GP Pneumosurvey

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Flinders University
Disclosures & Acknowledgements

Member
- Immunisation Coalition Scientific Advisory Board
- Seqirus Pneumococcal Advisory Board

Pneumosurvey
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- Peter Everett (Survey administration and analysis)
Overview

• Pneumococcal burden of morbidity
  • Incidence
  • Changes following childhood PCV13 program
  • PPV23 vaccine efficacy
  • PPV23 Coverage

• GP Pneumosurvey
  • Methodology
  • Results
Pneumococcal disease
Lower respiratory tract infection is the 4th leading cause of death in high-income countries, and responsible for 4.4% of total deaths.

Figure: Estimated annual incidence of selected community-acquired infectious diseases in Australia, 2011 to 2013. Stratified according to age group

≥ 80 years: 1,453.6 per 100,000 person years
Burden of disease

Prevalence of CAP due to pneumococcus

- Pre 2001: 26.4%
- Post 2005: 13.9%

Burden of morbidity

- IPD
- Community-acquired pneumonia (CAP)
- Meningitis

Burden of morbidity associated with community-acquired pneumonia

Fig. 1 Comparison of hospitalization metrics for CAP, MI, stroke, and OF

OF- osteoporotic fractures
MI- myocardial infarction
Snapshot of IPD trends in non-Indigenous elderly

Infant and adult pneumococcal vaccination programs have shaped the serotype-specific epidemiology of IPD in the 65+ population

- Herd immunity impact is clear for PCV serotypes excluding serotype 3.
- The adult 23vPPV NIP appears to have curbed replacement with IPD due to its 11 exclusive serotypes, highlighting the potential benefit of increasing adult 23vPPV coverage.
- An increasing proportion of IPD is due to non-vaccine serotypes.

Rates of IPD by serotype category, 2002-2016

- **Infant 7vPCV 65+ 23vPPV**
- **Infant 13vPCV**

A. Stein, A. W. Cripps, J. Litt, R. Menzies: EPIDEMIOLOGY OF INVASIVE PNEUMOCOCCAL DISEASE IN OLDER AUSTRALIANS REFLECTS IMPACT OF CHILDHOOD AND ADULT PNEUMOCOCCAL VACCINATION PROGRAMS, Poster presentation; ISSPD 2018, April 2018, Melbourne, Australia.
Prevention of pneumonia

Pneumococcal vaccination with PNEUMOVAX® 23 (23vPPV)¹

<table>
<thead>
<tr>
<th>VE against pneumococcal CAP</th>
<th>VE against IPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>25% - 35%</td>
<td>65% - 75%</td>
</tr>
</tbody>
</table>


CAP = Community acquired-pneumonia  
IPD = invasive pneumococcal disease  
VE= Vaccine efficacy
Influenza and Pneumococcal Vaccine coverage: NSW

Impact of universal funding for flu and 23vPPV vaccines

<table>
<thead>
<tr>
<th>Vaccines</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flu (1999)</td>
<td>61.3%</td>
<td>74.8%</td>
</tr>
<tr>
<td>23vPPV (2005)</td>
<td>35.4%</td>
<td>56.0%</td>
</tr>
</tbody>
</table>

Source: Australian Government. Health Stats NSW Influenza and pneumococcal disease immunisation by age and year [Internet]. HealthStats NSW; 2017
GP Pneumo-survey findings
GP Pneumosurvey: Methodology

• Web-based, Convenience sample (N=611), 2 waves (Nov-Dec 2018)

• Demographics
  – Full time 51.6%
  – Female 63.7%
  – Age three-quarters were ≥ 45 yrs
  – Practice
    • Group 76%
    • Corporate 11.6%
    • Regional 25.0% (population <15,000)
GP beliefs

• 23vPPV is both an important vaccine in patients 65 years and older (96.7%) and effective (93.9%)

• Most GPs were confident about:
  • Vaccine effectiveness of 23vPPV (82.7%)
  • Duration of protection lasting up to 5 years (65.5%)
  • Safety of 23vPPV (83.0%)

• Revaccination with 23vPPV
  – 1 in 7 GPs reported that a repeat dose of 23vPPV wasn’t necessary

23vPPV = PNEUMOVAX®23 (23-valent pneumococcal vaccine, polyvalent)
GP-reported 23vPPV coverage

- Self-reported 23vPPV coverage above 60% of eligible patients was moderate
  - 65-69 yr old patients 51.3%
  - 70 yrs and older patients 61.0%

- Predictors of lower 23vPPV coverage (60% or lower)
  - GP unclear about the patient eligibility for 23vPPV OR 0.65 (CI 0.45 - 0.93)
  - Self-reported re-vaccination with 23vPPV
    - 1 in 4 patients at increased risk received a second dose of 23vPPV

23vPPV = 23-valent pneumococcal vaccine, polyvalent
GP-reported system barriers to better 23vPPV coverage

• Practice doesn’t routinely identify and pro-actively recall patients eligible for 23vPPV 40.5%

• Inability to determine/confirm current patient 23vPPV status 26.4%

• Practice doesn’t tend to use opportunistic strategy to improved PPV23 coverage 21.0%

• Pneumosmart clinical decision aid
  – 62% of GPs did not know about the Pneumosmart tool
  – 11% of GPs used it regularly (often/always)

23vPPV = 23-valent pneumococcal vaccine, polyvalent
GP strategies to improve 23vPPV coverage

• Practices use Practice nurses to vaccinate the majority (>60%) of eligible patients with 23vPPV 49.3%

• Practices systematically review PPV eligibility in all patients 65 yrs and older and contact them 27.5%

• Opportunistic delivery of 23vPPV
  - Check PPV eligibility at the time of giving a flu injection 71.0%

23vPPV = 23-valent pneumococcal vaccine, polyvalent
What changes have been recommended for pneumococcal vaccination?

Current NIP funding (summary*)¹

<table>
<thead>
<tr>
<th>Non-indigenous adults aged 65+ years</th>
<th>1st dose</th>
<th>2nd dose (5 years)</th>
<th>3rd dose (5 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNEUMOVAX®2</td>
<td>PNEUMOVAX®23 only for ‘at-risk’ conditions*</td>
<td>PNEUMOVAX®23 only for ‘at-risk’ conditions*</td>
<td></td>
</tr>
<tr>
<td>PNEUMOVAX®23</td>
<td>-</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Children aged 4-5 years ‘at-risk’*</th>
<th>1st dose</th>
<th>2nd dose</th>
<th>3rd dose</th>
</tr>
</thead>
<tbody>
<tr>
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<th>Indigenous adults aged 50+ years</th>
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</tr>
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<tr>
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<td>PNEUMOVAX®23</td>
<td>PNEUMOVAX®23</td>
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</table>

| PNEUMOVAX®23: PBS reimbursed, 2-65 years old “at increased risk of pneumococcal infection”³ |

July 2019 PBAC Recommendation²

<table>
<thead>
<tr>
<th>Non-indigenous adults aged 70+</th>
<th>1st dose</th>
<th>2nd dose</th>
<th>3rd dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevenar 13®</td>
<td>-</td>
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</table>

<table>
<thead>
<tr>
<th>All ‘very high risk’ children &amp; adults aged 5+ years</th>
<th>1st dose</th>
<th>2nd dose (2 months)</th>
<th>3rd dose (5-10 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevenar 13®</td>
<td>PNEUMOVAX®23</td>
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| NO PBS listing |

* Minimum interval between any two doses of PNEUMOVAX®23 is 5 years, maximum 3 lifetime doses.⁴ Consult Australian Immunisation Handbook for full list of ‘at-risk’ conditions and recommendations.⁴

^ Consult NIP schedule and Australian Immunisation Handbook for complete list recommendations and NIP eligibility.


Which patients are likely to **miss out** if the PBAC recommendation is implemented on the NIP?

• ~1.2 million non-indigenous adults aged 65-69 years will no longer have access to any pneumococcal vaccine on the NIP

• Non-indigenous adults aged 65 years and older with common chronic conditions* will no longer have access to PNEUMOVAX®23
  – Previously able to access up to 3 funded doses
  – Will have access to a single dose of Prevenar 13® after the age of 70

• Delisting of PNEUMOVAX®23 from the Pharmaceutical Benefits Scheme (PBS) for all Australians aged >2 years of age

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* Individuals with specific medical condition(s) associated with very high risk of pneumococcal disease will have access to both Prevenar 13® and PNEUMOVAX®23

* Such as diabetes, chronic cardiac disease, chronic liver disease, chronic lung disease, tobacco smoking & alcoholism.

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## Implementation

<table>
<thead>
<tr>
<th>Disease</th>
<th>Magnitude of impact of GP recommendation OR on getting vaccinated</th>
</tr>
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<tbody>
<tr>
<td>Influenza</td>
<td>8.2&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Pneumococcal disease</td>
<td>32.1&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>Zoster</td>
<td>10.6&lt;sup&gt;2&lt;/sup&gt;</td>
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*GP recommendation is the biggest influence on patient likelihood of getting immunised*

Summary

- GPs are confident about the effectiveness and safety of the PPV23 but less sure about the duration of effectiveness.
- Self-reported PPV23 vaccination:
  - 1 in 2 65-69 yrs; 60% in those 70 years and older
  - Revaccination with PPV23 in higher risk groups was uncommon (25%).
- GP recommendation to get the (influenza and) pneumococcal pneumonia vaccine is one of the strongest influences on patient’s vaccination behaviour.
- PPV23 Implementation strategies:
  - More commonly opportunistic
  - Underutilise practice nurses and a systematic approach.
Recommendations

- Strategies
  - Better utilisation of practice nurses and pro-active approach
    - Appraise/update vaccination status in the clinical records
    - Routinely recommend PPV23 to those 65 years and older
    - Systematically identify target group, especially those at increased risk
    - Use digital recall/reminder systems eg Smartvax
  
  - Use the Pneumosmart tool to determine which pneumococcal vaccine is indicated and when
    - See http://www.pneumosmart.org.au/clinicians/vaccination-tool/
  
  - Routinely review coverage
    - Any PPV23
    - Repeat PPV23 in increased risk groups