IVI Global Initiative for Cholera Control

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Global Task Force on Cholera Control (GTFCC)
Joint Meeting of the Working Groups on Surveillance
Annecy, France
15-17 April 2019
<table>
<thead>
<tr>
<th>Company</th>
<th>Partnership</th>
<th>Stage of development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vabiotech (Vietnam)</td>
<td>mORCVAX - IVI re-formulated, redeveloped process to meet WHO standards</td>
<td>Licensed in Vietnam (mORCVAX™)</td>
</tr>
<tr>
<td>Shantha (India)</td>
<td>Shanchol - Technology transfer May 2008</td>
<td>Licensed in India (Feb 2009) WHO prequalified (Sep 2011)</td>
</tr>
<tr>
<td>Incepta (Bangladesh)</td>
<td>Cholvax - Technology transfer May 2014</td>
<td>Clinical trial conducted in Bangladesh; Technical and regulatory consultations ongoing</td>
</tr>
<tr>
<td>BIBCOL (India)</td>
<td>Technology Transfer</td>
<td>Initiated APR 2019</td>
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</table>
## Program Strategy and Projects

<table>
<thead>
<tr>
<th>Goals</th>
<th>Program Objectives</th>
<th>Current Projects</th>
</tr>
</thead>
</table>
| Ensure OCV Supply | • Continue support to existing manufacturers  
• Additional TT to ensure adequate global and national vaccine security | • Euvichol-P CTC Label  
• Supply Critical Reference Standards to Manufacturers  
• Cholvax II |
| OCV Use & Introduction | Generate evidence to support OCV use in endemic countries | • Modeling Impact and Cost-Effectiveness of GTFCC Cholera Elimination Plan  
• CSIMA -Malawi  
• MOCA -Mozambique  
• GICC-ECHO- Nepal and Mozambique-launch 2020 |
## Vaccination campaigns (2015-2018)

**Demonstrate feasibility, effectiveness etc in different settings**

<table>
<thead>
<tr>
<th>Year</th>
<th>Location/Type</th>
<th>Target #</th>
<th>Coverage</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>Cuamba, Preventive, Mozambique</td>
<td>180,000</td>
<td>1st 76%</td>
<td>M&amp;E coverage survey, Effectiveness (ongoing), Surveillance (ongoing)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2nd 69%</td>
<td>Cost of Delivery and Cost of Illness (COI)</td>
</tr>
<tr>
<td>2016/17</td>
<td>Nepal Pre-emptive</td>
<td>25,000</td>
<td>90%</td>
<td>M&amp;E Cost of Delivery and assessment of Choltool</td>
</tr>
<tr>
<td>2015</td>
<td>Nsanje, Malawi Reactive</td>
<td>160,000</td>
<td>1st 98%</td>
<td>Acceptability, feasibility, Effectiveness (ongoing)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2nd 68%</td>
<td>Delivery and Cost of Illness (COI), Cost-Effectiveness Analysis</td>
</tr>
<tr>
<td>2015</td>
<td>Shashemene Preventive, Ethiopia</td>
<td>~62,000</td>
<td>1st 76%</td>
<td>Acceptability, Feasibility</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2nd 65%</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>Newakot and Dhading, Nepal</td>
<td>10,000</td>
<td>1st 105%</td>
<td>Feasibility of delivering OCV in earthquake affected districts</td>
</tr>
<tr>
<td></td>
<td>Pre-emptive</td>
<td></td>
<td>2nd 96%</td>
<td>(during monsoon season) using government infrastructure</td>
</tr>
</tbody>
</table>
Malawi-Nsanje & Chikwawa

- 2 dose OCV targeted to 160,482 in March-April 2015
- Prospective passive diarrhea surveillance from April 2016
  (22 HF in Nsanje 18 in Chikwawa)
- **Nsanje**: 35 confirmed cases/767 samples (Aug 30)
- **Chikwawa**: 48 confirmed cases/1161 samples (Aug 30)
- Cost-of-illness associated with culture-confirmed *V. cholerae*
- Cost-effectiveness of the 2015 Nsanje OCV campaigns
- Phylogeny of *V. cholerae*
Current activities | IVI in Mozambique
Mozambique Cholera Prevention and Surveillance (MOCA)

Goal: To prevent cholera epidemics and empower local public health service for sustainable cholera surveillance and control

Key Outcomes and Activities:

1. OCV administration to approx. 180,000 individuals in Cuamba
   - Euvichol-plus®
   - Monitoring and evaluation of campaigns (AES, coverage)

2. Cholera and diarrheal disease surveillance in Cuamba
   **Core investigations:**
   - Surveillance of cholera and diarrheal diseases
   - Incidences and antimicrobial resistance profiles
   - Vaccine effectiveness estimation
   **Additional investigations under consideration:**
   - Water sample testing
   - Phylogenetic analysis of detected strains
   - Investigations on human gut/fecal microbiota

3. Health economic analysis associated with cholera
   - Cost-of-illness associated with treatment of cholera patients in cholera endemic setting
   - Delivery cost of OCV vaccination campaigns

4. WASH
   - Formative research (Baseline survey)
   - Hygiene Behavior Change interventions
### Current activities | IVI in Mozambique

**Mozambique Cholera Prevention and Surveillance (MOCA)**

#### Coverage estimation

<table>
<thead>
<tr>
<th>Administrative coverage</th>
<th>Post-vaccination household coverage survey</th>
</tr>
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<tbody>
<tr>
<td>Total population assumed</td>
<td>196,652</td>
</tr>
<tr>
<td>First round</td>
<td>98.9% (194,581)</td>
</tr>
<tr>
<td></td>
<td>75.9% (±2.2%)</td>
</tr>
<tr>
<td>Second round</td>
<td>98.8% (194,325)</td>
</tr>
<tr>
<td></td>
<td>68.5% (±3.3%)</td>
</tr>
<tr>
<td>Full doses</td>
<td>91.6% (180,074)</td>
</tr>
<tr>
<td></td>
<td>60.4% (±3.4%)</td>
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<table>
<thead>
<tr>
<th>Age Group</th>
<th>1-4yo</th>
<th>5-14yo</th>
<th>&gt;15yo</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>First round</td>
<td>81.1% (±4.5%)</td>
<td>86.4% (±3.1%)</td>
<td>67.6% (±3.3%)</td>
<td>75.9% (±2.2%)</td>
</tr>
<tr>
<td>Second round</td>
<td>72.2% (±6.9%)</td>
<td>71.3% (±5.8%)</td>
<td>65.2% (±4.8%)</td>
<td>68.5% (±3.3%)</td>
</tr>
<tr>
<td>Full doses</td>
<td>64.4% (±7.3%)</td>
<td>65.2% (±6.1%)</td>
<td>55.7% (±5.0%)</td>
<td>60.4% (±3.4%)</td>
</tr>
</tbody>
</table>
Prospective healthcare facility-based cholera and diarrheal disease surveillance with community-level healthcare utilisation survey

- Cholera and diarrheal disease surveillance
- Vaccine Effectiveness (test negative design)
- Cost-of-Illness
- Healthcare Utilisation Survey

Sentinel Healthcare Facilities (HCFs) selection criteria:

- Records of cholera/diarrheal cases reported in Cuamba in the past two years
- Areas/HCFs whereby most cholera/diarrheal cases have been reported

6 Healthcare Facilities (HCFs):

- Cuamba District Hospital | Secondary/Referral
- Cuamba District Health Center | Primary
- Namutimbua Health Center | Primary
- TipoII – Tetereane Health Center | Primary
- Adine III Health Center | Primary
- Mujaua Health Center | Primary
Global Initiative to Control Cholera - Enhancing Cholera Control

Mozambique
- Lichinga/Lago District and Nampula city/Meconta District (Nampula and Niassa Provinces)
- Preventive OCV vaccination campaigns in cholera endemic areas/hotspots (approx. 300,000 persons)
- Strengthen cholera and diarrheal disease surveillance and laboratory diagnostic capacities
- Enhance access to equitable and sustainable WASH services in vulnerable communities
- Establish platform for policy discussions to initiate roadmap to control cholera in Mozambique

Nepal
- Kathmandu Valley and Kailali District (Provinces 3 and 7)
- Preventive OCV vaccination campaigns in cholera hotspots (approx. 310,000 persons)
- Enhanced surveillance capacity for early detection of cholera
- Strengthened rapid response capacity in Nepal (includes WASH interventions)
- Evidence-based policy for cholera prevention and control (includes cross-sectional seroprevalence and risk study 1-65yo (cholera/IgG/IgM, HAV IgG/IgM))
## Thank you | Acknowledgements

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- Florian Marks
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on behalf of the project team

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- Jose Paulo Langa
- Cynthia Sema
- Jucunu Chitio
- Liliana Dengo-Baloi
- Igor Capitine
- Ilesh Jani

on behalf of the project team

### Nepal Partners
- MOH, NPHL, (others TBC)

### Malawi Partners
- MOH, UMP

### External partners
- WTSI
- JHU
Current activities
Mozambique Cholera Prevention and Surveillance (MOCA)

Departure from Korea | “Euvichol-Plus®”

Arrival in Cuamba

OCV mass vaccination campaigns (Aug 7-11 and 27-31, 2018)
Current activities
Mozambique Cholera Prevention and Surveillance (MOCA)