GLOBAL TASK FORCE ON
CHOLERA CONTROL

# REDUCING MORTALITY: INFECTION, PREVENTION CONTROL IN CHOLERA TREATMENT CENTRES

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# WASH IN HEALTH CARE FACILITIES


**Source.** UNICEF and WHO (2019)

- Global targets set by UNICEF and WHO to achieve universal WASH services in health care facilities (HCFs)
- HCFs are also now included in WASH SDGs
- In 2016, HCFs
  - ✓ 74% had basic water; 14% limited, 12% no water
  - ✓ 21% no sanitation services
  - ✓ >50% lacked basic waste management
  - ✓ 16% no hygiene services

# WASH AND IPC IN CTCS

- WASH and IPC **critical** for patient care
- Prevents disease transmission in and around the CTCs
- More than WASH, includes IPC
  - ✓ personal protective equipment
  - ✓ food handling and preparation
  - ✓ laundry
  - ✓ waste management
  - ✓ dead body management
  - ✓ cleaning and disinfection
  - ✓ vector control

**Source.** WHO Yemen (2018)

# TECHNICAL RECOMMENDATIONS FOR WASH/IPC IN CTCS

**Source.** WHO (2018)

Technical recommendations for WASH and IPC in CTCs are being reviewed. This includes:

- Recent review on impact of WASH in HCFs (LSHTM)
- On-going systematic review on WASH in CTCs (LSHTM)
- Many are not evidence based (Yates)

Some examples that are evidence based:

- Treatment and disposal of cholera effluent
- Hygiene promotion and messaging
- Hand hygiene and handwashing
- Cleaning and disinfection with chlorine

# TREATMENT AND DISPOSAL OF CHOLERA EFFLUENT

- Cholera waste can transmit disease
- Different chlorine solutions across with contact times of 10, 30 and 60 minutes
- Efficiency improved with increased chlorine concentrations
- Results suggest 30% hydrated lime suspensions or 2% chlorine solutions in controlled spills (buckets) with patient waste reduces contamination

**Source.** UNICEF Haiti (2016)

**Source.** Trajano Gomes da Silva, D.; Ives, K.; Fesselet, J.-F.; Ebdon, J.; Taylor, H. Assessment of Recommendation for the Containment and Disinfection of Human Excreta in Cholera Treatment Centers. Water 2019, 11, 188.

# HAND HYGIENE AND HAND WASHING

- Soap, sanitizer, 0.05% chlorine solution
- All have benefits and drawbacks
- Efficacy was similar
- Safety was similar (development of irritation) when washing hands 10 times per day
- Pick which is best for your context (acceptability, availability and sustainability)

**Source.** UNICEF Zimbabwe (2011)

**Source.** Wolfe MK, Gallandat K, Daniels K, Desmarais AM, Scheinman P, Lantagne D (2017) Handwashing and Ebola virus disease outbreaks: A randomized comparison of soap, hand sanitizer, and 0.05% chlorine solutions on the inactivation and removal of model organisms Phi6 and E. coli from hands and persistence in rinse water. PLoS ONE 12(2): e0172734. doi:10.1371/journal.pone.0172734

**Source.** Wolfe, M.K.; Wells, E.; Mitro, B.; Desmarais, A.M.; Scheinman, P.; Lantagne, D. (2016) Seeking clearer recommendations for hand hygiene in communities facing Ebola: A randomized trial investigating the impact of six handwashing methods on skin irritation and dermatitis. PLoS ONE, 11, e0167378.

# HYGIENE PROMOTION PACKAGES


- Risk of cholera infection > 100 times higher for household contacts of patients
- Cholera prevention package delivered at treatment center, follow up for 1 week
- Households had no presence of V. cholerae in stored water and 14 times higher odds of hand washing (days 5, 6 an 7
- 47% reduction in overall cholera infection amongst household members

**Source.** George CM, Monira S, Sack DA, Rashid M, Saif-Ur-Rahman KM, Mahmud T, et al. Randomized controlled trial of hospital-based hygiene and water treatment intervention (CHoBI7) to reduce cholera. Emerg Infect Dis. 2016 Feb [date cited]. http://dx.doi.org/10.3201/eid2202.151175

# CLEANING AND DISINFECTION

**Source.** UNICEF Haiti (2016)

- Fomites can transmit disease
- Use 2% chlorine solution to disinfect by:
  - ✓ Wiping or soaking
  - ✓ In the ward, toilets, showers, laundry, kitchen and morgue
- Spray surfaces until wet (i.e., 10 minutes)
  - ✓ In latrines, kitchen and patient's bed
  - ✓ 0.2% chlorine solution on HH surfaces and 2% on latrines and soiled surfaces
- Removes culturable *V. cholerae* from fomites

# BEYOND THE EVIDENCE FOR WASH AND IPC IN CTCS

**Source.** UNICEF Nigeria (2017)

- WASH and IPC in CTCs is not optional
- Needs to consider cultural and social norms, local context and recommendations
- Responsibility unclear between Health and WASH sectors
- Actual practices vary significantly from technical recommendations

# KNOWLEDGE GAPS FOR WASH AND IPC IN CTCS

- Need to fill evidence gaps for:
  - ✓ Personal Protective Equipment (PPE)
  - ✓ Footbaths
  - ✓ Laundry
  - ✓ Dead body management
  - ✓ Vector control
- Align international technical recommendations
- Consider local context and recommendations

**Source.** UNICEF Bangladesh (xx)

# WASH WORKING GROUP RESEARCH PLAN

- Wellcome Trust and DFID hosted research meeting in July 2018
- Identification of six priority areas in September 2018
- UNICEF consultancy launched in June 2019
- Epilinks for 80 days, until November 2019
- Funded by the CDC

## RESEARCH PRIORITIES

- Priority 1: Commonly-implemented, severely under-researched (CISUR)
- Priority 2: CATI teams for rapid response
- Priority 3: Minimum WASH Package for response
- Priority 4: OCV and WASH synergy
- Priority 5: Behaviour practices motivators and barriers
- Priority 6: programmatic learning for integrated response for control and elimination

# WASH WORKING GROUP RESEARCH PLAN

**OBJECTIVE:** Elaborate a harmonised research plan to guide and prioritise WASH and cholera research and support advocacy and resource mobilisation efforts based on the six priority areas identified by the WASH Working Group

**ACTIVTIES:**

- Mapping of existing, on-going and/or planned research
- Identification and prioritisation of knowledge gaps for research
- Develop research plan (including formulation of research questions)
- Develop funding and advocacy plan
- Develop monitoring and accountability framework

# MAPPING AND IDENTIFICATION OF KNOWLEDGE GAPS

| Methodology | Mapping exercise | Knowledge gaps |
|---|---|---|
| Literature review: 62 publications were included (51 from PubMed; 3 OFDA; 5 Prospero; and 3 Clinical Trials) | 72 existing, on-going and/or planned research | 101 knowledge gaps (42 from literature review and 59 from KIIs) |
| Key Informant Interviews (KIIs): 19 interviews and 5 written feedback (out of 35 KIIs contacted) | One new research area focused on WASH in hotspot for cholera elimination | 39 knowledge gaps emerged for all six priority areas |

# RANKING AND PRIORITISATION

| Priority Area | Research Gaps | Score |
|---|---|---|
| P1 / P2 / P3 | What cholera kits are the most effective according to the transmission routes/contexts? | 0.896 |
| P1 / P2 / P3 | What method of delivery works best for household intervention (including household decontamination and Household Water Treatment and Storage)? | 0.889 |
| P4 / P6 | What interventions during OCV campaigns contribute to WASH interventions effectiveness for long term control? | 0.870 |
| P1 / P3 | Which WASH interventions are the most effective at reducing household and community-level transmission of cholera? | 0.847 |
| P4 / P7 | What is the most appropriate methodology to prioritize cholera hotspot for WASH and OCV intervention? | 0.760 |
| P2 | What WASH Rapid Response Teams intervention modalities are the most effective during cholera outbreak? | 0.760 |
| P3 / P4 | When and where is it most effective to combine WASH package and OCV, and OCV, plus chemoprophylaxis? | 0.750 |
| P2 / P3 | Which targeted approaches (i.e., CATI, case-cluster approach, HBI, or combinations) are most effective depending on the stage of the cholera outbreak and on the transmission routes/context? | 0.750 |
| P3 | Which WASH packages are most effective to limit cholera transmission against transmission routes/context and towards specific high-risk population? | 0.736 |
| P1 / P3 | Which interventions are most effective in reducing contamination in cholera treatment centres? | 0.722 |
| P5 | What are the most effective behaviour change strategies or interventions that can be implemented during an outbreak or during periods with no cases (preventative)? | 0.694 |
| P6 | Which structural adjustments are most effective to eliminate cholera? | 0.521 |
| P2 / P6 | What method of delivery works best for pre-existing water supply infrastructure or service? | 0.500 |
| P6 | What type of public health regulations contribute most to the effectiveness of WASH interventions during an outbreak? | 0.417 |

- Used Child Health and Nutrition Research Initiative (CHNRI) method
- Applied an equally weighted scoring, in a ranked order, for **public health benefit**, **deliverability of intervention** and **feasibility of research**
- Resulted in 14 research priorities across six priority areas (with research questions)

# CONCLUSION AND NEXT STEPS

- Identified key research priorities that are feasible to implement and potential for public health impact
- Further refine these identified priorities and integrate within the broader research agenda for the GTFCC and its' Working Groups
- ½ day meeting focused on research at the WASH Working Group meeting in March 2020

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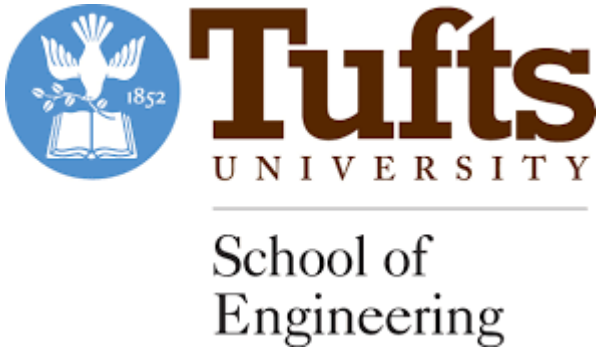



Thank you
Together we can
#endcholera
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