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

Report of the 22nd meeting
Geneva, Switzerland
6–8 June 2022
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Introduction

The World Health Organization (WHO), through its Global Tuberculosis (TB) Programme (GTB), leads and guides the global effort to end the TB epidemic through a human rights-based approach for universal access to people-centred prevention and care, multisectoral action and innovation. The major functions of the Global TB Programme include:

- providing global leadership to end TB through strategy development, political and multisectoral engagement, strengthening of reviews and accountability, and advocacy and partnerships (including with civil society);
- developing policies, norms and standards for TB prevention and care, and action on TB determinants, with support for their implementation;
- shaping the TB research and innovation agenda, and stimulating the generation, translation and dissemination of knowledge;
- providing specialized technical support for Member States and partners, and working with WHO regional and country offices to catalyse change and build sustainable capacity; and
- monitoring, evaluating and reporting on the status of the TB epidemic and progress in the financing and implementation of the End TB Strategy.

The Strategic and Technical Advisory Group for Tuberculosis (STAG-TB) is an expert advisory body that was established in 2001. STAG-TB’s mission is to contribute to ending the TB epidemic and eventually eliminating the disease by providing state-of-the-art scientific, strategic and technical guidance to WHO. Its functions are as follows:

1. To provide to the WHO Director-General independent evaluation on the strategic, scientific and technical aspects of WHO’s TB work.
2. To review, from a scientific, strategic and technical viewpoint, progress and challenges in WHO’s TB-related core functions, including the content, scope and dimension of WHO’s:
   a. development of TB policies, strategies and standards in TB prevention, care;
   b. collaboration with countries, and support of countries’ efforts to control TB, including the provision of guidance and capacity-building on policies, strategies, standards and technical assistance;
   c. TB epidemiological surveillance, monitoring, evaluation and operational research activities, their relevance to countries’ efforts to end the TB epidemic and approaches to be adopted; and
   d. promotion and support of partnerships and of advocacy and communications for TB prevention, care and control worldwide.
3. To review and make recommendations on the establishment of committees, working groups, and other means through which scientific and technical matters are addressed.
4. To advise on priorities between possible areas of WHO activities related to TB prevention, care and control.

STAG-TB reports to the WHO Director-General, and members are appointed by the WHO Director-General. The full terms of reference for STAG-TB are provided on the WHO STAG-TB website.1

The 22nd meeting of STAG-TB was organized as an in-person meeting on 6–8 June 2022, with a limited number of members joining virtually. The agenda (Annex 1) included the following four sessions:

1. Progress reports from the STAG-TB chair, the WHO Global TB Programme, WHO regional TB advisers and perspective from the WHO Civil Society Taskforce (CSTF);
2. Stepping up funding for the TB response;
3. Preparations for the 2023 United Nations High-Level Meeting on TB (UNHLM-TB): political dialogue, advocacy, multisectoral engagement and high-level reviews; and
4. Intensifying research and innovation.

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1 World Health Organization. 2022. Strategic and Technical Advisory Group for Tuberculosis (STAG-TB). Available at: https://www.who.int/groups/strategic-and-technical-advisory-group-for-tuberculosis/about
Prior to the meeting, Session 1 included a presentation from the Director of the Global TB Programme, feedback from the STAG-TB chair on a briefing provided to the WHO Director-General, progress updates from the WHO regional TB advisers (or staff in equivalent positions) from all six WHO regions, and perspectives from the WHO CSTF. Sessions 2-4 each started with a presentation by WHO, followed by commentaries from two STAG-TB discussants and discussion by STAG-TB members. Background documents were made available to STAG-TB members in advance of the meeting. The background documents are considered internal documents intended to inform discussions during the meeting and are not available for wider circulation.

With the assistance of WHO secretariat, session discussants developed draft recommendations following each session. All draft recommendations were reviewed and finalized in plenary on Day 3 by all STAG-TB members.

This report summarizes the sessions of the meeting, focusing on comments and recommendations from STAG-TB members. All reports of STAG-TB meetings are submitted by the Chair of STAG-TB and the Director of the WHO Global TB Programme to the Assistant-Director General, the Deputy Director-General and the Director-General of WHO, and are posted on the WHO STAG-TB website in conjunction with a widely distributed newsletter.

The full list of participants for the 22nd STAG -TB meeting is provided in Annex 2.

1. Progress reports from the STAG-TB Chair, the WHO Global TB Programme, WHO Regional TB Advisers and perspectives from the WHO Civil Society Task Force (Session 1)
Dr Ariel Pablos-Méndez, Chair of the STAG-TB, met the WHO Director-General in February 2022 and provided him with a summary briefing of the 2021 STAG-TB meeting outcomes and highlighting the requests made to the WHO Director-General:

- Member States to prioritize efforts, with collaboration across all sectors, to reach the 2022 international targets for TB set out during the 2018 UNHLM-TB;
- WHO to lead preparations for the organization of the 2023 UNHLM-TB and to develop a strategic advocacy and communications plan to elevate the spotlight on ending TB;
- WHO, in collaboration with relevant sectors, to promote the research and development of new TB vaccines, building on lesson learnt from the response to the COVID-19 pandemic;
- WHO to promote the prioritization of TB in the context of new and emerging priorities, to mitigate the devastating impact of pandemics such as COVID-19 on service provision and on the main drivers of the TB epidemic (such as undernutrition).

Dr Tereza Kasaeva, Director of the Global TB Programme, presented on progress made by WHO on implementing the recommendations from the 2021 STAG-TB meeting. Dr Kasaeva and WHO Regional TB Advisers (or equivalent) from all six WHO regions presented on global and regional progress and actions needed to end TB.

Ms Lana Syed provided an overview of key progress made by the CSTF since 2021, which included the launch of the CSTF progress report *WHO Civil Society Task Force on TB: engagement with civil society as a driver for change: progress report, March 2020 - June 2021*.

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Representing the CSTF, Mr Nyan Win Phyo joined the presentation to provide an overview of the CSTF 2022 workplan.

Session 1 was an information session, and as such there were no STAG-TB recommendations. STAG-TB members welcomed the progress update and provided comments summarized below.

1.1 STAG-TB comments

STAG-TB:

- Commends WHO, its Director General and the Global TB Programme for the overall leadership and work across all three levels of the organization and for the progress in implementing the recommendations from 2021 STAG-TB;
- Acknowledges the significant impact the COVID-19 pandemic has had on TB services, and that the pandemic has entered a new phase, with implications for the TB epidemic, that should be taken into consideration;
- Appreciates the rapid pace at which global TB guidelines are being developed and updated, and notes with concern the relatively slow pace of their adoption and implementation at country level;
- Encourages WHO to continue working with partners, civil society and other stakeholders, including WHO collaborating centers, to provide strategic and technical guidance, knowledge sharing and advocacy, and to support uptake and implementation of WHO guidelines;
- Encourages WHO to celebrate and share good practices and progress by countries on key TB targets and milestones, including enhanced monitoring and availability of data, as part of advocacy efforts to invigorate the TB response;
- Congratulates WHO on the success of its initiative to collect, report and visualize national TB notification data on a monthly/quarterly basis from more than 100 countries, which has ensured timely information about the impact of the COVID-19 pandemic on essential TB services and associated action;
- Recognizes the need for more attention to be paid to strategic advocacy and communication for TB; and
- Notes with deep concern the ongoing conflicts and instability, including the conflict in Ukraine, and the associated socioeconomic impact and implications for the TB epidemic.

2. Stepping up funding for the TB response (Session 2)

**GTB focal points:** Katherine Floyd, Philippe Glaziou, Dennis Falzon, Ines Garcia Baena, Peter Nguhiu, Ernesto Jaramillo

**Invited guest speakers:** Tim Evans (McGill University, Canada), Suvanand Sahu (Stop TB Partnership)

**Discussants:** Moorine Sekadde, Ariel Pablos-Mendez

2.1 Background

In 2014 and 2015, all Member States of WHO and the United Nations (UN) committed to ending the TB epidemic, through adoption of WHO’s End TB Strategy and the UN Sustainable Development Goals (SDGs). The End TB Strategy included milestones and targets for large reductions in the TB incidence rate (new cases per 100,000 population per year), the absolute number of TB deaths and to have no tuberculosis (TB) patient or their household face catastrophic costs because of TB disease. The milestones for 2020 were a 20% reduction in the TB incidence rate and a 35% reduction in the number of TB deaths compared with a baseline of 2015, and to have 0% TB patients and their households facing catastrophic costs due to TB (defined as costs exceeding 20% of household income or expenditure).
The political declaration of the first UNHLM on TB in 2018 reaffirmed the TB commitments in the SDGs and the End TB Strategy and set global targets for the numbers of people to be treated for TB disease and TB infection in the period 2018–2022 (40 million and 30 million, respectively) and, for the first time, global funding targets (at least US$ 13 billion per year for implementation of TB prevention, diagnostic, treatment and care services, and at least US$ 2 billion per year for TB research in each year 2018–2022).

The Global Tuberculosis Report 2021\(^4\) showed an increase in the global number of TB deaths for the first time in more than a decade (from a total of 1.4 million in 2019 to 1.5 million in 2020, back to the level of 2017), a slowing in the rate of decline in TB incidence, a big drop in global TB notifications (18% between 2019 and 2020), a large global drop in the number of people who were provided with TB preventive treatment (from 3.6 million in 2019 to 2.8 million in 2020), a reduction in spending on essential TB services in low and middle-income countries, from US$5.8 billion in 2019 to US$5.3 billion in 2020, and static funding for TB research (at around US$ 0.9 billion annually since 2018). Funding levels for TB in 2020 were less than half (39%) of the amount estimated to be required in the Global Plan and less than half (41%) of the global target set at the UN high-level meeting on TB. In July 2022, Stop TB Partnership released an updated Global Plan to End TB for the period 2023–2030,\(^5\) which includes estimates of the annual funding needed for the TB response up to 2030.

### 2.2 Topics covered

Topics covered in this session were:

- the impact of the COVID-19 pandemic on the TB response, and actions taken to monitor and mitigate the impact, including ensuring access to essential TB services during COVID-19 (presented by Katherine Floyd and Dennis Falzon);
- funding for the TB global response, including current funding needs, availability and gaps (presented by Inés Garcia Baena); and
- charting the way forward to fully fund the global TB response (presented by Suivanand Sahu, Stop TB Partnership).

Key actions led and supported by WHO, between June 2021 and June 2022 are outlined below.

At the STAG-TB meeting in 2021, new methods for estimating the burden of TB in 2020 in the context of the COVID-19 pandemic were presented and discussed. These drew heavily on the use of monthly and quarterly data reported by countries as part of a new WHO initiative (launched in February 2021) to provide timely information about the impact of the pandemic on essential TB services. These methods were used to produce the TB disease burden estimates published in the Global Tuberculosis Report 2021 and are being further extended and refined in 2022.

The Global TB Programme has continued to collect and report monthly and quarterly TB notification data on an ongoing basis, from around 100 countries that collectively account for about 90% of global TB incidence and notifications. Visualizations of the data (automatically updated as soon as new provisional data are reported) are available for all countries as well as pre-defined country groups at:


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The Global TB Programme has continued to provide global guidance and coordination of support to countries for the design, implementation, analysis and reporting of national surveys of costs faced by TB patients and their households. A WHO publication (book) that provides comprehensive information about the results and policy implications from the 20 surveys completed between 2015 and 2021 will be published shortly in 2022.

Since the start of the COVID-19 pandemic, WHO has issued guidance and monitored the maintenance of essential health services such as TB care. Examples of actions taken since between June 2021 and June 2022 include:

- A Call to Action 2.0 to advocate for progress on the UNHLM-TB 2018 targets in the context of the COVID-19 pandemic;6
- Provision of advice and data gathering on dual testing for TB and SARS-CoV-2 in collaboration with the Global Fund and other partners;7
- An updated collection of country reports on innovations in TB services during the COVID-19 pandemic;8
- Updates to the WHO TB Knowledge Sharing Platform;9
- Reviews of evidence on the effect of SARS-CoV-2 infection on TB patient outcomes for the WHO clinical guidance on COVID-19 management.

Recognizing that there is a chronic funding gap for TB which is increasing, especially given the need to increase investments to recover from the impact of the COVID-19 pandemic, the Global TB Programme presented a summary of the status of funding for TB in terms of the needs, availability and gaps in the period 2001–2020. Key messages included:

- Funding trends for TB prevention, diagnosis and care between 2006 and 2020 show a chronic funding gap, varying from around US$1 billion to US$8 billion. The biggest absolute gaps are in lower-middle income countries (LMC).
- While 80% of funding available for TB prevention, diagnosis and care comes from domestic sources, international donor funding remains critical in low-income countries.
- The example from India for the period 2016–2020 demonstrates that large efforts to increase domestic investments in TB are possible in low-and-middle income countries (LMIC). In India, domestic funding for TB increased from US$ 285 million in 2016 to US$ 473 million in 2019. The decline in 2020 was attributed to the COVID-19 pandemic.
- International funding for health has declined (OECD data) in recent years and its share dedicated to TB has been reducing since 2013. The percentage of international donor financing for health that was dedicated to TB rose from 0.8% in 2002 to 4.2% in 2010 and peaked at 4.7% in 2013, before declining to the current level of 3.8%. The proportion of international investment for TB is still quite low when compared with other priority programs such as Malaria and HIV, whereas the estimated population impact of these priority illnesses is quite similar in terms of DALYs lost in 2019 (616 for HIV, 608 for TB and 600 for malaria DALYs lost to illness in 2019 per 100 000 at risk population), and even larger among low-and-middle income countries with 965 DALYs lost with TB, compared with 597 DALYs lost with HIV and 721 DALYs lost with malaria).

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• Unless the situation for LMICs changes, funding gaps between estimated needs and available funding will not only persist, but are likely to increase, and financing targets to fund the TB response set in the Global Plan and agreed by world leaders at the UN high-level meeting will be increasingly unattainable.

The guest speaker from Stop TB Partnership presented the recently published Global Plan to End TB 2023-2030 funding needs for TB estimated at US$ 250 billion over 2023-2030 (including US$157 billion for TB plan implementation, US$52.6 billion for TB vaccination and US$40.2 billion for research and development of new tools) and described potential sources of additional fund suggested by the plan. Suggestions included increased domestic funding allocations to health and TB in upper-middle income (including BRICS) and high-income countries, as well as increased domestic and donor funding (Global Fund and other) in lower-middle income and low-income countries. The Global Plan 2023-2030 calls for an expansion in the use of blended loan and grants, debt swaps, private sector financing and high net-worth individuals in LMICs. Suggestions are framed within the context of financing of general health services, universal health coverage and anti-microbial resistance. Success stories such as the doubling of government funding for TB in India, Indonesia and loan buy downs from World Bank in India, Indonesia and Pakistan, debt swap in Indonesia were described. Opportunities ahead were flagged including the inclusion of TB in the Global Fund C19 RM (Covid-19 Response mechanism), G-20 summits, UNHLM in 2023 and Global Fund Catalytic Funding on Innovative Financing. The Global Plan also calls for cross-national funding for TB research and development of new tools to further expand its funding base to governments, philanthropy, private sector and innovative financing approaches.

2.3 Questions to STAG-TB
Two questions were posed to STAG-TB:

• Does STAG agree with the approaches taken by WHO’s Global TB Programme to advocate for the prioritization of TB services during the COVID-19 pandemic and what further actions does it propose? Does STAG-TB have any suggestions for revisions or additions needed to the next steps?

• In view of the chronic funding gaps for TB and recognizing that there is limited scope for increased funding from the Global Fund, what could be done to solve the chronic TB funding gap?
  - In general, and
  - By WHO specifically

2.4 STAG-TB comments

STAG-TB:

• Acknowledges the profound impact of the COVID-19 pandemic on people affected by TB and on TB services globally, as evidenced by the substantial drop (18%) in global TB notifications between 2019 and 2020;
• Appreciates WHO’s leadership and coordination, working closely with partners and communities, to document innovative actions to maintain and strengthen TB services, and WHO’s rapid update of evidence-informed guidance to encourage the rapid implementation of newer and more scalable technologies;
• Notes with concern the challenge of ensuring focus on TB in the face of multiple global public health challenges, threats and priorities;
• Recognizes:
  o There is a chronic funding gap for TB, which needs to be urgently addressed if TB targets are to be met.
  o That to close this funding gap, action is needed at the global, regional and country levels, with full engagement of civil society, partners and affected communities.
o That WHO has already strongly advocated for increased funding for TB, including through an official request to the Global Fund board to consider increasing the share of total funding allocated to TB.

o That there are general strategies that do not target TB specifically, but which have an impact on TB (“TB-sensitive” approaches) as well as “TB-specific” approaches for increasing funding.

o General approaches that are “TB-sensitive” include:
  ▪ ensuring progress in advancing Universal Health Coverage (UHC), with TB included as part of health insurance plans or benefit packages;
  ▪ expansion of prepayment financing mechanisms for health care that include TB; and
  ▪ including TB in current and future pandemic preparedness efforts.

o TB-specific approaches include:
  ▪ increasing TB-specific budgets allocated domestically;
  ▪ ensuring full replenishment of the Global Fund in 2022 (which has the potential to increase TB-specific funding from the Global Fund by 40%);
  ▪ changing the current Global Fund disease split, in which currently only 18% of funding is allocated to TB;
  ▪ expanding the use of World Bank loans, building on recent country success stories in Indonesia and India; and
  ▪ capitalizing on other innovative financing mechanisms (such as the airline tax that funds Unitaid).

2.5 STAG-TB recommendations

STAG-TB agreed with the next steps set out by the Global TB Programme, and made the following additional recommendations:

1. The WHO Director-General, Regional Directors and Heads of Country Offices to engage in high-level communication and political dialogue to close the funding gaps for TB, at the global, regional and country levels. For example:
   o At WHO Director-General level:
     ▪ Direct communication (e.g. letters to Ministers of Health of high TB burden/G20 countries highlighting the impact of the COVID-19 pandemic and the need to close funding gaps);
     ▪ Dialogue with Heads of State (e.g. in the context of G20 and bilateral meetings), Ministers of Health and Finance, highlighting links with SDG 3 and all other relevant SDGs;
     ▪ Dialogue with the leadership of the World Bank, Global Fund, and bilateral funding agencies.
   o At WHO heads of country office level: Dialogue with national authorities as well as relevant funding agencies (e.g. bilateral partners, the World Bank, the Global Fund country coordination mechanisms), within the context of existing health financing frameworks.

2. Use the WHO Director-General flagship initiatives to help address the funding gap for TB, including those related to universal health coverage (UHC), pandemic preparedness and response and the next WHO Director-General flagship initiative on TB.

3. Promote the strengthening of health expenditure tracking using national health accounts, to ensure more comprehensive and transparent understanding of national TB spending (public and private).

4. Strengthen guidance and support to countries related to the development and costing of national TB strategic plans, to help ensure that these have the right level of ambition and can be used to mobilize domestic and external resources needed from all relevant sources.
5. Continue to work with countries to ensure that results from national TB patient cost surveys are used to inform policy change related to UHC, social protection, health financing and reimbursement of costs (e.g. via grants or other incentives), in alignment with related multisectoral efforts (e.g. those linked to the Multisectoral Accountability Framework (MAF-TB)).

6. Collaborate with external partners, including (but not limited to) the World Bank, the Global Fund, and the Stop TB Partnership on innovative financing opportunities such as loan buy-downs and debt-swaps.

7. Enrich the STAG-TB membership to include more experts on health financing.

8. Continue to strengthen community and civil society engagement to scale-up TB services as essential health services, in the context of primary health care and UHC.

9. Promote and support discovery and operational research to address key unanswered questions on science, epidemiology and social determinants, and disseminate lessons learnt from country experiences to further inform evidence based strategies about TB prevention and care.

3. Preparations for the 2023 United Nations High Level Meeting on TB: political dialogue, advocacy, multisectoral engagement and high-level reviews (Session 3)

**GTB focal points:** Tereza Kasaeva, Monica Dias

**Perspectives from interagency stakeholders:** Ann Burton (United Nations High Commissioner for Refugees), Michael Smith (World Food Programme), Chris Gilpin (International Organization for Migration), Lou Tessier (InternationalLabour Organization), Lucica Ditiu (Stop TB Partnership)

**Discussants:** Syed Karam Shah, Ingrid Schoeman

### 3.1 Background

Despite progress over the last decades, TB remains among the leading infectious killers worldwide, claiming nearly 4000 lives a day. To accelerate action to end TB, Heads of State came together at the first-ever UNHLM on TB in September 2018. The meeting resulted in an action-oriented political declaration that includes bold targets to close gaps in TB prevention and care. In 2020, a progress report of the UN Secretary-General to the General Assembly showed that high-level commitments and targets have galvanized global and national progress towards ending TB, but that more ambitious investment and actions are required to put the world on track to reach targets, especially in the context of the COVID-19 pandemic.

For the first time in over a decade, TB deaths increased in 2020. Ongoing conflicts across Eastern Europe, Africa and the Middle East have further exacerbated the situation for vulnerable populations. Progress towards reaching the 2022 targets in the political declaration of the 2018 UN-HLM on TB and the WHO Director-General’s Flagship Initiative Find.Treat.All is at risk mainly due to lack of funding. Between 2018 and 2020, 20 million people were provided TB treatment. This is 50% of the 5-year target of 40 million people reached with TB treatment for 2018-2022. During the same period 8.7 million people were provided TB preventive treatment. This is 29% of the target of 30 million for 2018-2022. Targets on financing were also not met.

Furthermore, the importance of a multisectoral approach has been a key element in political commitments to end TB since the development of WHO’s End TB Strategy. The Moscow Declaration and Political declaration of the 2018 UNHLM on TB included a commitment by the Member States to enable and pursue multisectoral engagement and accountability to end TB. In 2019 WHO developed and rolled out the Multisectoral Accountability Framework to accelerate progress to end TB by 2030. The main aim of the MAF-TB is to support effective accountability of governments and all stakeholders at global, regional, and country levels, in order to accelerate progress to end the TB epidemic.
Urgent action, multisectoral collaboration and investment are required to get back on track, especially following the COVID-19 pandemic. The 2023 UNHLM on TB will be an important landmark for the fight against TB, bringing together Heads of State to recommit to strengthening efforts to end TB and get back on track to reach End TB Strategy targets. As requested in the political declaration of the 2018 UNHLM on TB and the 2020 report of the United Nations Secretary-General to the General Assembly, WHO is continuing to provide global leadership for the TB response, working in close collaboration with all stakeholders, to prepare for a high-level meeting on TB in 2023.

3.2 Topics covered

Topics covered in this session were:

- preparations for the United Nations High Level Meeting on TB, to be held in 2023;
- an updated WHO Director-General Flagship initiative called FIND.TREAT.ALL#TB;
- multisectoral collaboration and engagement including WHO’S Multi-sectoral Accountability Framework; and
- perspectives from inter-agency stakeholders;

Key actions led and supported by WHO, between June 2021 and June 2022 are outlined below.

- WHO and its leadership are working intensively to support countries towards reaching the 2022 UNHLM targets through the WHO Director-General’s FIND.TREAT.ALL#ENDTB flagship initiative. Political dialogue with high level leadership in countries has been undertaken including through country missions and national campaigns to drive progress and translate commitments to action at the national and subnational level, such as the “Races to End TB”.

- Several high-level events with participation of ministers and other leaders were held through the year to keep the spotlight on TB in the face of the COVID-19 pandemic, including a Call to Action to scale up access to TB prevention. Countries and partners have been briefed on UNHLM preparations through the WHO End TB Summit, WHO Global TB Symposium, TB Technical Expert Network meetings and other events.

- Since the beginning of the COVID-19 pandemic, WHO has been working with countries, health workers, communities, civil society and other partners to prioritize TB in recovery or maintenance plans for essential health services during COVID-19, and to enhance collaboration across stakeholders towards ending the epidemic.

- WHO has continued to develop and issue new guidelines and operational handbooks for the screening and diagnosis of TB and for the treatment of drug-susceptible TB, drug-resistant TB and prevention and treatment of TB infection. A digital TB knowledge sharing platform (including applications for smartphones and tablet computers), an online searchable repository of recommendations from TB guidelines (WHO eTB Guidelines) and online e-training courses on the Open-WHO platform were developed to improve access and use of the latest policy guidance.

- WHO is in the process of updating the DG Flagship Initiative to end TB. This special initiative will bring together countries and stakeholders to set the scene and accelerate the TB response in advance of the UNHLM.

- WHO is providing support to countries to drive multisectoral action through the WHO multisectoral accountability framework. At the global level, WHO launched a collaborative multi-stakeholder and multisectoral platform to coordinate the TB response and review progress. WHO has engaged at various levels and several events since the launch of the
platform and is looking to strengthen and formalize our efforts more to advance multisectoral action and accountability. WHO convened a meeting of its Global Multisectoral Multi-stakeholder platform to End TB in May 2022.

- With WHO support, high-level leadership on multisectoral accountability has advanced including through Presidential or Head of State End TB initiatives and formalized mechanisms for the engagement and accountability of stakeholders in India, Indonesia, Pakistan, Philippines and Vietnam and other countries.

- WHO is releasing operational guidance in 2022 to facilitate and promote the adaptation and implementation of MAF-TB at national and local levels. It provides practical advice on approaches to establishing the MAF-TB at the national (and local) levels with concrete country examples and case studies of MAF-TB adaptation and use which can help to political leaders, policymakers within and beyond the health sector, civil society and affected communities, international partners, and funders to accelerate progress towards reaching the global targets to end TB.

3.3 Questions to STAG-TB

Three questions were posed to STAG-TB:

1. What is STAG-TB’s advice on the strategic priorities, targets and content of the WHO DG Flagship Initiative to #EndTB?

2. What is STAG-TB’s advice on additional actions WHO can take to strengthen preparations for the UNHLM on TB, and on the secretariat-proposed outline of the review and report by WHO to inform the high-level review by Heads of States at the 2023 UNHLM?

3. What does STAG-TB propose to WHO to further accelerate implementation of MAF-TB, in addition to all the actions taken by WHO on MAF-TB adaptation and roll-out?

3.4 STAG-TB comments

STAG-TB:

- Applauds the range of actions led by WHO in preparation for the 2023 UNHLM on TB on political dialogue and advocacy, advancing multisectoral collaboration and accountability as well as partnerships with civil society, affected communities and other stakeholders.

- Welcomes the proposed process from the secretariat on high level reviews at the global and national level in the lead up to the UNHLM on TB, including with increased engagement of civil society.

- Recognizes the importance of a strong, targeted second flagship initiative under the leadership of the WHO Director-General with quantitative and qualitative indicators to drive accelerated action to get the TB response back on track, mobilizing increased resources and new science.

- Commends the progress made in the implementation of WHO’s MAF-TB and related operational guidance and tools and calls for its wider implementation at national and subnational levels.
3.5 STAG-TB recommendations

STAG-TB made the following recommendations to WHO:

1. Requests the WHO Director-General to:
   - Advocate for the 2nd UNHLM on TB to be held in September 2023, support the identification of co-chairs for the Meeting, and facilitate the preparatory process for the meeting including through the sending of an official communication to Heads of State urging action and participation in the 2023 UNHLM with a request that at least one civil society and national TB programme representative is part of country delegations to the meeting.
   - Support the WHO multisectoral and multistakeholder taskforce on ending TB to unite efforts to set collective priorities and to support preparations for the UNHLM in close partnership with the WHO CSTF.
   - Promote alignment of preparation for the UNHLM on TB with the High-Level Meeting on UHC, especially recognizing and enhancing the role of community health workers in the TB and UHC response.

2. Requests WHO to focus and strengthen the priorities outlined in the second WHO DG flagship initiative given the urgency in getting the TB response back on track, identifying clear high-level targets for the initiative considering COVID-19 recovery plans, as well as through the inclusion of quantitative and qualitative indicators such as on uptake of WHO recommendations for rapid molecular testing, shorter treatment regimens, contact investigation and quality of care, supported by a well trained health care workforce. STAG-TB recommends an analysis on the first set of UNHLM targets and progress made, to inform the setting of renewed targets in the flagship initiative, and well as a strategic advocacy plan.

3. Requests WHO to enhance strategic advocacy planning and efforts at global and national levels with the close engagement of civil society including the WHO CSTF and partners, to urge Heads of State participation in the UNHLM on TB, including through the organization of national high-level review hearings with the engagement of multiple sectors. This would include targeted advocacy efforts to pique interest in high income countries to participate in the UNHLM on TB and contribute resources for TB implementation and research, through mechanisms such as the BRICS TB research network. Lessons from the first WHO Global Ministerial Conference on Ending TB in the Sustainable Development Era and the Civil Society Hearing can be built on through the convening of Ministers of Health and Ministers of Finance by WHO to prioritize the spotlight on TB in advance of the UNHLM.

4. Recommends that WHO continues to work on addressing drivers of the TB epidemic while building a body of evidence on addressing these through multisectoral engagement and accountability in countries. This would include monitoring MAF-TB indicators across sectors and civil society to visualize their contribution and meaningful engagement.

5. Encourages WHO to help close the MAF-TB implementation gap by widely disseminating and sharing of best practices to ensure sustainability including engagement of civil society and local leaders at the national and sub-national level. Short term gains can be made at sub-national or district levels in MAF-TB through the mapping out and engagement of core stakeholders and leaders.

6. Requests WHO to play a strong leadership role, through its regional and country offices to scale up engagement of national UN agencies as part of efforts to strengthen multisectoral engagement, and advocate for inclusion of MAF-TB in national TB strategic plans, Global Fund and donor proposals, also including key stakeholders such as UN agencies working on these areas in resource mobilization efforts.
4. Intensifying research and innovation (Session 4)

**GTB focal points:** Matteo Zignol, Nebiat Gebreselassie

**WHO IVB focal point for TB vaccines and invited guest speaker:** Birgitte Giersing

**Invited guest speakers:** Richard White (London School of Hygiene and Tropical Medicine), Nicolas Menzies (Harvard University)

**Discussants:** Grania Brigden, Glenda Gray

### 4.1 Background

The WHO End TB Strategy articulates that safer and more effective vaccines, diagnostics and medicines, together with appropriate programmatic innovations are imperative to significantly reduce disease incidence and mortality.

**Global Strategy for Tuberculosis Research and Innovation**

The *Global Strategy for Tuberculosis Research and Innovation*\(^\text{10}\) is a high-level guiding document adopted by the World Health Assembly in 2020 to help accelerate efforts in TB research and innovation, aligned to four objectives: 1. creating an enabling environment for TB research; 2. increasing financial investments; 3. promoting and improving approaches to data sharing; and 4. promoting equitable access to the benefits of research and innovation.

Since the WHO End TB Strategy was adopted, research and innovation has continued transforming the landscape of TB prevention and care. Revision of global WHO guidelines on the treatment for drug-resistant TB has progressively reduced the duration of treatment from 24 months to 6 months. There has also been a reduction in the duration of treatment for drug-susceptible TB from 6 months to 4 months, easing the burden on people with TB, their families and health systems. Furthermore, WHO now recommends fully-oral regimens for drug-resistant TB, which facilitates a more people-centred approach and improves treatment completion and quality of life. Since the adoption of the End TB Strategy, WHO has recommended 12 new diagnostic tests. TB preventive treatment has equally evolved with several short-course regimens now available, and with a lower pill burden.

In 2015, there were at least 8 medicines and 14 vaccines under clinical development. By mid-2021, the number of medicines had increased to 25, while the number of vaccines has remained the same. The diagnostic pipeline remains robust. However, a simple point of care, rapid and accurate test for detection of TB that can be used for all people with presumptive TB remains a top priority to close the diagnostic gap.

Despite some progress, funding for TB research and development continues to fall short of global targets. In 2020, global TB research investment was US$ 915 million, less than half of the US$ 2 billion per year target set in the political declaration of the UNHLM on TB. Approximately one third of the funding was for drug research, followed by 18% for basic science research, 14% for diagnostics, 13% for epidemiological studies, 13% for vaccines, and 6% for infrastructure and other needs. This amount needs to more than double to reach the 2022 UNHLM global target, and it needs to quadruple to reach the 2023-2030 targets set in the Stop TB Partnership’s Global Plan to End TB: 2023-2030.

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\(^{10}\) World Health Organization. 2020. A global strategy for tuberculosis research and innovation. Available at: https://www.who.int/publications/i/item/9789240010024
**Accelerating the development and implementation of new TB vaccine**

The development of a safe and effective TB vaccine would undoubtedly be the best solution to prevent and potentially eliminate TB. However, there are several challenges to developing effective TB vaccines. From a scientific perspective, challenges include a lack of validated, predictive animal models of TB infection and disease; a lack of validated biomarkers that can act as signatures of the risk of developing TB or as correlates of protection; and an incomplete understanding of the nature of protective immunity to TB. From the perspective of vaccine developers, market uncertainties, as well as the long and expensive research timeline, make TB vaccine development challenging.

Key actions led and supported by WHO, between June 2021 and June 2022 are outlined below.

**Global strategy for TB research and innovation**

The COVID-19 pandemic has significantly affected TB research and development activities. WHO has been monitoring and reporting on research progress, and engaging in political advocacy to rebuild the momentum with regards to research, development and innovation:

- Related to monitoring progress:
  - Monitoring the clinical pipeline of new TB vaccines, diagnostics and medicines through the annual Global TB Report;
  - Annual survey of TB research spending as part of the global TB report data collection process.

- Related to research agenda setting and research implementation:
  - Publication of evidence and research gaps identified during the development of policy guidelines for TB;
  - Support to implementation research projects through TDR, the WHO Special Programme for Research and Training in Tropical Diseases.

- Related to political advocacy
  - The development of the Director-General’s report on progress in respect of the WHO End TB Strategy, including implementation of the Global Strategy for TB Research and Innovation in order to inform preparations for the comprehensive review by Heads of State and Government at a UNHLM on TB in 2023;
  - Support to a G20 side event on “Financing the Tuberculosis Response: Overcoming COVID-19 Disruption and Building Future Pandemic Preparedness”, which includes aspects on TB research financing;

**Accelerating the development and implementation of a new TB vaccine**\(^{11}\)

WHO has taken steps to build the evidence required to make economic and health impact arguments for TB vaccine development and uptake, and a roadmap to pave the pathway for TB vaccine licensure and use. A planned high-level summit on TB vaccines organized by the WHO Director-General is anticipated to promote accelerated development of new TB vaccines.

- Health and economic impact assessment of new TB vaccines: WHO promotes the Full Value of Vaccines Assessment framework to inform decision-making on TB vaccine investment, introduction and use. Using this framework, the health and economic impact of new TB vaccines that meet WHO preferred product characteristics were estimated in 102 low- and middle-income countries. The findings demonstrate that vaccine products that meet these profiles can significantly reduce TB incidence by 2050, with an adolescent/adult vaccine

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\(^{11}\) These are collaborative projects with the WHO Immunization, Vaccines and Biologicals (IVB) department.
demonstrating greater impact than an infant vaccine. The results also confirm that, when available, TB vaccines could be highly cost-effective (both from societal and health system perspectives) in most of the countries, and essentially all of those with a high burden of TB. A significant return on investment, and macroeconomic implications were projected for the modelled vaccine profiles. TB vaccines also offer additional advantages in the context of antimicrobial stewardship and averting catastrophic health expenditure. The number of treatment courses averted, and its impact on programme costs were also estimated. Finally, the findings demonstrate that a rapid introduction and scale up of vaccines (i.e., a mass campaign) offers a greater health impact and better cost-effectiveness.

- A roadmap to pave the pathway for TB vaccine licensure and use: The WHO Immunization, Vaccines and Biologicals Department is leading the development of a roadmap for global introduction of new TB vaccines intended for adults and adolescents. The roadmap will describe the activities needed to pave the way for the global introduction of new TB vaccines, once licensed, and specifically those relevant to policy development, commercialization, financing, access and implementation.

- A high-level summit on new TB vaccines: The vaccine field has evolved very rapidly over the past decade thanks to advances in our understanding of TB microbiology, immunology as well as advances in the structural analysis of antigens. In 2019, a Phase Ib study of the M72/AS01E vaccine candidate showed a 50% efficacy in preventing TB disease among healthy adults and adolescents already infected with TB over three years of follow up.\(^\text{12}\) WHO subsequently organized a high-level consultation to help define a way forward on the ideal pathway for the development of this vaccine.\(^\text{13}\) Glaxo Smith Kline has since licensed this vaccine candidate to the Bill and Melinda Gates Medical Research Institute,\(^\text{14}\) which is overseeing further testing among people living with HIV, while a larger Phase 3 trial is planned. The prospects for additional, more-effective TB vaccines have been transformed by a series of advances in vaccine platforms used for COVID-19 vaccine development such as mRNA and viral vector platform technologies. WHO’s Director-General is organizing a high-level summit to pave the way for accelerated development of new TB vaccines, drawing on lessons from the COVID-19 pandemic.

### 4.2 Topics covered

Topics covered in this session were:

- an update on the implementation of the WHO *Global Strategy for Tuberculosis Research and Innovation*;
- efforts to accelerate the development and implementation of new TB vaccines; and
- a roadmap for the introduction of new TB vaccines for adults and adolescents.


\(^\text{13}\) World Health Organization. 2019. Report of the high-level consultation on accelerating the development of the M72/AS01E tuberculosis vaccine candidate. Available at: https://www.who.int/publications/m/item/report-of-the-high-level-consultation-on-accelerating-the-development-of-the-m72-as01-e-tuberculosis-vaccine-candidate

\(^\text{14}\) The Bill & Melinda Gates Medical Research Institute. 2020. The Bill & Melinda Gates Medical Research Institute obtains license for continued development of M72/AS01E tuberculosis vaccine candidate from GSK. Available at: https://www.gatesfoundation.org/ideas/media-center/press-releases/2020/01/bill-and-melinda-gates-medical-research-institute-license-for-continued-development-of-m72-as01e
4.3 Questions to STAG-TB

Two questions were posed to STAG-TB:
- How best can WHO leverage the upcoming UNHLM on TB to improve the financing landscape for TB research and innovation?
- Does STAG-TB have any suggestions on how WHO can strengthen preparations for the high-level summit on new TB vaccines?

4.4 STAG-TB comments

STAG-TB:
- Welcomes the progress in the implementation of the *Global Strategy on Tuberculosis Research and Innovation*;
- Supports WHO’s efforts to leverage political events and commitments to increase investments for the development, optimization, and implementation of innovative tools and strategies;
- Notes the preliminary results of the full public value assessment of new TB vaccines and the development of the roadmap for the introduction of new TB vaccines for adults and adolescents;
- Commends WHO’s leadership in proposing to convene a high-level summit on new TB vaccines, leveraging lessons learned from the response to the COVID-19 pandemic; and
- Acknowledges that 2022 G20 Indonesia Presidency, followed by India (2023) and Brazil (2024) creates a unique political opportunity for advancing the TB research and innovation agenda, including for TB vaccines.17

4.5 STAG-TB recommendations

STAG-TB made the following recommendations to WHO:
1. Encourages Member States to fulfil their commitments on increasing domestic TB research financing and reporting thereof, as agreed in the political declaration of the UNHLM on TB, including by supporting efforts to incorporate research financing into national multisectoral accountability frameworks, and promoting that such public financing efforts come with strong conditions on affordability, access and equity, and support civil society engagement in this regard;
2. Uses its convening role to promote TB research cooperation among countries and partners, with a view to improve information and data sharing, reduce duplication of efforts, improve efficient use of resources and gather lessons learnt from collaboration, resource mobilization and prioritization processes of other initiatives such as the Joint Programming Initiative for Antimicrobial Resistance, as well as from the response to the COVID-19 pandemic;
3. Leverages preparations for the upcoming UNHLM meeting on TB, including the planned high-level summit on new TB vaccines to engage regional/collaboration platforms such as the BRICS (Brazil, Russian Federation, Indonesia, China, South Africa), G20 and the Association

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15 “Research” is defined as the development of knowledge with the aim of understanding health challenges and mounting an improved response to them. This definition covers the full spectrum of research, which spans five generic areas of activity: measuring the problem; understanding its cause(s); elaborating solutions; translating the solutions or evidence into policy, practice and products; and evaluating the effectiveness of solutions (From the *WHO strategy on research for health*). This includes various research domains such as basic science, translational and clinical research, epidemiological studies as well as operational, implementation, health system and social science research.

16 “Innovation” is the process of translating knowledge (generated through research) into a good or service that creates value.

17 Vaccines are identified in the text separately, as this topic will require a long-term perspective and effective linkage between 2022 G20 to that of 2023 and 2024.
of Southeast Asian Nations (ASEAN), with a view to boost diversification of donors and increase funding for TB research, in the context of their joint health and innovation goals;

4. Shapes the global TB research agenda prioritizing unmet needs that can be addressed in the short, medium and long term, and when applicable, by leveraging prioritized research needs articulated in other documents such as the Stop TB Partnership’s Global Plan to End TB: 2023-2030.

5. Finalizes the report on the full public value assessment of new TB vaccines, optimizing the use of data and messaging in a manner that is responsive to the needs of decision makers in vaccine research and development, financing, research workforce (early-stage), and implementation, including civil society and affected communities.

6. Leverages the planned high-level summit and future G20 meetings to advance the development of new TB vaccines, considering that it requires a long and rigorous research process. In this regard, STAG-TB encourages WHO to:

   o Advocate for substantial investment in TB vaccine research and development, by leveraging the outcomes of the full public value assessment, including data on broader social and economic impacts.

   o Develop messaging that demonstrates that research in TB vaccine discovery expands the knowledge base needed for breakthrough scientific progress of other biomedical tools for TB, and beyond, including in the context of the antimicrobial resistance agenda, and future pandemic preparedness;

   o Share progress in TB vaccine research, while clarifying the scientific and late-stage financing and manufacturing bottlenecks impeding the timely and equitable availability of effective vaccines, and the required actions to overcome these, drawing on the lessons learned from the response to the COVID-19 pandemic;

   o Support Member States in linking the outcome and commitments from the TB vaccine summit to the 2023 UNHLM on TB, future G20 meetings, and other political events, in collaboration with the Stop TB Partnership, affected communities, civil society, partners, and other relevant stakeholders.

5. Planning for the 2023 STAG-TB meeting
The WHO Secretariat announced that the 23rd annual meeting of STAG-TB is planned for June 2023 (exact dates to be confirmed), at WHO headquarters in Geneva, Switzerland, preferably as an in-person meeting. Proposed agenda items for the 2023 meeting were requested from STAG-TB members, and a proposed agenda will be compiled and discussed with the STAG-TB Chair and subsequently shared with members in the coming months, well in advance of the meeting dates.
Annex 1: Final agenda of the 22nd STAG-TB meeting, 2022

### Day 1: Monday, 6 June

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Details</th>
<th>Speaker</th>
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</thead>
<tbody>
<tr>
<td>9:00–9:10</td>
<td>Hidden reality - voice of a TB survivor</td>
<td>Anna, from India</td>
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<tr>
<td>9:10–9:20</td>
<td>Welcome remarks</td>
<td>Ren Minghui, Assistant Director-General, WHO UCN Division</td>
</tr>
<tr>
<td>9:20–9:45</td>
<td>Opening remarks and introductions</td>
<td>Ariel Pablos-Mendez, Chair, Tereza Kasaeva, Director, WHO Global TB Programme, GTB</td>
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<tr>
<td>9:45–9:50</td>
<td>Opening video: Key achievements</td>
<td>Hannah Monica Dias, GTB</td>
</tr>
<tr>
<td>9:50–10:00</td>
<td>Meeting objectives, overview of the agenda and declarations of interest</td>
<td>Farai Mavhunga, GTB</td>
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</tbody>
</table>

#### SESSION 1: PROGRESS REPORTS
(Leads and rapporteurs: Ernesto Jaramillo & Lana Syed)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Details</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>10:00-10:15</td>
<td>Feedback from the Chair on STAG-TB briefing to WHO Director-General</td>
<td>Ariel Pablos-Mendez, Chair</td>
</tr>
<tr>
<td>10:15–10:45</td>
<td>WHO progress update, June 2021 to June 2022</td>
<td>Tereza Kasaeva, GTB</td>
</tr>
<tr>
<td>10:45-11:15</td>
<td>Updates from the regions on progress and key actions needed</td>
<td>WHO Regional TB Advisers</td>
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**11:15 - 11:35 BREAK**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Details</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>11:35–11:45</td>
<td>Perspective from WHO Civil Society Task Force (CSTF)</td>
<td>Lana Syed, GTB</td>
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<td>Nyan Win Phyo, CSTF member</td>
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<tr>
<td>11:45 –12:55</td>
<td>Commentary from STAG-TB on progress reports</td>
<td>Mukadi Ya Diul, STAG member (5-7 minutes)</td>
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<td>Denise Arakaki, STAG member (5-7 minutes)</td>
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<tr>
<td>12:55-13:00</td>
<td>Questions/comments from STAG members and observers</td>
<td>Ariel Pablos-Mendez, Chair</td>
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**13:00-14:00 LUNCH BREAK**

#### SESSION 2: STEPPING-UP FUNDING FOR THE TB RESPONSE
(Lead and rapporteur: Ernesto Jaramillo, GTB)
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>14:00-14:30</td>
<td>The impact of the COVID-19 pandemic on the TB response</td>
<td>Katherine Floyd/ Phillipe Glaziou, GTB</td>
</tr>
<tr>
<td>14:30-14:45</td>
<td>Ensuring access to essential TB services under Covid-19</td>
<td>Dennis Falzon, GTB (ten minutes)</td>
</tr>
<tr>
<td>14:45-15:00</td>
<td>TB funding: needs, availability and gaps</td>
<td>Discussant: Moorine Sekadde, STAG member (5-7 minutes)</td>
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<tr>
<td>15:00-15:30</td>
<td>A way forward to fund global TB response</td>
<td>Ines Garcia Baena (GTB)</td>
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<td>Suvanand Sahu (Task Force for the Global Plan to End TB 2023-2030)</td>
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<td>Tim Evans, McGill University (20 minutes)</td>
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<td>Discussant: Ariel Pablos-Mendez, Chair (5-7 minutes)</td>
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<tr>
<td>15:30-15:50</td>
<td>BREAK</td>
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<tr>
<td>15:50–16:50</td>
<td>Plenary discussion</td>
<td>Ariel Pablos-Mendez, Chair</td>
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<tr>
<td>16:50 – 17:00</td>
<td>Summary and wrap-up of Day 1</td>
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**Day 2: Tuesday, 7 June**

**SESSION 3**

**Preparations for the 2023 UN High Level Meeting on TB**

_Political dialogue, advocacy, multisectoral engagement and high-level reviews_

(Lead and rapporteur: Monica Dias, GTB)

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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>9:00-9:30</td>
<td>Preparations for the UN High Level Meeting on TB: Process, priorities, lessons learned</td>
<td>Tereza Kasaeva, GTB</td>
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<td></td>
<td>Updated DG Flagship initiative: Special initiative to bring together countries and stakeholders to set the scene and accelerate the TB response in advance of the UNHLM</td>
<td>Hannah Monica Dias, GTB</td>
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<td>Multisectoral accountability framework: Progress in implementation and plans for high level reviews</td>
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<tr>
<td>9:30-10:15</td>
<td>Perspectives from interagency stakeholders: Progress overview and multisectoral collaboration:</td>
<td>- Ann Burton, UNHCR</td>
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<td>- Michael Smith, WFP</td>
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<td>- Chris Gilpin, IOM</td>
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<td>- Lou Tessier, ILO</td>
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<td>- Lucica Ditiu, Stop TB Partnership</td>
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<tr>
<td>10:15 – 10:45</td>
<td>STAG-TB Discussants</td>
<td>Ingrid Schoeman, STAG member (5-7 minutes)</td>
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<td>Syed Karam Shah, STAG member (5-7 minutes)</td>
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<td><strong>10:45-11:00 BREAK</strong></td>
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<td>Time</td>
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<td>Speaker(s)</td>
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<tr>
<td>11:00–12:30</td>
<td>Session 3 continued - Plenary discussion</td>
<td>Ariel Pablos-Mendez, Chair</td>
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<tr>
<td>12:30–14:00</td>
<td>Lunch</td>
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<tr>
<td>14:00-15:30</td>
<td><strong>SESSION 4: INTENSIFYING RESEARCH AND INNOVATION</strong></td>
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<td>(Lead and rapporteur: Nebiat Gebreselassie, GTB)</td>
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<tr>
<td>14:00-15:30</td>
<td>Update on the implementation of the global strategy for TB Research and Innovation</td>
<td>Nebiat Gebreselassie, GTB (15min)</td>
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<td>Accelerating the development and implementation of new TB Vaccines</td>
<td>Richard White (London School of Hygiene and Tropical Medicine) (10 min)</td>
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<td>- Potential health and economic impact of new TB vaccines in low- and middle income countries</td>
<td>Nicolas Menzies (Harvard University) (10 min)</td>
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<td>- A roadmap for the introduction of new TB vaccines for adults and adolescents</td>
<td>Birgitte Giersing, IVB/WHO (15min)</td>
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<td>STAG-TB discussants</td>
<td>Grania Brigden, STAG member (5-7 minutes)</td>
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<td>Glenda Gray, STAG member (5-7 minutes)</td>
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<tr>
<td>15:45-16:45</td>
<td>Plenary discussion</td>
<td>Ariel Pablos-Mendez, Chair</td>
</tr>
<tr>
<td>16:50-17:00</td>
<td>Summary and wrap-up of Day 2</td>
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</tbody>
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Annex 2: List of participants

STAG-TB Members

1. Dr Ariel Pablos-Méndez
   Professor of Medicine
   Columbia University Medical Center
   New York, NY
   United States of America

2. Dr Denise Arakaki-Sanchez (remote participation)
   Deputy Director
   Department of Chronic Communicable Diseases and Sexually-Transmitted Infections, Secretariat of Health Surveillance, Ministry of Health
   Brasilia
   Brazil

3. Dr Nimalan Arinaminpathy
   Professor in Mathematical Epidemiology
   Imperial College
   London
   United Kingdom of Great Britain and Northern Ireland

4. Dr Grania Brigden
   Senior Advisor
   The Global Fund to Fight AIDS, Tuberculosis and Malaria
   Geneva
   Switzerland

5. Dr Glenda Gray
   President and CEO
   South African Medical Research Council
   Johannesburg
   South Africa

6. Ms Jamilya Ismoilova
   Independent Consultant
   Dushanbe
   Tajikistan

7. Dr Seiya Kato
   Director
   Research Institute of Tuberculosis
   Tokyo
   Japan

8. Dr Knut Lönnroth (remote participation)
   Professor of Social Medicine
   Department of Global Public Health, Karolinska Institutet
   Stockholm
   Sweden

9. Dr Ya Diul Mukadi
   Senior Technical Advisor
   Global Health Bureau, US Agency for International Development (USAID)
   Washington, DC
   United States of America

10. Dr Anastasia Samoilova (remote participation)
    First Deputy Director
    National Medical Research Center of Phthisiopulmonology and Infectious Diseases of the Russian Ministry of Health
    Moscow
    Russian Federation

11. Ms Ingrid Schoeman
    TB Advocate, XDR-TB Survivor
    TB Proof
    Cape Town
    South Africa

12. Dr Moorine Sekadde
    Coordinator for Paediatric TB
    National TB & Leprosy Program, Ministry of Health
    Kampala
    Uganda

13. Dr Syed Karam Shah
    Adviser for Communicable Diseases Control
    Ministry of National Health Services, Regulations and Coordination
    Karachi
    Pakistan

14. Dr Chen Wang (remote participation)
    President
    Chinese Academy of Medical Sciences and the Peking Union Medical College
    Beijing
    China (People's Republic of)
WHO Civil Society Task Force on TB Members

15. Mr Jeffry Acaba
   TB Advocate
   APCASO
   Thailand

16. Ms Yuliya Chorna
   TB Advocate
   Canada

17. Mr Chamreun Sok Choub
   Executive Director
   KHANA
   Cambodia

18. Professor Harry Hausler
   Medical Director
   Project Integrate, TB Care Association
   Waterfront
   South Africa

19. Mr Bertrand Kampoer
   Coordinator
   Impacts in Social Health
   Cameroon

20. Mr Roger Kamugasha
   Editor In Chief
   The Health Times Africa Limited
   Uganda

21. Dr Amir Khan
    Association for Social Development
    Pakistan

22. Ms Evaline Kibuchi
    Stop TB Partnership Kenya
    Kenya

23. Ms Blessina Kumar
    CEO
    Global Coalition of TB Advocates
    India

24. Mr Tenzin Kunor
    Advocacy Coordinator
    We Are TB
    United States of America

25. Dr Nyan Win Phyo
    Coordinator, Health Technical, Monitoring and Evaluation
    World Vision Foundation of Thailand
    Thailand

26. Dr Ezio Távora dos Santos Filho
    REDE-TB - Brazilian Network of Tuberculosis Research
    Brazil

27. Ms Paran Sarimita Winarni
    TB affected community representative
    PETA
    Indonesia

Other participants

28. Professor Tim Evans (remote participation)
    Director and Associate Dean of the School
    of Population and Global Health
    McGill University
    Montreal
    Canada

29. Associate Professor Nick Menzies (remote participation)
    Associate Professor of Global Health
    Department of Global Health and Population
    Harvard University
    Boston
    United States of America

30. Professor Richard White (remote participation)
    Professor of Infectious Disease Modelling
    London School of Hygiene and Tropical Medicine
    London
    United Kingdom of Great Britain and Northern Ireland

Observers

31. Dr Daniel Chin (remote participation)
    Deputy Director, Global Health
    Bill & Melinda Gates Foundation
    United States of America

32. Dr Anand Date
    Chief, Global TB
    CDC
    Atlanta
    United States of America

33. Ms Lou Tessier (remote participation)
    International Labour Organization (ILO)
    Geneva
    Switzerland
34. Dr Chris Gilpin
International Organization for Migration (IOM)
Geneva
Switzerland

35. Professor Guy Marks (remote participation)
President
International Union Against Tuberculosis and Lung Diseases (The Union)
Paris
France

36. Dr Mustapha Gidado
Executive Director
KNCV Tuberculosis Foundation
The Hague
Netherlands

37. Dr Lucica Ditiu
Executive Director
Stop TB Partnership
Geneva
Switzerland

38. Dr Sreenivas Achuthan Nair
Regional Advisor, Asia and the Pacific
Stop TB Partnership
Geneva
Switzerland

39. Dr Sahu Suvanand
Deputy Executive Director
Stop TB Partnership
Geneva
Switzerland

40. Dr Eliud Wandwalo
The Global Fund to Fight AIDS, Tuberculosis and Malaria
Geneva
Switzerland

41. Dr Ann Burton (remote participation)
Chief, Public Health Section
United Nations High Commissioner for Refugees (UNHCR)
Geneva
Switzerland

42. Ms Sandra Harlas (remote participation)
Senior Public Health Officer
United Nations High Commissioner for Refugees (UNHCR)
Geneva
Switzerland

43. Mr Michael J. Smith (remote participation)
HIV Adviser & UNAIDS Partnership Officer
Nutrition Division (NUT)
World Food Programme (WFP)
Rome
Italy

WHO Regional Staff
AFRICAN REGION

44. Dr Michel Gasana
Medical Officer TB
WHO Regional Office, AFRO
Brazzaville
Congo

REGION OF THE AMERICAS

45. Dr Pedro Avedillo
Regional Advisor, TB
WHO Regional Office, AMRO
Washington, DC
United States of America

EASTERN MEDITERRANEAN REGION

46. Dr Martin van den Boom
Regional Advisor, TB
WHO Regional Office, EMRO
Cairo
Egypt

47. Dr Kenza Bennani
Medical Officer, TB
WHO Regional Office, EMRO
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EUROPEAN REGION

48. Dr Askar Yedilbayev
TB Team Leader
Joint Tuberculosis, HIV/AIDS & Hepatitis Programme (JTH)
WHO Regional Office, EURO
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STAG-TB 2022
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SOUTH-EAST ASIA REGION

49. **Dr Vineet Bhatia (remote participation)**
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WESTERN PACIFIC REGION

50. **Dr Rajendra Yadav**
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51. **Dr Kyung Hyun Oh**
Technical Officer
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WHO headquarters staff

Division of UHC/Communicable and Noncommunicable Diseases (UCN)

52. **Dr Minghui Ren**
Assistant Director-General

Global Tuberculosis Programme (GTB)

53. **Dr Tereza Kasaeva**
Director

54. **Mrs Hannah Monica Dias**
Cross-cutting Specialist, WHO Flagship Initiative, PPM & TB Elimination

55. **Mrs Karina Halle**
Cross-cutting Specialist, Enhanced TB Collaboration for Country Impact in high TB burden countries

Planning, Analysis & Risk Management (PAR)

56. **Mr Michael McCullough**
Unit Head

TB Prevention, Diagnosis, Treatment, Care & Innovation (PCI)

57. **Dr Matteo Zignol**
Unit Head

58. **Dr Dennis Falzon**
Team Lead

TB Vulnerable Populations, Communities and Comorbidities (VCC)

59. **Dr Farai Mavhunga**
Unit Head

60. **Dr Christian Gunneberg**
Public Health Specialist

61. **Dr Ernesto Jaramillo**
Medical Officer

62. **Ms Lana Syed**
Technical Officer

63. **Dr Kerri Viney**
Team Lead

TB Monitoring and Evaluation

64. **Dr Katherine Floyd**
Unit Head

65. **Dr Philippe Glaziou**
Team Lead

Immunisation, Vaccines and Biologicals (IVB)

66. **Dr Birgitte Giersing**
Team Lead, Vaccine Platforms and Prioritization