Meeting of the Technical Taskforce

Geneva and online, 1 July 2022
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Introduction

A meeting of the Technical Taskforce (TTF) for the Global road map on defeating meningitis by 2030 was convened by the World Health Organization (WHO) on 1 July 2022. The meeting, which was conducted both in person (at WHO headquarters in Geneva) and online, was opened at 11:00 Central European Time (CET) by the TTF Chair Prof Brian Greenwood of the United Kingdom who congratulated the WHO secretariat for keeping the road map project on track during the COVID-19 pandemic. The co-Chair Prof Samba Sow of Mali stressed the importance of prioritizing the work on the road map in order to speed up implementation towards the goal of defeating meningitis by 2030. It would be very important to set both short-term targets and longer-term goals.

Introducing the agenda, the Chair noted that the main aims of the meeting would be: 1) to consider operational support to regions and countries and how to make things happen, and 2) to review the investment case which had been circulated to participants and to discuss how this can best be launched to maximize resource mobilization.

Global update and next steps

Update by the secretariat

Dr Marie-Pierre Preziosi described developments since the previous meeting of the TTF in December 2021. A progress report on the Global road map on defeating meningitis by 2030 was provided to the 150th session of the WHO Executive Board in January 2022, this was well received with representatives from each of the six WHO regions speaking in support of the road map. In May the Seventy-fifth World Health Assembly confirmed its support for setting up a Strategic Support Group (for which the nomination process is now under way) and adopted the Intersectoral global action plan for epilepsy and other neurological disorders, a major plan, some of whose objectives are closely linked to those of the global road map to defeat meningitis. The first major progress report on meningitis will go to the Seventy-sixth World Health Assembly in 2023. Comments received from TTF members on the monitoring and evaluation plan are currently being addressed. It was noted that WHO’s SAGE Working Group on Meningococcal Vaccines and Vaccination resumed its activities in May 2022 and WHO’s Technical Advisory Group on Group B Streptococcus Vaccine was established in June.

Partners’ achievements and challenges

Pregnancy related GBS burden

Dr Proma Paul reported that, on the basis of recent investigations, it was estimated that 98% of cases of Group B Streptococcus (GBS) infection occur in low- and middle-income countries (LMICs) – with a total of some 390 000 infant cases and 40 000 additional maternal cases of invasive disease. Of the infant survivors, around 40 000 children have moderate or severe neurodevelopmental impairment (NDI) per year, which was larger than previously estimated. Earlier studies of GBS infection left several data gaps, particularly in relation to the lack of data after GBS sepsis in older children into school age, different assessment tools, the lack of counterfactuals and the specific situations in LMICs. Recent cohort studies of 2258 children with invasive GBS in Denmark and the Netherlands, with follow time to age 20 years of age, and a study in five LMICs (Argentina, India, Kenya, Mozambique and South Africa) found that moderate-severe impairment after GBS meningitis was 10-15% (similar to previously
estimates), however the LMIC study found that the risk of any NDI was 46%, higher than previously been reported. An article describing the short- and long-term outcomes after bacterial meningitis among Danish and Dutch children has been accepted by the Lancet Child & Adolescent Health. Next steps in this area include developing a standardized set of assessments for open access (Strategic Goal 3 of the Global road map on defeating meningitis) and implementation research to enable follow-up for at-risk neonates (Strategic Goal 14).

It was noted by participants that these figures are likely to be under-reports. In response to a question about the impact of poor socioeconomic conditions on the disease, Dr Paul said that the data suggest there was increased anxiety and depression among the mothers of GBS survivors, and there was evidence that many children had little support. Meeting participants expressed concern that, after decades of work on GBS, this infection remains unknown in many parts of the world. There was also concern that many cases of sepsis and impairment are simply not reported.

*Médecins sans Frontières/Epicentre*

Dr Iza Ciglenecki reported that there was an outbreak of meningitis in Niger in early 2022, and it is planned to carry out a follow-up study of sequelae and mortality with the Ministry of Health. Without adequate surveillance or investigation it is difficult to identify which factors might have influenced or exacerbated the outbreak. At the time of the TTF meeting there was another outbreak in the central part of the Democratic Republic of the Congo (DRC). This outbreak had begun to recede but the details are still unclear. A new rapid diagnostic test (RDT) is being developed by the Institut Pasteur and there is hope of a new product becoming available next year. In discussion, it was pointed out that there had been a few isolated pneumococcal cases in Sudan since the last TTF meeting but no outbreaks.

*Meningitis Research Foundation*

Mr Vinny Smith focused on the progress being made across several aspects of advocacy and engagement and in particular the creation of a new multi-stakeholder Pillar 5 working group in partnership with UNICEF; and future plans for World Meningitis Day on 5th October 2022.

The working group will help support the development of a strong partnership for advocacy and engagement in order to achieve the goals set out in Pillar 5 of the road map. A key activity already taking place is engagement on all aspects of World Meningitis Day that seeks to increase participation from 54 countries in 2021 to over 150 in 2022 which represents a major step-change in ambition. If the right tools and resources are available, it is hoped that over 90% of Confederation of Meningitis Organisation (CoMO) members will be motivated to support the day. MRF and CoMO have created a list of central messages, a social toolkit and templates, and will put materials on the CoMO website. Resources include meningitis stories, case studies and some videos. Members of the TTF can help by using (and adapting) the MRF toolkit to mark World Meningitis Day, and by creating a short video in support of the campaign. Current challenges are the need for funding and for enhanced communication. However, these challenges are offset by opportunities such as an increased ambition to be involved in World Meningitis Day and wider stakeholder involvement.

Through their partnership, MRF and UNICEF have also started research into existing meningitis communication strategies (including a literature review of vaccine acceptance communication strategies), the use of social communication (including mapping different social communication channels), risk communication, and meningitis and sepsis awareness campaigns. Insight analysis and key recommendations will be ready in the third quarter of 2022 and shared for consideration by the working group.
MRF is also working with WHO’s Regional Office for Africa on the launch of a regional road map, by providing analysis on burden of disease using data within the Meningitis Progress Tracker that has so far had 52,000 users from 117 countries. Updated data downloads are being sent to WHO’s regions, and feedback from workshops is being collated.

In discussion, it was pointed out that the Meningitis Progress Tracker records numbers of visitors and which countries they come from but further analysis of users is limited because resources available do not yet allow for more sophisticated digital monitoring. In 2023, the MRF website is intended to be upgraded to allow for further details to be collected. TTF members stressed the importance of communication and welcomed the work with the CoMO network whose members are often family members of persons with meningitis. MRF was encouraged to prioritize this approach. UNICEF has launched a landscaping questionnaire to establish just what approaches to communication are being taken in different countries.

Regional and country implementation

Regional Office for Africa (Dr Andre Bita, Dr Anderson Latt)

The region has finalized the regional road map and anticipates a formal launch by the Regional Director in the coming months with the involvement of health ministers from throughout the region, as well as nongovernmental organizations (NGOs) dealing with meningitis, plus other partners and donors. A workshop on the development of national road maps is planned for the coming months for 14 targeted countries. The development of national plans and roadmaps is proceeding and will be in place in 2023. Funds will need to be mobilized to support countries to implement their road maps.

TTF members stressed the role of communication in alerting both governments and citizens to the importance of the national road maps. Ministers selected as partners should be prepared to work with technical staff such as heads of district health departments.

Pan American Health Organization (Dr Lucía Helena de Oliveira)

The landscape analysis has been completed with analysis of data from both primary and secondary sources. The meningococcus webpage has been prepared and launched, and a virtual course on meningococcal meningitis was organized with 20 countries (and 300 participants) involved in collaboration with different PAHO departments. The landscape analysis risk assessment showed that Haiti was the country in the Americas at highest risk, with the Dominican Republic, Guatemala and Bolivia close behind.

The next steps for PAHO are to organize a workshop with experts and country representativeness in 2022 to discuss implementation and adaption of the regional road map, to include meningitis as one of the themes in the Vaccination Week of the Americas 2023, and to incorporate meningitis into PAHO’s social media platforms. Advocacy and engagement for meningitis will also be boosted.

In discussion, members of the TTF noted the issue of creating indicators in order to identify priorities. However, as some countries have limited data, the PAHO team needs to work closely with each country to decide on which priorities to begin with. WHO headquarters has reviewed data from all the sources that are available and has then shared these data with all regions and has asked the regions to provide their own data. WHO headquarters thus supplies the same core set of data to all regions but it is up to
the region itself to prioritize. For instance, a country with no surveillance will have no data so it may appear not to have a problem, but the regional team may decide that it is nevertheless a priority.

Regional Office for Europe (Dr Liudmila Mosina)

WHO’s Regional Office for Europe reported that Moldova and Uzbekistan had asked for help to prevent deaths from meningitis and to prevent meningitis outbreaks. However, the Regional Office noted that meningococcal vaccines cannot be procured from UNICEF and procuring it on the open market would be prohibitively expensive for the national programmes to bear. Agencies such as Gavi can obtain vaccines at low cost for low-income countries but not for countries classed as middle-income. In discussion it was acknowledged that the need for affordable vaccines is a major concern and is one of the reasons why the road map has been developed. It was proposed that the National Immunization Technical Advisory Groups (NITAGs) of the two countries concerned could be invited to attend the next sessions of the SAGE working group on meningococcal vaccines.

Regional Office for South-East Asia (Dr Emmanuel Njambe Tondo Opute)

Work is continuing on communication about the meningitis road map and on reaching out to Member States. The road map will be presented at the RITAG meeting in August 2022. Emergency preparedness is being included in the landscape analysis for the road map. India has included PCV through its immunization programme since the end of 2021 and Indonesia will do so from 2023.

Support to countries

Breaking down barriers to laboratory confirmation (Dr Lorenzo Pezzoli)

Since the beginning of the year and as of 19 June 2022, 20 countries in the meningitis belt were reporting meningitis, with 11,052 suspected cases and 578 deaths. There had been laboratory confirmation of the disease in 12 countries but not in the others. In two governorates of Syria there have been 1000 “probable meningitis” cases and two deaths since May 2022. Additionally, in Tajikistan between February and May there were 146 suspected cases with two deaths. Meningitis must be recognized as a global disease, and the first step towards defeating it must be to ensure that all cases are confirmed. A protocol to study the barriers to, and facilitators of, diagnosis is therefore being developed with support from Epiconcept. There is a need to enhance diagnosis at the point of care, though how this should be done will vary according to the situation – with RDTs in the African meningitis belt and similar situations, differentiation of bacterial from viral meningitis to decide whether to use antibiotics at primary care level, and multi-pathogen testing at hospital level. Many of the milestones on detection and surveillance mention forming expert groups. It was therefore proposed that now is the time to revitalize or establish working groups on laboratory support, surveillance and other areas.

In discussion, it was questioned whether anything can be learned from the global COVID-19 response which saw vaccines and diagnostics developed rapidly. A protocol to study barriers and facilitators to lumbar puncture practice has recently been approved and urgently needed RDTs are now being developed. It will be important to identify the barriers to use of RDTs and PCRs in particular. GeneXpert includes GBS but not the meningococcus, but there is a need for a multi-diagnostic tool. When meningitis is suspected the confirmation must come quickly so that treatment can begin as soon as possible.
Study on the burden of sequelae (Dr Nicoline Schiess)

The Intersectoral global action plan on epilepsy and other neurological disorders was adopted by the World Health Assembly in May 2022, with five strategic objectives of action and 10 global targets. WHO’s Brain Health unit (BRH) is taking the lead in developing one comprehensive guideline for diagnosis, treatment and care of persons with meningitis and for recognition and care of neurological sequelae (Strategic Goal 9). The guideline development process was outlined. A scoping review has been completed and BRH is setting up a Guideline Development Group and external review groups. PICO questions on diagnosis, treatment/care and recognition of sequelae have been formulated. Additionally, a brochure on implementation of the road map through primary health care has been made available.¹

With regard to Strategic Goal 13, protocols for sequelae studies have been developed and countries are being identified. It is proposed that a cohort study be conducted on evaluation of sequelae among bacterial meningitis survivors. The main objective is to estimate the increased risk of major and minor sequelae caused by bacterial meningitis among adults and children living in the meningitis belt of sub-Saharan Africa after the introduction of MenAfriVac, compared with an age- and community-matched control group. The protocol could then be extended and adapted to other regions.

In discussion it was mentioned that deafness is a major sequela of meningitis. It was noted that the PICO question on hesitancy to lumbar puncture has resulted in considerable discussion.

Ensuring quality meningitis data in the time of COVID-19 (Dr Ryan Novak)

During the COVID-19 pandemic, MenAfriNet partners focused on virtual technical assistance because of restrictions on travel. One example is the scale-up of the STELab help desk in Ouagadougou, Burkina Faso. STELab is a cloud-based multi-disease data management and specimen tracking system with 12 disease modules including in particular, meningococcal disease, pneumococcal disease, Haemophilus influenzae type b (Hib) and COVID-19. The aim of STELab is to gather data rapidly to ensure speedy diagnosis and confirmation for decision-making. It is implemented in 409 sites across 70 districts of Burkina Faso and 72 in Niger. Help desks in each country offer technical assistance. To strengthen country capacity to analyze surveillance data, a regional data analytic training series was launched in 2021 using the free data analysis software R and R Studio and has continued this year with the most recent course in May. The training courses were led by Burkinabe experts in R/R Studio and continue to provide post-course mentoring as a priority. The workshops have also been recorded for wider use and the materials will be part of the MenAfriNet toolkit. Five virtual regional workshops were held on diagnostics, laboratory data and process management, and laboratory quality. Although virtual training is not necessarily a replacement for in-person training, it has enabled a larger number of people to be reached, including training in different languages. This approach can be used in future.

In discussion it was noted how the training was greatly appreciated and enabled greater numbers of persons to be trained than otherwise. It was appreciated that local experts were incorporated into the training, and in fact the programme had deliberately sought out local persons who could assist. By ensuring training materials are available in the MenAfriNet Toolkit, this extends opportunities for other interested countries to learn R/R Studio which has become the global standard analytic software and available free of cost. Another example of Toolkit materials mentioned is a module for case based meningitis surveillance data validation, available in French and English. This is an important job aid detailing how to validate data locally to ensure quality case based data.

¹ See: https://www.who.int/publications/m/item/primary-health-care-health-systems-levers-for-action
New vaccines in support to countries (Dr Mark Alderson)

New vaccines for pneumococcal and meningococcal vaccines are being licensed on the basis of non-inferiority to existing licensed vaccines. For GBS, the Pfizer vaccine will enter Phase 3 trials in 2023 and the US Food and Drug Administration (FDA) is to use a correlate of protection for the licensure of this vaccine, probably based on serotypes 1A and 3 and ongoing sero-epidemiology studies in South Africa, United Kingdom and the United States. The results of the study in South Africa have been submitted for publication. PATH has been collaborating with a company called Inventprise on developing a multivalent (either pentavalent or hexavalent) conjugate vaccine which is planned to begin a first human study in 2023.

There is interest in protein antigens for GBS vaccines, so PATH has been working with Boston children’s hospital in the USA and with a group in South Africa to look at combining anti-protein and anti-polysaccharide responses into a second-generation GBS vaccine. PATH has worked with the Serum Institute of India on a pentavalent meningococcal conjugate vaccine that is effective against additional *N meningitidis* serogroups. This is on track for WHO prequalification and could be available for use for epidemic response in the 2023 meningitis season. Clinical studies for this vaccine were conducted in the Gambia and Mali, and a further study has begun in Mali on infants 9 months of age and toddlers 15 months of age to investigate safety and immunogenicity including co-administration of yellow fever and rubella vaccines, with results available in 2023.

PATH is in discussion with the Bill & Melinda Gates Foundation regarding a possible second pentavalent vaccine candidate since one of the goals of the road map is to have additional manufacturers with prequalified vaccines. With regard to pneumococcus, a study was completed in 2021 on Pneumosil® using the 2 + 1 schedule in the Gambia and a carriage study is due to begin later in 2022. In terms of new vaccines, PATH is collaborating with Inventprise on a next-generation high-availability 25-valent pneumococcal conjugate vaccine.

Context-specific strategies to prevent GBS (Dr Marie-Pierre Preziosi)

Little progress had been made in this area and one way forward could be to set up a dedicated working group.

In discussion, it was suggested that the TTF could establish a small working group, including some external experts as necessary, to address the issue of context-specific strategies and how such strategies can facilitate the work of the road map and help to achieve its goals.

Integration with primary health care (Dr Marie-Pierre Preziosi)

In May 2022 the World Health Assembly approved the integration of the road map within primary health care.

In discussion, there was general agreement on establishing a TTF working group on integration with primary health care, the Secretariat was requested to contact TTF members to ask if they could contribute either to this working group or to the group on context-specific strategies to prevent GBS.

Discussion also focused on Hib, one of the priority pathogens of the road map. The co-Chair pointed out that after the pandemic, Africa is seeing many cases of Hib because the immunization workforce concentrated on COVID-19 for two years and other vaccinations took second place. A few years ago Hib was a limited problem but now there are millions of children who have not been vaccinated so that Hib and other diseases are becoming more common. It was reported that Hib cases are also growing in the Americas and Europe. One participant asked if there was a justification for booster doses for Hib.
Resource mobilization and communication

Latest draft of the investment case

Mr Antoine Durupt introduced the latest draft of the investment case for the road map. The draft, which incorporated proposals from TTF members, had a revised structure and had been shared with TTF members so they could familiarize themselves with it. The TTF was asked to agree on the finalization of the investment case, to refine the financial component (i.e. what amount(s) should be requested), and to agree how and when the investment case for the road map should be launched. TTF members were asked their views on the clarity of the investment case, whether highlighting the impact beyond meningitis was acceptable, if the figures describing impact were correct, whether any messages or data were missing, and whether a Foreword was needed.

The cost of the road map implementation

It was pointed out that the costing data were more complex than for most other road maps or global strategies. It was critical that the figures should align with the needs but there were very large discrepancies between countries in terms of health systems, epidemiological information and costs. Additionally, a variety of pathogens must be addressed – some causing other diseases as well as meningitis – and some activities (such as surveillance) can be shared with other diseases. Costs need to be calculated for WHO, for partners and for countries.

Members of the TTF were asked for input on the approach taken in the investment case to support partner-led activities, to exclude high-income countries and the expenditure needed to maintain the current level of performance, to keep to the scope in the road map (i.e. 80% of countries, all targeted countries), to include the costs to local health systems, and to take advantage of synergies with other initiatives. Since all the resources needed are unlikely to be available immediately, the investment case also distinguishes between the “catalytic cost” – i.e. funds to kick-start activities at international level and in targeted countries during 2023–2025 period and the total cost as the full range of activities gets under way. Research leading to context-specific national plans, and policies and strategies based on national situation analysis and priorities would enable the full estimate of road-map needs to be refined by the mid-2020s.

TTF members were shown provisional figures (that are to be refined) of US$ 85 million for global expenditure and US$ 1 515 million for local expenditure. Catalytic cost, as per temporary figure, is estimated at US$ 170 million. These figures could potentially be reduced depending on how the details of the investment case are presented – for instance, by limiting the requested amount to the portion of implementation costs to be covered by external funding (excluding the local contribution), by excluding the cost of meningococcal vaccination in the meningitis belt (which Gavi is committed to supporting), or by limiting the request to the initial investment or by deducting the anticipated reduction in cost of new products such as point-of-care diagnostics.

In discussion, TTF members pointed out that some of the numbers in the investment case were unclear. Members appreciated the division between global and local costs, and the idea of learning as we go along. One participant in particular felt that the investment case allocated too much expenditure to the service side and not enough to the demand side. The secretariat pointed out that up-to-date figures are available and will be supplied to all TTF members.
There was a comment that the investment case put too little focus on gender. More was needed about the burden of caregiving that women bear that could be alleviated. Additionally it was suggested to add something more on the socioeconomic influence on meningitis and how the roadmap can contribute to welfare and wealth of society. Civil society could have been more closely involved in developing this investment case. There was a call for disability needs to be included, and for a clearer explanation of the return on impact, which is however difficult to estimate as the cost and the impact are estimated at different scopes.

In response to a question from the Chair regarding potential donors, the secretariat said certain donors may be interested in specific activities but this did not mean that other issues were less important. The feeling was expressed that a clearer idea of funding was needed. It was felt that it could be useful to say that global donors have already committed large amounts of resources to the meningitis roadmap, as this could encourage other donors to consider giving.

**Launching the investment case**

Advice from experts in this area indicated that to launch a major public campaign one needs to have influence, and that to gain influence one needs five elements, namely: authority (which WHO, UNICEF, MRF/CoMO plus individuals with experience can provide); commitment and consistency (which depends on all members of the group going public with the same message); reciprocity (e.g. a pledging conference which gives the donors visibility); social proof (people are more inclined to follow the lead of others, e.g. support and investment from well-known and creditable Foundations); and likeability (people prefer to say yes to persons they like). The launch of the investment case would benefit from a discussion of risks and barriers, communication and awareness-raising, opportunities, timeline and the roles and responsibilities of those involved. Many of these are in place, but a strategy group is needed to take the launch forward. Areas already covered by Gavi should be made clear to potential donors, and civil society will be very important to any appeal. The timing of the launch should preferably not coincide with other donor events, many of which occur in October, but which can be clearly associated with meningitis.

There was a discussion of whether a “champion” could be found for the road map – perhaps a donor and/or a well-known personality from the fields of sport or entertainment. Proposals were made but all would need to be clarified. Several Member States had expressed strong support for the road map at the World Health Assembly in May 2022. However, TTF members were also advised to consider non-financial aid – such as asking countries to invest in purchasing meningitis vaccines – which would represent a policy change rather than a donation of money. The launch event would be the big first step, and the way ahead will depend on what happens at the launch. It will necessary to follow the impact of the launch and to track progress afterwards.

Following the discussion it was proposed to draw up a resource mobilization plan with a small fundraising working group. This was strongly supported by UNICEF, and would be led by the WHO secretariat, which is currently strengthening this area of work, so someone from WHO resource mobilization team should ideally be involved. It was agreed to set up a small group to develop a draft strategy for communication and resource mobilization and to move forward rapidly. There was general agreement that the launch would need to be at a more distant, but certainly not too distant, date. The secretariat would contact members regarding the communication and fundraising working group.
Further business and closing

Dr Tedros Director-General WHO and Dr Mike Ryan Executive Director, Health Emergencies Programme WHO joined the meeting and took the opportunity to acknowledge the life-long contributions of Professor James Stuart to meningococcal disease, and his role in supporting WHO in the development and implementation of the Defeating meningitis global road map.

No further business was proposed. Dr Preziosi noted that there were a number of potential champions taking part in the meeting and it was also clear that WHO’s Director-General was committed to defeating meningitis. This was a very good sign for the future of the roadmap.

The Chair closed the meeting at 17:15 CET.
# Meeting Agenda

## Agenda - Technical Taskforce (TTF) meeting – 1st July 2022

WHO headquarters room W1 and on-line attendance

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<th>Session</th>
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<td>A few words of introduction</td>
<td>TTF Chair and co-Chair</td>
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<td>11:10-11:30</td>
<td>General update</td>
<td>Marie-Pierre Preziosi (WHO)</td>
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<td>11:30-12:05</td>
<td>Partners achievements and challenges</td>
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<td></td>
<td>- Pregnancy related GBS burden</td>
<td>Proma Paul (LSHTM)</td>
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<td>- MSF/Epicentre updates</td>
<td>Iza Ciglenecki (MSF)</td>
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<td>- World Meningitis Day 2022 progress &amp; engagement</td>
<td>Vinny Smith (MRF)</td>
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<td>12:05-12:40</td>
<td>Regional framework, identification of targeted countries, next steps</td>
<td>Regional focal points</td>
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<td>13:30-14:25</td>
<td>Operationalizing country support and challenges</td>
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<td>1) Selected examples of activities</td>
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<td>- Breaking barriers to laboratory confirmation</td>
<td>Lorenzo Pezzoli (WHO)</td>
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<td>- Study on burden of sequelae, identification and treatment of patients</td>
<td>Nicole Schless (WHO)</td>
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<td>- Ensuring quality meningitis data in the time of Covid-19</td>
<td>Ryan Novak (CDC)</td>
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<td>- New vaccines in support to countries</td>
<td>Mark Alderson (PATH)</td>
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<td></td>
<td>2) Promoting action for some key activities:</td>
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<td></td>
<td>- Context specific strategies to prevent GBS infection in infants</td>
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<td>- Integration with Primary Health Care</td>
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<td>14:25-15:30</td>
<td>Road map business case: findings and way toward finalization</td>
<td>Antoine Durupt (WHO), Ibrahima Coulibaly (WHO), Mary-Anne Land (WHO)</td>
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<td>15:30-15:45</td>
<td>Launch of the business case and resources mobilization strategy: objectives, features and planning</td>
<td>Mary-Anne Land (WHO), Kristen Cox Mehling (GrV), James Fishon (GrV)</td>
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<td>17:05-17:20</td>
<td>Any Other Business</td>
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<td>17:20-17:30</td>
<td>Wrap-up and closing</td>
<td>TTF Chair and co-Chair</td>
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List of Participants

Technical Taskforce

Centers for Disease Control and Prevention
Atlanta, United States of America
Dr LeAnne Fox
Dr Lucy McNamara*
Dr Ryan Novak

London School of Hygiene and Tropical Medicine
London, United Kingdom
Professor Brian Greenwood
Professor Beate Kampmann
Professor Joy Lawn*

Médecins sans Frontières and Epicentre
Brussels, Belgium; Geneva, Switzerland; and Paris, France
Dr Myriam Henkens*
Dr Iza Ciglenecki
Dr Matthew Coldiron
Dr Daniela Garone

Meningitis Research Foundation
Bristol, United Kingdom
Mr Vincent Smith
Ms Claire Wright

PATH
Seattle, United States of America
Dr Mark Alderson

UNICEF
Programme division
New York City, United States of America
Dr Sanjay Bhardwaj
Dr Christopher Gregory*

Subject Matter Experts
Professor Dominique Caugant, National Institute of Public Health, Oslo, Norway
Professor Nora Groce, University College London, London, United Kingdom
Professor Robert Heyderman, University College London, London, United Kingdom *
Professor Keith Klugman, Bill & Melinda Gates Foundation, Seattle, United States of America
Dr Gail Rodgers, Bill & Melinda Gates Foundation, Seattle, United States of America
Dr Caroline Trotter, University of Cambridge, Cambridge, United Kingdom
Professor Samba Sow, Centre pour les Vaccines en Développement (CVD- Mali), Bamako, Mali
Professor Muhamed-Kheir Taha, Institut Pasteur, France
WHO Secretariat (Technical Taskforce)

**Regional Office for Africa**
- Dr André Bita
- Dr Anderson Latt
- Ms Helena O’Malley*

**Regional Office for the Americas – Pan American Health Organization**
- Dr Lucia De Oliveira

**Regional Office for the Eastern Mediterranean**
- Dr Quamrul Hasan*

**Regional Office for South-East Asia**
- Dr Manish Kakkar
- Dr Emmanuel Njambe Tondo Opute

**Regional Office for Western Pacific**
- Dr Hardeep Sandhu

**Regional Office for Europe**
- Dr Siddhartha Datta*
- Dr Liudmila Mosina

**Headquarters**
- Dr Tarun Dua*
- Mr Antoine Durupt
- Ms Katya Fernandez
- Dr William Perea*
- Dr Lorenzo Pezzoli
- Dr Marie-Pierre Preziosi
- Dr Nicoline Schiess
- Dr Heidi Soeters
- Dr Carol Tevi Benissan

**Other Subject Matter Experts**

- Ms Virginia Benassi, WHO headquarters
- Dr Anindya Bose, WHO headquarters
- Dr Ado Bwaka, WHO, Regional Office for Africa
- Dr Adam Cohen, Centers for Disease Control and Prevention, Atlanta, United States of America
- Mr Ibrahima Coulibaly, WHO headquarters (consultant)
- Ms Kristen Cox Mehling, Global Health Visions, New York, United States of America
- Ms Ruth Embaye, WHO headquarters*
- Mr James Fishon, Global Health Visions, New York, United States of America
- Dr Mary-Anne Land, WHO headquarters (consultant)
- Mr Clément Lingani, WHO, Regional Office for Africa
- Dr Jason Mathiu, WHO, Regional Office for Africa*
- Dr Proma Paul, London School of Hygiene and Tropical Medicine, London, United Kingdom
- Dr Messeret Shibeshi, WHO, Regional Office for Africa*
- Dr Maria Teresa Valenzuela Bravo, WHO, Regional Office for the Americas – PAHO (consultant)
- Dr Goitom Weldegebriel, WHO, Regional Office for Africa*

**Meeting rapporteur:** Mr David Bramley

* Unable to attend