International Coordinating Group on vaccine provision for cholera

Report of the annual meeting

21 September 2021
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Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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</thead>
<tbody>
<tr>
<td>CFR</td>
<td>case fatality rate</td>
</tr>
<tr>
<td>COVID-19</td>
<td>coronavirus disease</td>
</tr>
<tr>
<td>GTFCC</td>
<td>Global Task Force on Cholera Control</td>
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<tr>
<td>ICG</td>
<td>International Coordinating Group</td>
</tr>
<tr>
<td>IFRC</td>
<td>International Federation of Red Cross and Red Crescent Societies</td>
</tr>
<tr>
<td>MSF</td>
<td>Médecins Sans Frontières</td>
</tr>
<tr>
<td>NCP</td>
<td>national cholera control plan</td>
</tr>
<tr>
<td>SD</td>
<td>Supply Division (of UNICEF)</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
</tr>
<tr>
<td>WASH</td>
<td>Water, sanitation and hygiene</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>YF</td>
<td>yellow fever</td>
</tr>
</tbody>
</table>
1. Introduction

The International Coordinating Group (ICG) on vaccine provision has existed since 1997, after a large-scale epidemic of meningitis in West Africa. Since then, stockpiles have been established of vaccines for meningitis, cholera, yellow fever (YF) and, most recently, Ebola virus disease.

The ICG consist of representatives of the four founding agencies: the International Federation of Red Cross and Red Crescent Societies (IFRC), Médecins Sans Frontières (MSF), the United Nations Children’s Fund (UNICEF) and WHO. They consult with many partners, including technical experts and vaccine suppliers. Gavi, the Vaccine Alliance, is the principal funder of the oral cholera vaccine (OCV) stockpile. In performing its mandate, the ICG pursue its guiding principles of ensuring equitable, timely access to essential vaccines while maintaining independent decisions based on objective assessment of scientific evidence.

The revolving ICG stockpile of OCV is complemented by the Global Task Force on Cholera Control (GTFCC), which seeks to reduce the risk of cholera outbreaks through preventive campaigns and other activities.

The objectives of the ICGs are to:

- allocate vaccine equitably by careful, objective assessment of risk based on epidemiological and operational criteria;
- deliver vaccines rapidly in response to infectious disease outbreaks;
- coordinate deployment of limited quantities of vaccines and other essential medicines;
- minimize wastage of vaccines and other supplies;
- advocate for readily available, low-cost vaccines and medicines;
- work with manufacturers through UNICEF and WHO to guarantee the availability of emergency stock supplies of vaccine; and
- follow standard operating procedures and establish financial mechanisms to purchase emergency vaccine supplies and ensure the sustainability of stocks.

The 2021 annual meeting of the ICG on Vaccine Provision for cholera was held remotely on 21 September 2021. The participants included representatives of WHO headquarters, including the ICG Secretariat, of the WHO Regional Office for Africa, UNICEF, with participants from both the Programme Group and the Supply Division (SD), MSF, the IFRC and Gavi. Representatives from vaccine manufacturers were also in attendance.

The objectives of the meeting were to:

- review the epidemiological situation of cholera in 2020–2021;
- review the campaigns supported by ICG during 2021;
- discuss OCV demand in 2020–2021 and supply forecasts;
- discuss manufacturers’ production plans and future vaccine developments; and
- decide on the size and composition of the OCV stockpile for 2022.
2. Epidemiological update 2020–2021

Since 2013, there has been a general decrease in the numbers of cholera cases and deaths reported worldwide, particularly in the African Region. In Haiti, the last country in the Americas in which cholera has been a significant public health issue, no local cholera transmission was reported in 2021. Over 95 million doses of OCV have been shipped to 22 countries through the combined ICG and GTFCC mechanisms since 2013, including 21.7 million between January and September 2021.

During the period October 2020–September 2021, cholera outbreaks occurred in Bangladesh, Benin, Cameroon, the Democratic Republic of the Congo, Ethiopia, India, Kenya, Mali, Mozambique, Niger, Nigeria, the Philippines, South Sudan, Togo and Yemen.

Recurrent outbreaks of cholera have occurred in southern Ethiopia since April 2019, when there were 20,000 reported cases and 320 deaths (case fatality rate [CFR], 1.6%), followed by two outbreaks in November 2020 and in March 2021. In 2021, Nigeria had the largest cholera outbreak for over a decade, with about 70,000 cases and 2300 reported deaths (CFR, 3.3%) in 26 of the country’s 36 states. The outbreaks in Ethiopia and Nigeria resulted in submission of two emergency requests to the ICG for OCV.

In Niger, an outbreak attributable to population movement across the country’s shared border with Nigeria was declared on 9 August 2021, with over 4650 cases and 149 deaths (CFR, 3.2%) in six of the eight regions of the country; exported cases were reported in Burkina Faso and Mali. Niger submitted an emergency vaccine request to the ICG.

Transmission of cholera remains high in the province of Cabo Delgado in Mozambique after two cyclones in 2019 and armed conflict, which have precipitated a humanitarian crisis. Over 3400 cases have been reported in Cabo Delgado and over 1500 in the neighbouring province of Nampula. As of September 2021, the country had yet to develop a long-term cholera prevention plan, nor had it submitted an emergency request for OCV to the ICG.

During early 2021, a total of 10 suspected but unconfirmed cases of cholera were reported in Cameroon in the Littoral and Extrême-Nord regions. Benin, Burkina Faso, Chad, Mali and Togo remain at risk of cholera outbreaks.

In Asia, the number of reported cholera cases increased in Cox’s Bazaar, Bangladesh, after June 2021, of which 81% were among the Rohingya refugee population. The country submitted an emergency vaccine request in August 2021. Small outbreaks of up to 400 cases were also reported in India, in the states of Haryana, Punjab and West Bengal; no vaccine request was submitted to the ICG.

Requests and vaccination campaigns, 2020–2021

Table 1 summarizes the requests for OCV submitted to the ICG during the period October 2020–September 2021. In this period, the ICG Secretariat received eight emergency OCV requests from five countries for a total of 27 009 644 vaccine doses. Five requests were fully approved, two partially approved (both from Ethiopia) and one not approved. A total of 21 578 374 doses (79.9% of those requested) were approved for use in emergency response.

Table 1. Emergency requests to the International Coordinating Group for oral cholera vaccine, October 2020–September 2021

<table>
<thead>
<tr>
<th>Country</th>
<th>Date of request</th>
<th>No. of days for request circulation</th>
<th>No. of days for additional information</th>
<th>Approval</th>
<th>No. of days for decision</th>
<th>No. of days for delivery</th>
<th>No. of days until start of campaign</th>
<th>No. of vaccine doses requested</th>
<th>No. of vaccine doses approved</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td>13/11</td>
<td>Same day</td>
<td>5</td>
<td>1</td>
<td>Partial</td>
<td>16</td>
<td>22</td>
<td>4 938 802</td>
<td>3 354 278</td>
</tr>
<tr>
<td>South Sudan</td>
<td>23/12</td>
<td>N/A</td>
<td>2</td>
<td></td>
<td>Not approved</td>
<td>N/A</td>
<td>N/A</td>
<td>610 810</td>
<td>N/A</td>
</tr>
<tr>
<td>2021</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td>15/02</td>
<td>Same day</td>
<td>16</td>
<td>2</td>
<td>Partial</td>
<td>13</td>
<td>35</td>
<td>5 501 466</td>
<td>2 390 454</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>10/03</td>
<td>1</td>
<td>N/A</td>
<td>2</td>
<td>Full</td>
<td>9</td>
<td>19</td>
<td>4 017 218</td>
<td>4 017 218</td>
</tr>
<tr>
<td>Nigeria</td>
<td>06/07</td>
<td>Same day</td>
<td>N/A</td>
<td>2</td>
<td>Full</td>
<td>8</td>
<td>8</td>
<td>1 565 558</td>
<td>1 565 558</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>26/08</td>
<td>Same day</td>
<td>N/A</td>
<td>2</td>
<td>Full</td>
<td>14</td>
<td>14</td>
<td>2 836 820</td>
<td>2 711 896</td>
</tr>
<tr>
<td>Niger</td>
<td>07/09</td>
<td>1</td>
<td>N/A</td>
<td>2</td>
<td>Full</td>
<td>38</td>
<td>35*</td>
<td>3 972 342</td>
<td>3 972 342</td>
</tr>
<tr>
<td>Nigeria</td>
<td>09/09</td>
<td>Same day</td>
<td>N/A</td>
<td>3</td>
<td>Full</td>
<td>20</td>
<td>16*</td>
<td>3 566 628</td>
<td>3 566 628</td>
</tr>
</tbody>
</table>

N/A, not applicable

* Pending as of 15 October 2021; date of arrival of vaccines in the country made available after the ICG meeting.

A severe challenge faced by the ICG was submission of requests only two days apart by Niger and Nigeria in 2021, each for over three million doses, exceeding a total of seven million doses, which resulted in temporary depletion of the ICG emergency OCV stockpile.

Performance outcomes, 2020–2021

Table 2 summarizes the key performance indicators for ICG between October 2020 and September 2021, with results shown separately for the periods October–December 2020 and January–September 2021. Between October 2020 and September 2021, the mean time to a decision on the eight requests was two days (range, 1–3), and the mean time for delivery after approval of requests was 16.9 days (range, 8–38). The mean ICG processing time, i.e., the time between receipt of requests by the ICG to arrival of vaccines in the requesting countries (including
the time required for submission of additional information by requesting countries), was 22.1 days (range, 10–41). The mean time to start of a campaign after arrival of vaccine in the country was 21.3 days (range, 8–35).

**Table 2. International Coordinating Group performance indicators for responses to emergency oral cholera vaccine requests, October 2020–September 2021**

<table>
<thead>
<tr>
<th>Period</th>
<th>No. of requests received</th>
<th>No. of requests for additional information (%)</th>
<th>No. approved (%)</th>
<th>Mean no. of days to a decision (range)</th>
<th>Mean no. of days to delivery (range)</th>
<th>Mean no. of days for ICG process (range)</th>
<th>Mean no. of days between reception and start of campaign (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct–Dec 2020</td>
<td>2</td>
<td>1 (50%)</td>
<td>1 (50%)</td>
<td>1.5 (1–2)</td>
<td>16.0</td>
<td>22.0</td>
<td>22.0</td>
</tr>
<tr>
<td>Jan–Sept 2021</td>
<td>6</td>
<td>6 (100%)</td>
<td>6 (100%)</td>
<td>2.2 (2–3)</td>
<td>17.0 (8–38)</td>
<td>21.9 (10–41)</td>
<td>21.2 (8–35)</td>
</tr>
<tr>
<td>Oct 2020–Sept 2021</td>
<td>8</td>
<td>3 (38%)</td>
<td>7 (88%)</td>
<td>2.0 (1–3)</td>
<td>16.9 (8–38)</td>
<td>22.1 (10–41)</td>
<td>21.3 (8–35)</td>
</tr>
</tbody>
</table>

* Approved requests only, means include data made available after the ICG meeting.

The ICG currently has three key performance targets: requests are circulated to ICG members within one working day; the ICG decision-making body reaches a decision on approval of requests within two working days; and UNICEF SD delivers approved vaccines to the requesting country within seven days. Further targets are seven days between outbreak confirmation and submission of an emergency request to the ICG, and 10 days between arrival of vaccines in a country and start of vaccination campaigns.

Of the eight requests received between October 2020 and September 2021, the time for circulation of the request to ICG members exceeded one day for only one request (South Sudan). Decisions on approval were made within two days for all but one submitted request in 2021 (Nigeria). The time between approval of requests and arrival of vaccines in requesting countries exceeded the target of seven days for all requests. It was noted that the time between outbreak confirmation and request submission often significantly exceeded seven days, with Niger and Nigeria taking 29 and 38 days, respectively, to submit emergency requests. Furthermore, the time between arrival of vaccines in a country and the start of campaigns exceeded 10 days for all but one approved request (Nigeria, 06/07) between October 2020 and September 2021, the average time being 19.4 days (Table 2).

The ICG members noted that the main factors that contributed to delays in vaccine response to cholera outbreaks during the period were late submission of vaccine requests, delayed arrival of vaccines in countries, due in particular to the time necessary for customs authorization, and delayed campaigns. These factors are outside the control of the ICG. It was agreed that the ICG should continue to support countries in preparing requests and organizing campaigns and should ensure accountability by requesting countries for delays in customs authorization.

The ICG continues to fully implement its accountability framework and reports annually on its key performance indicators to the Governance Oversight Committee to ensure the transparency and accountability of the ICG mechanism.
Challenges for emergency vaccine response and lessons learnt during 2020–2021

In relation to specific vaccine requests, UNICEF SD reported that delivery of vaccines after a request by Ethiopia in February 2021 had been delayed by a temporary lack of cold storage at the destination, so that the vaccines had to be held at the manufacturer’s site. This had resulted in a delivery time of 25 days after approval of the request. A delivery of emergency vaccines in response to a request by Nigeria had been divided into several lots due to lack of air freight capacity for delivery of the whole lot. Limited air cargo capacity had also caused a 38-day delay in delivery of vaccines to Niger after approval of the request. Challenges had also been faced in Bangladesh due to limited cold chain capacity.

UNICEF SD noted the following challenges for emergency vaccine response that were considered likely to have contributed to delays:

- lack of commercial air cargo capacity;
- lack of readiness by countries to receive shipments at short notice;
- countries’ requirements in terms of documentation for customs authorization;
- delays in replenishing the stockpile due to limited production, storage capacity and the number of suppliers;
- countries’ programmatic preference for specific vaccines;
- low level of the stockpile and pressure on manufacturers to replenish it;
- restrictions due to the COVID-19 pandemic; and
- local insecurity in areas targeted for emergency vaccination campaigns.

Unpredictable delays can occur at any stage of the ICG process, with downstream effects that can result in delays in emergency vaccination campaigns. This is particularly the case with OCV, which requires a two-dose schedule, as delays in the first round of vaccination may necessitate postponement of administration of second doses. To mitigate the risks associated with such delays, requesting countries should plan campaigns and mobilize resources and personnel before the arrival of vaccines in the country.

The participants considered that factors associated with delays should be monitored over time in order to identify recurrent patterns, countries that are in particular need of support and long-term solutions. ICG members identified the following means to improve the timeliness of emergency vaccine response:

- consider increasing the size of the emergency stockpile;
- provide additional funds for emergency deployment staff;
- continue to provide training and training materials for emergency personnel in countries at risk of cholera outbreaks, and provide guidelines on declaration of outbreaks;
- provide guidelines for making requests to improve their quality;
- encourage requesting countries to provide more information on their epidemiological situation to inform decisions on approval of requests and the numbers of doses to be released from the stockpile;
- improve operational feedback between vaccine manufacturers and freight forwarders; and
- ensure that ICG emergency request forms are user-friendly.

While the quality of requests submitted to the ICG has improved in recent years, the ICG is compiling guidance for countries in completing forms for emergency requests for vaccines against...
Ebola virus disease, and it was suggested that similar materials could be developed for the other stockpiles, including of OCV. Online training packages for relevant national personnel are planned. Meeting participants also noted that laboratory capacity for case confirmation should be strengthened to ensure timely declaration of outbreaks and to provide information to support emergency vaccine requests, which could result in containment of outbreaks at an earlier stage, with fewer vaccine doses.

**Impact of the global COVID-19 pandemic on ICG performance**

The global COVID-19 pandemic has had wide-ranging impacts on countries’ capacity to respond to public health threats, including cholera prevention services such as surveillance, water, sanitation and hygiene (WASH) services and community engagement, in addition to preventive OCV campaigns.

During 2021, a study was conducted on the impact of COVID-19 on reactive mass vaccination campaigns for cholera and YF with stockpiled doses obtained for emergency requests. The study, mainly for members and stakeholders in the ICG, was conducted by the ICG Secretariat and an external consultant. The aim was to investigate impacts on campaign timelines (from preparation of emergency requests to completion of campaigns) and overall cost.

The findings of an initial in-depth review of ICG-related documents for all emergency OCV and YF vaccine requests approved in 2020, including emergency request forms, were used to design the study and areas for further analysis. Video conferences were then held with requesting countries to explain the objectives of the assessment, and personnel responsible for completing ICG emergency request forms were consulted in developing a tool for quantifying the impact of COVID-19 on various aspects of emergency vaccine response.

The analysis tool was used to record disruptions to the preparation of reactive mass vaccination campaigns (categorized into nine activities), disruptions to implementation (seven activities) and impacts on budgets (for each activity and for the campaign overall). Delays to activities and implementation were categorized by number of months and whether they were attributable to COVID-19.

Eleven approved requests for OCV and YF vaccines during 2020 were considered for the analysis, comprising five requests for OCV vaccines from five countries and six requests for YF vaccines from six countries (of which five were analysed). It was found that vaccine response following a request from Uganda for OCV was disrupted by delays of more than four months in transportation of campaign personnel, deployment of cold chain equipment and supplies and social mobilization of communities in areas targeted for mass vaccination. Shorter COVID-19-related delays to community mobilization before the vaccination campaign, to training of campaign personnel and to implementation of vaccination during the campaign were found in the Democratic Republic of the Congo and Mozambique.

A score was calculated for each campaign according to the number of delays identified and the severity of each. The results suggested, however, that the length of delays was not associated with the severity of the COVID-19 outbreak in the receiving country, as measured from the cumulative incidence rate for COVID-19 in the country during the period studied.
For OCV campaigns, the basic cost in the absence of COVID-19 was estimated to be US$ 0.34–0.56 per dose administered, while COVID-19 increased the cost by US$ 0.00–0.17 per dose administered, with the greatest increase in the Democratic Republic of the Congo. The main reasons for increased campaign costs were the requirement for personal protective equipment, increased costs of immunization services, promotion of demand among the populations targeted for campaigns and supportive supervision of campaign personnel.

A number of limitations to the study include self-reporting of delays to campaigns by respondents in each country, potential recall bias in responses and respondents’ subjective interpretation of categorization of delays and increases in cost as attributable to COVID-19.

4. The oral cholera vaccine stockpile, supply, procurement and forecasting

The International Coordinating Group stockpile in 2020–2021

The targeted size of the ICG OCV stockpile in October 2020–September 2021 was three million doses, to be available at all times for emergency response. Meeting participants noted that the number of stockpiled doses fell below this target on three occasions during the period: seven days during March 2021 (when the number of stockpiled doses fell to 2.9 million), 20 days during May 2021 (down to 1.3 million doses) and 20 days during September 2021 (down to 0.9 million doses). These figures exclude the doses requested by Nigeria in 2020. Participants noted that, without immediate addition of OCV doses, the stockpile would be fully depleted by the end of September 2021.

The ICG members agreed that, in view of the increasing size of emergency requests, shortages of OCV doses and the temporarily low stockpile levels recorded during 2021, the ICG should consider increasing the targeted stockpile size to prevent vaccine shortages, delays to ICG approval of emergency requests and disruption of preventive campaigns through the GTFCC mechanism. It was suggested that the ICG OCV stockpile be increased to five million doses that are always available for emergency response. ICG members agreed that a meeting should be held within two months to discuss the new target for the stockpile size. Gavi proposed that the meeting also discuss the assumptions on which expansion of the stockpile was based, expected outcomes, the risks of stockpile depletion and mitigation strategies.

ICG members recognized the urgency of finding a short-term solution to ensure OCV doses to meet the emergency requests submitted by Nigeria and other countries. They requested that all ICG members be notified as soon as practicable when the stockpile fell below its targeted size.

Meeting participants were invited to consider whether 2021 was an outlier in terms of the number of doses requested or whether it was the beginning of a longer-term trend. It was noted that an increase in the size of the emergency stockpile can be justified by the increasing sizes of individual vaccine requests, the fact that countries that had not made requests in previous years had submitted emergency requests to the ICG during 2020 and 2021 and the presence of large at-risk populations not covered by previous preventive campaigns in countries such as Ethiopia, which increases the risk for large-scale outbreaks. In addition, although demand for OCV was lower in 2020 than in previous years, the COVID-19 pandemic had disrupted other preventive
activities such as improvements in WASH services, paving the way for a resurgence of cholera transmission. Climate change is another source of uncertainty.

An increase in the size of the emergency stockpile might reduce the likelihood that it will be fully depleted under various circumstances. It would also prevent shortages of OCV due to delayed decisions on approval of requests and constraining the numbers of doses that can be approved for emergency use. A larger emergency stockpile would reduce the risk of disruption of preventive campaigns under the GTFCC by diversion of vaccines to emergency use at short notice and delays in shipping vaccine for preventive use during replenishment of the emergency stockpile. It was noted that such a measure would require increased funding and increased cold storage capacity by manufacturers.

**Oral cholera vaccine supply outlook**

Meeting participants discussed the projected OCV supply in coming years. While it was noted that the availability of OCV for use in both emergency and preventive campaigns had improved between 2019 and 2021, from 22 411 790 doses in 2019 to an expected 31 800 000 doses in 2021, UNICEF SD anticipates a further increase in overall supply to 36 million in 2022 and 47 million in 2023. UNICEF SD expects to sign a multi-year tender for OCV procurement in the period after 2023 in the coming months.

Meeting participants noted the forthcoming withdrawal of one vaccine manufacturer from the OCV market by the end of 2023, which could result in overreliance on a single supplier unless new manufacturers enter the market.

**Manufacturers’ updates**

Representatives of the two manufacturers that currently supply OCV to the ICG stockpile, EuBiologics and Shantha Biotechnics (a subsidiary of Sanofi), described progress in realizing their production plans.

EuBiologics, which has supplied OCV to the stockpile since 2016, plans to expand its production, packaging and storage capacity, including constructing a new facility, and the plans were reported to be on track. Having secured WHO prequalification for its most advanced OCV product and registration in the Republic of Korea for export only of Euvichol-Plus, in August 2017, the company has continued to lengthen the list of countries in which its product is registered. Since 2017, registration of Euvichol-Plus has been approved in seven more countries (Malaysia, Mozambique, Myanmar, Nepal, Nigeria, Pakistan and Zambia), in addition to countries under the Caribbean Regulatory System. In late 2021, applications for the product’s registration in the Democratic Republic of the Congo, the Philippines and Uganda will be reviewed.

The representative of Shantha, which has provided OCV to the stockpile since 2011, confirmed the intention of the company to withdraw from the OCV vaccine market by the end of 2023. No further OCV doses were available for 2021; however, four million doses would be produced each year in 2022 and 2023 before production ends.
Vaccine market shaping

The representative of Gavi presented the current state of the OCV market and its work in market shaping. The last 10-year OCV demand scenario was forecast in 2017 and formed the basis of the most recent Vaccine Investment Strategy, which Gavi endorsed in December 2018, and the Gavi supply and procurement road map. Currently, Gavi is updating its long-term OCV demand scenarios from data on variables including population growth in high-risk countries, vaccination coverage and frequency of vaccination campaigns. New data on these variables are expected to become available in the coming months.

One of the objectives of the 2018 Gavi supply and procurement road map for OCV was to reach 50 million doses by 2021. The expected timeline for EuBiotics’ scale-up, the entry of a new manufacturer onto the market, and Shantha's exit from the OCV market in 2023 are expected to delay the roadmap's objective by approximately two years. Gavi is attempting to mitigate the impact of the departure of Shantha from the market through discussions with the company and by exploring potential partnerships with new manufacturers. Gavi continues to support EuBiologics in scaling up its production of OCV. Gavi continues to engage with and support new market entrants to ensure timely entry, while remaining on track to meet its OCV cost target (which is confidential) and its objective of ensuring that at least one new conjugate OCV product is in development.

Meeting participants agreed that OCV demand over the years should be studied to ascertain trends. They noted that the marked increase in demand in the past few years might be viewed as part of a virtuous cycle resulting from successful market shaping, in which countries respond to an increasing supply of OCV by expanding their cholera prevention goals.

5. Global Task Force on Cholera Control update

The GTFCC Secretariat described their support for preventive campaigns in countries at high risk of cholera outbreaks within comprehensive national cholera control plans (NCPs). To date, the GTFCC has supported establishment of NCPs in Bangladesh, Somalia, Zambia and Zanzibar (United Republic of Tanzania). Concurrently, proposals for NCPs in Ethiopia, Kenya and Zimbabwe have been submitted to the GTFCC’s Independent Review Panel, and NCPs for Liberia, the Philippines and Sierra Leone are being developed. Potential subnational hotspots for cholera outbreaks have been identified with the GTFCC tool in Burundi, Ethiopia, Kenya, South Sudan, Sudan, Yemen, Zambia, Zanzibar (United Republic of Tanzania) and Zimbabwe and work is continuing in Cameroon, Mozambique, Nigeria and Togo. Evidence from this exercise will inform establishment of NCPs for these countries. The GTFCC is preparing guidance to improve the quality of GTFCC requests and is providing direct support to improve the quality of countries' requests through its Country Support Platform.

Concern was raised that recent shortages of OCV for emergency response might discourage countries from using long-term prevention strategies. This is particularly relevant because of incomplete delimitation between emergency and preventive use of OCV in areas endemic for cholera, where there is a risk of spread from hotspots to other areas, thereby generating new outbreaks and necessitating emergency reactive measures. There is also a risk that population movements due to seasonal migration and insecurity could lead to the international spread of diseases from hotspots or recent outbreaks from neighbouring countries. It was emphasized that
while short-term solutions are necessary to respond to ongoing outbreaks, ensure timely emergency response to prevent their expansion, and maintain a stable OCV supply. Additionally, long-term multisectoral approaches are necessary to reduce reliance on emergency OCV use and sustain progress in preventing future outbreaks. These approaches will require improved laboratory capacity for case confirmation, data to inform decision-making and NCPs.

Meeting participants acknowledged that any decision about the size of the ICG stockpile should be justified in accordance with the global strategy for outbreak prevention and that an emergency vaccine response should not be considered a substitute. It was emphasized that any increase in the size of the emergency stockpile should be consistent with the overall GTFCC strategy, countries should prioritize outbreak prevention rather than emergency response, and the potential impacts of diverting vaccines from long-term prevention should be considered.

Participants noted that communication between UNICEF SD, the ICG and GTFCC mechanisms should be improved to minimize the possibility of situations in which doses are shipped for preventive campaigns while they are potentially necessary for outbreak response, particularly when the stockpile level is low.

6. Meeting decisions and action points

A number of action points were noted and decisions taken with respect to the ICG OCV vaccine stockpile.

- ICG members recommended that the stockpile be increased to five million doses of OCV to be available at all times for emergency requests from early 2022 onwards. The ICG and partners agreed to hold a meeting to confirm the arguments that led to this decision.
- UNICEF SD will engage with vaccine manufacturers to increase the short-term availability of OCV vaccines in light of the recent depletion of the emergency stockpile and ongoing commitments to provide doses for emergency campaigns.
- The ICG and partners will continue to support countries in improving their capacity to complete emergency vaccine requests, including by developing online training materials.
- The ICG will continue work to make the ICG emergency request forms more user-friendly.
- Gavi and relevant partners will pursue support for potential technology transfer to facilitate the entry of new manufacturers onto the market for emergency OCV vaccines.

Participants agreed to these action points by consensus and expressed their commitment to implement them in the coming year.
Annex 1. Meeting agenda

Objectives:
- Review the outbreaks and campaigns supported by the ICG during 2020–2021.
- Discuss vaccine demand in 2020–2021 and the forecast supply.
- Discuss manufacturers' production plans and future vaccine developments.
- Decide on the size and composition of the stockpile for 2022.

Chair: Christopher Gregory

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>14:00–14:15</td>
<td>Introduction, objectives and expected outcome of the meeting</td>
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<tr>
<td>14:15–14:55</td>
<td>Cholera epidemiological situation 2020–2021 and review of responses and lesson learnt (investigation, campaigns, monitoring, reporting, WASH intervention activities during emergency vaccination) (10 min)</td>
<td>Malika Bouhenia (WHO)</td>
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<td></td>
<td>Impact of COVID-19 on reactive campaigns approved by ICG in 2020 (10 min)</td>
<td>Mohammad Salim Reza (ICG Secretariat)</td>
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<td>Discussion (10 min)</td>
<td>All</td>
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<tr>
<td>14:55–15:10</td>
<td>ICG performance – review of key indicators (5 min)</td>
<td>Mohammad Salim Reza (ICG Secretariat)</td>
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<td>Discussion (10 min)</td>
<td>All</td>
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<tr>
<td>15:10–15:30</td>
<td>Update on GTFCC (10 min)</td>
<td>Philippe Barboza (WHO)</td>
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<td>Discussion (10 min)</td>
<td>All</td>
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<tr>
<td>15:30–15:40</td>
<td>Break</td>
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Session 2: Vaccine supply

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<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
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</thead>
<tbody>
<tr>
<td>15:40–15:50</td>
<td>Vaccine procurement and deployment</td>
<td>Antonia Naydenov (UNICEF SD)</td>
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<tr>
<td>15:50–16:00</td>
<td>Vaccine supply forecast for 2022</td>
<td>Antonia Naydenov (UNICEF SD)</td>
</tr>
<tr>
<td>16:00–16:10</td>
<td>Market shaping update</td>
<td>Margarita Xydia Charmanta (Gavi)</td>
</tr>
<tr>
<td>16:10–16:30</td>
<td>Discussion (20 min)</td>
<td>All</td>
</tr>
<tr>
<td>16:30–16:50</td>
<td>Manufacturers’ production plans and future vaccine developments (OCV), followed by discussion</td>
<td>Sanofi-Shantha EuBiologics</td>
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Session 3: Stockpile size (closed session)

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<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:50–17:30</td>
<td>Discussion: OCV stockpile size requirements</td>
<td>Closed session (ICG members, UNICEF SD and Gavi)</td>
</tr>
<tr>
<td>17:30</td>
<td>Conclusions</td>
<td>Chair</td>
</tr>
</tbody>
</table>
Annex 2. List of participants

ICG members
Myriam Henkens, International Medical Coordinator, MSF, Brussels, Belgium
Daniela Garone, International Medical Coordinator, MSF, Brussels, Belgium
Christopher Gregory, Senior Advisor, UNICEF, New York City (NY), United States of America
Sanjay Bhardwaj, Health Specialist, UNICEF, New York City (NY), USA
Frank Mahoney, Senior Officer, Immunization, IFRC, Geneva, Switzerland
Robert Fraser, Senior Officer, WASH, IFRC, Geneva, Switzerland
Philippe Barboza, Team lead, High Impact Epidemics (EHI)/Health Emergency Interventions (HEI), WHO, Geneva, Switzerland
Malika Bouhena, Technical Officer, EHI/HEI, WHO, Geneva, Switzerland

WHO Regional Office for Africa, Dakar, Senegal
Vincent Sodjinou, Epidemiologist, Emergency Preparedness (EMP)

WHO headquarters, Geneva, Switzerland
Altaf Musani, Director, HEI
Pierre Formenty, Unit Head a.i., EHI/HEI
Laurence Cibrelus, Team lead, EHI/HEI
Emmanuel Musa, Team lead, EHI/HEI
Francis Mulemba, Logician, Strategic Health Operations (SHO)/Operations Support & Logistics (OSL)
Carole Tevi, Technical Officer, Immunization, Vaccines and Biologicals (IVB)/Essential Programme on Immunization (EPI)

Vaccine manufacturers
Rachel Park, General Manager, EuBiologics, Seoul, Republic of Korea
Chankyu Lee, Senior Managing Director, EuBiologics, Seoul, Republic of Korea
Yeongok Baik, Chief Executive Officer, EuBiologics, Seoul, Republic of Korea
Youngjin Lee, Senior Managing Director, EuBiologics, Seoul, Republic of Korea
Françoise Griguer, Senior Director, Sanofi Pasteur, Lyon, France
Anabelle Monnet, Lead, Public Affairs, Sanofi Pasteur, Lyon, France
Amit Kumar, Assistant Manager, Shantha, Hyderabad, India

Other partners
Francisco Luquero, Senior Technical Advisor, Gavi, Geneva, Switzerland
Stephen Sosler, Head, Vaccine Programmes, Gavi, Geneva, Switzerland
Margarita Xydia Charmanta, Senior Manager, Market Shaping, Gavi, Geneva, Switzerland
Allyson Russell, Programme Manager, Gavi, Geneva, Switzerland
Hans Christiansen, Contracts Manager, UNICEF SD, Copenhagen, Denmark
William Peoples, Procurement Associate, UNICEF SD, Copenhagen, Denmark
Antonia Naydenov, Contracts Specialist, UNICEF SD, Copenhagen, Denmark
Michaela Briedova, Contracts Specialist, UNICEF SD, Copenhagen, Denmark

ICG secretariat, EHI/HEI, WHO, Geneva, Switzerland
Eduardo Vargas, Medical Officer
Mohammad Salim Reza, Technical Officer

Observers
Christopher Brewer, Africa Cholera Coordinator, IFRC, Nairobi, Kenya
Thomas Mollet, Country Support Platform (CSP) Coordinator, IFRC, Geneva, Switzerland

Rapporteur
Sol Richardson, Freelance editor, London, United Kingdom of Great Britain and Northern Ireland