Delivering Oral Cholera Vaccine (DOVE)

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• The cholera disease burden
• How OCV can make an impact
• The DOVE project
• OCV: Opportunities and challenges
Global burden of cholera

- Approximately 1.4 billion people at risk for cholera in endemic countries
- Approximately 2.8 million cholera cases and around 100,000 deaths annually
- More cholera cases in Asia but more cholera deaths in Africa

Cholera can cause devastating outbreaks.
“Oral cholera vaccines which have proven to be safe and effective are now considered to be part of a comprehensive and multidisciplinary approach to cholera prevention and control.”

Internationally available, WHO-prequalified OCVs
OCV provides direct and indirect (Herd) Protection

• OCV reduces the risk for cholera (direct protection)
• If vaccine coverage is ≥50%:
  – OCV also reduces the risk in persons who did not receive vaccine (indirect or herd protection)
  – Protection becomes even higher for those who had received the vaccine
• Herd protection is likely due to reduced excretion resulting in decreased transmission in the community
OCV can make an impact if:

- It can be provided to the right populations at the right time
- It is available in sufficient amounts and at reasonable cost
- Policy makers learn how and when to use it
- It is integrated with WaSH interventions and case management
Increasing experience with mass OCV campaigns

Mass oral cholera vaccination campaigns from 1997 - August 2014

Increasing experience with mass OCV campaigns

- Over 2 million doses of Dukoral and Shanchol have been administered in public health mass vaccination campaigns in more than 14 countries

Number of OCV doses administered in mass campaigns, 1997 - August 2014

WHO OCV stockpile

- Created in 2012
- Currently, nearly all available Shanchol doses are in the stockpile and reserved for use in outbreaks or complex emergencies
- Stockpile facilitates rapid deployment to control outbreaks
- Vaccine supply is limited – about 2 million doses produced annually
- If supply is increased, OCV deployment can be expanded to endemic countries
The DOVE Project
(Delivering Oral Vaccine Effectively)

• Created in 2012

• **The goal:** to ensure that populations at risk will benefit from receiving OCV in an appropriate and effective manner.

• Works with WHO, UNICEF and other partners

Mass vaccination campaign in Malawi in 2015 conducted by MoH, WHO and IVI
Where DOVE is currently working

- Cameroon
- Malawi
- South Sudan
- Uganda
- Nepal
- Philippines
DOVE activities

- Helping to evaluate new strategies for vaccine campaigns
- Carrying out a safety study of OCV in pregnancy
- Assisting countries in applying for OCV from the WHO stockpile
- Assisting countries in M&E following OCV campaigns
- Planning to evaluate concurrent vaccination with OPV
- Able to assess immunogenicity of new OCV formulations
OCV deployment where it is needed

**Opportunities**

- Several agencies now advocate OCV use: WHO, UNICEF, MSF etc
- Increasing demand from countries
- OCV can be a key component in an integrated strategy for cholera control
- OCV can be used to revitalize National cholera control plans

**Challenges**

- Supply is not sufficient to meet epidemic and endemic needs worldwide
- Newer and easier to administer formulations would provide a major boost to cholera control measures
Developing new OCV formulations

**Opportunities**

- This is a killed whole cell vaccine
- No complex purification steps
- Production methods are well established
- R&D costs are low
- For those skilled in vaccine production, OCV is relatively simple

**Challenges**

- Keep at reasonable price
- Validate thermostability so OCV can be used outside cold chain
- More convenient formulation for distribution by health workers
Summary

• There is increasing use and demand for OCV
• DOVE helps ministries and agencies decide when, where, and how to use OCV as part of an integrated cholera control strategy
• Insufficient OCV supply is the major challenge
• Newer formulations would be beneficial
Acknowledgment

• Bill & Melinda Gates Foundation
• DOVE team
• Country collaborators
Thank you!