

STAG-TB 2019

Report of the 19th Meeting of the STRATEGIC AND TECHNICAL ADVISORY GROUP FOR TUBERCULOSIS

11-13 June 2019

Geneva, Switzerland



© World Health Organization 2019

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: “This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition”.

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

Suggested citation. Report of the 19th meeting of the Strategic and Technical Advisory Group for Tuberculosis (WHO/CDS/TB/2019.12). Geneva: World Health Organization; World Health Organization; [Year]. Licence: [CC BY-NC-SA 3.0 IGO](https://creativecommons.org/licenses/by-nc-sa/3.0/igo).

Cataloguing-in-Publication (CIP) data. CIP data are available at <http://apps.who.int/iris>.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

This publication contains the collective views of the Strategic and Technical Advisory Group for Tuberculosis (STAG-TB) and does not necessarily represent the decisions or the policies of WHO.

**WHO STRATEGIC AND TECHNICAL ADVISORY
GROUP FOR TUBERCULOSIS (STAG-TB) 2019**



Report of the 19th Meeting

WHO STRATEGIC AND TECHNICAL ADVISORY

GROUP FOR TUBERCULOSIS

(STAG-TB)

11-13 June 2019

This report provides the conclusions and recommendations of the 19th meeting of WHO Strategic and Technical Advisory Group for Tuberculosis (STAG-TB).

In its work on TB, the World Health Organization (WHO) aims for a world free of TB and, as part of the Sustainable Development Goals, to end the global TB epidemic by 2030. It seeks to enable universal access to TB prevention and care, guide the global response to threats, and promote innovation. The WHO Secretariat, at all its levels, requires regular scientific, technical and strategic advice from the STAG-TB.

Mission and functions of STAG-TB:

The mission of the STAG-TB is to contribute to ending the TB epidemic, and eventually eliminating the disease, by providing state-of-the-art scientific and technical guidance to WHO. The STAG-TB reports to the Director-General of WHO, and members are appointed by the Director-General. The Terms of Reference for STAG-TB are provided at http://who.int/tb/advisory_bodies/stag/en/

It has the following functions:

- 1.1 To provide to the Director-General independent evaluation of the strategic, scientific and technical aspects of WHO's Tuberculosis work;
- 1.2 To review, from a scientific and technical viewpoint, progress and challenges in WHO's TB-related core functions, including:
 - 1.2.1 The content, scope and dimension of WHO's development of TB policies, strategies and standards in TB prevention, care and control;
 - 1.2.2 The content, scope and dimension of WHO's collaboration, and support of, countries' efforts to control TB, including the provision of guidance and capacity-building on policies, strategies, standards and technical assistance;
 - 1.2.3 The content, scope and dimensions of WHO's TB epidemiological surveillance, monitoring, evaluation and operational research activities, their relevance to countries' efforts to end the TB epidemic and approaches to be adopted;
 - 1.2.4 The content, scope and dimensions of WHO's promotion and support of partnerships, and of advocacy and communications for TB prevention, care and control worldwide;

- 1.3 To review and make recommendations on the establishment of committees, working groups, and other means through which scientific and technical matters are addressed; and
- 1.4 To advise on priorities between possible areas of WHO activities related to tuberculosis prevention, care and control.

The 19th meeting of the STAG-TB took place from 11-13 June 2019 at WHO Headquarters in Geneva, Switzerland. The meeting was organized by the WHO Global TB Programme (GTB), which provides the Secretariat for the advisory body. Dr Ibrahim Abubaker, Director of the Institute for Global Health, University College London, was appointed by the WHO Director-General as STAG-TB Chair for the period of 2016-2019. He worked with the Director of the WHO Global TB Programme and the STAG-TB Secretariat in the development of the 2019 meeting agenda, found in **Annex 1** *(to be attached with final document)*

At the 2019 meeting, fifteen STAG-TB members participated. The STAG-TB members were joined by senior representatives from the National TB Programmes of China, India and Indonesia, the three countries that carry the greatest burden of TB globally, as well as Members of the WHO Civil Society Task Force on TB, and over 50 other partners including representatives of civil society and affected communities, member states, development agencies and technical, implementation and research partners. The meeting was also attended by WHO staff from Headquarters (HQ), regional and country offices, including from the 30 highest burden TB countries. **See Annex 2** *for the list of participants (to be attached with final document).*

Nineteenth meeting objectives:

At this 19th meeting, WHO requested STAG-TB to review and advise on a number of areas of WHO global TB work. The WHO STAG-TB Secretariat and the Chair of STAG-TB developed the agenda for the 19th meeting based on priorities of the WHO in its TB work in 2018 and 2019 and suggested issues proposed by the STAG-TB members at their 18th meeting and a follow up teleconference held in March 2019, including follow-up to the United Nations High-Level Meeting (UN HLM) on TB in September 2018.

The agenda items were:

- Follow up to the UN high-level meeting on ending TB
- Regional and country priorities and initiatives
- TB impact measurement update and new digital platform
- TB preventive treatment
- Civil Society Task Force Priorities and Progress
- The Multisectoral Accountability Framework
- Digital health
- Progress of the Find.Treat.All#ENDTB Initiative
- TB diagnostics, infection control and MDR-TB treatment
- TB research and innovation

Each STAG-TB meeting session began with an introductory presentation(s). Comments and suggested recommendations were provided by one to three STAG-TB members serving as session discussants, followed by comments and recommendations offered by other STAG-TB members, and additional comments by other participants.

The STAG-TB members serving as session discussants developed draft written recommendations, with the assistance of WHO rapporteurs. The recommendations were consolidated by the WHO Secretariat. The consolidated report was reviewed by the STAG-TB Chair and then by all STAG-TB Members. The report will be submitted by the Chair of STAG-TB to the Director-General of WHO.

The report will be posted on the WHO website:

http://who.int/tb/advisory_bodies/stag/en/

OPENING SESSION

Dr Tereza Kasaeva, Director of the Global TB Programme and Dr Ibrahim Abubakar, Chair of STAG-TB, welcomed STAG-TB members and all participants for their collaboration. Dr Soumya Swaminathan, Chief Scientist of WHO, made opening remarks on behalf of the WHO Director-General on the implementation of WHO 13th Global Programme of Work and the WHO Transformation process.

Dr Abubakar and Ms Diana Weil, Global TB Programme, noted the objectives of the meeting, introduced the agenda and meeting processes, as well as the efforts taken to follow-up with STAG-TB to inform them on actions taken on 2018 recommendations through an information note. Note that Declaration of Interest forms for STAG-TB members were reviewed in advance of the meeting and no conflicts of interest were noted that would preclude participation in any of the sessions of the meeting.

CONCLUSIONS AND RECOMMENDATIONS BY SESSION

SESSION 1A: FOLLOW UP TO THE UN HIGH-LEVEL MEETING ON ENDING TB AND STRENGTHENING MULTISECTORAL ACTION AND ACCOUNTABILITY; AND

1B: REGIONAL AND COUNTRY PRIORITIES AND INITIATIVES TO STRENGTHEN CAPACITY AND REACH TARGETS

Dr Kasaeva provided an overview presentation summarizing the targets and commitments of the UN HLM on TB. She highlighted key WHO activities and progress to date since the UN HLM to support countries to address these commitments and to build on the opportunities of the WHO transformation.

Regional representatives from the six WHO regions - Dr Wilfred Nkhoma (AFRO), Dr Rafael Lopez

Olarte (AMRO/PAHO), Dr Muhammad Akhtar (EMRO), Dr Masoud Dara and Dr Askar Yedilbayev (EURO), Dr Mukta Sharma (SEARO), and Dr Tauhid Islam (WPRO) - presented on their efforts to support countries in pursuing the End TB Strategy and related UN HLM targets, focusing on distinct regional priorities.

Dr Nkhoma highlighted efforts to reach missed cases by supporting expansion of diagnostic capacity, coordination of TA with technical partners, improved impact measurement, and the development by WHO and the African Union (AU) Secretariat of a scorecard for African Continental accountability which has been endorsed by the AU. Dr Lopez Olarte spoke to addressing TB and cross-disease elimination efforts with low-incidence countries, and action to leave no one behind through work on TB with indigenous peoples, and TB in prisons. Dr Akhtar noted ongoing work on complex emergencies, and accountability steps. Dr Dara and Dr Yedilbayev highlighted the region's work to support coordination of TB and drug-resistant TB platforms, civil society engagement, policy dialogue to ensure sustainable financing, and measures to address the increase in HIV-related TB. Dr Sharma highlighted actions taken based on the Delhi Declaration and UNHLM, advances in reporting of TB cases and development of a regional strategy on TB preventive treatment. Dr Tauhid Islam noted support of special initiatives by Member States building on new targets and high-level action, and framing regional actions linked to UHC policies, preventive treatment scale-up and TB in the elderly.

Dr Ibrahim Abubaker and Dr Christy Hanson were the STAG-TB discussants for the session.

STAG-TB:

- Acknowledges the important role of WHO in monitoring global financing of TB and WHO engagement in strengthening methods for calculating the costs associated with ending TB, and encourages WHO to sustain this work;
- Acknowledges the progress being made, as reflected by declining incidence of TB in all regions. However, STAG-TB also notes that sub-optimal rates of treatment success in many regions is a risk to the pace of future progress;
- Notes and is encouraged by the positioning of the Global TB Programme within one of the two Universal Health Coverage (UHC) Divisions at WHO headquarters as this offers opportunities for TB to be mainstreamed into the momentum toward UHC;
- Commends WHO on its active follow-up to the UN high-level meeting on TB (UNHLM), particularly noting the six high-level missions in the past 8 months aimed at securing action against the commitments by these high-burden countries;
- Congratulates the regional offices on the important work undertaken during 2018-2019 to adapt and introduce new technical guidance, and to plan responses to changing funding and demographic landscapes; and
- Given the priorities of member states, recommends that WHO embolden its workstreams in support of the proposed recommendations that follow.

STAG-TB recommends that WHO:

1. Advance financing to end TB by:
 - a) Enhancing its work in support of countries along the continuum of health financing; i.e. improving costing methods/data, promoting resource optimization and domestic resource mobilization through UHC platforms and other domestic funding modalities (and including resources for research);
 - b) Tracking and reporting on country, regional and global funding gaps alongside progress toward epidemiological and programmatic targets; to consistently consider the role of adequate and efficient use of financing for progress;
 - c) Monitoring and addressing any negative implications for the availability of drugs and commodities that result as countries transition from donor to domestic funding;
2. Support improvement of quality of care by:
 - a) Continuing to enhance the availability of case-based surveillance systems and capacity for data use to enable real-time programmatic quality improvement in support of care continuation;
 - b) Promoting active engagement of civil society, affected communities and the private sector with a view to ensuring the quality of care provided by this sector;
 - c) Operationalizing multi-sectoral partnerships for expanding patient-support modalities;
 - d) Supporting countries in ensuring adequate numbers and training of health care workers, including community-based workers.
3. Strengthen prioritization in its own work planning and support countries to prioritize action based on evidence of impact against the SDGs, including towards achievement of UHC, to optimize not only epidemiological impact but to reach all people with quality care.
4. Advance multi-sectoral action and accountability by:
 - a) Developing clear guidance for countries on how to operationalize multi-sectoral partnerships; i.e. with whom, for what; to address the need to enhance patient support, reduce catastrophic costs due to TB, increase domestic financing, incorporate TB into health benefit packages and ensure quality of care;
 - b) Working closely with all sectors to support the accountability systems intended through the multisectoral accountability framework.

SESSION 2: TB IMPACT MEASUREMENT UPDATE AND A NEW DIGITAL PLATFORM FOR TB DATA ANALYSIS AND USE (Information Session)

Dr Katherine Floyd presented an information update on the work of WHO and the WHO Impact Measurement Task Force. Dr Babis Sismanidis presented the new WHO digital platform for TB data analysis and use. As an information session, there were no STAG-TB recommendations.

SESSION 3: TB PREVENTIVE TREATMENT: Outstanding Policy Issues and Accelerating Implementation and Monitoring

Dr Avinash Kanchar presented on global TB preventive treatment policy, treatment support and tools. Dr Sharma presented the development of the SEARO regional draft TB strategy on preventive treatment.

Dr Nguyen Viet Nhung, Dr Unyeong Go, and Dr Seiyō Kato were STAG-TB discussants.

STAG-TB acknowledges:

- Implementation challenges that remain in the scale-up of treatment of TB infection in high TB burden countries, the need to ensure prioritization of those targeted and reached based on the WHO guidelines, the need for ongoing advocacy with governments and health care workers, as well as the need to generate demand for preventive treatment services;
- Ongoing work of WHO staff worldwide and partners to support implementation and scale-up of TB preventive treatment services in high TB burden countries and endorses the need to strengthen capacity at WHO regional level to support member states;
- The need to review evidence and provide clarity on contact investigation in congregate settings, such as prisons or workplaces, and to consider including health care workers as an at-risk population for testing for TB infection and treatment;
- Need to strengthen infection prevention and control in congregate settings as key elements of programmatic management of latent TB infection; and
- High pricing of medicines used in the shorter preventive treatment regimens is an ongoing barrier to access.

STAG-TB recommends that WHO:

1. Support countries, when requested, in setting nationally-appropriate targets for persons reached with TB preventive treatment by 2022.
2. Develop communication messages to help support the scale-up of treatment of TB infection in countries, including using appropriate language and terminology to enable civil society members to generate demand.
3. Develop practical operational guidance for health care and community workers.
4. Develop tools for contact investigation, counseling of people eligible for TB preventive treatment, identification and management of adverse events drawing from available tools developed by partners. Support recording and reporting, and implementation research, across all steps of the cascade of care from screening of target populations, to start of preventive treatment and treatment outcome.

5. Support regional mechanisms to increase capacity to scale up the programmatic management of TB infection at regional level, as a solid platform to support countries to update national strategic plans and develop an investment case to scale-up TB preventive treatment.
6. Support strategic discussion with partners to enhance access to shorter regimens through price reduction, and work with other WHO departments, including essential medicines and prequalification departments, and partners to facilitate overcoming barriers to access.

SESSION 4: CIVIL SOCIETY TASK FORCE (CSTF) ON TB: Priorities and Progress

Ms Lana Syed presented on the revamping of the Task Force and selection of new members and Secretariat support. Mr Roger Kamugasha, CSTF member presented on behalf of the CSTF on the Task Force priorities and progress to date.

Dr Thato Mosidi and Ms Jamilya Ismoilova were the STAG-TB discussants for this session.

STAG-TB:

- Supports the direction of the Global TB Programme in deepening partnerships with civil society and affected communities and acknowledges that close collaboration with civil society is critical at all levels of the TB response;
- Compliments the Global TB Programme Director and WHO leadership for their support in establishing the WHO Civil Society Task Force (CSTF). The Terms of Reference of the revamped CSTF are very comprehensive and provide a framework for prioritizing joint and collaborative action by its members and the Secretariat; and
- Notes the variable level of systematic civil society and affected community engagement at regional and country levels as well as insufficient attention to measuring impact of civil society advocacy and community engagement in the TB response.

STAG-TB recommends that:

1. To help improve systematic engagement of civil society and affected communities, the CSTF and Secretariat:
 - a) Identify and nurture linkages with regional and country efforts and groups to boost their commitment to civil society and affected community engagement;
 - b) Develop repositories of different regional and HBC groups and networks to catalyse engagement beyond the global level;
 - c) Define the role of CSTF members and regional and country level to strengthen engagement.
2. The WHO CSTF Secretariat and the CSTF could consider the following priorities within their work:
 - a) Focusing on vulnerable populations (eg. children, prisoners, and refugees);

- b) Developing additional indicators to help assess quality and impact of civil society and affected community engagement at different levels;
 - c) Leveraging routine TB programmatic activities and proposing innovative activities to facilitate and track civil society and affected community engagement at country level (e.g., relevant questions added to supervisory checklists for grassroot supportive supervision of facilities);
 - d) Identifying and compiling good practices in different priority areas (Multisectoral Accountability Framework for TB (MAF-TB) implementation, Political Declaration processes, national TB programme reviews, etc.) in their base countries and regions.
3. The WHO CSTF Secretariat should ensure adequate resources and capacity building for the full implementation of the CSTF workplan including members' participation in national TB programme reviews; CSTF and the Secretariat should also systematically advocate for adequate resources for country-level affected community and civil society engagement. Information on funding sources which may be easily accessed by civil society organizations should be collected and shared.
 4. The CSTF and Secretariat should raise the importance of scale up of integrated community health programmes in high-burden countries (HBCs) and push for closing the community monitoring and evaluation gap, as currently, one third of countries with national coverage of community-based service delivery do not have community indicators as part of their surveillance systems.

SESSION 5: THE MULTISECTORAL ACCOUNTABILITY FRAMEWORK FOR TB (MAF-TB): Progress Update (Information Session)

Dr Katherine Floyd and Ms Diana Weil presented the finalization of the WHO Multisectoral Accountability Framework and action being taken to support its country adaptation and implementation in 2019, as requested by the UN General Assembly and World Health Assembly.

As an information session, there were no STAG-TB recommendations.

SESSION 6: EVOLVING DIGITAL HEALTH STRATEGY IN SUPPORT OF ENDING TB

Dr Dennis Falzon, presented progress made on the WHO digital health strategy, ongoing research and implementation experiences.

Dr Daniel Chin and Dr Farhana Amanullah were the STAG-TB discussants for this session.

STAG-TB acknowledges that:

- Substantive progress has been registered by countries and partners in the last four years to move along in the strategic direction recommended by STAG-TB in 2015;

- Examples of creative, large-scale use of digital technologies and of collected data in low-resource settings could fuel similar investment in innovation in high-burden settings through visionary leadership;
- Despite the progress there are still missed opportunities in the mainstreaming of digital technologies across the broad diversity of TB prevention and care activities, even though current evidence and recommendations permit greater implementation; and
- The full application of the data that are being collected – such as in summary dashboards, supply management, clinical decision support tools, and use of artificial intelligence – remains under-exploited in TB programmes.

STAG-TB recommends that WHO:

1. Develop the digital health agenda further in the direction proposed, taking advantage of the new WHO digital health department and guidelines, and integrate the use of digital technologies into all areas of work of the Global TB Programme and into country support by Regional and Country Offices.
2. Map how various digital technologies can be applied at different points of an integrated TB care cascade and develops implementation guidance in different languages to overcome critical barriers to quality TB care, with continuous collection of experience within a community of practice.
3. Make bolder statements on the need to be more proactive in implementing digital technologies which are likely to generate benefits to patients and health systems based on evidence or other experience of use, without allowing potential misuse to deter investment, and works with countries and partners to scale-up digital technologies for TB.

**SESSION 7(A): ADVANCING THE FIND.TREAT.ALL#END TB INITIATIVE; and
7(B): ADDRESSING 3 CHALLENGES IN FINDING PEOPLE WITH TB: Access to
Diagnosis/integration with Primary Health Care, Clinically-diagnosed cases, and
Contact tracing**

Dr Malgoisa Grzemska (GTB), presented alongside Dr Lucica Ditiu of the Stop TB Partnership, and Dr Eliud Wandwalo of The Global Fund to Fight AIDS, Tuberculosis and Malaria, on the progress made under the Find.Treat.All initiative and the Global Fund Strategic Initiative.

Dr Christian Gunneberg presented on proposed approaches to address three of the major challenges in finding those with TB.

Dr Anna Vassall and Dr Farhana Amanullah were the STAG-TB discussants for both sessions. Dr Mahshid Nasehi was unable to attend, however Dr Amanullah made comments on her behalf.

STAG-TB:

- Acknowledges that there is an increase in TB notifications (especially in 13 HBCs supported by the Global Fund Catalytic Initiative and Strategic Initiative of the Global Fund with WHO and the Stop TB Partnership); However, the majority of the new patients have been clinically diagnosed and, therefore, a more granular analysis is necessary to identify the causes thereof;
- Acknowledges that the commitment to find and treat 40 million people with TB and provide TB preventive treatment to at least 30 million people by 2022 requires enhanced screening, equitable access to diagnostics and contact management strategies;
- Agrees with the identified barriers to finding the missing people with TB which include limited capacity of health care workers and lack of TB services at the first point of contact (PHC level and private clinics) and limited contact tracing efforts; and
- Recognizes that without additional human and financial resources and meaningful civil society and community engagement, countries will not be able to scale up intensified and active case finding, including contact tracing activities and, consequently, will not meet the UN HLM targets.

STAG-TB recommends that WHO:

1. Support comprehensive analyses of the latest available data disaggregated by country, to determine the reasons behind the increase in clinically-diagnosed TB (including private sector, pediatric TB and extra-pulmonary TB).
2. Support countries in building front-line health worker capacity in line with system-wide efforts for human resources for health, for recognizing presumptive TB and initiating appropriate diagnostic investigations.
3. Work with partners to support countries in identifying best-suited mechanisms to improve access to diagnostic services, including by improving TB sample transportation (integrated with existing transport systems for other commodities) to ensure availability of TB diagnosis in Primary Care in the public and private sector.
4. Support countries to develop and scale up intensified, and active case finding, and TB contact tracing mechanisms, including approaches of integrated with other community initiatives, such as those related to UHC, HIV, malaria, polio, and noncommunicable diseases.
5. Recommend approaches to address other barriers to finding and treating people with TB, including by addressing gender-specific issues, reducing stigma, promoting and protecting human rights, and enhancing treatment literacy and peer support.
6. Together with the Global Fund and other partners, enable and encourage the evaluation at national level of the cost-effectiveness of strategies to reach and diagnose TB among different populations.

SESSION 8: TB DIAGNOSTICS INFECTION CONTROL AND MDR-TB TREATMENT: New Guidelines, Planned Updates and Implementation Support

Dr Fuad Mirzayev and Dr Kefas Samson presented on WHO's actions taken to help support implementation of recent new WHO guidance on TB diagnostics and MDR-TB treatment, and plans for additional guidelines development in 2019.

Dr Kitty van Weezenbeek and Dr Catharina Boehme were the STAG-TB discussants for this session.

STAG-TB:

- Acknowledges and commends WHO for creation of the Scientific Division as part of the WHO transformation process, recognizing its role in optimization of the Guideline Development process;
- Commends the Global TB Programme for the robust process and efforts in updating of recent guidelines for infection prevention and control, drug-resistant TB and diagnostics, keeping pace with the new developments;
- Recognizes the effect of specific health system conditions (e.g. access to diagnostics; human resources for health; active TB drug safety monitoring and management; pharmaceutical supply management) and the importance of targeted implementation research as key to identify and address challenges for the uptake of new tools; and
- Acknowledges that the programmatic management drug-resistant TB is in a period of change that requires agile adoption of interventions at the country level.

STAG-TB recommends that WHO:

1. Continue to develop global recommendations, keeping pace with emerging new evidence while maintaining scientific rigor and independence in the process.
2. Continue to foster involvement of WHO country office and their capacity to engage partners at the country level and facilitate the adaptation of guidelines to specific country context.
3. Continue promoting and supporting implementation research to enable early adoption of diagnostic tools, treatment regimens and other innovations.
4. Help countries establish absorption platforms for rapid implementation and uptake of guidelines, in collaboration with partners.
5. Explore mechanisms to overcome regulatory barriers delaying access to new tools, and continue to work with WHO essential medicines and prequalification departments, and partners.

SESSION 9(A) and 9(B): TB RESEARCH AND INNOVATION - Status of the draft Global Strategy, and update on support for TB vaccine trials

Dr Nebiat Gebreselassie reviewed the development and content of the draft WHO Global Strategy on TB Research and Innovation and noted the upcoming steps for its review by WHO Governing Bodies. Dr Matteo Zignol presented on WHO support with partners to advancing research on the M72 vaccine candidate.

Ms Erica Lessem and Dr Ibrahim Abubakar were the STAG-TB discussants for this session.

STAG-TB:

- Welcomes the progress in the development of a "Global Strategy on TB Research and Innovation" as requested by Member States, together with relevant stakeholders;
- Applauds the framing of the Strategy in alignment, with national health and research strategies to enable country ownership and with over-arching guiding principles, such as Universal Health Coverage and initiatives such as the Secretary-General's High-Level Panel on Access to Medicines, the G20 Antimicrobial Resistance R&D Hub., with the aim to deliver concrete outcomes;
- Commends the WHO on the consultative and inclusive process to develop the draft Research Strategy, and particularly for including civil society-developed targets for country funding contributions to R&D;
- Welcomes efforts to enhance R&D of new TB vaccines along the full spectrum through the development of a full public health value assessment of new TB vaccines;
- Supports WHO's initiative to advance the further development of the M72 vaccine candidate, guided by the principles of affordability, effectiveness, efficiency and equity; and,
- Commends WHO's leadership on convening stakeholders regarding promising vaccine candidate M72/AS01 and supports future plans to convene potential funders.

STAG-TB recommends that WHO:

1. Engage with Member States, and work with partners, to support the adoption of the Global Strategy for TB Research & Innovation, as well as fulfilment of the commitments in it, including fully funding TB R&D needs by Member States (at minimum meeting the "fair share" targets) and reporting publicly on these investments.
2. Work with relevant stakeholders to support accountability systems to ensure that research funding includes operational research by Members States.
3. Continues using its convening role to advance without delay the further development of the M72 vaccine candidate (e.g. through a phase III trial) as soon as final 3-year follow-up data confirm the promising 2-year findings, to expedite the availability of vaccines to those who need it.
4. In its support for the clinical development process of M72 vaccine:

- a) Support the inclusion of adolescents (down to the age of 12), and people living with HIV, to support equity as well as implementation as soon as possible post-trial; includes a biobanking component; and ensures that trial participants have access to effective interventions, in line with recommendations on effective therapy for TB infection;
 - b) Explore opportunities, together with relevant stakeholders, to advance research into alternative adjuvant systems to AS01, in parallel to ongoing clinical development of M72/AS01;
 - c) Ensure meaningful community engagement throughout the vaccine development process and promotes the need for public education, from trial design through implementation and post-trial access. STAG urges WHO to promote inclusion of investment needs for vaccine literacy and capacity building of civil society groups globally and at study sites as part of funding estimates and investments for M72's development.
5. Conduct an independent full public health value assessment of new TB vaccines, together with relevant public, academic, multilateral, and community stakeholders, to support decision makers in the R&D value chain.
 6. Help ensure that M72 is treated as a public good and the benefits accrue to the public, and that an affordable target price for M72 is driven by an independent assessment, and that access at this price is available in all markets, recognizing that the majority of funding will likely be from the public sector.
 7. Advocate for the urgent need of more effective TB vaccines, and voices a call to action publicly and advocates for investment in TB vaccine R&D:
 8. Continue to work with partners to support the further development of different TB vaccine candidates (including the BCG revaccination trial), as more than one vaccine will likely be needed to support TB elimination efforts:
 9. Continue to collaborate with the vaccine development groups in other disease areas (for lessons learned and state-of-the-art best practices), given the lack of recent late-stage vaccine development experience in TB.

PROPOSED AGENDA ITEMS FOR THE 20TH STAG-TB MEETING: 8-10 June 2020

The 20th annual meeting of STAG-TB will be held at WHO Headquarters in Geneva Switzerland from **8-10 June 2020**. STAG-TB members offered the following suggestions on items to be addressed at the 2020 meeting. The items are listed in the order raised by members, and not by any priority status. Topics that were largely overlapping were consolidated.

1. Sequencing and its role in implementing the DR-TB guidelines
2. Status and strategy for resource mobilization to enable implementation at country level
3. Status of community engagement and contributions to TB detection and care and development and use of appropriate indicators

4. A comprehensive update on finding missed cases, including people with MDR-TB and among key populations, and evolution of case finding strategies and
5. Progress achieved in use of digital technologies, and implications of evidence from ongoing studies on digital technologies
6. An update on promotion and support for research and development, including vaccines
7. Update on WHO processes for norms and standards/guidelines development
8. Update on new guidance processes and roll-out of treatment guidance using new drugs and regimens
9. Progress in implementing the Childhood TB Roadmap
10. Prevention and management of post-TB treatment sequelae
11. Progress in implementation of the Multisectoral Accountability Framework for TB
12. Progress in implementing the PPM Roadmap
13. Addressing the care cascade, including case finding, quality of care, prevention and social support
14. Assessment of, and response to, the dominant TB burden in men
15. Progress in supporting countries in their prioritization of interventions

CLOSING THE MEETING

In closing the meeting, Dr Abubakar and Dr Kasaeva thanked STAG-TB members for their comprehensive advice and recommendations, and all participants for contributing to the discussions. Dr Kasaeva and the participants applauded Dr Abubakar for his outstanding work as the Chair of STAG-TB, 2016-2019.



ANNEX 1: Strategic and Technical Advisory Group for Tuberculosis 2019

19th MEETING AGENDA

11 - 13 June 2019, Executive Board Room, Geneva, Switzerland

Day 1: Tuesday 11 June 2019

9:00 – 9:30	<p>Welcome and introductions</p> <p>Opening remarks: The WHO 13th Global Programme of Work and WHO Transformation: Recent developments and significance for meeting End TB targets</p> <p>Objectives, agenda and follow-up on STAG-TB 2018</p> <p><i>Opening video</i></p>	<p>Ibrahim Abubakar, Chair, STAG-TB</p> <p>Tereza Kasaeva, Director, Global TB Programme (GTB)</p> <p>Soumya Swaminathan, Chief Scientist, WHO</p> <p>Ibrahim Abubakar Diana Weil, GTB/PSI</p>
9:30 – 9:55	SESSION 1 (A): Follow-up to the UN high-level meeting on ending TB and strengthening multisectoral action and accountability	Tereza Kasaeva
9:55 - 10:15	Coffee	
10:15 – 11:45	<p>SESSION 1 (B): Regional and country priorities and initiatives to strengthen capacity and reach targets</p> <p>Discussants for Session 1(A) and 1(B)</p> <p>Session 1 Discussion and STAG-TB Recommendations</p>	<p>Tauhid Islam, WPRO</p> <p>Mukta Sharma, SEARO</p> <p>Muhammad Akhtar, EMRO</p> <p>Masoud Dara and Askar Yedilbayev, EURO</p> <p>Rafael Lopez-Olarte, AMRO</p> <p>Wilfred Nkhoma, AFRO</p> <p>Ibrahim Abubakar Christy Hanson</p>
11:45 – 12:45	SESSION 2: TB impact measurement update and a	<p>Katherine Floyd, GTB/TME</p> <p>Babis Sismanidis, GTB/TME</p>

	new digital platform for TB data analysis and use (information session) Questions & Answers	
12:45– 13:45	Lunch	
13:45 – 15:00	SESSION 3: TB preventive treatment: outstanding policy issues, accelerating implementation and monitoring capacity Discussants Discussion and STAG-TB recommendations	Avinash Kanchar, GTB/THC Mukta Sharma Nguyen Viet Nhung, Unyeong Go, Seiyo Kato
15:00– 15:20	Coffee	
15:20 – 16:30	SESSION 4: Civil Society Task Force Priorities and Progress to date Discussants Discussion and STAG-TB Recommendations	Lana Syed GTB/TSC Roger Kamugasha (CSTF Representative) Thato Mosidi, Jamilya Ismoilova
16:30-17:15	SESSION 5: The Multisectoral Accountability Framework for TB (MAF-TB): Progress Update (information session) Questions and Answers	Katherine Floyd Diana Weil
17:15 – 17:30	Summary of the day	Chair
17:40 – 19:00	Reception	UNAIDS/WHO D Building Cafe
18:30 – 19:00	Discussants work on Day 1 draft STAG-TB recommendations, with assistance from GTB rapporteurs	

Wednesday 12 June 2019		
8:30 – 9:30	SESSION 6: Evolving digital health strategy in support of ending TB Discussants Discussion and STAG-TB Recommendations	Dennis Falzon, GTB/THC Daniel Chin, Farhana Amanullah
9:30 – 10:30	Extended Coffee	
10:30 – 12:00	SESSION 7: (A) Progress of the Find.Treat.All.#ENDTB Initiative (B) Addressing 3 challenges in finding people with TB: access to diagnosis/integration with PHC; clinically-diagnosed cases, and contact tracing Discussants	Malgosia Grzemska, Coordinator, GTB/TSC Lucica Ditiu, Stop TB Partnership Eliud Wandwalo, The Global Fund Christian Gunneberg, GTB/TSC Anna Vassall, Mahshid Nasehi*, Farhana Amanullah
12:00 – 13:00	Lunch	
13:00 – 14:10	SESSION 8: TB diagnostics, infection control and MDR-TB treatment: New guidelines, planned updates and implementation support Discussants Discussion and STAG-TB recommendations	Fuad Mirzayev, GTB/LDR and Kefas Samson, GTB/TSC Kitty van Weezenbeek, Catharina Boehme
14:10 -14:30	Coffee	
14:30 – 15:30	SESSION 9: TB research and innovation	

*Mahshid Nasehi was unable to attend, but provided comments.

	(A) Status of the draft Global Strategy (B) Update on support for TB vaccine trials Discussants on Session 9 (A) and (B) Discussion and STAG-TB Recommendations	Nebiat Gebreselassie, GTB/RTE Matteo Zignol, GTB/RTE Erica Lessem, Ibrahim Abubakar
15:30 – 16:30	Review of 1st day recommendations Summary of 2nd day	Chair
16:30 – 17:30	Discussants work on draft STAG-TB recommendations, with assistance from GTB rapporteurs	
19:00	Dinner discussion: STAG-TB Members and WHO Senior Staff	

Thursday, 13 June 2016		
9:00 – 10:30	STAG-TB recommendations review STAG-TB recommendations review and finalization	Chair STAG-TB Discussants and STAG-TB Members
10:30 - 10:50	Coffee	
10:50 – 11:40	STAG-TB recommendations review & finalization (cont.)	
11:40 – 11:50	Planning agenda for 20th STAG-TB Meeting, 2020 Suggestions from STAG-TB Members for topics Dates: 8- 10 June, 2020	
11:50 – 12:00	CLOSING REMARKS	I. Abubakar T. Kasaeva

ANNEX 2:



Strategic and Technical Advisory Group for Tuberculosis (STAG-TB)

19th Meeting

11 to 13 June 2019, Executive Board Room, WHO Headquarters
Geneva, Switzerland

List of Participants

STAG-TB Members

1. Prof. Ibrahim Abubakar
Chair, STAG-TB

Director, Institute for Global Health
University College London
London
United Kingdom

2. Dr Farhana Amanullah

Department of Pediatrics
The Indus Hospital and
Aga Khan
University Hospital
Karachi
Pakistan

3. Dr Catharina Boehme

Chief Executive Officer
Foundation for Innovative New
Diagnostics (FIND)
Geneva
Switzerland

4. Dr Daniel Chin

Deputy Director for Delivery
TB Program
Global Health Program
Bill & Melinda Gates Foundation
Seattle, WA
USA

5. Dr Unyeong Go

Director, Center for Disease
Prevention and Korean Network for
Organ Sharing
Korea Centers for Disease Control
and Prevention
Seoul
Republic of Korea

6. Dr Christy Hanson

Senior Programme Officer
TB Programme
Global Health Programme
Bill & Melinda Gates Foundation
Seattle, WA
USA

7. Dr Jamilya Ismoilova

Project Hope
Dushanbe
Tajikistan

8. Dr Seiya Kato

Director, Research Institute of
Tuberculosis
Tokyo
Japan

9. Ms Erica Lessem

TB/HIV Director
Treatment Action Group
New York, NY
United States

10. Dr Thato Mosidi

Public Health Medicine Registrar
Western Cape
Department of Health
Cape Town
South Africa

11. Dr Ya Diul Mukadi

Senior Technical Advisor
Global Health Bureau
US Agency for International
Development
Washington, DC
USA

12. Dr Nguyen Viet Nhung

Director, National Lung Hospital
Manager of the National Tuberculosis
Control Program
Hanoi
Viet Nam

13. Dr Kitty Van Weezenbeek

Executive Director
KNCV Tuberculosis Foundation
The Hague
The Netherlands

14. Dr Anna Vassall

Reader in Health Economics
London School of Hygiene & Tropical
Medicine
London
United Kingdom

Temporary Advisers

15. Dr Jaap Broekmans

Chair, WHO Global Task Force on
TB Impact Measurement
The Hague
The Netherlands

16. Dr Imran Pambudi

Deputy Director of Tuberculosis
Ministry of Health
Jakarta
Indonesia

17. Dr Kuldeep Sachdeva

Deputy Director General TB
Revised National TB Control
Programme
Ministry of Health and Family Welfare
New Delhi
India

18. Dr Hui Zhang

China Centre for Disease Control
Beijing
China

**WHO Civil Society Task Force
on TB Members**

**19. Mr Elie Gaston Bertrand
Kampoer Pfouminzhouer**

Coordinator
For Impacts in Social Health
Yaoundé
Cameroon

20. Ms Yuliya Chorna

Executive Director
TB Europe Coalition
Kiev
Ukraine

21. Dr Harry Hausler

Medical Director
Project Integrate
TB Care Association
Waterfront
South Africa

22. Mr Roger Paul Kamugasha

Editor In Chief
The Health Times Africa Limited
Uganda

23. Dr Amir Khan

Association for Social Development
Islamabad
Pakistan

24. Ms Evaline Kibuchi

Kenya AIDS NGO Consortium
(KANCO)
Nairobi
Kenya

25. Ms Blessina Kumar

CEO and Patient Advocate
Global Coalition of TB Activists
New Delhi
India

**26. Dr Ezio Tavora dos Santos
Filho**

REDE-TB
Brazilian Network of Tuberculosis
Research
Rio de Janeiro
Brazil

27. Ms Esty Febriani Tasman

TB Advisor
Lembaga Kesehatan Nahdlatul Ulama
Jakarta
Indonesia

28. Ms Nandita Venkatesan

Patient Rights Advocate and
Journalist
Thane
India

29. Dr Phyo Nyan Win

Health Technical, Monitoring and
Evaluation Coordinator
World Vision Foundation of Thailand
Bangkok
Thailand

30. Dr Anh Tuan Nguyen

Professor
Department of Tuberculosis and
Lung Disease
Hanoi Medical University
Hanoi
Viet Nam

Other Participants

31. Dr Jay Achar

TB Working Group Leader and
TB/HIV Advisor
MSF UK
London
United Kingdom

32. Dr Sreenivas Achuthan Nair

Regional Advisor
Stop TB Partnership
Geneva
Switzerland

33. Dr Sevim Ahmedov

Senior TB Technical Advisor
Global Health Bureau
USAID
Washington, DC
USA

34. Dr Draurio Barreira

Technical Manager
UNITAID
Geneva
Switzerland

35. Dr Amy Bloom

Senior Technical Advisor
Bureau of Global Health
US Agency for International
Development
Washington, DC
USA

36. Dr Grania Brigden

Deputy Director
TB and HIV Department
The Union
Geneva
Switzerland

37. Dr Karen Brudney

Senior Expert TB Advisor
CDC
Brooklyn
USA

38. Dr Kenneth Castro

Senior TB Technical Advisor, USAID
& Professor, Emory University
Atlanta, GA
USA

39. Dr Sarabjit Chadha

Regional Technical Director
FIND
New Delhi
India

40. Dr Isaac Chikwanha

Consultant
Global Health Innovative Technology
Fund (GHIT)
Tokyo
Japan

41. Dr Daniela Cirillo

Head, Emerging Bacterial Pathogens
Unit
San Raffaele del Monte Tabor
Foundation
San Raffaele Scientific Institute
Milan
Italy

42. Dr Jacob Creswell

Head, Innovations and Grants
Stop TB Partnership
Geneva
Switzerland

43. Dr Cintia Dantas

Global Advocacy and Americas
Regional Director
Global TB Caucus
Brasillia
Brazil

44. Dr Anand Date

Associate Chief, Global TB Branch
Center for Disease Control (CDC)
Atlanta, GA
USA

45. Dr Lucica Ditiu

Executive Director
Stop TB Partnership
Geneva
Switzerland

46. Ms Fran Du Melle

Sr. Director
International Programmes &
Activities Organisation
American Thoracic Society
New York
USA

47. Dr Razia Fatima

Research Coordinator
National TB Control Program
Islamabad
Pakistan

48. Dr Paula Fujiwara

Scientific Director
The Union
Paris
France

49. Dr Jennifer Furin

DR-TB Stat
Chicago, IL
USA

50. Dr Agnes Gebhard

Senior Consultant
KNCV Tuberculosis Foundation
The Hague
Netherlands

51. Dr Mustapha Gidado

Challenge TB
The Hague
The Netherlands

52. Dr Alexander Golubkov

Senior TB Technical Advisor
US Agency for International
Development (USAID)
Washington, D.C.
USA

53. Dr Philip Hopewell

Professor of Medicine
Curry International TB Center
University of California
San Francisco General Hospital
San Francisco, CA
USA

54. Dr Ridha Jebeniani

Consultant
Tunis
Tunisia

55. Ms Thandi Katiholo

Programme Officer
Stop TB Partnership
Geneva
Switzerland

56. Dr Amara Khan

Technical Officer
Stop TB Partnership
Geneva
Switzerland

57. Ms Daisy Lekharu

Disease Advisor TB
The Global Fund to Fight AIDS, TB
and Malaria
Geneva
Switzerland

58. Ms Sharonann Lynch

HIV and TB Policy Advisor
MSF
New York
USA

59. Dr Ethel Maciel

Rede-TB President
Universidade Federal do Espirito
Santo
Vitória
Brazil

60. Dr Adam Macneil

Epidemiologist, Global TB Branch
CDC
Atlanta, GA
USA

61. Dr Shelly Malhotra

Director, Market Access
Global Alliance for TB Drug
Development
New York, NY
USA

62. Dr Susan Maloney

Chief, Global TB Branch
Center for Global Health
Centers for Disease Control and
Prevention
Atlanta, GA
USA

63. Dr Refiloe Matji

Regional Director
University Research Corporation
Pretoria
South Africa

64. Mr Andrei Mosneaga

Regional Advisor
Stop TB Partnership
Geneva
Switzerland

65. Dr Howard Njoo

Deputy Chief Public Health Officer
and Chief Medical Advisor for the
Infectious Disease Prevention and
Control Branch
Public Health Agency of Canada
Ottawa
Canada

66. Dr Pierre Yves Norval

Director
TeAM
Paris
France

67. Dr Nnamdi Nwaneri

Specialist, TB Strategic Initiatives
The Global Fund
Geneva
Switzerland

68. Dr Kosuke Okada

Director International Programmes
Japan Anti-Tuberculosis Association
Tokyo
Japan

69. Dr Regina Osih

TB/HIV Senior Technical Expert
The Aurum Institute
Johannesburg
South Africa

70. Mr Steve Otieno

Advocate
TB Free World Health Organization
Nairobi
Kenya

71. Dr Zhi Zhen Qin

Technical Officer
Stop TB Partnership
Geneva
Switzerland

72. Dr Lal Sadasivan Sreemathy

Director, Infectious Diseases
TB Portfolio
Global Health, Population and
Nutrition
FHI 360
Washington, DC
USA

73. Dr Suvanand Sahu

Deputy Executive Director
Stop TB Partnership
Geneva
Switzerland

74. Dr Celeste Sandoval

Technical Officer
UNAIDS
Geneva
Switzerland

75. Dr Mariam Sianozova

Regional Director for Europe and
Eurasia
Project HOPE
Yerevan
Armenia

76. Dr Zelalem Temesgen

Professor of Medicine
Executive Director
Mayo Clinic Center for Tuberculosis
Rochester, MN
USA

77. Dr Carrie Tudor

TB Project Director
International Council of Nurses
Pretoria
South Africa

78. Dr Alexander Trusov

Senior Director
TB Portfolio
Project Hope
Millwood
USA

79. Mr Carlos Van Der Laat

International Organization for
Migration
Geneva
Switzerland

80. Mr Kristian Van Kalmthout

Digital Health Consultant
KNCV Tuberculosis Foundation
The Hague
Netherlands

81. Mr Job Van Rest

Digital Health Consultant
KNCV Tuberculosis Foundation
The Hague
Netherlands

82. Dr Eliud Wandwalo

Senior Technical Advisor
Tuberculosis
The Global Fund to Fight AIDS,
Tuberculosis and Malaria
Geneva
Switzerland

83. Dr Jacqueline Weekers

Director
Migration Health Division
International Organization for
Migration
Geneva
Switzerland

84. Dr William Wells

Senior TB Technical Advisor
US Agency for International
Development
Washington DC
USA

85. Dr Mohammed Yassin

Senior Advisor, Tuberculosis
The Global Fund to Fight AIDS,
Tuberculosis and Malaria
Geneva
Switzerland

WHO Headquarters Staff

Office of the Director General

86. Dr Souyma Swaminathan, Chief
Scientist

Global TB Programme

87. Dr Tereza Kasaeva, Director

***Policy, Strategy and Innovations
Unit***

88. Ms Diana Weil, Coordinator

89. Ms Hannah Monica Dias

90. Ms Marzia Calvi

91. Ms Amy Collins

92. Ms Shagun Khare

93. Ms Jasmine Solangon

94. Ms Yi Wang

***Laboratories Diagnostics and
Drug Resistance Unit***

95. Mr Ivan Babovic

96. Dr Christopher Gilpin

97. Ms Licé Gonzalez-Angulo

98. Dr Ernesto Jaramillo

99. Dr Alexei Korobitsyn

100. Dr Tiziana Masini

101. Dr Fuad Mirzayev

***Technical Support Coordination
Unit***

102. Dr Malgorzata Grzemska,
Coordinator

103. Ms Yulia Bakonina

104. Ms Natacha Barras

105. Ms Annemieke Brands

106. Dr Giuliano Gargioni

107. Ms Media Gegia

- 108.** Dr Christian Günneberg
- 109.** Ms Karina Halle
- 110.** Ms Soleil Labelle
- 111.** Dr Carl Michael Nathanson
- 112.** Dr Linh Nhat Nguyen
- 113.** Dr Kefas Samson
- 114.** Ms Lana Syed
- 115.** Mr Michael Tabiszewski
- 116.** Ms Eloise Valli
- 117.** Ms Clarisse Veylon Hervet

TB Monitoring and Evaluation Unit

- 118.** Dr Katherine Floyd, Coordinator
- 119.** Dr Anna Dean
- 120.** Ms Maria Anglica Flores
- 121.** Ms Ines Garcia Baena
- 122.** Dr Philippe Glaziou
- 123.** Dr Marek Lalli
- 124.** Dr Irwin Law
- 125.** Mr Tomas Matas
- 126.** Dr Nobuyuki Nishikiori
- 127.** Dr Gita Parwati
- 128.** Ms Valerie Robert
- 129.** Dr Charalampos Sismanidis
- 130.** Mr Hazim Timimi
- 131.** Dr Olga Tosas Auguet

Programme Management Unit

- 132.** Dr Michael Mc Cullogh, Programme Manager
- 133.** Ms Janet Coutin
- 134.** Ms Tracey Mawer
- 135.** Ms Catherine McMahon
- 136.** Ms Dorris Ortega
- 137.** Ms Cassiana Tissot
- 138.** Ms Henrikka Weiss

Research for TB Elimination and TB/HIV Unit

- 139.** Dr Matteo Zignol, Coordinator
- 140.** Ms Lou Maureen Comia
- 141.** Dr Nebiat Gebreselassie
- 142.** Ms Annabel Baddeley
- 143.** Dr Dennis Falzon
- 144.** Dr Avinash Kanchar
- 145.** Dr Carmen Figueroa

HIV/AIDS Department (HIV)

- 146.** Dr Gottfried Hirnschall, Director
- 147.** Dr Meg Doherty, Coordinator

- 148.** Dr Satvinder Singh

Initiative for Vaccine Research (IVR)

- 149.** Dr Johan Vehemans

WHO Regional and Country Staff

WHO/AFRO

- 150.** Dr Wilfred Nkhoma, Leader TB, a.i., Regional Office (RO)
- 151.** Dr Jean Iragena, RO
- 152.** Dr Farai Muvhunga, RO
- 153.** Dr Michael Gasana, RO
- 154.** Dr Andre Ndongosieme, IST WA
- 155.** Dr Richard Mbumba, IST CA
- 156.** Dr Javier Aramburu, CO Angola
- 157.** Dr Laurent Moyenga, CO Burkina Faso
- 158.** Dr Hubert Wang, CO Cameroon
- 159.** Dr Aristide Désiré Komangoya-Nzonzo, CO Central African Republic
- 160.** Dr Noel Djemadji-Oudjiel, CO Chad
- 161.** Dr Hermann Judicael Ongouo, CO Congo
- 162.** Dr Nicolas Nkierere Masheni, CO Democratic Republic of the Congo
- 163.** Dr Ismael Hassen Endris, CO Ethiopia
- 164.** Dr Esther Mary Aceng, CO Ethiopi
- 165.** Dr Ghislaine Nkone Asseko, CO Gabon
- 166.** Dr Joyce Kerubo Onsongo, CO Kenya
- 167.** Dr Susan Zimba Tembo, CO Lesotho
- 168.** Dr Claude Rutanga, CO Madagascar
- 169.** Dr Naye Bah, CO Mali
- 170.** Dr Nurbai Calu, CO Mozambique
- 171.** Ms Mary Nana Brantuo, CO Namibia
- 172.** Dr Mariama Baïssa Abdoulaye, CO Niger
- 173.** Dr Ayodele Awe, CO Nigeria
- 174.** Dr Philippe Patrobas, CO Nigeria

- 175.** Dr Amos Omoniyi Fadare, CO
Nigeria
- 176.** Dr Jules Mugabo Semahore, CO
Rwanda
- 177.** Dr Ndella Diakhate, CO Senegal
- 178.** Dr Kassa Ketema, CO Sierra
Leone
- 179.** Dr Patrick Hazangwe, CO South
Africa
- 180.** Dr Nkateko Mkhondo, CO South
Africa
- 181.** Dr Nomthandazo Lukhele, CO
Kingdom of Eswatini
- 182.** Dr Bhavin Jani, CO Tanzania
- 183.** Mr Muggaga Kaggwa, CO
Uganda
- 184.** Dr Mkhokheli Ngwenya, CO
Zimbabwe
- 185.** Dr Lastone Chitembo, CO
Zambia

WHO/AMRO

- 186.** Dr Massimo Ghidinelli,
Coordinator, HIV/TB/HEP, RO
- 187.** Dr Rafael Lopez Olarte,
Regional Adviser, TB, RO
- 188.** Dr Pedro Avedillo, RO
- 189.** Dr Fabio Moherdau, CO Brazil
- 190.** Mr Mauricio Cerpa Calderon, CO
Haïti

WHO/EMRO

- 191.** Dr Muhammad Akhtar, Regional
Adviser, RO
- 192.** Ms Kenza Bennani, RO
- 193.** Dr Mohammad Aloudal, CO
Afghanistan
- 194.** Dr Ali Akbar, CO Iraq
- 195.** Mr Yassine Aqachmar, CO
Morocco
- 196.** Dr Khawaja Laeeq Ahmad, CO
Pakistan
- 197.** Dr Iraneus Sindani, CO
Somalia

WHO/EURO

- 198.** Dr Masoud Dara, Coordinator,
Communicable Diseases, RO
- 199.** Dr Askar Yedilbayev, TB Team
Leader, RO
- 200.** Dr Ogtay Gozalov, RO
- 201.** Dr Gayane Ghukasyan, CO
Armenia
- 202.** Dr Javahir Suleymanova, CO
Azerbaijan
- 203.** Dr Viatcheslav Grankov, CO
Belarus
- 204.** Dr Saltanat Yegeubayeva, CO
Russian Federation
- 205.** Dr Sona Valiyeva, CO
Turkmenistan

WHO/SEARO

- 206.** Dr Mukta Sharma, Team
Leader, TB/HIV/HEP
- 207.** Dr Shalala Ahmadova, CO
Indonesia
- 208.** Dr Ikushi Onozaki, CO
Myanmar
- 209.** Dr Debashish Kundu, CO Timor
Leste

WHO/WPRO

- 210.** Dr Tauhid Islam, Coordinator,
STB and Leprosy Elimination,
RO
- 211.** Mr Fukushi Morishita, RO
- 212.** Dr Luciano Tuseo, CO
Cambodia
- 213.** Dr Chen Zhongdan, CO China
- 214.** Dr Kiyohiko Izumi, CO Lao PDR
- 215.** Dr Narantuya Jabambaa, CO
Papua New Guinea
- 216.** Dr Rajendra Yadav, CO
Philippines
- 217.** Dr Quang Hieu Vu, CO Viet
Nam
- 218.** Dr Satoko Otsu, CO Viet Nam