



REPORT OF THE

9TH ANNUAL MEETING OF THE GLOBAL TASK FORCE ON CHOLERA CONTROL

How do we transition from cholera outbreak response to cholera prevention?

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Acronyms and abbreviations

AEFI	adverse events following immunisation
AMR	antimicrobial resistance
AWD	acute watery diarrhoea
BRC	British Red Cross
CATI	case-area targeted intervention
CFR	case fatality rate
CHV	community health volunteer
CHW	community health workers
CLTS	community-led total sanitation
CSP	Country Support Platform
CTC	cholera treatment centre
DRC	Democratic Republic of Congo
EAWAG	Eidgenössische Anstalt für Wasser, Abwasser und Gewässer
EOC	emergency operations centre
EPI	WHO Expanded Programme on Immunization
EWARS	Early Warning and Response System
GHV	Global Health Visions
GTFCC	Global Task Force on Cholera Control
icddr,b	International Centre for Diarrhoeal Disease Research, Bangladesh
ICG	Intersectoral Coordinating Group
IDSR	integrated disease surveillance and response
IFRC	International Federation of Red Cross and Red Crescent societies
IMS	Incident Management System
IPC	infection prevention and control
IRP	Independent Review Panel
IVI	International Vaccine Institute
LGA	local authority (Nigeria)
LNSP	Haiti National Laboratory of Public Health
M&E	monitoring and evaluation
MGH	Massachusetts General Hospital
MMGH	MM Global health
MSF	Médécins Sans Frontières
NCCP	national cholera control plan
NCP	national cholera plan
NIH	US National Institutes of Health
NITAG	national immunization technical advisory group
NMCEP	Kenya national multisectoral cholera elimination plan
OCV	oral cholera vaccine
ORS	oral rehydration salts
PCR	polymerase chain reaction
PHSM	public health and social measures
PQ	WHO prequalification
PWD	people with disabilities
RCCE	Risk communication and community engagement
RDT	rapid diagnostic test
RRT	rapid response team
SAM	severe acute malnutrition
SDC	Swiss Agency for Development and Cooperation
SDGs	Sustainable Development Goals
SOP	standardized operating procedure

SWOT	strengths, weaknesses, opportunities and threats analysis
TPP	target product profile
UNICEF	UN Children's Fund
US CDC	US Centers for Disease Control and Prevention
VC	Vibrio cholerae
VIS	Gavi vaccines investment strategy
WASH	water, sanitation and hygiene
WD	watery diarrhoea
WGS	whole genome sequencing
WHO	World Health Organization
WSU	Washington State University

Executive summary

The ninth annual meeting of the Global Task Force on Cholera Control (GTFCC) took place on 27-29 June 2022. Because of the continued difficulties imposed by the COVID-19 pandemic, the meeting was held in a hybrid format, with some attendees meeting in person in Les Pensières, Annecy, France, and others attending virtually for part of the programme.

The meeting was focussed on the critical question: “how do we transition from cholera outbreak response to cholera prevention?”

Global cholera efforts have historically been driven by the need to respond to cholera outbreaks. Indeed, rapid, effective response to outbreaks is a strategic axis of *Ending Cholera: The Global Roadmap to 2030* (aka “the Roadmap”) – the document that lays out the GTFCC’s unified approach to cholera prevention and control and the goals it is designed to meet. These include reducing cholera deaths by 90% by 2030 and eliminating cholera in 20 countries. Fewer than eight years remain before 2030 comes around: achieving these goals will only be possible with a rapid strategic and practical shift towards cholera prevention.

With that central focus in mind, the objectives of this this year’s annual meeting are as follows:

- Present and showcase the last year’s activities of the GTFCC secretariat, the GTFCC Country Support Platform (CSP), and the various area-specific technical working groups of the Task Force;
- Discuss the implementation of the Roadmap, sharing and discussing good practices, challenges and bottlenecks experienced over the last year, with the goal of identifying solutions together;
- Share country updates on cholera strategies and perspectives on the development and implementation of National Cholera Plans (NCPs), including key challenges, barriers, and needs for additional partner support;
- Look at recent developments and innovations across the global roadmap’s six pillars: water, sanitation, and hygiene (WASH); strengthening healthcare systems; surveillance; use of oral cholera vaccine (OCV); community engagement; and case management;
- Highlight multisectoral approaches to achieving the Roadmap goals.

The official sessions of the meeting took place in the afternoons, allowing for easier participation by those joining remotely from around the world, and leaving dedicated space for side meetings between those present onsite.

Three days of productive discussion summarised progress over the past year and highlighted key issues. Outbreaks have increased in the recent past: 22 countries had been affected by cholera in the six months preceding the meeting, with worrying increases in case fatality rate. In this context, countries have been increasingly and commendably willing to share experiences and challenges. At this meeting 12 countries shared their achievements and challenges in their efforts to develop, revise and implement national cholera plans. One clear conclusion was that it is far better to have an imperfect plan that is implemented than a perfect plan that never is.

Meanwhile, the GTFCC continues to address its own challenges, particularly around community engagement, upscaling the CSP and the work of the Independent Review Panel. As 2030 draws nearer, measuring cholera-free status will be a high priority task and improved surveillance will be increasingly important.

It is critical that countries, donors and partners take note of how quickly the last five years have passed. The next eight will go quicker. There is a need to put shoulders to the wheel and work harder.

The meeting closed with a round of thanks to donors, partners and countries for their continued support of work to achieve the goals set out in the GTFCC core document, *Ending cholera: a global roadmap to 2030* (aka “the Roadmap”).

Welcome remarks

Frew Benson, GTFCC Chairperson

The GTFCC has very little time remaining in which to achieve the goals of the Roadmap. If there was ever a time to move past plans and commitments to bold, courageous action, it is now.

The targets of cholera elimination in 20 countries and a 90% reduction in deaths by 2030 are ambitious. Everyone who plays a part in this effort – countries, partners and donors – must put their shoulders to the wheel to ensure implementation of effective oral cholera vaccine (OCV) campaigns and sustainable water, sanitation and hygiene (WASH) programmes.

Gratitude is due for the commitment of all partners to date, without which the achievements and plans so far would not have been possible. Now is the time to go further and implement those plans.

GTFCC updates

During this session, representatives of the GTFCC Secretariat and Country Support Platform (CSP) presented the progress, achievements and challenges of the previous year.

Update from the GTFCC Secretariat: major achievements, progress, challenges and perspectives

Philippe Barboza, GTFCC Secretariat

A preliminary overview of the epidemiological context in 2021/2022 does not reveal good news. The world is seeing the largest cholera outbreaks in decades, with cases, deaths and case fatality rates (CFR) all increasing. This is a major step back in comparison with previous years and a morally unacceptable situation.

Trends are not improving. The whole of 2021 saw 21 countries with outbreaks, a number already matched in the first half of 2022, with five new countries already this year. A further two countries have experienced outbreaks of acute watery diarrhoea (AWD). Shortages of OCV and other cholera commodities were widespread throughout 2021 and cases and deaths both increased over the year, with an average preliminary CFR of 2.8%.

Driving factors behind these trends include conflict, humanitarian crises, climate change, natural disasters and hunger, while intrinsic factors are familiar: lack of access to safe water, open defecation, lack of accessibility to health care, poverty and vulnerability.

Vaccination campaigns have been seriously challenged: in mid-2022 more doses have been shipped (14 million) and approved (26 million) than the maximum estimated availability for the year (38 million). As of the end of June 2022 the gap is already 7.7 million doses, even with emergency stock included, and more OCV requests are in preparation. In 2021, the highest demand came in the second half of the year.

Emergency campaigns have been delayed in 2021. In addition, despite having made strong justifications, two pre-emptive campaigns (8 million doses) were refused due to the lack of vaccines. This situation will reduce the feasibility of planned, preventive campaigns, with potential knock-on effects: unmet expectations break momentum.

On the plus side, an increasing number of approved preventive vaccination requests show the broader, longer-term GTFCC strategies are working. The various ongoing and planned reactive, pre-emptive and preventive vaccination campaigns are complementary, demonstrating good strategic coherence.

2021 recommendations

Several key recommendations emerged from the 2021 GTFCC annual meeting.

In the area of technical cooperation and coordination, it was recommended that NCPs be managed at a political level above that of a single ministry; that NCP development processes should align theories of change with indicators; and that systematic effort should be given to documenting multisectoral success stories to improve future technical collaboration and coordination.

On the monitoring and evaluation (M&E) front, the GTFCC requested more structured feedback from countries, with clarified assessments of progress and impact at national and Roadmap level. Recommendations were that M&E should be flexible enough to achieve both objectives, and that M&E guidance should be developed for each technical pillar, with support provided to countries implementing that guidance. Frameworks for M&E should be included at the start of NCP development and should outline the implementing partners, roles and responsibilities, and resources required.

In the third and final area, financial mechanisms and country-specific advocacy, the recommendations were to develop a more structured approach to collaborative advocacy; to develop mapping of existing financing mechanisms and types of partner support; and to engage relevant ministries beyond health and finance.

GTFCC progress since last year

The 2021-2022 period has seen good progress towards the goals of the Roadmap. Hotspots have been identified using the GTFCC tool in 15 countries across Africa, with six more ongoing at the time of the meeting. New NCPs have been launched in Bangladesh, Somalia, Zambia and Zanzibar (with Bangladesh and Zambia already working on updated versions). Two further countries, Ethiopia and Kenya, launched their NCPs at the GTFCC side event at the May 2022 World Health Assembly (see advocacy section below). Zimbabwe has submitted its NCP to the Independent Review Panel (IRP); 12 more African countries and Yemen are developing NCPs; and five more countries are considering them.

Working group summaries

OCV

Since the creation of the OCV vaccine stockpile in 2013, more than 100 million doses have been deployed across 23 countries for preventive use and outbreak responses (56% of doses were for outbreaks). In 2022 to date, 36 million doses have been requested, two-thirds of which have been approved. 13.8 million doses have already been sent to 10 countries.

Since December 2021, Nigeria and Ethiopia have submitted preventative campaign requests and Benin, Democratic Republic of Congo (DRC) and Kenya have been engaged to develop multiyear plans of action for OCV deployment. In 2022, OCV was introduced in Pakistan, which will potentially be followed by Kenya

later in the year. An OCV coverage survey (combined with a WASH assessment) has been done in Zanzibar and will be duplicated in other countries.

Major challenges include a limited OCV stockpile and delayed implementation of emergency campaigns; lack of engagement from the WHO Expanded Programme on Immunization (EPI), low two-dose coverage in campaigns; and difficulties reprioritizing preventative campaigns over reactive ones.

The role of the OCV working group is to develop cholera-specific normative and programmatic guidance for countries and other stakeholders to support planning, implementation, and monitoring of OCV activities in accordance with the Roadmap. The group also reviews and approves OCV requests for preventative campaigns submitted to the GTFCC. From 2023, the latter role will transition to reviewing the feasibility of multiyear OCV plans submitted by countries to Gavi, The Vaccines Alliance (henceforth “Gavi”). The working group also identifies OCV research needs and supports the development of the GTFCC research agenda. The group defines its priorities and develops its workplan at the beginning of each year and then meets every two months to review progress against planned activities.

2021 priorities (as per June 2021 GTFCC annual meeting)

- Strengthen support for planned OCV campaigns: (1) Deploy experienced partners to support planned OCV campaigns in five priority countries (Nigeria, Ethiopia, Sudan, Mozambique, Bangladesh); and (2) collaborate with the CSP to develop a pool of potential OCV deployment personnel.
- Address the issue of poor quality OCV requests and campaigns: Develop and pilot a workshop for country representatives and CSP consultants on preparing OCV requests and planning, implementing and monitoring OCV campaigns.
- Strengthen the GTFCC review process: Develop guidelines to ensure appropriate, consistent, unbiased reviews of OCV requests, and identify essential review criteria.
- Document OCV deployment/campaigns and make the information available to all partners: Develop an interactive dashboard to document OCV use and campaign indicators.
- Develop technical documents to support ministries of health in endemic countries with multiyear planning for OCV campaigns: (1) Develop technical notes for selecting cholera hotspots for OCV use and (2) develop tools for countries to improve the quality of campaigns.
- Develop technical supporting tools: Continue to develop and distribute tools on the laboratory methods.
- GTFCC surveillance guidelines: Redesign the cholera testing strategy to be integrated with GTFCC and national surveillance guidelines.

Achievements and progress in the last year

- Strengthen support for planned OCV campaigns : support was provided to Ethiopia and Nigeria.
- Address issue of poor quality OCV requests and campaigns
 - Materials and practical exercises were developed for a five-day international workshop on OCV request and campaign planning, implementation, and monitoring workshop that was held in Nigeria on April 25–29. Representatives of six countries (Ethiopia, Kenya, Mozambique, Nigeria, South Sudan, and Uganda) attended, including public health professionals from ministries of health (representing EPI and national cholera and surveillance programs), WHO country office staff from the EPI and emergencies programmes, CSP

- consultants and partners including the International Federation of Red Cross and Red Crescent societies (IFRC), CSP, Gavi and the US Centers for Disease Control and Prevention (US CDC). The GTFCC has since seen an improvement in the quality of applications from attendees.
 - Additional international workshops are planned for francophone Africa in DRC (October) and southeast Asia in Nepal (early 2023)
 - National-level training materials being developed and will be piloted in Ethiopia Q4 2022.
- Strengthen the GTFCC review process:
 - Draft guidance has been developed on review procedures for OCV requests and is under review by all working group members. There is a need to review alignment with Gavi documents and procedures before transition of preventative request reviews from the GTFCC to Gavi in early 2023.
- Document OCV deployment/campaigns and make this information available to all partners:
 - An interactive dashboard to document OCV deployment and campaign indicators has been developed and is in pilot phase, to be completed by 2022.
- Develop technical documents to support health ministries of endemic countries with multiyear OCV planning:
 - Draft guidance and a tool have been developed to help select cholera hotspots for OCV use and prioritize selected hotspots in multiyear plans. This is under review by the working group.

Key documents/outcomes

- Development of guidance on process to review multiyear OCV plans
- Selection of cholera hotspots as part of multiyear OCV plans
- Support for eight countries to determine their 2022-2026 OCV forecast.

2022 priorities

- Support countries implementing the OCV components of their NCPs
- Develop tools and guidance documents as needed to ensure standardized M&E of OCV campaigns
- Develop a transparent, fair process to prioritize OCV shipments during supply constraints
- Develop OCV request and campaign planning workshops for countries
- Pilot training in 2-3 countries
- Support more countries as they determine their 2022-2026 OCV forecast.

Surveillance pillar: epidemiology working group

The epidemiology working group works closely with the laboratory working group to strengthen the surveillance pillar. The goal of cholera surveillance is to make necessary cholera information quickly available at all levels (local, national, regional and global) to guide the development of prevention and control strategies and maximize their impact.

2021 priorities (as per June 2021 GTFCC annual meeting)

- Redesign the cholera surveillance strategy (including indicator-based, community-based and event-based surveillance), beginning by defining epidemiological settings that might require different surveillance modalities (e.g., outbreaks, cholera elimination, etc.).

- Revise the GTFCC hotspot methodology in accordance with the guiding principles based on a review of past hotspot identification exercises.
- Finalize a landscape analysis of regional platforms to inform the development of a framework for coordinated regional surveillance.

Achievements and progress in the last year

- National surveillance:
 - The guiding principles and overarching framework for an adaptive cholera surveillance strategy have been developed.
 - A framework for the recognition and maintenance of cholera-free status has been developed, formalizing harmonized, transparent requirements and independent assessment mechanisms.
- GTFCC hotspot methodology:
 - A revised GTFCC framework for identifying priority areas for interventions has been developed. It consists of two components, for respective use in (1) countries where cholera transmission is high to moderate, and (2) countries where cholera transmission is low to very low.
- Regional surveillance approaches:
 - A landscape analysis of regional platforms has been completed, describing cholera surveillance activities routinely implemented by regional organizations.
- A framework for strengthening coordinated regional cholera surveillance is near completion.

Challenges

It is challenging to ensure that recommendations are pragmatic enough to be implemented, that they realistically consider countries' capacities, and that they address contextual needs. To meet this challenge, regional stakeholders and countries participate in all sub-working groups, and pilots are undertaken in countries with different levels of cholera transmission and endemicity.

Key documents

All key documents are yet to be finalized.

2022 priorities

- National surveillance: Continue to develop technical recommendations for operationalizing adaptive cholera surveillance strategies
- GTFCC priority areas methodology: Continue to refine technical recommendations for identifying priority areas for interventions through pilots, and develop supporting tools, guidance, training materials and/or case studies for country users
- Regional and global surveillance: Finalize and pilot the framework for strengthening coordinated regional cholera surveillance. Develop a strategy for regional and global cholera surveillance, including data requirements, governance mechanisms, functional requirements and technical recommendations for identifying cross-border threats and priority areas for interventions
- Cholera-free status: If the framework for cholera-free status is endorsed by the GTFCC Steering Committee, launch operational mechanisms to formalize GTFCC recognition and maintenance of cholera-free status.

Surveillance pillar: laboratory working group

The laboratory working group works with the epidemiology working group to strengthen surveillance. Increasing laboratory capacities and reinforcing cohesion and coordination between laboratories – including by developing a long-term surveillance strategy – are essential for detecting outbreaks early and implementing the right prevention and control measures. The laboratory working group continues to assess how best to support countries and develop practical ways to address gaps and needs.

2021 priorities (as per June 2021 GTFCC annual meeting)

- Continue to develop and distribute tools on key laboratory methods identified by the working group
- Redesign the cholera testing strategy to be integrated with national and GTFCC surveillance guidelines
- Define the role of the laboratory and of whole genome sequencing (WGS) methods in characterization and surveillance of cholera strains at regional and global level
- Define the role of laboratory testing in cholera elimination
- Finalize GTFCC recommendations for environmental surveillance of toxigenic *Vibrio cholerae* (VC).

Achievements and progress in the last year

- Laboratory job aids and fact sheets:
 - Three job aids were finalized and published. The job aid for stool specimen sample collection and the job aid and fact sheet for culture of VC are close to completion.
- Cholera testing strategy:
 - Development of an improved cholera testing strategy was informed by the results of a literature review and analysis of existing data on the use and interpretation of rapid diagnostic tests (RDTs) for the different epidemiological settings defined by the surveillance working group.
 - Specific questions were compiled on strategic use of RDTs, culture, and polymerase chain reaction (PCR) for outbreak detection or monitoring in different epidemiological settings.
 - A joint laboratory and epidemiology focus group was formed to draft the framework.
- Minimum laboratory capacity standards and laboratory capacity assessments:
 - Minimum laboratory capacity standards were defined and drafted.
 - A laboratory capacity assessment questionnaire was developed and piloted in five countries.
- RDT evaluation protocol for WHO pre-qualification:
 - After a request from the WHO prequalification (PQ) team, the working group reviewed an RDT evaluation protocol to be used in the WHO-PQ process.
- Lab testing in surveillance of regional/global cholera spread (WGS):
 - The outcome of these discussions is being integrated into the draft framework for coordinated regional cholera surveillance.
- Role of lab testing in determining/validating cholera elimination:
 - Laboratory data was defined as the determining criteria for achieving and maintaining cholera-free status. The outcome of these discussions was integrated into the framework for cholera-free status.
- Recommendations for environmental surveillance of toxigenic VC:
 - A draft technical note on environmental surveillance of VC was circulated within the laboratory and WASH Working Groups and is currently being finalized.

Challenges

The main challenge has been developing direct contacts with laboratories in countries and obtaining an accurate picture of capacities and needs in order to design the best ways to provide support. To that end, the working group plans to finalize and distribute a laboratory capacity assessment tool, and to promote activities like meetings and training sessions that develop networks and facilitate exchange of technical information, skills, and knowledge.

Key documents

The job aid on RDT use and the job aid on antimicrobial susceptibility testing were published in English and French on the GTFCC website and in the GTFCC app, and added to WHO's cholera kits.

2022 priorities

- **Laboratory testing strategy:**
 - Finalize development of a draft framework for an adaptive testing strategy, integrating the use of RDTs, culture and PCRs and considering different epidemiological contexts.
 - Reflect on the implications of the molecular characterization of VC in this context.
 - Present draft framework to the national surveillance sub-working group for review and validation.
- **Environmental surveillance technical note:**
 - Finalize and distribute GTFCC recommendations on testing environmental samples and drinking water for VC.
- **Laboratory job aids and fact sheets:**
 - Continue to develop tools for laboratories performing cholera diagnostics and assess the need for additional technical guidance.
- **Minimum laboratory capacity standards and laboratory capacity assessments:**
 - Formalize and publish recommendations for minimum laboratory capacity standards.
 - Working with the CSP, refine the capacity assessment tool in light of feedback from country pilots.
 - Resume distribution of the assessment tool and data collection.
- **General Technical Guidance for PCR and standardized operating procedures (SOPs):**
 - Finalize existing guidance for PCR use and initiate development of target product profile (TPP) for cholera PCR.
 - Continue to promote sharing of in-house PCR SOPs.
 - Propose initiating work on evaluation of existing commercially available PCR kits.

Case management

The work of the case management working group has two main focal points: improving clinical management of patients with cholera and improving access to cholera care.

2022 priorities (as per June 2021 GTFCC annual meeting)

- **Improving early access to treatment:**
 - Take advantage of new community engagement initiatives
 - Improve early access to treatment of cholera in communities, including by focussing on the role of the health sector and community health workers (CHWs)
 - Reactivate subgroup on the role/integration of CHWs in cholera response
 - Implement targeted community interventions (e.g. multisectoral case-area targeted interventions/CATI), antibiotic use, early access to treatment, etc.) in collaboration with other groups.
- **Improving clinical management:**
 - Revise high-risk groups for cholera mortality

- Revise GTFCC guidance on antibiotic use, starting with indications for treatment and followed by targeted prophylaxis.

Achievements and progress in the last year

- A scoping review on cholera mortality risk factors has been completed as a basis for the work of the group. Key findings were as follows:
 - Global data is of poor quality. Many published studies did not report even basic epidemiological indicators such as CFR by age and sex, and there was insufficient data on specific clinical features or comorbidities for analysis.
 - Many deaths occur in the community. Despite poor quality reporting and data this is clear. In some studies, more than half of deaths occurred before reaching health facilities.
 - In many studies elderly and male patients had a higher risk of dying.
 - There was significant variability between contexts, highlighting the importance of data collection and analysis during outbreaks to adapt response activities to context.
- Clinical management of cholera:
 - Assessment of dehydration showed poor correlation between the currently used dehydration scoring system and actual levels of dehydration. Building evidence to improve the assessment of dehydration will have broad implications for many health programmes, including clinical care of cholera patients.
 - Elderly individuals have been identified as a high-risk group for cholera. Initial discussions were held with other groups working on clinical care of the elderly.

Challenges

Several challenges emerged over the year. Some key areas of work require field research. Some work was suspended due to the COVID-19 pandemic and will take time to relaunch. Other research (e.g. on CATIs) required interventions during epidemics, which are unpredictable. Work was hampered by a lack of funding for cholera case management. It is also challenging to ensure continual input into group from partners with limited resources – although webinars continue to be well attended despite not having had an in-person working group meeting since 2020.

Key documents

- Scoping review on cholera mortality risk factors. The results of this review provide clear priorities for the working group for the next 1-3 years.
- Minor revisions to the treatment of cholera in children with severe acute malnutrition, carried out with the WHO nutrition team to improve understanding and implementation of the guidance.
- Minor revisions to the technical note on the use of antibiotics for the treatment and control of cholera, adding elderly individuals as a high-risk group.

2022 priorities

- Submit an article on the findings of the scoping review on cholera mortality risk for peer reviewed publication.
- The scoping review demonstrated the need to improve data collection during cholera outbreaks, so work will be done with the Surveillance working group to improve guidance on data collection and analysis, including during outbreaks.
- A small working group will be established to improve clinical guidance, including adapting guidance on antibiotic use.
- Carry out a scoping review examining existing mechanisms to treat diarrhoea and cholera in communities and build on the results to improve access to treatment.
- GTFCC partners are working on multiple aspects of antibiotic use, including modelling potential impact on transmission of wider antibiotics use and the use of antibiotics in CATIs during

outbreaks. Potential antimicrobial resistance (AMR) is a critical component of any project broadening the use of antibiotics.

WASH

The main responsibilities of the WASH working group are to provide a forum for technical exchange on WASH-related activities in cholera-affected contexts; produce WASH-specific normative and programmatic guidance for countries and other stakeholders in support of the Roadmap; and identify WASH-specific needs to support the development of cross-cutting activities such as research, advocacy, and training, and cross-pillar work with other working groups.

Since 2020 the working group has been chaired by WaterAid, which succeeded UNICEF in this role. Members of the group are selected based on technical expertise and the relevance of their work to WASH interventions that contribute to cholera preparedness, control, and elimination. The group includes UN and international agencies, academic and research institutions, NGOs, donors, and other partners. Experts working and/or based in cholera-endemic countries are strongly encouraged to participate, and external expertise on specific topics is recruited when required.

As resources and capacities are constrained, one important role of the group is to prioritize activities according to their impact. Although lifesaving interventions delivered in outbreak responses are of tremendous importance to reduce transmission and mortality, the group should focus on providing relevant guidance, not acting as a humanitarian responder. Activities contributing to sustainable cholera control and elimination are of the highest priority: WASH represents the long-term solution to the transmission of cholera and most waterborne diseases.

Achievements and progress in the last year

In September 2021 a virtual meeting of the working group initiated a comprehensive redesign of the group workplan, which was consolidated in March 2022. Key achievements in 2021-22 included:

- Expansion of the workplan based on member input
- A first WHO pilot of a combined OCV and WASH intervention in Tigray, Northern Ethiopia
- Development of WASH indicators for the revision of the cholera hotspot identification methodology, in collaboration with the epidemiological surveillance working group
- Reviews of the WASH pillars of several NCPs
- Close collaboration with the CSP to support development of the WASH pillars of NCPs in CSP focus countries (Bangladesh, DRC, Nigeria and Zambia)
- Creation of a specific WASH assessment tool (EAWAG) for this purpose
- Organization of three thematic webinars, one virtual working group meeting and one hybrid meeting.

Challenges

Despite strong engagement of working group members in defining the group's objectives, the main challenge in 2021-2022 was a noticeable reduction of capacity to conduct the actual work, due to members' competing demands. There were also severe limitations to financial resources for hiring WASH consultants to progress the workplan.

2022 priorities

- The establishment of a WASH data repository to act as a strong evidence base for prioritizing activities in cholera hotspots according to WASH conditions
- Development and testing of methodologies and tools supporting development of the WASH pillars of NCPs, including M&E frameworks

- Definition of SOPs to select context-appropriate WASH interventions
- Evaluation of Tigray pilot and revision of the concept note on integrating WASH and OCV; definition of WASH interventions to be implemented alongside multiyear preventive OCV plans; and pre-positioning of WASH items in areas prone to regular cholera outbreaks
- Hygiene and food safety: improving the definition of hygiene interventions for NCP development, including M&E frameworks
- WASH and infection prevention and control (IPC): strengthen the working group's capacity to provide specific guidance for WASH in healthcare facilities
- Identifying gaps in water quality management and water safety planning resources and adapting existing guidance for cholera control and outbreak risk management.

Other projects

Community engagement

Communities are essential to the implementation of all other working group activities and should be central to the strategy of all pillars. The creation of a GTFCC community engagement working group that can define how best to engage neglected communities, establish the necessary political commitment and community-level coordination, and build on the success of other programmes (e.g. in community-led total sanitation/CLTS and COVID) was an important priority of the previous annual meeting.

However: the GTFCC currently has insufficient capacity to realise this objective. This project needs a reboot and greater substantive involvement from GTFCC partners.

Independent Review Panel (IRP)

The Independent Review Panel (IRP) for NCPs is a new process and requires refinement. The Panel's first NCP review began in 2020 and three have been reviewed to date, two of which (Ethiopia and Kenya) have been endorsed. The third remains in progress. More reviews are coming soon. The panel intends to build on the lessons of the first three reviews.

Challenges to date have included the need for multiple areas of expertise versus a limited number of IRP members; a (foreseen) increase in NCP submissions; and a need for more tools and guidance to support IRP reviews. The production of these resources has started.

The work of the IRP is critical for independent review of countries' cholera work, and advocacy for that work. The IRP must not, however, become a bottleneck in the NCP process as the number of reviews increases. More resources and a pre-screening process are needed. Other interventions are being discussed by the GTFCC Steering Committee.

Ways forward

The GTFCC has several clear priorities for the next stage of its work. These are as follows:

- Providing GTFCC supporting to countries implementing the Roadmap
- Monitoring implementation of the Roadmap
- Reinforcing national surveillance capacities
- Supporting hotspot analysis and targeted multisectoral interventions
- Targeting hotspots for sustainable WASH interventions
- Ensuring the most appropriate, strategic use of OCV
- Promoting universal access to health care in communities
- Promoting the role of communities in cholera control
- Further integrating the six technical pillars of the GTFCC
- Implementing operational research

- Seeking potential synergies with other programmes
- Continued advocacy for greater investment in cholera control.

In support of these goals, the Task Force continues to work on partner and donor engagement. Partners have done a huge amount over the last year:

- the Bill and Melinda Gates Foundation and the Swiss Development Corporation (SDC) have supported the GTFCC Secretariat and the CSP;
- Gavi has supported OCV programmes, provided technical assistance in countries, and assisted surveillance work;
- US CDC has provided technical support for regional and national activities;
- US CDC, Epicentre, IFRC, Institut Pasteur, MSF and WaterAid have all provided GTFCC working group chairs;
- The Fondation Mérieux assists with organizing GTFCC meetings and website development;
- Global Health Visions (GHV) has worked on Advocacy communication;
- the IFRC supports and hosts the CSP and runs the One WASH project targeting cholera hotspots;
- Johns Hopkins University has supported the Global Cholera Database;
- MSF, Save the Children, Medair and the International Organization for Migration (IOM) have supported OCV campaigns;
- Wellcome Trust and MM Global Health (MMGH) are supporting the Cholera Research Agenda; and
- all partners have contributed to GTFCC projects, including but not limited to the establishment and running of the IRP, the development of technical guidance resources and the activities of the working groups.

Update from the Country Support Platform

Thomas Mollet, *CSP Coordinator*

After countries called for technical support in developing and implementing NCPs, in 2019 the GTFCC established and launched the Country Support Platform (CSP) as its new operational arm. The IFRC stepped up to host and manage the CSP in close consultation with the GTFCC. The main donor for establishing and launching the platform (over a three-year period) is the Bill and Melinda Gates Foundation. Other donors, including the Swiss Development and Cooperation Agency (SDC), have entered or are entering into similar grant agreements with the IFRC to support the CSP. The Wellcome Trust is funding the British Red Cross (BRC) to support a GTFCC-led cholera research position.

The main objectives of the CSP are threefold: (1) to help countries develop and implement NCPs through a multisectoral coordination mechanism; (2) to help countries mobilize resources to meet the funding needs identified in their NCPs; and (3) to facilitate and coordinate the provision of multisectoral technical support and capacity building to countries.

The provision of that support includes assisting NCP development from inception through submission to implementation; providing expertise to assist advocacy and communications and mobilize resources; coordinating provision of technical expertise from GTFCC partners (including coordinating a pool of expert deployments responding to countries' needs); and supporting pillar-specific work on OCV and WASH.

Country-level activities include CSP programme managers working closely with country counterparts to develop and implement NCPs; expanding research, laboratory support, community-based and national surveillance, cholera outbreak preparedness, OCV work and short- and long-term WASH projects; and supporting advocacy and resource mobilization. The CSP is also on hand to provide ad hoc support when needed.

Though this support portfolio is a broad one, the work of the CSP still has limitations. The platform does not provide funds or long-term human resources, nor does it provide logistical support for cholera interventions. The CSP cannot lead strategic decisions: while the IFRC is represented on the GTFCC Steering Committee, the CSP is not. CSP representatives participate in the work of the GTFCC technical working groups, but do not lead them; and the CSP does not replace any existing support mechanisms of WHO, the GTFCC, countries or any other relevant parties.

The inception phase of the platform took longer than planned. Handover to the current operating team started in May 2021, establishing a new model of operation. Seven of eight planned positions were filled by the end of 2021. The full establishment of the CSP coordination arm was ongoing at the time of the meeting and the most recent recruitment was in March 2022, a project manager position in Bangladesh (the CSP is currently present in Bangladesh, DRC, Nigeria and Zambia). Regular meetings and retreats with the GTFCC Secretariat are held to establish coordination between the and ensure strong engagement and trust with key partners. Standard Operating Procedures (SOPs) have been developed for NCP assistance and deployments.

There have been challenges, including delays in recruitments; the need to build trust in this new body across the cholera field; the need to consolidate the Country Task Force; the demands of additional projects related to the CSP's three main objectives; and other external factors, most notably the COVID-19 pandemic.

Four countries currently receive the full complement of CSP support, with in-country project managers in Nigeria, DRC, Zambia and Bangladesh. Several other countries and wider cholera projects have received support as needed (Table 1).

Table 1: CSP support projects 2021-2022

Consultancies	Countries	Main objectives
2021		
OCV	Zanzibar	Support OCV campaign
WASH	Ethiopia	Cholera WASH assessment
WASH	Ethiopia	Cholera WASH assessment
NCP	Mozambique	Hotspot analysis
NCP	Mozambique	Hotspot analysis
2022		
WASH tools and SOPs	Geneva	Update WASH SOPs
WASH	Nigeria	WASH baseline tool in Nigeria
WASH	Madrid for Nigeria	WASH baseline tool in Nigeria
3 OCV consultancies	Nigeria	OCV Training
NCP	Nigeria	Workshop and NCP in Nigeria
WASH	DRC	WASH assessment for NCP
OCV*	Pakistan	Reactive OCV campaign

Work towards all these accomplishments has been guided by a few underlying principles: helping countries map national frameworks to the Roadmap; strengthening national cholera task forces; facilitating workshops on the NCP development and review processes; stakeholder mapping; and carefully planning milestones, timelines and required resources.

Achieving the mortality and elimination goals of the Roadmap will require a major and widespread change in approaches to cholera. Countries must commit, at the highest levels of government, to controlling cholera by establishing and meeting clear national goals. Partners must engage in a coordinated fashion, providing technical support to countries implementing their action plans; and donors must provide financial support to meet the priorities defined by countries.

National cholera control plans, aligned to the GTFCC guiding principles, are the key. The NCP is the core document for cholera control, advocacy, creating political interest and political will, and mobilizing resources and coordinating national efforts. Its strategic component defines national goals and objectives, targets and milestones; the necessary multisectoral coordination structures; working methods, roles and responsibilities; and the stakeholders involved. The operational component outlines an implementation plan with timelines, costings, budgets, implementing agencies and partners and the mechanisms for tracking and monitoring progress.

Workshops on the NCP development and review processes have been held in DRC, Zambia and Nigeria, with a further workshop planned in Bangladesh for July 2022. A wide range of tools to support NCP processes are also in development, including an NCP strengths, weaknesses, opportunities and threats (SWOT) analysis tool, an NCP toolkit, a resource mobilisation methodology, an advocacy toolkit and a guide to the Independent Review Panel (IRP) evaluation process. These are complemented by resources to support situational analysis; WASH costing; hotspot analysis and representation; workshops to set goals and objectives; development of implementation plans; development of indicator/outcome timeframe templates for the implementation plan; country investment cases; and stakeholder mapping. These self-assessment tools are all developed specifically for the GTFCC, and all in pilot phase. Testing with three IFRC national societies finished recently and they can now be shared so that countries and partners can customise them.

Work on country-level fact sheets and advocacy toolkits is ongoing, and there are plans to expand the CSP and GTFCC social media presence beyond Twitter (please follow @SecGTFCC!).

There are also plans to expand CSP support to other countries facing challenges with NCPs– but given current capacity levels, it must first be established that the current priority countries are sufficiently advanced to let the CSP turn attention elsewhere. Increasing numbers of requests for help are coming in from countries with no recent experience of cholera – the most obvious example being Ukraine. The CSP has started to map existing training resources – a project not just for the CSP, but for everyone – but this work has slowed due to insufficient responses from partners. There are many important opportunities – meetings with the UN Health and/or WASH clusters, for example – to share this training database; but this is not something any partner can do alone. With cooperation between the clusters and the GTFCC, a repository of training resources organized by pillar can be made available online.

All this work by the CSP has been based on and supported by several key CSP processes, commitments and activities: implementing Roadmap processes globally and nationally; participating in the GTFCC advocacy task force; providing bimonthly operational highlights; profiling the CSP at global platforms such as the GTFCC-organized, IFRC-hosted cholera side event at the 2022 World Health Assembly; engaging new partners; supporting national advocacy; and global donor mapping. It has been guided by clear desired outcomes including development of tools and resources (including a self-assessment tool for cholera stakeholders); creation, maintenance and deployment of a pool of experts; mapping available cholera training; and training further OCV consultants.

The hiring of the Wellcome Trust-funded senior cholera research officer – to be embedded with the British Red Cross (BRC) on behalf of the IFRC and the CSP in order to work with the GTFCC on research uptake at global and country levels – is underway. Their first task is likely to be mapping operational cholera research – i.e. projects designed to make a difference in the field – before updating the research agenda and calling a meeting of research stakeholders in CSP countries and elsewhere. The GTFCC will seek the resources to make this happen, and to promote and implement operational research where needed.

The way forward for the CSP from this point is to continue providing the extra technical support needed within countries and globally; to strengthen and expand global advocacy and resource mobilization; and to keep a guiding focus on building the CSP well rather than fast.

Participants were encouraged to get in touch with the CSP with any queries or support requests:

countrysupportplatform@ifrc.org

Recent developments of the GTFCC advocacy strategy

Marion Martinez Valiente, GTFCC Secretariat & **Jayne Palani**, GTFCC CSP

One of the recommendations of the 2021 GTFCC annual meeting was the creation of a GTFCC Advocacy Task Team: a group of partners dedicated to strategic planning and partner coordination who convene regularly to plan work around policy, advocacy, communications and resource mobilization. This group met for the first time in March 2022.

The objectives of this meeting included refining the GTFCC advocacy strategy, drafting a shared workplan to coordinate partner advocacy, designing a coordination mechanism for partner organizations to work together on advocacy in select high-burden countries, and designing a mechanism to coordinate planning for key global and regional advocacy and communications moments.

Developing the GTFCC advocacy workplan, and the country coordination mechanisms to support it, is a phased approach. The first meeting examined the GTFCC advocacy strategy and past advocacy efforts. Two further sessions will respectively facilitate (a) discussion between partners and examination of the refinements needed for the existing strategy, and (b) the joint partner review and finalization of the revised strategy for 2022. Two phases of work planning will then address partner coordination on advocacy and communications opportunities. Country-level coordination efforts are currently underway in DRC, Zambia, Nigeria and Bangladesh.

WHA side event

To maintain advocacy momentum in 2022, the GTFCC hosted a cholera side event at the World Health Assembly in Geneva entitled *Commitments and re-commitments: leveraging partnership and collaboration to end cholera*. The event was hosted at the IFRC and showcased the perseverance, organization and ingenuity of countries' efforts to control cholera despite extreme pressures on resources and the challenges of the COVID-19 pandemic.

In addition to partners and other high-level speakers, 10 countries participated directly, with six Ministers of Health in attendance – an encouraging sign given how speakers throughout the event stressed the importance of coordination and political will in achieving the Roadmap goals. Dr Tedros Adhanom Ghebreyesus, Director-General of WHO, delivered the opening address, emphasizing that cholera remains “a disease of inequity.” Other high-level addresses included remarks from Jagan Chapagain, IFRC Secretary General, and Xavier Castellanos, IFRC Undersecretary General for National Society Development and Operations Coordination.

Ethiopia and Kenya officially launched their multisectoral NCPs during the event, while His Excellency Hakainde Hichilema, the President of Zambia – who has agreed, at the invitation of WHO, to become a cholera control champion – noted the importance of champions in driving national and global cholera agendas, recommitted Zambia to the fight against cholera, and called other countries and partners to similar action. The President will spearhead cholera elimination efforts through the Southern African Development Community (SADC) platform and planned African Union discussions. Zambia also plans to relaunch the Lusaka “Cleaner & Greener” campaign to showcase commitment to global cholera elimination.

The event ended in a high-level call to action, asking countries and partners for urgent collective effort to increase support in three areas:

1. Technical and financial assistance from partners and donors for the development and implementation of National Cholera Plans (NCPs);
2. Investments by countries and partners in life-saving tools and surveillance improvements, in addition to full community engagement with prevention and response efforts; and
3. Investments by countries and partners in WASH systems, particularly in health facilities and among underserved communities.

GTFCC partner recommitment process

To maintain the momentum generated by the WHA side event, and to make partnership and collaboration generally more robust, the GTFCC Secretariat is in the process of asking partners to “recommit” to the Task Force. This process will occur in phases – not all GTFCC partners had yet been prompted to undertake the recommitment process at the time of the meeting. Components of the process include membership renewal; a partner mapping process; addressing principles for engagement (i.e. requesting an endorsement of “professional principles and norms” to guide future interactions); and re-signing the 2017 Declaration to End Cholera.

Next steps

The next steps for the Advocacy Task Team will be guided by three simple organising principles: prioritise; coordinate; and implement. In the near future they will be follows: continued engagement in in high-level, strategic advocacy discussions wherever and whenever possible; expansion of the task team to include advocacy staff from partner organizations; coordinating in-country and global advocacy and resource mobilization where needed; completing and launching the advocacy workplan and dashboard; and working to ensure a wide range of partner engagement in activities, such as drafting a communications and advocacy toolkit to ensure cohesive messaging.

The CSP will meanwhile be engaging in country level advocacy, continuing national and global resource mobilization processes including donor mapping; producing the aforementioned bimonthly operational highlights; working on donor stewardship in a cross-cutting collaboration with IFRC teams; and supporting countries in their own advocacy efforts. To date these have included stakeholder and media engagements in DRC, Nigeria and Zambia, and an advocacy workshop on AWD in Bangladesh.

As previously mentioned, the GTFCC will soon also expand its visibility on social media, with the aim of increasing cholera visibility and awareness, securing partner commitment and building the global cholera network, and allowing direct engagement with the GTFCC Secretariat (@SecGTFCC) for message amplification. The content for these campaigns is likely to consist mainly of information on OCV campaigns, trainings and workshops and other GTFCC or related events, and highlights of partners’ cholera activities and engagements.

The UN Water meeting is coming soon, probably the highest level such conference in 50 years. If this can be used to engage more people and ensure more partners and donors engage in cholera WASH and those areas of urgent activity away from the spotlight, the GTFCC will take that opportunity. But the real value of the Task Force is the strength and breadth of its members and partners – who should feel free to take the cholera flag to other audiences when they can, running with the opportunities they identify. The GTFCC does not want to be a bottleneck.

Regards croisés: looking across the GTFCC working groups

During this session, an onstage panel of GTFCC working group chairs discussed recent developments in their technical areas, interactions between working groups, and ways to improve cross-cutting initiatives and approaches as per the Global Roadmap. These discussions elaborated on the summaries presented in the previous section and allowed participants the opportunity to ask questions.

The speakers were **Iza Ciglenecki**, MSF (case management); **Lucy Breakwell**, US CDC (OCV); **Raoul Kamadjeu**, UNICEF (surveillance - epidemiology); **Marie-Laure Quilici**, Institut Pasteur (surveillance – laboratory; joining via Zoom); and Nurullah Awal, WaterAid (WASH).

The discussion was moderated by Tanya Shewchuk.

Case management

Reducing cholera mortality by 90% is a core objective of the Roadmap; but instead, 2021 saw major outbreaks and large increases in deaths and in CFR. Contemporary approaches treat patients the same way as they did 50 years ago, without targeting or adjusting treatment. While last year’s review of risk factors exposes this lack of knowledge, it revealed some interesting results, as elaborated in the previous section. CFR is higher in the elderly – unsurprising, but not previously clearly stated – but age group thresholds are not well defined. More unexpectedly, in multiple contexts men were also shown to be more likely to die.

These findings imply two major tasks: provide early access to treatment, then improve care in facilities and target it based on who is at risk. This will involve defining and facilitating community care pathways and improving management of complicated cases.

Occupational risk of cholera for certain groups – fishermen, for example – could not be determined. The GTFCC urges anyone working on cholera to analyse data in real time to see who is dying in their particular context: sometimes small, easy changes can be made that save lives. Case management can also be targeted specifically around at-risk groups, such as those with kidney problems or ischaemic heart disease, or severely malnourished children.

OCV can also potentially be reconsidered according to risk groups. Doing this would mean considering many factors, such as comorbidities that increase risk of severe dehydration. It might be useful to do microplanning and social mobilisation work looking at the groups identified in the review rather than targeting vaccines per se. This possibility should be highlighted in campaign planning processes, mainly to let high-risk people know their status so they are more likely to present for vaccination, or can be targeted specifically if they have access barriers.

Current GTFCC recommendations on antibiotics recommend treating severely dehydrated patients and those at higher risk of death with antibiotics; the review means this recommendation can now include elderly patients as well. There has also been discussion of preventive antibiotic use – e.g. as part of CATI strategies – for people at highest risk. There is a need for more data on how expanded use of antibiotics for cases influences transmission (and the University of Utah is currently doing a modelling study on this topic). The working group is collaborating with other groups on how to monitor and avoid resistance.

The last few years have seen little serious change in case management practices, but the COVID pandemic has improved WASH and hygiene to some extent and reduced diarrhoea and cholera (though this was partly because people were unable or reluctant to visit hospitals and health facilities so there was less reporting). During the pandemic, CFR fell.

It is always difficult to interpret CFR, however, because the numerator and denominator are difficult to quantify. The historical assumption is that people arrive at treatment centres alive, then either live or die – a good metric for M&E of case management. But if patients who die in communities are included in the numerator while the denominator remains cases treated in a centre, a mismatch occurs. A better model

to look at fatalities may be required, along the lines of the three-delay model for maternal obstetric emergencies: how long it takes to recognise a case; how long to get to treatment; and what happens next. This would help clarify where cholera cases are occurring and what factors lead to death – probably 2/3 of which occur outside centres, with many not counted. In reality, the true cholera mortality burden is unknown and is always underestimated. The majority of deaths probably occur near the start of outbreaks and are never captured. The best approach to solving this problem remains unknown, but there is a clear need to improve the picture of disease at community level.

Surveillance – epidemiology & laboratory

Cholera surveillance needs to be differentiated by epidemiological context, and the GTFCC surveillance guidelines are being revisited to ensure they align properly with the Roadmap goals. Cholera surveillance strategy must be tailored to epidemiology: situations with huge caseloads in major outbreaks require different approaches to areas with sporadic cases. Discussions around how to tailor it and how to clarify the role of RDTs are currently guiding the group's work.

Similarly, the method for identifying priority areas for interventions (hotspots) is also being revisited. The current GTFCC method assumes high to moderate transmission. This is being revisited to accommodate epidemiological situations with fewer, more sporadic cases.

A cholera-free status framework document and step-by-step guidance on how to establish, document and maintain cholera-free status have been drafted and are being reviewed for approval by the GTFCC steering committee. Once approval is achieved these will be field tested as soon as possible. The maintenance process for keeping cholera-free status is similar to equivalent processes for polio, measles and other transmissible diseases.

Because surveillance must adapt to context, this means tests and diagnostic strategies must also adapt. In outbreaks, this will involve RDT use, though the strategy still needs to be defined. Work to do this is ongoing: recommendations will eventually outline how many tests to use, when to use them, what type, etc. This requires full understanding of the specificity and sensitivity of tests, whether they require enrichment steps, and so on.

In the longer term, laboratories must provide a regular monitoring function; discussions are taking place on how this is best done.

Rising AMR is pertinent to all of this. Treatment should be adapted to resistance risks at the start of an outbreak and monitored over the course of the outbreak for any significant change in the level of resistance. Information on AMR is provided on the GTFCC website and elsewhere.

There is an issue with the fact that people are often unaware that certain resources are available on the GTFCC site. This gap should be addressed, possibly with a GTFCC system that alerts users when new documents become available.

In elimination context, labs will have to work on culturing strains. Recent outbreaks have seen cholera that is not part of the seventh epidemic strain, which raises important questions. Sequencing tools allow monitoring, but this requires sufficiently large number of samples to represent what is happening across the world – essentially, the highest possible number of sequences.

Surveillance to support the achievement and maintenance of cholera-free status is demanding: the fewer cases there are, the more sophisticated the required surveillance. Achieving what Haiti has done takes incredible amounts of work and required measures far beyond what the GTFCC would ever normally ask a country to do. Under the new framework for cholera-free status, documents from countries are assessed by an independent GTFCC panel.

RDTs have limits to sensitivity and specificity and none are WHO prequalified, though a PQ protocol has been drafted and two RDTs are currently included in WHO cholera kits.

The working group considers operational support to laboratories a key priority, and is trying to establish and maintain as close a level of contact with labs as possible. This is often challenging, and part of the GTFCC's task is to try to identify strengths and weaknesses in given contexts. For that the group has shared draft questionnaires to a few countries as a pilot test, and is working on a range of solutions that can be offered in response to different expressed needs.

There is a clear increase in interest in using genomic sequencing for cholera surveillance regionally and globally. Ideally, sequencing information will be treated as open access data. Sharing models generated during the COVID pandemic could potentially be used as examples for cholera.

WASH

WASH is crucial to prevention and should have a bigger role. It has many links with health care service delivery and should be integrated into healthcare strategies and projects.

The "H" part, hygiene, means behaviour change. Progress was made during the COVID pandemic as more people became aware of the benefits of social/physical distancing, mask use, hand washing, etc.; but establishing these messages is difficult, especially around safe water and handwashing practices. These priorities are behaviour change issues and all are linked to priorities of care.

Hospitals in developing countries often suffer from poor hygiene conditions; but when WASH conditions are improved, this changes, cholera can be prevented, and wider IPC improves. This was also evident in the COVID period – issues like general IPC and proper management of medical waste all link to cholera prevention.

WaterAid has done a study of hospital settings in Bangladesh to observe whether there have been any longer term trends and changes in behaviours since COVID. The different stages of the pandemic were very different in character in Bangladesh, and the second wave was particularly fatal, impacted by different issues including poor access to services and medication. During this period the pandemic hit hard, the impact was obvious, and consequently people were careful. Handwashing practice went up by a factor of 30 in communities and in health facilities. But when the second wave of COVID abated, people became comfortable again and many stopped using these precautions. The challenge is to find ways to achieve proper, lasting behaviour change.

This is also a health systems issue. If hygiene options are not available in hospitals, they will not be used. For issues of AMR, good WASH prevents unnecessary use of antibiotics. It contributes to cholera prevention, more effective OCV use, better case management and more. WASH improvement is key.

OCV

Many of this year's challenges have been around ensuring that OCV is correctly positioned in the wider cholera discussion as an activity that buys time for prevention work. This task takes a lot of time from the broader programme.

More work is also needed to improve integration with the activities of other working groups.

Supply and stockpile limitations have impacted all planning in this area, further emphasising the need for work with countries on multiyear planning and the importance of rolling out guidelines as soon as possible. From that point, some of the implementation delays can be addressed.

Addressing the lack of engagement with EPI in many (though not all) countries is crucial. EPI has valuable skills and experience in implementing campaigns. Campaign quality must improve so there is a better rate

of two-dose coverage and better balancing and prioritisation of reactive versus preventative campaigns so that the best use can be made of available doses.

Country updates

During this session, representatives from 12 countries provided concise country-level overviews of national cholera control and prevention efforts, with a focus on NCP initiation and/or revision. To cover a wide range of case studies in a short time, each presentation followed a preset template provided by the GTFCC Secretariat.

Bangladesh

Dr Aninda Rahman on behalf of Professor Nazmul Islam, Bangladesh Ministry of Health

Update on the cholera situation

The number of diarrhoeal patients in Dhaka was higher in the period from March to May 2022 than it has been in the past several years. A reactive OCV campaign was planned in response to a recent outbreak, to cover Dhaka's five most affected areas (based on hospitalization rate). The Intersectoral Coordination Group (ICG) provided funds (about 4.5 million doses) and vaccination began in June 2022. The campaign is also supported by the National EPI, WHO, UNICEF, the IFRC, the Bangladesh Red Crescent Society and MSF.

Achievements and good practices

- Coverage of access to basic water facilities at household level is 99.5%; sanitation coverage is 60.7%; and hygiene coverage is 56.3%.
- Several cholera meetings have taken place involving local administrations, water sanitation authorities and city corporations to improve WASH and impose measures to manage recent outbreaks of diarrhoeal disease
- An approved national WASH strategy is in place, along with a specific WASH strategy for healthcare facilities. IPC in healthcare facilities has been strengthened.
- Training of healthcare staff of all tiers in case management is continuing according to recently developed guidelines for diarrhoeal management
- Multistakeholder advocacy was held in five out of eight divisions after the recent upsurge of diarrhoeal disease
- Emergency intravenous saline, oral rehydration salts (ORS) and water purification tablets have been supplied to hospitals
- The CSP has been launched and is bolstering multistakeholder coordination in Bangladesh.

Challenges and solutions

- More policy advocacy is needed to raise the priority of WASH for cholera control
- There is insufficient manpower in the national programme to manage the current disease situation: a separate National Diarrhoea Control Programme is required
- Multisectoral coordination is difficult
- Updated management guidelines need to be incorporated into medical curricula
- Climate change and natural disasters hamper sustainable WASH programmes
- Case reporting and surveillance systems need to be strengthened for better sustainability.

Priorities for 2022-23

- Improve multisectoral coordination mechanisms and hold quarterly meetings
- Carry out an OCV demonstration campaign at cholera-prone areas in Dhaka city
- Advocacy to relevant government departments to strengthen WASH interventions
- Initiation of RDT testing at primary, secondary and tertiary level health facilities

- Strengthen cholera detection capacity at health facilities
- Strengthen cholera case management following WHO guidelines, preferably through mobile applications
- Establish the Early Warning and Response System (EWARS)
- Strengthen the cholera surveillance system
- Strengthen cholera awareness programmes for all communities.

Nepal

Dr Rajesh Pandav, Nepal Ministry of Health

Update on the cholera situation

Nepal is a cholera-endemic country with the potential for large outbreaks. 93% of households in Nepal use an improved source of drinking water, and 72% of the population live in households with improved sanitation. Open defecation is still practiced in a few areas. The country is at high risk for outbreaks due to steady increases in urban population density alongside an inadequate supply of safe drinking water and issues with sanitation and sewage infrastructure.

Two cholera events were detected in 2021. Two imported cases in September triggered immediate surveillance and response and no further cases were identified. In October, however, another outbreak generated more than 1500 cases. Epidemiological investigation was done at local and district levels; as cases increased, provincial and central governments (Epidemiology and Disease Control Division of the Ministry of Health and Population) formed a joint investigation and response team with WHO country office staff. WHO cholera kits were provided for immediate response. An OCV request was submitted to the ICG and approved on 3 November 2021, and a vaccination campaign is ongoing. Since the start of the campaign no additional cases have been detected in that district.

In June 2022, more cases were reported in Kathmandu valley (12 cases had been detected as of 27 June). The Epidemiology and Disease Control Division is leading an investigation, working alongside district and local authorities and multisectoral local partners in community engagement, risk communication, WASH and door-to-door sensitisation.

Actions taken by the Ministry of Health and Population

The Ministry has drafted a national preparedness and response plan for outbreaks of acute gastroenteritis/cholera, the main goals of which are to prevent the spread of cholera; reduce mortality from cholera; ensure coordinated, collaborative responses to outbreaks; and ensure a rapid response mechanism is in place to stop the spread of disease.

Cholera control initiatives with the International Vaccine Institute

Since 2020, the Ministry of Health and Population has worked with the International Vaccine Institute (IVI) Enhancing Cholera Control in Nepal (ECHO-N) project to strengthen the cholera and diarrheal disease surveillance and control capacities of local public health services. This has been a major cholera control and prevention project that includes oral cholera vaccine (OCV) campaigns combined with WASH activities, strengthened surveillance, and the development and approval of Nepal's NCP.

Achievements and good practices

- Surveillance and case detection systems are in place and the laboratory network has been strengthened
- A new federated governance structure clarifies that cholera response, risk communication and community engagement (RCCE) and WASH are primarily the responsibility of local authorities

- The government is keen to work on cholera control (and has developed a national preparedness and response plan for acute gastroenteritis/cholera outbreaks)
- Event-based surveillance capacities have been developed and strengthened
- There is multisectoral involvement in cholera prevention and control.

Challenges and solutions

- There is a need to appoint staff at all levels in accordance with the newly federated governance structure
- Nepal needs a framework or guidance document on how local authorities can effectively meet their response responsibilities
- Capacity building activities are required to the extent of the resources available (the government has allocated budgets to capacity building in its Annual Workplan).

Priorities for 2022-23

- Use the findings of the research component of the ECHO-N project to develop an NCP
- Strengthening event-based surveillance further, including community-based surveillance
- Train local rapid response teams (RRTs).

Ethiopia

Dr Ashalew Workineh, Ethiopia Ministry of Health

Update on cholera situation

Since last year's meeting, Ethiopia has had 674 cholera cases and seven deaths with a CFR of 1.04%. An OCV campaign began in late December 2021 and the last case was on January 15, 2022.

Achievements and good practices

- Vaccines left over from campaigns have been successfully redeployed at no additional operational cost
- There has been close collaboration with the EPI team in preparing and implementing OCV campaigns
- Further coordination of cholera control is planned at even higher political level, under the aegis of building national health security
- Provision of 6 814 410 doses of OCV was approved by GTFCC on 3 November 2021.

Challenges and solutions

- Cold chain capacity is limited
- Money to meet operational budgets was released late and had to be pre-financed using other budgets.

Priorities for 2022-23

- Finalize the technical action plan by July 2022 and disseminate it to relevant stakeholders and partners
- Prepare a high-level advocacy meeting of senior officials, inviting representatives of respective line ministries and partners by August 2022
- Once OCV doses arrive, undertake the planned preventive campaign.

Kenya

Dr Emmanuel Okunga, Kenya Ministry of Health

Update on cholera situation

Kenya saw 38 cases of cholera and no deaths in 2021, all in refugee camps. In 2022 so far there have been eight cases and two deaths, a CFR of 25%, seven of which were in the five sub-counties of Nairobi. Kenya is on alert due to a cholera outbreak in the neighbouring Gedo region of Somalia, with potential for spread to Northern Kenya and the Kenyan Coast. At the time of the meeting there had been no confirmed imported cases. Kenyan authorities are also monitoring the cholera situation in South Sudan and Tanzania

Update on the National Multisectoral Cholera Elimination Plan (NMCEP)

In March 2022, the NMCEP was validated, finalized and endorsed by the GTFCC, and the National Immunization Technical Advisory Group (NITAG) recommended use of OCV. In May, the NMCEP was endorsed by the leadership at the Ministry of Health. In June, a multiyear OCV plan was developed and a request for doses for preventive campaigns was submitted to the ICG (see below). County health teams were trained on the NMCEP revision, the official launch of which is planned for July 2022. Funding advocacy is ongoing.

An OCV request was made for a **pre-emptive** campaign in Northern Kenya and along the coast, where there is potential for cross-border spread from Somalia and South Sudan. Planning included a refugee population of 461 381 and a request was made for 7 699 134 doses. This was not approved and a plan has been made to resubmit a request for 922 762 doses targeting only refugee camps and settlements.

Preventive vaccination was planned based on mapping of hotspots from the NMCEP, which identified 18 high priority areas. The first phase of the campaign will target 5.1% of the total population with 7 072 498 doses and the OCV request is being finalized for submission to GTFCC.

A request was prepared for doses for a **reactive** vaccination campaign in response to the Nairobi County outbreak. However this outbreak was contained and the request, for 9 410 467 doses, was not submitted.

Achievements

- The Kenya NITAG recommended use of OCV
- The GTFCC has endorsed Kenya's NMCEP
- Ministry of Health leaders announced endorsement of the Kenya NMCEP and officially launched the NMCEP at the GTFCC Side Event at the 2022 World Health Assembly
- Kenya has developed a multiyear plan of action
- An OCV request was developed and submitted for a pre-emptive campaign; though this was not approved Kenya has been advised by the GTFCC to amend and resubmit
- An OCV request for preventive campaigns has been developed.

Good practices

- Successful cholera control collaboration with the Ministry of Water, Sanitation and Irrigation and respective county authorities
- WASH data has been used to refine hotspots
- County teams have helped validate hotspot mapping methodology and findings
- Kenya has made good use of readily available GTFCC resources (particularly the NCP framework and the GTFCC guidance and tool for hotspot identification)
- Bi-weekly check-in meetings are held with the GTFCC, WHO, US CDC and the Ministry of Health

- Several major WASH sector interventions have taken place:
 - National policy, legislative and institutional structures have been streamlined
 - A National Water Policy was implemented in 2021
 - Strategies and regulations are in place for Provision of Water Services, National Water Resources and National Water Harvesting and Storage
 - A National Sanitation policy is in the final stages of approval
 - Ongoing WASH activities include expansion of water infrastructure (borehole drilling) in informal settlements; construction of water pans and dams; registration of new water service providers; distribution of water treatment chemicals to ensure communities can access safe water; and expansion of handwashing points with soap and water in hotspot counties.

Challenges and solutions

Other public health emergencies – including COVID-19 preparedness and response, immunization activities and persistent WASH challenges – put pressure on staff and resources. One solution has been to integrate cholera activities into the Ministry of Health calendar. Coordination structures are in place to ensure prioritisation of cholera activities and a National Cholera Advisor role has been created. A National Water and Sanitation Strategy has been implemented.

Engagement of relevant sectors and actors has been difficult. As one potential solution, the NMCEP is to be hosted in an office at a higher political level and new county coordination structures have been proposed, especially in hotspot areas.

Kenya has had to rely on external technical support throughout the OCV application process, so the Ministry of Health has increased its hands-on involvement in identifying hotspots and building OCV applications, to build ministry capacity in the longer term.

Priorities for 2022-23

Dr Okunga presented a comprehensive list of Kenya’s plans for the coming year organised by pillar.

- Leadership and coordination
 - Official national launch of the NMCEP
 - Establishing the NMCEP at the Office of The President to facilitate funding and coordination
 - Sensitizing and supporting counties to adopt the NMCEP
 - Advocacy to the President, governors and partners for budget support for NMCEP implementation
 - Regular meetings of the national cholera task force and technical working group
- Case management and IPC
 - Developing county-specific emergency response plans
 - Updating and disseminating national guidelines on clinical case management
 - Training healthcare workers on case management and IPC (aiming to train at least 60% of healthcare workers in hotspot areas)
 - Training community health volunteers on community cholera management in hotspots
- Risk communication
 - Updating existing RCCE training packages and job aids
 - Updating cholera messages for targeted communities and audiences, particularly in hotspot areas
 - Producing cholera information, education and communication (IEC) materials
 - Rolling out the cholera training package and job aids during OCV trainings
 - Integrating risk reduction messages into during OCV campaigns
- WASH
 - Enforcing public health, water and other relevant legislation in hotspot areas

- Carrying out community water quality surveillance in areas without conventional water treatment
- Carrying out water treatment in all water treatment works, boreholes and protected dams
- Implementing CLTS activities in all hotspot areas
- Carrying out household water treatment and safe storage activities in hotspot areas
- OCV
 - Submitting pending multiyear plans and preventive OCV request to the GTFCC
 - Preparing documentation tools and IEC materials
 - Reviewing and adapting training materials on OCV use and training healthcare workers accordingly
 - Implementing preventive OCV campaigns in cholera hotspots
 - Implementing reactive OCV campaigns in emergency settings or during cholera outbreaks.

Mozambique

Jose Paulo Langa, Mozambique National Institute of Health

Update on cholera situation

Mozambique saw 16 073 cholera cases in 2020-2021, a level of just over 52 cases per 100 000 people at a CFR of 0.2%, in three areas. The outbreak response consisted of classic interventions.

Achievements and good practices

- Technical cholera working groups have been established at central, provincial and district levels across the country
- Technical workshops on cholera data analysis have been conducted, with participation from all relevant stakeholders across all operational levels
- Cholera hotspot mapping has been done to define high-risk zones at the lowest administrative levels.

Challenges and solutions

Engaging technical, political and administrative actors with cholera has been challenging, so technical working groups have been created and established in all provinces, accompanied by advocacy at all levels.

The cholera surveillance system built into in routine health structures has low sensitivity for capturing cholera cases, leading to chronic underestimation of cases. Work has been done to infer more accurate case numbers among severe cases of acute diarrhoea in adults; high-risk zones have been mapped; and an enhanced surveillance programme has been implemented in Nampula, one of the most important hotspots.

A widespread lack of granular geographic data (e.g. population metrics, geolocation data, etc.) at the lowest administrative levels has imposed the use of approximate data.

Priorities for 2022-23

- Carrying out a national capacity assessment for the Multiannual Cholera Preventive Plan (NCP) 2023-2028
 - An approach and tools have been defined and a multisectoral technical working group created. Further finances are needed.
- Drafting the NCP 2023-2028
 - Target areas and populations have been identified

- a multisectoral technical working group has been created and ministry pre-approval secured.
- Prepare and submit OCV requests for Nampula and Cabo Delgado
 - Target areas and populations have been identified and ministry pre-approval secured.
- Approval of NCP 2023 - 2028
 - Advocacy and hotspot mapping have been performed and a capacity assessment has been scheduled
 - Financial and technical support will be needed.

South Sudan

Dr John Rumunu, South Sudan Ministry of Health

Update on cholera situation

Cholera is endemic in South Sudan. The country has ten major cholera outbreaks varying in magnitude from 17 to 48 035 cases, with case fatality rates (CFR) ranging between 0.13% and 2.9%. All started in Juba apart from the one ongoing during the meeting, which began in Unity State in March 2022. Since then a total of 212 cholera cases have been reported (37 RDT-positive cases of which 24 tested culture positive). One patient died, giving a CFR of 0.47%. 83.5% of the cases (177 patients) are in five sectors of Bentiu Camp for internally displaced people (IDP); 16.5% (35 people) are from two communities outside the IDP camps.

While two counties have been affected by this outbreak, a further 23 remain at high risk for cholera transmission due to inadequate safe and clean drinking water, poor sanitation and hygiene, flooding and insufficient supply of OCV.

OCV implementation

Between 2012 and 2022, 47 OCV campaigns have been conducted in South Sudan. Most campaigns in hotspots took place between 2017 and 2018, so the three-year period for which they were expected to confer protection has now elapsed. The key challenge to immunisation remains restricted supply of OCV doses and restricted operational support funding for preventive campaigns in hotspots.

Achievements and good practices

- Government institutions and agencies have demonstrated high levels of political commitment to cholera, leading to substantive country ownership of cholera control efforts
- Cholera hotspot analysis has been done, alongside a systematic analysis of the overall cholera situation
- The national OCV operational plan has supported OCV campaigns in three hotspot counties
- The NCP has been drafted to address multisectoral challenges.

Challenges and solutions

- Important data and information needed to finalize some pillars of the operational plans is unavailable
- Coordination with state and county level supervisors and partners to obtain this data has been challenging
- A lack of financial resources hinders timely implementation of planned activities
- Continuous engagement with donors is needed to mobilize resources.

Priorities for 2022-23

- Review, update, validate, cost and launch the NCP
- Mobilize local and external resources to implement key activities of the NCP
- Implement OCV campaigns in identified hotspot and at-risk locations as rainy season nears (which brings high flood risk)
- Address WASH gaps as the principal objective for cholera control in affected and at-risk populations.

Democratic Republic of Congo

Dr Placide Welo Okitayemba, Democratic Republic of Congo Ministry of Health

Update on cholera situation

Cholera incidence has fallen by 78% since 2017. Cholera response activities in 2021 included coordination of the NCP development process; further work on case management; communication and awareness; preventive vaccination campaigns through which 3.1 million people have received two doses of OCV; and community cholera control activities such as emergency WASH interventions and CATIs.

Achievements and good practices

- Multisectoral coordination has been established for the NCP development process, and support has been provided by the CSP
- OCV campaigns have been implemented and combined with WASH activities in four regions, with over 3.1 million people receiving two doses of OCV
- An online database has been established and populated with individual line list data in three provinces (North Kivu, South Kivu and Tanganyika)
- Emergency contingency activities were developed and implemented after a volcanic eruption in Goma in May 2021
- Cholera incidence has been reduced through a combination of strategies and interventions such as quadrillage (a geographical proximity targeted response), CATIs, emergency WASH interventions, OCV campaigns, early detection and rapid response, prepositioning of cholera kits, etc.

Challenges and solutions

- Finalizing the NCP and drawing up a resource mobilization plan have been challenging
- Populations living in hotspots have poor access to safe water. A WASH package will be designed for implementation in hotspots after a WASH assessment
- The online database needs to be scaled up in all hotspots
- Surveillance is hindered by limited numbers of confirmatory lab tests and there are only three appropriately equipped labs (in Kinshasa, Haut Katanga and Goma). Two further confirmation laboratories will be established in Tanganyika and Haut Lomami.
- DRC needs to maintain a rapid response mechanism for outbreaks and epidemics.

Priorities for 2022-23 (and the first year of the incoming NCP)

- Finalize the NCP and prepare a resource mobilization plan
- Organize a rapid WASH assessment in hotspots
- Establish two more confirmation laboratories in Tanganyika and Haut Lomami
- Support all possible high-impact interventions, including multisectoral projects, preparedness work, CATI and quadrillage interventions, OCV campaigns and WASH packages.
- Develop the OCV Plan for the next three years and identify WASH projects in hotspots following the WASH assessment.

Haiti

Dr Katilla Pierre, Haiti Ministry of Health

Update on cholera situation

In October 2010, while struggling to overcome the impact of a major earthquake, Haiti began to experience the biggest cholera epidemic ever seen. The outbreak saw up to 4 000 cases per day and inspired a ten-year national plan to fight cholera in three phases, with four main components: social mobilization, epidemic surveillance, curative health care and increasing access to WASH. The government led the implementation of the plan, supported by a range of strong partners, and eventually the epidemic was subdued. Thanks to all this activity, the cholera situation in Haiti has evolved greatly. Following a peak in 2011 (a year that saw over 350 000 suspected cases) cholera has been on a downward trend, and no cases have been confirmed since February 4, 2019.

Achievements and good practices

Haiti's achievements have been based on the following best practices:

- National leadership: while Haiti had many partners at the start of the epidemic, they fell away by the end and financial and human resources were limited. National ownership of the response was crucial.
- Unusual decision making where necessary: for example, doxycycline was used as prophylaxis in communities with poor WASH access and without any drug resistance observed in labs.
- On-field decision-making guided by strong epidemic surveillance facilitated the non-stop work of rapid intervention teams (which continues today) and substantial public awareness campaigns.
- Laboratory work was key, with decentralised testing and work to ensure permanent availability of reagents in national and regional laboratories.
- Since 2019, Haiti has had a new strategy of searching for *Vibrio cholerae* in acute non-choleraiform diarrhoea, strengthening surveillance mechanisms in 56 institutions across the country's 10 departments. Over 8 900 samples have been tested in AWD patients to identify potential cholera cases, and four regional laboratories have been capacitated to realize culture testing. The National Laboratory of Public Health (LNSP) has been equipped to carry out PCR tests.

Challenges and solutions

Challenges have included financial and human resource limitations and the falling away of partners. These are exacerbated by socio-political instability, national security concerns and widespread financial issues.

Priorities for 2022-23

- Maintaining cholera surveillance, including through the strategy to search for *Vibrio cholerae* in acute non-choleraiform diarrhoea:
 - Ensure permanent availability of lab reagents
 - Secure the required human and financial resources
 - Establish the LNSP as culture testing centre
 - Guarantee the communication networks underpinning the strategy
 - Establish an efficient process for transporting specimens to the LNSP
- Evaluate and revise the NCP
- Strengthen contingency planning: reinforce capacity for the interventions required in the event of possible re-introduction of cholera
- Strengthen diarrhoea surveillance by integrating with surveillance for other pathogens (e.g. salmonella, shigella, etc.)
- Train and deploy more laboratory and epidemiology staff
- Establish formal community involvement through community-based epidemiological surveillance

- Obtain certification of cholera-free status for Haiti.

Nigeria

Dr Sebastian Yennan, Nigeria Ministry of Health

Update on cholera situation

Between January and June 2022, the National Multisectoral Cholera Technical Working Group has continued support for cholera-affected states, intensifying surveillance, risk communication and WASH activities. This period has seen 2530 suspected cases with 77 deaths for a CFR of 3% across 30 reporting states and 141 local authorities (LGAs). Four states have reported more than 100 cases.

OCV requests and campaigns

Hotspots were mapped in Nigeria's 774 local administrative areas between 2017 and 2021 in accordance with the 2019 GTFCC hotspot identification method. In December 2021 Nigeria requested 9.96 million doses of OCV for preventive vaccination in 14 LGAs across eight states. Approval came in February 2022. As of June 6, 2022 1 039 065 doses had been received and vaccination is currently planned for 16–20 July 2022 in Kano State.

NCP progress

Nigeria's first draft National Strategic Plan of Action on Cholera Control (NSPACC) was developed in 2018 based on the 2012–2017 hotspot mapping. Its main objective is to reduce Nigeria's cholera burden by 80% by the year 2030. Further hotspot mapping and analysis for the five years ending in 2021 has been completed and a review of the NSPACC for 2023–2027 is ongoing, with submission to the IRP expected in November 2022. The first national stakeholder meeting to review the current NSPACC has completed. The plan has nine pillars, with technical working groups established and active for each. Government agencies are showing high interest levels of interest and commitment around cholera control and elimination.

Achievements and good practices

- Nigeria has enhanced WASH advocacy to state governments and launched an aggressive nationwide cholera risk communications campaign
- The national Incident Coordination Centre and state emergency operations centres (EOCs) have been used to coordinate the national cholera response
- A medium-term strategy has been developed for OCV campaigns in hotspots
- Diagnostic capacity has been improved through a network of public health laboratories and the cholera sequencing capacity of the National Reference Laboratory has been enhanced
- Data management systems have been improved with case-based surveillance using integrated disease surveillance and response (IDSR) and SORMAS, a digital case-based surveillance tool
- Healthcare workers and disease surveillance and notification officers have undergone capacity building exercises for reporting cases
- The supply chain of RDTs and reagents to laboratories has been improved
- States have been supported with case management commodities
- Case management guidelines and treatment protocols have been developed
- The NCP has been reviewed
- The Subnational Support Department (SSD) has been created
- State cholera outbreak response teams have been trained.

Challenges and solutions

Challenges to the success of this work have included the following:

- Poor political will, commitment and support, especially at subnational levels, and poor involvement of community leaders
- Poor collaboration among relevant cholera stakeholders (e.g. state ministries of health, the environment, water resources and education, and other partners)
- Inadequate WASH infrastructure
- Poor access to safe water, especially in rural areas and urban slums, and widespread open defecation
- Difficulty accessing some communities due to security concerns, and others because of access issues through difficult terrain
- Poor and inconsistent reporting from states
- Inadequately trained human resources for outbreak, detection, investigation and management
- Inadequate procurement and prepositioning of cholera preparedness and response commodities
- Inadequate vaccines for areas with outbreaks
- Inadequate health facility infrastructure and cholera commodities and fluids for case management
- A lack of after action reviews for cholera outbreaks

Priorities for 2022-23

- Increased collaboration with state ministries and partners
- Identification of community leaders to so they can exert a positive influence on cholera outbreak control
- Implementation of the NCP and work to strengthen the capacity of all pillars
- Frequent chlorination of public waterworks and wells
- Strengthening laboratory diagnosis capacity and networking and ensuring a regular supply of laboratory reagents and medical commodities
- Ensuring the use of OCV in epidemic settings and for at-risk groups
- Establishment of cholera focal points at federal, state, LGA and health facility levels
- Intensification of campaigns against open defecation
- Implementation of a three-year vaccination plan for 2022-2024 (administering approximately 10 million doses per year)
- In-depth studies to prepare for Phase 2 of preventive OCV campaigns.
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Zambia

Professor Paul Zulu, Zambia Ministry of Health

Update on cholera situation

Zambia has reported 32 cholera outbreaks since 1977, the magnitude and frequency of which have significantly decreased since the 2019 implementation of the national cholera plan, the Multisectoral Cholera Elimination Plan (MCEP). The latest outbreak was in April 2022 and was controlled within three weeks with a multisectoral response.

5.7 million OCV doses have been received to vaccinate 11 hotspots (covering about 2.9 million people). As of June 2022 nine of those 11 hotspots had been vaccinated, with around 2.4 million people immunised (83% of the target population). A CSP project manager has been assigned to support operationalization of the MCEP, which has been reviewed and updated to align fully with the new government's priorities. This process resulted in renewed political commitment and support: the Zambian President, His Excellency Mr. Hakainde Hichilema, accepted the role of Global Cholera Champion at the 2022 World Health Assembly, and has enhanced cholera support nationally.

Hotspot analysis has been reviewed down to ward level (the lowest possible administrative level), and 46 wards in 19 districts have been identified as hotspots. This information has been shared with partners to guide targeted interventions. The WASH sector budget has been increased to \$129.5 million and several WASH projects initiated in hotspot districts.

Achievements and good practices

- Partner engagement and collaboration has been improved: sharing the MCEP and its implementation plan has resulted in enhanced support for implementation
- An improved governance and coordination mechanism is now in place, with strong political and partner support enhancing smooth multisectoral implementation of the MCEP
- Several cholera preventive and readiness activities have been implemented, including capacity building and pre-emptive OCV campaigns.
- 75% of ongoing WASH projects are in cholera hotspot districts
- Several MCEP implementation activities have been completed:
 - Surveillance systems have been improved
 - An isolation facility and cholera treatment centre (CTC) in Mpulungu (a hotspot) have been rehabilitated
 - Nine out of 11 hotspots have been fully vaccinated, covering around 2 386 574 people for an average coverage across the campaigns of 95%, and the first round of vaccinations in the 10th hotspot has been completed
 - A national community engagement plan has been developed and community engagement and sensitization is ongoing
 - Several WASH infrastructure projects have been completed.

Challenges and solutions

The impact of COVID-19 has put pressure on resources. One solution will be to integrate cholera control activities as far as possible with COVID-19 response interventions. The information environment of the pandemic and the public health and social measures (PHSM) implemented in response to it – what WHO and others call the “infodemic” – has brought with it potentially damaging myths and misconceptions. While resources for comprehensive preparedness work are limited, one potentially effective solution is to work on community engagement and integration of cholera work.

Inadequate understanding of the importance of the cholera elimination agenda on the part of certain key stakeholders will be met with continued partner engagement.

Inadequate funding for the necessary WASH interventions can be offset by prioritizing WASH projects based on evidence such as hotspot mapping.

Priorities for 2022-23

For all these priorities, the need for resources is a potential bottleneck.

- Finalize development of resource mobilization plan for MCEP (though funds will be needed to hire a consultant to develop a resource mobilization plan)
- Establish provincial and district cholera elimination task forces
- Conduct capacity building in all thematic areas of the MCEP
- Enhance M&E of the ongoing rehabilitation and expansion of WASH and solid waste services in cholera hotspots
- Establish WASH and solid waste management surveillance, preparedness and emergency response capacity in cholera hotspots
- Strengthen laboratory capacity for cholera confirmation in 50% of cholera hotspot districts
- Preposition basic cholera supplies in all hotspots

- Advocate for budgetary allocations to the MCEP in the national budget by engaging the Parliamentary Budget Committee, MPs, other partners, etc.

Zanzibar

Dr Yahya Mselem, Zanzibar Ministry of Health

Update on cholera situation

All 11 districts in Zanzibar are subject to recurrent seasonal cholera outbreaks during periods of heavy rains. Cholera hotspots have been identified in urban and peri-urban areas, fishing villages and small islets.

Achievements and progress

- A two-dose hotspot-targeted OCV campaign in July 2021 and March 2022 fully vaccinated 254 302 (61.6%) of a targeted 413 008 people (373 297 people received a first dose – there were 118 995 dropouts).
- WASH projects to increase access to safe water and sanitation in communities, health facilities and schools constructed 62 boreholes, 71 water storage tanks, 123 school handwashing facilities, 41 WASH infrastructure points and approximately 123 WASH clubs.
- Improvements to detection and follow-up of cases were made by implementing RRTs and the Incident Management System (IMS) and strengthening community surveillance through (a) use of community health volunteers (CHVs) and (b) work to strengthen lab capacity.
- Case management was improved through training diagnostic and management personnel, increasing IPC measures and ensuring the availability of medicines, equipment and supplies
- Monitoring and evaluation was done through annual/mid-term/final progress reviews, and quarterly meetings of a multisectoral technical committee
- Community health education was done through work on hand and food hygiene in schools and campaigns using key influencers and mobilizers (such as CHVs and religious and community leaders)
- TV and radio programmes (live and recorded) and advertisements were used to reinforce cholera messaging
- Mobile health promotions were carried out
- IEC and behaviour change materials were printed and distributed.

Good practices

- Sustained multisectoral collaboration
- Focus on strengthening WASH standards
- Successful demonstration that mass OCV campaigns can be coupled with WASH interventions and social and behaviour change campaigns
- High levels of political commitment from the government, but also from communities
- Successful partnerships with local and international agencies.

Challenges and solutions

- Poor WASH infrastructure, especially in peri-urban areas. Over 30% of the population have no access to clean and safe water
- Inadequate integration and coordination of WASH strategies and inadequate enforcement of WASH regulations
- Fast-growing population – again particularly in peri-urban areas
- Inadequate WASH practices.

Priorities for 2022-23

- Build national and district-level laboratory capacity (including by procuring incubators, water baths, autoclaves, petri dishes, refrigerators, and other supplies)
- Procure and distribute 5000 cholera RDTs to district facilities
- Introduce an electronic IDSR system
- Increase monitoring of water quality and infrastructure
- Conduct a mid-term review of the NCP
- Improve communication on different cholera activities by different agencies.

Zimbabwe

Dr Munyaradzi Dobbie, Zimbabwe Ministry of Health

Cholera has been reported almost every year in Zimbabwe since 1998, with the largest outbreak in 2008-2009, when there were 98 592 cases and 4288 deaths for a CFR of 4%. The most recent outbreak was in 2018-2019, with 10 671 cases and 68 deaths (a CFR of 0.63%). Hotspots have been identified in 96 wards, with a cumulative population of 1.7 million people covered by 73 health centres and 1200 voluntary health workers.

Achievements and progress

In July 2019 the National Task Force on Cholera Elimination endorsed a high-level Framework for Cholera Elimination for Zimbabwe. Under the leadership of the President a 10-year plan to eliminate cholera by 2028 was developed and validated, and in February 2020 the NCP was shared with the IRP and the GTFCC for review. IRP recommendations were received in May 2020 and a new draft NCP is awaiting endorsement.

Dr Dobbie presented an overview of the institutional framework for public health in Zimbabwe, which includes a Cholera Partnership of 40-50 organizations working on cholera across thematic subcommittees for public health, WASH, urban infrastructure, resource mobilisation and finance innovation, and advocacy and community engagement. He presented a table of Roadmap outcome indicators over time, comprising both current and target figures for different stages of the NCP up to elimination in 2028, and a summary of objectives, activities and indicators and corresponding budgets for 2022-2024. The total cholera elimination budget for 2022-2024 is just under USD 31 million.

Challenges

Challenges to these goals include:

- Inadequate investment in safe water systems in urban areas
- Huge suburban populations are using old, already heavily-burdened infrastructure
- Huge, unplanned, informal peri-urban settlements lack even basic sanitation facilities
- Illegal gold mining/panning is causing huge internal population displacement that contributes to the spread of cholera.

Priorities for 2022-23

The priority for 2022-23 is to make progress in all six pillars of the GTFCC Roadmap.

Discussion

A brief period of panel discussion followed, in which the presenters came on stage or online to answer questions from the audience (both those present in Les Pensières and those attending digitally), mainly about NCP design and implementation. This raised several themes.

- It can be a challenge to determine where within a country's political structures the NCP can most effectively be hosted. Generally, the higher the political level, the better, as this facilitates multisectoral coordination and aids cholera visibility, advocacy and buying. Kenya's NCP is in the Office of the President; Mozambique's is at Cabinet level, with the Minister of Health as process leader; and Ethiopia's is led by the Ministry of Health and chaired by the deputy Prime Minister.
- The question of how NCPs plan to accommodate the needs of people with disabilities (PWD) was a strong theme – clearly revealing a concern across range of participants from different countries. Kenyan authorities are required by the Constitution to factor in the needs of PWD (and youth and gender issues) in any public sector planning; Mozambique also imposes a constitutional obligation to address the needs of PWD, along with other sensitive issues, including regional balance of service provision. Zimbabwe has a whole-of-society approach to planning and implementation alongside similar Constitutional protections and a commitment to universal health coverage (UHC) that “leaves no-one behind.” This approach includes specific plans to bring services to PWD with access issues rather than requiring them to attend health facilities.
- The issue of cross-border coordination between Kenya, South Sudan and Somalia was raised, with Kenya having reported cases at the South Sudan border but South Sudan reporting none. Kenya has several frameworks under which to conduct cross border surveillance, including the East African Community; many are not cholera-specific, but they share structures and routine surveillance and a core group is in place to support polio and other cross-border work. In northern Kenya, the camp in Turkana – part of which is already a settlement – brings together refugees from many countries in the region, including but not limited to South Sudan, Uganda, DRC and Somalia. South Sudan is currently responding to outbreaks in two counties in the northern part of country (far from Kenya) and also uses structures for cross-border collaboration, including a WhatsApp group for real-time communication and discussion of all infectious disease outbreaks. Kenya and Uganda held a dedicated meeting on cross-border collaboration the week before this gathering.
- It was asked how much Haiti has focused on WASH. The plan for elimination includes a national WASH plan.
- Zimbabwe is monitoring a large spread of indicators and objectives, raising questions about the complexity and feasibility of the monitoring process. Everything will be included and integrated, using a whole-of-society approach covering all ministries of government and the private sector, gathering and tracking all their indicators and taking advantage of pandemic changes such as increased use of telehealth. Support for AMR work is also in place and will also be tracked in real time.
- Some NCPs, such as Zimbabwe and Zambia, seem to have more success mobilising cash for cholera, especially for WASH interventions. In Zambia, the establishment of partner coordinating platforms has helped by aligning all stakeholders' goals and ensuring that sectors or ministries with WASH components have highlighted the issue and prioritised it accordingly in national budgets. This has not been easy, especially with pandemic pressure on funding, but this platform not only helps ensure that budgeted funds are secured for all the required projects and objectives, but also provides an effective advocacy platform to showcase successes and lobby for more. Experiences in Zanzibar suggest that this area highlights the importance of involving central government at the highest possible level to coordinate, direct and govern NCP implementation. This makes it easier to get resources, and to advocate and educate about the importance of targeting money at hotspots. Most hotspots now have improved water supply because of high level NCP governance.
- DRC faces logistical challenges due to the size of the country, but also many opportunities that allow the implementation of focussed actions in zones reporting rising cases. Logistics remain at the root of many vaccine delivery issues, but experience shows the results that can be obtained

when resources are correctly focussed. Leaders in all of DRC's 145 territories have now implemented cholera preparations.

Update from Gavi, The Vaccines Alliance

New developments: Preventive Cholera Vaccine Programme & Diagnostics Initiative

Allyson Russell - Programme Manager, Cholera and Typhoid, Gavi, The Vaccine Alliance

Gavi's vaccines investment strategy (VIS) has supported the OCV stockpile since 2014, with the original goal of breaking the cycle of low demand and low supply, reducing outbreaks and strengthening the evidence base for pre-emptive campaigns. Gavi's commitment to OCV over the last decade has generated interest in OCV use in a growing number of countries, and parallel interest from manufacturers in producing more doses to meet demand. Gavi approved expanded preventive use of OCV – expansion that in recent years has transformed cholera control and response.

The decision to expand support for preventive vaccination took place as part of the regular five year review of the VIS, an evidence-based consultative process that analyses the immunisation landscape to identify and evaluate new investment opportunities. The 2019 review of expanded investment in cholera scored OCV as an intervention with “medium health impact, but an important contribution to equity, social protection, and global health security,” and highlighted the underestimation of burden and the high risk of large-scale socio-political and economic consequences from outbreaks. A recommendation was made for investment in planned, preventive vaccination as part of a comprehensive immunisation and disease control strategy to supplement scale-up of WASH activities – crucially, not as a standalone intervention. The recommendation also included funding a learning agenda to improve understanding of vaccine use in high-risk areas, and agreed a continued market shaping role for Gavi.

Shortly afterwards, however, reprioritization of focus to the COVID-19 pandemic paused expansion of Gavi's vaccine portfolio, and the design of the preventive OCV programme only resumed in late 2021. The funding guidelines and application materials are now nearly finalised (with thanks to all who contributed to the development process). Final guidelines should be available on the Gavi website in July.

A transition from the current application and grant management process to the new one is beginning now and will last at least a year. Gavi and the GTFCC Secretariat will work closely with individual countries to guide them through this process. From January 2023, countries will be able to apply directly to Gavi for multiyear preventive vaccination programmes. These will also be multiyear approvals, so new applications will not be needed annually.

The consultation process generated new goals for the preventive programme:

- Implement a holistic, interactive review of multiyear plans to improve quality and outcomes of campaigns
- Through multiyear plans, improve the planning and predictability of campaigns and the reliability of demand forecasts for manufacturers over a longer time period
- Leverage campaigns to strengthen routine immunization and integrate WASH and other health activities by engaging EPI and WASH teams.
- Achieve greater health impact by increasing focus on prevention.

The main changes

The main changes in the process are as follows:

- The shift to multiyear approvals and annual planning cycles. Multiyear planning has already begun in several countries, and Gavi will work with GTFCC to develop tools and processes to support this
- The application review process will change and an independent review committee will be introduced
- Grant management will become Gavi's responsibility.

Gavi will continue to rely on the GTFCC Secretariat and partner organizations for technical support for design, planning, and implementation.

For now, the vaccines and the stockpile will not change, and the preventive programme will remain campaign-based and targeted at hotspots. When demand is greater than supply, as now, a coordination body and allocation mechanism will continue to be used to determine what can be supplied within the year. This will be separate to the IRC approval process.

The shift to longer-term planning and forecasting will allow for more predictable campaign implementation, which may in turn allow for enhanced coordination with other immunization and health activities, higher quality campaigns, and greater health impact.

What the review committee will be looking for in preventive use OCV applications

The review committee will be looking for programme design qualities across five main themes:

- **Strong rationale.** Plans should be:
 - targeted based on epidemiology;
 - based on data-driven decisions;
 - designed to increase the use of diagnostics to determine needs; and
 - for implementations that are feasible and correctly timed.
- **Advance planning.** Plans should contain:
 - multiyear vaccination plans;
 - annual implementation plans and budgets;
 - demonstrated readiness; and
 - strategies to reach high coverage in all targeted areas.
- **Coordination of immunisation programmes.** Plans should be designed to:
 - Reduce the burden on healthcare workers;
 - Improve the efficiency of planning and delivery; and
 - achieve greater impact.
- **Leveraging campaigns.** Plans should:
 - Take more holistic care approaches, capitalising on opportunities to reach people with WASH interventions and other needed health measures; and
 - identify neglected communities and reach them with other vaccines.
- Plans must also be part of a broader cholera control strategy that demonstrates commitment, investment and improvement in WASH, surveillance and other control measures, and which works with local organizations for community engagement.

It has been argued that this level of Gavi involvement may increase OCV demand further by creating heightened expectations in countries, further pressuring the stockpile. The goal of multiyear plans is to provide the market with stable demand. Solving supply issues will take time, but if each country could predict its own demands and forecast supply for the next few years, the process will improve.

Diagnostics

Gavi also supports procurement of cholera diagnostics. In December 2021 Gavi's Board approved funding to improve availability of fit-for-purpose diagnostic tools for six diseases, including cholera. The goal of

this expansion is to use improved diagnostic testing to increase the effectiveness, efficiency, and equitability of national vaccine programmes eligible for new vaccine support through Gavi.

Improved cholera diagnostics should help target campaigns. Cholera testing in many countries is limited, particularly outside outbreaks. More regular, extensive testing, especially in suspected hotspots, could determine needs for preventive campaigns, build a case for such campaigns among competing priorities, and facilitate flexible, targeted outbreak responses. Once diagnostic testing is widespread, OCV decision-making can rely more on diagnostically confirmed cases – an improvement that will be particularly useful for decisions on preventive revaccination.

Current status of the cholera diagnostics market

Culture is the current diagnostic mainstay, but scale-up is hampered by major availability gaps and logistical and technical challenges. The most practical, cost-effective option for surveillance for OCV planning is probably RDTs, but there are currently no validated commercially available RDTs (though WHO PQ standards exist). PCR tests are a viable third alternative but they are expensive and complicated, so scale-up is difficult. They are well-suited for quality control in validating RDTs if adequate lab platforms are available.

For Gavi to procure diagnostic tests, one of two things is needed as a stopgap: WHO PQ, or an interim recommendation. Gavi also needs (and will support) pilot projects to inform the best RDT strategies. The timeline for RDT prequalification is not known, though one manufacturer is already in discussions with WHO. Hopefully, input from Gavi, the GTFCC and others can accelerate this process.

Once tests and usage strategies are available, Gavi will develop guidance on making diagnostic support applications and the submission processes can begin. Applications will be independently reviewed.

Regional updates

Eastern Mediterranean

The WHO Eastern Mediterranean region has been facing cholera outbreaks for over ten years. Countries report regularly and many are endemic. Recent outbreaks have occurred in Pakistan, where cholera was reported from almost all provinces over a two-month period (with cases showing epidemiological links); Somalia; and Yemen. The WHO Regional Office for the Eastern Mediterranean is carrying out several high-level cholera activities, including supporting countries as they make OCV requests to the ICG and implement campaigns; helping coordinate WASH actors and align their activities; participating in GTFCC working groups; working on community-based collaboration with Afghanistan and Pakistan; and coordinating with other regional offices around imported cases.

A regional overview of roadmap progress shows that many countries have established multisectoral task forces, outbreak response plans and enhanced capacities for surveillance, reporting and detection and confirmation in outbreaks. Resource mobilisation has been done using multisectoral approaches, and OCV campaigns have been rolled out. Progress is being made across the region – most countries are notifying and leadership and coordination is working, with support from WHO and partners. Preparation activities, logistics and supplies are in place, and capacity building projects are happening.

Africa

Update and activities

2021 was an unprecedented cholera year for Africa, with over 137 000 cases and 462 deaths in 19 countries. West Africa was worst affected, with about 90% of cases. 2022 is likely to be worse: in just the

first half of the year there have already been more than 121 000 cases and 341 deaths in 11 countries. In response, WHO established a cholera hub in Lomé, Togo to coordinate outbreak responses, not only in West Africa but across the continent. The Hub has helped countries assess readiness and improve preparations for cholera, and West Africa is now seeing cholera trends decreasing. Only Nigeria and Benin have seen cases in 2022 so far, and both outbreaks are now controlled. The current regional response focus is now on DRC and East Africa.

The WHO Regional Office for Africa has been helping countries develop and implement NCPs. Many African countries have already validated their plans and are implementing them (such as DRC, Kenya, Zambia, Zanzibar and Zimbabwe). Only DRC opted not to follow GTFCC guidance in their NCP development, but their hotspot analysis is now being updated accordingly. Fourteen more African NCPs are in preparation, with the help of the CSP, and a consultant has been hired to support the process. All of these countries have finalised and validated their hotspot analysis, and some are already doing situational analysis for their NCPs. Implementation has, however, been slowed by a general lack of funding. Currently the most visible activities are OCV preventive campaigns, because these are supported by Gavi vaccines and GTFCC operational grants. Other NCP components across the region tend to be less well funded. The Regional Office is supporting countries to improve surveillance and organise WASH projects.

Africa has endorsed the regional framework for elimination by 2030. Member States are implementing the framework and the Regional Office is supporting and monitoring progress. Coordination is in place in at least 17 countries, all of which have focal points, RRTs and improved capacity building. 2021 outbreak was a brake on progress, though: plans targeted a 50% reduction, and this cannot now be reached. There was also the goal of a continental CFR of less than 1% but the last outbreak was very deadly across the region.

Part of the work of the Lomé hub is to improve country capacity for early detection and response: training and workshops have been held for this, the third of which is currently in progress. Over 130 people from 13 countries have been trained, with more scheduled in the coming months.

The way forward for the region will be based on a few simple goals: improve implementation of the regional framework; improve NCP development processes across Africa; continue regular readiness assessments; and provide support to work to fill gaps and improve in areas of weakness.

The challenge to all this remains the issue of funding. More money is needed to complete hotspot analyses, support elimination plans and conduct in-country training in hotspots to improve the implementation of the required actions.

South East Asia

Between 2002 and 2022, 78 outbreaks of diarrhoeal disease were investigated by WHO in South East Asia, 30 of which were confirmed as cholera outbreaks.

Surveillance is strong across the region. Bangladesh, one of the worst affected countries, has systematic diarrhoeal disease surveillance, with sampling of 22% of cases regardless of age. India has a similar system, sampling about five per cent of cases (though with great diversity in sampling rates across states). Cholera control is centralised by the Institute for Cholera and Enteric Disease in Calcutta. Nepal uses EWARS hospital-based surveillance with 81 systems across 75 districts.

The only country in the region with a full NCP so far is Bangladesh – one of the first countries anywhere to launch an NCP. This is currently being revised. Others have national plans, but do not meet the GTFCC reporting criteria.

The main regional cholera challenge is to estimate the burden of disease. Other lesser challenges are myriad (though they vary across countries and regions) – for example, insufficient lab capacity, low levels of human resources, insufficient political commitment and gross underreporting.

Panel discussion: Centring communities in cholera prevention across the roadmap pillars

Moderator: Nurullah Awal, WaterAid

All roadmap pillars are integral to the success of the global roadmap, but for any of them to work the buy-in of communities is crucial. During this plenary session an onstage panel gave brief presentations of their own experiences of how community engagement can contribute to NCPs, then functioned as the focal point for a general discussion in which all participants had the opportunity to share comments, experiences and good practices.

Panel members were **Jose Paulo Langa** (Mozambique National Institute of Health); **Mona Pradhan** (WHO Country Office for Nepal); and **Munyaradzi Dobbie** (Zimbabwe Ministry of Health).

The session began with each panel speaker describing a brief case study of their own experiences.

Nepal

Mona Pradhan, WHO

On 4 October 2021, a local hospital reported nine cases of AWD and a preliminary investigation team was deployed. On the first day, security personnel were sent to the community to make people aware of the situation and stress the importance of drinking boiled water and ensuring good personal hygiene and sanitation. Two deaths were reported – one person who failed to seek care, and one who attended a pharmacy rather than a health facility. Health workers were sent into communities to identify severe dehydration cases and distribute ORS.

The next day, cases had more than doubled. The decision was taken to mobilise a team of female CHVs and external development partners already in the district health office to work alongside volunteers from local NGOs. (The female CHV programme was introduced around 30 years ago to deliver basic health services at grassroots level, where many people are unable to access services and/or health posts. For example, during COVID vaccination campaigns CHVs took vaccines, services and advocacy into isolated communities where a lack of awareness and a lack of access to media meant they would otherwise not have been vaccinated). Questionnaires were prepared and door-to-door surveys were done to collect data on household demographics, symptoms, care seeking behaviours, etc. The survey results helped to identify weaknesses in preventive practices and focus on improving them. The CHVs stressed messages of awareness, hygiene, safe water techniques, the importance of toilet use and more.

Challenges included local language barriers and the fact that this community disliked using toilets. Open defecation was widely practiced. After discussing this issue the team approached local leaders and carried out a series of orientation exercises in each affected municipality with the participation of mayors, local authorities and local health workers. These orientations addressed cholera, preventive measures and the same messages on the importance of toilets, hygiene, boiling water, etc. With the help of all partners, a wide public was reached.

The potential of this level of community engagement was soon visible as people began to use various methods of water purification and toilet use increased. Community engagement proved an important part of breaking the transmission chain. In any form of emergency management, the role of communication in changing potentially harmful behaviours and practices is crucial.

Zimbabwe

Munyaradzi Dobbie, Zimbabwe Ministry of Health

Zimbabwe experienced a cholera outbreak in 2008/9 in which one of the main transmission risks was a traditional method of cleaning dead bodies by passing water through the gastrointestinal tract. This was done in accordance with the belief that deceased people must be cleaned in this way before they can reach heaven. There was a clear, urgent need to address the risks of this practice.

After engagement efforts were made and the risks were understood, the community asked for solutions – but also made it clear they could not stop the practice, because it was important to their identity and their way of life. They were advised to continue the practice, but only while wearing appropriate personal protective equipment (PPE), and that it was crucial for cleaners to sanitise properly afterwards, before meeting with other people. This was acceptable, the practice continued, and to date it has been linked with no further cases.

The conclusion must be that it is not right for authorities to prescribe. The community was involved with this approach, and that is why it worked. Instead, health authorities should engage and create a sense of ownership of health practices in different communities and cultures, and be creative and flexible in approaching different problems.

Ownership is arguably the most important issue in any programme. Communities should be involved in all programming, with particular focus on the more influential members of society – chiefs, religious leaders, traditional healers and other influencers – because when these people communicate risk, it is understood and accepted better than when that information comes from health practitioners. A sense of community ownership is crucial.

Mozambique

Jose Paulo Langa, Mozambique National Institute of Health

Engagement and involvement are two different things: to coin a phrase, “when you have eggs and bacon for breakfast, the pig is involved but the chicken is engaged.” Community engagement must be clear about whether it is engaging or involving communities – these require two different strategies.

First, the community must be defined. Some unlikely communities are often overlooked. For example, while “community” is often taken to mean local communities, politicians and senior leaders also constitute a community – and when work is to be done building infrastructure, they are a very important one that needs to be properly understood.

The right kind of engagement is important – for example, bringing hundreds of people and the local authorities to inaugurate a latrine might well end up discouraging people from using such a public place to carry out intimate functions. This kind of learning is important in NCP planning and capacity assessment.

Pilot capacity assessments need to be clear on the terms they will use – what “community” means, whose capacity is being assessed, and so on – and hotspot mapping requires a clear understanding of where and what the communities are. For example, while a hospital may be the hotspot, the cases might be coming from far away; and exploring that properly means finding out whether the hotspot represents cases in a community elsewhere. If so, it is important to determine what kind of community it is and what messaging it needs.

Three key issues to consider and include in planning are:

- (1) Language: how we talk and how people understand. If they are not on the same page, communication fails.
- (2) People: if we’re working for “the people,” who are they? Who are the real beneficiaries of the projects we implement?

(3) Involvement vs engagement.

Discussion

A period of open discussion raised several themes.

- Community engagement can achieve big results with small expenditure: it is a good long-term investment. NCPs are living documents. All those that are already endorsed and approved but which do not foreground community engagement should be revisited to ensure this crucial element is included. Talking to researchers and shaping research questions with communities is a good way to start.
- NCP planning should include community agents of all kinds – for example, institutions or organisations outside health, working in different ways but which already have trust from communities, can be strategically important. In Mozambique, development organisation Caritas was one such example: they work with communities to teach skills such as farming and are a key partner in assessments. For example, they can help establish sentinel sites because they know not only which hospitals have cholera, but which communities have it – including communities far from the hospital, with patients who might be dying en route to care.
- It is important not only to define and engage target communities, but also to compensate them. Too often, projects engage with people on a voluntary basis; but people's time is their money, and they should be recompensed. They also need to be kept in projects for the long term: together in design, implementation and sustainability. Too many programmes are currently unsustainable. There are many different examples and models of participation for cholera volunteers, and all of these should be considered in planning.
- Social anthropologists should be engaged in project design. Most communities know exactly where their problems are: if they are properly engaged, they will say so – and projects will not only save time and money but also be more effective. Some countries are already doing this. For example, the Mozambique NIH has social scientists, anthropologists and researchers who contribute their expertise to programme design.
- Project design that really considers and engages communities must consider questions like, what are the interests of the funders? And the researchers? And the politicians? Communities have their own questions and priorities, and these are often disconnected from those of the designers and financiers of the projects. Good NCP design must understand and navigate the different interests of the involved parties.
- From an epidemiological point of view, reports, OCV requests, plans and the rest of the standard cholera processes and documents are always built on very basic information – times and places – and not people. Few investigations describe the people affected, the community risk factors or the complexities of local contexts. But without communities, nothing happens: the cholera world must treat cases as full grown, three-dimensional adults. Seldom does anybody adequately explain to communities what is happening, or going to happen, in response to diseases they do not know about.
- The GTFCC needs its members' support to prepare and integrate these components at the start of national processes. This expertise cannot come from outside. Members must express their experiences, concerns and this information so the GTFCC can collectively share it back to others and say: "this is how to tackle things."
- "I don't know" is a perfectly valid position when information is not available. Indeed: knowing when information is not there is valuable, in that it guides advocacy.
- In DRC, community engagement is the basis of every successful programme. Every village has Community Animation Cells with a President (usually the Village Chief), treasurer and secretary that elects a health worker for each 50 houses who visits households and identifies diseases. These cells therefore provide information on whole communities that can be relayed to Head Nurses in health centres who can take the correct initial action in response to outbreaks or other issues.

- Understanding populations and establishing their needs are important parts of NCP preparation, development and implementation.
- One example was shared from COVID vaccination project. Campaigns for COVID vaccination face a range of challenges and complications – it is a new disease, mis- and disinformation are rife, operational setups and supply chains face issues, vaccine shortages are common, responses to adverse events following immunisation (AEFI) are generally poor, and so on. In this project 17 vaccination initiatives were set up across eight countries. The key operational question was how to create conditions in which civil society would become as willing as the health sector to engage. Different tools were required. Social network mapping created understanding of the leaders, vulnerable populations, influencers, strengths and weaknesses in each area – all were different. Meetings were held with local populations to assess perceptions around vaccine hesitancy and understand limits in communities. With the results of this analysis it became possible to create focus groups as platforms to discuss vaccines, risk and campaign projects, which in turn led to the creation of a Participation Committee to guide vaccination efforts. The original target was 500 000 vaccinated people, and by the end of the period around 800 000 had been vaccinated – mainly due to community engagement.
- When local leaders spread fake news, effective response and management of the situations they create must come from within their communities, not external health authorities.
- There is some potential to use the CSP to strengthen or change approaches to community involvement, particularly given the close connection between the CSP and the network of IFRC national societies. At the moment, however, the CSP is monitoring and improving its own internal design and clarifying what it can and cannot do to be as effective as possible, so additional potential roles might take some time to crystallise.

Panel discussion: Using research to end cholera

Moderator: Iqbal Hossain, Bangladesh Centre for Nutrition & Clinical Services Division (NCSD) and James P. Grant School of Public Health, BRAC University

In this session, research partners presented updates on cholera research. The presentations were followed by a period of open discussion. The questions and themes raised in discussion focussed on the research presentations and are incorporated into the summaries below.

Burden & differential features of cholera & non-cholera watery diarrhoea among under-5 children: a case-control study in Bangladesh

Iqbal Hossain, Bangladesh Centre for Nutrition & Clinical Services Division (NCSD) and James P. Grant School of Public Health, BRAC University

Determining whether watery diarrhoea (WD) in infants and young children in Bangladesh (and other settings) is an ongoing problem. Data on the epidemiology and differential features of cholera and non-cholera WD are limited, but this information is needed for proper management of WD to avoid and/or control the unethical use of antibiotics that are indicated for cholera if a child is suffering significant WD and dehydration. This study therefore aimed to assess caseloads of cholera and non-cholera WD and clarify the differential features.

The study used data collected between 1996 and 2014 from a hospital-based diarrhoeal disease surveillance system (DDSS) in the Dhaka Hospital of the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b). The DDSS takes a 2% systematic sample, regardless of age, sex, & diarrhoea severity, and the data included information on socio-demographic factors, environmental history, clinical characteristics, nutritional status and diarrhoea pathogens. A total of 21 626 children under five were studied, of whom 20 936 (96.8%) were admitted with features of WD and rectal swab/stool culture reports negative for shigella negative. Their mean±SD age was 14.8±11.6 months; 40.3% were girls; 2264 (10.8%) children had cholera and 18 672 (89.2%) had non-cholera WD.

After logistic regression analysis, associated or risk factors of cholera were shown to be:

- age greater than 12 months;
- stool frequency greater than 10 per 24 hours;
- some or severe dehydration;
- admission in the warmer months of the year (i.e. April-September in Bangladesh); and
- being a child of a working mother.
- Absence of abdominal pain and having been predominantly breastfed during the first six months of life were found to be protective factors against cholera.

Eleven per cent of all WD cases in children under five were cholera and the remaining 89% of diarrheal cases were non-cholera illness. Children with cholera were more likely to need inpatient admission and treatment with intravenous fluid, but the fatality rate was very low for both children with cholera (0%) and without (0.1%).

These associated or risk factors in children under five could be used to help differentiate non-cholera WD cases (that do not need any antibiotics) from cholera cases. This could improve the rampant improper use of antibiotics and encourage appropriate management of diarrhoeal illness in children under five.

International Vaccine Institute (IVI) cholera programme: strategy and projects

Julia Lynch, International Vaccine Institute (IVI)

The IVI cholera programme has three main goals:

1. Ensure OCV supply by supporting manufacturers. Current projects include work on critical reagents and vaccine reformulation.
2. Improve the cholera vaccine by improving efficacy, especially in patients under five, and flexibility of use. Current projects include the Euvichol-S CTC Label, the Duochol project the cholera conjugate vaccine (CCV).
3. Propagating and improving OCV introduction and use. The main activity here is to generate better evidence to Support OCV in endemic countries. Research is ongoing in Nepal, Mozambique and Ethiopia.

Reformulation of OCV: Euvichol-S

This project is funded by the Bill and Melinda Gates Foundation and conducted in collaboration with EuBiologics.

The current OCV contains five components: redundant heat and formalin inactivated O1 Inaba and Ogawa and Vibrio cholera O139. This project is investigating whether a simplified formulation containing only two current components (O1 Inaba (El Tor) and O1 Ogawa (classical)) inactivated by a single method could be equally effective. If so, this could lead to production cost reductions and an increase in production capacity of around 35%. A technical expert group meeting in January 2020 concluded that a two-component vaccine should achieve an equivalent protective immune response to O1 serotypes of *V. cholerae*, and that the O139 component provides no cross-protection to O1 and little public health value, as O139 has limited circulation. Regulatory consultations then approved the rationale for change and the clinical development plan.

A phase III, multi-centre, observer-blinded, randomized, active controlled trial to evaluate immune non-inferiority, safety and lot-to-lot consistency of Euvichol-simplified (Euvichol-S) vaccine as compared to Shanchol in healthy patients aged one to 40 years is now ongoing in four sites in Nepal. Non-inferiority of Euvichol-S compared to Shanchol is measured by seroconversion rates of anti-*V. cholerae* O1 Inaba and anti-*V. cholerae* O1 Ogawa vibriocidal titer two weeks after second doses of vaccine for all ages. 2530 subjects are enrolled (enrolment began in early October 2021) and results are expected at the beginning of 2023.

Reformulation of OCV: Duochol

This project is funded by Wellcome Trust and the Swedish government and run in collaboration with the University of Gothenburg.

The tested vaccine is Dukoral in a capsule: a lyophilized mixture of formalin inactivated whole-cells of serotype O1 *V. cholerae* Inaba and Ogawa with cholera toxin B-subunit (rCTB) contained in an enterocoated capsule, with two doses to be taken two to six weeks apart. There should be several advantages of this formulation: the vaccine shows 85% efficacy against cholera for nine months in patients under six years old; it confers protection against Enterotoxigenic *Escherichia coli* (ETEC) diarrhoea for 6-9 months for all ages; the cost is similar to current OCV; it is thermostable at 40 degrees centigrade for six months; and the weight and volume of the product are substantially reduced compared to current vaccines, meaning significantly lower product delivery costs and reduced waste. The main disadvantage

is the fact that children under six may not be able to swallow the capsule, so the drug would require dissolution in liquid.

The vaccine is completing pre-clinical development in 2022 and funding proposals for Phase I and Phase II trials are in progress. Phase II would explore feasibility and acceptability of dosing children under six. Uptake likelihood analysis is already funded and will be initiated in 2023, evaluating use cases for feasibility, acceptability, cost and resource requirements. This would examine general use in reactive or preventive campaigns for all ages and for mixed delivery (i.e. 85% capsule and 15% liquid) and special settings (e.g. forward stockpile for use in outbreaks).

Phase I is likely to be in a naive adult population in Sweden, with Phase II trials in endemic countries. There is an easy pathway through clinical development to production similar to that for Duochol; but it is more complex to produce tablets than liquid vaccines.

Reformulation of OCV: cholera conjugate vaccine (CCV)

This project is funded by the RIGHT Fund, Open Philanthropy and Wellcome Trust and conducted in collaboration with MGH-Harvard and EuBiologics.

Approximately half of cholera cases and deaths are estimated to occur in children aged five or younger (WHO 2017), but the current prequalified two-dose OCV regime has reduced efficacy in children under five, and a single dose has no efficacy at all. The vaccine is not wholly suitable for delivery through EPI. Current SAGE recommendations advocate re-dosing with OCV every three years.

In 2017 the WHO Initiative for Vaccine Research convened a stakeholder consultation on preferred product characteristics for next generation cholera vaccines that could support a new sustainable implementation paradigm for cholera control. The target product profile that emerged from the meeting is as follows:

- Higher efficacy in infants and children under 5 years of age
- Longer duration of protection
- Lower cost
- Single dose.

The rationale for CCV to meet these requirements are that conjugate vaccines elicit long-lasting T-cell dependent immune responses in young children, often with a single dose. An injected vaccine with a long duration of protection can be incorporated into EPI, reducing the cost and burden of repeated vaccination campaigns and building population immunity from infancy.

A CCV candidate vaccine has been developed by collaborators at MGH-Harvard, icddr and the US National Institutes of Health (NIH) and has proved to be protectively immunogenic in preclinical animal models. Pre-clinical development – including toxicology studies – is complete. A cost analysis suggests a cost of 0.42 USD per dose.

A Phase I trial is now in preparation and scheduled to start in August 2022 in South Korea, with results expected in early 2024.

Cholera detection: rapid detection test or rapid detection confirmatory test?

Ankur Mutreja, *University of Cambridge*

The target product profile for cholera diagnostics contains the desired criteria of early detection, declaration and monitoring of cholera outbreaks without needing cholera confirmation. Only molecular

tests can achieve this, and so the “desired versus acceptable” discussion has been ongoing in the GTFCC for some years. If onsite confirmation using a field-adapted molecular assay were possible, reporting would be far easier and quicker.

The goal of this testing is to understand the pathogen. Current molecular tests determine its genus and species, but with cholera there is an operational need to know more: not just the lineage as well, but also the risk each lineage imposes. To provide these capabilities, Dr Mutreja’s team developed a prototype product to meet the following TPP: a test with as high a sensitivity as possible (better than current antibody dipstick tests) and 100% specificity, to create field situations where a single test confirms or rejects disease without need for further culture confirmation, generating reliable results that are easily communicated and shared. The cost should be as low as possible without compromising quality, and the speed of the test as fast as possible, ideally in a couple of hours, so results can be generated before a testing camp is struck for the day (to facilitate this scenario data communication speed is very important, as are portability and deployability). The test should be easy to stockpile, thermostable with a reasonable shelf life, easy to deploy in urgent situations, and usable without the need for AC, power. It should be suitable for use in primary health care centres in low resource settings and in alignment with the needs of clinical and environmental surveillance, WASH and vaccination programmes. Training requirements for users should be minimal, with easy-to-follow universal language SOPs and video-based guides for process flow and troubleshooting. The disposal of kits and contents should be possible onsite without risk to health.

In this product two key lab technologies – traditional PCR and electrophoretic gel detection – are improved and replaced by a battery operated, portable PCR and molecular detection strips. For the maximum utility it comes in a portable, field-ready kit case containing the portable PCR machine; a rechargeable battery; multiplexed detection strips and lyophilized reagents; and a mobile phone. Up to five PCR runs can be done with a single, full battery charge, screening 16 samples (including controls) per PCR run for 80 samples per battery. Three optimised cholera targets are detected on each strip. The new dipstick is molecular and shows bands as would a lab PCR.

Most of the development time was spent on sample preparation, to avoid DNA extraction; the research team worked with a company in India to create a buffer that is added into the stool sample and used as template in the reaction, so no DNA extraction is involved. It has been noted that is relatively easy for technicians – especially untrained staff – to contaminate samples accidentally; but no negative control is yet included in the design because the detection mechanism looks for anti-tag reactions, avoiding non-specific amplification and binding to the tags on the stick. A negative control that would give no signal has, however, been considered for the future. Dr Mutreja pointed out that human error can only be avoided up to a point – and contamination still happens even in reference labs. The team is trying to get to a process where reagents are lyophilised in PCR tubes themselves to reduce the risk of contamination.

If more funding becomes available, a smartphone app will be developed to record results and avoid human error in taking down results.

Dr Mutreja illustrated the differences between current testing and confirmation process and those possible with this new technology. Once a sample is determined to be RDT positive, shipping of samples to reference laboratories for culture and PCR confirmation generally adds 24 to 48 hours to the confirmatory process; but using the proposed test kit, those confirmatory results could be obtained in less than two hours.

Feedback during the meeting suggested that while the current process should be possible in 48 hours, in real life it can often take a week, and highlighted the importance of solving cost and speed bottlenecks and ensuring the test can be used easily in primary health care and field settings. The importance of safe disposal was also reinforced.

This kit is designed to be affordable, a single investment of around USD 800, with ongoing costs only for reagents and dipsticks. With the right supply and demand these costs could be brought as low as \$5 per reaction, competitive with other current tests. While Bangladesh has developed a rapid test – although not as specific as this one – that costs around USD 1, Dr Mutreja’s test is a full PCR and will not be able to achieve prices that low. But it will show whether a strain is pandemic or not, something the GTFCC has been looking for, and is significantly cheaper than lab PCR.

Specific use cases for this test might include when countries are approaching elimination and/or seeking cholera-free certification; settings with sporadic cases where it would be useful to check 1000 individuals to see what strain is communicating as part of hotspot identification; or attempts to establish which communities need what interventions.

The mini-PCR machine has been tested and used by NASA on the International Space Station and has proven to be robust and portable.

Research side meeting: new research questions

Iqbal Hossain, icddr,b

Session moderator Iqbal Hossain summarised the outcomes of a research side-meeting the previous day.

On the topic of current cholera research investment, it was noted that the NIH currently funds a lot of fundamental research on pathogenicity, but other funders have more interest in investing in vaccines, surveillance, and pathogenicity research. Funding gaps are clear in WASH, case management and community engagement.

In response to these observations, the group was asked to suggest new priority research questions to inform the GTFCC cholera research agenda. The following gaps and/or questions emerged:

- There is a need for better understanding of co-administration OCV with other immunizations and their interactions
- There are no current publications on the effectiveness of Euvichol; only Johns Hopkins University and Epicentre have effectiveness data. Comprehensive analysis and publication of this data is needed.
- There is a need for improved PCR options, and an improvement in cholera diagnostic tools generally.
- Should all cholera surveillance be done in hotspots, or should there be interventions elsewhere?
- Surveillance research should be done in countries neighbouring outbreak countries.
- The GTFCC WASH pillar needs more implementation strategies based on findings of existing research.
- Cholera morbidity and mortality are increased in elderly people, but the data is poor (see case management working group summary). Existing data (e.g. at icddr,b and other treatment centres) should be used to perform higher quality in-depth analyses to build on these initial findings. This could be done with small funding from external donors.
- Incidence and mortality are also high in severely malnourished children. This requires a modification in ORS composition and the duration of standard rehydration times. This suggests the need for modestly-funded prospective clinical trials.

WHO global strategy for strengthening public health emergency surveillance

Emilie Peron, WHO Health Emergency Intelligence and Surveillance Systems Division

Dr Emilie Peron presented work on WHO's new surveillance strategy, a 10-year overarching strategic framework designed to enhance global, regional and national all-hazards surveillance and related information management systems. The desired outcome of the strategy is improved global capacity to prepare for, forecast, prevent, detect, and characterize epidemic, pandemic and other public health hazards and monitor the response to public health emergencies.

Phase I of the development process was a scoping exercise based on qualitative analysis of interviews with WHO technical teams and regional and country offices and a range of external partners including DHIS2, US CDC, MSF, the European Centre for Disease Control (ECDC) and the African Centre for Disease Control (AFCDC). This was complemented by semi-quantitative reviews and analyses of joint external evaluation (JEE) reports, state party annual reports (SPAR) under the International Health Regulations (2005) (IHR), and SPAR indicators, and the outcomes of a "world café" session in a global meeting with the WHO Health Information Management department. Phase II was an effort to integrate the lessons identified during the COVID pandemic, during which a review of 15 major assemblies, committees, commissions, and international meetings produced 245 recommendations.

Key quotes from the various recommendations reviewed included the following:

"WHO should develop a mechanism for States Parties to automatically share real-time emergency information, incl. genomic sequencing, needed by WHO for risk assessment [...]"

—IHR Review

"Create an agile health emergency system that can deliver on equity through better information sharing, and an end-to-end mechanism for research, development, and equitable access to common goods [...]"

—WHO Global Preparedness Monitoring Board (GPMB) report

"WHO to establish a new global system for surveillance based on full transparency by all parties, using state-of-the-art digital tools to connect information centres around the world and include animal and environmental health surveillance, with appropriate protections of people's rights."

—Independent Panel for Pandemic Preparedness and Response (IPPPR) report

"WHO strengthen the technical capacities of the WHE Program to include social scientists and gender-equality experts to address the socioeconomic & gender-related implications of public health emergencies"

—WHO Independent Oversight and Advisory Committee

A WHO working group was then established and began to consult, with ongoing, parallel informal consultation with external surveillance leaders. The summary recommendations of this process were for WHO to:

- Strengthen national, regional, and global surveillance through strengthening capacities and systems and simplifying processes for early warning and real-time communication of public health risks
- Ensure timely and comprehensive investigation and risk assessment of public health events
- Strengthen laboratory and genomic surveillance capacities to detect and diagnose new threats and share data, information, and samples

- Fully adopt and operationalise the One Health approach to improve prevention, monitoring, detection of, response to, and forecasting of human, animal, and environmental health risks.

This effort is supported by a number of underlying WHO documents, frameworks and international agreements, including the WHO 13th General Programme of Work 2019-2023; the IHR (2005); the Sendai Framework for Disaster Risk Reduction 2015-2030 (2015); the Health Emergency and Disaster Risk Management Framework (2019); the WHO Emergency Response Framework (2nd ed); the WHO Five-Year Global Strategic Plan to Improve Public Health Preparedness and Response (2019–2023); the WHA Resolution on “Strengthening WHO preparedness for and response to health emergencies;” and the October 2017 Tripartite Commitment to provide multisectoral, collaborative leadership in addressing health challenges.

The strategy will be structured around five high-level objectives (Figure 3), with defined outcomes, outputs and activities and frameworks for implementation and M&E. It addresses routine surveillance of epidemic-prone diseases for baseline, trend and impact analysis; early detection of public health events, their characterization and iterative risk assessment; monitoring of epidemics and pandemics and the impact of response activities; disease-specific programmatic needs; and assessments of health system readiness and utilization during emergencies .

Figure 1: Draft WHO surveillance strategy – vision and objectives



The next steps before the strategy is launched will be to seek endorsement from the WHO Health Emergencies Programme and the WHO surveillance strategy working group, then from WHO Regional Offices and other departments. After this will come a stage of engagement and consultation with partners and Member States, after which the strategy will be finalised and launched.

Plenary discussion: Perspectives and movement toward an integrated approach to cholera

Moderator: Philippe Barboza, GTFCC Secretariat

During this plenary, country presenters working with different pathogens shared their experiences in order to highlight the potential for greater collaboration with the work of the GTFCC.

Work of the WHO Immunization, Vaccines and biologicals Department (IVB)

Carole Tevi-Benissan, Immunization, Vaccines and Biologicals department (IVB), WHO

The work of the IVB department raises an increasing number of questions about cholera integration. Historically cholera has been managed on an emergency basis, but given recent developments in the work of the GTFCC, integration is moving closer.

The IVB department has asked country cholera focal points to work more closely with vaccine teams in countries. A workshop was organised in Nigeria to which vaccination colleagues were invited; it was not hugely successful, but another is being planned in DRC for Francophone countries, and it is hoped that country vaccination representatives will attend with a view to building closer cooperation with cholera teams.

One historical example to follow might be meningitis, which used to be in the portfolio of two separate WHO departments, epidemic management and vaccines. It took time for these teams to work together, but eventually the Director General decided that the vaccine department should take on the responsibility of introducing meningitis vaccines across Africa.

Integration must be at donor level too. Donors finance several campaigns, but rightly do not see the point of having countries do campaign after campaign, making routine vaccination is impossible. Normally, vaccination must be routine for elimination or eradication to happen; but cholera vaccination is not a routine approach.

With COVID-19, vaccination teams at WHO Headquarters and in countries decided to integrate COVID-19 into routine vaccination. WHO is clarifying what needs to be done to plan integrated campaigns – it is a time consuming and complex process that requires integrated planning, scheduling, activities, cold chain, training and more, all of which must be planned upstream in advance and. A WHO integration guide will be published soon.

Integration is not just about vaccines, but also about integrating vaccines with other healthcare processes and treatments, such as Vitamin A, and other interventions, such as WASH. There are obvious synergies: typhoid, for instance. WASH is a factor in both diseases, and both require multisectoral responses. Typhoid is now a routine vaccination included in EPI. Following a request from the Regional Immunization Technical Advisory Group for assistance in pushing African countries to adopt other typhoid control interventions, WHO is now working to develop an operational guide for this that will also be effective for cholera.

Countries are willing to do these types of interventions, but often guidance is lacking.

Meningitis

Lorenzo Pezzoli – WHO Meningitis programme

Meningitis has a GTFCC-inspired roadmap and a goal for 2030. These are less ambitious than their cholera equivalents: the roadmap talks about “defeating” rather than “eliminating” cholera, because meningitis is a multi-pathogen disease caused by bacteria, viruses and parasites and total elimination is impossible.

The central focus of the roadmap is on the four most harmful bacteria that cause disease. With this focus, the plan aims to eliminate epidemics of bacterial meningitis, most of which are caused by pneumococcus in the African meningitis belt.

Some aspects of this work are easy compared to cholera – the WASH focus is missing, for example – but there are common challenges, especially around the Roadmap’s first goal, eliminating epidemics. The first step is to confirm the presence of epidemics, as with cholera; but taking samples for meningitis confirmation is far more difficult as it requires cerebrospinal fluid. A great deal of work is needed to build capacity at the lowest levels of health systems to take and confirm samples.

Combining resources around these two bacterial diseases would allow a doubling or tripling of reach and a far more effective use of resources.

Haiti: integration of surveillance for different pathogens

Katilla Pierre

Haiti’s approach to cholera was integrated and multisectoral, involving many partners and a broad range of strategies and approaches, such as RRTs and sensibilisation campaigns. After a ten-year period of work to highlight the importance of hygiene and water treatment, some of the behaviour change improvements were evident when the COVID pandemic struck. A lot of people now treat water before consuming it.

Diarrhoeal surveillance is being reinforced and integrated into all institutions, combining with surveillance of other illnesses linked to diarrhoea, such as typhoid. That integration has helped: fewer and fewer people getting salmonella, for example. Cases still occur, because when culture is done for cholera it is also done for salmonella and shigella; and while cholera cases are gone, salmonella remains – though cases are falling.

The integration of pathology at institutional level reinforces surveillance of pathogens and diarrhoea-based illnesses.

DRC: surveillance of different pathogens

Placide Welo Okitayemba

Going vertical loses resources. In DRC, the cholera programme is targeted at the “elimination of cholera and the fight against other diseases,” not cholera alone. Even labs outside the cholera sphere can identify different germs that cause diarrhoeal diseases like salmonella and shigella. The Ministry has a department working on all diarrhoea-based illnesses. Surveillance is an integrated system into which everything is fed. For cholera elimination, cases are listed along with the extra elements that improve understanding of the dynamics of the epidemic and the residual cases. Integration is good, and the lab is the central element, and is used for all illnesses.

Grouping interventions such as diarrhoea-based illnesses makes surveillance more efficient.

When organising OCV campaigns, specificities need to be considered. Cholera does not impact the entire population: in DRC, with a population of 100 million, ten million are at risk. So making vaccines routine and integrating them into other campaigns requires careful management – they will not be needed in all regions.

Discussion

A period of open discussion followed that raised several themes.

- Hand washing and water surveillance are vital.
- Integration can pose difficulties and challenges on the funding side: the GTFCC has tried in the past to submit joint multi disease projects, to very little donor enthusiasm. Donors should listen more to networks like the GTFCC and engage with multi-illness projects, which will greatly increase their impact.
- Cholera has an opportunity that other vaccines do not, because it reaches whole communities that lack everything else, and responses can be used to design organised efforts to engage with those communities and see how their other needs can be met – all their needs, not just cholera.
- “When you have money, you work alone; when you don’t, you find a partner.” Calls for integration should only come from the players who need it and are genuinely interested in it.
- While the ideal approach in many situations may be to integrate, we should also analyse when and why we cannot – understand what can feasibly be integrated and what cannot.
- Integration does not mean diluting everything. Objectives are needed and duplication should be avoided. With typhoid, meningitis and cholera it is not logical to have three parallel initiatives reinforcing the same labs in the same districts. There is a clear opportunity here, earmarking money and using it efficiently rather than asking for more.

Closing

Frew Benson, GTFCC Chair and Philippe Barboza, Head of GTFCC Secretariat

Dr Benson and Dr Barboza closed the meeting with thanks to all who spoke and all who attended, whether in person or remotely, and to the organisations that funded, organised and hosted the meeting.

They highlighted some of the issues identified in a productive three days of discussion. It is five years now since the roadmap was launched and only eight more years until the 2030 target. Outbreaks have increased in the recent past and 22 countries have been affected by cholera in the six months preceding the meeting, with worrying increases in CFR.

The GTFCC is grateful to countries for their increasing willingness to share experiences and challenges, which is deeply appreciated. At this meeting 12 countries shared achievements and experiences developing, revising and implementing national cholera plans. One clear conclusion was that it is far better to have an imperfect plan that is implemented than a perfect plan that never is. Only eight years remain until 2030.

The achievements of countries to date is encouraging and inspiring for the GTFCC as it addresses its own challenges, particularly around community engagement, upscaling the CSP and the work of the IRP.

As we move towards 2030, measuring cholera-free status will be important, and surveillance is likely to move further into the spotlight.

Countries, donors, partners should take note of how quickly the last five years have passed. The next eight will go quicker. There is a need to put shoulders to the wheel and work harder.

Agenda

FINAL VERSION



GLOBAL TASK FORCE ON CHOLERA CONTROL

9th Annual Meeting of the Global Task Force on Cholera Control (GTFCC)
How do we transition from cholera outbreak response to cholera prevention?

27-29 June 2022

Veyrier-du-Lac, Les Pensières, France
(Virtual attendance for afternoon plenaries only)

Objectives of the meeting

The 9th Annual Meeting will be centered on the question “*how do we transition from cholera outbreak response to cholera prevention?*” Historically, cholera outbreak response has been the driving force behind global cholera efforts. Though rapid, effective response to outbreaks is an axis in the *Ending Cholera* Global Roadmap, we can only achieve our 2030 goals by shifting to cholera prevention. This year’s annual meeting will serve to continue this conversation and will be built upon the following objectives:

- Present the activities of the GTFCC secretariat, the GTFCC Country Support Platform (CSP), and Working Groups
- Discuss the implementation of the *Ending Cholera by 2030* global roadmap, identifying and sharing good practices, while surfacing challenges and bottlenecks and identifying solutions
- Share country updates on the progress of their cholera strategies and perspectives on the development and implementation of National Cholera Plans (NCPs), including key challenges, barriers, and needs for additional partner support
- Look at recent developments and innovations across the global roadmap’s pillars, including water, sanitation, and hygiene (WASH), healthcare system strengthening, surveillance, oral cholera vaccine (OCV), community engagement, and case management
- Highlight multisector approaches to achieving the goals of the global roadmap

Venue and Dates

This meeting will be conducted in a **hybrid format**. The meeting will occur from 27-29 June 2022 in Veyrier-du-Lac, Les Pensières Conference Center, in Annecy, France. Interested parties will also be able to join the afternoon sessions virtually (via Zoom).

Information on Scheduling

The official annual meeting sessions will occur **in the afternoons (from 14:00 each day)**. This approach to scheduling will allow for easier participation and will ensure that virtual participants from multiple time zones are able to join the meeting. Please note that side-meetings will be proposed in the mornings but are **not “formal”** aspects of the annual meeting agenda and are scheduled to facilitate adjunct conversations. **Virtual attendance will only be available during the afternoon sessions, with morning sessions occurring in-person only.**

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FINAL VERSION

Monday, 27 June 2022

Afternoon Plenary (In-Person and Virtual)

Session	Content
14:00-14:05	<p>I. Welcome remarks</p> <ul style="list-style-type: none"> Frew Benson, GTFCC Chairperson
14:05-15:45	<p>II. The global cholera control effort: An overview and updates from the GTFCC Secretariat and the Country Support Platform</p> <p><i>During this session, the GTFCC secretariat and Country Support Platform will present the progress made, achievements and challenges encountered over the past year.</i></p> <ul style="list-style-type: none"> Overview of major achievements, progress, challenges, and perspectives <i>Philippe Barboza, GTFCC Secretariat</i> Update from the Country Support Platform (CSP) <i>Thomas Mollet, CSP Coordinator</i> Recent developments on GTFCC advocacy strategy and perspectives <i>Marion Martinez Valiente, GTFCC Secretariat & Jayne Palani, GTFCC CSP</i> <p><i>Following presentations, participants will engage in a Q&A session.</i></p>
15:45-16:00	<p>IV. Coffee Break</p>
16:00-17:25	<p>V. Regards Croisés: Looking Across the GTFCC Working Groups</p> <p><i>During this session Chairs of the GTFCC working groups will highlight recent developments of each of the Working Groups and will also discuss interactions between working groups and perspectives to improve cross-cutting initiatives and approaches, as per the Global Roadmap. This will include presentation of GTFCC technical notes, guidance and tools developed since last Annual Meeting.</i></p> <p><u>Speakers include:</u></p> <ul style="list-style-type: none"> Case Management – Iza Ciglenecki, MSF OCV – Lucy Breakwell, US CDC Surveillance/Epidemiology – Raoul Kamadjeu, Unicef Surveillance/Laboratory – Marie-Laure Quilici, Institut Pasteur WASH – Nurullah Awal, WaterAid <p><i>Panel on stage for live discussion led by the Moderator, among Chairs and with the audience.</i></p>
17:25-17:30	<p>VI. Daily Conclusion/Wrap Up</p>
18:00-19:30	<p>VII. Poster Session and Cocktail Hour</p> <p><i>At the end of Day 1, researchers, practitioners, and country representatives will have an opportunity to share their work and progress toward Cholera Roadmap goals.</i></p> <p><i>Note: a template will be provided by the GTFCC Secretariat.</i></p>

FINAL VERSION

Tuesday, 28 June 2022

Afternoon Plenary (Virtual and In-Person)

Session	Content
14:00-14:05	<p>I. Welcome back</p> <ul style="list-style-type: none"> Frew Benson, GTFCC Chairperson
14:05-15:30	<p>II. Panel 1: Country Updates [part 1 with a focus on NCP development and revision]</p> <p><i>During this session, country representatives will provide a country-level overview and relevant updates on the status of in-country cholera control and prevention efforts with a focus on NCP development and revision.</i></p> <p><u>Speakers include:</u></p> <ul style="list-style-type: none"> Bangladesh – Prof. Nazmul Islam Nepal – Rajesh Pandav Ethiopia – Aschalew Abayneh Workineh Kenya – Dr Emmanuel Okunga Mozambique – José Paulo Langa South Sudan – John Rumunu Regional focal points WHO – Muhammad Tayyab (EMRO), Vincent Sodjinou (AFRO) <p><i>Following updates from the country representatives, participants will engage in a Q&A session alongside all country representatives present.</i></p> <p><i>Note for speakers: a template will be provided by the GTFCC Secretariat.</i></p>
15:30 – 15:55	<p>III. Focus on the design and launch of the preventive OCV program within Gavi's portfolio</p> <p>Gavi, the Vaccine Alliance, will provide an update on the design and launch of the preventive OCV program within Gavi's portfolio.</p> <p><u>Speaker:</u></p> <ul style="list-style-type: none"> Gavi, the Vaccine Alliance Allyson Russel, Program Manager <p><i>Following the presentation, participants will engage in a Q&A session.</i></p>
15:55-16:05	<p>IV. Coffee Break</p>
16:05-17:25	<p>V. Panel 2: Country Updates [part 2 with a focus on NCP implementation]</p> <p><i>During this session, country representatives will provide a country-level overview and relevant updates on the status of in-country cholera control and prevention efforts with a focus on NCP implementation (first results, lessons learned, challenges, identified priorities etc.).</i></p> <p><u>Speakers include:</u></p> <ul style="list-style-type: none"> Democratic Republic of the Congo – Dr Placide Haiti – Katilla Pierre Nigeria – Sebastian Yennan Zambia – Prof Zulu Zanzibar – Yahya Mselem Zimbabwe – Dr Munyaradzi Dobbie Regional focal points WHO – Philippe Barboza (on behalf of SEARO) <p><i>Following updates from the country representatives, participants will engage in a Q&A session.</i></p>
17:25-17:30	<p>VI. Daily Conclusions/Wrap-Up</p>

FINAL VERSION

Wednesday, 29 June 2022

Afternoon Session (In-Person and Virtual)

Session	Content
14:00-14:05	<p>I. Welcome back</p> <ul style="list-style-type: none"> Frew Benson, GTFCC Chairperson
14:05-15:05	<p>II. Discussion: Centering Communities in Cholera Prevention Efforts Across the Roadmap Pillars</p> <p><i>While all roadmap pillars are integral to the success of the global roadmap, ensuring the buy-in of communities is crucial. During this plenary, partners will convene to discuss the importance of community engagement, share experience and good practices to identify concrete ideas and ways forward for further consideration across all pillar areas.</i></p> <p><u>Speakers include:</u></p> <ul style="list-style-type: none"> NIH Mozambique - Dr Jose Paulo Langa WHO Nepal – Dr Mona Pradhan MoH Zimbabwe – Dr Munyaradzi Dobbie
15:05-15:45	<p>III. Discussion: Utilizing Research to End Cholera</p> <p><i>Research plays a critical role in cholera control and prevention efforts. During this discussion, key research partners will discuss the evolution of research projects and priorities in the field. Country representatives will also join partners to discuss the importance of research in their national cholera efforts.</i></p> <p><u>Speakers include:</u></p> <ul style="list-style-type: none"> IVI - Julia Lynch ICCDR, b - Iqbal Hossain University of Cambridge - Ankur Mutreja
15:45-16:00	IV. Coffee Break
16:00-17:00	<p>V. Plenary Discussion: Perspectives and movement toward an integrated approach</p> <p><i>During this plenary, countries will be invited to share their respective cross-pathogen experiences, partners will be invited to explain their efforts in providing daily technical support, and donors will be invited to discuss their contributions on breaking siloed approaches in favor of more collective approaches moving forward. This, in turn, will highlight the potential for greater cross-collaboration in responding to pathogens.</i></p> <p><u>Speakers include:</u></p> <ul style="list-style-type: none"> WHO – Emilie Peron Haiti – Katilla Pierre WHO – Carol Tevi Benissan Democratic Republic of the Congo – Dr Placide WHO – Lorenzo Pezzoli
17:00-17:15	<p>VI. Annual Meeting Conclusions and Final Thoughts</p> <ul style="list-style-type: none"> Frew Benson, GTFCC Chairperson and Philippe Barboza, Head of GTFCC Secretariat
17:15	End of the 2022 Annual Meeting