

# Water, Sanitation and Hygiene, and Oral Cholera Vaccine

Oliver Cumming (LSHTM), Maggie Montgomery  
(WHO) and Christine George (JHU)

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# Background

Cholera a persistent global health challenge

(WHO 2018)

Ongoing seventh global cholera pandemic

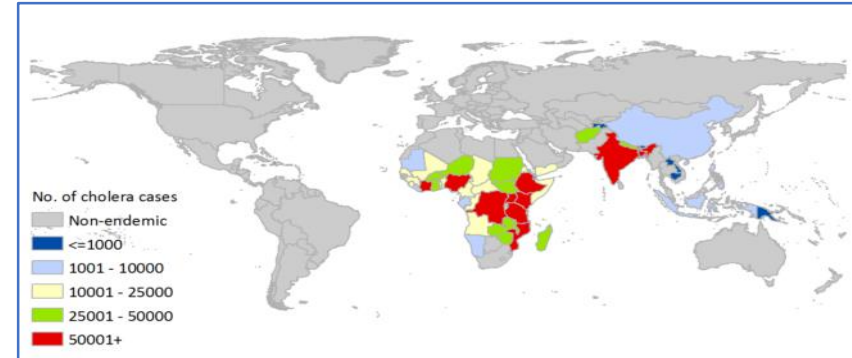
(Mutreja et al 2017)

Approx. 2.9 million cases annually and 95,000 deaths across 69 cholera endemic countries

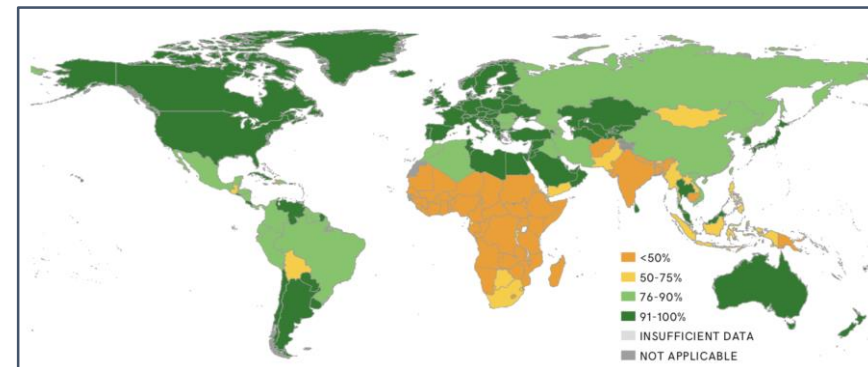
(Ali et al 2015)

Endemic settings predominantly those with poor water and sanitation conditions

(WHO/UNICEF 2017)



SOURCE: Ali et al 2015



SOURCE: WHO/UNICEF 2017

## **WHO convened meeting (Geneva, Switzerland - 2017)**

- Researchers
- WASH and OCV sectors
- Conclusions:
  - More rigorous research to identify key WASH interventions
  - Operational research to assess combined delivery strategies

## **ELRHA convened meeting (Windsor, UK – July, 2017)**

- Practitioners, donors, researchers from humanitarian sector
- WASH sector
- Conclusions:
  - Number 1 research priority: evaluation of WASH interventions for cholera control
  - Number 3 research priority: design and evaluation of WASH/OCV interventions

# Evidence for OCV

Good evidence for efficacy and effectiveness of killed whole cell oral cholera vaccines

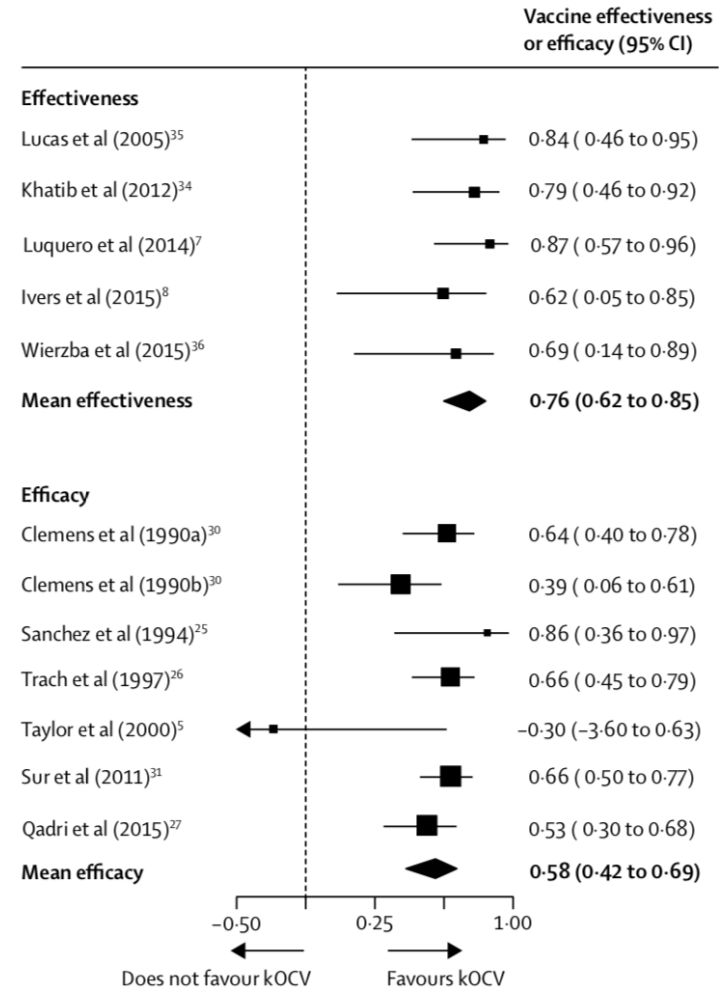
(Bi et al 2017)

Challenges:

- Availability and timely deployment of vaccine
- Vaccination/protection lag (approx. 1 week)
- Efficacy among children much lower
- CTC admissions negative for cholera

Integrating OCV with responsive WASH interventions may mitigate some of these challenges

(George & Sack 2017)



SOURCE: Bi et al 2017

## **General paucity of evidence for public health interventions in emergency settings**

(Blanchet et al 2017)

## **Very few studies of impact of WASH interventions on cholera**

(Taylor et al 2015)

- Mostly low quality, observational studies
- Mostly evaluating water treatment at source and point-of-use
- Most intervention studies in endemic settings

## **Increased attention to short-cycle versus long-cycle transmission:**

- Importance of short-cycle (P2P) vs long-cycle (Mukandavire & Morris 2015; Phelps et al 2017)
- High household and spatial clustering of cases (Hughes et al 1985; Weil et al 2014)
- Spatial clustering of cases and variation by settings (Ali et al 2017)

## **Recent intervention studies:**

- Evaluation of combined OCV & WASH vs OCV (Qadri et al 2015; Najnin et al 2016)
- CHoBI7 trial of hospital based WASH intervention (George et al 2016)

Evaluating conventional WASH interventions

Understanding long-cycle (env2human) versus short-cycle (human2human) transmission and implications for effective WASH responses

Identifying effective WASH/OCV responses for different settings/populations

Timing and targeting of WASH/OCV interventions to address most at risk

Point of intervention for rapid WASH – household, community, point-of-care

Achieving higher compliance of WASH even under rapid response

# Thank you

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