How well is the 23vPPV working in Indigenous adults?

Rob Menzies
Acknowledgements

- Ross Andrews
- Deborah Lehman
  - Telethon Institute for Child Health Research
- Heather Cook
  - Northern Territory CDC
- Sarah Moberley
- Enhanced IPD Surveillance Working group
- ABS
23vPPV – history of Indigenous vaccination programs
23vPPV recommended and funded for Indigenous adults:

- ≥50 years
- 15-49 years with risk factors
  - Chronic disease
  - Heavy alcohol use
  - Smoking
- All 15+ years in NT
Methods

- IPD notifications rates

- Vaccine effectiveness
  - NT
    - Screening method
    - Indirect cohort method
  - National
    - Indirect cohort method
Methods, cont.

○ National Aboriginal and Torres Strait Islander Health Survey 2004-05
  ● Vaccination coverage
  ● Risk factor prevalence

○ NT Immunisation Register
  ● Vaccination coverage
Risk factor prevalence, Indigenous Australian adults, 2004-05

Source: Australian Bureau of Statistics National Aboriginal and Torres Strait Islander Health Survey, 2004-05

Chronic conditions
Chronic conditions + heavy alcohol
Chronic conditions + heavy alcohol + tobacco

% of population

Risk factor prevalence, Indigenous Australian adults, 2004-05

Source: Australian Bureau of Statistics National Aboriginal and Torres Strait Islander Health Survey, 2004-05

Chronic conditions
Chronic conditions + heavy alcohol
Chronic conditions + heavy alcohol + tobacco

% of population
Receipt of 23vPPV in previous 5 years

[Diagram showing the percentage of Indigenous population aged 18-49 with risk factor(s) and total Indigenous population aged 50 or over for different jurisdictions in Australia.]

Jurisdiction

Source: Australian Bureau of Statistics National Aboriginal and Torres Strait Islander Health Survey, 2004-05
Cumulative percentage of cases of IPD in Australians by age, 2006

- Indigenous
- Non-Indigenous

Cumulative percent of cases (2006)

Age group (years)
North Queensland

Source: Hanna, Humphreys and Murphy, MJA 2006;184(3):118-121
IPD in WA, 1997-2007
(Aboriginal population)

Less IPD in under 2s
(but >4x higher than non-Aboriginal kids)

D Lehmann, unpublished data
IPD in WA, 1997-2007
(Aboriginal population)

- Less IPD in under 2s (but >4x higher than non-Aboriginal kids)
- What's happening here?
7v IPD types, 1997-2007
(WA Aboriginal population aged ≥15 years)

D Lehmann, unpublished data
23v (non 7v) IPD types, 1997-2007
(WA Aboriginal population aged ≥15 years)

D Lehmann, unpublished data
Non-vaccine IPD types, 1997-2007
(WA Aboriginal population aged >15 years)

D Lehmann, unpublished data
IPD notifications, Northern Territory 1994-2005
(Aboriginal population aged 15-39 years)
IPD types, 1994-2005
(NT Aboriginal population aged 15-39 years)

S Moberley, unpublished data
IPD and 23vPPV coverage, Northern Territory Central Region, (Aboriginal population aged 15-39 years)
IPD, NT Top End
(Aboriginal population aged 15-39 years)

Top End IPD (vaccine-type)
Top End 23vPPV uptake

S Moberley, unpublished data
## Vaccine effectiveness

<table>
<thead>
<tr>
<th>Region</th>
<th>Screening method</th>
<th>Indirect cohort</th>
<th>VE</th>
<th>Vaccine uptake amongst the comparator</th>
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<tr>
<td>NT</td>
<td>3% (-43%,35%)</td>
<td>57% (15%,78%)</td>
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<td>60% (33/55)</td>
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<td>Central</td>
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* Population coverage for screening method determined from NT imm register

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### 23vPPV effectiveness against IPD, Age ≥15 years, Indirect Cohort Method

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<th>Group</th>
<th>Ever vaccinated</th>
<th>Fully vaccinated†</th>
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<tr>
<td></td>
<td>Unadjusted VE</td>
<td>Adjusted VE*</td>
</tr>
<tr>
<td></td>
<td>(95%CIs)</td>
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</tr>
<tr>
<td><strong>Indigenous:</strong></td>
<td></td>
<td></td>
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<tr>
<td>All</td>
<td>55 (4 – 89)</td>
<td>63 (9 – 85)</td>
</tr>
<tr>
<td>Northern Australia</td>
<td>58 (-5 to 83)</td>
<td></td>
</tr>
<tr>
<td>Northern Territory</td>
<td>56 (-39 to 86)</td>
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</tr>
<tr>
<td><strong>Non-Indigenous:</strong></td>
<td>32 (-11 – 59)</td>
<td>38 (-146 – 84)</td>
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Conclusions

- Impact of 23vPPV on IPD is not clear
  - ✔ Nth Qld
  - ? WA
  - ? NT
- Low coverage, particularly in <50 years of age
- Most IPD in <50 year-olds
- VE estimates are >0
- Expand age eligibility?
  - Impact of ≥2 doses