Summary of WHO Position on Rotavirus

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Presentation

• WHO Position Papers on Rotavirus
• Optimizing immunization schedules
• WHO recommendations
  – RV in national immunization programs
  – Immunization schedule
  – Intussusception
  – Surveillance
    • Safety
    • Impact
Background

• WHO position papers on Rotavirus Vaccines
  – 2007
  – 2009
  – 2013

• SAGE Meeting April 2012
  – Summarized recent developments
  – Reviewing evidence the potential of RV to further reduce mortality by employing more flexible immunization schedules
Optimizing Immunization Schedules

• To maximize its impact, vaccine should be administered before RVGE occurs → In developing countries, early immunization could be programmatically challenging.

• Previous WHO recommendation: RV vaccine to be initiated before 15 weeks and completed by 32 weeks: issues related to intussusception
Potential advantages of removing age restriction

• Increased number of children vaccinated and greater number of deaths averted
  – In some LMICs, only 60% of children receive the 1\textsuperscript{st} dose of DTP by 15 weeks of age and,
  – Only 50% of the children receive the 3\textsuperscript{rd} dose of DTP by 32 weeks of age

• Logistically easier to implement
  – With DTP contacts
  – In many developing countries, as many as 80% of infants are reached by outreach services
Potential disadvantages of removing age restriction contd.

• Potential to increase the number of intussusception cases and deaths
  – Limited evidence whether there would be increased risk of intussusception including deaths

• There may be less emphasis on timeliness of vaccination for rotavirus and other vaccines
  – Potential negative impact on rotavirus vaccine and overall immunization program
## Optimizing Immunization Schedules contd.

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Median (5&lt;sup&gt;th&lt;/sup&gt; and 95&lt;sup&gt;th&lt;/sup&gt; percentiles)</th>
<th>Associated Intussusception Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rotavirus Deaths Averted</td>
<td></td>
</tr>
<tr>
<td>Restricted</td>
<td>155,800 (83,300 to 217,700)</td>
<td>253 (76 to 689)*</td>
</tr>
<tr>
<td>No age restriction</td>
<td>203,000 (102,000 to 281,500)</td>
<td>547 (237 to 1,160)*</td>
</tr>
<tr>
<td>No age restriction (vs. age restriction)</td>
<td>47,200 additional rotavirus deaths averted (18,700 to 63,000)</td>
<td>294 additional IS deaths associated (161 to 471)</td>
</tr>
</tbody>
</table>

Trade-offs exist when considering various schedule options. Model estimates include large uncertainties.
WHO Recommendations on Rotavirus Vaccination
• Rotavirus vaccines should be included in all national immunization programmes and considered a priority particularly in countries with high RVGE associated fatality rates, such as in south and south-eastern Asia and sub-Saharan Africa

• The use of rotavirus vaccines should be part of a comprehensive strategy to control diarrheal diseases and overall improvements in case management
WHO recommendations-II

• Plans for introduction of rotavirus vaccines

  – Consider the epidemiology of the disease by age
  – Estimated public health impact and potential risks
  – Cost-effectiveness
  – Issues of affordability of the vaccine, financial and operational impact on the immunization delivery system
  – Measures to ensure high vaccination coverage and timely administration of each dose by the recommended age
WHO recommendations-III

- **Immunization schedule**

  - WHO continues to recommend that the first dose of rotavirus vaccine be administered as soon as possible after 6 weeks of age, along with vaccination against diphtheria-tetanus-pertussis (DTP1), to ensure induction of protection prior to natural rotavirus infection.
WHO recommendations-IV

- Immunization schedule
  - Although early immunization is still favored, age restrictions on the first and last dose of rotavirus vaccines may have prevented vaccination of many vulnerable children in settings where the DTP doses are given late (i.e. after 15 weeks for DTP1 or after 32 weeks for DTP2 or DTP3)
  - By allowing infants to receive rotavirus vaccine together with DTP regardless of the recommended time of DTP vaccination in the existing national schedules, programmes excluded from the benefits of rotavirus vaccines
WHO recommendations-V

• Immunization schedule

  – Because of the typical age distribution of RVGE, rotavirus vaccination of children >24 months of age is not recommended
WHO recommendations-VI

• Immunization schedule
  – RV1 should be administered orally in a 2 dose schedule at the time of DTP1 and DTP2 with an interval of at least 4 weeks between doses
  – RV5 should be administered orally in a 3 dose schedule at the time of the DTP1, DTP2 and DTP3 contacts, with an interval of at least 4 weeks between doses
WHO recommendations-VI

• Immunization schedule

  – With both vaccines, prematurely born infants should follow the vaccination schedules recommended for their chronological age

  – Rotavirus vaccinations can be administered simultaneously with other vaccines of the infant immunization programme
WHO recommendations-VII

• **Intussusception**: The current rotavirus vaccines are considered safe and well tolerated
  – A low risk of intussusception (about 1-2 per 100 000 infants vaccinated)
  – Countries should develop a strategy to inform relevant health staff that the benefits outweigh the risks of a small potential risk of intussusception
  – Countries should also ensure that caregivers are adequately counseled to recognize danger signs of dehydration or intussusception that should prompt immediate medical consultation
WHO recommendations-VIII

• **Surveillance**
  
  – Proper planning and training of staff to conduct pharmacovigilance should take place before the vaccine is introduced

  • Background rate of natural intussusception
    
    (Most cases of intussusception are expected to occur by chance alone following rotavirus vaccination)
  
  – Establish the baseline incidence of intussusception at sentinel sites and to use epidemiological studies for causality assessment
WHO recommendations-IX

- **Contraindications to RV vaccine:** Severe allergic reaction (e.g. anaphylaxis) after a previous dose and severe immunodeficiency (SCID)

- **Precautions:** History of intussusception or intestinal malformations, chronic gastrointestinal diseases, and severe acute illness

- Vaccination should be postponed in case of ongoing acute gastroenteritis or fever with moderate to severe illness
WHO recommendations-X

- Epidemiological impact of rotavirus vaccination should be monitored
  - High quality surveillance in selected countries and defined populations, including high child mortality settings
  - Lack of population based surveillance should not be an impediment to introduction of RV
Thanks!