

Defeating meningitis by 2030

First meeting of the Technical Taskforce

World Health Organization headquarters, Geneva, 18 and 19 July 2018

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The meeting was chaired by Dr Nadia Teleb Badr (Regional Adviser, Vaccine Preventable Diseases and Immunization, WHO Regional Office for the Eastern Mediterranean, Cairo) and Professor Brian Greenwood (London School of Hygiene and Tropical Medicine, London, United Kingdom of Great Britain and Northern Ireland) (see Annex 1 for the agenda and Annex 2 for the list of participants).

Dr Teleb opened the meeting by highlighting the progress made in controlling meningitis from the time of the call by African governments in 1996 for an affordable vaccine¹ to the successes of the Meningitis Vaccine Project with the MenAfriVac vaccine against disease caused *Neisseria meningitidis* serogroup A bacteria in the meningitis belt in Africa.

Dr Martin Friede (Coordinator, Initiative for Vaccine Research, WHO) emphasized the importance of the initiative to defeat meningitis by 2030 and of the meeting for WHO. It contributes to the achievement of the three goals of WHO's Thirteenth General Programme of Work (2019-2023), which focus on promoting health, keeping the world safe and serving the vulnerable. Vaccines have been the cornerstone of ensuring healthier lives, with vaccination having a highly-favourable cost-benefit ratio. The hardest task has been getting vaccines to where they were needed. WHO has depended on global experts to design strategies and plans for defeating meningitis.

Dr Marie-Pierre Preziosi (Medical Officer and Lead Flagship Projects, Initiative for Vaccine Research, WHO) outlined the scope and objectives of the meeting and the process for developing a roadmap (see Annex 3 for WHO's concept note). The aims are to: learn from other experiences and approaches to developing roadmaps, identifying expectations and potential contributions to the process; discuss the baseline situation of meningitis and explore the way forward; and determine the next steps. The meeting would also consider terms of reference of the Technical Taskforce and the attribution of roles and responsibilities.

Background

Meningitis is a devastating disease and remains a major global public health challenge. Together with sepsis it is estimated to cause more deaths in children under 5 years of age than malaria. Survivors can suffer severe sequelae with considerable social and economic costs. Vaccines are available against three main bacterial causes of meningitis (*Neisseria meningitidis*, *Streptococcus pneumoniae*, and *Haemophilus influenzae* type b). There is no vaccine yet against disease caused by with group B streptococci (*Streptococcus agalactiae*). Furthermore, vaccine introduction and coverage are variable especially in lower- and middle-income countries. The burden of meningitis falls mainly on the poorest countries.

Two meetings in 2017² issued calls for a global vision and the defeat of meningitis by 2030. The WHO Secretariat acknowledged the global relevance of this approach, arguing at the same time for the need to recognize regional specificities. Its work on meningitis is fully aligned with the objectives of the Organization's Thirteenth General Programme of Work (2019-2023). WHO's regional offices for Africa and the Eastern Mediterranean have jointly developed an immunization business case for the African Continent,³ which was launched in May 2018 at a technical briefing during the Seventy-first World Health Assembly and for which ambition is high that all high-risk countries will have eliminated outbreaks of meningitis by 2030.

The Secretariat proposes to create a roadmap comprising a clear vision and strategic goals, defined milestones and agreed priorities for research and enhanced control activities. Its scope will be global, with strategies tailored to each region as relevant, building on collaboration and the work already done in WHO's African and Eastern Mediterranean regions, and it will include a business case. The

process for its development will be (1) finalizing the baseline situation analysis, (2) drafting the roadmap, and (3) holding iterative technical and public consultations. The Technical Taskforce will be responsible for developing the baseline situation analysis, drafting the roadmap, and supporting cycles of review and synthesis

This initial Technical Task Force is a consortium of major technical partners historically invested in long-term meningitis control, particularly in the African region, with complementary focus and expertise.

Past experience with roadmap development and lessons learnt

Members of the Technical Taskforce reviewed the lessons learnt from the development of previous roadmaps. One common issue was the need to be consistent in the use of terminology relating to concepts of disease control, eradication, elimination or elimination as a public health problem.

The World Health Assembly has adopted many resolutions and decisions on the prevention and control of infectious diseases, including conditions relevant to meningitis such as pneumonia and sepsis. Some have urged elimination and eradication. In 1997 its resolution on elimination of lymphatic filariasis as a public health problem included the concept of disease prevention with mass drug administration and recognized the socio-economic impact of the disease⁴ and the need to reduce suffering. In several instances, the Secretariat has responded by establishing technical taskforces, instigating broad partnerships. Several of these groups developed global strategies containing defined goals, strategic objectives and specific indicators (sometime national or regional), timelines and monitoring mechanisms.

WHO has amassed a considerable body of expertise and created, working with partners, numerous global action plans, roadmaps and strategies for achieving public health goals. Elements include roadmaps for accelerating work on neglected tropical diseases,⁵ malaria vaccine technology,⁶ and ending cholera by 2030.⁷ For example, the roadmap for neglected tropical diseases sets multiple targets, including eradication, elimination (both at global and regional levels) and control of diseases, but also includes targets and indicators for reducing suffering and improving quality of life.

The World Health Assembly has also adopted or endorsed global strategies for prevention and control (for instance on water and air pollution and viral hepatitis), strategic plans (measles and rubella), other roadmaps (for example, on childhood tuberculosis) and action plans (for instance, the global vaccine action plan (2011-2020) and those on pneumonia and diarrhoea). Since 2015, the goals of all the plans have been linked to the goals in the 2030 Agenda for Sustainable Development.

The roadmap on ending cholera by 2030 was developed through a long-standing partnership, the Global Task Force on Cholera Control. The choice of the word “ending” in its title was deliberate, in order to have greater impact in communication with the public. The roadmap included consideration of costs, and stressed early detection and containment of outbreaks, with clear goals, linked with other Sustainable Development Goals besides Goal 3 on health. Its development was rapid (six months), owing to strong engagement and support from partners, short-term recruitment of dedicated staff, adaptation of existing materials where possible, formulation of key communication messages, and the creation of a small core group to guide the process and review materials. The roadmap was featured in a side event at the Seventieth World Health Assembly in May 2017 and given a prominent launch in October that year, followed by the adoption of resolution WHA71.4 on cholera prevention and control by the Seventy-first World Health Assembly in May 2018.⁸ Challenges remaining to be overcome include fitting responses to emergencies within long-term programmes,

coordination, costing the strategy, implementation (including resource mobilization) and WHO's internal processes.

The roadmap on malaria vaccine technology was developed with substantial support from international partners, engendering a good sense of ownership. The process involved intense but long consultations, with continued meetings of the global funders' group, ensuring coherence, and WHO assuming a coordinating role. The roadmap set strategic goals and priority areas, including research, key capacities, policy and commercialization issues (as well as related regulatory concerns). The original version was updated through a public consultation process and technical consultations. Challenges faced included the lack of a centralized decision-making authority, the need for different levels of coordination, failure to get government agencies to agree, and the need to distinguish translational research from product development.

Comments to emerge in discussion included the need to document progress, to ensure that achievements were sustained, to pay close and early attention to the consequences of meningitis, to analyse the reasons for success or failure of various strategies and action plans, and how to respond when targets were not being met. A balance had to be struck between aspirational and realistic targets. Costing was a vital element. Another essential factor was country ownership; Member States needed to be engaged from the outset. One member of the Taskforce observed that the experience with the introduction of MenAfriVac (a conjugate vaccine against *N. meningitidis* serogroup A meningococcal disease) in the sub-Saharan meningitis belt demonstrated that some countries can own their surveillance activities. It was noted that meningitis could be a vehicle to direct attention to other actions such as control of sepsis, pneumonia and outbreaks of other infectious diseases.

Presentations and expectations

Representatives of six member organizations of the Technical Taskforce as well as WHO temporary advisers and subject matter specialists expressed their views on, and expectations of, the roadmap.

The **Centers for Disease Control and Prevention** (CDC, Atlanta, Georgia, United States of America) supports the development of the roadmap. It offers technical support through its expertise in disease control and surveillance. In particular, it is a leading partner in MenAfriNet, an international consortium that includes the Agence de Médecine Préventive, African health ministries and WHO. The consortium works to strengthen meningitis surveillance in five countries in sub-Saharan Africa so as to evaluate the impact of MenAfriVac on the incidence of meningococcal disease due to *N. meningitidis* serogroup A as well as to monitor the emergence of disease and epidemics due to other serogroups. CDC and the **Norwegian Institute of Public Health** (NIPH, Oslo, Norway) are leading a study in Burkina Faso (see below). CDC's Bacterial Meningitis Laboratory also serves as a WHO Collaborating Centre for Meningitis, monitoring the global spread of virulent strains of meningococci using molecular methods and building capacity, particularly in Africa.

The work of the **London School of Hygiene and Tropical Medicine** (London, United Kingdom of Great Britain and Northern Ireland) on meningitis includes the coordination of the African Meningococcal Carriage Consortium, which focused on patterns of meningococcal carriage in seven countries in the sub-Saharan meningitis belt. The transfer of the Medical Research Council Unit in The Gambia to the School in May 2018 strengthens its work on meningitis, immunization and maternal and child health programmes in The Gambia.

The **Meningitis Research Foundation** (Bristol, United Kingdom of Great Britain and Northern Ireland) advocates for people, families and patient's needs. Its vision is a world free from meningitis and septicaemia, with the specific goal of eliminating both as a public health problem. It called on the Taskforce to adopt a person-centred approach to its work, focusing on vaccination as well as improved diagnosis and treatment, support and aftercare for survivors of meningitis with sequelae; better data for advocacy and decision-making: information and advocacy capacity; adaptation of other public health business cases; and clear prioritization and phasing of actions with clear definition of roles. With the target date of 2030 - only 12 years away - action is needed urgently.

In their work on progressing towards ensuring no more vaccine-preventable meningitis, **Médecins sans Frontières** (MSF) and the MSF Epicentre in Paris have been involved deeply in work on strategy development, protocols, vaccination and access to vaccines, earlier and better treatment, early decentralized diagnosis (with quality assurance of diagnostics) and advocacy for more than 10 years. MSF provides a reality check on aspirations, seeking what can be achieved feasibly and defining both short-term and long-term goals. MSF emphasizes that any global strategy should reflect the fact that there is no one-size-fits-all approach to outbreak control.

In 2001, **PATH** (Seattle, Washington, United States of America) partnered with WHO to establish the Meningitis Vaccine Project to eliminate epidemic meningitis due to *N. meningitidis* serogroup A in sub-Saharan Africa through the development, testing, introduction and widespread use of conjugate meningococcal vaccines. PATH led the pharmaceutical, clinical and regulatory development work that resulted in the licensing and prequalification of MenAfriVac, which has been used so successfully in the African meningitis belt. It is trying to replicate that success for a vaccine covering serogroups A, C, W, X and Y of *N. meningitidis*, to develop affordable conjugate and protein-based vaccines against *S. pneumoniae*, and to develop a low-cost conjugate vaccine against infection with group B streptococci (*S. agalactiae*) to prevent neonatal sepsis and meningitis.

UNICEF is focusing on supply-side aspects of meningococcal vaccines, detailing market situations and providing information on difficulties in supply and demand. It also works on programmatic issues, for instance demand creation, risk communication, and the use of vaccines in outbreak control. UNICEF supports the development of the roadmap, and advised to invest in conducting health economic studies to assess the impact of meningitis on national economies. The roadmap should demonstrate how introduction of a meningitis vaccine could support the use of other routine vaccines and improve vaccination coverage. Its remit should be broadened to cover neonatal health and related topics.

For more than 20 years, the **Norwegian Institute of Public Health** (NIPH, Oslo, Norway) has been designated a WHO Collaborating Centre for Reference and Research on meningococci. It contributes to diagnostic and outbreak confirmation in various countries (including a recent outbreak in Kazakhstan), monitoring world-wide spread of virulent strains of meningococci using molecular methods, and building capacity, particularly in Africa. NIPH is working on better rapid diagnostic tests, laboratory diagnosis, disease burden studies and vaccines. It has also been leading a study with CDC in Burkina Faso to monitor the ability of vaccination with MenAfriVac to reduce the prevalence of carriage of *N. meningitidis* and so limit transmission of the meningococcal disease as well as examining the impact of vaccination with MenAfriVac.

The **Bill & Melinda Gates Foundation** invested heavily in the Meningitis Vaccine Project, which resulted in MenAfriVac, a *N. meningitidis* serogroup A vaccine that was introduced at the initial cost of less than US\$ 0.5 a dose. The Foundation is now supporting routine MenAfriVac introduction and

surveillance networks for the meningitis belt. Its Global Health Programme includes work to reduce deaths in children from pneumonia, neonatal sepsis and meningitis due to many of the pathogens covered by the proposed roadmap. The focus is global, it being noted that in the USA, following introduction of a 13-valent pneumococcal vaccine, group B streptococci are the largest cause of meningitis in under 5s. Through an innovative arrangement, the Foundation is supporting a multinational pharmaceutical company to develop a vaccine against group B streptococci. It is also contributing support to PATH in the development of a pentavalent meningococcal conjugate vaccine by an Indian manufacturer for use in Africa. Although progress was being made, challenges to be faced include the necessarily large size of clinical trials and more work on correlates of protection. The Foundation supports studies to improve herd protection with pneumococcal vaccines including the need for a booster dose, novel vaccination regimens and reduced-dose schedules.

The Foundation is also funding a surveillance programme in India to detect meningitis pathogens in cerebrospinal fluid through PCR assays, with whole genome sequencing in regional reference laboratories.

Other concerns of the Foundation include availability and accessibility of vaccines and, for treatment, antimicrobial resistance. More generally, there is concern that, with meningitis becoming increasingly concentrated in the poorest countries, the attention of donors on this condition may decline.

Work is being done at the **University of Cambridge** (United Kingdom of Great Britain and Northern Ireland) on modelling the burden of meningitis, vaccine strategies and the impact of vaccination, in particular against meningococcal infection, with additional work on group B streptococcal infections. Reliable data are essential if the results of modelling studies are to be credible; hence considerable efforts should be made to improve the accuracy of data on the burden of meningitis and related infections, including better definition of burden. The focus of any roadmap should be global and not restricted to WHO's African and Eastern Mediterranean regions.

Currently, **WHO's** work is mainly divided between headquarters and the regional offices for Africa and the Eastern Mediterranean, but the need to form linkages with the four other regional offices in order to provide a global response is recognized. Country ownership is vital; one way to encourage that would be to broaden the membership of the Taskforce to encompass additional experts from some countries where meningococcal disease is a significant concern. In the **WHO African Region** concerns about the re-emergence of *N. meningitidis* serogroup C are fuelling the push to develop multivalent meningococcal conjugate vaccines. Concerned Member States outside the meningitis belt need to consider including the serogroup A vaccine in routine immunization programmes. Other priorities include better detection and response to outbreaks, with increased availability of rapid diagnostic tests for use at points of care, and a people-centred approach building on experience with serogroup A.

The **WHO Eastern Mediterranean Region** suffers the second largest burden of meningococcal disease globally. Its Member States include low- and middle-income countries, and sustainability of programmes is of great relevance in this Region. Some 70% of children in these countries have no access to a vaccine against *S. pneumoniae* and generally poor access to diagnostics and adequate treatment. Serotype-specific meningitis burden data are lacking. Few countries can provide aftercare for survivors of meningitis with sequelae. The Regional Office proposes inclusion in the roadmap of: clear goals; identified factors that have led to success or failure; investment needs; better data,

especially on sequelae and disease burden; guidance on clinical management; and attribution of under-5 mortality and morbidity to meningitis.

Work at **WHO headquarters** follows the outcomes of the Wilton Park meeting and reflects the goals and objectives of WHO's Thirteenth General Programme of Work. The Secretariat is endeavouring to expand the focus from the two regions principally engaged in meningitis control to the global level and putting meningitis on the global public health agenda. The R&D Blueprint⁹ has helped to set a precedent for work on new tools and introducing them more rapidly. The Organization's convening mandate is a powerful asset, together with the involvement and input of regional and country offices. In order to ensure country ownership, the political engagement of Member States can be encouraged through WHO's governing bodies, with use of the regional committees and their annual sessions as the first level of entry. The need for a rapid and concentrated effort, emulating the progress of the Global Technical Task Force on Cholera, was underlined.

Comments during the open discussion period recognized that expanding the focus to the global level would need more resources. One route to raising the necessary awareness was through politicians, for whom meningitis commanded attention; the example was given of Burkina Faso, where the President receives monthly updates on the meningitis situation. The need to gather perfect data on the actual burden of disease was balanced against the need to invest into other priorities. Realistic figures seem essential for forecasting demand for vaccines and identifying optimum approaches for introducing vaccines.

Meningitis should be viewed as the severe end of the spectrum of infection with many of the pathogens that cause meningitis concerned, and treatment and efforts to prevent and control meningitis will have broad-ranging effects. Another issue was the role of Gavi, the Vaccine Alliance, and how currently eligible countries would cope once their development rendered them ineligible for its support.

The running down of support for polio services in countries such as Nigeria where the burden of meningitis is high raises fears of a decline in the quality of data, surveillance and laboratory systems in that country.

Baseline situation analysis and strategic objectives for the roadmap

Before the meeting members of the Taskforce had prepared five draft documents to create a baseline situation analysis, providing the foundation for the proposed roadmap. These background documents cover: global and regional burden of disease; diagnosis and surveillance; treatment and prophylaxis; vaccines and vaccination; and information and support. Elaboration of the baseline analysis should outline the main public health policies for meningitis and its sequelae, recommended practices and implementation status, barriers to implementation of policy, R&D priorities, and the main gaps in policy implementation, knowledge and R&D between where we are and where we want to be.

After extensive discussion, members of the Taskforce agreed that the roadmap should focus on the four main bacteria responsible for vaccine-preventable meningitis for which vaccines are available or likely to become so in the foreseeable future. Other bacteria and pathogens that cause meningitis (viruses, fungi and parasites) should not be excluded when goals and strategies are generalizable, especially in terms of information and support for survivors with sequelae. Many points covered by the roadmap should be of relevance to this latter group of pathogens.

The members of the Taskforce also recognized that the objective of the roadmap should be aspirational but the goals should be realistically achievable. The challenge would be to strike the right balance.

Global and regional burden of disease

The background document presented current knowledge on the epidemiology of bacterial meningitis, including global and regional mortality and incidence, modelling the burden of disease, and sequelae in terms of risk and their impact (disability-adjusted life years).

Discussion highlighted the unreliability of global and regional data on deaths from meningitis, and the wide discrepancies between estimates of mortality and morbidity. Concerns were expressed about using existing estimates as the basis for formulating targets.

Several questions and proposals emerged. One suggestion was to find out whether the institution credited with gathering the most reliable data on childhood pneumonia and *H. influenzae* type b meningitis (the Johns Hopkins Bloomberg School of Public Health, Baltimore, USA) could restart its work on estimating meningococcal cases and deaths. Another suggestion was to convene a meeting of modellers and epidemiologists with the aim of reconciling data, sources and estimates, as WHO had done previously for developing roadmaps on malaria and other diseases. Yet another was to generate separate estimates of meningitis and sepsis in neonates to define more clearly what was recognized as a high burden of mortality and disease. The situation analysis could contain information on less common causes of meningitis even if there were few data. Comparative data on the burden of other diseases would be valuable for advocacy and designing preventive interventions. Data on sequelae in survivors are particularly scarce, even though in Africa about one third of cases of meningitis appeared to result in sequelae and the disease is one of the main causes of deafness; a suggested starting point was a desk review of literature.

Diagnosis and surveillance

The background document focused on laboratory tests and surveillance. It identified strengths and weaknesses, and defined the following priorities:

- development of rapid diagnostic tests,¹⁰ in particular: (1) for surveillance purposes (in epidemic settings) to identify organisms rapidly at peripheral level (outbreak control); (2) for global (epidemic and non-epidemic) settings (to identify bacterial infection for individual case management); and (3) globally (for detection of several pathogens with a multiplex test at hospital level);
- strengthening of countries' capacity for rapid diagnostic confirmation, including: better lumbar puncture policies and practice; and improved transport networks for samples;
- collecting and using country surveillance data – laboratory and epidemiological data linked at country level, regional data management tools linked to country databases, country data from all regions reported to WHO;
- international collaboration on molecular surveillance – a global genome library and metagenomics, with greater country access to reference centres.

In discussion, it was noted that the initial purpose behind the development of rapid diagnostic tests in the African meningitis belt was to identify pathogens responsible for outbreaks. As treatment with ceftriaxone for five days seems to be acceptable, affordable and successful, there is less need clinically for identification of the pathogen during epidemics, for example differentiation between infections caused by meningococci and pneumococci. However, serogroup-specific information is still

needed to inform vaccine response, and rapid diagnostic tests do allow early detection of cases and, with multiplex formats, a wide range of pathogens. If available as point-of-care tests, they could reduce or overcome the difficulties experienced with transport of samples to often-remote reference centres and shorten the time needed to receive a response. It was argued that their use could be crucial, leading to earlier initiation of treatment and better outcomes. Not all countries have well-developed or functioning surveillance systems, and rapid diagnostic tests could have a valuable role in supporting epidemiological surveillance in such countries. Strengthening rapid confirmation within a country (as with the Ebola virus disease outbreak in Sierra Leone) is a major challenge. Further, several pharmaceutical companies are developing and selling diagnostic tests for Ebola virus – about 70 million in 2017: a substantial market – and the rationale for the companies' activities could usefully be explored.

In most resource-constrained countries, surveillance of vaccine-preventable diseases is externally funded and therefore sustainability is a major concern. However, examples of good practice exist; for instance, in Uganda, such surveillance is part of an integrated disease control programme. Problems can arise, however, with the maintenance of equipment. Other issues raised included the sensitivity of the tests, availability of standard operating procedures, training, and bioinformatics support to interpret sequence-based information (it was mentioned that the Wellcome Trust supports courses on bioinformatics and building this capacity in developing countries). It was recommended that the Taskforce could disseminate case studies of successes and best practices. It was also suggested that market research could be done into needs at different levels. Big questions remain about what priority should be given to rapid diagnostic tests, who should push the R&D agenda, and finally who pays for their supply to low- and lower-middle-income countries?

Clear guidance on surveillance for group B streptococcal infections is lacking and data on the burden of disease due to such infections are scarce. Collection of data through a set of sentinel sites was proposed as an option for gathering better data.

Treatment and prophylaxis

The background document focused on antibiotic treatment regimens, prevention and management of sequelae, chemoprophylaxis of meningococcal disease (both of contacts and the community), and screening and prophylaxis for group B streptococci.

Participants agreed that the recommendation for the five-day duration of ceftriaxone treatment (seven days under two months of age) was rational and sound. The treatment is effective for all the pathogens being considered and sterilizes cerebrospinal fluid. In cases where facilities were overwhelmed, return to a single dose with monitoring of clinical progress could still be adopted in outbreaks confirmed to be due to *N. meningitidis*.

Concern was expressed about the lack of follow-up after infection and treatment, given that deafness and other sequelae may not be apparent immediately. Further research was needed to understand whether the risks of sequelae were the same for each causal agent, and to what extent the risk decreased when treatment was begun promptly after infection. The role of adjunctive therapies (that is, steroids such as dexamethasone) in the prevention of sequelae was discussed and its potential role would need further consideration during development of the roadmap.

Efficacy of prophylaxis at the household level has been shown in developed country settings, and a recent clinical trial of ciprofloxacin prophylaxis to the whole village during an epidemic in the meningitis belt showed a reduced attack rate in those communities. Further work is needed before

this practice is recommended widely. For instance, the lack of data from urban contexts needs to be rectified and potential for enhancement of antimicrobial resistance requires careful consideration.

For group B streptococcal infections, it was argued that there was a potentially huge market for a simple rapid point-of-care diagnostic test, and that it was important that the roadmap encourage R&D on such a test.

Members of the Taskforce emphasized that the roadmap must include the need for all diagnostics, vaccines and treatments to be quality assured.

Vaccines and vaccination

The background document describes multivalent meningococcal conjugate vaccines that are currently licensed and in clinical development; licensed meningococcal B protein vaccines; *H. influenzae* type b vaccines; multivalent pneumococcal conjugate vaccines that are currently licensed and in the late stages of development; and group B streptococcal vaccines in development. Currently, there are three licensed quadrivalent conjugate meningococcal vaccines (A, C, W and Y), of which are all prequalified by WHO. For low-income and lower-middle-income countries, however, their high cost of these conjugate vaccines, which confer longer-lasting immunity and herd protection, renders them unaffordable. In addition, their availability is limited. Despite efforts to make a smooth transition from polysaccharide to conjugate vaccines, most manufacturers have either downsized or stopped production of polysaccharide vaccines, with two phasing out production of affordable polysaccharide vaccines. Manufacturers were encouraged to submit vaccines for WHO prequalification. Vaccines directed at preventing epidemic meningitis in Africa have historically represented a relatively small, less predictable and profitable market for multinational pharmaceutical companies, although the sizeable number of people making the hajj and umrah pilgrimages to Saudi Arabia each year (more than two million for the hajj alone) demonstrates a certain steady demand for such vaccines. As for all vaccines, good data are needed for determining supply and demand and for price negotiations, including meningococcal vaccines used for routine prevention, but also for outbreak response.

The increasing uptake of meningococcal vaccines globally is seen as a success. However, the fact that it has taken 30 years for vaccines such as that against *H. influenzae* type b to be widely introduced provides context to the long process. Nevertheless, the Taskforce considered that, for newer vaccines that are designed to be more affordable, uptake should and would be more rapid. More information on policies (for vaccination and complementary public health measures) and coverage for each vaccine should be provided in the baseline situation analysis.

For pneumococcal vaccines, clinical trials with protein-based vaccines have focused on nasopharyngeal carriage and otitis media and not the more clinically relevant but difficult to measure endpoints of invasive pneumococcal disease and pneumonia. On the other hand, multivalent pneumococcal conjugate vaccines have documented effectiveness against invasive pneumococcal disease and pneumonia and have been widely introduced globally. Of WHO's 194 Member States, 53 are yet to introduce multivalent pneumococcal conjugate vaccines. Although the currently high price of these vaccines may be reduced in the future with competition from developing country vaccine manufacturers, there will still be financial difficulties for countries graduating from support from Gavi for their pneumococcal conjugate vaccination programmes. Prices are quoted for vaccines supplied for routine immunization programmes (EPI), and vaccines are not available at that negotiated price for other circumstances, for example, for use in children over one year of age or for outbreak response. African countries were encouraged to explore pooled negotiations and to work together on regulatory aspects (especially as there are instances of fake or substandard vaccines being used).

The Secretariat acknowledged that the background document would benefit from additional information, including a section on access, and that the roadmap would clearly deal with that issue. It should include liaising with initiatives such as ones pertaining to lower- and middle-income countries, prices and procurement, with WHO contributing advocacy on these matters.

The challenges facing the development of group B streptococcal vaccines were acknowledged, but it was noted that the US Food and Drug Administration will soon evaluate the first vaccine specifically developed for use in pregnant women to protect their infants. That could set a useful precedent, even though there is extensive experience with tetanus toxoid and increasing use of influenza vaccine in pregnancy.

Following WHO's recommendation that *H. influenzae* type b conjugate vaccines should be included in all routine infant immunization programmes, their introduction in all but three (China, Russian Federation and Thailand) of WHO's Member States is rightly seen as a success. Each of the three countries chose not to use the vaccine for different reasons. Because of China's large population the proportion of the world's birth cohort not vaccinated stands at around 20% (and a sizeable proportion may not be vaccinated in India). Nevertheless, the global situation raises the possibility of eliminating *H. influenzae* type b, although vaccination coverage rates need to be raised and many countries do not administer a booster dose. With the decline in *H. influenzae* type b infections, a rise in cases due to type a has been seen; that situation needs monitoring. The incidence of type a disease increased in the USA six-fold between 2002 and 2016, with particularly high rates in American Indian and Alaskan Native populations as well as in Canada in indigenous people. The disease appears to be as severe as that due to type b.

Information and support

The background document analysed the various functions of information and support across the spectrum of care. It examined aspects of advocacy for vaccines and presented several successful approaches. As it is estimated that at least 14 million survivors of meningitis are disabled or impaired, any global plan would need to consider the impact of their condition on their family members and society as a core feature.

Approaches to implementation generally depend on levels of economic development and are not systematically measured. The roadmap needs to recognize the crucial role of the community in its successful implementation, especially given the strategies for social mobilization that have increased vaccination rates in some populations. The impact of any plan will only be seen after several years, but quality of life can be improved through information, support, advice and counselling for entire populations, with information and awareness starting before infection and support starting with diagnosis.

Members of the Taskforce deplored the paucity of support in many low-income countries for the disabled, including those disabled as a result of meningitis (for instance, little provision of wheelchairs and hardly any services for deafness). There were, however, rare encouraging signs, for example, a civil society organization in Burkina Faso running schools for children with deafness after meningitis. The key, it was felt, lay in a combination of government commitment and engagement of civil society, with the need for advocacy aimed at politicians and at communities to raise awareness and demand. Care of those with sequelae should be part of the design of any programme and involve multiple ministries, including those responsible for health and education. Meanwhile, community awareness must be raised; the health sector should review programmes on deafness and there could be studies of whether introduction of conjugate vaccines reduces the prevalence of deafness; the relative risks of deafness and sequelae from different forms of meningitis should be defined; and

networks of meningitis associations and family members should be encouraged and established. Confidence in vaccines needs to be built, maintained and indeed strengthened. The Secretariat could collate information on relevant services in health facilities, and, following its experience with the roadmap on neglected tropical diseases, it could assemble a toolkit with training packages and examples of communication best practices. Health surveys on the prevalence of disabilities could provide useful information.

Proposed structure of the roadmap

The members of the Taskforce agreed that, as things stood at the moment, the roadmap could be structured around five pillars: prevention and epidemic control; diagnosis and treatment; disease surveillance; advocacy and information; support and aftercare for survivors. Access and monitoring would be cross-cutting issues (Figure 1).

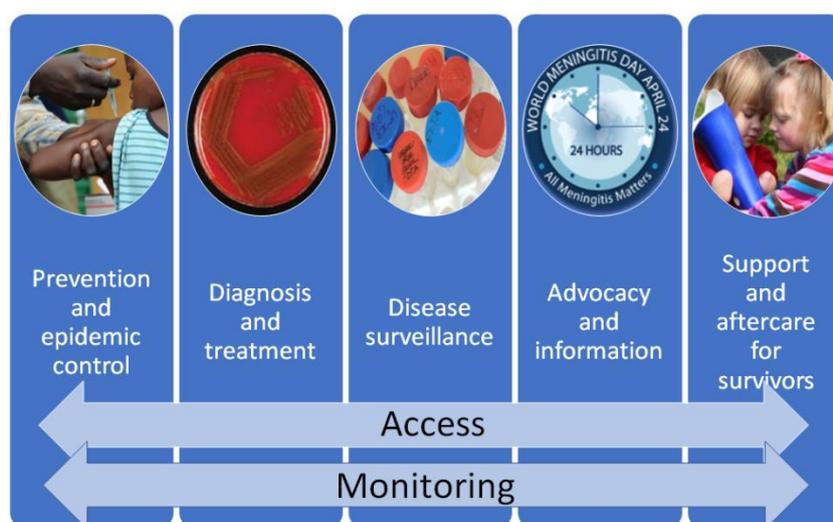


Figure 1. Proposed structure and pillars of the roadmap

The Taskforce reviewed the terms of reference of the Technical Task Force and the Roadmap Support Group. The revised versions of the terms of reference are attached as Annexes 4 and 5 for further consideration.

Consensus of the vision and scope of the roadmap

The consensus of the meeting was that the roadmap should consist of the following elements. The strategic and specific goals should be considered as tentative and would be further discussed and refined as the roadmap was developed, in particular the target percentages .

Title

Defeating meningitis by 2030: a roadmap.

Scope

The focus of the roadmap will be on meningitis caused by organisms responsible globally for most cases of bacterial meningitis: *Neisseria meningitidis*, *Streptococcus pneumoniae*, *Haemophilus influenzae type b*, and *Streptococcus agalactiae*.

Meningitis caused by other bacteria or other organisms will be included in strategic goals where applicable.

Vision

A world free from meningitis

Strategic goals by 2030

- Eliminate meningitis epidemics
- Reduce cases and deaths from vaccine-preventable meningitis by 80%
- Provide high quality care for survivors with sequelae

Specific goals

- *Prevention and epidemic control*
 - Universal introduction, achievement and maintenance of 90% coverage of existing pneumococcal and *H. influenzae* type b conjugate vaccines
 - Ensured availability and affordability and broader serotype coverage of pneumococcal vaccine
 - Access to affordable meningococcal multivalent conjugate and *N. meningitidis* serogroup B vaccines in all areas where needed
 - Adapted vaccination strategies to reach the maximum benefit in terms of protection as soon as possible
 - Licensure, WHO pre-qualification and introduction of an affordable group B streptococcal vaccine
 - Implementation, when feasible, of prophylaxis against group B streptococcal infection in pregnant women in all settings (before vaccine introduction)
 - Optimization of strategies for outbreak prevention and response including vaccination and chemoprophylaxis
- *Diagnosis and treatment*
 - Widely accessible, quality-assured point-of-care tests developed to identify main meningitis pathogens
 - Patients promptly receive appropriate treatment and supportive care
- *Disease surveillance*
 - Strengthened national surveillance of meningitis pathogens
 - with reporting and use of evidence to guide national and global policies
 - Increased quality-assured laboratory diagnostic confirmation capacity
 - with strengthened use of existing tools and microbiological tests
 - with increased coverage with lumbar puncture
 - Advance sequence-based global surveillance for meningitis pathogens
- *Support and aftercare for survivors*
 - Existing disability support services relevant to meningitis sequelae mapped
 - Best practice for after care and support identified

- Ensured access for meningitis survivors with sequelae to appropriate support services and education (cross-reference to World Health Assembly resolutions would be desirable)
- Engagement of civil society encouraged
- Consideration of sequelae included in treatment guidelines and national plans
- *Advocacy and information*
 - Improved recognition of meningitis as a health priority, globally and nationally
 - Awareness among all populations of meningitis signs, symptoms and sequelae and appropriate healthcare-seeking behaviour ensured
 - The right to meningitis prevention and services valued and demanded by communities
 - Vaccine confidence maintained
 - Partnerships encouraged between civil society (including nongovernmental organizations) and governments to meet these aims.

Strategies for achieving the goals

[To be developed under each specific goal, with indicators and milestones]

Research priorities

- *Disease burden*
 - Obtain accurate data on the global burden of meningitis
 - Share assumptions, understand and possibly resolve differences in different disease burden estimates
 - Better understanding of, and approaches to prevention of, pneumococcal outbreaks.
 - Obtain accurate data on burden of sequelae and impact on society
- *Diagnosis and treatment*
 - Market research for rapid diagnostic tests: what are the incentives and barriers for manufacturers?
 - R&D for point-of-care diagnostics (including sequencing methods, and blood-based rapid diagnostic tests without the need for lumbar puncture)
 - Do adjunctive therapies reduce sequelae?
 - What is the risk/benefit balance of implement screening and prophylaxis of group B streptococci in low-resource settings?
- *Disease surveillance*
 - Understand the full aetiology of meningitis (including negative cerebrospinal fluid samples)?
- *Prevention and epidemic control*
 - Optimum schedule for *N. meningitidis* pentavalent vaccine?
 - Optimum schedule for pneumococcal vaccine for herd-protection?
 - Optimum schedule for *H. influenzae* type b vaccination (for elimination?)?
 - Clinical development of new vaccines, in particular against group B streptococcal infections
 - Refinement of evidence for prophylaxis during meningitis outbreaks in the African meningitis belt?

- *Advocacy and information and Support and aftercare for survivors*¹
 - Population awareness of signs and symptoms of meningitis
 - (Inter)relationship between awareness of signs and symptoms of meningitis and suitable health-seeking behaviours
 - Barriers to health-seeking behaviours
 - Follow-up practice after discharge by health provider following treatment for meningitis
 - Disability-service signposting in primary, secondary and tertiary settings for survivors of meningitis
 - Availability of disability services mapped to meningitis sequelae

Next steps

- Revise and finalize baseline situation analysis and its constituent documents
- Review and define priority research areas
- Elaborate a communication plan for the work of the Taskforce and the development of the roadmap
- Start work on a business case
- Continue to map stakeholders and attributing their roles and responsibilities
- Prepare for an extended Technical Taskforce meeting in the first quarter of 2019 and a “defeating meningitis by 2030” roadmap consultation (large stakeholders’ consultation) in the second quarter of 2019, to be followed by a web-based public consultation.
- Ensure political engagement within WHO
- Plan to submit roadmap for consideration by WHO’s regional committees in their sessions in the third quarter of 2019
- Plan to submit the revised text to the Seventy-second World Health Assembly in May 2020 through the Executive Board in January 2020
- Prepare for a consultation by the Strategic Advisory Group of Experts (SAGE) on immunization in 2020: define terms of reference and establish a SAGE working group on meningococcal vaccines and vaccination in 2019.

Planning for the consultative process

As mentioned above, a next step will be to map stakeholders. It was proposed that, as a starting point, a list of experts with the following areas of expertise could be drawn up:

- epidemiology and surveillance
- immunization policy
- diagnosis and treatment of meningitis
- meningococcal, pneumococcal, *Haemophilus influenzae* type b and group B streptococcal vaccines
- statistics and mathematical modelling
- health economics
- social anthropology and health emergencies
- immunization programmes and service delivery
- information and advocacy
- disability.

¹ These proposals were submitted after the meeting. They will be considered by the Taskforce in subsequent meetings and correspondence.

Members of the Taskforce agreed to submit suggestions for names and further topics.

A web-based public consultation on the roadmap is also planned later in 2019.

Concluding remarks

The Assistant Director-General for Family, Women, Children and Adolescents, Dr Princess Nothemba (Nono) Simelela, welcomed the expertise provided by the Technical Taskforce and gave assurances of WHO's continued commitment to defeating meningitis. The roadmap and its vision are keenly awaited.

The Chairman welcomed the strong leadership being provided. The first meeting of the Technical Taskforce had made good progress towards a common programme, setting out what is realistic and what can be done. More engagement was needed from experts in the countries most involved.



Annexes

Annex 1 – Agenda

Defeating Meningitis by 2030 **First meeting of the Technical Taskforce**

WHO Salle M605, Geneva 18-19 July 2018
Agenda

Meeting Chairs: Dr. Nadia Teleb and Prof. Brian Greenwood

Day 1 – Wednesday 18 th July 2018		
8:30	Registration	
SESSION 1: INTRODUCTION AND OVERVIEWS		
9:00	Welcome and Introductions	Chairs, WHO
9:15	Overview of the agenda and aims of the meeting Proposed vision and development process for the roadmap	WHO
9:45	Lessons learned from previous roadmap developments <ul style="list-style-type: none"> • Review of resolutions for prevention and control of infectious diseases endorsed by the World Health Assembly (10') • Review of the development process for the cholera roadmap (10') • Review of the development and implementation process for the malaria vaccine roadmap (10') • Discussion (10') 	CDC WHO WHO
10:15	Presentations and expectations: Where are we now with managing meningitis and where we would like to be? What are our expectations for the roadmap and which contributions our organization could bring? (10' each maximum)	Taskforce members <i>Incl. regional perspectives</i>
10:45	<i>Coffee and tea</i>	
11:15	Presentations and expectations (<i>continued</i>)	Taskforce members <i>Incl. regional perspectives</i>
12:05	The meningitis strategy at the Bill & Melinda Gates Foundation	BMGF
12:20	Discussion	All
13:00	<i>Lunch</i>	
SESSION 2: BASELINE SITUATION ANALYSIS AND STRATEGIC OBJECTIVES FOR THE ROADMAP		
14:00	Overview of the Baseline Situation Analysis (5')	WHO
14:05	Burden of disease (15')	WHO & MRF
14:20	Discussion	All
15:00	Consensus on the Vision and Scope of the Roadmap	Chairs
15:30	<i>Coffee and tea</i>	

Day 1 – Wednesday 18 th July 2018 (Continued)		
SESSION 2 (Continued)		
16:00	Vaccines and Vaccination Programmes and Policies <ul style="list-style-type: none"> • Current status (15') • Discussion on strategic objectives and priorities 	PATH & WHO All
17:30	Information and Support, including support to survivors <ul style="list-style-type: none"> • Current status (15') • Discussion on strategic objectives and priorities 	MRF & UNICEF All
18:30	End of the day	
19:00	<i>Reception</i>	

Day 2 – Thursday 19 th July		
SESSION 2 (Continued)		
9:00	Diagnostics and Surveillance <ul style="list-style-type: none"> • Current status (15') • Discussion on strategic objectives and priorities 	CDC & WHO All
10:00	Treatment and Prophylaxis, including management of sequelae <ul style="list-style-type: none"> • Current status (15') • Discussion on strategic objectives and priorities 	Epicentre & MSF All
11:00	<i>Coffee and tea</i>	
11:30	Other areas to address	All
12:00	Wrap up: summary of taskforce deliberations and proposed next steps	Chairs, WHO
13:00	<i>Lunch</i>	
SESSION 3: PLANNING FOR THE CONSULTATION		
14:00	Stakeholders mapping	All
14:30	Consultation process	All
15:30	<i>Coffee and tea</i>	
16:00	Conclusion	Chairs, WHO
16:30	End of the day	

Meeting Rapporteur: Mr. David FitzSimons

Defeating Meningitis by 2030 **First meeting of the Technical Taskforce**

WHO Salle M605, Geneva 18-19 July 2018
List of Participants

Technical Taskforce

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London, United Kingdom

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Professor Beate Kampmann*

Professor Joy Lawn*

Médecins sans Frontières and Epicentre

Brussels, Belgium; Geneva, Switzerland; and Paris, France

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Dr Iza Ciglenecki

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Meningitis Research Foundation

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Ms Linda Glennie

PATH

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UNICEF

Programme division

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Oslo, Norway

Professor Dominique Caugant

Subject Matter Experts**Bill & Melinda Gates Foundation**

Seattle, United States of America

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Dr Ajoke Sobanjo-ter Meulen*

WHO Secretariat**Immunization and Vaccine Development/Immunization, Vaccines and Biologicals**

Regional Office for Africa

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Ms Helena O'Malley*

Regional Office for the Eastern Mediterranean

Dr Nadia Teleb Badr

Headquarters

Ms Virginia Benassi

Dr Adam Cohen

Mr Antoine Durupt

Ms Ruth Embaye

Dr Ike Ogbuanu*

Dr Marie-Pierre Preziosi

Dr Fatima Serhan*

Professor James Stuart (consultant)

Mr. David FitzSimons (meeting rapporteur)

Health Emergencies Programme

Regional Office for Africa

Dr Mamoudou Djingarey

Headquarters

Ms Katya Fernandez

Dr William Perea

Dr Olivier Ronveaux

Information, Evidence and Research

Headquarters

Dr Vasee Moorthy

* *Unable to attend*

Defeating meningitis by 2030

WHO concept note, Draft July 2018

The rationale

Major progress has occurred over the past twenty years in the prevention of meningitis globally, in particular through the development, marketing and large public health use of extremely potent and life-savings vaccines. Meningitis remains a universal public health challenge, cases and outbreaks are highly dreaded in any country of the world. When cases occur they become immediately high-profile, raising political and media attention universally. Globally, there are still many deaths and long-term sequelae among survivors, particularly among vulnerable communities. An order of magnitude of the global number of deaths from meningitis was recently estimated to be over 300,000 deaths among the population under five years of age (the Institute for Health Metrics and Evaluation [IHME]: <http://ghdx.healthdata.org/gbd-results-tool>; <https://vizhub.healthdata.org/gbd-compare>; *The Lancet* 2016; 388: 1459–544). Meningitis and sepsis together were estimated to result in a mortality in children under five years of age similar to that from malaria, not accounting for devastating sequelae (IHME: Global, regional, and national causes of under-5 mortality in 2000–15: an updated systematic analysis with implications for the Sustainable Development Goals – *The Lancet* 2016; 388: 3027–35). The magnitude of the problem however varies dramatically globally. Developing countries suffer from the highest burden by far, while they remain faced with the biggest challenges in accessing to vaccines, diagnoses and care. Yet the current remarkable success observed toward the elimination of meningitis in many countries and notably that of epidemic meningitis A in Africa, in the century-old meningitis belt, is a fundamental source of optimism. The global public health community must not stop there to ensure that it reaches the next level and the steady sustainable state, in line with United Nations Sustainable Development Goals «To transform our world and leave no one behind » by 2030.

The 2017 call: Wilton Park and Ouagadougou

Optimists are perseverant, and over 50 representatives from governments, global health organizations, public health bodies, academia, private sector and civil society expressed a unanimous wish for global perseverance at the May 2017 Wilton Park conference (Wilton Park: <https://www.wiltonpark.org.uk/reports/page/2/>). They called for a global vision and for the defeat of meningitis by 2030. Of note a high burden of meningitis is in Africa, several delegates from countries in the African meningitis belt were in attendance and contributed to the debates. WHO committed to answer the call acknowledging the global relevance, emphasizing the meningitis belt specificities, and outlining five preliminary strategic objectives: (1) ensuring long-term protection against meningococcal A for the entire at-risk population in the meningitis belt, building on the success of recent vaccination campaigns; (2) improving outbreak response and control of meningococcal epidemics in the meningitis

belt, and management of patients and survivors; (3) enhancing disease surveillance in the meningitis belt, and promoting development point of case diagnostic tests; (4) promoting development and public health use of affordable vaccines that tackle different causes of meningococcal meningitis in the meningitis belt; and (5) calling for meningitis expertise to address globally the many different causes of meningitis around the world. Moreover at the September 2017 annual regional meeting on meningitis in Ouagadougou, another 200 representatives from 26 meningitis belt countries vibrantly called for perseverance, for meningitis as a global priority, for urgent actions in favour of a sustainable availability and an equitable access to vaccines.

The WHO timing: a new Director General, a new Global Programme of Work

This comes at an opportune time for WHO. A new Director General has been elected a few months ago. WHO is now in the process of finalizing its next Global Programme of Work (GPW) based on the United Nations Sustainable Development Goals (SDGs). The SDGs are consistent with WHO's Constitution, which states: *"The health of all peoples is fundamental to the attainment of peace and security and is dependent on the fullest cooperation of individuals and States"*. WHO's vision, rooted in Article 1 of its Constitution, is of: *"A world in which all people attain the highest possible level of health and well-being."* In the context of the SDGs, WHO's mission is three-fold i.e. to **'Promote health, Keep the world safe, Serve the vulnerable'**. It is structured around prioritizing **universal health coverage (UHC) and health security (HS)** associated with the mapping, building and sustaining capacities, and ensuring sustainable financing. **Meningitis as a global priority captures the essence of this three-fold mission.** An enhanced fight against meningitis is fully aligned with WHO's mission and fits perfectly into its 13th General Programme of Work, with a focus on outcomes and impact; and opportunities for new fast track to elimination initiatives.

Meningitis as a global priority

Meningitis is a largely vaccine-preventable disease, and could be for an even greater part with the advent of new vaccines. The case has long been made for linking UHC and immunization as potentially mutually reinforcing. Meningitis is an epidemic-prone disease, and as such deserves special attention given the potentially major impact on health systems, the economy and society as a whole. This is about health emergencies, this about health security, this is about serving the vulnerable, saving lives and preventing disabilities.

Ongoing efforts and innovative approaches could be assembled into a coherent strategy focusing on impact and combining prevention, early detection and appropriate response, with a solid R&D component. Affordability would need to drive the agenda to ensure access and sustainability. Other areas such as enhancement of community engagement and management of cases and sequelae could also be considered. The near elimination of meningitis A in Africa provides a successful practical example for possible country-owned multi-partner initiatives.

A global roadmap can set a vision, provide a high-level overview and communicate direction, outlining priority areas for research and activity, with goals and specific solutions to meet the desired milestones. While the roadmap would be global with a well-defined scope – e.g.

bacterial meningitis and sepsis – strategic goals, milestones and research priority activities would likely need to be refined by world regions to ensure equitable and sustainable access to vaccines, diagnosis and treatment. Among key founding aspects: setting the baseline with the documentation of the global burden of meningitis to be further addressed by the roadmap; the baseline situation analysis (landscaping) of meningitis control tools available, the R&D pipeline and the gaps in terms of access to current tools or need to develop new tools; the links with other major initiatives (e.g. antimicrobial resistance, measles elimination). Impact comes with focus, perseverance and a ‘committed team’. A technical taskforce, made up of historical expert partners in the fight against meningitis, can be commissioned to drive and support the process.

Next steps

Efficient collaboration and coordination will be key in the coming years to sustain and further pursue the outstanding meningitis achievements of the last decade, in order to meet the UN Sustainable Development Goals for 2030. An outline of the proposed process for roadmap development and implementation is featured in figure 1. The *Technical Taskforce* (TTF) is formed for the purpose of developing and implementing a global roadmap. Critical expert stakeholders would ensure support and advice through a *Strategy Support Group* (SSG). Policy and resolutions from WHO bodies at regional and global level would drive the global and specific agendas and ensure the country ownership and political will critical to a successful implementation.

WHO secretariat will provide support and overall coordination, and ensure continuous oversight, with accountability to its Member States for the development and subsequent implementation of the roadmap. WHO specific responsibilities will also include the drafting of the baseline situation analysis and the convening of the TTF. WHO will act as Secretariat for the TTF and ensure appropriate liaison between the SSG and the TTF.

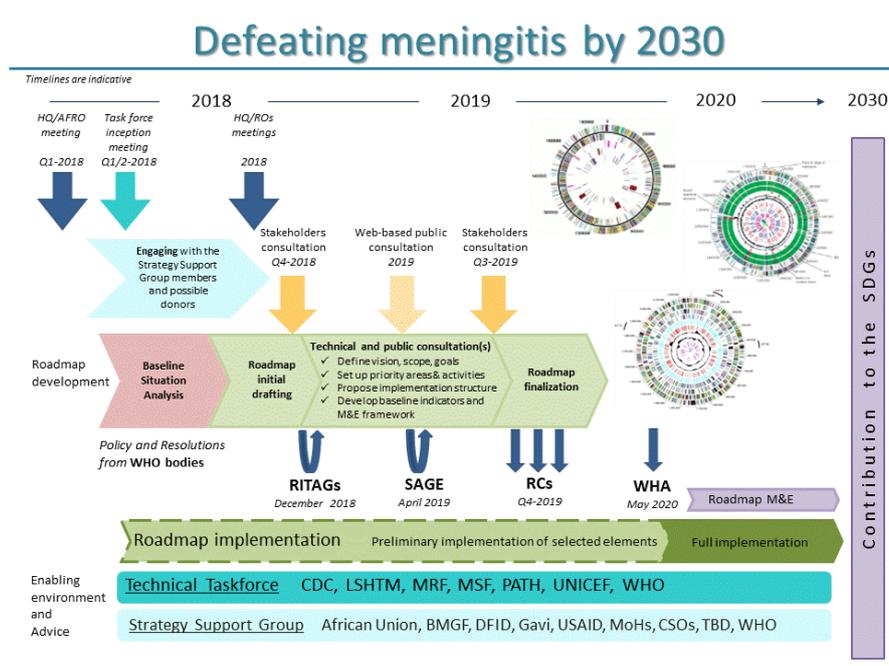


Figure 1. Defeating meningitis by 2030: Overview of the roadmap development

Annex 4 – Technical Task Force: terms of reference

The Technical Task Force is a consortium of major technical partners historically invested in long-term meningitis control with complementary focus and expertise. The responsibility of the TTF is to develop the roadmap, including:

1. To develop the global meningitis roadmap, taking responsibility for the initial steps, as well as for the broad consultation and review cycles, including:
 - a. To review and provide technical contributions to the Baseline Situation Analysis (BSA);
 - b. To draft the vision, scope and objectives of the roadmap;
 - c. Based on the BSA, to propose strategies, tools and activities required to achieve the roadmap objectives;
 - d. To support WHO, in its role as secretariat, in convening the stakeholders consultations and coordinating the public consultations aiming to refine and agree on a global roadmap; and
 - e. To define the roadmap implementation and monitoring structure.

2. To contribute to the finalization and dissemination of technical documents to support their endorsement and the formulation of policy and resolutions by WHO bodies*, including:
 - a. To engage with the Strategy Support Group on the roadmap process;
 - b. To publish and disseminate the roadmap, in close collaboration with WHO; and
 - c. To act as ‘ambassadors’ of the roadmap, contributing to raising public awareness.

** Regional Technical Advisory Groups, the Strategic Advisory Group of Experts (SAGE) on Immunization, the Strategic and Technical Advisory Group for Infectious Hazards (STAG-IH); Regional Committees (RCs) and World Health Assembly (WHA)*

Annex 5 – Strategy Support Group : terms of reference

The Strategy Support Group (SSG) is constituted of global level sponsors highly committed to “defeating meningitis by 2030”. Their terms of reference include:

1. To enable the processes associated with the roadmap development;
2. To champion the roadmap among stakeholders and partners;
3. To help identify key stakeholders at global and regional levels;
4. To advise the TTF on the roadmap development and dissemination process;
5. To act as ‘ambassadors’ of the roadmap, contributing to raising public awareness; and
6. To provide strategic support for the roadmap development, implementation and monitoring.

Endnotes

¹ Ouagadougou Declaration, October 1996 (World Health Organization. Group A and C meningococcal vaccines, WHO position paper. Wkly Epidemiol Rec 1999; 74:297–304).

² Wilton Park conference, May 2017 (<https://www.wiltonpark.org.uk/wp-content/uploads/WP1521-Report.pdf>); Annual regional meeting on meningitis, Ouagadougou, September 2017.

³ Business case for WHO immunization activities on the African continent, 2018-2030. Brazzaville: World Health Organization Regional Office for Africa; 2018. Licence: CC BY-NC-SA 3.0 IGO (https://www.afro.who.int/sites/default/files/2018-05/WHO_Bcase_Brochure_2018_05_11_FINAL%20VERSION_ISBN_WEB_0.pdf, accessed 22 July 2018).

⁴ Included in the preamble of the resolution: http://www.who.int/neglected_diseases/mediacentre/WHA_50.29_Eng.pdf?ua=1

⁵ Accelerating work to overcome the global impact of neglected tropical diseases: a roadmap for implementation. Geneva: World Health Organization, 2012 (http://apps.who.int/iris/bitstream/handle/10665/70809/WHO_HTM_NTD_2012.1_eng.pdf;jsessionid=8A57988833D75C87B7F27958ED290B30?sequence=1).

⁶ Malaria Vaccine Funders Group. Malaria Vaccine Technology Roadmap. 2013 (http://www.who.int/immunization/topics/malaria/vaccine_roadmap/TRM_update_nov13.pdf?ua=1, accessed 21 July 2018).

⁷ Global Task Force on Cholera Control. Ending cholera: a global roadmap to 2030. Geneva: World Health Organization, 2017 (<http://www.who.int/cholera/publications/global-roadmap.pdf?ua=1>, accessed 21 July 2018).

⁸ See link in http://apps.who.int/gb/e/e_wha71.html#Resolutions (accessed 25 July 2018).

⁹ WHO. An R&D blueprint for action to prevent epidemics. Geneva: World Health Organization; 2016 (http://www.who.int/blueprint/about/r_d_blueprint_plan_of_action.pdf?ua=1, accessed 7 August 2018).

¹⁰ See the report of a WHO meeting on developing a new generation of rapid diagnostic tests for meningitis (Geneva, 9 March 2018) (www.who.int/emergencies/diseases/meningitis/meeting-report-rdt-meningitis.pdf?ua=1, accessed 31 August 2018).