Universal Paediatric Influenza Vaccination: The Western Australia Experience

Collaboration between VTG and Communicable Disease Control Directorate, DOH WA, Pathwest, VIDRL, PMH.

Credit to Dr Gabriela Dixon

Credit to Dr Paul Van Buynder
Universal Paediatric Influenza Vaccination: The Western Australia Experience

- Objective rationale
- Subjective rationale
Epidemiology of influenza in kids in Australia

Young children at risk of severe illness - high rates of admission to hospital

Figure 3.9.1: Influenza notification rates 2003–2005 and hospitalisation rates 2002/2003 to 2004/2005, Australia, * by age group
Annual rate of admission to hospital for influenza in children aged under 5 years in South Australia, 1996–2006, by Indigenous status

Katina D’Onise and Jane C A Raupach MJA 2008; 188 (9): 510-513
“Healthy children younger than 2 years and Aboriginal and Torres Strait Islander children younger than 5 years in SA have a high burden of illness from influenza, with hospitalisation rates that exceed those in older adults.

This may have implications for the target group recommendations for influenza immunisation.”
“However, an assessment of the efficacy, feasibility, safety and cost-effectiveness of vaccination in the Australian context would be required to support an expansion of the influenza immunisation program target groups to include children.”
**Rationale for Influenza vaccine in WA**

Flu kills three young children

**Bacterial infection, influenza joined to kill young children**

**FLU FACTS**

**What did the three children die of?**

- A combination of both influenza A virus and a bacterial infection.
- Deaths occurred within 3 days of illness.
- Influenza and influenza-like symptoms.
- Bacterial infections developed rapidly and were severe.

**What is the common denominator?**

- All children had a history of influenza illness in the past 12 months.
- None had received the influenza vaccine.

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**West Australian**

**07/07/2007**

**Page: 1**

**General News**

**Region: Perth**

**Circulation: 26,6025**

**Type: Capital City Daily**

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**MTWFS**
WA recommended influenza vaccine for all children from 6 months to <5 years of age for 2008 winter season

Vaccines (Vaxigrip, Fluvax) provided free of charge
QUESTIONS

- Can a paediatric influenza vaccination program attract sufficient coverage?

- Does paediatric influenza vaccination protect children against influenza illness and hospitalisations?
WA Influenza Vaccine Campaign

Flu outbreak WA’s worst in four years

Hundreds seek help in a night of worry

Three toddlers killed by fast-acting flu

The good news is flu vaccinations are free for children under five.

Last year, the flu proved very bad news for WA’s children under five. Three died - and many others fell rapidly and seriously ill. With flu strains becoming increasingly severe and unprectable, it’s vital that you vaccinate your children against this potentially deadly disease. A flu vaccination won’t give you child the flu; just safe and effective protection against this year’s influenza viruses. Vaccinations for children under five are free. Make an appointment now with your doctor.

Vaccination is safe, effective and free. Make an appointment now with your GP.

www.public.health.wa.gov.au
Paediatric Influenza Vaccination Uptake by Dose
2008 vs 2009

2008 Dose 1
34,314

2008 Dose 2
22,937
Paediatric Influenza Vaccination Uptake by Dose
2008 vs 2009

No. of Doses

- 2008 - Dose 1: 34,314
- 2008 - Dose 2: 22,937
- 2009 - Dose 1: 34,664
- 2009 - Dose 2: 8,920
## WA Influenza vaccine coverage 2008

<table>
<thead>
<tr>
<th></th>
<th>1(^{st}) dose percentage</th>
<th>2(^{nd}) dose percentage</th>
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<tbody>
<tr>
<td>CATI survey (n=183)</td>
<td>52%</td>
<td>47%</td>
</tr>
<tr>
<td>WAIVE ED (n=361)</td>
<td>52%</td>
<td>36%</td>
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</tbody>
</table>

*ACIP recommends vaccination of all children aged 6–23 months

ACIP* encourages vaccination of all children aged 6–23 months

![Graph showing percentage of children vaccinated by season](image)

*Advisory Committee on Immunization Practices.
†Children were considered fully vaccinated if they had 1) received no doses of influenza vaccine before September 1 and received 2 doses from September 1 through the date of interview or January 31 (whichever was earlier), or 2) received 1 or more doses of influenza vaccine before September 1 and received 1 or more doses during September–December.

§2002–03 (N = 13,831); 2003–04 (N = 13,881); 2004–05 (N = 12,056); 2005–06 (N = 13,546); and 2006–07 (N = 9,710).
Parental attitudes towards influenza immunisation

72% aware influenza vaccine recommended for young children from:

- GP (31%)
- TV ads (28%)
- Radio (17%)
- Friends or relative (14%)
- Childcare (12%)
- Newspaper (12%)
Parental attitudes towards influenza immunisation

Parents of children vaccinated

- To protect child (69%)
- because flu is serious (54%)
- as a result of flu deaths (50%)
- due to the media campaign (31%)
- because vaccine is free (17%)
Parental attitudes towards influenza immunisation

Why children did not get vaccinated?

- Recommended not to (28%)
  - by GP/Paediatrician (16%)
- Concern re side effects (26%)
- Vaccine not effective (16%)
- Flu not serious (12%)
- Did not get around to it (10%)
QUESTIONS

- Can a paediatric influenza vaccination program attract sufficient coverage?

- Does paediatric influenza vaccination protect children against influenza, hospitalisations?
Preliminary results from 2008

- 361 children with ILI recruited between 29/07/08 to 31/10/08

<table>
<thead>
<tr>
<th>Arm</th>
<th>No. Subjects</th>
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<tbody>
<tr>
<td>Hospital Inpatient</td>
<td>76</td>
</tr>
<tr>
<td>ED</td>
<td>211</td>
</tr>
<tr>
<td>GP</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>361</td>
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</tbody>
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- 6% ATSI
- Fully vaccinated 40%
- Partially vaccinated 12%
Influenza Positive Cases

74 positive cases of influenza
- 26 influenza A
- 48 influenza B
Preliminary results from 2008

Vaccine Effectiveness

- 83% against hospitalised influenza (CI -54 to 98)
- 51% in GP and ED arms (CI -9 to 78)

Limited by small numbers
Novel Influenza A (H1N1) Cumulative Hospitalization Rates by Age
United States, May 19, 2009 (n=202)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Incidence of Hospitalization/100,000</th>
</tr>
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<tbody>
<tr>
<td>0-4 years</td>
<td>0.19</td>
</tr>
<tr>
<td>5-17 years</td>
<td>0.11</td>
</tr>
<tr>
<td>18-49 years</td>
<td>0.05</td>
</tr>
<tr>
<td>50-64 years</td>
<td>0.04</td>
</tr>
<tr>
<td>65+ years</td>
<td>0.02</td>
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</tbody>
</table>

U.S. population estimates for Apr 2009
EIP Influenza Laboratory-Confirmed Cumulative Hospitalization Rates, Spring/Summer 2009

*This value represents an age group-specific average influenza rate from October 1 to April 30 from the 2005-06, 2006-07, and 2007-08 influenza seasons.*

**Note: The scales for the 0-23 month and the ≥65 year age groups differ from other age groups.
EIP Influenza Laboratory-Confirmed Cumulative Hospitalization Rates, Spring/Summer 2009

*This value represents an age group-specific average influenza rate from October 1 to April 30 from the 2005-06, 2006-07, and 2007-08 influenza seasons.

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WA Paeds Flu Summary

- The vaccine program uptake has been good
- More cases are needed but vaccine effectiveness is encouraging
- The Paeds Flu Vax Immunisation will continue for the 2009-12 influenza seasons
- Impact of swine flu outbreak TBD
Thank you.
Acknowledgements