

Evidence-based Best Practice?

Evaluating the health impact of WASH in cholera outbreaks

Some results and a research proposal



**GLOBAL WASH
CLUSTER
MEETING**

3 April 2014

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HYGIENE
& TROPICAL
MEDICINE



Objectives


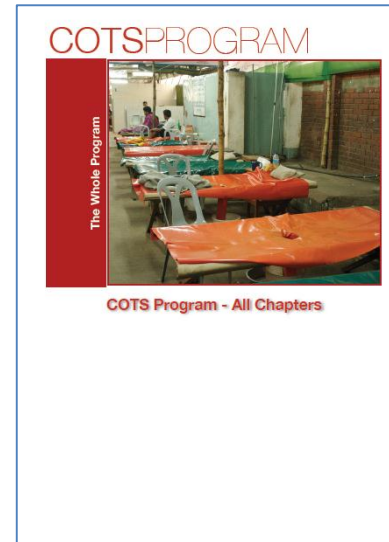
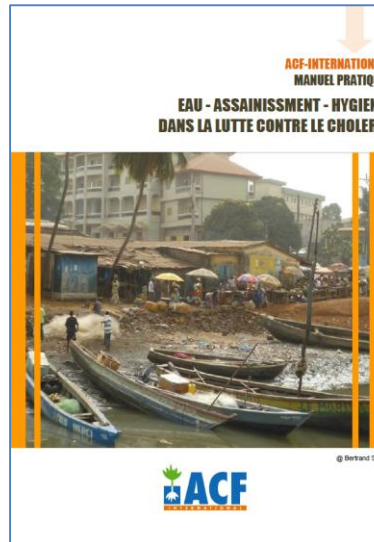
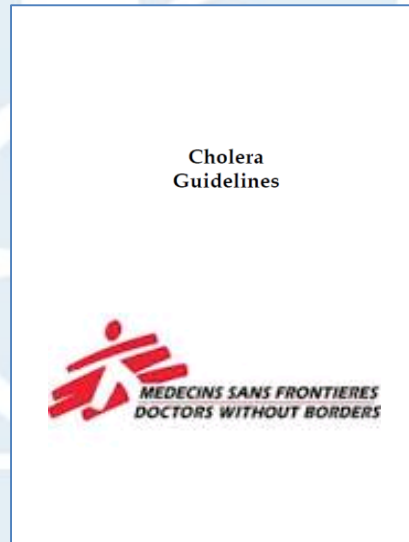
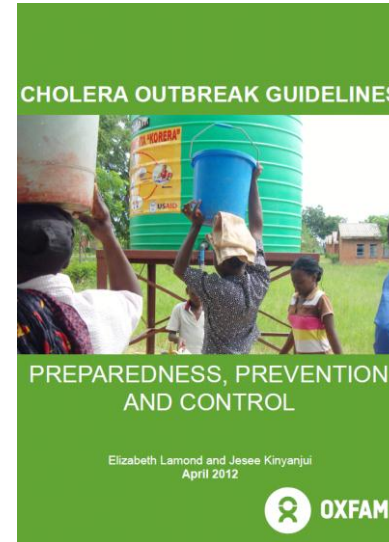
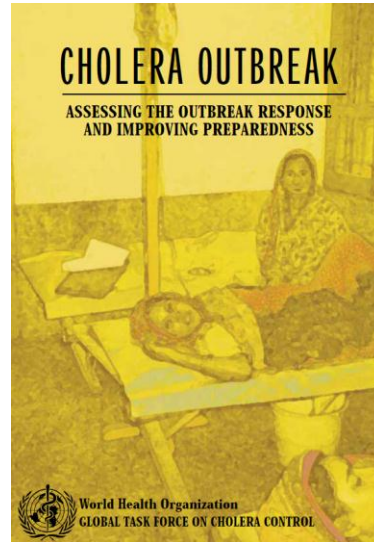
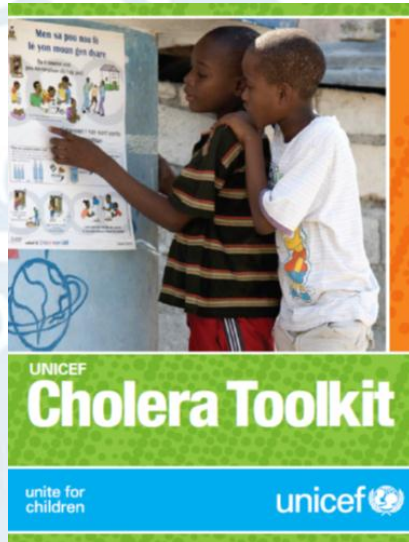
- Current practice: What are we doing?
- Current evidence: What have we done, evaluated and shared?
- Current gaps: What questions do we need to ask?
- Future research : What do we need to do next?



EVIDENCE-BASED BEST PRACTICE



Cholera Guidelines



Coalition of Cholera Prevention and Control Comprehensive Integrated Strategy



Grey Literature

- UNICEF – Guinea Conakry, Guinea Bissau, Zimbabwe, Lake Chad Basin, Sierra Leone
- ACF – Chad, Sierra Leone, Guinea
- MSF – Angola, Zimbabwe, Haiti
- Oxfam – Dem Rep. Congo
- IFRC – Uganda
- WASH Cluster – Somalia

- WASH related NFI - a briefing paper
- Household spraying position paper
- Household water treatment in emergencies ...



Recommended interventions

100%

Sufficient and treated water (SPHERE standards)
Hygiene promotion and food safety
Communal latrines and hand washing points in public places
Safe funeral practice

83%

Temporary or improved water supply systems
Water quality monitoring
Mass media communication of messages
Food safety training and inspection of food outlets

67%

Household water treatment & safe storage (materials, info & ed.)

50%

Water vendors & tanker owners involved
Bucket chlorination at source
Interpersonal communication of messages
Promotion of breastfeeding and safe fluids/food
Soap and/or kit distribution



Possible interventions...?

33%

Chlorination of high-risk lined wells
Water storage container disinfection

Promotion of latrine use and community led sanitation action
Solid waste collection systems – public places
Drainage channel clearance

Distribution of materials for household disinfection
Safe laundry practices promoted

Behaviour change interventions (HWWS at critical times)
Hygiene promotion in schools
Simple fly control measures
Chlorinated lime for latrine disinfection

17%



Not recommended

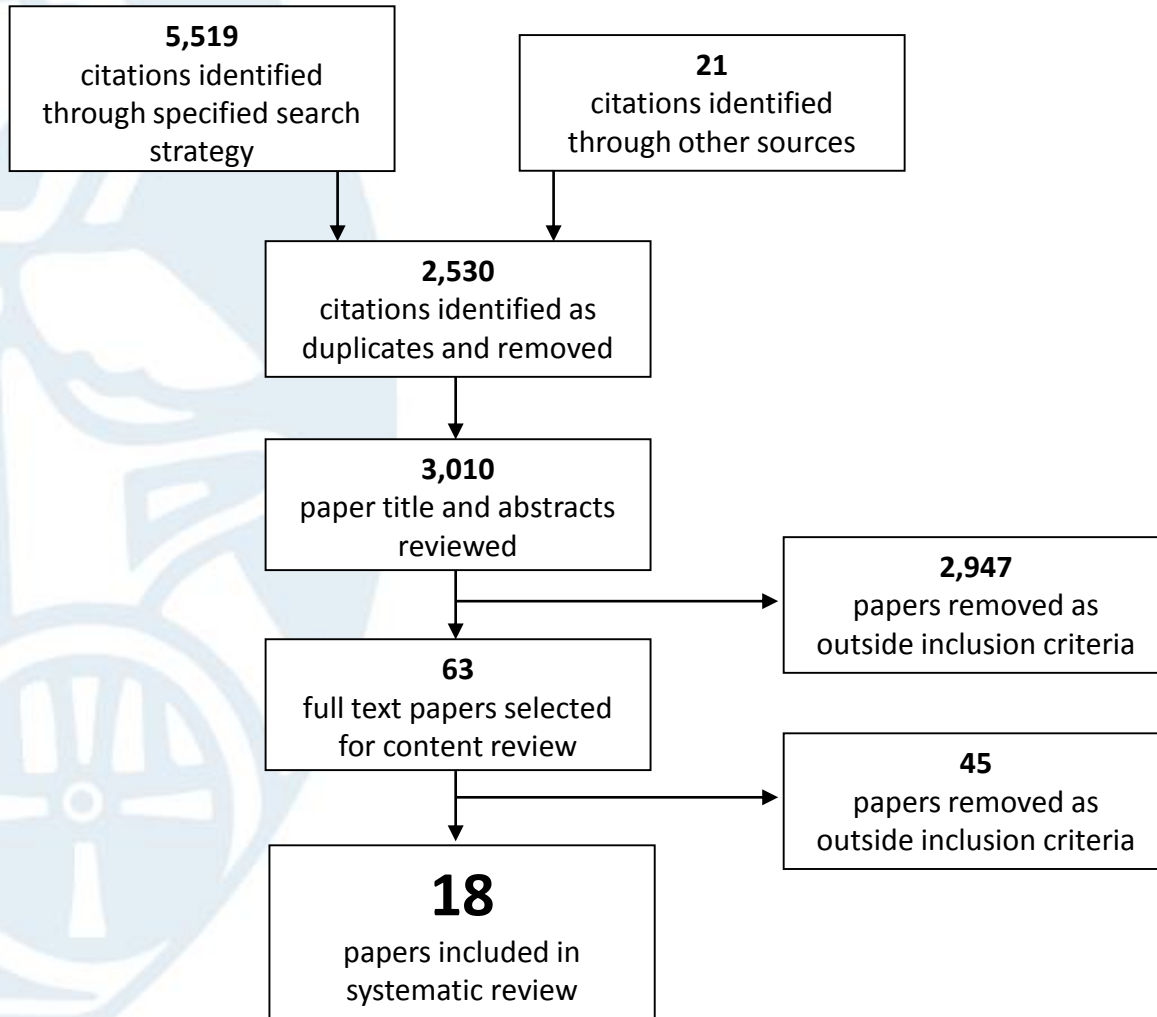
Chlorination of unlined/unprotected wells

Household disinfection spraying

Borehole drilling (last resort)



Current Evidence



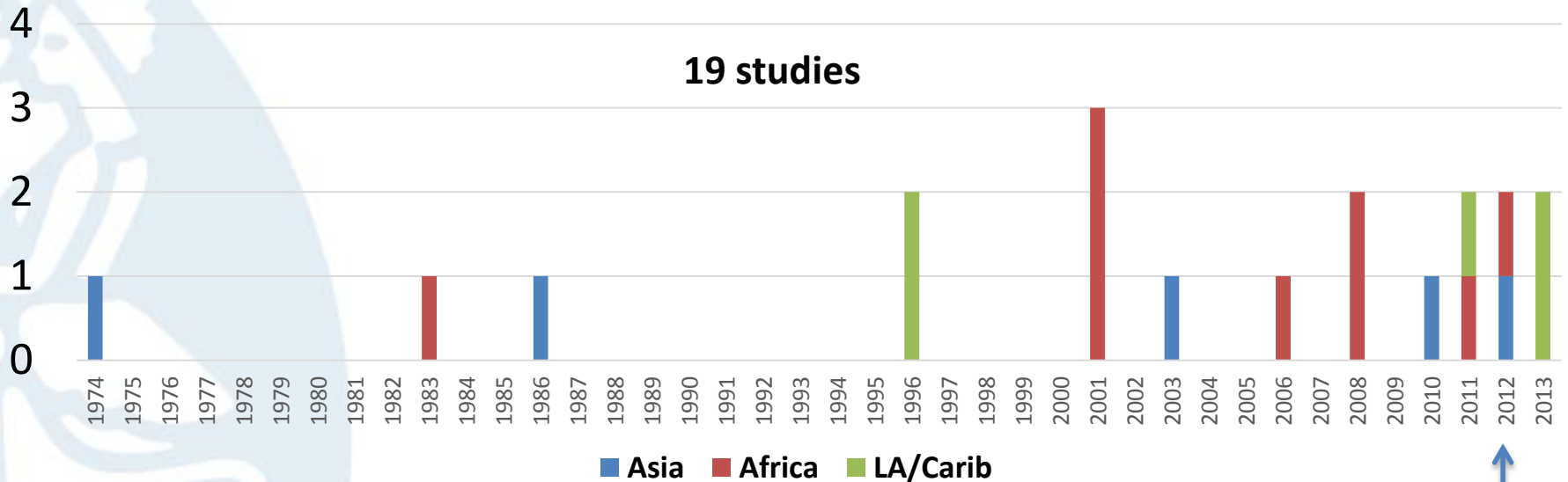
Systematic search of
5 online databases

Search criteria

1. Clearly defined WASH intervention
2. Cholera health outcome
3. Data on function and use of WASH intervention

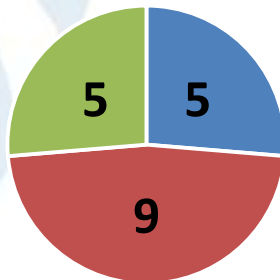


Year and Location of Publications



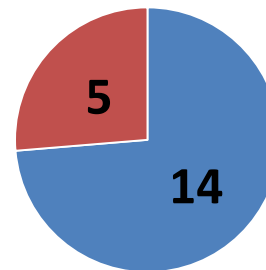
1 paper – 2 studies in 2 locations
Lantagne (2012)

Geographical Area



Legend: Asia (blue), Africa (red), LA/Carib (green)

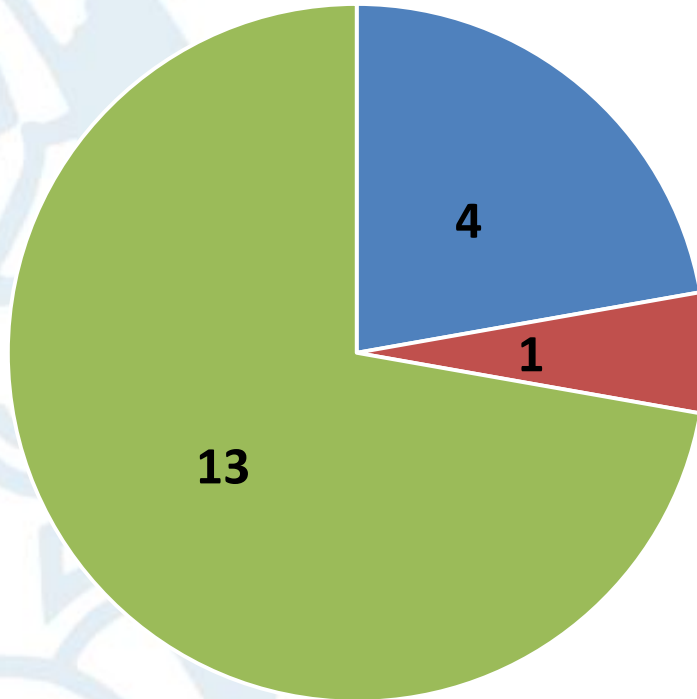
Study Setting



Legend: Epidemic (blue), Endemic (red)

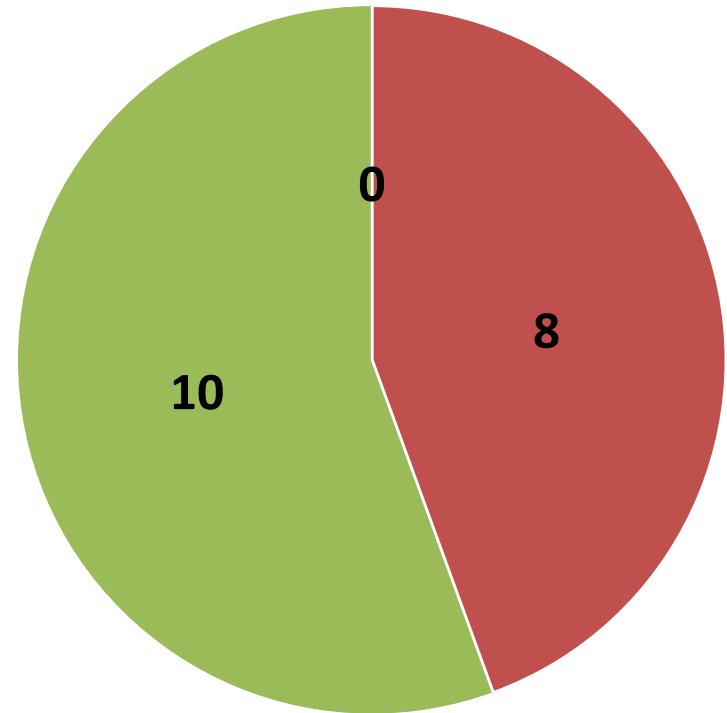


Statistical Quality Assessment



- Statistical association in health-related outcome
- Changes in health-related outcome
- Outputs only

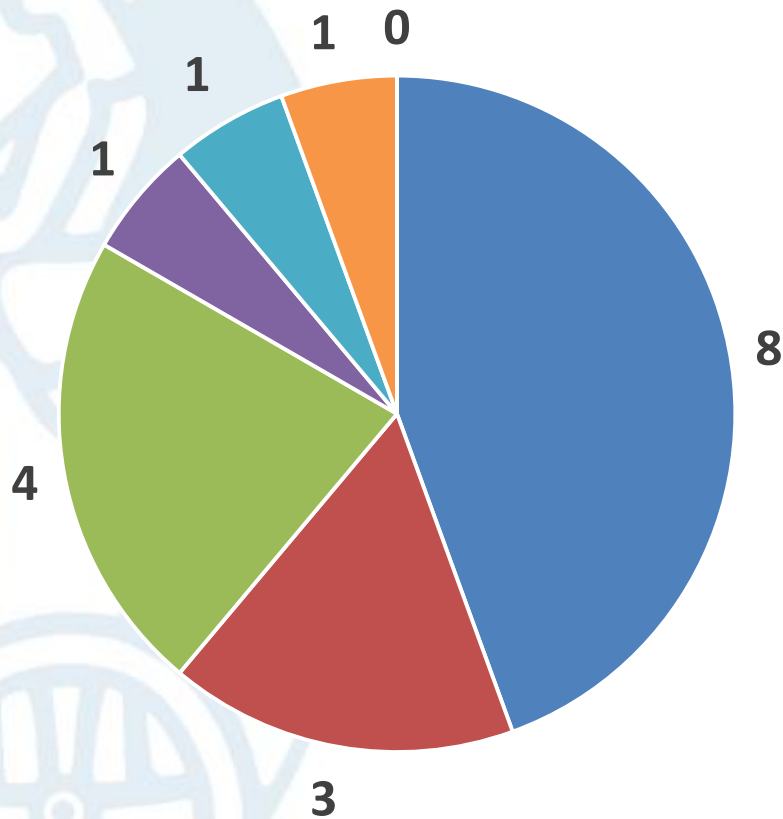
Epidemiological Quality Assessment



- High Quality
- Medium Quality
- Low Quality



WASH Interventions



- Water Treatment Point of Use
- Water Source Treatment
- Hygiene Promotion
- Improved WASH Infrastructure
- Household Disinfection
- Safe water storage
- Sanitation



Water treatment at source

- 3 studies - Well chlorination or Pot chlorinators
- Acceptability by population not evaluated
- Leads to false sense of security
- Must be accompanied by information and education
- Useless if hygienic water handling practices not promoted
- Difficult to implement at scale

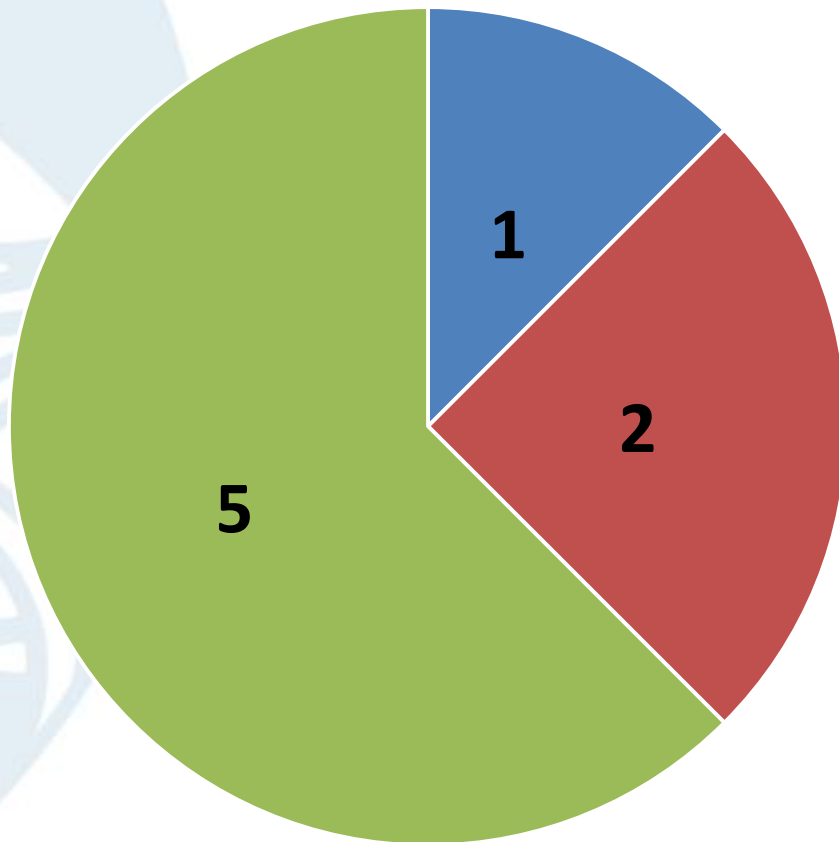


**EVIDENCE SUGGESTS WELL CHLORINATION NOT
RECOMMENDED FOR CHOLERA OUTBREAK RESPONSE**

BUT ... WHAT ABOUT OTHER SOURCES ?



Water treatment at point of use



■ Solar disinfection

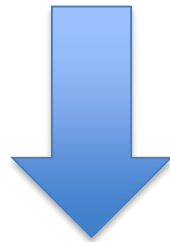
■ Simple Filtration

■ Chlorination



Water treatment at point of use

- Chlorination is the most popular HWT method
- Inconsistency of product use and dosage
- Used sporadically – dependent on availability and affordability
- Mass distributed products poorly used even when prevention knowledge is high
- Only targets one transmission route



IS HWT BEING USED EFFECTIVELY ?

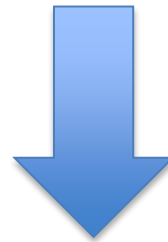


Sanitation

- No study evaluated a sanitation intervention alone
- One study (Philippines, 1974) suggest 68% reduction in cholera incidence by implementing shared toilet facilities alongside water supply
- Poor study design

Research gaps:

- Evaluation of function and use of communal latrines in public places
- Evaluation of behaviour change interventions to promote latrines use



IS IT WORTH DOING ?



Hygiene Promotion

- 4 studies evaluated community knowledge and cholera awareness
- Focus on changing behaviour related to water treatment practice rather than hygiene (hand washing with soap)
- Mass media (TV and radio) are the most popular ways of receiving information
- Improved knowledge does not translate into practice



**HOW EFFECTIVE IS HAND WASHING WITH SOAP?
WHAT IS THE BEST WAY TO DISSEMINATE INFORMATION ?**



Other WASH interventions

Water Container Disinfection	1
Household Disinfection Kits	1
Food Safety	0
Soap / Hygiene Kit Distribution	0
Solid waste management	0
Simple fly control	0



Research gaps

- Water supply
 - Evaluation of how interrupted water supplies affect cholera incidence
- Household water treatment
 - Evidence to support uptake, correct and sustained use
 - Evaluation of health impact and delivery methods
 - Mass or targeted distribution
 - Bucket chlorination compared to Aquatabs
- NFI/Hygiene kits
 - Evaluation of delivery methods
 - Mass or targeted distribution of kits
 - Full hygiene kit or soap only
- Hygiene promotion
 - Mode of communication: Mass media versus interpersonal communication in different contexts
 - Evaluation of health impact of hand washing with soap

MORE HEALTH IMPACT EVALUATIONS !



Evidence-based Best Practice

- Evidence-based decision-making
 - Best available research evidence
 - Practitioner expertise
 - Assessment of the characteristics of the population (needs, values and preferences)
- Evidence-based approach to public health
 - Engage community in assessment and decision-making
 - Systematic use of data and information systems
 - Apply programme planning frameworks
 - Sound evaluation
 - Disseminating what is learnt



Field Research

WASH-RECORD (WASH Interventions – Real-time Evaluation of Cholera Outbreak Response)

OBJECTIVES

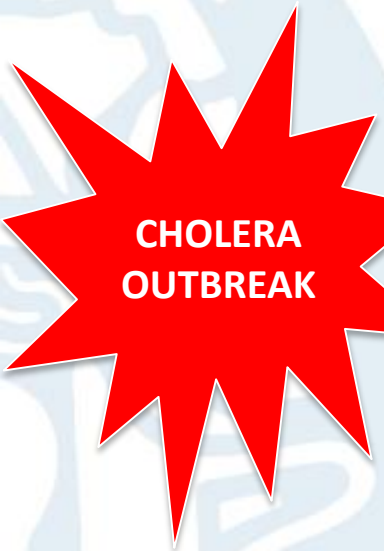
- Strengthen the evidence base
- Inform and consolidate WASH policy and practice for Cholera
- Inform revision of SPHERE WASH Indicators

KEY FEATURES

- Pre-emptive ethics approval granted (LSHTM)
- Collection of baseline data as outbreak declared
- Multiple WASH interventions are evaluated
- Systematic protocols to collect data and information



Study Plan



Surveillance



Mapping



Clusters



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Before & After Study



WASH interventions

Hygiene promotion

Water treatment

Hygiene kit dist.

Food safety prom.

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Case
Control
Study



DATA COLLECTION

- Programme monitoring data (standard indicators)
- Household survey
- Structured observation
- Water sampling and analysis
- Focus group discussion

OUTCOMES

Reduction in cholera incidence in intervention areas

Odds of cholera in those exposed to the WASH intervention compared to those not exposed (OR)

% respondents demonstrating effective knowledge and use of WASH interventions

Your help & support

- Evaluation reports and tools
 - WASH interventions in the community
 - Specific to cholera outbreaks (epidemic, endemic)
 - How do your indicators relate to SPHERE standards
- Lessons learnt – What works, what does not
 - WASH interventions only (bucket chlorination, aquatabs, bleach, soap)
 - Hygiene promotion dissemination methods (mass media, HH visits)
- WASH Strategies – Examples of past responses with results

Thank you

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