The Role of Vaccination Towards Typhoid Elimination

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Overview

☑ Typhoid Burden in Africa

☑ Why Typhoid Vaccination

☑ Role of WHO

☑ Use of TCV in Africa – The Zimbabwe Experience

☑ RITAG Recommendations

☑ Typhoid as part of the larger agenda

☑ Next Steps
Estimated incidence of typhoid and paratyphoid fevers by country per 100,000 population, 2015.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6128367/
Why Typhoid Vaccination?

- Typhoid is a disease related to development and the vaccine can serve as a “bridge” as countries improve on development indicators
  - Improved WASH remains the mainstay for Typhoid prevention
  - Access to potable water, improved sanitation and sewage collection and treatment will take investments and time
  - Improved health systems and education will complement WASH improvements

- Antimicrobial Resistance

- Recurrent and seasonal outbreaks

The vaccine is a tool in the toolkit for typhoid control
Role of WHO

- Development of policies for TCV use (e.g. SAGE/RITAG recommendations)
- Development and supporting countries to use a Rapid Assessment Tool to assess burden (with CDC)
- Provide guidance on decision making for vaccine introduction either for response to outbreaks or into routine immunization
- Provide country focused TA for Gavi applications, preparation and implementation, monitoring and evaluation of TCV introduction (with TyVac)
Use of TCV in Africa – The Zimbabwe Experience

- Typhoid fever is endemic in Harare, with seasonal outbreaks every year since 2010 due to persistent poor WASH conditions in overcrowded suburbs; not likely change in the near future

- 4 suburbs accounted for 79% of all suspected cases between 2016-2018, allowing targeted vaccination

- Amidst a cholera outbreak, Oct 2017 – Jan 2019, total of 6140 cases including 289 confirmed cases and 2 deaths
High level of AMR S. Typhi in Harare

=> WHO recommends the introduction of TCV to be prioritized in countries with the highest burden of typhoid disease or a high burden of antimicrobial resistant S. Typhi.

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Kuwadzana</th>
<th>Rest of Harare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetracycline</td>
<td>76.32%</td>
<td>49.50%</td>
</tr>
<tr>
<td>Cotrimoxazole</td>
<td>86.21%</td>
<td>56.80%</td>
</tr>
<tr>
<td>Ceftriaxone</td>
<td>73.08%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Clprofloxacin</td>
<td>19.90%</td>
<td>12.50%</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>40.50%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
Use of TCV in Africa – The Zimbabwe Experience

- Outbreak response - mass vaccination campaign with Typbar
- Optimal administrative coverage (85.4%) reached in 8 days
- TCV well accepted by communities
- No serious AEFIIs reported
- School vaccination was effective in reaching 90% of 5 – 15 age group
- Wastage rate was minimal (<0.01%)

- Using available evidence, Zim-NITAG recommended the introduction of TCV into Routine Immunization.
- NRA licensed its use in-country
WHO AFRO to:

- Prioritize development of a comprehensive multi-sectoral plan for control of typhoid and other water-borne/faeco-oral diseases

- Support countries with data generation (burden/AMR) for evidence based decision making to introduce TCV into routine immunization programmes

- Support the use of the WHO surveillance standards for typhoid fever and other invasive salmonella diseases for generation of better quality data

- In outbreak situations - countries to consider use of use vaccination as an extra tool in response to confirmed outbreaks of typhoid fever.
Evidence gaps/Research: WHO AFRO to guide and support priority research on TCV to generate evidence of vaccine effectiveness, cost effectiveness analyses, safety and immunogenicity in special populations.

In emergency situations - prioritize provision of safe water and promotion of improved hygiene and sanitation especially among food handlers. Typhoid vaccination may be considered within the framework of implementation research.
Typhoid as Part of the Larger Agenda: Context

- Typhoid is one among the very many competing priorities in the region. VPD outbreaks:
  - Ebola
  - cVDPV
  - Rotavirus diarrhea
  - Rubella
  - Pertussis
  - Measles
  - Yellow Fever
  - Meningitis
  - Cholera
  - Diptheria

- New Vaccine Introductions in most countries (HPV, IPV, Rota, PCV, MR, MCV2, YF, Men, Malaria Vaccine, Hep B birth dose, Pentavalent booster, etc)

- Natural disasters and insecurity; cyclones, mud slides, flooding, IDPs
- Polio end game and transition
- Large number of unimmunized children
- Implementation of UHC
- Cyclone Idai, etc
Next Steps in Prevention and Control of Typhoid

- Advocate for more funding to improve WASH

- Strengthen health systems to diagnose & treat typhoid
  - Includes appropriate antimicrobial treatment, identification of chronic carriers and antimicrobial susceptibility training

- Urgent need to develop a comprehensive multi-sectoral plan for control of typhoid and other water-borne/faeco-oral diseases

- Improve surveillance for typhoid fever - Evidence generation on disease burden/hotspots to support TCV introduction

- Consolidate partner efforts and funding towards Typhoid fever prevention and control

- For countries with high Typhoid burden and AMR, consider TCV introduction

- Confirm stock pile before enhancing advocacy efforts
Thank you