Immunogenicity outcomes (SAGE Oct 2009)

- Both adjuvanted and non-adjuvanted inactivated influenza A (H1N1) 2009 vaccines induced high level immune responses in healthy adults in clinical trials after a single dose.

- SAGE provided advice from public health perspective, particularly for countries with access to limited supplies of vaccine, that a single dose of vaccine should be given. Countries using vaccine where two doses are recommended by the manufacturer, were advised to consider giving a second dose as limitation of supply ceases, and subject to regulatory considerations.

- Preliminary data only were available for pediatric populations – updated data on following slide.
**Monovalent pandemic influenza A (H1N1) vaccines**: immunogenicity in children

<table>
<thead>
<tr>
<th>Manufacturer (Licensing agency)</th>
<th>Product</th>
<th>Age</th>
<th>No. doses (ug HA)</th>
<th>Number of serological criteria exceeded</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSL (Australia; US-FDA)</td>
<td>Panvax; Afluria</td>
<td>≥6 mo - &lt;3 yrs</td>
<td>2 (7.5 ug, 4 wk apart)</td>
<td>3/3 for all groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 3 – 9 yr</td>
<td>2 (15 ug 4 wk apart)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 10 yr</td>
<td>1 (15 ug)</td>
<td></td>
</tr>
<tr>
<td>GSK/ASO3 adjuvanted (EMA; Health Canada)</td>
<td>Pandemrix; Arepandrix</td>
<td>≥6 mo - &lt;3 yrs</td>
<td>1* (1.9 ug) all age groups</td>
<td>3/3 all age groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 3 – 9 yr</td>
<td>2 (7.5 ug 4 wk apart)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 10 yr</td>
<td>1 (15 ug)</td>
<td></td>
</tr>
<tr>
<td>Sanofi Pasteur (US-FDA)</td>
<td></td>
<td>≥6 mo - &lt;3 yrs</td>
<td>2 (7.5 ug 4 wk apart)</td>
<td>3/3 all age groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 3 – 9 yr</td>
<td>2 (15 ug 4 wk apart)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 10 yr</td>
<td>1 (15 ug)</td>
<td></td>
</tr>
<tr>
<td>Novartis/MFS9 adjuvanted (EMEA) Focetria</td>
<td></td>
<td>≥6 mo - &lt;3 yrs</td>
<td>2 (7.5 ug 3 wk apart)</td>
<td>3/3 all age groups</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 3 – 8 yr</td>
<td>1-2 (7.5 ug)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 9 yr</td>
<td>1 (7.5 ug)</td>
<td></td>
</tr>
<tr>
<td>MedImmune (US-FDA)</td>
<td></td>
<td>≥ 2 – 9 yr</td>
<td>2 (0.2 ml containing 10^6.5 FFU, 1 mo apart)</td>
<td>Not applicable to live vaccines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≥ 10 yr</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Vaccines offered to WHO

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**Update on H1N1 vaccine safety**

**No new signals**

- More than 25 pH1N1 vaccines licensed
- Over 570 million doses distributed, over 350 million doses administered
- Varying uptake >>> from shortages to surpluses
- High media coverage
- High level of collaboration between authorities
Data sharing

Comparisons of safety profile between vaccine types

- Limited data at this stage, as most countries use one type only, or predominantly one type.

Analysis of data in progress

- Standard descriptive analysis and trends done, but rates generation pending data from long term monitoring, active surveillance, phase IV trials, and analysis of data collected by various registries yet to be completed.

Deployment in low resource settings

- Limited experience (MON, AZE), quick introduction of safety surveillance modifications is cumbersome.

Global signal generation

- UMC – relays on timely upload of data from national pharmacovigilance centres (28999 events from 11904 reports submitted by 22 countries, status 21 March 2010).

Work ahead … H1N1
2009 pandemic vaccine effectiveness: preliminary results I-MOVE

Bruno Ciancio, senior expert influenza, SAU, European Centre for Disease Prevention and Control
Stockholm, 12 March 2010

Studies 2009-10

- 17 protocols received, 11 studies selected

- Case control studies
  - France, GROG
  - Hungary
  - Ireland
  - Italy
  - Portugal
  - Romania
  - Spain

- Cohorts
  - Navarra, Spain
  - Scotland&England
  - The Netherlands (Erasmus)

- Screening
  - Italy
  - Spain

EVM funded studies
- Denmark
- Valencia, Spain
- Campobasso, Italy
- France Sentinels
Preliminary results

- **Adjusted VE ≥70% in all studies**
  - 95% C.I. wide due to the small number of vaccinated individuals
  - Stratification for vaccine brand and age-group not possible
  - Brand-specific VE will be attempted at a later stage
  - Consistency of results between studies indirect indication of brand-wide pandemic VE

Interpretation

- VE ≥70% should be interpreted as high
  - Consistent with immunogenicity studies
  - Consistent with excellent vaccine-virus match

- Final results may be slightly different (data validation ongoing)

- Brand-specific results may not be possible for all brands
Limitations

- Most pandemic cases occurred prior to the widespread availability of vaccines.
- Vaccination coverage was lower than expected in all participating countries.
- Target groups changed over time according to the process of prioritisation.
- Ascertainment of vaccination status difficult:
  - Self-report not acceptable because both TIV and monovalent pandemic vaccines administered in many countries.
  - Vaccination administered outside GP practice in some countries.