GLOBAL TASK FORCE ON
CHOLERA CONTROL

UPDATE FROM THE SURVEILLANCE WORKING GROUP GTFCC ANNUAL MEETING 08-10 JUNE 2021

Marc Gastellu-Etchegorry
Marie Laure Quilici

KEY ACHIEVEMENT: LAUNCH OF SUB-GROUP WORK

- 4 priority thematic areas identified by the Surveillance WG in October 2020
- Resulted in the creation of 4 dedicated surveillance sub-working groups

❑ **Surveillance & global monitoring** (co-leads: Andrew Azman, JHU & Nick Thomson, Sanger Institute)
❑ **Outbreak detection, investigation and response** (lead: Raoul Kamadjeu, UNICEF)
❑ **Hotspots** (lead: Elizabeth Lee, JHU)
❑ **Regional approaches to surveillance** (lead: Alexandra Medley, CDC)

- Important role of the laboratory in the 4 Sub-Groups
- 16-20 participants in each sub-group
- Very dynamic work: **20 sub-group meetings since the launch and 2 surveillance working group webinars to assure the good convergence of the puzzle pieces**

SURVEILLANCE AND MONITORING SUB-GROUP

Significance

Robust routine monitoring based on indicators is paramount

- **For hotspots to be identified in a reliable manner to effectively target interventions in a comprehensive and complementary action (axis 2 of the Cholera Roadmap)**
- **To monitor the progress of the implementation of the National Cholera Plans (NCPs) and of the Global Cholera Roadmap**
- **To document with confidence the absence of local transmission**

SURVEILLANCE AND MONITORING SUB-GROUP

Minimum standards for indicator-based surveillance

- Review case definitions
  - Suspected case, confirmed case, consideration for probable case
  - *Nearly completed*

- Identify epidemiological settings (including outbreaks) and recommend
  - Individual and collective testing strategies
  - Adequate surveillance methods in each type of setting

- Develop minimum standards for cholera **indicator-based surveillance**
  - incl core dataset, reporting requirements, templates for epi sitreps and linelist, etc.

SURVEILLANCE AND MONITORING SUB-GROUP
Future work

- **GTFCC Global Cholera Database**
  - Review data sources
  - Review template for cholera profile / maximize usefulness for users
  - Develop long-term vision/action plan for global cholera database and country profiles

- **Documentation of absence of local transmission**
  - Recommend minimum surveillance standards and minimum documentation standards

OUTBREAK SUB-GROUP

Significance

Early detection, rapid confirmation, and quick response to outbreaks:

- **Axis 1 of the Cholera Roadmap**
- **Critical to mitigate outbreak's impact**

OUTBREAK SUB-GROUP

Outbreak detection

- Revise GTFCC definitions/criteria in different epidemiological settings for:
  - Suspected cholera outbreak, cholera outbreak, end of an outbreak
  - *Nearly completed*

- Develop minimum standards and guidance for **event-based surveillance** and **community-based surveillance**

- Develop criteria for evaluating sensitivity of cholera surveillance for timely detection and notification of cholera outbreaks

- Foster innovation in cholera outbreak detection/forecasting

OUTBREAK SUB-GROUP
Future work

- **Outbreak investigation**
  - Develop SOPs and case investigation forms
  - Evaluate timeliness of investigation of cholera outbreaks

- **Outbreak response/case-area targeted interventions (CATIs)**
  - Define criteria to decide where to implement CATIs
  - Define the nature and the purpose of CATIs in different epidemiological settings
  - Define minimum surveillance standards where CATIs are implemented including for monitoring and evaluation

HOTSPOT SUB-GROUP

Significance

Adequate identification of hotspots: critical to target interventions across all roadmap pillars and to maximize their impact on the reduction of the cholera burden

HOTSPOT SUB-GROUP

Revision of GTFCC hotspot methodology

- A review of 22 hotspot identification exercises has been conducted
- Based on the findings of this review:
  - Guiding principles of a revised methodology have been identified
  - A general framework of a draft revised methodology based on 2 steps is being developed
  - Representatives of all GTFCC WGs/pillars are being consulted

HOTSPOT SUB-GROUP
Future work

- Continue to revise the GTFCC hotspot methodology, including data reviews and exercises/simulations
- Support the development of principles/criteria for the strategic use and facilitate a more extensive use of OCV. This implies an increase of stockpile for preventive vaccination (support to the OCV WG)
- Support the development of minimum standards for cholera surveillance in hotspots (support to surveillance & monitoring and outbreak sub-groups)

REGIONAL APPROACHES SUB-GROUP

Significance

Because cholera has no borders

Outbreaks of cholera are fueled by migration, political instability, environmental conditions, socioeconomic factors and climate change

Cholera control or elimination in one country is unlikely to be stable unless all countries within connected regions aim to prevent cross-border or regional spread

Strong collaboration and coordination between countries, sub-regions, and regions is essential to progress towards cholera control and elimination and to facilitate alert in different countries / regions.

REGIONAL APPROACHES SUB-GROUP
Landscape analysis of regional platforms

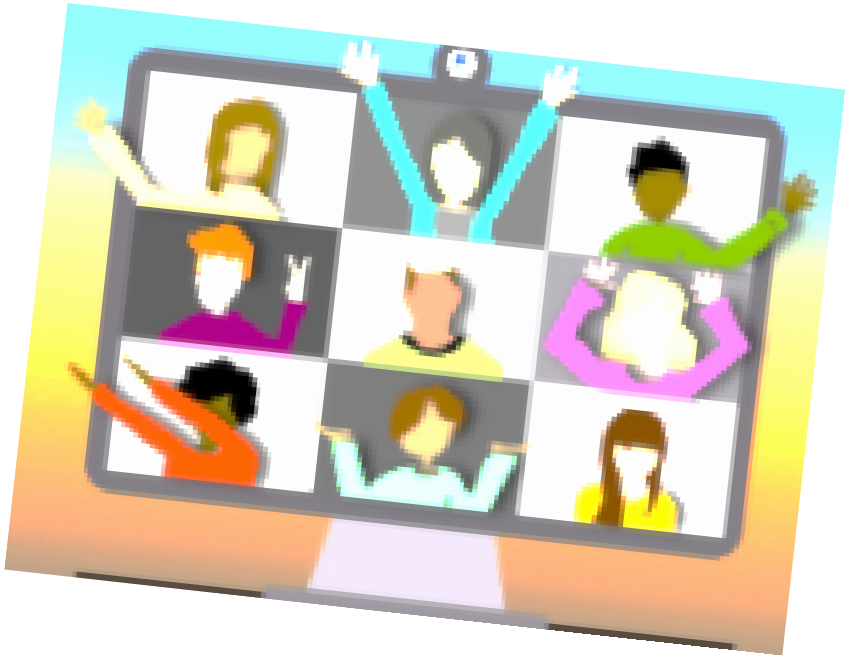
- Goal:
  - Inform regional platform's stakeholders, the GTFCC, and the CSP for the future development, strengthening, and streamlining of regional activities
  - Inform the development of a framework for cross-border coordination and cholera surveillance
- Harmonized set of surveillance, preparedness and response activities to be covered by regional platforms has been drafted
- Regional platform's activities are being described against these activities, through targeted discussions with regional platform's focal points (**participative process**)
- Regional platforms: WHO Regional Offices, regional Cholera Platforms, CSP

REGIONAL APPROACHES SUB-GROUP
Future work

- Finalize landscape analysis of regional platforms (ongoing)
- Develop a GTFCC regional surveillance framework (epi and lab)
- Identify research questions to indicate cross-border or regional cholera connectivity
- Study the role of whole-genome sequencing to demonstrate cross-border spread
- Identify which factors may inform prevention of cholera importation

SUB-GROUP WORK: CHALLENGES AND PERSPECTIVES

- Maintain high level of engagement despite:
  - frequent sub-group meetings
  - virtual format
  - requests for extensive contributions



- Capture diversity of opinions
- Find the path for consensus and decision building

➢ Keep the systems simple and efficient while adding research components, Innovative IT tools and engaging formats to be tested out

Special thanks to:

- Sub-group leads
- Surveillance working group members involved in sub-group(s)
- Ad hoc subject matter experts who contribute to sub-groups
- Representatives of other GTFCC WG who support the hotspot sub-group
- Representatives of various regional platforms who extensively support the regional sub-group
- Former Epi WG chair, who opened the way to test out sub-group work

for the fantastic collaborative work!

LAB AND SUB-GROUP WORK

- **Involvement of the lab group members in the four surveillance sub-working groups**
- **Laboratory data essential for strong surveillance in all epidemiological settings**
  - to determine how lab capacities can be used to better identify the true burden of cholera during and between outbreaks (close the gap between lab and epidemiology)
  - Proportion of suspected cases tested by RDTs, proportion of RDT positive cases lab tested, proportion of lab confirmed cases
    - Hotspot identification
    - Detection, confirmation, investigation and end of outbreaks
    - Long term surveillance in persistent and non persistent settings
- **WGS to demonstrate cross-border (regional and global) spread ?**
- **Country lab capacities should not be a "limiting factor"**

KEY ACHIEVEMENTS

LAB CAPACITY BUILDING

✓ Job Aid completed and available on the GTFCC application

- Domestic transportation (EN and FR), included in the WHO Cholera Investigation Kit

https://www.gtfcc.org/wp-content/uploads/2020/05/gtfcc-job-aid-specimen-packaging-and-domestic-transportation-for-laboratory-confirmation-of-vibrio-cholerae.pdf

https://www.gtfcc.org/wp-content/uploads/2020/05/gtfcc-outil-de-travail-conditionnement-et-transport-interieur-d-echantillons.pdf

- International transportation (EN and FR), included in the WHO Cholera lab kit

https://www.gtfcc.org/wp-content/uploads/2020/05/gtfcc-job-aid-strain-conditioning-for-international-transportation-of-vibrio-cholerae-1.pdf

https://www.gtfcc.org/wp-content/uploads/2020/09/gtfcc-outil-de-travail-conditionnement-des-souches-de-v-cholerae.pdf

- Antimicrobial susceptibility testing (EN and FR)

https://www.gtfcc.org/wp-content/uploads/2021/04/gtfcc-job-aid-antimicrobial-susceptibility-testing-for-treatment-and-control-of-cholera.pdf

https://www.gtfcc.org/wp-content/uploads/2021/06/gtfcc-outil-de-travail-determination-de-la-sensibilite-aux-antibiotiques-pour-le-traitement-et-le-controle-du-cholera.pdf

✓Update of WHO cholera lab kit

https://www.gtfcc.org/wp-content/uploads/2019/10/cholera-kit-item-list.pdf

OVERVIEW OF LABORATORY CAPACITIES IN COUNTRIES ENGAGED IN NCP DEVELOPMENT

- cholera Lab questionnaire, with definition of Minimum country lab standards, for a situational analysis of NCP-engaged countries lab capacities and identification of their needs.
- Under evaluation in Mozambique.

ACTIONS IN PROGRESS

LAB CAPACITY BUILDING

- *V. cholerae* culture procedure, Job-aid to be edited
- Standard operating procedure for PCR (Dropbox to collect procedural manuals for PCR already performed by the lab partners to identify 7th pandemic O1 VC (CDC, IP, JHSPH, NICD, South Africa, NICED, India)

DEVELOPEMENT OF COUNTRY DIAGNOSTIC CAPACITY

Use of RDTs :

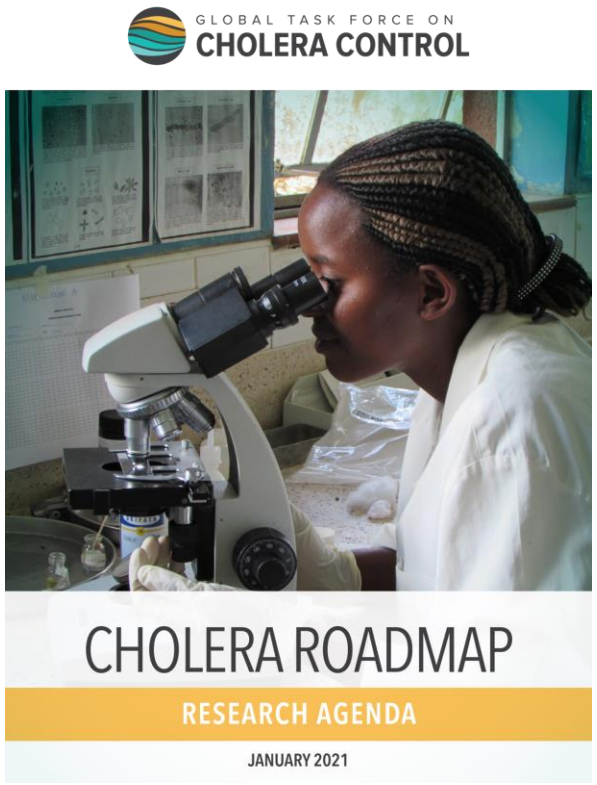
- Cholera RDT performance review performed (Amanda Debes)
- Synthesis document (David Olson)
  - ➢ proposed process for interpreting collective cholera RDT results as part of overall diagnostic strategy

WORKPLAN

- RDT use : in collaboration with epidemiology surveillance WG
  - methodology for interpreting collective cholera RDT results based on realistic mean Se and Sp defined by 2019 GTFCC Surveillance WG (90% and 85%, respectively)
  - guidance for expanded use of RDTs, according to cholera context
  - improve early outbreak detection
  - provide greater microbiologic evidence without relying solely on culture or PCR
- Testing Strategy: geographic and temporal completeness
  - During routine surveillance
  - For outbreak detection
  - During outbreak monitoring and response
  - For end of outbreak
  - To document “elimination”
- Countries laboratory capacities
  - Investigate lab capacities on other pathogens and how to synergize laboratory activities

CHOLERA ROADMAP RESEARCH AGENDA

Top 5 Research Priorities for Epidemiology, Surveillance and Laboratory



Rank Within Pillar		Research Question
1		What is the impact of early diagnosis of cholera using a rapid diagnostic test at the point of care in a community setting compared with testing only in health facilities?
2		How can we improve and fine-tune hotspot definition and identification at a district and sub-district level?
3		What are the optimal designs for surveillance systems (e.g., indicator-based, event-based, community-based, environmental, sentinel site surveillance) to monitor progress of the Cholera Roadmap?
4		What are the optimal surveillance tools (e.g., laboratory methods, case definitions, etc.) to monitor progress of the Cholera Roadmap?
5		How can combined epidemiological and genomic analysis of *V. cholerae* be used to better understand transmission dynamics and inform epidemiological models?

https://www.gtfcc.org/cholera-roadmap-research-agenda/

EPI WORKING GROUP MEMBERSHIP

Bill & Melinda Gates Foundation
Centers for Disease Control and Prevention (US CDC)
Country Support Platform (CSP)
Epicentre
Fogarty International Center, NIH
Gavi, the Vaccine Alliance
Icddr,b
ICMR -National Institute of Cholera and Enteric Disease
International Federation of Red Cross and Red Crescent (IFRC)
International Vaccine Institute
Johns Hopkins University
London School of Hygiene and Tropical Medicine
Medair
Nigeria Centre for Disease Control (NCDC)
Oxfam
PATH
Save the Children
Solidarités International
UNICEF
WaterAid
WHO

LAB WORKING GROUP MEMBERSHIP

American University of Beirut
Bill & Melinda Gates Foundation
Centers for Disease Control and Prevention
Centers for Disease Control and Prevention
Centre de Recherche Médicale et Sanitaire, CERMES, Niger
Eawag-Sandec
Epicentre
Gavi, the Vaccine Alliance
Icddr,b
ICMR -National Institute of Cholera and Enteric Disease
MERIEUX FOUNDATION
National Institute for Communicable Diseases (NICD), South Africa
Nigeria Centre for Disease Control (NCDC)
Translational Health Science and Technology Institute
Sanger / LSTMH
UNICEF
University of Florida
INSTITUT PASTEUR
Johns Hopkins University
Médecins Sans Frontières


Thank you
Together we can
#endcholera
GLOBAL TASK FORCE ON
CHOLERA CONTROL