients were available, all eligible patients were included. ESRF patients were assessed through haemodialysis unit attendance, and geriatric patients were assessed from admissions to a GEM unit.
- Patient immunisation status was extracted from the Australian Immunisation Record (AIR) and compared to current Australian guidelines (3).
- The primary outcome was up-to-date vaccination status as per national guidelines

This study was approved by the Northern Health Research Development and Governance Unit QA 45.2025

Results

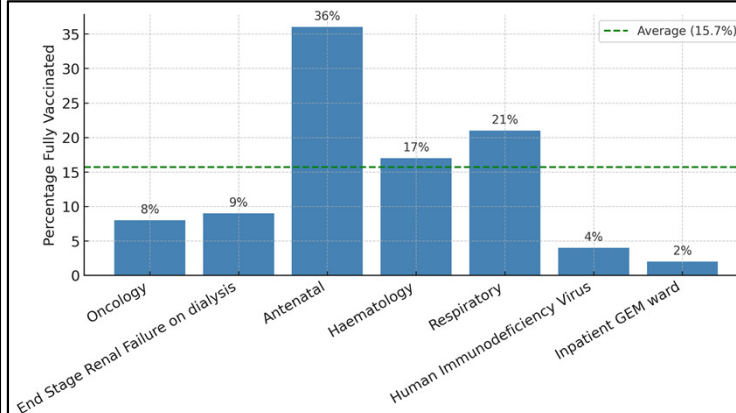


Figure 1: Vaccination Coverage in High-Risk Populations

- A total of 599 patients were included in this study.
- 94 (15.7%) patients were fully vaccinated.
- Vaccination coverage was highest in the antenatal cohort (n=36; 36%), while the lowest coverage was seen amongst inpatients in the GEM unit (n=1 ; 2%).

Conclusion

- Vaccination is highly effective in protecting vulnerable patients. However, this study highlighted a substantial gap in vaccine coverage amongst high-risk patients at Northern Health.
- Implementing strategies to ensure high-risk patients are immunized as per Australian guidelines, may reduce inpatient admissions, complications and healthcare associated costs

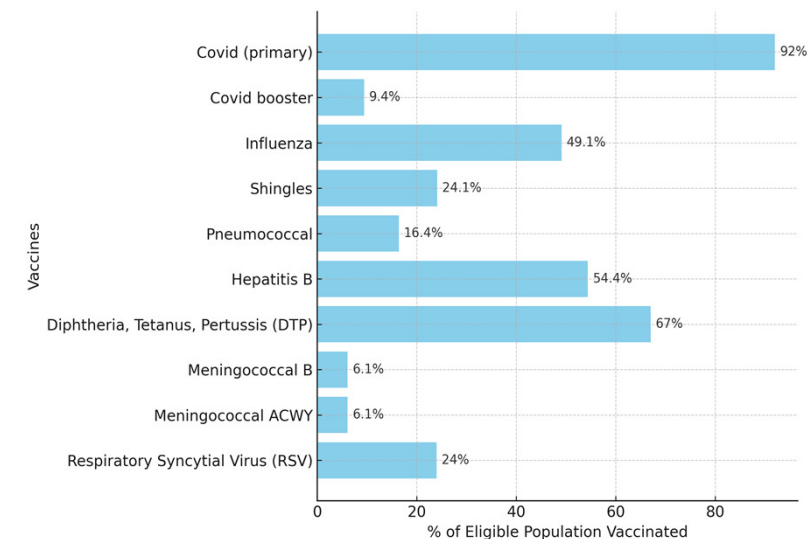


Figure 2: Vaccination Uptake Across Recommended Immunisations

- Vaccine coverage was lowest for Meningococcal B and ACWY with 3 of 49 eligible patients vaccinated (6.1%).
- Conversely, coverage was highest for the Covid-19 primary course (n= 552; 92%) and Diphtheria-Tetanus-Pertussis where coverage was seen in 67 of 100 eligible patients (n= 67%).

- Australian Institute of Health and Welfare. *Potentially preventable hospitalisations* [Internet]. Canberra; 2025 [cited 2025 Oct 6]. Available from: <https://www.aihw.gov.au/hospitals/topics/admitted-patient-safety-and-quality/potentially-preventable-hospitalisations>
- Zhang D, Petigara T, Yang X. Clinical and economic burden of pneumococcal disease in US adults aged 19–64 years with chronic or immunocompromising diseases: an observational database study. *BMC Infect Dis*. 2018 Aug 29;18(1):436. doi:10.1186/s12879-018-3326-z
- Australian Government Department of Health and Aged Care. *Australian Immunisation Handbook* [Internet]. 11th ed. Canberra: Australian Government Department of Health and Aged Care; 2023 [cited 2025 Oct 6]. Available from: <https://immunisationhandbook.health.gov.au>