Second Meeting of the Global Task Force on Cholera Control

15-16 June 2015 – Geneva, Switzerland
Acknowledgements

This report of the second meeting of the Global Task Force on Cholera Control (GTFCC) was compiled by the Control of Epidemic Diseases (CED) Unit in the Department of Pandemic and Epidemic Diseases (PED) at WHO/HQ.

Interest in attending the second meeting was overwhelming, and required a bigger venue to host the participants compared to the first meeting. We wish to thank all our partners including other UN agencies, research institutions, universities, government and nongovernmental organizations (NGOs), donors, representatives of health ministries for attending this meeting and for providing technical input and comments to the report. A full list of participants is attached in Annex 1. CED also wishes to thank the collaboration and input of numerous experts within WHO, who are also listed in Annex 1.

For the second time, Professor David Sack, Department of International Health, John Hopkins University Bloomberg School of Public Health chaired the meeting and deserves a special mention.

Mr Kai Lashley is gratefully acknowledged for writing and editing this report.
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<th>Description</th>
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<tr>
<td>APW</td>
<td>Alkaline Peptone Water</td>
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<tr>
<td>AWD</td>
<td>Acute Watery Diarrhoea</td>
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<tr>
<td>GIS</td>
<td>Geographic Information System</td>
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<tr>
<td>GTFCC</td>
<td>Global Task Force on Cholera Control</td>
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<td>ICG</td>
<td>International Coordinating Group</td>
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<tr>
<td>IFRC</td>
<td>International Federation of Red Cross and Red Crescent Societies</td>
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<tr>
<td>OCV</td>
<td>Oral Cholera Vaccine</td>
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<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<tr>
<td>MSF</td>
<td>Médecins Sans Frontières</td>
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<tr>
<td>NGO</td>
<td>Nongovernmental organization</td>
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<tr>
<td>PCR</td>
<td>Polymerase Chain Reaction</td>
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<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>WASH</td>
<td>Water, Sanitation and Hygiene</td>
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<td>WG</td>
<td>Working Group</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Introduction

Word has spread that the Global Task Force on Cholera Control (GTFCC) has indeed been 'revitalized', and is committed to multisectoral collaboration in order to reduce cholera's global burden of disease. Since the GTFCC held its first meeting in June 2014 stakeholders support has been growing. During that meeting, working groups were established in five key domains of cholera control and prevention – surveillance/epidemiology; oral cholera vaccines (OCVs); case management; water, sanitation and hygiene (WASH); and communication/social mobilization. Despite the ongoing Ebola virus disease outbreak in Africa that has strained the capacity of affected governments, the World Health Organization (WHO) and other international health organizations, stakeholders involved in these working groups met over the course of 2014/2015 to outline areas of work for cholera control in the short- and long-term.

One year on, the GTFCC Secretariat convened stakeholders for the second meeting to share what has so far been done by the working groups, share global and regional perspectives on cholera control and prevention and detail areas of work for 2015/2016. Interest in attending the second meeting was overwhelming, and required a bigger venue to host the participants, which included international health actors, nongovernmental organizations (NGOs) and ministries of health of cholera-stricken countries.

The Secretariat decided to capitalize on the opportunity afforded by having stakeholders assembled for the second meeting by not only providing them with updates on what has been set in motion since the first meeting, but also putting them to work. Participants were divided into subgroups in the afternoon of day 1 to work on specific issues related to cholera control and prevention; during the afternoon of day 2 each subgroup returned to the main room to present their recommendations and get them validated by the whole group.

What follows is a report of the proceedings of the second meeting of the GTFCC, summarizing these recommendations while also highlighting the successes and failures that have occurred globally and regionally in the area of cholera control and prevention.
Plenary session I: GTFCC activities in the first year since 'revitalization'

Dr Sylvie Briand, Director of the Department of Pandemic and Epidemic Diseases, opened the meeting, noting that the disease burden of cholera continues to remain high. Underreporting makes accurate projections of disease burden difficult. While steps have been made towards cholera control – notably the revitalization of the GTFCC, which culminated in the first meeting of the GTFCC in June 2014 – more synergy of efforts and application of innovation is required. For example, the promising results of the prequalified OCV Shanchol™ and future vaccines could kick-start efforts and become a part of an integrated response to cholera prevention and control.

The director noted the increased attendance since the first GTFCC meeting and thanked the participants (their organizations shown in Figure 1) for their work. On behalf of the GTFCC, she also gratefully acknowledged the financial support of the Bill and Melinda Gates Foundation.

Following Dr Briand's speech, summaries of the activities since the first meeting were presented.

Figure 1. Partners involved with the GTFCC

Update on activities since the first GTFCC meeting (Lorenzo Pezzoli)

David Sack, the chairperson of the GTFCC, stated his desire to see an end to cholera as a major public health problem, and sees the collaborative work of the GTFCC as a means to that end: "Cholera is a complex public
health problem requiring cross-sectoral solutions and broad stakeholder collaboration”.

Following the chairperson's introduction, Lorenzo Pezzoli from the GTFCC Secretariat summarized the task force's goals and methods of working. One of the goals of the first meeting was to elucidate where working groups could focus to achieve short-term gains (the so-called 'low-hanging fruit' which can be accomplished in 12 months), and lay out a research agenda for the future; Dr Pezzoli noted, however, that in many instances the working groups "had reached higher than just the low-hanging fruit".

For an explanation of the history of the GTFCC and its terms of reference, see the report that followed the first meeting\(^1\) or the GTFCC website: [http://www.who.int/cholera/task_force/en/](http://www.who.int/cholera/task_force/en/). In brief, the GTFCC objectives are:

- Support global strategies for cholera prevention and control;
- Provide a forum for technical exchange, coordination, and cooperation on cholera-related activities;
- Support the development of a research agenda with special emphasis on monitoring and evaluating innovative approaches to cholera prevention and control;
- Increase the visibility of cholera as an important global public health problem;
- Strengthen countries’ capacity to prevent and control cholera.

The activities of the GTFCC were ordered into five domains during the first meeting:

- Surveillance/epidemiology
- Oral cholera vaccine
- Case management
- Water, sanitation and hygiene (WASH)
- Communication/social mobilization.

There are seven working groups that support the domains above, several of which have met formally or informally over the past year.

1. Epidemiology and surveillance
2. Laboratory and surveillance
3. Patient care\(^2\)
4. WASH
5. Oral cholera vaccine
6. Communication, advocacy and social mobilization
7. Training\(^3\).

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\(^2\) These working groups are currently being formed.
The three that met in the past year are summarized below. Participants of the second GTFCC meeting were given the notes from each of the working groups that had thus far met.

**Epidemiology laboratory and surveillance working group**

Review and validate procedures for cholera surveillance:

- Case definitions, endemic/epidemic, cholera 'hot spots' (glossary of cholera terms);
- Minimum data needs;
- Reporting, analysis, and dissemination;
- Systems for alert and response;
- Role of lab (culture, RDTs, and molecular techniques);
- Role of environmental surveillance;
- Role of mapping;
- Role of infectious disease modelling.

**Communications working group**

This group has proposed key messages for the development of a global 'concept of communication', a phased plan (with achievable goals) beginning with small-scale pilot projects in a few countries. Stakeholders from cholera-endemic countries and WASH actors should be included at an early stage.

An additional activity under this category is the dissemination of the newsletter titled Cholera Network News to all GTFCC members. The newsletter provides updates about the GTFCC; its second edition is to be mailed in late June 2015. Anyone can subscribe: http://eepurl.com/bbYc89. Or write to pezzolil@who.int.

**Proceedings of the OCV working group (David Sack)**

The working group met on 17-18 November 2014 in Geneva, followed by a teleconference on 20 February 2015. The group’s second face-to-face meeting will take place on 22-23 September 2015.

**Topics of work**

The group was to review and validate the following:

- Priority medium-term research agenda for OCV;
- Monitoring and evaluation (M&E) protocols for OCV campaigns;
- Procedures for OCV use in non-emergency settings (including criteria for risk assessment and vaccine allocation);
- Recommendations for administering OCV to travellers and pregnant women;
- Identify and overcome constraints to the use of OCV where needed.

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This working group has not yet convened face to face.
David Sack opened by saying that OCV is a pillar of a comprehensive strategy to control cholera, which includes M&E, identification of constraints of use, integration with WASH activities, and comprehensive review of the OCV 'learning agenda' (i.e. review of data from OCV campaigns), particularly with respect to OCV's safety for use by pregnant women.

One of the obstacles to the use of OCV is its relatively unknown status as a tool in reducing cholera's burden of disease. Data from recent trials⁴ are showing that OCV can be effective in reducing cholera disease burden, particularly in conjunction with improving the 'standard' control measures, but these findings have not yet become common knowledge. Other constraints mentioned included: cold chain management and exploring possibilities of integrating OCV with oral polio campaigns.

Such integration of vaccine campaigns would be much more cost-effective than an individual campaign. To quantify how much more cost-effective an intervention could be, stopcholera.org (managed by Johns Hopkins university) developed the vaccine introduction cost-effectiveness (VICE) calculator⁵, which allows for determination of ways in which vaccine interventions would save disability-adjusted life years (DALYs).

It was also noted that the demand for OCV continued to exceed supply. The OCV stockpile (approximately 2 million doses) established in 2013 and managed by the International Coordinating Group (ICG) of OCV – an autonomous group comprising WHO, MSF, IFRC – is by design for emergency use. Therefore, emergency requests (e.g. following disasters, outbreaks) were guaranteed (as long as enough doses are present in the stockpile) while use in hot spots was not. Figure 2 shows the decision tree developed to determine if OCV use should be considered during cholera outbreaks.

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⁵ https://www.stopcholera.org/resources/vaccine-introduction-cost-effectiveness-vice-calculator
Proceedings of the laboratory and surveillance working group (Marie-Laure Quilici)

The working group met on 19 December 2014 at the Pasteur Institute in Paris.

Topics of work

- Agree on procedures surrounding rapid diagnostic tests (RDTs) and recommendations for countries
- Agree on procedures surrounding *Vibrio cholerae* molecular typing techniques (including revising the biological classification) and recommendations for countries
- Agree on gaps and needs with regards to laboratory capacity in cholera-endemic countries
- Agree on road map and next steps for the creation of the cholera laboratory network

One of the first tasks of the WG was to review and validate the WHO briefing note on use of cholera RDTs in the field. The WG agreed that RDTs are better used to detect cholera outbreaks in populations rather than for individual diagnoses\(^6\) and proposed an algorithm for their use in

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\(^6\) The sensitivity and specificity of RDTs is not optimal; any results testing positive should be confirmed in a laboratory using traditional culture-based methods.
the field. Their discussion concluded before reaching consensus on a few additional points related to RDTs, which they addressed on day 2 of the meeting during subgroup work:

- Could RDTs testing only for strain O1 be recommended for Africa at least?
- Should RDTs be evaluated in the country in which they are introduced, and if so how?
- Should the WG change the recommendation about culture to confirm RDTs (culture or PCR)?
- Should the WG include a table listing the sensitivity and specificity of different RDTs evaluated in the laboratory and/or field?

The next task of the WG was to review and validate the WHO briefing note on the use of molecular typing techniques in the field (e.g. determining the methods to employ, the situations/countries in which to employ them, and designating the laboratories to conduct the testing). The group also discussed the advantages and disadvantages of various typing techniques. While the group highlighted many issues with respect to the briefing note, they did not reach consensus about its contents; finalizing the note was therefore moved to the agenda of the next working group meeting.

The next meeting's agenda also outlined the following work on RDTs: reviewing evaluations of nine commercially-available RDTs, reviewing the efficacy of enriching samples to improve specificity, reviewing transport media and the requirements needed to control the quality of batches of RDTs as well as the finalization of a generic protocol for field evaluation of RDTs (including the choice of the gold standard).

It was decided for the next working group meeting to also address the issues of a global cholera laboratory network and a data bank of cholera strains to facilitate the exchange of cholera data regionally and globally. Creation of a prioritized operational research agenda and assignment of tasks and responsibilities will also occur at the next meeting. It was noted that external help on these issues is always welcome.

**Proceedings of the WASH working group (Thierry Vandevelde)**

The working group met on 4-5 May 2015 at the headquarters of the United Nations Children's Fund (UNICEF) in New York City.

**Topics of work**

1. **WASH strategies**: identify specific WASH interventions in various contexts including: emergency response, ongoing preparedness, long-term interventions, OCV campaigns.
2. **Efficiency of WASH interventions**: identify an investment case for WASH interventions and plan for its development.
3. **Formulate recommendations** for key WASH practices to be implemented at local level for cholera control.
4. **Advocacy and funding**: identify evidence-based approaches including essential personnel, material and budget to advocate for WASH interventions in high-risk cholera areas.
Each of these topics was addressed by the WASH working group. The working group identified 20 priority issues for action, each of which was defined with expected outputs and timelines, where possible. Nine of the 20 priority issues do require specific funding to allow the WG to produce the necessary reports prior to the 2016 GTFCC meeting.

The example discussed was that of evidence-based household disinfection, one of the issues identified by the subgroup on WASH practices. One of the outputs of the subgroup is to be a review of the evidence about household disinfection, distribution of disinfection kits and household spraying of chlorine. Following this the subgroup will identify the gaps in evidence and indicate where research is needed, with the ultimate goal of writing a briefing note summarizing the evidence and proposing recommendations in light of considerations such as stigma, cost, government policy, scale and documentation of impacts. A timeline for each priority issue was developed, showing the actions required to implement them.

Prior to sharing other examples of outputs, it was noted that the activities of the WASH working group should not occur in a vacuum and encouraged communication with the other working groups to determine possible synergies. Future outputs included:

- Position paper defining and describing the WASH recommended strategies in response to various situations;
- Epidemiological-WASH approach to define targeted methodologies;
- Technical brief about the use of a geographic information system (GIS);
- One or more investment cases, with supporting case studies;
- A social mobilization strategy that would promote a combination of different interventions depending on the context;
- Identity two priority countries to begin advocacy efforts.

A lively discussion followed the presentation. In particular, comments focused on operationalizing the integration (or 'cross-talk') of WASH activities with the other working groups; it was suggested that a definite mechanism was needed to ensure this occurred. The Secretariat suggested the meeting space itself provided the forum to share experiences between working groups in the short term and that in the long-term the cholera repository could also become a space to exchange ideas.

The Cholera Training Repository (Arlette Communier)

Work on a cholera training material repository began in November 2014, through the support of UNICEF. The forthcoming repository will contain training materials for those working on issues related to cholera.

Specific objectives include:

- Collect and analyse existing training materials;
- Identify gaps in existing materials;
• Translate and/or adapt and/or develop new training materials on cholera as necessary;
• Develop a Web application to access training materials on the GTFCC website.

The users of the repository are also its suppliers of information: the initial call for information resulted in a huge amount of material from the individuals and organizations involved with the GTFCC – primarily in English and French, but also in Spanish and Arabic – which was divided into six categories:

• Key resources (articles, guidelines, tools);
• Case studies;
• Exercises;
• Lectures (includes 'summary' sheets indicating objectives, target audience, etc.): Searching by keyword is possible (e.g. "outbreak investigation") as is providing feedback on materials;
• Videos;
• Training packages (including educational games, handbooks and briefing documents).

Figure 4 provides an example of a summary sheet.

**Figure 4. Organization of the summary sheet**

<table>
<thead>
<tr>
<th>Title</th>
<th>Cholera in Mudzi district, Zimbabwe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>Epicentre-WHO HQ</td>
</tr>
<tr>
<td>Date</td>
<td>Not specified</td>
</tr>
<tr>
<td>Target audience</td>
<td>District Level (management team)</td>
</tr>
<tr>
<td>Language</td>
<td>English and French</td>
</tr>
</tbody>
</table>
| Learning objectives | • Describe the principles of risk assessment  
• Describe the principles of outbreak management  
• Understand key steps in outbreak investigation  
• Identify outbreak preparedness activities |
| Learning approach | 8 questions to propose to a group of participants. The participants play the roles of a district management team. Each role is described. For the facilitators: comments and suggested answers |
| Duration | Time defined for each question = 45 min to one hour. Total = 8 hours |
| Context | In October 2008 the water supply in Mudzi became erratic due to a breakdown in water distribution from ZINWA the national water company. The District Health Office has been informed that there are cholera cases in Harare, the capital. No cases have been reported in the past few months in Mudzi district. |
| Content | Background/introduction  
Section 1: Outbreak preparedness  
Section 2: Outbreak investigation  
Section 3: Outbreak response  
Section 4: Organising a cholera treatment centre  
Section 5: Responding to the media  
Section 6: Social mobilisation  
Section 7 Post outbreak activities  
Section 8 (optional) Vaccination |
| Comments | • Very good case study focussed on process  
• Context well described, complete, easy to understand  
• Well organized to prepare a team at district level (repartition of the roles within the group) |

The GTFCC Secretariat is asking for volunteers to test the Web application (e.g. navigation) and make comments. If you would like to volunteer, make contact with the Secretariat: communier.arly@gmail.com. Once the
Functioning of GTFCC (William Perea)

A summary of the work done to establish the GTFCC was presented. 'Revitalization' of the task force began in 2011 following World Health Assembly resolution WHA64.15 (“Cholera: mechanism for control and prevention”) and in 2013 with the financial support of the Task Force for Global Health and Bill & Melinda Gates Foundation (BMGF).

The first meeting of the GTFCC took place in June 2014. Since the first meeting, 24 partners have expressed an interest in joining the GTFCC. The GTFCC Secretariat is housed at WHO, and through two-year funding from BMGF employs one full-time employee. While a chairperson and vice chair were suggested during the first GTFCC meeting, no vice chair has been nominated. Working groups conduct the work of the task force (seven of which have been formally established) and an initial broadcast of the task force's revitalized role came through a CNN bulletin.

Key issues going forward include:

- To further elucidate the roles of the chairperson (e.g. public voice of the GTFCC or simply leading the annual meetings? Is a vice-chairperson needed?), the Secretariat (e.g. support of GTFCC activities or providing coordination and leadership?) and the distinction of core and rotating members (e.g. so far there has been no difference in their contributions).

- Should the number of GTFCC members remain limited? Numerous partners are requesting to be part of the GTFCC. There is a need for a forum to exchange ideas and collaborate; would more stakeholders inform that process or dilute the process of making decisions?

A short discussion followed about the composition of the GTFCC, its role and the working groups. Among the salient points raised:

- Cholera control overlaps with Ebola virus disease control; once the 'crises' of outbreaks fade from public memory, however, funding can become an issue (e.g. Haiti). Therefore sustainable funding will become an issue.

- Industry has a role in the GTFCC as observers. Conflicts of interest (among industry, for example) make it important to continue having those involved in the GTFCC declare their interests to ensure the task force does not focus on any one particular area of cholera control.

At the end of the discussion it was stressed that the GTFCC is more than the Secretariat; it is represented by all of the stakeholders present—even those not attending but still active in cholera control.

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7 http://www.who.int/cholera/task_force/Report_mtg_June2014_GTFCC_21Nov2014.pdf?ua=1
Plenary session II: Global cholera control

During session II, the state of cholera control and prevention globally and regionally was discussed.

Cholera epidemiological review for 2014 (Dominique Legros)

Despite being preventable and treatable, Cholera is still claiming lives: 143,581 cholera cases including 2,219 deaths were reported to WHO in 2014. The global trend since 1990 shows an increase in cholera cases – over 100,000 reported\(^8\) cases each year globally, which represents a collective public health failure to control cholera.

The regions where cholera is still a public health problem are known, yet hot spots persist despite control efforts. Countries in the South-East Asia Region, African Region, Eastern Mediterranean Region and Region of the Americas are still being affected. Of note in the Americas in 2014: a spike in cholera cases in Haiti towards the end of the year, despite concerted efforts to control it, led to 27,753 cases and 296 deaths in Haiti during the year; and 14 cases reported in Mexico have been proven to be locally transmitted rather than imported, which is alarming because it means that cholera could be gaining a foothold on the mainland once again.

Also alarming is the underreporting of cholera cases. This occurs for a number of reasons; inadequate surveillance is often the culprit, but misdiagnosis plays a large role as well. More pernicious, however – and much more difficult to correct – is the pride/fear factor: a country may not wish to be labelled as "cholera endemic" or as having an outbreak for fear of negative impacts on trade and tourism. Whatever the causes, underreporting – which occurs in many countries but is particularly prevalent in India and Bangladesh – is a major impediment to cholera prevention and control. For example, 4,031 cases and 21 deaths were reported in India in 2014. The International Vaccines Institute estimates, however, that India's annual number of cases is approximately 830,000\(^9\) – a burden much greater than official figures.

Only concerted multisectoral interventions by governments of countries where cholera is endemic and partners will reduce the burden of disease.

Regional perspective: cholera control in the African Region
(Rebecca Sodjinou)

As mentioned in the global cholera epidemiological review, the African Region bears a large share of the global cholera disease burden. Recurring outbreaks occur in a concrete number of countries – Democratic Republic of the Congo, Ghana, Kenya, Malawi, Mozambique, Nigeria, South Sudan, the United Republic of Tanzania – and cholera represents 30% of all

\(^8\) Given that populations affected are often living in low-resource settings where cases are underreported, the actual disease burden is likely to be higher than what is officially reported.

reported health events, causing high morbidity and mortality (a case fatality rate greater than 1%).

This burden could be prevented and controlled but for some common and longstanding obstacles:

- Poor water and sanitation;
- Insufficient multisectoral approaches;
- Weak implementation of innovative approaches, especially OCV;
- Insufficient preparedness for cholera prevention and control;
- Insufficient resources for the implementation of a long-term strategic plan;
- Lack of leadership/ownership of the issue (national and local), particularly the perception of cholera as a 'lost war'.

Within the region, countries and partners are collaborating to implement cholera prevention and control activities, particularly under the WHO African Region cholera multi-year plan. Developed in close collaboration with WHO headquarters, the plan will be used as operational research on the effectiveness of qualified interventions on the burden of cholera, while reducing the cholera burden. The focus is on eight countries (Benin, Burundi, Democratic Republic of the Congo, Ghana, Mozambique, Namibia, Nigeria, Uganda) and on the hot spots within each of those countries. Scaling up the use of OCVs is also a component (e.g. campaigns are ongoing in Ethiopia, Malawi, South Sudan and the United Republic of Tanzania). It was noted that there is a need for more resources to fully implement the plan.

Alongside the multi-year plan is the implementation of the other proven components of cholera control and prevention:

- Enhanced surveillance (e.g. daily monitoring of media, identification and verification of rumours, timely alerts to health system managers);
- Laboratory confirmation;
- Information management (e.g. adding cholera events to the WHO Event Management system, data collection and analysis through the Strategic Health Operations Centre, monthly outbreak bulletin\(^{10}\)).
- Case management;
- WASH (particularly in hot spots);
- Technical support to affected countries for rapid control of outbreaks (Ghana, Malawi, Mozambique);
- Risk mapping and prioritization of the most at-risk countries.

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Regional perspective: cholera control in the Eastern Mediterranean Region (Abdinasir Abubakar)

Cholera remains a major public health risk in the Eastern Mediterranean Region. Estimated cholera cases in the region may be around 188 000 per year. The full extent of the cholera burden is difficult to estimate, however, due to weak surveillance systems (e.g. no community reporting) and underreporting. The latter is rampant due to the fear of overreaction from neighbouring countries as well as unwarranted restrictions on trade and tourism.

During the past decade, at least 13 out of the 22 countries in the region have reported cholera cases. This is due to multiple factors, but one in particular is the role of humanitarian crises and complex emergencies – affecting approximately 76 million people in the region. While cholera outbreaks have been reported from a number of countries in the region, those with complex emergencies are particularly susceptible. Sudan is a case in point. The ongoing conflict in the Darfur region that began in the 2000s has led to many internally displaced persons, which is a risk factor for cholera outbreaks. Data from 2006 showed the ‘waves’ of cholera cases came from regions in Sudan experiencing conflict. Data from 2013 reinforce this point: Somalia, Afghanistan and Pakistan, all countries experiencing internal conflict, had outbreaks of cholera.

The strategic framework for cholera prevention and control is the way forward in the Eastern Mediterranean Region: improving preparedness and response will lead to control/elimination of cholera (and diarrheal diseases) risk. It includes strengthening the elements considered to be the foundation for prevention of diarrheal diseases (WASH, surveillance, laboratory capacity, social mobilization, case management) as well as implementing response measures to disease outbreaks (e.g. sharing surveillance and other disease data between agencies and pre-positioning drugs and other medical supplies needed during outbreaks as part of epidemic preparedness and response plans). Use of OCVs is also a component (e.g. as a supplement to preventive measures in cholera-endemic countries like Somalia or Yemen).

Regional perspective: cholera control in Haiti (Ana Riviere-Cinnamond)

The discussion about the Region of the Americas began with Haiti. Following the January 2010 earthquake that killed over 300 000 and displaced 1.5 million, the already tenuous political structure was overwhelmed in providing emergency assistance to its citizens. The cholera outbreak that followed – which through 2014 has claimed over 8 500 lives – continues to cripple the country and spread to the Dominican Republic. Access to sanitation in Haiti, which was declining before the earthquake, has ensured that cholera continues to remain a public health emergency. This is evidenced by the fact that cholera cases in Haiti in the first 17 weeks of 2015 have almost tripled over those in the same period from 2014.
Given the cholera emergency continues in Haiti, a comprehensive elimination plan was developed, with five pillars:

1. Improving surveillance, alert & response: e.g. implementing community-based surveillance, and building capacity for culture at sub-national level, including systematically collecting samples for culture.

2. Improving case management: e.g. integrating cholera treatment into mainstream health care institutions to ensure sustainability and strengthening coordination between government institutions, and international partners\(^{11}\).

3. Improving water and sanitation: e.g. using water safety plans to target interventions in the most at-risk areas and monitoring water and sanitation conditions at local level.

4. Enhancing social mobilization and health promotion: e.g. raising awareness of the signs of cholera and ways to prevent it.

5. Implementation of an OCV programme (targeting 600 000 people by end 2015).

Between 2012 and 2014 the OCV programme provided vaccines to 338 000 people living in peri-urban slums, rural and urban communes. A few minor side-effects were reported (nausea, vomiting, abdominal pain, etc.). In 2015, the target for vaccination was 262 000 people in high-risk areas (i.e. those not previously vaccinated, density of population, or in areas with high incidence of cholera cases in 2014, or lack of WASH facilities). Monitoring and evaluation activities were conducted, notably by Partners In Health and the Centers for Disease Control and Prevention (acceptability, vaccine coverage, vaccine effectiveness studies).

Discussion also turned to the cases of cholera reported in Mexico. The 14 cases were traced to a river into which untreated waste was dumped; in the same river people drank and bathed, resulting in infection. Reservoirs of *V. cholerae* can persist in the environment. In Haiti for example environmental reservoirs are one of the challenges to eradicating cholera; the mangrove ecosystems in the Port-au-Prince bay/Artibonite River estuary were cited as an example. Such reservoirs mean that the risk of exporting cholera to other countries in the region is quite possible; and those countries with populations living in indigenous ways or extreme poverty are particularly susceptible to infection.

\(^{11}\) It was noted during the discussion that of the billions of dollars donated for Haiti’s earthquake relief, only 1% went to the government of Haiti.
Plenary sessions III & IV: parallel sessions and subgroup work

Participants were divided into four subgroups to review specific outputs achieved during the year in order to present them to the GTFCC for validation; they are not intended to duplicate the work already conducted in the working groups. The subgroups were:

- Oral cholera vaccines
- Laboratory
- Surveillance
- Advocacy.

The discussions of each subgroup are summarized below, followed by the validation of their recommendations.

Oral cholera vaccines (Lead: David Sack)

Topics of work

1. Evidence of the risks and benefits of vaccinating pregnant women with WHO prequalified cholera vaccines during mass campaigns;
2. Technical note on cholera prevention among international workers and travellers to and from cholera-affected countries;
3. Allocation process of oral cholera vaccines from the OCV stockpile managed by the ICG.

During the discussion of the subgroup there was a great deal of debate about recommending OCVs for travellers and international workers going to and from cholera-affected countries. In particular, the subgroup felt that it had insufficient expertise to make recommendations concerning the use of antibiotics to prevent asymptomatic or convalescent carriers from endemic countries transmitting the disease when they work in an at-risk country (e.g. UN peacekeepers, aid workers, etc.) and felt that this question should be referred to the clinical WG.

Validation of subgroup recommendations

1. Following an in-depth literature review, the GTFCC continues to support the current WHO recommendation\textsuperscript{12} regarding the use of killed oral cholera vaccines in pregnancy. Based on the analysis of the risks and benefits, the potential benefit of vaccinating pregnant women with OCVs outweighs the risk associated with the vaccination. Therefore, pregnant women should be included in vaccination campaigns with WHO prequalified killed OCVs.

2. Topic of cholera prevention among international workers and long-term travellers. Recommendations include:

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a. Only drinking safe water; where not possible purification tablets, chloramine, portable filters or boiling can be used to make the water safe for drinking (if turbid, water should be filtered first);
b. Wash hands frequently with soap and water or with alcohol hand sanitizer (e.g. before preparing food and eating, and after using the toilet);
c. Only eating safe food; i.e. cooking food thoroughly and consuming it while hot, covering the food, separating raw and cooked food, storing food at safe temperatures, using water and raw ingredients that are safe.
d. Vaccination is encouraged for those who are likely to be exposed to cholera.
e. In accordance with the WHO recommendations in *International Travel and Health 2012*\(^{13}\), vaccination can be considered for high-risk travellers.
f. There is insufficient data on potential effectiveness of vaccination in eliminating vibrio carriage. Given this, vaccination is not recommended in hopes that such vaccination will prevent transmission to other countries.

3. Allocation of OCV for non-emergency settings (see also Figure 5):
Limited numbers of doses will limit the use of OCV outside the ICG mechanism for the time being; available doses can be allocated through a separate mechanism under supervision of the OCV WG; discussed procedures for recognizing potential use of vaccine, conducting assessment and decision making by the OCV WG; need to make some doses available for research projects.

\(^{13}\) http://www.who.int/ihr/publications/ith/en/
Figure 5. Process for OCV allocation in non-emergency settings

Laboratory (Lead: Marie-Laure Quilici)

Topics of work

1. Cholera RDTs: draft a briefing note. Specific questions included: a) Could RDTs testing only for strain O1 be recommended for Africa at least? b) Should RDTs be evaluated in the country in which they are introduced, and if so how? c) Should the WG change the recommendation about culture to confirm RDTs (culture versus PCR)? d) Should the WG include a table listing the sensitivity and specificity of different RDTs evaluated in the laboratory and/or field?

2. Molecular tests for cholera surveillance: draft a briefing note, particularly the classification of Vibrio cholerae (this is linked with the diagnosis of V. cholerae by molecular techniques and could be part of the briefing note concerning molecular testing);

3. Plans to establish a global cholera laboratory network.

This subgroup worked a great deal on the topic of RDTs, which did not leave much time to make recommendations for the other two topics. Note that presentations by Balakrish Nair and Nick Thomson following the conclusion of the GTFCC meeting discussed advances in the field of molecular testing.

Validation of subgroup recommendations

1. Recommendation for RDTs to be included in the briefing note:
   a) There is a need to engage with manufacturers to ensure new products meet minimum quality standards (e.g. provide them with a target product profile).
   b) The subgroup recommends the use of RDT with performance estimates based on field evaluation among target populations. Each new production should be quality controlled with respect to
confirmed positive and negative stool samples; these controls should be centrally performed in reference laboratories to ensure good quality and comparability. For quality assurance, each country should validate performance at central level and maintain a set of confirmed positive and negative samples in their national or reference laboratory for lot testing prior to distribution and use in the country (at the discretion of individual countries). Where possible, countries should conduct post-marketing surveillance.

c) Culture and/or PCR should be used to confirm positive RDT results before announcing an outbreak (before confirming an alert).

d) Add in an annex to the briefing note a table listing the sensitivity and specificity of the different RDTs commercially available that had been evaluated in laboratory or the field. It should specify the type of sample used (stool/swab), the reference standard and whether it was a laboratory or field evaluation.

e) In case sample testing is delayed for more than one hour after collection, how should the samples be stored – at 4°C or at ambient temperature? Subgroup recommendation: Specimens should be stored at ambient temperature and if there is a delay in processing, transport medium such as Cary Blair or filter paper and sterile saline should be used.

2. Molecular testing: there is a public health need to update cholera nomenclature and to associate genotyping and phylogeny based on new global whole genome data.


**Surveillance (Lead: Martin Mengel)**

**Topics of work**

1. Glossary of cholera terms;
2. Guidance document on cholera surveillance.

The subgroup sought to review the guidance document on cholera surveillance and unify terms and definitions based on the glossary of terms supplied by Johns Hopkins University. This included shortening the definitions into a 'dictionary style' (one sentence per term) and standardizing definitions where multiple existed (e.g. the current WHO case definition of cholera).

**Validation of subgroup recommendations**

1. Core definitions were discussed, including:
   a) Acute watery diarrhoea (AWD): Acute watery diarrhoea is an illness characterized by three or more loose or watery (non-bloody) stools within a 24-hour period.
   b) Confirmed cholera: A patient of any age with AWD and from whom *V. cholerae* (O1 or O139) was isolated from a faecal sample during the illness by culture.
   c) Cholera infection: *Vibrio cholerae* (O1 or O139) can be isolated from faecal sample.
d) Passive surveillance: Reports of patients who have come to health facilities and are reported to have met the case definitions of cholera.

e) Facility-based active surveillance: Extensive review of health facility records to detect patients who meet the cholera case definitions.

f) Community-based active surveillance: Also referred to as active case finding in which field workers go to the communities to look for AWD cases in a defined population.

g) Sentinel surveillance: to be discussed at the next meeting of the surveillance WG.

h) 'Cholera outbreak' is being replaced by 'confirmed cholera': A sudden increase in the number of cholera cases above the expected number in a given area within a specific time period; the terms 'outbreak' and 'epidemic' can be used interchangeably.

i) Cholera-endemic area: An area where confirmed cholera cases were reported during three years of five years; the area can be defined as a region, a country, a district or a small locality.

j) Hot spots: Definition still under review by WHO; it will require further group discussion to be revised for the glossary of terms.

The following terms will be added to the guideline: cholera infection, cholera gravis (severe cholera) and cholera sicca (dry cholera).

Future discussion points include:
- Add outbreak investigation guide;
- Revise existing templates and guidelines (e.g. WHO's Cholera Outbreak publication14);
- Precise documentation of cases (GIS);
- Environmental surveillance (e.g. if possible using RDTs after enrichment).

And with the assistance of the laboratory working group, define:
- Standard operating procedures (e.g. for transport of samples)
- Use of RDT for surveillance, esp. outbreak confirmation.

**Advocacy (Lead: Rebecca Grais)**

**Topics of work**

1. Review the analyses of costs of different cholera prevention and control strategies (patient care, WASH, OCV);

2. Propose a strategy to advocate for a 'global cholera control programme' (as a synergy between countries, partners and donors);

3. Propose an agenda of work.

---

This subgroup focused on targeted messages for governments, donors and NGOs, within the context of a broader message: cholera is not a 'lost war', but one that has been won in various settings and can be won again. The targeted messages show each group where they can work (quick wins and long term), how they can resolve the obstacles and provide evidence (investment cases) and encouragement (GTFCC and others donors, governments and NGOs are companions in the mission and can lead the way).

Validation of subgroup recommendations

1. Main messages to governments, donors and NGOs:
   a) Cholera exists and it comes with costs – health care, financial (lost productivity), perception (affects tourism); the cost of inaction is actually quite high.
   b) Cholera can be eliminated – technically feasible, fairly easy to accomplish via a targeted, integrated, multisectorial approach (governments, donors and NGOs working together).
   c) There are benefits beyond cholera control, including other diarrhoeal disease prevention and control and "spill-over" effects into other sectors (e.g. education).

2. Investment cases for cholera elimination in hot spots:
   a) Investment case: costs and benefits of integrated approach including damage costs.
   b) Investment case of the integrated approach to eliminate cholera (fill data gaps, document lessons learned and cases themselves can become an advocacy tool).
   c) Different contexts and different interventions are used to illustrate range of scenarios.
   d) Common methodology is used across investment cases.
   e) Overarching all of the investment cases is the communications plan or strategy to support the GTFCC advocacy work including tools, standardized messages, identification of target audiences and dissemination of information (formal and informal).

3. GTFCC work plan: Its broad goal is to remind stakeholders that each actor is working towards the common goal of cholera elimination. To be successful the work plan will need:
   a) Cross-sectional working group
   b) Work plan (development of terms of reference)
   c) Case studies
   d) Success stories
   e) Investment cases (including 'translation' of these cases into easily-understandable lessons learned for advocacy and communications)
   f) Communications plan.
The final aspect of discussion of this group reiterated what other groups and participants stated throughout the meeting: that the working groups are not silos; each must work with the others to translate all of the energy and work of the GTFCC into the realizable goal of cholera elimination. The subgroup moved to have that aspect of the task force clearly stated and formalized.
Plenary session V: Strategy for the second year of GTFCC activities

There is much work to do with respect to cholera control and prevention. The focus of GTFCC's efforts in its second year will be on hot spots, particularly changing the institutional response from essentially passive to active. While passive response still saves lives, the switch to an active response will expand the benefits.

Such responses include enhancing multisectoral actions, and improving infrastructure; cholera can be controlled via development. Quick fixes like OCV campaigns do save lives but cannot provide long-term protection from the disease; it should be seen rather as what Dominique Legros calls "a key to the front door" opening the possibility of multisectoral approaches focusing on WASH, patient care, social mobilization and surveillance. After initially costly investments in WASH, the results will recoup the costs quickly, and offset the costs of patient care. Figure 6 shows a hypothetical situation in a cholera hot spot.

Figure 6. Hypothetic evolution of the proportionate investments in each domain of cholera prevention & control over the years in a cholera hot spot

Further actions include identifying more focal points in the WHO regions – two of whom presented regional perspectives on day 1 – and strengthening the GTFCC.

GTFCC members should continue to advocate for cholera control within and outside their institutions, coordinate interventions to support cholera control programmes/provide field technical support, implement M&E and research projects and help develop and validate guidance and strategies.
The Secretariat should continue to advocate for cholera control and mobilize donors, coordinate and organize support to countries, facilitate development of technical guidance and organize technical and strategic meetings.

**Targets for the second year of the GTFCC**

- Develop an investment case for cholera control;
- Organize regional workshops to review strategies for cholera control;
- Develop the cholera laboratory network;
- Develop at least two pilot control projects in two hot spots;
- Ensure broader use of OCVs;
- Develop guidance/technical notes for the domains of WASH, patient care, surveillance, laboratory and OCVs.

William Perea discussed the remaining questions about the GTFCC and its working groups on day 1. In order to accomplish the targets set for its second year, the GTFCC’s focus must remain concerted: working groups must continue to meet, discuss and deliver on their work agendas. The roles of chairperson and vice chair must be elucidated, so they too can add their strength to the work of cholera prevention and control. GTFCC meetings will continue to be held yearly, during which the strategy and progress towards the overall goal can be reviewed, measured and modified if necessary. Sustainable funding is also an issue: the grant from the BMGF ends in October 2017 and GTFCC members should consider establishing a ‘cholera fund’ to enable the task force to continue beyond this point.
## Annex 1. Meeting Programme

### Second Meeting of the Global Task Force on Cholera Control

**15 - 16 June 2015**  
**Hotel Starling, Geneva, Switzerland**

#### Day 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Presenter/Contact Person</th>
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<tbody>
<tr>
<td>8.30 – 9.00</td>
<td>Welcome coffee</td>
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<tr>
<td>9.00 – 9.15</td>
<td>Opening address</td>
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<td>9.15 – 9.30</td>
<td>Introduction of participants and appointment of chairperson</td>
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<tr>
<td>9.30 – 10.00</td>
<td>Update on activities since 1st GTFCC meeting</td>
<td>Lorenzo Pezzoli (WHO/GTFCC Secretariat)</td>
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<tr>
<td>10.00 – 10.10</td>
<td>Proceedings of OCV WG</td>
<td>David Sack (JHU)</td>
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<td>10.10 – 10.20</td>
<td>Proceedings of Lab WG</td>
<td>Marie-Laure Quilici (Pasteur)</td>
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<td>10.20 – 10.30</td>
<td>Proceedings of WASH WG</td>
<td>Thierry Vandevelde (Veolia Foundation)</td>
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<td>10.30 – 10.40</td>
<td>The Cholera Training Repository</td>
<td>Arlette Communier (WHO Consultant)</td>
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<tr>
<td>Time</td>
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<td>10.40 – 11.00</td>
<td>Coffee break</td>
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<td>11.00 – 11.30</td>
<td>Functioning of GTFCC</td>
<td>William Perea (WHO)</td>
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<td><strong>Plenary session II:</strong></td>
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<td></td>
<td><strong>Global cholera control</strong></td>
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<tr>
<td>11.30 – 11.45</td>
<td>Update on the global cholera situation in 2014</td>
<td>Dominique Legros (WHO)</td>
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<td>11.45 – 12.00</td>
<td>Regional perspective: cholera control in AFRO</td>
<td>Vincent Sodjinou (WHO)</td>
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<td>12.00 – 12.15</td>
<td>Regional perspective: cholera control in EMRO</td>
<td>Abdinasir Abubakar (WHO)</td>
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<td>12.15 – 12.30</td>
<td>Regional perspective: cholera control in Haiti</td>
<td>Ana Riviere-Cinnamonond (PAHO)</td>
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<td><strong>Plenary session III:</strong></td>
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<td><strong>Introduction to parallel sessions and subgroup work</strong></td>
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<tr>
<td>12.45 – 13.00</td>
<td>Objectives and functioning of subgroup parallel sessions</td>
<td>Lorenzo Pezzoli (WHO/GTFCC Secretariat)</td>
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<td>13.00 – 14.00</td>
<td>Lunch break</td>
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<td></td>
<td><strong>Parallel sessions (Part I)</strong></td>
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<tr>
<th>Subgroups</th>
<th>Review and validate outputs:</th>
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<td><em>Lead: David Sack (JHU)</em></td>
<td><em>Lead: Marie-Laure Quilici (Pasteur)</em></td>
<td><em>Lead: Martin Mengel (AMP)</em></td>
<td><em>Lead: Rebecca Grais (Epicentre)</em></td>
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<td>Objectives</td>
<td>1. Final agreement on the following technical documents in order to provide recommendations for GTFCC validation</td>
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<td></td>
<td>a. Briefing note on OCV in pregnancy</td>
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<td>b. Briefing note on OCV in travellers</td>
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<td>c. Process for vaccine allocation</td>
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<td>1. Final agreement on the following technical documents in order to provide recommendations for GTFCC validation</td>
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<td>a. Briefing note on RDTs</td>
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<td>b. Briefing note on molecular techniques</td>
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<td>2. Define the roadmap to set-up a global cholera laboratory network</td>
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<td>1. Final agreement on the following technical documents in order to provide recommendations for GTFCC validation</td>
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<tr>
<td></td>
<td>a. Glossary of terms</td>
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<td>b. Document on surveillance procedures</td>
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<td></td>
<td>1. Review the analyses of costs of different cholera prevention and control strategies</td>
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<td>a. Patient Care</td>
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<td>b. WASH</td>
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<td>c. OCV</td>
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<td>2. Propose a strategy to advocate for a “global cholera control programme” (as a synergy between countries, partners, and donors)</td>
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<td>3. Propose an agenda of work</td>
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| 14.00-14.15 | Briefing on objectives by subgroup lead                                                                 |
| 14.15-14.30 | Organization of work                                                                                   |
| 14.30-15.00 | Group work, including technical presentations                                                         |
| 15.00-15.30 | Coffee break                                                                                          |
| 15.30-17.00 | Group work, including technical presentations                                                         |

Cocktail: 18.00-20.00
### Day 2

#### Parallel sessions (Part II)

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<tr>
<td>09.00-10.30</td>
<td>Continuation of group work</td>
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<td>10.30-11.00</td>
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<tr>
<td>11.00-12.30</td>
<td>Preparation of presentations with recommendations for GTFCC validation</td>
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<td>12.30-13.30</td>
<td>Lunch break</td>
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#### Plenary session IV

**Validation of subgroup recommendations**

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<tr>
<td>13.30-14.00</td>
<td>David Sack (JHU)</td>
<td>Marie-Laure Quilici (Pasteur)</td>
<td>Martin Mengel (AMP)</td>
<td>Rebecca Grais (Epicentre)</td>
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<td>Advocacy</td>
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<td>15.30-16.00</td>
<td>Coffee break</td>
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<tr>
<td>Time</td>
<td>Session Description</td>
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<tr>
<td>16.00 – 16.50</td>
<td>Strategy and roadmap for the 2nd year</td>
<td>Dominique Legros (WHO)</td>
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<tr>
<td>16.50 – 17.00</td>
<td>Closing remarks</td>
<td>Chair</td>
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</table>
Annex 2. List of participants

2\textsuperscript{nd} Meeting of the Global Task Force for Cholera Control

15 – 16 June 2015

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