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

Data Linkage Update – Vaccine Safety, Effectiveness and Antenatal Vaccine Coverage

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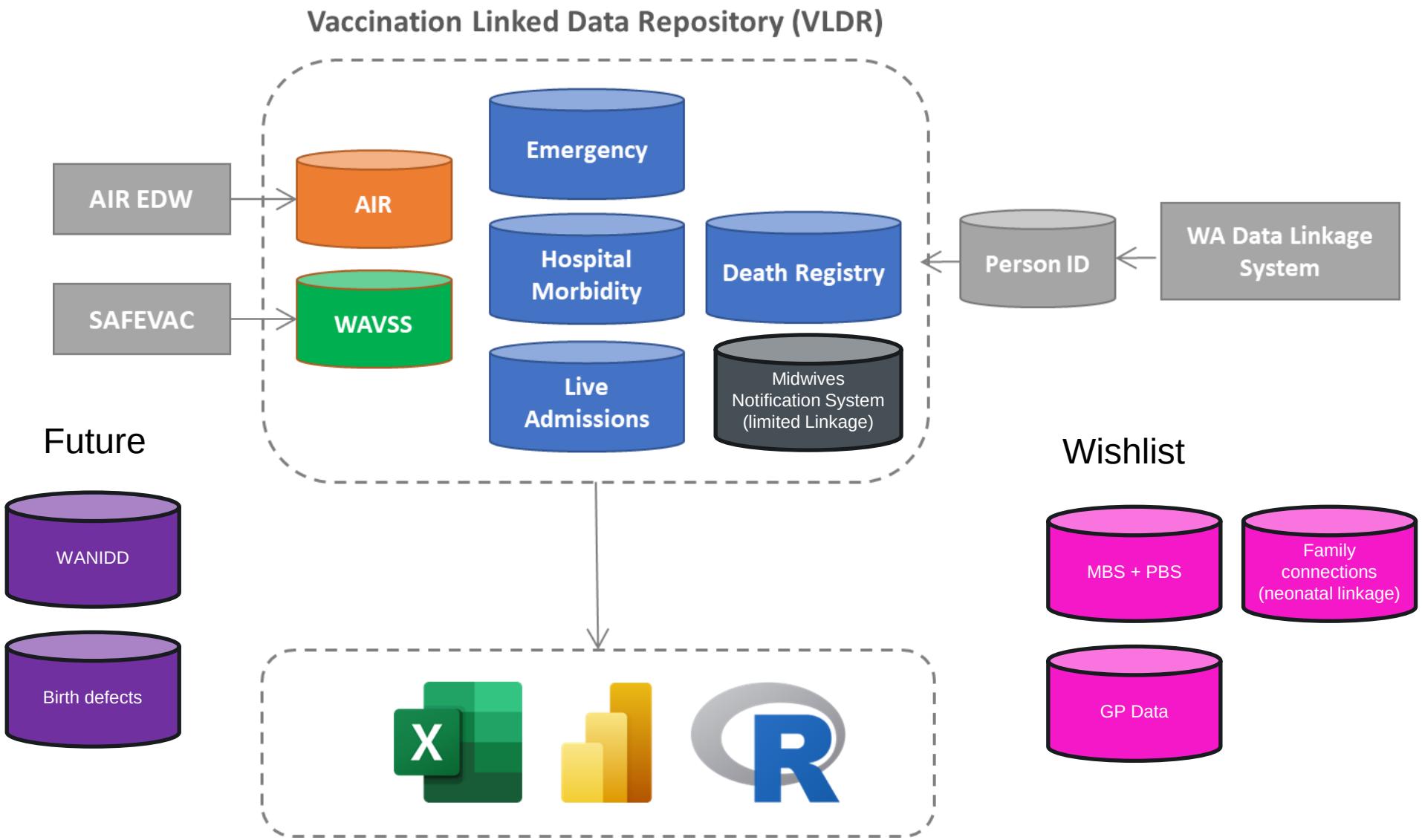
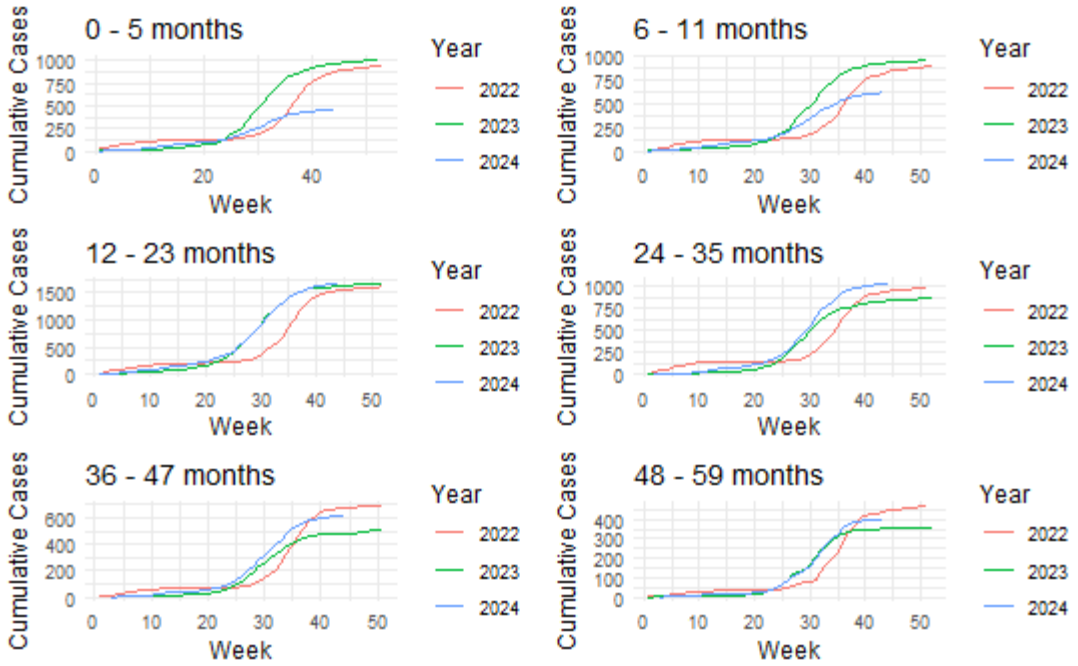
Collections in the WA VLDR



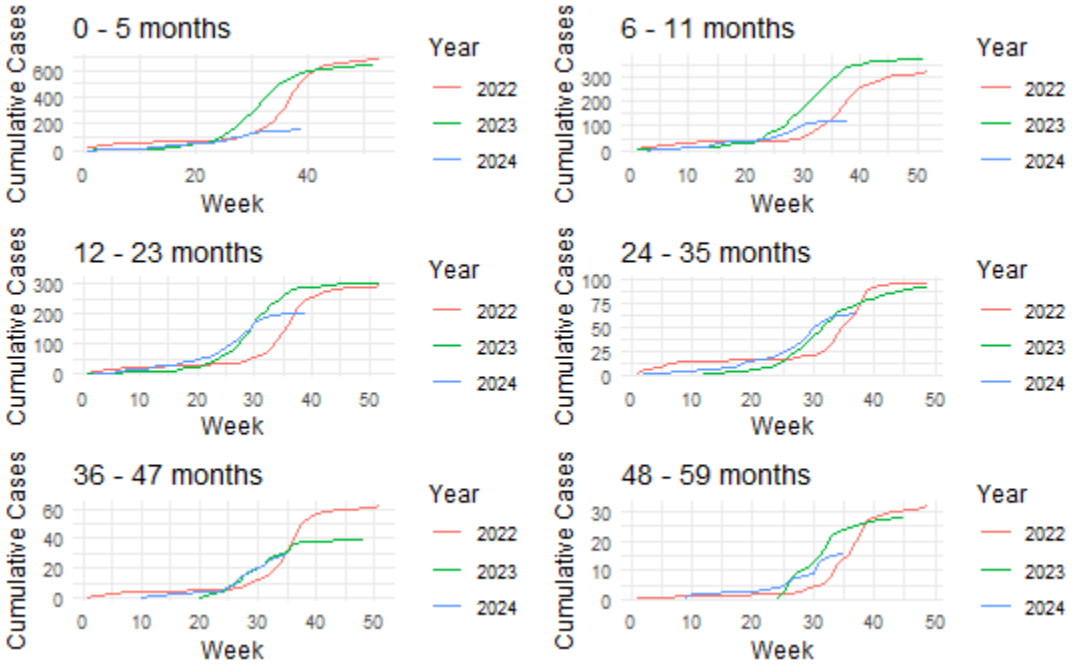
Vaccine Effectiveness

- Cohort approach (time-to-event) used
- Exposure of interest – RSV vaccination (nirsevimab) >= 7 days before positive test – all of AIR
  - Covariates = sex, Aboriginal status, IRSAD, week of birth
- Outcomes of interest
  - Infection (positive notification) – linked to WANIDD
  - RSV-related hospitalisation (admission for J12.1, Respiratory syncytial virus pneumonia, J20.5, Acute bronchitis due to respiratory syncytial virus or J21.0, Acute bronchiolitis due to respiratory syncytial virus) – linked to HMDC

Vaccine Effectiveness RSV – prelim.



Infections
68.5% (62.4% - 73.6%)



Hospitalisations*
84.4% (78.2% - 88.8%)
*data not complete but indicative

Vaccine Effectiveness Flu

- Preliminary estimates for breakthrough infection showing overall VE to be ~60% for influenza A and ~82% for influenza B (very low case numbers for the latter)
- Hospitalisation data pending

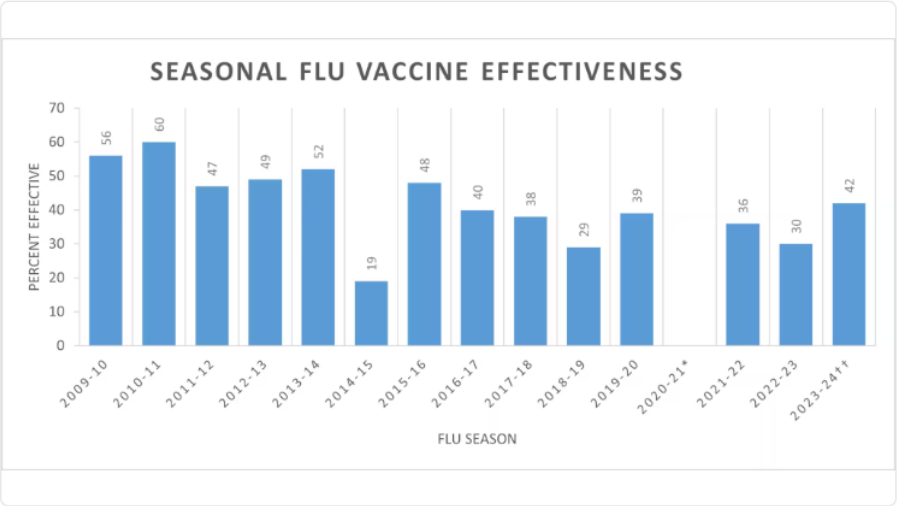
Effectiveness of Seasonal Flu Vaccines from the 2009-2024 Flu Seasons

The vaccine effectiveness estimates included in the chart and tables below are vaccine effectiveness estimates from the U.S. Flu VE Network.

Effectiveness of Seasonal Flu Vaccines from the 2009-2024 Flu Seasons EXCEL — Download

Vaccine Effectiveness PowerPoint Presentation Slides PPT — Download

View Larger



https://www.cdc.gov/flu-vaccines-work/php/effectiveness-studies/index.html

Vaccine Coverage – antenatal vaccines

- Data from linked hospitalisation sets (using birth codes):
  - Influenza vaccine coverage was 50.8% in 2022 and 48.7% in 2023 (increases to ~60% by restricting dates).
  - Pertussis vaccine coverage was 73.1% in 2022 and 73.9% in 2023.
- Aligns quite well with data from MNS linkage:
  - 2022 coverage 49% for flu and 71% for pertussis; 2023 data not yet available

Vaccine Coverage – antenatal vaccines

Do vaccines stop me and my baby from getting sick?

Are antenatal vaccines safe for me and my baby?

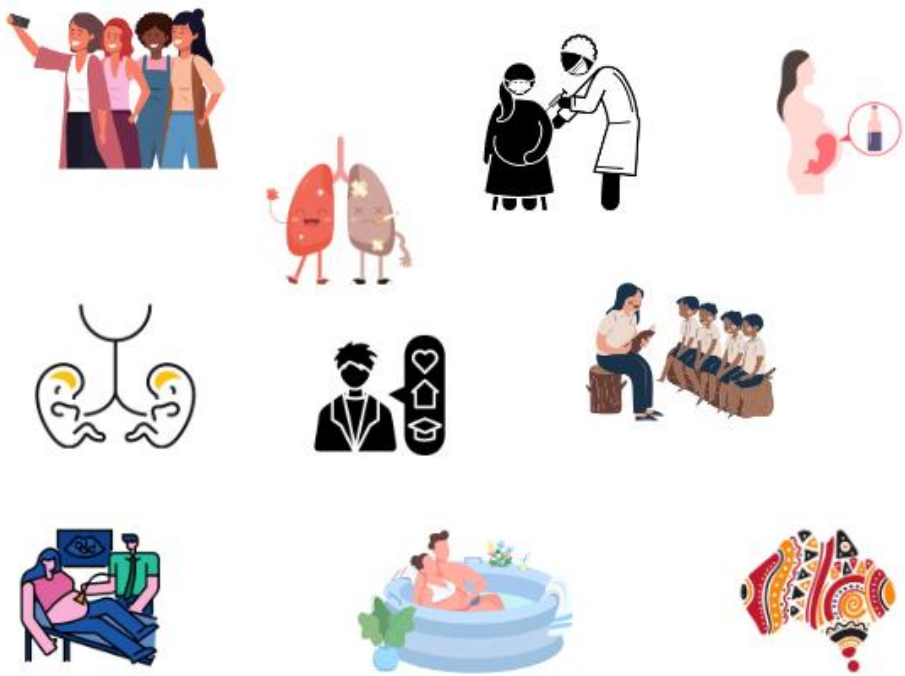
Should I get a vaccine while pregnant?

How can I make up my mind about the RSV vaccine?

Vaccine Coverage – antenatal vaccines

Maternal factors significantly associated with being vaccinated for influenza and/or pertussis

(univariable analyses)



Plan is to share the final results with providers along with safety data to support discussions around antenatal vaccination esp. those at higher risk of not being vaccinated

Vaccine Safety – antenatal vaccines

- Biomedical science student joined CDCD for a short-term placement
- Preliminary analysis looking at antenatal vaccine safety with regard to birth outcomes
- Exposure(s) = antenatal flu or pertussis vaccine according to AIR linkage; controlled for a number of covariates associated w/ vaccination/healthcare access
- Outcomes of interest = stillbirth, pre-term birth (PTB), small for gestational age (SGA), low birthweight (LBW)
- No evidence on preliminary analysis to show influenza and pertussis vaccines received in pregnancy associated with increased risk of these birth outcomes (in keeping with current literature)

Vaccine Safety – other work

- Planning for antenatal RSV vaccines in 2025
  - Rapid cycle analysis – rapid safety assessment
  - Active case-finding
  - Follow-up of birth outcomes
- Continuation/completion and publishing of other AN safety data (maternal outcomes, neonatal outcomes, vaccine effectiveness) – aim to increase vaccination rates
- Routine collaboration w/ Victoria (MCRI) on safety signal detection/validation
- Contribution to Global Vaccine Data Network (GVDN) safety studies

Thank You!

- Questions?
  - Thanks to all co-authors for their contribution to this presentation

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