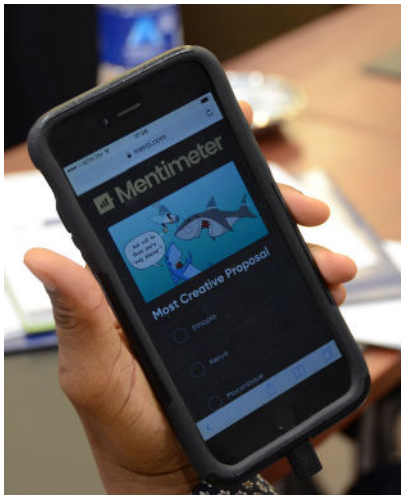
HIV Differentiated Service Delivery

Opportunities and Challenges for TB Prevention and Care

MEETING REPORT

March 26-29, 2019
Lusaka, Zambia

Hosted by the HIV Coverage, Quality, and Impact Network (CQUIN) and the World Health Organization



ICAP
Columbia University Mailman School of Public Health

World Health Organization

HIV LEARNING NETWORK
The CQUIN Project for Differentiated Service Delivery

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Executive Summary

Background

In March 2017, ICAP at Columbia University launched the HIV Coverage, Quality and Impact Network (CQUIN), convening member countries to form a learning network to advance the scale-up of differentiated service delivery (DSD) for HIV. CQUIN is designed to support the exchange of knowledge and best practices and to foster the co-creation of resources and tools; it is a demand-driven network responding to participant needs and interests.

As countries scale up DSD services for HIV, there are important implications for tuberculosis (TB) programs and for the delivery of TB/HIV services, including screening, prevention, linkage and treatment. DSD models generally shift recipients of HIV care who are stable and doing well on treatment to less-intensive models requiring fewer visits to health facilities. For example, models such as appointment spacing, multi-month prescriptions and fast-track visits require fewer and faster clinic visits, while community antiretroviral groups (CAGs) facilitate service delivery at the community level. These changes create both challenges and opportunities for TB/HIV service delivery.

Meeting Dates and Objectives

In response, ICAP and the World Health Organization (WHO) hosted a meeting entitled "HIV Differentiated Service Delivery: Opportunities and Challenges for TB Prevention and Care" in Lusaka, Zambia from March 26-29, 2019. The workshop convened global experts to explore the impact of differentiated HIV services on TB/HIV services; facilitate the exchange of relevant experiences, tools and best practices; and highlight innovations and new data. The main objectives were to:

- Identify opportunities and challenges posed by DSD for TB screening, diagnosis, prevention, and care
- Facilitate exchange of knowledge, best practices, innovations, resources and strategies for scaling up HIV-associated TB interventions in the context of DSD
- Identify common gaps, challenges and opportunities for future joint learning, co-creation of tools and resources and future south-to-south exchange visits

Meeting Participants

The meeting brought together 120 participants. Eighty (80) were from seven CQUIN countries (Ethiopia, Kenya, Mozambique, South Africa, Uganda, Zambia, and Zimbabwe) and included representatives from ministries of health (MOH) HIV and TB departments, civil society, national networks of people living with HIV, academic institutions, U.S. President's Emergency Plan for AIDS Relief (PEPFAR) agencies and their implementing partners (IP) and other stakeholders. Additional participants included representatives of ICAP, WHO, UNAIDS, the Global Fund for AIDS, TB & Malaria, the Bill & Melinda Gates Foundation, the International AIDS Society (IAS), the International Treatment Preparedness Coalition (ITPC), the U.S. Centers for Disease Control and Prevention, USAID, and other experts.

Meeting Content

The CQUIN meeting opened on the evening of Tuesday, March 26 with a panel of speakers moderated by Dr. Prisca Kasonde, ICAP Zambia Country Director, followed by an opening reception. Over the next three days, the meeting showcased four plenary presentations, three panel discussions, four breakout sessions, one moderated discussion, a hands-on "tools lab" demonstration session, and a "shark tank" competition in which country teams presented ideas for future funding.

Day One:

On Wednesday, March 27, Professor Helen Ayles from the London School of Hygiene and Tropical Medicine and ZAMBART delivered a keynote address on TB screening and linkage, presenting a framework to facilitate thinking through the "who," "what," "where," and "when" in relation to TB and HIV screening and linkage to care in DSD programs. She was followed by a panel of speakers who provided an introduction and framing for the meeting's key issues, including: defining DSD and its benefits, describing progress toward DSD scale-up, and considering the potential impact of DSD on TB/HIV services (Dr. Peter Preko from ICAP); the background, achievements and challenges of community-based TB services (Ms. Lana Syed from WHO); findings from an IAS consultation with key stakeholders on TB/HIV and DSD (Dr. Lucia Gonzalez Fernandez from IAS); and an overview of the definition and principles of community engagement, as well as key messages from the Recipients of Care Engagement Working Group on improving TB/HIV integration and engaging recipients of care in the process (Mr. Nelson Juma Otwoma from the National Empowerment Network of People Living with HIV in Kenya).

Country teams next paired up in a breakout session to describe the state of their national DSD scale-up, focusing on coverage, model mix, and TB/HIV program achievements and challenges. Each country pair described similarities and differences in country contexts; brainstormed about the potential opportunities and threats to TB/HIV services in shifting to DSD; and decided on an overall verdict as to whether the shift to DSD represents an overall opportunity or threat in their contexts. The consensus from this breakout session was that countries were cautiously optimistic about the opportunities to leverage DSD scale-up to expand TB screening and TB preventive treatment.

A panel of speakers provided different perspectives on the impact of DSD on TB screening and linkage. Ms. Angela Salomon from McGill University presented preliminary results from a literature review on effective interventions for TB/HIV linkage. Dr. Pren Naidoo from the Bill and Melinda Gates Foundation previewed the exciting TB screening innovations on the horizon. Speakers discussed frontline experience and case studies related to TB screening and DSD, including examples from Uganda (Dr. Josen Kiggundu from the Uganda MOH), Lesotho (Dr. Andrea Howard from ICAP), Kenya (Dr. Jacquin Kataka from the Center for Health Solutions), and South Africa (Ms. Sydney Rosen from the Boston University School of Public Health).

The final session of Day One was a "sofa session" that provided the audience with perspectives on person-centered TB/HIV services. This discussion featured the perspectives of people living with both HIV and TB (Ms. Sarah Banda and Ms. Nancy Chishimba) who shared their personal experiences navigating HIV/TB services; DSD program implementers (Ms. Mwelwa Chabala from the Center for Infectious Disease Research in Zambia [CIDRZ], Dr. Baker Bakashaba from the AIDS Support Organization [TASO] in Uganda, and Dr. Didier Kamerhe Kazige, from

IHAP/PATH in the DRC); and ministries of health (Dr. Cordelia Katureebe Mboijana from the MOH of Uganda).

Key Takeaways from Day One: DSD and TB Screening & Linkage

- Important changes are taking place in both HIV and TB programs, with the rapid scale-up of HIV DSD models and the introduction of novel TB screening and diagnostic technologies
- Ongoing communication and partnership between HIV and TB programs are needed to foster the innovation and creativity needed to improve TB screening, case finding, and linkage for people living with HIV
- Structured, meaningful, supported, and accountable engagement of people living with HIV is critical to this process; stakeholders must ensure that people living with HIV have a seat at the table and a voice in decision-making, planning, implementation, monitoring, and evaluation
- Treatment is prevention for both TB and HIV
- There are ongoing challenges related to TB screening, case finding and diagnosis for people living with HIV, and TB messaging and community literacy lag behind those of HIV and need improvement
- Data regarding the impact of DSD on TB screening and linkage are scarce, and early programmatic experience has been mixed. Participants noted the importance of harnessing supportive supervision, quality improvement methodology and community treatment supporters to optimize the use of TB screening tools in DSD models
- Overall, participants felt that DSD provides more of an opportunity than a threat with regards to improving TB/HIV services

Day Two:

Dr. Salome Charalambous from the Aurum Institute opened the second full day of the meeting with a keynote address on TB preventive treatment (TPT). She discussed progress in relation to global targets to end TB; the latest WHO guidelines; cutting-edge research on forthcoming new regimens; and different opportunities for TPT in DSD.

Next, speakers in a panel discussion provided diverse perspectives on DSD and TB prevention, including integration of TPT into antiretroviral therapy (ART) clubs in Cape Town, South Africa (Dr. Rheiner Mbaezue from the City of Cape Town, City Health); integration of TPT into the PODI model in the DRC (Dr. Didier Kamerhe from IHAP/PATH); TPT for migrant miners in Lesotho (Dr. Llang Maama from the Lesotho MOH); and community-based TPT in the DO-ART study in South Africa (Dr. Adrienne Shapiro from the University of Washington).

Country teams then paired to discuss DSD and TB prevention in a breakout session. Participants discussed provision of TPT in the context of differentiated ART models and arguments in favor or against providing TPT in the context of differentiated ART. They then voted on whether TPT should be offered to HIV-positive individuals enrolled in differentiated ART models. The overwhelming consensus was "yes" – TPT should be provided to DSD participants – with most discussions focusing on how to make this happen. Meeting participants noted that many TB programs prefer to dispense only one month of TPT at a time, which would require recipients of care to effectively leave their DSD models during TPT. The discussions highlighted the lack of an evidence base for this restriction, and the need to explore other options, including providing multi-

month prescriptions for TPT as well as ART. Another challenge discussed in the breakout sessions is that many national TB/HIV programs focus on providing TPT only to people newly starting ART – which, by definition, excludes people in DSD models. Participants also noted that WHO TPT targets focus on people initiating ART, rather than all people on ART, although WHO guidelines support TPT for all people living with HIV.

In a Tools Lab, participants learned about and viewed demonstrations of tools used in different contexts to help improve and accelerate DSD and TB/HIV integration.

Day Two concluded with parallel breakout sessions in which participants joined one of six groups focused on health system building blocks to discuss DSD and TB/HIV services (lab/diagnostics; supply chain; monitoring and evaluation; demand generation for TB/HIV services to discuss health systems; screening for TB in the context of the advanced HIV package of care; and how can countries make community engagement real). Each group discussed how their assigned health system building block needs to change to optimize TB/HIV services for people in differentiated ART models and define key "take home" messages from the group.

Key Takeaways from Day Two: DSD and TPT
• A significant reduction in TB incidence is needed to achieve global targets • Shorter regimens for TPT are on the horizon; recent clinical trials provide essential data, but do not answer all questions • Shorter TPT regimens have important implications for DSD as they are simpler to provide in the community, less disruptive of DSD models, and could be provided at the household level • Even before these shorter regimens are available, meeting participants felt strongly that TPT should be provided to people in DSD treatment models, not only to people newly starting ART • The case studies shared indicate that TPT can be integrated into DSD models and is feasible in community settings; multi-month prescription of TPT is thought to be possible • A sustained and uninterrupted supply of drugs requires addressing capacity and systems to enable accurate projections, quantification, and inventory control • There was a call to invest in a simplified and harmonized M&E system utilized by all HIV and TB stakeholders to drive action and policy • A bottom-up approach and meaningful engagement of recipients of care is critical: "nothing about us without us" and "it takes two to tango"

Day Three:

The third day of the meeting opened with a keynote address on engagement of people living with HIV by Ms. Stella Kentutsi from the National Forum of People Living with HIV/AIDS Networks in Uganda. She described the levels at which engagement of recipients of care must occur; the importance of formal structures, coordination mechanisms, capacity-building, and dedicated resources; different potential roles for recipients of care in M&E, implementation research, and policy; and emphasized the importance of placing a more resilient constituency of people living with HIV at the center of the response to close gaps.

Participants then joined one of four groups in a parallel breakout session to discuss TB/HIV services as they apply to specific DSD models (facility-based individual models, facility-based group models; community-based individual models, and community-based group models) and how to optimize

TB/HIV services within each model type. Groups discussed different aspects of their assigned model, including what they learned during the meeting about TB/HIV services in that particular DSD model; what is working well; and where there are opportunities to improve; where are the gaps in information; ways to leverage community-based TB services to achieve full coverage of high-quality TB/HIV services within DSD models; and next steps.

Next, country teams pitched brief proposals for post-meeting projects related to the topic of DSD and TB/HIV services in a highly anticipated "shark tank" competition, in which they presented proposals to the audience and a panel of judges. A panel of judges and a general audience voted for winners in several different categories, and teams from Kenya, Uganda, Zambia and Zimbabwe were chosen to move on to round two of the competition.

The meeting closed with remarks from Dr. Lee Abdelfadil from the Global Fund, Dr. Bactrin Killingo from ITPC, Dr. Vindi Singh from WHO, Dr. Peter Ehrenkranz from the Bill and Melinda Gates Foundation, Dr. Miriam Rabkin from ICAP, and Dr. Alex Makupe from the Zambia Ministry of Health.

Key Outputs

- DSD and TB action plans were submitted by the seven CQUIN countries in attendance to document next steps related to meeting outputs
- The shark tank finalists, Kenya, Uganda, Zambia, and Zimbabwe will move to the second round of the funding competition by submitting short concept notes
- Meeting report

Next Steps

Following the meeting, CQUIN will continue its focus on the issue of DSD and TB/HIV services. The stream of work will include (but not be limited to):

- Funding two of the "shark tank" projects;
- Hosting a satellite session on this topic at the IAS2019 meeting in Mexico
- Convening a virtual community of practice to continue work on the challenge of providing TPT in the context of DSD treatment models. This CoP will be open to all 11 CQUIN network countries; terms of reference will be shared in May 2019.

Introduction

Background

In March 2017, ICAP at Columbia University launched the CQUIN Network to accelerate the expansion of high-quality HIV differentiated service delivery (DSD) by supporting south-to-south learning, diffusion of innovation, co-creation of practical knowledge and tools, focused technical assistance, and catalytic research. The Bill & Melinda Gates Foundation funds CQUIN, which currently includes 11 countries (Cote d'Ivoire, eSwatini, Ethiopia, Kenya, Malawi, Mozambique, South Africa, Tanzania, Uganda, Zambia and Zimbabwe).

Each year, CQUIN convenes several all-network meetings as well as selected topic-specific meetings for smaller groups of countries. In March 2019, ICAP and the World Health Organization (WHO) hosted a seven-country meeting on the implications of DSD scale-up for the delivery of TB screening, diagnosis, prevention and care. Teams from Ethiopia, Kenya, Mozambique, South Africa, Uganda, Zambia, and Zimbabwe participated, along with diverse regional and global experts.

TB is the leading cause of death for HIV-positive individuals, causing a third of the 940,000 global deaths among people living with HIV in 2017.[1] Despite the scale-up of ART, TB incidence is also 20-fold higher amongst people living with HIV than in HIV-negative populations.[2] Programmatic gaps remain: nearly half of people with HIV-associated TB fail to receive TB care, and less than one third of new enrollees in HIV care initiated TB preventive treatment (TPT) in the subset of countries that reported in 2017. In addition, while ART coverage among people living with HIV with diagnosed TB is high, only 41% of people living with HIV estimated to have TB are receiving ART. These numbers are lower for children and adolescents. Sub-Saharan Africa has a particularly heavy burden of HIV-associated TB, accounting for 72% of new TB cases among people living with HIV and 84% of global deaths from TB in people living with HIV in 2017. Thus, expanding the coverage and quality of TB services for people living with HIV is a high priority for ministries of health in CQUIN member countries.

As countries scale up DSD services for HIV, there are important implications for TB programs. Shifting "stable" HIV-positive recipients of care to less-intensive models is hoped to improve patient satisfaction, provider workload, and health system efficiency: it also means that many people living with HIV will spend less time at health facilities. DSD models such as appointment spacing, multi-month prescribing and fast-track visits require fewer and faster clinic visits. Models such as community antiretroviral groups (CAGs) facilitate service delivery at the community level. These changes create both challenges and opportunities for TB service delivery. Will these less-intensive models be able to provide effective TB screening and referrals? Can TPT be delivered to patients in community settings?

As a demand-driven network, CQUIN convened this meeting, "HIV Differentiated Service Delivery: Opportunities and Challenges for TB Prevention and Care" in response to the priorities of the CQUIN countries. The meeting explored the impact of differentiated HIV services on TB screening,

[1] WHO. Global Tuberculosis Report, 2018.

[2] Kwan CK, Ernst JD. HIV and tuberculosis: a deadly human syndemic. Clin Microbiol Rev 2011:24:351-76.

diagnosis, prevention, and care; facilitated the exchange of relevant experiences, tools, and best practices; and highlighted innovations and new data.

Objectives

- Identify opportunities and challenges posed by DSD for TB screening, diagnosis, prevention, and care
- Facilitate exchange of knowledge, best practices, innovations, resources and strategies for scaling up HIV associated TB interventions that can be built upon
- Identify common gaps, challenges and opportunities for future joint learning, co-creation of tools and resources and future south-to-south exchange visits

Opening Reception

Dr. Prisca Kasonde
Country Director, ICAP Zambia

Dr. Prisca Kasonde welcomed participants to the meeting and thanked representatives from the seven CQUIN learning network member countries, PEPFAR agencies, UN agencies, and global experts. Dr. Kasonde noted that the goal for the opening reception was to set the tone for the three-day meeting and highlighted the timeliness of the meeting in the context of the recent celebration of World TB Day.

Dr. Miriam Rabkin
Director for Health System Strategies, ICAP

Dr. Miriam Rabkin opened her presentation with an overview of the CQUIN Learning Network. She described how CQUIN fosters south-to-south learning to promote the scale-up of high-quality differentiated HIV services; provided examples of CQUIN activities; and gave an overview of DSD scale-up in CQUIN partner countries.

Next, Dr. Rabkin outlined the meeting objectives and shared an analysis of data collected from participants during the registration process. Registration data showed:

- Most meeting participants felt that *coverage* of TB screening for HIV-positive patients enrolled in DART was worse (41%) compared to those in traditional HIV treatment, while others felt it was the same (30%) or better (29%).
- Most meeting participants felt that the *quality* of TB screening for individuals in DART was the same (53%) compared to individuals in traditional HIV treatment, while others felt it was better (30%) or worse (17%).

- Most meeting participants reported that people in DART models are eligible for TB preventative treatment (TPT) in their countries (78%), while a minority reported that they were not eligible (22%).
- Most meeting participants felt that people in DART models receive TPT somewhat often (64%), while others felt they received it very often (19%), rarely (14%), and never (3%).
- Most meeting participants felt that the shift to DSD provided an opportunity for TB/HIV services (85%), while a minority felt that it was a threat to these services (15%).

Dr. Rabkin summarized the meeting agenda, described the different types of sessions, and acknowledged the meeting contributors and funders.

Dr. Andrea Howard
Director, Clinical and Training Unit, ICAP

Dr. Howard opened her presentation with an overview of global TB mortality, highlighting that TB is the leading cause of infectious deaths in the world. She described links between HIV and TB infection, and the increased risk for people living with HIV to develop TB and die from it compared to HIV-negative people. Dr. Howard provided an overview of TB incidence, noting many new TB cases in people living with HIV in sub-Saharan Africa. She outlined key diagnostic and treatment delays that contribute to TB mortality. Dr. Howard emphasized that ART alone is not enough to prevent TB and the importance of considering the additive protective and survival benefits of combined TPT and ART in both early and advanced HIV.

Dr. Howard summarized why TPT implementation is currently inadequate, including low isoniazid preventive therapy (IPT) IPT coverage; suboptimal IPT completion rates; and common implementation barriers, such as concerns about adherence, toxicity, and resistance, stockouts, and required monthly visits. She highlighted promising aspects of newer TPT regimens, such as lower incidence of adverse events, potential higher completion rates with shorter course regimens, and their potential to improve access to and completion of TPT in people living with HIV.

Dr. Howard urged participants to ensure the inclusion of TB services in the package of care for people in differentiated treatment models; to consider how to routinely screen people living with HIV for TB, link them to diagnostic and treatment services in a timely fashion, and provide them with TPT; and to think creatively to ensure that people living with HIV who receive care in DSD models do not die from HIV.

Dr. Vindi Singh
Medical Officer, HIV Department, WHO

Dr. Singh opened her presentation by highlighting that TB is the top infectious killer in the world and the leading killer of people living with HIV; in 2017 TB killed 1.6 million people including 300,000 people living with HIV. She also provided an overview of the global HIV epidemic, noting that as of 2017, 36.9 million people were living with HIV; 1.8 million people were newly infected, and 0.9 million people died from HIV-related deaths. Dr. Singh emphasized that TB deaths among people living with HIV are not declining fast enough to reach the 75% reduction target by 2020. She presented data from the countries participating in the meeting on missed TB cases among people living with HIV (28-59%), those with HIV/TB not receiving ART (38-49%), and IPT coverage (low or not reported).

Next, Dr. Singh highlighted key aspects of relevant WHO guidelines and policy guidance, including:

- Guidelines on TB screening at HIV testing visits, ART clinic visits, and community encounters, which prominently feature HIV testing for all people with TB symptoms and those with active TB;
- Guidelines on the scale up of use of newer rapid diagnostic molecular tests, such as the TB diagnostic Xpert MTB/RIF Test
- Guidelines on the scale up of point-of-care urine LF-LAM testing in people living with HIV with low CD4 or who are seriously ill, with mention of forthcoming newer, more sensitive tests on the way
- Guidelines on initiating ART early and "treat all," focusing on how ART reduces mortality from TB;
- Guidelines on preventing and managing advanced HIV disease; and newer, shorter treatment options within these guidelines.

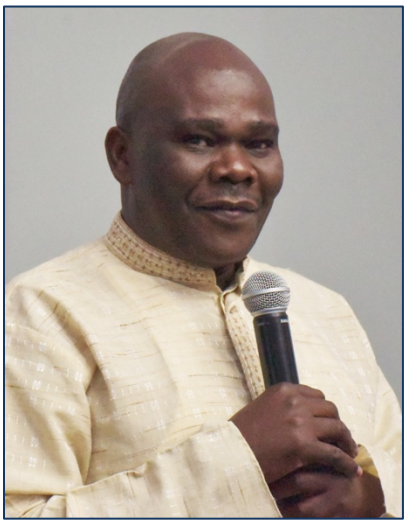
Dr. Singh summarized gaps in policy uptake and implementation, including the scale up of TPT, novel TB diagnostics, and HIV/TB co-treatment. She highlighted gaps in service delivery access, using the example of gaps in ART and TB service delivery across seven countries in Africa. Dr. Singh emphasized some key points about TB/HIV within DSD models, including the higher risk of TB in people living with HIV, even when stable on ART; the need to prevent, diagnose, and link to TB treatment within DSD models of care; the importance of offering newer regimens for latent TB, novel diagnostics for TB, and close follow-up; the importance of leveraging community links, peer support groups, and treatment literacy efforts; the need to reach children, adolescents, pregnant women, key populations, men and people in high-risk settings and leave no one behind. She told participants that WHO is looking forward to hearing what they have learned in their implementation of DSD models of care and how they are addressing the challenges of preventing, diagnosing, and linking to TB treatment in different settings.

Dr. Zameer Brey
TB Lead for South Africa, Bill and Melinda Gates Foundation

Dr. Brey welcomed meeting participants on behalf of the Bill and Melinda Gates Foundation, and emphasized how in keeping with the theme of World TB Day (It's Time!), it is time for everyone to use the tools at their disposal to prevent TB incidence and mortality amongst the most vulnerable populations. He highlighted key data from World TB Day that shows that TB treatment coverage in high HIV/TB burden countries has remained stagnant and lacks enough progress. Dr. Brey also showed a map of treatment coverage, which included many areas where data are scarce or missing.

Next, Dr. Brey discussed some of the components that need to be addressed in TB prevention. He mentioned structural drivers, such as poverty, housing, and infrastructure, which are hard to tackle, but critical to address for a sustainable solution to the burden of TB. Dr. Brey described 2018 as "the year of vaccines" with the best results in TB vaccines emerging in 70 years. More trials will start in 2019, and are poised to build on previous results. In addition, Dr. Brey emphasized the importance of infection control in facilities and in other places where people living with TB come into contact with other people in the community. He discussed exciting developments in TB therapy, and described the forthcoming availability of safe, easy-to-take, durable regimens.

Mr. Nelson Otwoma
Executive Director, Network of People Living with HIV/AIDS, Kenya



Mr. Otwoma opened his talk by emphasizing the importance of both community engagement and healthcare worker training and sensitization. He emphasized that, as part of DSD, it is important to empower recipients of care with knowledge and awareness to be vigilant and seek services and screening for TB.

Mr. Otwoma noted that empowerment and education of people living with HIV is a critical enabler of progress towards HIV epidemic control. Recipients of care were empowered, given space, mentored, and supported to engage with health care workers – and people with TB also need to have a voice to speak and engage. He emphasized that it is important ensure that recipients of TB services are empowered with knowledge and skills to communicate, ask questions, and make sure they take responsibility for their health. Mr. Otwoma highlighted the fact that people in communities need resources to engage and educate each other in support groups. He called for ensuring that TB is not left behind in efforts to pursue the 90-90-90 targets.

Dr. Nathan Nsubunga Bakyaita
WHO Zambia Country Representative, WHO

Dr. Bakyaita pointed out that although there has been marked progress in identifying people living with HIV, linking them to HIV treatment, and enabling adherence, retention, and viral suppression, there are still programmatic gaps in TB prevention, care, and treatment services. He noted that WHO recommends a DSD approach to meet the diverse needs of all people living with HIV and urged that it is time to provide TB/HIV services differently. Dr. Bakyaita explained that by providing DSD for TB, barriers in accessing services for TB patients and HCW should be reduced and allow communities to refocus resources to those most in need.

Dr. Bakyaita emphasized that it is not possible to successfully achieve universal health coverage for HIV and TB without coordinated support from donors, implementing partners, communities, and networks of people living with HIV. He expressed that the UN family in Zambia is very grateful to the MOH and ICAP for their excellent work to expand high-quality HIV DSD by supporting south-to-south learning, diffusion of innovation, and catalytic research. Dr. Bakyaita described how the UN agencies in Zambia will continue working with the government of Zambia to ensure an enabling environment, policy, and effective implementation of client-centered approaches for HIV/TB prevention and care.

Dr. Kennedy Malama, Guest of Honor
Permanent Secretary, Technical Services, Ministry of Health

Dr. Malama welcomed participants on behalf of the Zambia MOH, emphasizing the importance of quality and ensuring that it is part of the agenda. Dr. Malama described how the DSD model aligns with the Zambia MOH's transformation agenda of ensuring attainment of universal health coverage as well as HIV epidemic control.

Dr. Malama described how the DSD model in Zambia is anchored in 1) appointment spacing with fast-track visits and multi-month scripting (MMS), 2) community-based access points, ART distribution, and adherence groups, 3) the scholars' model of facility-based teen clubs. Dr. Malama discussed how Zambia recently introduced six-month MMS and early morning refills and how DSD has contributed to the fact that of the 1.2 million people living with HIV in Zambia, there are more than 970,000 people on treatment.

Dr. Malama stressed that the commemoration of World TB Day is "not an end in itself, but a means of taking us where we want to go." He explained that it is not what is done on World TB Day that will lead to outcomes, but what is done to sustain those interventions after the commemoration. Dr. Malama explained that Zambia is one of 30 high TB burden countries (as are other countries represented at the meeting) with an estimated 2,000 new TB cases diagnosed every year and an estimated 25,000 "missing" TB cases. He described the CQUIN meeting, as an opportunity to address the global public health threat of TB in the era of DSD.

Wednesday, 27 March

View the Presentations

Session 1: Keynote Address - TB Screening and Linkage
Dr. Helen Ayles
Director of Research, ZAMBART

Dr. Ayles described community screening and linkage in urban populations as her passion, and briefly provided an overview of two studies she has spearheaded that look at targeted community screening (ZAMSTAR) and community-wide screening (PopART). She then introduced a framework for conceptualizing TB linkage and screening in DSD programs. Patients are at the center of this framework, which includes "who, what, where, and when" in relation to TB and HIV screening.

Regarding the *who*, Dr. Ayles noted that although there has been a 24-fold increase in HIV screening for people with TB since 2004, there are still many missing patients living with HIV and TB – people who are not diagnosed or treated. For example, data from 17 high-burden countries showed that only 8% of HIV-positive individuals newly enrolled in care were diagnosed with TB. Dr. Ayles highlighted the importance of vulnerable and key populations for TB/HIV co-infection, including prisoners, urban slum dwellers, alcohol and drug users, men, pregnant women, migrants, and other groups with high TB risk and poor access to services.

In discussing *how* to screen for TB, Dr. Ayles said that "TB diagnostics are crying out for point-of-care testing". Whereas HIV diagnostics are point-of-care, relatively simple, accurate, and quick, TB diagnostic tests are less accurate, more "finicky", and take time to perform. Dr. Ayles noted that there is only one TB point-of-care test (urine LAM), but it has a limited role in TB diagnosis for people with advanced HIV and those who are hospitalized and seriously ill. The new LAM test is expected to be more sensitive.

When she discussed *where* TB screening should occur, Dr. Ayles noted that community-based efforts have been studied for years, and that linkage can be maintained from the community setting. She discussed community-based innovations, including mobile one-stop TB vans, which can provide same-day TB diagnosis in the community. These are equipped with digital x-rays read my computer algorithms, and additional diagnostic tools. Even in health facilities, many opportunities for TB screening, diagnosis, and linkage are missed because of the different tracking and monitoring systems used by TB and HIV programs. TB/HIV clubs for people with dual diagnoses are a rare but promising DSD model.

Finally, Dr. Ayles emphasized that treatment is prevention for both TB and HIV; treatment prevents both diseases and their spread to the rest of the population.

Session 2: Panel Presentations
Introduction and Framing

Dr. Peter Ehrenkranz from the Gates Foundation and Ms. Siphiwe Shongwe from ICAP co-moderated the first panel. Panelists presented the context and rationale for HIV DSD and potential opportunities and threats to HIV/TB service delivery; a review of relevant WHO guidelines and strategies; findings from a consultation with key, global stakeholders on expanding DSD to improve evidence-based integrated models of TB/HIV care, research, and decision-making; and meaningful engagement of recipients of care.

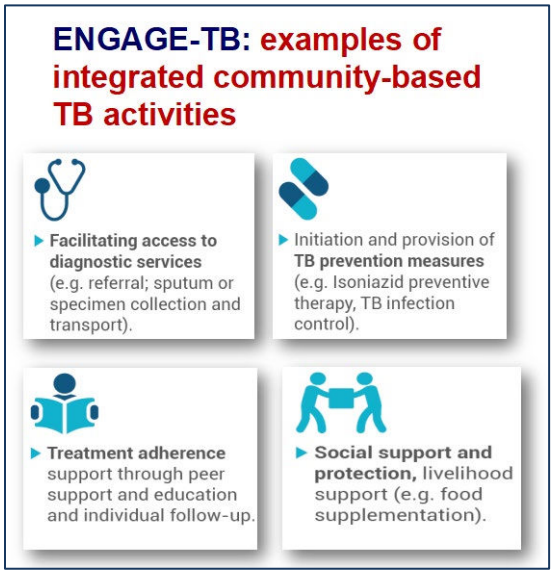
Panelists

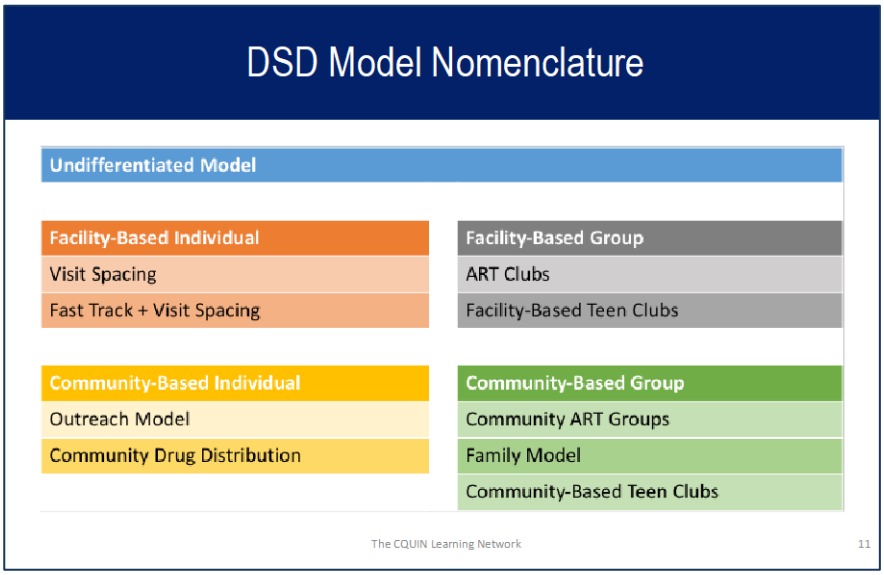
- **Dr. Peter Preko**, Project Director for CQUIN Learning Network, ICAP
- **Ms. Lana Syed**, Project Manager in the TB/HIV and Community Engagement Unit, WHO
- **Dr. Lucia Gonzalez Fernandez**, Senior Manager for HIV Programs, IAS
- **Mr. Nelson Juma Otwoma**, Executive Director, National Empowerment Network of People Living with HIV, Kenya

Key Takeaways

- CQUIN Network countries are rapidly scaling up differentiated ART services.
- This creates both opportunities to improve TB/HIV services and potential challenges for TB/HIV service delivery.
- This meeting provides a platform to deliberate how to optimize TB/HIV services in the context of DSD.
- The WHO ENGAGE-TB project emphasizes close collaboration between national TB programs and community actors in planning, supervision, and M&E.
- Community-based TB activities are included in the vast majority of Global Fund grants, but often underfunded.
- While the HIV community is familiar with differentiated ART models, the TB community is less so.
- Community engagement is defined as a structured, supported, meaningful, and accountable process that ensures that people living with HIV have a seat at the table and a voice in decision-making, planning, implementation, and M&E in order to achieve access to quality HIV care for all.
- Key messages from the Recipients of Care Engagement Working Group include:
    - Improve treatment literacy for TB to match HIV literacy;
    - Successful TB/HIV integration should start with donors and IP who should commit to community engagement;
    - Improve timely and accurate diagnosis of TB;
    - Empower TB and TB/HIV recipients of care to articulate their needs and demand services; provide resources to recipients of care to improve TB/HIV treatment

literacy and consultations; adapt the definition of community engagement with the seriousness it deserves; engage recipients of care to articulate their preferences for HIV/TB service delivery; and involve the recipients of care working group in developing the CQUIN meeting agenda and facilitate the working group to share feedback with its constituencies.





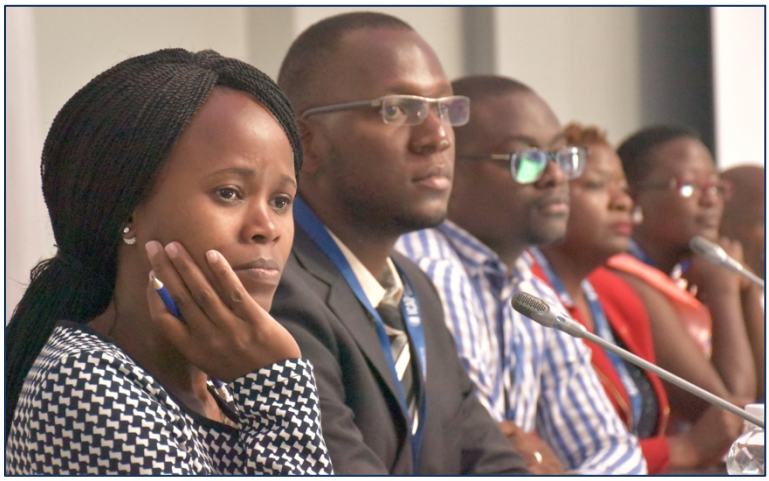
Session 3: Breakout Session
Country Teams Paired to Discuss DSD and TB/HIV

Country teams were paired to discuss the status of each country's DSD and TB programs. The discussion focused on DSD coverage and differentiated ART model mix, and the achievements and challenges of national TB/HIV initiatives. Each pair of countries completed a slide template to answer the following questions:

- With regards to DSD and TB/HIV services, list <u>one</u> way in which the country contexts are the same, and <u>one</u> way in which they are different
- At the end of this first breakout session, does the group see the shift to DSD as more of an *opportunity* to improve TB/HIV services or as more of a *threat* to achieving TB/HIV program goals and targets? What contributed to this determination?

Mr. Gavin Khumalo from the National Network of People Living with HIV and AIDS in Eswatini and Dr. Clorata Gwanzura from the MOHCC in Zimbabwe, co-moderated the report-back session,

which is summarized in the table below. There was a strong consensus that DSD represents an important *opportunity* to improve TB/HIV services.



Left: Dr. Irenio Gaspar speaks to the Mozambique team. Right: Country team report back.

Breakout Group Results

Ethiopia and Uganda	
Similarities: • Both countries have recently expanded TPT criteria • The current guidance for both countries is for TPT patients to have monthly facility visits and both countries are eager to explore other alternatives • TB screening is carried out in all DSD models	**Differences:** • Countries are at different stages of transition to 3HP for TPT (Ethiopia: advanced stages, Uganda: preliminary discussions) • Uganda has adapted TB-LAM for high volume facilities, whereas this is still under evaluation for pediatric and TB/HIV populations in Ethiopia • Ethiopia has a limited model mix for DSD, focusing on appointment spacing with multi-month prescribing, whereas Uganda has five models
Potential opportunities created by DSD: • Community-level screening for TB • Integration of TPT in community ART models • Introduction of multi-month scripting and refills for TPT for people receiving multi-month ART scripting	**Potential threats created by DSD:** • Pharmacovigilance monitoring may be more difficult if patients are at HF less frequently – leads to hesitation re: multi-month isoniazid prescriptions • Requirement to return to the facility more frequently could lead to rejection of TPT

• Reduced HCW workload can improve quality of ART and TB/HIV services at the facility level • Leverage HIV program resources to enhance TB/HIV services • Greater engagement of recipients of care in TB/HIV services	• Less frequent HF visits may compromise frequency and quality of TB screening • Dual stigma can lead to recipients of care seeking care in different places
Verdict: The shift toward DSD is an opportunity to improve TB/HIV services.	

Kenya and South Africa	
Similarities: • Similar DSD models with different names	**Differences:** • The standard DSD model is most prevalent in Kenya, whereas Central Chronic Medicine Dispensing and Distribution is the most prevalent DSD model in South Africa
Potential opportunities created by DSD: • Convenience • Empowerment of HCW and lay counsellors who conduct screening for TB and delivery TPT • Integration of community and facility services	**Potential threats created by DSD:** • Challenge to integrate TB screening within the CCMDD model • Negative impact on quality of screening • Long queues on appointment pick-up days that could result in health facilities turning people away
Verdict: There is an opportunity to improve TB/HIV services for people in DSD models, but it will require careful monitoring to ensure that TB recipients of care receive the desired quality of care (including monitoring for any side effects) as they would in facility-based care.	

Mozambique and Zambia	
Similarities: • Both countries working to take DSD to scale • Both countries considering 3HP implementation	**Differences:** • Different policies regarding maintaining patients in a DSD model after developing TB • Rolling out different DSD models

Potential opportunities created by DSD: • Integration, which supports holistic patient-centered care • Improved retention	**Potential threats created by DSD:** • Compromised quality of care as a result of difficulties in aligning TB and HIV services • Missed diagnosis of TB as a result of reduced visits to health facilities • Poor linkage for people who screen positive for TB • INH resistance
Verdict: The shift toward DSD is overall an opportunity to improve TB/HIV services.	

Zambia and Zimbabwe	
Similarities: • Both countries have five or more DSD models and mixes are similar for facility and community • Both aim to scale up to 70%-75% of stable clients in DSD	**Differences:** • Zambia's M&E system includes "Smart Card" pilot; Zimbabwe has a largely paper-based system

Potential opportunities created by DSD:
• Strengthen screening and linkage to TB services
• Opportunities for TLD transition – to bundle services
  o TB services, including TPT
  o Family planning options
  o Viral load
  o Partner notification
	Potential threats created by DSD:
	• Concern about reduction in frequency of TB screening in DSD models
	• Concern that people in DSD models must leave those models in order to receive TPT
	• Less visits; the frequency is dependent on the quality of care provided when the client interfaces with health services

Verdict: There is no evidence to show if DSD is an opportunity or threat. In the final analysis more people voted that it represents an opportunity.	

Session 4: Panel Presentations
Impact of DSD on TB Screening and Linkage

Dr. Hala Jassim Al Mossawi from USAID and Dr. Llang Bridget M. Maama-Maime from the Lesotho MOH TB Department moderated this panel. Panelists discussed the impact of DSD on TB screening and linkage and discussed the evidence base, forthcoming innovations, and TB screening in the context of different DSD models.

Panelists

- **Ms. Angela Salomon**, Research Assistant, McGill International TB Center
- **Dr. Pren Naidoo**, TB Delivery, Bill and Melinda Gates Foundation, South Africa
- **Dr. Josen Kiggundu**, National Technical Advisor for DSD in the National AIDS Control Program, MOH, Uganda
- **Dr. Andrea Howard**, Director of the Clinical and Training Unit, ICAP
- **Dr. Jacquin Kataka**, Program Director, Center for Health Solutions, Kenya
- **Ms. Sydney Rosen**, Research Professor in the Department of Global Health, Boston University School of Public Health

Key Takeaways

Literature Review on TB/HIV linkage

- The McGill team is working with WHO on a systematic review of evidence related to interventions that impact linkages to diagnosis and treatment initiation for HIV and TB, including 1) TB diagnosis and TB treatment initiation among patients with HIV and 2) HIV diagnosis and ART initiation among patients with active TB
- Ms. Salomon shared some preliminary results, and focused on two outcomes: TB diagnosis (case detection) and treatment initiation among people with HIV
- Key findings included: HIV patient education on TB might be an effective approach to increase TB case detection in healthcare facility settings; there are too few studies with linkage outcomes to determine what might be an effective approach for increasing linkage to TB treatment initiation in health facilities; and there is a need for high-quality experimental studies, particularly to improve linkage to TB treatment initiation.

Future of TB screening

- Dr. Naidoo provided updates on TB screening, noting a move away from passive case-finding ("an approach in its dying throes") to provider-initiated case finding and systematic screening to efficiently differentiate people with a high probability of having active TB from those who are unlikely to have active TB.
- Symptom screening has relatively low accuracy, so the goal is to move toward a rapid, non-sputum-based, accurate, inexpensive, point-of-care test.
- There are multiple screening options that are under evaluation or in proof-of-concept.

- The low-cost, urine LAM test was conditionally endorsed by WHO in 2015 for HIV-positive adults with a CD4 <100 and/or who are seriously ill (44% sensitivity and 92% specificity); efforts are underway to improve LAM accuracy.
- Even without new diagnostics, DSD provides the opportunity to scale up active case finding to all service delivery points, including those in community-based DSD models
- It is important to understand the health system barriers contributing to diagnostic gaps and to use quality improvement methodology to optimize use of current tools.

Uganda: TB screening in DSD programs

- Dr. Kiggundu presented results from Uganda's targeted DSD supportive supervision activities from September 2018- March 2019 aimed at: 1) determining the level of DSD implementation within the region and at health facilities; 2) providing necessary technical support to implement quality DSD; and 3) exploring client experiences and perspectives about DSD.
- The top ten challenges reported by HCW were: lack of revised HMIS tools, ARV stockouts, lack of funds for community drug distribution points (CDDP) implementation, clients not registered in DSD groups, lack of mentorship, group leaders not trained, high client load resulting in challenges to sort categories and label files per DSD approach, inadequate space for sorting and categorizing client files, staffing shortages, and competing priorities at health facilities.
- The top five positive observations of DSD by HCW were: reduced overcrowding of clients on clinic days, time enabled by DSD for HCW to focus on unstable clients, improved adherence and viral suppression rates, client appreciation of DSD, and the increase in uptake due to anticipated benefits.

Lesotho: TB screening in fast track and CAG models

- Dr. Howard summarized the result of a qualitative study in Lesotho, where nearly two-thirds of virally-suppressed recipients of care are enrolled in DSD models, including 33% in multi-month dispensing (with fast-track refills) and 28% in CAGs, including CDDP.
- Key informant interviews revealed missed opportunities for TB screening in both facility- and community-based DSD models.
- Health care workers noted that TB screening is not routinely performed during fast-track refill visits and had concerns about the quality of TB screening performed in the community, as well as linkage of those screening positive, particularly men.

Kenya: TB screening in the community ART model

- Dr. Kataka described lessons learned from implementation of community ART in Siaya Country, Kenya, focusing first on the scale-up of the community ART distribution (CAD) model.
- He described five phases of implementation: 1) County and facility readiness assessments; 2) Sensitization and training of HCW, facility leaders, and Community ART Treatment Supporter (CATS); 3) Preparation of tools, patient categorization forms, appointment diaries, ART refill registers, ART distribution forms, CAG members registers, and ART distribution kits; 4) Implementation (October 2017); and 5) Ongoing support and M&E. By December 2018, more than 5,000 people were enrolled in CAD services at 119 health facilities.

- Dr. Kataka next described the provision of TB screening services within CADs, using program data to analyze the percentage of people in CADs who were screened for TB (100%), the percentage who screened positive (0.4%), the percentage of those with follow-up diagnostic testing (89%), the percentage of those with confirmed TB (24%), and the percentage of those treated for TB (100%). He concluded that people in the CAG model are receiving effective TB screening and linkage services.
- Key lessons learned included the importance of: regular capacity building of community ART treatment supporters (peer educators) on TB Intensified Case Finding (ICF); investing in the capacity-building of community ART treatment supporters around TB infection control; ensuring real time collection of sputum samples for those with TB symptoms; and providing community ART treatment supporters with sputum mugs and sample packaging materials

South Africa: Rapid ART initiation following TB screening

- The requirement to perform TB tests and receive results for symptomatic patients before offering ART has long been a major cause of delays in ART initiation in South Africa; those with positive tests are typically required to be on TB treatment for 14 days or "until tolerated" before being offered ART
- Professor Rosen described the SLATE I and SLATE II trials, which evaluated simple clinical algorithms for determining eligibility and readiness for same-day ART initiation through individually randomized trials at three clinics each in Kenya (SLATE I) and South Africa (SLATE I and II)
- The study enrolled adult, non-pregnant patients presenting for any HIV care, including an HIV test, but not yet on ART. Very high prevalence of TB symptoms made it essential to address TB-related delays in ART initiation within the studies
- Compared SLATE I or II algorithm to standard of care for:
    - ART initiation ≤ 28 days (SLATE I) or 7 days (SLATE II);
    - Retention/suppression at eight months after study enrollment (to capture six-month routine clinic visit/viral load test)
- SLATE I enrolled 2017-18, completed follow up in December 2018; SLATE II enrolled 2018—follow up is still underway, but enrollment and ART initiation data are available
- Data from SLATE I and II suggest that delaying ART initiation due to the presence of mild TB symptoms, without other reasons, may not be necessary and denies immediate ART to up to half of all patients
- The SLATE II algorithm successfully identified 71% of patients with diagnosed TB and successfully traced and treated all five patients whose baseline TB tests were found to be positive after ART initiation

Session 5: Moderated Discussion
Person-Centered TB/HIV Services

Dr. Helen Bygrave from IAS and Mr. Tonderai Mwareka from ZNNP+ co-moderated the "sofa session" focused on person-centered TB/HIV services. The session featured people receiving treatment for both HIV and TB, who shared their crucial perspectives on HIV/TB services, as well as health workers, program managers, and representatives of health ministries.

Panelists

- **Ms. Sarah Banda**, Recipient of Care, Zambia
- **Ms. Nancy Chishimba**, Recipient of Care, Zambia
- **Ms. Mwelwa Chabala**, DSD Coordinator, CIDRZ, Zambia
- **Dr. Baker Bakashaba**, Regional Project Manager for the Soroti Region, The AIDS Support Organization (TASO), Uganda.
- **Dr. Cordelia Katureebe Mboijana,** National Coordinator for HIV Care and Treatment, MOH AIDS Control Program, Uganda
- **Dr. Didier Kamerhe Kazige**, Community Prevention, Care, and Treatment Advisor, IHAP/PATH, DRC

Key Takeaways:

- Ms. Banda and Ms. Chishimba discussed their experiences with HIV and TB treatment, contrasting the information and peer support available for the two conditions. They noted that they felt alone and without information during their TB treatment, but that once they enrolled in HIV community treatment groups (CAGs), they received information about TB signs and symptoms and received support to adhere to and complete TB treatment. Both young women highlighted gaps in TB literacy in comparison to HIV literacy and suggested that programs take their experiences into account so that other young people can be aware and receive support.
- Dr. Bakashaba described the TASO experience providing differentiated treatment models for people with HIV and TB. TASO utilizes the services of expert and non-expert peers to screen for TB in the community setting. When individuals are identified as TB+ via screening, they have to leave the DSD model for a short time while they are on the intensive phase of TB treatment.
- The Democratic Republic of Congo's community-based individual model (PODI) provides opportunity for task-shifting to solve issues of congestion and workload. Dr. Kamerhe noted that TB screening takes place in the community, but data on its effectiveness is limited.
- In her comments, Dr. Katureebe observed that, in some cases, TB prevention seems to have "fallen through the cracks" in the shift to DSD models.
- Discussants agreed that is necessary to strengthen and simplify TB literacy and the availability of education and information at the community level so that all recipients (even young

people) are aware of the signs and symptoms of TB, and the availability of treatment and prevention services.

Left: Sharing perspectives on recipients of care engagement in CAGs. Right: Ms. Mwelwa Chabala discusses how recipients of care participate in CAGs.

Session 6: Keynote Address - TB Preventive Therapy
Dr. Salome Charalambous
Deputy Chief Scientific Officer, Aurum Institute

Dr. Charalambous opened her presentation by noting that it will not be possible to meet global TB targets without a marked drop in TB incidence. At the current rate of 2% reduction of TB cases per year, there will be very little progress towards global goals. Improved use of currently available tools could lead to a 10% reduction in TB incidence per year, but this will also be insufficient. In order to meet the 2050 global target, set forth in the WHO End TB Strategy, it is necessary to achieve a 20% reduction per year in TB incidence. Dr. Charalambous emphasized that to achieve this target, we need new tools and new ways of thinking. We cannot stop where we are now or stop with ART on its own – we need to focus on TB preventive treatment (TPT). WHO has recognized this by adding TPT for those at high risk of TB to the first pillar of the End TB strategy.

"TPT is no longer boring" said Dr. Charalambous – newer and better options have joined isoniazid preventive treatment (IPT) which, while effective and cheap, has not been taken to scale. Uptake of IPT has been limited by the duration of treatment (6-36 months), poor adherence, and concerns about reinfection in high-burden settings. Newer regimens can be game-changers!

Dr. Charalambous described emerging evidence for new TPT regimens:

- 3HP: Rifapentine plus isoniazid weekly for 3 months:
    - The TBTC Study 26 compared 9 months of IPT to 3HP, demonstrating that 3HP had higher completion rates, lower TB rates, and less hepatotoxicity in a largely HIV-negative population.
    - The study was extended to enrollment of people living with HIV and showed the same positive results.
    - The TBTC Study 26 also extended to children and showed positive results for children, but there is uncertainty of its impacts on children less than the age of two years and pregnant women.
    - Post-marketing surveillance of 3HP in the US showed that completion of 3HP in routine healthcare settings was greater overall than rates reported from clinical trials, and greater than historically observed using other regimens among reportedly nonadherent populations.
    - A systematic review of 3HP safety looked at 23 randomized controlled trials and 55 non-randomized studies. Flu-like reactions were reported with an increased frequency and hepatotoxicity with a lower frequency than standard treatment. While 3HP had an overall low frequency of adverse events compared to INH monotherapy, reporting of adverse events for many regimens was limited, so results should be interpreted cautiously.
- 4R: Rifampicin for four months:

    - This regimen was non-inferior to 9 months of INH and had higher rates of treatment completion and fewer adverse events.
- 3HR: Rifampicin plus isoniazid daily for three months (available as a fixed-dose combination)
    - Has similar efficacy and safety to 3HP and is recommended for children and adolescents less than the age of 15 years.
    - It can be given to children less than the age of two years.
- 1HP: Rifapentine and INH daily x 1 month
    - The BRIEF-TB study showed that 1HP was non-inferior to nine months of isoniazid alone for preventing TB in HIV-infected patients and had a higher treatment completion rate and lower rates of adverse events.

These studies provide exciting evidence for shorter TPT regimens, but not all questions have been answered. Dr. Charalambous noted important programmatic issues, including: cost and cost-effectiveness; the need to advocate for fixed dose combinations and paediatric formulations; the issue of resistance for which most studies are too underpowered; and adherence and the self-administration of regimens vs. daily observed therapy. She also discussed the question of whether 3HP is safe to give with dolutegravir, highlighting the results of the DOLPHON trial, which explored provision of DTG and 3HP in patients living with HIV and suggested that this combination is safe with minimal drug-drug interactions.

These shorter regimens may open many options for provision of TPT in the context of DSD models. Other opportunities include provision of TPT in households, which is happening in a study in South Africa; remote adherence monitoring via technology that can reduce the need for frequent clinic visits; community-based TPT drug distribution similar to distribution of ARVs; opt-out prescribing in which TPT can be added on to the script when patients pick up ARVs in an effort to increase use; weekly DOT from a current trial where patients take 3HP weekly in front of pharmacists (and take other three doses at home); and inclusion of TB contact tracing in DSD programmes.

Session 7: Panel Discussion
DSD and TB Prevention

Mr. Lawrence Khonyongwa from the Malawi Network of People Living with HIV and Dr. Stephen Muleshe from the Kenya National TB, Leprosy, and Lung Disease Program moderated the discussion panel on TB prevention in the context of DSD.

Panelists

- **Dr. Rheiner Nnenna Mbaezue**, Clinical Medical Officer, City of Cape Town, City Health, South Africa
- **Dr. Didier Kamerhe Kazige**, Community Prevention, Care, and Treatment Advisor for the IHAP-HK/L Project, PATH, Democratic Republic of Congo
- **Dr. Llang Bridget M. Maama-Maime,** National TB & Leprosy Program Manager, MOH Lesotho
- **Dr. Adrienne Shapiro**, Senior Fellow, International Clinical Research Center, University of Washington

Participants listen to simultaneous translation of Dr. Kamerhe's presentation during the panel discussion.

Key Takeaways:

South Africa: integration of TPT into ART clubs

- Cape Town is both a TB hotspot and home to ART clubs, which were born as an MSF pilot in Khayelitsha in 2008 and then rolled out to the whole city over three years as a collaborative project between Province, City, MSF, IHI, and other partners.
- In 2014, ART club patients were targeted for TPT. Dr. Mbaezue described the systematic roll out of TPT in the context of ART clubs, noting that this led to a significant increase of TPT coverage. She shared key strategies, tools, and job aides for club-based TPT administration.

DRC: integration of TPT into PODI model

- TPT coverage in DRC remains a challenge. Dr. Kamerhe shared data showing that while 85% of HIV-positive patients are screened for TB only 67% of those who screened negative started TPT.
- IHAP-HK/L introduced and is scaling up three differentiated care models, including:
    - Community-based points of ART distribution (PoDi+): Screening and drug distribution are provided by lay health workers in community settings; first PoDi+ established in October 2016.

    - Fast-track ART refill circuit: Rapid circuit established at high-volume facilities to enable stable patients to have a quick check-up and proceed directly to the pharmacy for treatment pick-up; started March 2017.
    - ART support groups: Treatment distribution during monthly people living with HIV support group meetings; started in March 2017.
- 97% of patients at PODI are screened for TB in all visits, and the model has proven to improve TB screening, TB case identification, treatment, and TPT coverage. INH is dispensed in the community setting.
- DRC is working on improving supply chain of INH (which is why INH is still dispensed on a monthly basis), and on a specific patient level tracker so that all patients on INH can be followed over time. They aim to dispense three months of INH at a time, once supply chain constraints have been resolved.

Lesotho: TPT for migrant miners

- Dr. Maama explained that Lesotho's economy is highly dependent on the labor of miners, who are vulnerable to HIV and TB given prolonged periods away from home, interactions with sex workers, and poor work conditions (silica dust, poor ventilation in closed mine shaft).
- In 2013, in partnership with the miner's organization (TEBA), points of service for HIV and TB were established at three regional offices that offer banking and administrative services. They are open six days a week and provide onsite TB screening and diagnosis (GeneXpert) and HIV testing care and treatment.
- These specialized miner-friendly clinics provide a two to- eight-week supply of TPT and ART, depending on the travel schedules of individual recipients of care. In addition, automated SMS reminders are sent to people on TPT and adherence is continuously assessed remotely by phone.
- The PROMISE study is evaluating the effectiveness, feasibility and acceptability of miner-friendly services; results should be available soon.

South Africa: Community-based TPT in the DO-ART study

- Dr. Shapiro presented results from the DO-ART study, a three-site, three-arm randomized-controlled trial designed to compare HIV and TB outcomes of participants in different models of care: the standard of care, in which all services are provided at health facilities, an exclusively community-based model, and a hybrid model in which participants initiate treatment in the clinic and are then referred to community-based services.
- In the community arm, patients receive 3-month refills of ART and INH
- Use of a mobile phone app guides lay counselors through TB screening, adverse events, adherence assessment, and recommendations
- A rapid test to detect presence of INH in urine is regularly used to assess TPT adherence
- Preliminary findings suggest that community-based TPT with multi-month prescribing of INH is safe and acceptable:
    - No incident TB cases were detected
    - Community-based TPT had better initiation and completion rates *vs.* facility-based TPT
    - Point-of-care urine-based testing can complement adherence monitoring

Session 8: Breakout Session
Country Teams Paired to Discuss DSD and TB Prevention

Participants joined one of four groups of country pairs to discuss the advantages and disadvantages of providing TPT in the context of DSD models. Dr. Maureen Syowai from ICAP Kenya and Dr. Lee Abdelfadil from the Global Fund co-moderated the session.

Each pair of countries discussed the following set of questions:

- Is TPT currently provided in the context of differentiated ART models? If yes, please describe. If no, why not?
- What are the arguments in favor of providing TPT in the context of differentiated ART? Does it depend on the model? Are there some models where this would be easier?
- What are the arguments against providing TPT in the context of differentiated ART? Does it depend on the model? Are there some models where this would be harder?
- With a show of hands, how does the group vote on the question: "TB preventive treatment should be offered to HIV-positive recipients of care who are enrolled in differentiated ART models"? Yes or no?

Depending on available time, they also discussed:

- Has the MOH decided about 3HP?
- If yes, what is it? If no, how will they decide?
- Do countries (e.g., MOH) have the information they need to make decisions about 3HP? If not, is more implementation science needed? What are the most important questions?

At the end of the session, participants used real-time online voting to describe their position on TPT in the context of DSD. All groups strongly supported TPT for those in DSD models, and most (86%) participants agreed that more one than one month's supply of INH should be dispensed to patients enrolled in DSD models.

Dr. Salome Charalambous (far right) discuses DSD and TB prevention with the Ethiopia country team.

Session 9: Tools Lab

In the Tools Lab, participants learned about and viewed demonstrations of tools used in different contexts to help improve and accelerate DSD and TB/HIV integration. Through this session participants had a hands-on opportunity to explore new technologies, services, innovative products, and progress in technology.

Left: Ms. Cuc Tran presents CDC's TB Preventive Treatment Toolkit. Right: Mr. Martin Githiomi presents Kenya's TIBU System.

Title of Tool Presented	Presenters
1. TIBU mobile phone adherence support system	Martin Githiomi, TIBU Unit, Ministry of Health Kenya
2. Monthly reporting form for Expert Clients	Lawrence Khonyongwa, Malawi Network of People Living with HIV
3. Presumptive TB Patient Register & TB screening tool	Didier Kamerhe, PATH DRC
4. Mobile TPT screening and monitoring App & INH detection strip	Adrienne E. Shapiro, University of Washington
5. CDC TB Preventive Treatment Toolkit	Brittany Moore, Minish Shan and Cuc Tran, CDC Atlanta
6. Global Fund toolkit on differentiated care for HIV and TB	Lee Abdelfadil, Global Fund
7. SmartCare-DSD Module	Joseph Kayaya and Christopher Mbinji, Broadreach Zambia

Session 10: Parallel Breakout Sessions
Health Systems, DSD, and TB/HIV Services

Participants joined one of six groups to discuss health systems building blocks, DSD, and TB/HIV services. Dr. Satvinder Vindi Singh from WHO and Brittany Moore from CDC served as overall moderators for the parallel breakout sessions. The group topics included: lab/diagnostics co-moderated by Kaunda Kaunda from CIDRZ in Zambia and Dr. Stephen Muleshe from the MOH in Kenya; supply chain moderated by Mr. Morton Khunga from the MOH in Zambia; M&E co-moderated by Ms. Cuc Tran from CDC and Ms. Andrea Schaaf from ICAP; demand generation co-moderated by Mr. Felix Mwanza from TALC in Zambia and Ms. Maureen Luba from the AIDS Vaccine Advocacy Coalition; screening for TB in the context of the advanced HIV package of care co-moderated by Dr. Helen Bygrave from IAS and Dr. Maureen Syowai from ICAP Kenya. Meeting participants also selected a "wild card" topic: how can countries make community engagement real?

Each group discussed the following questions in relation to their topic:

- How does the topic of your breakout relate to provision of TB/HIV services for individuals in differentiated ART models?
- How can "your" building block facilitate TB/HIV services in this context? How could it be a barrier?
- What else is important to consider about your topic?

Each group reported back on the following questions to the broader group:

- For each health system building block discussed, describe the change that needs to occur in order to optimize TB/HIV services for recipients of care in differentiated ART models
- Describe the key "take home" message from the group

Results of report-back:

Group 1: Demand Generation

The demand generation group opened their report-back by making the distinction between demand creation and demand generation. They defined demand *creation* as educating people to recognize a need and creating demand for something where none exists – often necessary when introducing a new service or product. In contrast, demand *generation* involves 'harvesting' existing demand by marketing a service to meet existing needs.

When applied to TB/HIV services, demand creation would mean educating communities to understand the threat of TB to people with HIV and the possibility to mitigate this threat with TB screening, prevention and treatment. Once communities realize that they "want" TB services, demand generation would involve telling them about specific services and encouraging them to participate, by coming to health facilities or requesting community-based screening and prevention. The group noted that TB/HIV services in DSD models are currently not optimal and require a mix of demand creation and generation at facilities and outside the community. They recommended the following changes for HCW and recipients of care.

Changes for providers	Changes for Recipients of Care
• Address clinicians' misconceptions around TPT initiation and their reluctance to start patients on treatment (influence the change in behavior of practice – scientific data) • Achieve a balance between the demand and supply; don't want to create demand that we will not be able to fulfill (INH stock outs) • Harmonize guidelines/policies for TB and HIV • Strengthen supportive supervision and mentoring • Establish platforms for providers to share best practices and lessons learnt	• Create a full TB literacy package that includes advocacy, communication, and social mobilization with simplified and succinct messaging • Facilitate community engagement at various levels, including decision making, implementation, service provision, and monitoring and with the involvement of sub-populations of recipients of care • Enlist agents of change for knowledge dissemination

The key message was that demand generation is a bottom up approach that requires actively engaged communities, recipients of care and health care providers.

Group 2: Screening for TB in the context of the advanced HIV package of care

This group opened their report-back with the results of a poll they took within their group to determine where LAM is currently recommended (mostly in health facilities) and who can perform LAM in different settings (mostly lab technicians and clinicians).

Next, they shared their feedback on the main challenges of implementing TB screening in advanced HIV disease. These included policies, lack of guidelines, limited diagnostics, unavailability of LAM, insufficient training, and limited commodities.

The group highlighted the need for policies to allow for task-sharing to conduct TB LAM testing and shared multiple country examples (from Zimbabwe, South Africa, and Uganda) of task-sharing in the context of LAM. They also discussed the challenges of urine sample collection for LAM in children.

The group's key take-away messages were that LAM is not only for seriously ill patients and/or inpatients and the implementation of TB LAM is feasible, but we need to address the key issues both in the framework and develop innovative models of implementation.

Group 3: M&E

The M&E group identified changes to M&E needed to optimize TB/HIV services for recipients of care in DSD treatment models. These included the use of simple digital technology; simplifying M&E tools to only include relevant information; enhancing M&E capacity building for HCW and recipients of care; the use of data for action; increased investment and allocation of resources for M&E; and harmonizing and aligning data and M&E systems across programs to create interoperable

systems. They concluded with their take home priority: "Investment in a simplified and harmonized M&E system utilized by all stakeholders to drive action and policy."

Group 4: How can countries make community engagement real?

This group opened by describing three key reasons that we need community engagement, including:

1) Increased coverage of TB/HIV services through increasing staff levels and bringing services closer to the community
2) Increased quality of TB/HIV services through increasing the knowledge of people in the community, increasing the community's trust, decreasing stigma and discrimination, and establishing a better understanding of the barriers
3) Increased uptake, adherence and retention of prevention and treatment services

Next, they discussed what needs to be changed. They described the importance of recognizing that recipients of care need to be at the center of program planning, delivery, and evaluation; improved support for people with HIV, including financial and practical resources, orientation, and ongoing training; institutionalizing engagement, and incorporating engagement into policies and guidelines; the need for a paradigm shift amongst health professionals to overcome their fear of losing control; and the need for recipients of care need to be seen as partners. The group concluded with two take home refrains: "nothing about us, without us," referring to the importance of community engagement, and "it takes two to tango" (need to move in the same direction with the same urgency).

Group 5: Supply Chain

The group's answer to "what needs to change" focused on ensuring the availability of medicines. They emphasized the importance of:

- Defining roles and responsibilities of the TB *vs.* HIV programs with regards to program implementation;
- Having guidelines and rollout plans for TPT in coordination with plans to introduce dolutegravir and multi-month scripting for ART;
- Proper forecasting and quantification;
- Ensuring procurement to optimize the timing of medicine delivery, provide fixed-dose combination pills, and ensure availability of appropriate formulations;
- Optimizing distribution based on ordering mechanism (push or pull systems) and DSD models;
- Development of key performance indicators (stock levels (min and max), level of stocks out (facility level or national), and pharmacovigilance.

The group closed with key messages including the importance of defining the collaboration and responsibilities between the TB and HIV program and stakeholders and aligning the dispensing periods between ART and TPT.

Group 6: Lab and Diagnostics

The lab and diagnostics group described two areas where they feel change is necessary to optimize TB/HIV services for recipients of care in differentiated ART models: TB screening and TB

diagnosis. With regards to screening, the group reminded meeting participants of the comments in the preceding day's "sofa session" emphasizing the contrast between HIV and TB treatment literacy. They emphasized the importance of demand creation for both health care workers and recipients of care. The group also recommended use of a simple TB screening tool to be used by the community to raise their awareness as well as making a mobile digital chest x-ray machine available in the community for TB screening.

With regards to TB diagnosis, the group noted that sample transportation and results communication are important bottlenecks. They suggested that one way to improve these issues would be to engage the community to come up with ideas and perhaps support for both sample transportation and results communication it. Other ideas included expanding the use of GeneXpert to enable integrated TB and HIV services, and expanding the use of TB LAM.

The group concluded by noting that for the sake of quality, maintenance lab services cannot be moved into the community, yet there is a need for point-of-care tests in community. They emphasized that lab TB screening should not be a barrier to TPT in people living with HIV and children less than five years.

Session 11: Keynote Address - Engagement of Recipients of Care
Ms. Stella Kentutsi
Executive Director, National Forum of People Living with HIV/AIDS Networks in Uganda

Ms. Stella Kentutsi opened her presentation on engagement of people living with HIV by articulating the principles of community engagement: recipient of care-centered, meaningful, consistent, transparent, structured, equity, supported, practical, and accountability on all fronts. She defined community engagement as a structured, supported, meaningful, and accountable process that ensures that people living with HIV are included and have a voice in decision-making, planning, implementation, monitoring and evaluation in order to achieve universal access and utilization of quality HIV care.

Ms. Kentutsi emphasized that engagement of recipients of care must occur at three levels (national, subnational, and community), be based on greater involvement of people living with HIV/AIDS (GIPA), and meaningful involvement of people living with HIV/AIDS (MIPA). She discussed different potential levels of engagement. At the bottom of the ladder, recipients of care are a target audience, while at the other end of the spectrum, they are decision makers who participate in policy-making bodies where their inputs are valued equally with all other members (see Figure).

The CQUIN Dashboard: Community Engagement Domain
Representatives from the community of people living with HIV (PLHIV) and civil society organizations (CSO) are not involved in any activities related to DSD and there are currently no plans to engage these groups
PLHIV and CSO are not currently engaged in DSD activities, but engagement is planned or meetings and discussions are ongoing
PLHIV and CSO are meaningfully engaged in DSD implementation
PLHIV and CSO are meaningfully engaged in implementation and evaluation of DSD models
PLHIV and CSO are meaningfully engaged in implementation and evaluation of DSD, as well as oversight of DSD policy (e.g., via inclusion in DSD task force or other group)

Ms. Kentutsi described how community/sub-national/national involvement in DSD has both bottom-up and top-down approaches. She reminded participants that the CQUIN dashboard community engagement domain gives the highest score to countries in which recipients of care belong to national policy-making organizations, and thus have a seat and a voice, and questioned whether this is enough. She described the many roles that people living with HIV play at health facilities and in the community, such as providing peer-to-peer support, including receiving and registering peers at facilities; reducing stigma; following up on colleagues, returning those lost to care, and facilitating home visits, referrals, and linkages; providing counselling and health education talks;

supporting drug distribution at facility and community refills; serving as adherence/treatment buddies; and screening for TB. Ms. Kentutsi stressed that in most settings, people living with HIV provide all this support as volunteers, but moving forward they need formal recognition and both financial and technical support to facilitate their work. She pointed out that funding largely goes to MOHs and implementing partners, whereas organizations of people living with HIV remain beneficiaries, creating a disconnect between the two.

Ms. Kentutsi highlighted the importance of having formal structures and coordination mechanisms for recipients of care to facilitate their meaningfully contributions to DSD. She suggested having 1) formal structures for people living with HIV that extend from the village to district level so partners have a stable team to work with irrespective of the DSD model, and 2) coordination meetings that bring all recipients of care together at the community, district, and national levels as part of a feedback mechanism. Ms. Kentutsi discussed the role of recipients of care in advocacy and alluded to Uganda's rich history of people living with HIV and advocacy with the MOH. She highlighted the instrumental role of community dialogues in bringing together people living with HIV and those affected; duty bearers, service providers, beneficiaries, CSOs/CBOs, FBOs, cultural leaders at decentralized and national levels.

Ms. Kentutsi discussed capacity-building and the fact most trainings are focused on health workers. There is a great need for targeted capacity building for recipients of care to support DSD service delivery. For HCW, AIDS/TB competency training is necessary to address their knowledge gaps to serve recipients of care better. Ms. Kentutsi also discussed potential roles for recipients of care in M&E and implementation research, as well as policy formulation, implementation, and review. She shared the example of how recipients of care in Uganda supported the Uganda AIDS Commission to develop the first ever national anti-HIV stigma and discrimination policy.

Ms. Kentutsi emphasized that to close gaps, it is important to see a more resilient constituency of people living with HIV that are placed at the center of the response. She called for the development of a strategic framework for the involvement of HIV-positive people, at the center of decision-making and at all levels. She called for addressing the challenges affecting people living with HIV; drug stockouts, stigma and discrimination, rights violations, poverty, and nutritional gaps. Ms. Kentutsi highlighted the necessity of integration and alignment; the involvement of people living with HIV as programme designers, planners, implementers, and evaluators; and investment that is deliberate to make recipients of care strong partners in the HIV/TB response.

Session 12: Parallel Breakout Sessions
Differentiated Models Used by TB and HIV Programs

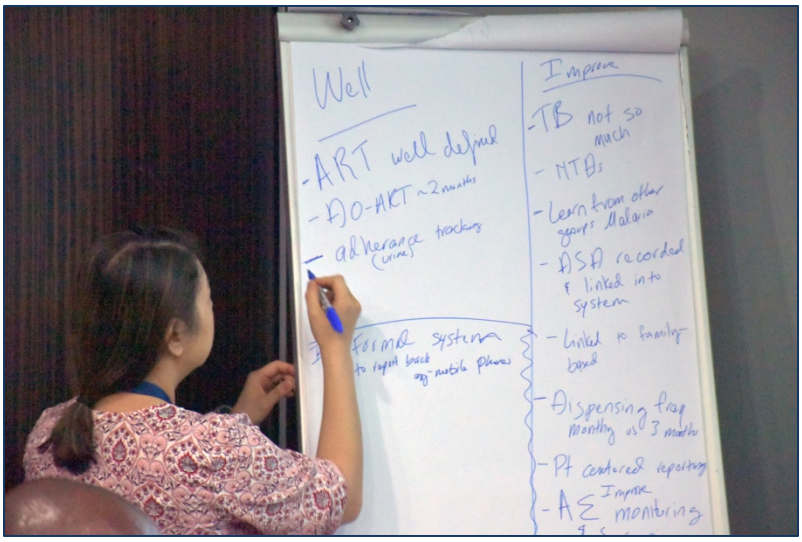
Participants joined one of four groups to discuss TB/HIV services as they apply to specific DSD models and how to optimize TB/HIV services within each model type. Dr. Andrea Howard from ICAP and Ms. Priscilla Lumano-Mulenga were co-moderators for the parallel breakout sessions. Topics covered in the parallel breakout sessions included: Facility-based individual models (e.g., visit spacing, fast track) co-moderated by Dr. Miriam Rabkin from ICAP and Dr. Minesh Shah from CDC; Facility-based group models (clubs) co-moderated by Dr. Godfrey Musuka from ICAP and Dr. Muhammad Saleem from UNAIDS; Community-based individual models (e.g., PODI, outreach, CCMDD) co-moderated by Dr. Bactrin Killingo from ITPC and Dr. Adrienne Shapiro from the University of Washington HE2RO Project; and

Community-based group models (e.g., CAGs) co-moderated by Clorata Gwanzura from the MoHCC in Zimbabwe and Ndoungou Salla Ba from WHO AFRO.

Each group discussed the following questions in relation to their topic:

- What have we learned so far this week about TB/HIV services in this DSD model? What is working well? Where are opportunities to improve?
- Are we missing information? Do we need implementation research? Feasibility studies? Pilot projects?
- Are there ways to leverage community-based TB services to achieve full coverage of high-quality TB/HIV services within DSD models?
- What are the next steps?

Results of report-back



Group 1: Facility-based individual models

This group opened their presentation by sharing examples of facility-based individual models, including fast track, early morning refills, weekend clinics, multi-month scripting, and special clinics for special populations. To improve TB/HIV services, the group suggested different activities to prevent TB/HIV services from "falling through the cracks," including planning carefully to ensure TB screening and prevention do not get lost in the shift to DSD models; acknowledging that if TB screening only happens at the facility, it will happen less frequently in these models; educating and empowering recipients of care so that they know to come back to the health facility if they have TB symptoms; synchronizing timing of TB/HIV visits and ART visits; and multi-month prescribing of INH (or other TPT); education and empowerment of recipients of care; linkage of facility-based and community-based services to ensure TB screening, linkage, and prevention; and the need to ensure the quality of screening, particularly if it happening less often.

The group defined next steps, including:

1) Defining a package of wrap-around services to enhance the facility-based individual models and improve the coverage and quality of TB screening, linkage, and prevention services
2) Identifying the optimal ways to provide TB/HIV services in the individual facility-based models

Group 2: Facility-based group models

This group opened their presentation with suggestions on where to improve facility-based group models, including expanding the scope of lay health workers to identify HIV-positive individuals eligible for TB screening and TPT; adverse events monitoring, which can be done within clubs and easily managed; and treatment clubs where recipients of care can receive peer psychosocial adherence and compliance support.

They described what is needed to optimize TB/HIV services for people in these DSD models, including training lay health workers; standardizing SOPs, job aides, M&E tools; experience sharing and learning from other countries that are already implementing this model; optimizing patient education; generating evidence to inform programming and implementation science; and ensuring availability of drugs.

The group described necessary enhanced linkages between facility-based ART and facility-based TB services, including accompanied referrals within the facility by peers/lay workers; monitoring intra-facility TB linkages; proper documentation of clients screened, eligible, and offered TPT; follow up tracking; and integrating TB/HIV services.

In conclusion, the group described next steps for facility-based group model, including advocacy for a policy that promotes the establishment of the facility based group models; updating SOPs to integrate/include TB/HIV in facility-based DSD models; capacity building on supply chain; implementation science; quality improvement on TB/HIV; and south-to-south learning exchange visits for TB/HIV.

Group 3: Community-based individual models

This group opened their presentation with suggestions on where to improve community-based individual models, including harnessing innovative ways of self-care and reporting/feedback; building on existing services; careful planning before integration of services; and harnessing existing HIV human resources.

They described what is needed to optimize TB/HIV services for people in community-based individual models, including asking, engaging, and building the capacity in the community of recipients of care; simple, scalable models; harmonizing guidelines/policies; training materials; and M&E.

The group felt strongly about the need for enhanced linkages between community-based ART and community-based TB services.

In conclusion, the group described next steps for the community-based individual model, including reinforcing that TB is the business of the HIV program; changing what they felt can be a "paternalistic" TB mindset; shifting to a recipient of care-centered approach overall; demonstrating simple, scalable models; implementing holistic approaches by stakeholders (MOH, donors, and others); and starting immediately without waiting.

Group 4: Community-based group models

This group opened their presentation with suggestions on where to improve community-based group models, including improving coverage of HIV/TB strategies (includes TB screening, linkage and care);

improving engagement and self-care of recipients of care in TB/HIV strategies; and strengthening TB/HIV activities.

They described what is needed to optimize TB/HIV services for people in community-based group models, including improving supply chain management; community empowerment and engagement, including in planning, implementation, and monitoring of these DSD models; capacity building of recipients of care related to TB screening; developing an information package for recipients of care; and providing more information on TB for people living with HIV, even for those who are virally suppressed. The group felt that enhanced linkages between community-based ART and community-based TB services are needed.

The group described next steps for the community-based group model, including strengthening existing models rather than reinventing them; improving treatment literacy for recipients of care and providers; improving supply chain management; creating and implementing guidance and policies that speak to integration of TB/HIV strategies into DSD models; and taking advantage of TLD transition to improve introduction of recipients of care into these DSD models and integrating HIV/TB strategies.

Session 13: Breakout Session
Shark Tank Session

The final session of the CQUIN meeting, the shark tank session, was named after a U.S. reality TV show, in which entrepreneurs rapidly present their ideas to a panel of potential investors, also known as "sharks." Participants had received guidance in advance of the meeting, enabling them to brainstorm about possible projects. In Session 13, each team finalized a short proposal for a post-meeting project related to the topic of DSD and TB/HIV services to present to a panel of judges and the general audience to vote for winners in several different categories.

Winners of the "shark tank" will have the opportunity to move to the next round, and to submit concept notes to receive up to $15,000 in funding from the CQUIN Network.

Proscovia Namuwenge from Uganda role-played a nurse during the team's proposal skit

Shark Tank Criteria

- Each team had five minutes to present their proposal
- All projects had to relate to the impact of DSD on TB/HIV services – and to the issues discussed at the meeting

- There had to be a plan for project implementation in the six months following the CQUIN meeting and in time for at least preliminary results to be presented at the CQUIN annual meeting in November 2019
- All proposals had to be approved by the country MOH HIV and TB departments; buy-in from any relevant individuals not present at the CQUIN meeting had to be obtained prior to submission of a concept note

The Judges

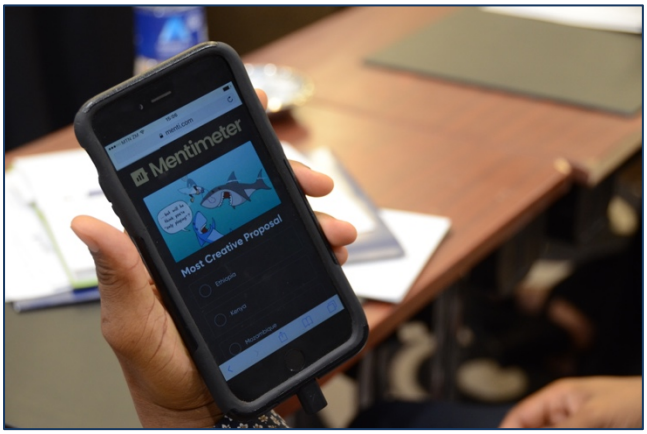
- Dr. Peter Ehrenkranz, Bill & Melinda Gates Foundation
- Ms. Stella Kentutsi, Nafophanu Uganda
- Dr. Peter Preko, ICAP at Columbia/CQUIN
- Dr. Vindi Singh, WHO

Country Proposals:

Country	Proposal Title
Ethiopia	Establishing Facility-Based Adherence Club for Integrated HIV and TB/HIV Comprehensive Care
Kenya	Optimizing TB/HIV Services at the Community Level in Siaya County, Kenya
Mozambique	Early Enrollment on DSD Models and Integration of HIV/TB Services
South Africa	Knowledge, Acceptability, and Preferences of Recipients of Care on DSD Models and Services Offered
Uganda	Alignment of IPT to ART multi-month refills for stable recipients of care for improved uptake and completion of IPT
Zambia	Selfcare for TPT in DSD Team Zambia
Zimbabwe	Feasibility of Community-Based DSD Models to Scale up TB Case Finding & TPT uptake in Two High Volume Rural Facilities in Zimbabwe

Results

The audience voted for the winning team in several categories, including best overall proposal (Zambia), most creative proposal (Uganda), highest impact proposal (Zambia), and best engagement of HIV-positive recipients of care (Zambia)). Audience feedback was captured through the interactive Mentimeter application (pictured right).



The judges then conferred and, in addition to taking the audience votes into account, they also considered the following categories:

- Best leveraging of other resources
- Cost-effectiveness
- Ease of implementation
- Likelihood that the project can be taken to scale if successful

Following deliberation by the judges, Zimbabwe, Zambia, Uganda, and Kenya were all selected to submit proposals for the two funding spots.

Left: Dr. Peter Preko chooses the presenters by drawing names from a bag. Right: Participants celebrate the winners.

Appendices

Appendix A: Strategic Decisions Table

This table synthesizes discussions about shared strategic decisions related to delivering TB/HIV services in the context of differentiated HIV models. It is not intended to be comprehensive.

	Key Strategic Decisions	Common Options	Country Examples/Notes
1	How are TB and HIV services coordinated at the national level?	TB/HIV focal points within MOH HIV and/or TB departments	• Ethiopia, Mozambique and Zambia have both a TB/HIV focal point within the MOH HIV department and a TB/HIV focal point within the National TB Program • Uganda has a TB/HIV advisor within the MOH HIV department • In Zimbabwe, TB/HIV collaborative activities are under the portfolio of the national ART coordinator
		Joint Technical Working Groups (involving both HIV and TB departments)	• Ethiopia, Mozambique, South Africa, Uganda, Zambia and Zimbabwe have joint TWGs (called "TB think tank" in South Africa)
		Ad hoc interdepartmental/ interagency coordination	• In Kenya, NASCOP and NTLDP collaborate on policy initiatives that cut across the two diseases • In SA, SANAC (South African AIDS Council) monitors implementation of the HIV/TB Strategic plan • In several countries (including Ethiopia and Zimbabwe), the TB and HIV programs are under the same directorate
2	Does the country have national TB/HIV guidelines? If yes, when were they last updated? When is the next update scheduled?		• Ethiopia's national TB/HIV guidelines were most recently updated in August 2018. TB/HIV and TPT are also covered in the national ART guidelines. • Kenya's national HIV guidelines include a chapter on TB/HIV and were most recently updated in 2018. The national TB guidelines were last updated in 2014; more recent updates/revisions are underway. • Mz has newly-finalized TB/HIV guidelines which will be launched mid-2019 • SA has TB guidelines from 2014, due for updating, and a National HIV, TB and STI Strategic Plan 2017-2022 • Uganda has national TB/HIV guidelines from 2018; TPT guidelines are currently being reviewed

			• Zambia: These are incorporated into the 2nd Edition of the "*Guidelines for the Management of Latent Tuberculosis Infection*" 2019 and the consolidated HIV guidelines Zimbabwe has national TB/HIV guidelines from 2012; will be updated in 2020
3	How are recipients of care engaged in planning, implementing and/or evaluating TB/HIV services?	Not engaged	• Recipients of care are not engaged in TB/HIV services in Mozambique
		Recipients of care participate in the Technical Working Groups responsible for policy and guideline development	• In Ethiopia, recipients of care are part of the national task force and regional TWGs. The national network of PLHIV (NEP+) plays a primary role. • In SA, this varies by province, ranging from attending DOH meetings to active CARG groups. The HAST (HIV, AIDS, STI and TB) Committee at provincial level and District and Local AIDS Councils provide platforms for engagement of recipients of care. • In Uganda, Zambia and Zimbabwe, recipients of care participate in the national TB/HIV TWG and/or task team
		Recipients of care participate in implementation and/or M&E of TB/HIV services	• In Kenya, people formerly treated for TB support case tracing and the National Strategic Plan (NSP) 2019-2023 aims to strengthen this activity. • In Uganda, recipients of care support TB/HIV service delivery • In Zambia, recipients of care participate in implementation/service delivery and M&E • In Zimbabwe, recipients of care support community-level M&E
		Engaged in demand creation	• In Zambia, recipients of care are involved in demand creation and patient education; they may also be part of health facility Neighborhood Health Committees • In Zimbabwe, recipients of care support demand creation and patient education
4	Are there national guidelines or standards relating to **TB screening** for PLHIV enrolled in differentiated ART models (DARTs)? If yes, please describe		• Ethiopia, Kenya, Mozambique, South Africa and Zambia do not have national guidelines or standards for TB screening in DART models specifically; the assumption is that people will be screened during their clinical visits (e.g., every 6-12 months). • Uganda and Zimbabwe have detailed guidance for TB screening (and its documentation) in each DART model; they support both facility-based and community-based TB screening. • *NB* that screening data are generally not disaggregated by model in routine M&E processes, making it difficult to compare screening coverage in one DART model vs. another or in DART vs. conventional models

5	To what extent (if any) is urine LAM used to screen HIV-positive recipients of care in general, and in DART models?	Not available	• Ethiopia: urine LAM is not available, due to cost. • Mozambique: urine LAM is not available. Discussions are underway with MOH re: whether to include in advanced disease package.
		Included in guidelines but not yet taken to scale	• Kenya is currently implementing a LAM pilot in 12 counties. There is a training guide and SOPs are in place. The findings will inform the development of national guidelines • South Africa: guidelines are in place, urine LAM is being piloted in several high-volume health facilities, but not yet rolled out across provinces • Uganda: urine LAM is currently being scaled up, targeting high volume sites up to level 4 • Zambia: urine LAM has been used in research setting, but limited resources prevent other uses at present. Roll-out is in the planning stage. • In Zimbabwe, urine LAM is being offered at all central and provincial hospitals, but few clients meet criteria leading to challenges with expiration of reagents. No immediate plans for expansion to smaller facilities, given low uptake seen at present.
6	What do national guidelines recommend in terms of **TB preventive therapy (TPT)** for HIV-positive recipients of care? Are changes or revisions expected in the coming year? If so, please describe.	6 months of INH	• Ethiopia: 6 months of INH; introduction of 3HP and 3HR is planned (and in guidelines) but not yet implemented • Kenya: 6 months of INH; 3HP set for adoption in 2020 and guidelines are currently being developed • Mozambique: 6 months of INH; introduction of 3HP to be discussed in coming months as TB guidelines are being updated • Uganda: 6 months of INH
		6-9 months of INH	• Zambia: new guidelines: INH for 6-9 months or 3HP (added March 2019) • Zimbabwe: 6-9 months of INH. 3HP recently adopted in guidelines, but implementation has not yet started.
		12 months of INH	• South Africa: 12 months of INH; guidelines for 3HP are in place but implementation is subject to procurement, which is limited by cost
7	To what extent has TPT for people living with HIV been implemented in the country? Are national targets being met?		• Ethiopia: PEPFAR projections assume that only 75% of people currently on ART have received TPT; FMOH data showed that only 50% of eligible clients received TPT in the past year. A TPT accelerated campaign has been launched. • Kenya: It is estimated that 65% of PLHIV have received/are receiving TPT. The current National Strategic Plan (NSP) 2019-2023 aims to increase this to 90%.

			• Mozambique: TPT initiation rates are estimated to be 49% • South Africa: TPT completion rates need work (both in terms of documentation and performance) • Uganda: TPT initiation rates estimated to be 17% • Zambia: TPT initiation rates are estimated to be 18% c/w national target of 90% • Zimbabwe: implemented nationally, but coverage < 50%.
8	Are people enrolled in DARTs models currently eligible for TPT?	Yes, but monthly visits are required	• Ethiopia: Yes, but patients on TPT need to come out of the DSD model – in other words, to come back to the HF monthly for TPT services. • Kenya: Yes, but are then considered "unstable" and need to leave DSD model during TPT. • Mozambique: Patients on TPT may stay in DSD models, but they have to pick up INH at HF on a monthly basis. • Uganda: Yes, for all DSD models. INH is given monthly, so this means coming out of some DART models
		No	• South Africa: No • Zambia: No • Zimbabwe: Current guidance is not explicit, so few if any people in DART models receive TPT
9	What are the country's programmatic priorities in the area of TB/HIV and DSD? What's next?		• Ethiopia: Implementing 3HP – this has already been adopted in the guidelines, and the NTP and stakeholders are working to implement it at scale. A second priority is to scale up TPT with an accelerated campaign. • Mozambique: Update new TB/HIV guidelines – includes the discussion on 3HP introduction and 3-month INH dispensing + scale-up of DSD models to reach the target of 50% of patients on ART by the end of 2019 • South Africa: QA related to screening and linkage; improving retention. • Uganda: Alignment of IPT prescription, dispensing and appointments to ART prescription, dispensing and appointments; monitoring IPT adverse events • Zambia: Incorporation of TPT in DSD models, increasing TPT coverage • Zimbabwe: TPT provision for people in community ART models
10	What are the country's research priorities in the area of TB/HIV and DSD?		• Ethiopia: Optimizing TB/HIV services for key and vulnerable populations (e.g., miners, prisoners) and expanding TPT in diverse settings • Mozambique: Use of 3HP in patients on DTG but not yet virally suppressed

			• South Africa: Implementation research on phased implementation of DTG and 3HP; models to improve retention in care in DSD • Uganda: IPT in the context of DSD especially models for stable ROCs • Zimbabwe: situational analysis on current status of TPT in DSD models; assessment of feasibility of TPT provision for clients in community-based group models.

Appendix B: Delivering TB/HIV Services in the Context of Specific DART Models

Category	Examples	Notes	Implications for TB/HIV services
Undifferentiated model	These are the models used for recipients of care who are: (a) not eligible for DART; (b) have not yet been assessed for DART eligibility. For example, Uganda calls this facility-based individual model (FBIM) and comprehensive clinical evaluation (CCE); Eswatini calls it "mainstream" ART.		
Facility-based individual DART models	Fast track + visit spacing	Appointments are less frequent than the undifferentiated model, and at least some involve quick check-ins, rather than full clinical visits. ART is collected at the health facility. AKA "spaced and fast lane (SAFL) in SA; "six monthly appointments (SMA) in Kenya	• *Opportunities:* o Facility-based TB screening by HCW *may* be higher quality than community-based TB screening by peers o Linkage to TB diagnosis *may* be easier for people who screen positive for TB symptoms when they are at the facility o Screening for adverse effects of INH *may* be higher quality when performed by HCW at health facility than by peers in community settings • *Challenges:* o Less-frequent visits mean fewer opportunities for TB symptom screening, compared to undifferentiated model o Absence of community-based "wrap around" services may create challenges for TPT adherence and retention, and linkage to TB diagnostics if symptoms occur between visits o If monthly visits are required for TPT, this may dis-incentivize participation by people currently visiting facilities every 3-12 months, decreasing demand and coverage o For the family pick-up model, if the same family member comes each time, the others may receive very little TB screening – possibly only once yearly
	Visit spacing only	*e.g.,* Ethiopia's 6-month appointment spacing model	
	Extended hours	*e.g.,* early mornings, weekends and/or evening hours for recipients of care with "stable" HIV. Usually associated with appointment spacing.	
Facility-based group DART models	ART clubs	AKA "facility adherence clubs" (CI), urban adherence clubs (Zambia)	
	Facility-based teen clubs		
	Family model	AKA "family centered model" (Eswatini), "family ART group refill" (Zimbabwe)	
Community-based individual DART models (include health facility visits every 6-12 months)	Outreach model	Provider-led ART distribution + streamlined clinical services: *e.g.,* mobile ART distribution (Zambia), Home ART delivery (Zambia), outreach ART (Eswatini), outreach model (Zimbabwe)	• *Opportunities:* o Quarterly community-based TB symptom screening by HCW *might* be 'best of both worlds' in terms of quality and frequency o If ART and TPT can be dispensed on same schedule, may increase demand/uptake o Decreasing frequency of visits to health facilities *may* decrease the risk of acquiring TB

			• *Challenges:* o If TB screening is not a part of the package of care delivered at community level (e.g., if it only occurs at health facility), less-frequent visits mean fewer opportunities for TB screening o If ART and TPT are not on the same dispensing schedule, may increase complexity, disincentivize uptake, and decrease TPT coverage o Absence of community-based "wrap around" services may create challenges for TPT adherence and retention, and linkage to TB diagnostics if symptoms occur between outreach visits
	Community drug distribution	ART distribution only, no clinical services: CCMDD[3] (SA + Zambia), CDDP[4] (Uganda), Community retail pharmacy model (Zambia), OFCAD[5] (Zimbabwe)	• *Opportunities:* o If ART and TPT can be dispensed on same schedule, may increase demand/uptake o Decreasing frequency of visits to health facilities *may* decrease the risk of acquiring TB • *Challenges:* o Less-frequent visits to health facilities mean fewer opportunities for TB symptom screening – could be as infrequently as once a year o If ART and TPT are not on the same dispensing schedule, may increase complexity, disincentivize uptake, and decrease TPT coverage o If ART and TPT *are* on the same schedule, this model does not provide an opportunity for screening for adverse events of INH – would have to be added on in some way o Absence of community-based "wrap around" services may create challenges for TPT adherence and retention, linkage to TB diagnostics if symptoms occur between visits, and/or screening for adverse effects of INH for those on TPT
	PODI model	Peer-led drop-in centers for ART distribution + adherence/symptom check	• *Opportunities:* o Peers can provide education and counseling re: importance of TPT (uptake and adherence) o Peers can provide TB symptom screening o If ART and TPT can be dispensed on same schedule, may increase demand/uptake o Decreasing frequency of visits to health facilities *may* decrease the risk of acquiring TB

[3] CCMDD = chronic centralized medication dispensing and distribution (SA and Zambia)
[4] CDDP = community drug distribution points (Uganda)
[5] OFCAD = out of facility community ART distribution (Zimbabwe)

			• *Challenges:* o Is peer-led TB symptom screening as effective as that provided by HCW? o Is peer-led screening for adverse effects of INH as effective as that provided by HCW?
Community-based group DART models (include health facility visits every 6-12 months)	Community ART groups (peer-led or HCW-led)	CAG[6], CARG[7] (Zim), GAAC (Moz), CCLAD[8] (Uganda)	• *Opportunities:* o Group leaders/peers can provide education and counseling re: importance of TPT (uptake and adherence) o Group leaders/peers can provide TB symptom screening o If ART and TPT can be dispensed on same schedule, may increase demand/uptake o Decreasing frequency of visits to health facilities *may* decrease the risk of acquiring TB • *Challenges:* o Is peer-led TB symptom screening as effective as that provided by HCW? o Is peer-led screening for adverse effects of INH as effective as that provided by HCW?
	Community-based teen clubs (HCW-led)		• *Opportunities:* o Quarterly community-based TB symptom screening by HCW *might* be 'best of both worlds' in terms of quality and frequency o HCW and peers can provide education and counseling re: importance of TPT (uptake and adherence) o If ART and TPT can be dispensed on same schedule, may increase demand/uptake o Decreasing frequency of visits to health facilities *may* decrease the risk of acquiring TB • *Challenges:* o If ART and TPT are not on the same dispensing schedule, may increase complexity, disincentivize uptake, and decrease TPT coverage

[6] CAG = community ART group
[7] CARG = community ART group (Zimbabwe)
[8] CCLAD = community client-led ART delivery (Uganda)

Appendix C: Meeting Agenda

Tuesday 26 March

6:00 – 8:00 **Opening Reception and Dinner**

Moderator: Prisca Kasonde, Country Director, ICAP Zambia

- Miriam Rabkin, ICAP at Columbia University
- Andrea Howard, ICAP at Columbia University
- Vindi Singh, WHO
- Zameer Brey, Bill & Melinda Gates Foundation
- Nelson Otwoma, National Empowerment Network of People Living with HIV/AIDS in Kenya
- Nathan Nsubunga Bakyaita, WHO Zambia
- Guest of Honor, Dr. Kennedy Malama, Permanent Secretary, Technical Services, Ministry of Health

Wednesday 27 March

8:00 – 8:30 **Registration**

8:30 – 9:00 **Session 1: Keynote address – TB screening & linkage**
Helen Ayles, ZAMBART

9:00 – 10:00 **Session 2: Panel Presentations | Introduction & Framing**
Moderator: Peter Ehrenkranz (Gates Foundation) & Siphiwe Shongwe (ICAP/CQUIN)

- HIV differentiated service delivery: Peter Preko, ICAP/CQUIN
- Community-based TB programs: Lana Syed, WHO
- Expanding DSD for TB/HIV: a consultation with global stakeholders: Lucia Gonzalez Fernandez, IAS
- Meaningful engagement of recipients of care: Nelson Otwoma, NEPHAK Kenya

10:00 – 11:30 **Session 3: Breakout Session | Country Teams Paired to Discuss DSD & TB/HIV**
Co-Moderators: Gavin Khumalo (SWANNEPA) & Clorata Gwanzura (MoHCC Zimbabwe)

11:30 – 12:30 **Session 3, continued: Report-back from Breakout Session**
Co-Moderators: Gavin Khumalo (SWANNEPA) & Clorata Gwanzura (MoHCC Zimbabwe)

12:30 – 2:00 Lunch | Breakout Discussion Session = Dolutegravir Transition

2:00 – 3:30 **Session 4: Panel Presentations | Impact of DSD on TB Screening & Linkage**

Co-Moderators: Hala Al Mossawi (USAID) & Llang Maama (Lesotho MOH)

- TB/HIV linkage: What works and how do we know? Angela Salomon, McGill

- The future of TB screening: What's on the horizon? Pren Naidoo, Gates
- Uganda: TB screening in DSD programs, Josen Kiggundu, MOH Uganda
- Lesotho: TB screening in Fast Track and CAG models, Andrea Howard, ICAP NY
- Kenya: TB screening in the Community ART model, Jacquin Kataka, CHS
- South Africa: Rapid ART initiation following TB screening, Sydney Rosen, HE2RO

3:30 – 4:30 **Session 5: Moderated Discussion | Person-Centered TB/HIV Services**
Co-Moderators: Helen Bygrave (IAS) & Tonderai Mwareka (ZNNP+)

- Sarah Banda
- Nancy Chishimba
- Mwelwa Chabala, CIDRZ
- Baker Bakashaba, TASO Uganda
- Cordelia Katureebe, MOH Uganda
- Didier Kamerhe, IHAP/PATH DRC

4:30 – 5:00 **Wrap-up and Plans for Day 2**

Thursday 28 March

8:00 – 8:30 **Registration**

8:30 – 8:40 **Welcome and Recap of Day One**

8:40 – 9:00 **Session 6: Keynote Address – TB Preventive Therapy**
Salome Charalambous, Aurum Institute

9:00 – 10:00 **Session 7: Panel Discussion | DSD and TB Prevention**

Co-Moderators: Lawrence Khonyongwa (Malawi Network of People Living with HIV) & Stephen Muleshe (MOH Kenya)

- South Africa: integration of TPT into ART clubs, Rheiner Mbaezue, City of Cape Town, City Health
- DRC: integration of TPT into PODI model, Didier Kamerhe, IHAP/PATH
- Lesotho: TPT for migrant miners, Llang Maama, MOH Lesotho
- South Africa: Community-based TPT in the DO-ART study, Adrienne Shapiro, U. of Washington

10:00 – 11:30 **Session 8: Breakout Session | Country Teams Paired to Discuss DSD & TB Prevention**
Co-Moderators: Maureen Syowai (ICAP Kenya) & Lee Abdelfadil (Global Fund)

11:30 – 1:00 **Session 9: Tools Lab**

1:00 – 2:30 Lunch | Breakout Discussion Session = The Future of TB Screening

2:30 – 4:00 **Session 10: Parallel Breakout Sessions**

Co-Moderators: Vindi Singh (WHO) and Brittany Moore (CDC Atlanta)

- Lab/diagnostics
  Co-Moderators: Kaunda Kaunda (CIDRZ) & Stephen Muleshe (MOH Kenya)
- Supply chain
  Moderator: Morton Khunga (MOH Zambia)
- M&E
  Co-Moderators: Cuc Tran (CDC) & Andrea Schaaf (ICAP)
- Demand generation for TB/HIV services
  Co-Moderators: Felix Mwanza (TALC) & Maureen Luba (AVAC)
- Screening for TB in the context of the advanced HIV package of care
  Co-Moderators: Helen Bygrave (IAS) & Maureen Syowai (ICAP Kenya)
- Participant choice / "wild card" topic
  Co-Moderators: TBD

4:00 – 5:00 **Session 10, continued: Report-back from Breakout Session**

Friday 29 March

8:00 – 8:30 **Registration**

8:30 – 8:40 **Welcome and Recap of Day Two**

8:30 – 9:00 **Session 11: Keynote Address | Engagement of Recipients of Care**
Stella Kentutsi, Nafophanu Uganda

9:00 – 10:30 **Session 12: Parallel Breakout Sessions | Differentiated Models used by TB and HIV programs**
Co-Moderators: Andrea Howard (ICAP NY) & Priscilla Mulenga (MOH Zambia)

- Facility-based individual models (e.g., visit spacing, fast track)
  Co-Moderators: Miriam Rabkin (ICAP) & Minesh Shah (CDC)
- Facility-based group models (clubs)
  Co-Moderators: Godfrey Musuka (ICAP) & Mohammed Saleem (UNAIDS)
- Community-based individual models (e.g., PODI, outreach, CCMDD)
  Co-Moderators: Bactrin Killingo (ITPC) & Adrienne Shapiro (HE2RO)
- Community-based group models (e.g., CAGs)
  Co-Moderators: Clorata Gwanzura (MoHCC Zimbabwe) & Ndoungou Salla Ba (WHO AFRO)

10:30 – 11:00 **Session 12, continued: Report-back from Breakout Session**
Co-Moderators: Andrea Howard (ICAP NY) & Priscilla Mulenga (MOH Zambia)

11:00 – 11:30 Tea Break

11:30 – 1:00 **Session 13: Breakout Session | Individual Country Team Strategies and Prep for Shark Tank session**
Moderator: Peter Preko (ICAP/CQUIN)

1:00 – 2:00 Lunch

2:00 – 3:30 **Session 13 continued | Shark Tank Session - Country Teams Present Project Proposals for CQUIN Support**
Co-Moderators: Peter Ehrenkranz (Gates), Peter Preko (ICAP/CQUIN), Vindi Singh (WHO) & Stella Kentutsi (Nafophanu Uganda)

3:30 – 5:00 **Session 14: Closing Remarks and Way Forward**
Lee Abdelfadil (Global Fund), Bactrin Killingo (ITPC), Vindi Singh (WHO), Peter Ehrenkranz (Gates), Miriam Rabkin (ICAP/CQUIN), and Dr. Alex Makupe, Director of Clinical Care Services, Zambia Ministry of Health

Appendix D: Meeting Participants

Lee Abdelfadil is an Advisor on the HIV-Technical Partnerships and Advisory Team for the Global Fund. In this role Dr. Abedelfadil provides expert guidance on HIV/AIDS; keeps staff updated on the best scientific evidence and program practices in the areas of HIV/AIDS prevention, treatment, care, and support; identifies opportunities for reprogramming of existing HIV grants, and for programming of new HIV funding; represents the Global Fund in technical HIV/AIDS fora; and liaises closely with key partners to maximize the Global Fund's contribution to the fight against HIV/AIDS. Dr. Abdelfadil holds a Bachelor of Medicine and Bachelor of Surgery from Ahfad University, an MSc in Public Health in Developing Countries from London School of Hygiene and Tropical Medicine (LSHTM), and a Doctor of Public Health from LSHMT.

Hala Jassim Al Mossawi is a Senior TB/HIV Advisor with Office of Infectious Disease, Global Health Bureau, USAID. She is a public health specialist with over 22 years of experience in project management, capacity building, quality improvement, and monitoring and evaluation (M&E). Prior to joining USAID, Dr. Al Mossawi worked at University Research Co., LLC in field programs and at HQ as Senior Director of Technical Support for the Center for Innovations and Technology and provided technical and management support to various programs, including TB, HIV, malaria, family planning, maternal child health, health system strengthening, drug reduction, and education. She assisted in the development of many TB and HIV-related technical materials, including: strategies, guidelines, communication materials, SOPs, EMMPs, EEIs, TB QI manuals, designed assessments tools, conducted gap analysis, and the implementation of option, reports and fact sheets among others. Dr. Al Mossawi has worked in and supported field teams in the following countries: Iraq, Afghanistan, Jordan, Albania, Philippines, Cambodia, Myanmar, South Africa, Swaziland, Lesotho, Malawi, Cote dIvoir, Ethiopia, Vietnam, Indonesia, Bangladesh, Pakistan among others

Tamrat Assefa is the Director for Regional Programs at ICAP Ethiopia. He has over 20 years of experience in public health, specializing in health systems strengthening, HIV, and quality improvement. Mr. Assefa is a fellow of the Visionary Leadership Program funded by the Packard Foundation, a fellow of the Management Development Institute at UCLA, and a member of the Ethiopia reproductive health leadership network. Mr. Assefa received his MPH in health system management and policy from Prince Leopold Institute of Tropical Medicine in Belgium, an MPH from Addis Ababa University and a BSc in Nursing from Jimma University.

Helen Ayles is a Reader in the Clinical Research Unit at the London School of Hygiene and Tropical Medicine. For the last 11 year, she has been director of research at the Zambia AIDS Related Tuberculosis (ZAMBART) Project. Dr. Ayles is the Zambia principal investigator (PI) for the PopART (HPTN 071) Trial, which will investigate whether a strategy of universal test and treat for HIV can reduce the incidence of HIV at the community level. She is also a PI for the BHOMA study, a community randomised trial to evaluate an intervention aimed at improving health outcomes by strengthening the health system. Dr. Ayles is also a site PI on a new TB vaccine trial, conducted jointly by GSK and Aeras.

Robinah Babirye is a Programs Assistant at the African Young Positives Network and volunteers with several networks of young people living with HIV. As a young woman living with HIV and former Miss Y+ (2015/2016), she is an advocate and role model for young people, especially adolescent girls and young women, living with HIV. She supports them to realize their potential. Ms. Babirye harnesses platforms, such as radio, television talk shows, social media, print media, and community and school outreaches, which provide the opportunity to articulate the issues that affect young people living with HIV, especially adolescent girls and young women, both locally and internationally.

Baker Bakashaba is the Regional Project Manager for the Soroti Region for the AIDS Support Organization (TASO) in Uganda. For seven years, Dr. Bakashaba has managed HIV/AIDS programs at TASO, focusing on design and implementation of facility- and community-based, client-centered projects, and health systems strengthening. He has contributed to the design of community antiretroviral (ART) models, such as community drug distribution points and community, client-led ART delivery, as well as other national-level differentiated service delivery (DSD) models. He is currently the Regional Project Manager for the Accelerating HIV Epidemic Control in Soroti Region Project – a regional project funded by PEPFAR through CDC. Dr. Bakashaba received his Bachelor of Medicine & Surgery Degree from Makerere University in Uganda, and is currently pursuing a Master of Science in Project Management at the University of SalD in the UK. Dr. Bakashaba is a member of the CQUIN Advisory Group.

Not pictured

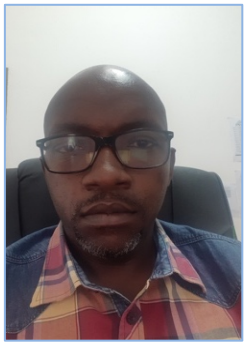
José Bendita is the Focal Person for Community TB Activities in the TB Program for MISAU/MOH in Mozambique.

Mesfin Bekele Belayneh is a Senior NTP (TB/HIV) Program Officer for the Federal MOH in Ethiopia. He provides technical support in areas of TB, TB/HIV, and TB-IC at the facility and program levels; administers TB and TB/HIV-related training for health care providers and program managers; monitors, coordinates, and evaluates programs at the national and sub-national levels; and provides communication, relation, and team management. Mr. Belayneh has a Master's of Science in Public Health.

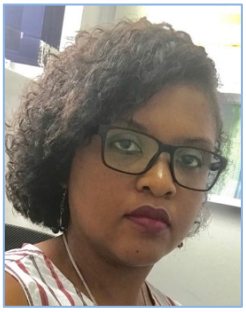
Zameer Brey is the TB Lead for South Africa for the Bill and Melinda Gates Foundation and serves as Chair of the Hospital Board for Groote Schuur Hospital. Dr Brey has worked in leadership positions as a change agent in multiple organizations: he has served as a process analyst for the Western Cape Department of Health; as internal consultant to the Dean of the faculty of Health Sciences at the University of Cape Town (UCT); and as has been involved with consulting for the National Departments of Health and Higher Education. Dr. Brey's expertise centers on improving efficiency and quality in healthcare, using existing resources relating to personnel, equipment, and finances. His passion is creating impact and improving healthcare in South Africa. He is an active Board member for three organizations and vice chairperson of two provincial structures- all related to healthcare. He has a MHChB, MBA, and PhD in Lean Healthcare and Implementing Change in Healthcare from the UCT.

Helen Bygrave is a physician and works as a general practioner in London. As an HIV/TB advisor in Médecins Sans Frontières' (MSF) Southern Africa Medical Unit, she has supported programs across Sub-Saharan Africa and Asia since 2005. Dr. Bygrave works as a consultant for the International AIDS Society (IAS) and the World Health Organization (WHO) and develops international and national guidance on how to provide DSD for HIV. Building on the lessons learned from the scale-up of HIV care, she recently started to work with the MSF Access Campaign as a Technical Advisor on non- communicable diseases focusing on diabetes and cardiovascular disease. Dr. Bygrave trained as a physician in Cambridge and London.

Salome Charalambous is the Deputy Chief Scientific Officer at the Aurum Institute. Dr. Charalambous has been involved in HIV program implementation since 1998, prior to ART implementation, and was instrumental in the first large ARV implementation project in the Anglo American companies in 2003 - 2007. She has been PI on a number of cluster-randomized and observational studies in issues of HIV and TB implementation and epidemiology in special populations. She has a special interest in TB and special populations such as miners, inmates, and TB contacts. Dr. Charalambous is the chair of the M&E working group of the South African National Department of Corrections Task Team and the co-chair of one of the working groups of the South African National TB Think Tank. She currently heads the Secretariat of the TB Think Tank. Dr. Charalambous is a South African trained medical doctor with a PhD in Epidemiology from the London School of Hygiene and Tropical Medicine.



Edson Chidovi is a Zimbabwean trained medical practitioner with 15 years of experience in the private, public, and humanitarian health sector. He is currently working as a Senior Programs Manager with International Teaching and Education Centre for Health-Zimbabwe and oversees the TB and PMTCT programs. His area of interest is demonstrating the benefits of TB preventive treatment and how it can be scaled up in resource-limited settings.



Sonia Chilundo works with CDC in Mozambique. She is a medical doctor and holds a Master's degree in Public Health.

Lastone Chitembo is a Technical Advisor for the WHO in Zambia and advises the MOH in Zambia on prevention, control, and management of HIV, TB, and hepatitis. He has over 20 years of experience in public health strategic planning; management; implementation, monitoring, and resource mobilization for HIV/AIDS; and maternal, newborn, and childhood survival. Dr. Chitembo's background includes clinical experience as medical doctor in Poland and Zambia; work as a District Director of Health, working as a paediatrician, serving as an Honorary Lecturer at the University of Zambia School of Medicine, and technical officer for UNICEF Zambia. He has also worked for UNICEF in Sierra Leone and Sudan as a Technical Advisor on paediatric HIV care.

Regis Choto is the National ART Coordinator for the MOH and Child Care's (MOHCC) AIDS and TB Programs in Zimbabwe. He joined as the Deputy National ART Coordinator in 2011 until he became the National ART Coordinator in 2017. Dr. Choto's key roles include strategic planning and coordination of all national HIV care and treatment functions in collaboration with all key stakeholders; developing relevant technical proposals and budgets to mobilize resources for the care and treatment program; and ensuring the care and treatment program's compliance with MOHCC policies and procedures. Dr. Choto is a medical doctor and attained his Master's Degree in Public Health in 2010 from the University of Zimbabwe. His aspirations are to see a world free from TB and HIV in his lifetime.

Fred Chungu is the Executive Director of the Network of Zambian People Living with HIV (NZP+) and has more than 15 years of experience in the HIV/AIDS sector. He specializes in organizational capacity building, project M&E, and community mobilization. Mr. Chungu provides both technical and operational support for the development, implementation, and evaluation of prevention, care, and treatment activities for HIV, TB, and other related conditions to community-based organizations (CBO), such as NZP+ district chapters and those affiliated to NZP+. He has been involved in various HIV research initiatives, such as ZAMPHIA, where he served as a Monitor, the People Living with HIV Stigma Index Assessment by NZP+, and has worked with the Southern African Development Coordination Conference through Primson Management Services as a Country Coordinator under a project that provided capacity-building for CBO. Mr. Chungu was also involved in the mid-term evaluation and development of the National AIDS Strategic Framework as well as the development of the National Guidelines for DSD. He holds diplomas in social work, management studies, and management of information systems. Mr. Chungu is in his second year of pursuing a Bachelor degree in Development Studies.

Peter Ehrenkranz is Senior Program Officer for HIV Treatment at the Bill & Melinda Gates Foundation. From 2010 to 2015, Dr. Ehrenkranz worked in Eswatini with CDC, first as the PEPFAR Care and Treatment Lead, and later as the Country Director. Prior to that, he spent two years in Liberia with a joint appointment as a Senior Advisor to the National AIDS Control Program and Medical Director for the Clinton Health Access Initiative-Liberia. Dr. Ehrenkranz earned an undergraduate degree in history from Yale, medical and public health degrees from Emory, and trained in internal medicine at the University of Pennsylvania, where he completed the Robert Wood Johnson Clinical Scholars Program.

Iyiola Faturiyele is Senior HIV Clinical Services Advisor for the Division of Prevention Care and Treatment, Office of HIV/AIDS, Bureau for Global Health at USAID. In this role he provides technical support on the HIV continuum of care to PEPFAR/USAID-funded country programs. Dr Faturiyele has worked closely with community and district leaders, as well as government officials, to expand access to HIV/AIDS and TB treatment services across age groups and populations in technical and clinical capacities for much of his career. He holds MD and MPH degrees.

Beniam Feleke is Senior Public Health Specialist for the TB/HIV programs for CDC Ethiopia. He currently works with the MOH and partners to implement innovative approaches (active tracking system) to accelerate TB Prevention Therapy (TPT) uptake and completion among people living with HIV in a campaign approach and preparatory activities for nation-wide rollout of alternative TPT regimens (3HR and 3HP). Dr. Feleke joined CDC Ethiopia in 2006 as the TB/HIV Programs Technical Officer and his roles include providing TA to the MoH and partners on TB/HIV and MDR-TB program areas; participation in policy; and developing and revising national guideline and training materials. His role also includes monitoring CDC-funded TB/HIV programs and participation in program evaluation, survey, and surveillance activities. Dr. Feleke attended Gondar College of Medical Sciences and has worked in different urban and rural hospitals as a clinician. After graduating in internal medicine at Addis Ababa University in 1992, he worked as a consultant clinician at St. Peter's TB specialized hospital managing referral TB/HIV and MDR-TB patients and engaging in research and training activities.

Dércio Filimão joined the USAID PEPFAR team five months ago as a Senior HIV/AIDS Treatment Advisor for USAID. He is USAID focal person for the second 90, DSD, quality improvement, and male engagement. Dr. Filimão is a Mozambican physician with more than eight years of experience working in public health. His previous positions include: serving as Director of the local rural hospital at Morrumbala (Zambézia); HIV Program Supervisor at Zambézia DPS, where he helped the scale up of health facilities providing ART services, pediatric ART coverage, implementation of a national quality improvement pilot in 33 health facilities, and created the Provincial ART Committee; Head of the Department of Endemic Diseases at Zambézia DPS, where Dr. Filimão helped to achieve the highest tuberculosis detection rate for the province to date; and before joining the USAID Dércio, Dr. Filimão worked as Provincial Clinical Advisor at Maputo DPS (CCS), covering HIV and TB programs. Dr. Filimão is a graduate of Eduardo Mondlane University in Maputo and holds a Master's Degree in Science (Infectious Diseases) from the Federal University of São Paulo.

Eudóxia Filipe is a general practice doctor and the Focal Point for TB/HIV, opportunistic infections, and hepatitis for the MOH, National STI, HIV, and AIDS Program in Mozambique. In this capacity, she develops standards, guides, national manuals for prevention and care and treatment for HIV, and collaborative TB/HIV activities. Prior to this, Dr. Filipe managed clinical programs for TB, HIV, and malaria in districts of Nampula Province and worked as a focal point for improving quality of care for HIV at the Provincial Health Directorate in Nampula. She studied medicine and graduated from Eduardo Mondlane University.

Marcelo A. Freitas is the is a Clinical Director at ICAP Mozambique. He is a Brazilian medical doctor and public health specialist. Dr. Freitas spent ten years at the MOH in Brazil working on HIV/AIDS Programs as the HIV Care and Treatment Coordinator, and more recently as Deputy Director. He holds a Master's in Infectious Diseases.

Mary Gaeddert is an Allen Rosenfield Global Health Fellow. Prior to this, she was a Senior Research Study Coordinator at the Boston Medical Center and an Epidemiologist for the Massachusetts Department of Health. She has a BA in psychology and biology from the University of Rochester and a Master's Degree in Epidemiology from Boston University.

Irénio Gaspar is a Medical doctor, qualified at Eduardo Mondlane University and currently working as the STD and HIV/AIDS Programme Supervisor at the Maputo City Branch/Directorate of the Ministry of Health since 2015. Due to the nature of his work, as well as the country's high HIV prevalence, he works mostly with the general population, with special focus on high- risk groups: the LGBT community, prisoners and sex- workers.

Martin Githiomi is an M&E /Information Communication Technology (ICT) Specialist for the TB Program in the MOH in Kenya. In this role he works on the design of system wireframes (logic), digitization for routine surveys, and software development (core and supervisory roles). Mr. Githiomi's research experience includes coordination of the ICT implementation of the 2016 Kenya National Tuberculosis Prevalence Survey; data management for the Kenya Paediatric Survey; key participation in protocol design, implementation, and data analysis of the 2017 Tuberculosis Catastrophic Cost Survey; key participation in the protocol design, implementation, and data analysis of the 2013 Tuberculosis Inventory Study; key participation in the protocol design, implementation, and data analysis for the 2018 Tuberculosis Adherence Study; and current key participation in the protocol design of the 2019 Tuberculosis Adherence Survey. Mr. Githiomi holds a Bachelor's in Information Technology from Makerere University in Uganda and a Certificate in Software Development (Android) from Iridium Interactive in India. He is currently pursuing an MBA focusing on strategic information systems from Kenyatta University in Kenya.

Getachew Gonfa Werdofa is a Resource Mobilization Department Manager at Networks of HIV Positives in Ethiopia (NEP+). His past experience includes positions as an M&E Department Manager at NEP+; Sub-City HIV/AIDS Prevention and Control Program Coordinator for the Addis Ababa HIV/AIDS Prevention and Control Office; Woreda HIV/AIDS Coordinator for the Addis Ababa HIV/AIDS Prevention and Control Office; and Department Head, for North Shewa Zone Labor and Social Affairs Department. Mr. Gonfa has a BA in Administration from Addis Ababa University, a Professional Certificate in Management from Nazareth College, and an MA in Regional and Local Development Studies from Addis Ababa University.

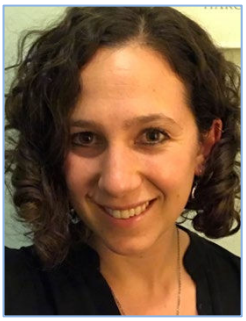
Lucia Gonzalez-Fernandez is a Senior Manager (Co-Infections), HIV Programs for the IAS. As a medical doctor focused on global health, she has worked and supported primary health, TB, HIV, and hepatitis programs in Sub-Saharan and East Africa, Central and Southeast Asia, and the Pacific regions. Dr. Gonzalez-Fernandez has a strong interest in increasing health in populations across the world through health systems strengthening, policy development, and implementation research.

Clorata Gwanzura, is the Differentiated Care Medical Officer: HIV Care and Treatment at the MOHCC in Zimbabwe. With support from the CQUIN project, she supports differentiated care projects in the AIDS and TB Units and focuses on the scale-up of DSD models nationwide. She has five years of experience working at various levels in the Zimbabwe MOHCC and implementing and managing health programs, including HIV programming. Her interests include health systems strengthening and program management. Dr. Clorata is a medical doctor and has an MPH degree.

Ahmed Saadani Hassani, MD, MPH is the Clinical Services Team Lead for the CDC Zambia Country Office since 2017. Prior to this, Dr. Saadani Hassani was the HIV Care and Treatment Team Lead with the CDC Cambodia Country Office (2015-2017); Health Scientist on the Care and Support Team in the Division of Global HIV/AIDS Care and Treatment Branch (2012-2015); Technical Officer with the HIV Department at the WHO in Geneva; and as a clinician, medical team leader, and a Program Field Coordinator with the French and the Swiss sections of MSF in Burundi, Guinea, Guatemala, Angola, Cambodia, Uganda, and Laos. He earned his medical degree from the Faculty of Medicine of Abidjan, Côte d'Ivoire, and his MPH and Tropical Medicine Certificate from the Prince Leopold Tropical Medicine Institute in Antwerp, Belgium. Dr. Saadani Hassani also practiced family medicine in Cote d'Ivoire.

Andrea Howard is the director of the Clinical and Training Unit at ICAP, where she oversees the design and implementation of clinical, laboratory, and training programs for the prevention, care, and treatment of HIV, TB, and related conditions in resource-limited settings in sub-Saharan Africa and Asia. Her research has broadly focused on TB/HIV integration, implementation science, migrant miners, and the HIV care continuum. Dr. Howard recently completed two implementation science studies aimed at defining best practices for integrating TB and HIV service delivery programs in sub-Saharan Africa: the NIH-funded ENRICH Study, and the USAID-funded START Study. She is currently leading a mixed-methods implementation science study in Lesotho (PROMISE) to evaluate the feasibility, effectiveness, and acceptability of a miner-friendly intervention strategy to implement early ART and IPT for migrant miners living with HIV. Dr. Howard is an associate professor of epidemiology at Columbia University Medical Center and director of the Global HIV Implementation Science Research Training Fellowship at the Mailman School of Public Health. She is board-certified in internal medicine and infectious diseases, and provides HIV specialty care at Harlem Hospital.

Amy Huber is an AMBIT investigator for HE2RO based in South Africa. Her research interests include: HIV and chronic disease, retention in HIV care, spatial distribution of health, and technology-based health solutions. Dr. Huber is an epidemiologist with 12 years of experience researching HIV treatment and prevention strategies in sub-Saharan Africa. Her past experience includes spending two years with the Peace Corps in Swaziland educating rural communities about HIV and three years working with the Aurum Institute. Dr. Huber's work at the Aurum Institute included measuring HIV incidence in South African coal mines and managing two sites of the FACTS 001 Phase III trial of pericoital tenofovir gel. She holds a Bachelor of Arts from Miami University, a Master's of Public Health from Columbia University, and a PhD in Epidemiology from the University of North Carolina at Chapel Hill.



Mollie Hudson is a staff nurse in the Medical-Surgical Department at St. Joseph Health and a nurse practitioner student at the University of California, San Francisco (UCSF) in the U.S.A. For the last decade, she worked in health clinics and hospitals in the Bay Area and East Africa, working primarily with HIV-positive populations. She received as MS from the UCSF GHS Program where her research focused on linking HIV/TB co-infected patients to public sector health services.

Alemayheu Hunduma is the Deputy Head for the Addis Ababa City Administration Health Bureau in Ethiopia.

Benedita José is the Focal Point for community TB activities for the TB program in the MOH in Mozambique, where she has worked on the TB program on TB/HIV, multidrug-resistant TB, and childhood TB since 2011. Dr. José is a medical doctor and has a Master's degree in Field and Laboratory Epidemiology from the Faculty of Medicine of Eduardo Mondlane University.

Joseph Kabanda is an HIV Care and Support Specialist at CDC Uganda where he provides technical assistance to the MOH, implementing partners, and health facilities, including the development of guidelines for the DSD models for Uganda. His current work includes providing support and input for implementation manuals, job aids, and SOPs for implementation of DSD models in Uganda. Dr. Kabanda received his medical degree and Master of Science in Public Health from Makerere University.

Didier Kamerhe Kazige is a Community Prevention, Care, and Treatment Advisor for the IHAP-HK/L Project for PATH in the Democratic Republic of Congo (DRC). He is responsible for the implementation of community-based interventions, including HIV prevention, DSD, and care and support activities for people living with HIV. Prior to his current role with PATH, Dr. Kamerhe worked for several international organizations including Chemonics (ProVIC/USAID), FHI360 (C-Change/USAID), PATH (ProVIC/USAID), and he also worked with the National AIDS Program (PNLS) within the DRC MOH for seven years. Among his professional achievements, as Head of Service and then Provincial Coordinator at PNLS, he actively participated in the development of various health policy documents as well as HIV/TB co-infection training guides and modules. Dr. Kamerhe is a medical doctor by training and a specialist in community health.

Not pictured

Kaunda Kaunda is the TB and Microbiology Laboratory Manager at CIDRZ. He has over eight years of TB and Microbiology diagnostics experience.

Prisca Kasonde is the Country Director for ICAP in Zambia. She is an experienced Zambian medical doctor and public health specialist with a career spanning over 25 years in the public and private health sectors, as well as in international non-governmental organizations. Dr. Kasonde's experience includes both clinical as well as program management in the area of HIV/AIDS, STIs, reproductive health, obstetrics and gynaecology, and health systems strengthening. She has successfully provided technical leadership and programmatic guidance on the design, development, introduction, implementation, and M&E of HIV/AIDS prevention, care and treatment programs in donor-funded projects. Prior to joining ICAP, Dr. Kasonde worked on large PEPFAR/USAID funded HIV/AIDS projects in Zambia (ZPCT/ZPCTIIB) and has experience implementing DSD models. She has co-authored over 20 different publications in peer-reviewed journals. Dr. Kasonde has a Master's degree in Public Health with a focus on HIV/AIDS epidemiology as well as a Master's degree in Medicine specializing in Obstetrics and Gynecology.

Jacquin Kataka is the Program Director for the Shinda Project at the Centre for Health Solutions Kenya. This project involves supporting the MOH in planning, initiation, implementation, and M&E of HIV Care and Treatment, TB, PMTCT, and Voluntary Male Medical Circumcision in Siaya County, Western Kenya. He is a public health specialist with 13 years working experience in healthcare, including 10 years in public health in HIV/AIDS programs. Dr. Kataka previously worked with ICAP and FHI 360 as a Senior Technical Advisor, clinical services, providing technical support for quality HIV prevention, care, and treatment services in the Rift valley, Nyanza, and Eastern regions of Kenya. He holds a Bachelor of Medicine and Surgery degree from the University of Nairobi and a Master's degree in Public Health (Epidemiology and disease control) from Moi University, and is currently pursuing a Master's degree in Business administration (strategic management) at the University of Nairobi.

Cordelia Katureebe Mboijana is a pediatrician and child health specialist, currently working as a National Coordinator for HIV Care and Treatment at the Uganda MOH, AIDS Control Program. She has over 15 years of experience in clinical care, strategic planning, and implementation of programs related to HIV care and treatment for HIV-positive pregnant women. Recently, over the last three years, she was assigned as the Coordinator for Adolescent HIV Services. Her recent work has focused on the roll out of the standards of care for adolescent HIV across the country to improve care and treatment outcomes of retention and viral load suppression among adolescents living with HIV. Dr Katureebe just completed a short course on public health policy and aspires to be a leader in HIV care and treatment across all populations.

Mathew Kawogo is the Manager of Community Mobilization and Engagement for the National Council of People Living with HIV/AIDS in Tanzania, a role he has assumed since 2017. Mr. Kawogo has abundant experience with communities, people living with HIV groups, CSOs, government ministries, departments, and parliamentarians in HIV/AIDS, children, ageing, and disability. Prior to serving in his current role, he was the Program Manager for HIV/AIDS for more than four years with HelpAge International in Tanzania where he also served as the Coordinator of Capacity Building to strengthen CSOs and Councils' capacity on ageing and managed HIV/AIDS programs in more than 15 district councils and 100 villages. He also worked with World Vision International in various posts, including designing, managing, and coordinating projects to oversee program developments for children in Tanzania. He was appointed as the Country Director of Action on Disability International in Tanzania for a year and a half and then moved to UNAIDS to serve as a Program Officer for the Alliance of the Mayor's Initiative for HIV/AIDS at Local Level.

Andrew Kazibwe is a Senior Technical Advisor leading community TB interventions for the USAID/Defeat TB Project in Uganda. He provides technical support to the National TB and Leprosy Program, as well as regional, district, facility, civil society, and community teams to support effective engagement of communities in ending TB. Dr. Kazibwe is currently working on several operational research projects to evaluate community TB interventions, such as Urban DOTs and DSD for TB. He previously led teams addressing challenges in HIV, maternal and child health, and reproductive health quality of care. Dr. Kazibwe served as a member of the national IMCI Technical working group and is currently part of the ACSM technical working group. He holds a bachelor's degree in medicine and surgery from Makerere University, postgraduate training in health care management, and is currently pursuing a Master's degree in Health Care Management at the Uganda Management Institute. He has also attended training in project management, epidemiology, and evidence-based public health. Dr. Kazibwe is passionate about health systems strengthening with a focus on patient-centered care.

Miftah Kemal Mohammed is the Central Care and Treatment Advisor for ICAP in Ethiopia. He has had other roles at ICAP in Ethiopia, including Regional Care and Treatment Adviser in Oromia region and Mentor Coordinator of Jimma District. Prior to his work at ICAP, Dr. Kemal was a general practitioner, ART physician, hospital-based ART mentor, and served as Medical Director for three years in Limmu Genet General Hospital in Jimma district of Ethiopia. He holds a Doctor of General Medicine from University of Gondar in Ethiopia and an MPH from Jimma University in Ethiopia.

Stella Kentutsi is the Executive Director of the National Forum of People Living with HIV/AIDS Networks in Uganda, an umbrella organisation that coordinates 13 national and 116 district networks of people living with HIV. Stella is an expert in HIV/AIDS programming with over 15 years of experience in HIV work at different levels ranging from coordinating schools' HIV/AIDS activities to currently coordinating networks of people living with HIV across the country. She holds a Master of Arts Degree in Development Studies and a Bachelor of Arts in Education.

Lawrence Khonyongwa is the Executive Director of the Malawi Network of People living with HIV. He has worked to improve the lives of communities living with HIV/AIDS for more than 20 years with resilient and sustainable systems for health. Skilled in program design and management, coordination and networking, he is also a trainer of trainer in participatory methodologies with a good understanding of gender and development. He is currently managing the Global Fund project on Sustainable and Resilient systems for health with the main aim of achieving the UNAIDS 90:90:90 targets towards ending AIDS by 2030.

Gavin Khumalo is a Coordinator for the National Network of People Living with HIV and AIDS in Eswatini. He is the founding member of the people living with HIV network and also served as a board treasurer in the first board. Mr. Khumalo is the National Coordinator for the Centre for Socio- Economic Rights and Development in Eswatini and the Focal Person for the Recipients of Care. He is a human rights activist and has a diploma in Business Management.

Josen Kiggundu is the National Technical Advisor for DSD at the MOH AIDS Control Program in Uganda. Dr. Kiggundu is a public health professional with training and practical experience in managing health programs within the public sector and NGO setting, including district-led health services, maternal and child health programs, and comprehensive HIV/AIDS programs. Prior to his current role, Dr. Kiggundu worked with Baylor College of Medicine Children's Foundation in Uganda as an acting Program Manager, Care and Treatment Coordinator, and Regional Coordinator (2014 – 2017); a Program Officer with Protecting Families Against HIV/AIDS (2012 to 2014); and a District Health Officer and Medical Officer with Manafwa District Local Government (2007-2012). He holds a Master's degree in Public Health (Uganda Christian University), a post graduate diploma in Project Planning and Management (Uganda Management Institute) and a Bachelor of Medicine and Bachelor of Surgery (Makerere University).

Bactrin Killingo is an independent consultant. Dr. Killingo is a medical doctor by training and has been involved in community HIV treatment education and advocacy for the past 10 years. As a palliative care practitioner, he has worked in resource poor communities facing insurmountable challenges regarding access to essential HIV medicines and has mobilized communities to advocate for increased access to HIV-related services. In addition, Dr. Killingo has been instrumental in empowering communities with the knowledge and skills necessary to mobilize resources and take charge of their own health and the small projects they run.

Enock Kizito is the Adult Care and Treatment Coordinator for the Makerere University Walter Reed Project (MUWRP). In this role he provides technical support to four districts (Buvuma, Kayunga, Mukono, and Buikwe) in provision of Comprehensive Care, Treatment, and TB services as guided by the MOH and PEPFAR of Uganda. Mr. Kizito directly oversees the rollout of DSD in the four MUWRP- supported districts. He holds a Bachelor's degree in Public Health and Health Promotion from Uganda Martyr's University in Nkozi and a Diploma in Clinical Medicine and Community Health from Mbale School of Clinical Officers. Dr. Kizito is currently pursuing a Master's degree in Public Health and majoring in Population and Reproductive Health at Uganda Martyr's University in Nkozi.

Not pictured

Morton Kunga is a member of the TB team for the Zambia MOH.

Maureen Luba is the African Region Advocacy Advisor for the AIDS Vaccine Advocacy Coalition. In this role she supports the Coordination of the COMPASS Project, meant to build the capacity of community service coalitions around data-informed advocacy and activism in Zimbabwe, Malawi, and Tanzania. Maureen is also a board member of the International Partnership for Microbicides and a passionate champion for young women's health. She is a tireless advocate for HIV prevention programming in PEPFAR and the Global Fund funded projects.

Deus Lukoye is an HIV/TB Specialist for the Division of Global HIV and TB at CDC. He is a medical doctor with over 15 years of experience in TB control. He formerly led the implementation of the Urban DOTS model in Kampala, Uganda, supporting TB interventions in the city's five divisions for Management Sciences for Health. Before that he worked with Uganda's MOH as an Operations Officer for the East African Public Health Laboratory Networking Project. He also worked as a TB Medical Officer with the Kampala City Council (now Kampala Capital City Authority). Deus' technical areas of expertise include MDR-TB surveillance, TB control in urban settings, TB/HIV co-management, and epidemiological research. He holds a PhD in Epidemiology from the University of Amsterdam.

Priscilla Lumano-Mulenga is an Infectious Disease Specialist who is currently working as Technical Advisor to the HIV Unit at the Ministry of Health, Zambia. She has been involved with the National Anti-Retroviral (ARV) Program since its inception in 2002. In 2005 she joined the Centre for Infectious Disease Research in Zambia (CIDRZ), where she held various positions including that of Head – Quality Assurance/Quality Control (QAQI) before moving to the Elizabeth Glaser Paediatrics AIDS Foundation (EGPAF) as the Technical Director.

Patrick Lungu is a Program Manager in the Zambia MOH TB/Leprosy Unit. He is a medical doctor and his interest in TB stemmed from the challenges he faced in treating TB in his clinical practice. Dr. Lungu is pursuing a PhD, in which he is studying protective immunity against TB. The theme of his study originated from the observations he made in his MMED study where he observed that certain populations mount a robust immune response that prevents TB infection.

Llang Bridget M. Maama-Maime is the National TB and Leprosy Program Manager for the MOH in Lesotho. As National TB Program Manager, she oversees implementation of the End TB Strategy, other TB/HIV policies and guidelines, and the development of new ones. Dr. Maama supervises districts and chairs the TB/HIV Technical Advisory Committee, which brings together all the implementing partners supporting TB, MDR-TB, and TB/HIV. She is currently leading national efforts to adapt treatment of latent TB infection in TB and ART guidelines as well as to strengthen community TB care through implementation of innovative approaches, which holds potential to prove or disprove the benefits of the DSD model on how it affects TB screening among people living with HIV. Dr. Maama has more than ten years of experience as a medical doctor and public health practitioner. She has a Master's in International Public Health from Sydney University School of Public Health and a PGD in Quality of Health Care from Regional Centre for Quality of Health Care School of Public Health Makerere University Uganda.

Filomena Francisco Macandja is a Legal Jurist in the MOH in Mozambique, where she has served since 2011. She belongs to the Association of Women in Legal Careers.

Thierry Mukwa Malebe is the Technical Director for the Care and Treatment Project in Zambia under ICAP. The project supports the Government of the Republic of Zambia (GORZ) to reach the 90-90-90 UNAIDS targets for HIV epidemic control. In this role Dr. Malebe provides overall leadership to the technical team to ensure effective implementation and coordination of care and treatment project activities and monitors progress toward the achievement of project goals and objectives. Dr. Malebe is a medical doctor with more than 17 years of experience in clinical service delivery and public health, with the past 12 years focused on scale up of quality HIV/AIDS service in Zambia. In the past Dr. Malebe held leadership positions at IntraHealth international (Country Director) and FHI360 (Technical Management). His experience and knowledge in the clinical management of HIV/AIDS has contributed to the scale-up and operationalization of the GORZ's HIV strategy in Zambia. Dr. Malebe has a degree in Medicine and a Master's Degree in Public Health.

MJ Mapfurira is a TB/HIV Technical Officer for the National TB Control Program in the MOHCC in Zimbabwe.

Talent Maphosa recently joined CDC Zimbabwe as a Public Health Specialist (PHS) responsible for TB and Pediatric ART programming. Within CDC his PHS responsibilities include day-to-day program and administrative management and coordination and collaboration with other PEPFAR agencies to ensure that project implementation addresses program strategic objectives, internationally recognized public health standards, and best practices. As a PHS, Mr. Maphosa also represents CDC Zimbabwe on HIV care, support, and treatment issues at technical, policy, and strategic planning meetings, including meetings with collaborators and donor agencies. He has 14 years of experience in public health, including program design implementation, management, implementation research, protocol writing, grant proposal writing, manuscript/abstract writing and review, and health systems strengthening. Before joining CDC, Mr. Maphosa was a Technical Director for the Organization for Public Health Interventions and Development. He also briefly worked with the National TB Control Program as the National TB/HIV Coordinator. Mr. Maphosa has extensive experience working with the MOHCC and managed Mutare District for ten years.

Munyaradzi Paul Mapingure is a Strategic Information Coordinator at ICAP Zimbabwe where he coordinates and leads various operations research conducted by ICAP on behalf of the MOHCC. He has a strong background and postgraduate training in research, epidemiology, and biostatistics, and more than 10 years of experience providing technical guidance for research and project M&E of HIV/AIDS and other programs. As the Head of Research, Metrics, and Information Systems at Population Services International in Zimbabwe, Mr. Mapingure led and coordinated research and M&E reporting to donors and was responsible for delivering annual research plans to inform decisions on all health programs, including HIV/AIDS, HIV-self testing, ART, pre-exposure prophylaxis, VMMC, family planning, violence against women and girls, DREAMS, and condom sales and distribution. He worked with the Information Systems Department to develop and implement information systems, which collect, collate, and report data, including district health information software (DHIS2). Mr. Mapingure previously taught at the University of Zimbabwe College of Health Sciences' Department of Community Medicine and was a National Epidemiologist at UNICEF Zimbabwe. He and is a well published public health specialist with 36 manuscripts in peer reviewed journals.

Lawrence Mbae is currently the Technical Advisor for DSD at ICAP Kenya. He has 12 years of experience in health care systems management and has worked across the public (MOH), private, and non-profit sectors. Mr. Mbae has robust experience in HIV programming, quality improvement, and service integration. He previously worked for FHI (Goldstar), PSI, and consulted on quality improvement for Aga Khan University and JHPIEGO.

Rheiner Nnenna Mbaezue works for the City of Cape Town in South Africa where she is actively involved in ART club interventions as well as research based on the ART club differentiated model of care. Dr. Mbaezue is a medical doctor with vast experience in HIV/TB, STI, and clinical management of patients. She was previously worked with Khethimpilo, an NGO that had significant involvement in the scale-up of ART sites across South Africa. She holds a Master's degree in Public Health and a Postgraduate diploma in Family Medicine.

Not pictured

Estella Mbewe is a DSD Task Force Representative and works for NZP+ in Zambia.

Trudy T Mhlanga is an aspiring public health physician with five years of experience in the field of public health management. She works for the Organization for Public Health Interventions and Development (OPHID), a technical partner to the MOHCC in Zimbabwe. Dr. Mhlanga is currently the Provincial Program Manager and was previously a Technical Advisor. As the Program Manager, she leads and manages all technical aspects of the program, operational support, and coordination/networking within the province in line with organizational and national guidelines. Dr. Mhlanga is a previous trainer in Programmatic Management of Drug Resistant Tuberculosis and Tuberculosis Case Management. She has contributed to the expansion of differential care models within health facilities and working with community partners to ensure that communities models are rolled out. She is a member of the Zimbabwe College of Public Health Physicians.

Luckyboy Edison Mkhondwane is the Prevention and Treatment Literacy Training Coordinator at Treatment Action Campaign (TAC) and represents South Africa on the Clinton Health Access Initiative Optimal ARV Project Community Advisory Board. Lucky has openly lived with HIV since his diagnosis in 2002, which prompted him to become an Access to Treatment Advocate. He has a great passion for HIV and TB treatment literacy and community education. Mr. Mkhondwane has worked as a Prevention and Treatment Literacy Trainer, Capacity Building Officer, and Policy, Communications and Research Coordinator at TAC in Gauteng amongst other positions since joining in 2002. He has written articles on living with HIV and issues around treatment literacy for community newspapers and Equal Treatment, the TAC magazine on living with HIV. Mr. Mkhondwane used to co-present "Siyayinqoba Beat It," a South Africa television talk show on HIV, health, and human rights. He was formerly ambassador of a South African positive living campaign "Positive Heroes.

Brittany K. Moore is a Senior Epidemiologist at CDC-Atlanta with the Division of Global HIV and TB's Global TB Branch where she oversees research focused on pediatric TB and TB service delivery for vulnerable populations. She also provides technical support for TB/HIV efforts through PEPFAR to CDC country offices in Zambia and Cambodia. She has provided TB technical support and led operational research in 10 countries throughout Southeast Asia and Sub-Saharan Africa. She has served as a primary CDC representative to the US Government (USG) TB working group and played a key role in the development of the USG Global TB Strategy 2010-2015 and 2015-2019 as well as the White House National Action Plan for Combating Multidrug-Resistant TB (2015). Brittany is a PhD candidate in Epidemiology at the University of Tampere, Finland. She received her MPH from Emory University's Rollins School of Public Health and holds dual degrees in political science and journalism from the University of Georgia.

Mabel M Moti joined USAID/South Africa in 2017 as a Project Development Specialist for Strategic Information (SI) with the Health Team. Ms. Moti is currently the point of contact for TB/HIV on the SI Team. Prior to joining USAID/ South Africa, she worked as a Data Quality Specialist for Khulisa Management Services and John Snow Incorporation, an SI partnership. Ms. Moti has worked on various USAID health projects in different capacities. She holds a BSc Honours in Information Systems from the Midlands State University in Zimbabwe; a Certificate in Advanced Project Management from UNISA School of Business Leadership; and is completing her Master's degree in Public Health at the University of Pretoria in 2019.

Auxilia Muchedzi is the Deputy Chief of Party/Technical Director for the USAID-funded Zimbabwe HIV Care and Treatment (ZHCT) Project for FHI360. She is a public health specialist with over 15 years of progressive public health experience in HIV programs in Zimbabwe. Ms. Muchedzi has knowledge of the health system and the HIV epidemic in Zimbabwe obtained from working for both national and NGO HIV programs. She holds a Master's in Public Health and a Master's in Business Administration.

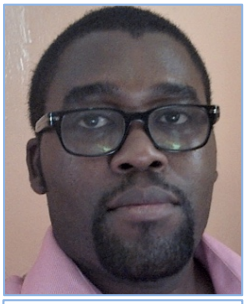
Not pictured

Lloyd Mulenga is the National Care and Treatment Lead for the HIV Team for the MOH in Zambia.

Stephen Muleshe is a public health specialist from Kenya with more than 10 years of experience. He is the Head of TB Care and Treatment for the Kenya National TB, Leprosy, and Lung Disease Program. Dr. Muleshe previously worked for the MOH in Kenya in various technical and managerial positions until 2011 when he joined a USAID project in Kenya (APHIAPLUS) as the service Delivery Advisor for HIV/AIDS/TB/Malaria & Maternal and Child Health. Dr. Muleshe has immense experience in health policy and planning; project management; international health relations; research & development; health systems strengthening; and disease prevention & control. He holds a Master's Degree in Public Health, a Bachelor's Degree in Medicine (MBCHB) from the University of Nairobi, and a Postgraduate Diploma in the Management & Control of HIV/AIDS & other Sexually Transmitted Diseases from the same University.

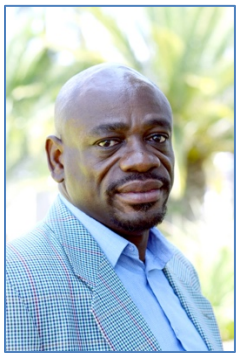
Musonda Musonda is a Community ART Advisor at USAID Zambia. She was formerly Head of Community Programs at CIDRZ; an HIV Prevention Program Manager at CIDRZ; a Lecturer at Cavendish University; and Communications Consultant at Save the Children-Denmark. She holds a Bachelor's Degree in Social Sciences in Development Studies from the University of KwaZulu-Natal and a Master of Arts from London Metropolitan University.

Godfrey Musuka is ICAP's Country Director in Zimbabwe. He is an HIV/AIDS M&E and public health expert with 20 years of experience in implementing health interventions in Zimbabwe, Botswana, and Nigeria. He has worked for UNICEF and ACHAP (the partnership between the Government of Botswana, the Gates Foundation, Merck & the Merck Company Foundation) in the areas of HIV/AIDS, TB, and immunization. Dr. Musaka's key areas of interest include strategic information and program management. He is a Doctor of Veterinary Medicine and holds MPhil and MSc degrees.



Mukuka Mwamba is Senior Quality Improvement Advisor at ICAP in Zambia. He has worked in various capacities for organizations that include FHI360, MSH, and REPSSI. He holds a Master of Science degree in M&E and is currently studying for a degree in public health, in which he hopes to major in biostatistics.

Linah Kampilimba Mwango is Deputy Chief of Party for the Community HIV Prevention Grants at the University of Maryland at Baltimore. As a registered HIV nurse practitioner and nurse tutor, she has over 10 years of experience working in community HIV/AIDS treatment and prevention programs targeting priority and key populations. Prior to her current role, Ms. Mwango served as the community advisor focusing on implementing community HIV testing, community clinical care, and prevention programs. She leads a team of clinical, social workers, and community health workers to develop and implement a DSD model called the community HIV Epidemic Control Model with the primary focus of managing HIV-positive clients who were stable on care in the community and averting new HIV infections by providing home HIV testing services. She has a diploma in nursing, an advanced diploma in HIV, and a BSc in Nursing and majoring in community health nursing. She is currently pursuing her Master's degree with the University of South Wales in UK.



Felix Mwanza is the National Director of the Treatment Advocacy and Literacy Campaign, a leading social mobilization civil society organization in Zambia that promotes equitable access to HIV medication for people living with HIV. Mr. Mwanza is an international HIV/AIDS activist and has vast experience in mobilizing resources for program implementation at national and international levels. He holds a Diploma in Computer Science and a BA in Social Work. Mr. Mwanza previously worked as an Information Technology Specialist.

Tonderai Mwareka is currently a Program Officer for the Zimbabwe National Network of People Living with HIV (ZNNP+) and responsible for coordinating and representing the interests of people living with HIV throughout Zimbabwe. He is a social scientist who has supported HIV/AIDS programming since 2003. Mr. Mwareka has experience in program design, implementation, management, M&E, research, and resource mobilization. His DSD work includes working with people living with HIV and ZNNP+ Provincial Coordinators to roll out models of care such as family-centered care, diary spacing, fast-track, and facility adherence clubs. In 2018, he started leading research on community monitoring/surveillance on enablers and barriers to differentiation of service. Mr. Mwareka has a BSc. in Psychology from the University of Zimbabwe and is currently pursuing a Master's degree in Child Rights and Childhood Studies at Africa University.

Keith Mweebo is a public health specialist in PMTCT/ART at CDC Zambia. He works with implementing partners to support adult HIV treatment, including DSD. Mr. Mweebo is a lead activity manager for two CDC-funded treatment partners and is a member of the DSD committee. He spent six weeks as an experiential attachment at TASO Uganda to implement DSD (community drug distribution).

Ernest Mwila is a Zambian trained medical doctor with nine years of service in rural Zambia in the public health sector; three years working with the PEPFAR-supported HIV/AIDS project at Churches Health Association of Zambia (CHAZ); and two years with USAID DISCOVER – Health on an HIV/AIDS USAID-supported project. Dr. Mwila's years of service in the public health service have resulted in his gaining an excellent understanding of public health services in Zambia. Dr. Mwila is currently working with USAID DISCOVER – Health working as an ART/TB Director. He holds MBChB, MSC, MPH, and BSC (HB) degrees.

Pren Naidoo has supported the TB delivery work of the Bill and Melinda Gates Foundation in South Africa since 2016. She previously led Health Systems and Operational Research at the Desmond Tutu TB Centre at Stellenbosch University and led a PEPFAR TB/HIV Integration Project supporting health system strengthening initiatives in public health facilities in Cape Town. Dr. Naidoo has extensive public sector experience; she managed HIV/AIDS/TB for the City Health Directorate in Cape Town and managed the "ProTEST" Pilot Project, a TB/HIV integration project undertaken in Cape Town. She is a trustee and co-founder of "Dignified Spaces Trust," a public benefit organization seeking to enhance the working environment in health and educational facilities. Dr. Naidoo was co-chair of the Implementation Working Group of the National TB Strategic Think Tank. She received her PhD (2017) from Stellenbosch University; MBA (1998); and MBChB (1986) from the University of Cape Town.

Proscovia M. Namuwenge is the National Coordinator for TB/HIV Programing for the MOH-Uganda. In this role, she coordinates National TB/HIV programming for the MOH. She is a member of the following national technical working groups; National ART Sub-committee, National TB/HIV Technical Working Group, the National DSD Technical Working Group, and the National MDRTB Panel. Following her studies, in 2009 she completed a public health fellowship (HIV/AIDS Program Management) at Makerere University School of Public Health. She has since worked in leadership positions on various projects focusing on HIV/AIDS programming. Dr. Namuwenge completed her MBCHB at Makerere University Medical School, Kampala, Uganda, in 2000 and Master of Science (population and reproductive health) at the same university in 2007.

Carol Nawina Kachenga is the Executive Director of CITAM Plus, a community-based organization working to advocate for national access to information, treatment, care, and support for people living with and affected by TB and HIV/AIDS and conducting advocacy around nutrition. Ms. Nawina is renowned international TB and HIV activist with more than 12 years of experience at the international, regional, national, and community levels. In the area of TB civil society engagement, Ms. Nawina is one of the founding members of the Global Coalition of TB Activists and Union Community Advisory Panel, immediate past president of Africa Coalition on TB, Chairperson of Zambia TB Civil Society, and Focal Point Person/Secretariat for the Zambia Parliamentary Caucus on TB. Her work related to HIV includes serving as Chairperson of the Pan African Positive Women's Coalition and National Coordinator of the Coalition of Zambian Women (and Youths) Living with HIV). Ms. Kachenga also works directly in communities, building the capacity of people affected by TB, HIV, and malaria, as well as working directly with them at grassroots level to enable them to advocate on their own behalf for policy change at community, national, regional, and international levels.

Ronald Thulani Ncube is the Deputy Country Director for the International Union Against Tuberculosis and Lung Disease Zimbabwe office. In this role, he coordinates execution of a comprehensive technical assistance package for TB-HIV service delivery in the country, with funding support mainly from USAID through the Challenge TB Grant and the Global Fund to Fight AIDS TB and Malaria. Dr. Ncube is a public health practitioner with over 15 years of public health experience in low and middle-income countries. Dr. Ncube has been instrumental in crafting national TB control strategies for Zimbabwe as well as Botswana, where he served as Head of the National TB Program.

Joseph Nikisi is the Chief of Party for the USAID Eradicate TB Project, led by PATH in Zambia. He is a seasoned public health physician with over 20 years of progressive responsibility and experience in clinical care, health services, and program management in the areas of HIV/AIDS, STIs, TB, and malaria; reproductive health; maternal and child health, and health systems strengthening. Dr. Nikisi has successfully provided technical leadership and programmatic guidance in the implementation of a wide range of complex HIV and TB programs. He previously served as Country Director for IntraHealth International in Zambia and Deputy Country Director for Jhpiego Zambia. Prior to joining Jhpiego, he worked with the Zambia MOH in the Directorate of Clinical Care and Diagnostic Services. In addition, Dr. Nikisi has served on several national technical working groups and has contributed to the development of several national guidelines and manuals, in collaboration with the Zambia MOH. Dr. Nikisi holds an MD from the University of Zambia and an MPH from the University of Pretoria in South Africa.

David Ojok has worked with the Centre for Infectious Disease Research in Zambia (CIDRZ) Central Laboratory for the last four years as Head of Laboratory Quality Assurance/Quality Control and has been central in establishing, coordinating, and monitoring lab quality management systems programs at the Central Laboratory. He has 15 years of experience in the operations and quality management systems of clinical and research laboratories. Previously he worked as Lab Shift Leader at Makerere University and Johns Hopkins University Core Lab at Makerere University. Mr. Ojok has experience working with the Division of AIDS, National Institutes of Health (DAIDS/NIH) Clinical trial Networks, including HIV Vaccine Trials Network (HVTN), International Maternal Paediatric Adolescent AIDS Clinical Trials Network (IMPAACT), PROMISE, Microbicides Trial Network (MTN), and AIDS Clinical Trial Group (ACTG). He is currently pursuing his PhD studies in International Public Health.

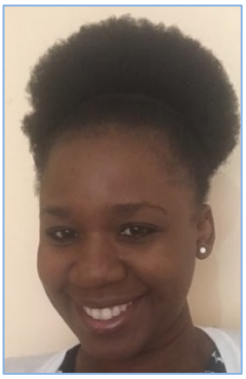
Nelson Juma Otwoma is the Executive Director for the National Empowerment Network of People Living with HIV/AIDS in Kenya where his main role is to provide strategic, accountable, and committed leadership to ensure the visibility and voice of people living with HIV and affected communities in the response to HIV. He is a long time AIDS and TB advocate with keen interest in TB and HIV prevention and treatment. Mr. Otwoma advocates for better, safer, and cheaper HIV and TB diagnostics and medicines. He has over 15 years of experience working with networks of people living with HIV and the affected communities in Kenya. He belongs to a number of national, regional, and global bodies and structures that work to reduce the spread of HIV and TB. He is member of the Kenya country coordinating mechanism for the Global Fund as well as member of the Kenya HIV Tribunal.

Blanche Pitt is the Population-based HIV Impact Assessment (PHIA) Regional Project Director for ICAP. In her role she provides strategic- level guidance and oversight in collaboration with PHIA NY to conduct HIV Impact Assessments in PHIA countries and ensure timely and high-quality implementation of the survey. Dr. Pitt's work with PHIA countries includes reviewing data collection tools, developing and adapting standard operating procedures and research related training materials, overseeing capacity building of MOH and country level partners in preparation for survey implementation and monitoring survey teams to ensure efficiency and quality data. Ms. Pitt is a public health specialist and one of the first South Africans to graduate with a MSc in Health Promotion and Disease Prevention from Leeds Metropolitan University. She has more than 20 years senior management experience in managing health services in the formal sector and over 15 years senior management in the non-government health sector.

Peter Preko is the Project Director for ICAP's CQUIN Learning Network. Prior to his current role, Dr. Preko worked with I-TECH – University of Washington, seconded to the Malawi MOH as the Senior HIV Care and Treatment Advisor; with CDC Eswatini from 2011 to 2016 as the PEPFAR Eswatini Care and Treatment Lead; as a Senior Care and Treatment Specialist at ICAP in Eswatini; and as a Senior Program Manager (HIV/AIDS) in Ghana at AED-SHARP and Engender Health, respectively. Dr. Preko began his career in HIV work as the CEO and co-founder of AIDS ALLY, a local NGO that provided care and treatment in Ghana before national HIV treatment programs started in Africa. He obtained a BSc in Human Biology, a medical degrees from the Kwame Nkrumah University of Science and Technology, and an MPH from the London School of Hygiene and Tropical Medicine.

Miriam Rabkin is the principle investigator for the CQUIN project at ICAP. She has worked in the field of HIV/AIDS for 20 years, focusing on strengthening health systems to improve the delivery of prevention, care, and treatment services for underserved populations. Dr. Rabkin is an Associate Professor in Epidemiology and Medicine at the Mailman School of Public Health, and Director for Health Systems Strategies at ICAP. At ICAP, she focuses on strengthening health systems, improving access to HIV services in resource-limited settings, and the design, delivery, and evaluation of chronic care programs for HIV and non-communicable diseases. Dr. Rabkin's current research focuses on implementation science, and on ways to leverage the successes and lessons of HIV scale-up to strengthen broader health systems, to enhance the quality of programs for HIV, maternal/child health, non-communicable diseases, and infection prevention and control in sub-Saharan Africa, and to improve refugee health services in Turkey, Jordan, and Lebanon.

Sydney Rosen is a research professor in the Department of Global Health at the Boston University School of Public Health and the Co-Division Head of the Health Economics and Epidemiology Research Office (HE2RO) of the University of the Witwatersrand in Johannesburg, South Africa. Ms. Rosen's research addresses the economic consequences of the HIV/AIDS epidemic, and in particular the outcomes, costs, cost-effectiveness, and benefits of HIV treatment interventions and models of service delivery. She is the PI of multiple USAID-, NIH-, and foundation-supported studies and evaluations in South Africa, with other research underway in Zambia, Malawi, and Kenya. She is also the author of policy and review papers on the business response to AIDS, the rationing of ART, the retention of patients in HIV/AIDS care and treatment programs, and same-day ART initiation. Ms. Rosen's technical training is in policy analysis and applied economics. She holds a BA (magna cum laude) from Harvard University and an MPA from the Kennedy School of Government at Harvard.



Ebedy Sadoki is Chief of Party for the USAID EQUIP Project in Zambia.

Muhammad Saleem is a Senior Regional Program Advisor for the UNAIDS Regional Support Team for Eastern and Southern Africa, based in Johannesburg. In this role he serves as the focal person for treatment, e-MTCT, technical support mechanism coordination, and he is a member of the Fast Track Team. He has 20 years of experience in the public health sector and joined UNAIDS in 2005. Before joining UNAIDS, Dr. Saleem worked with WHO, UNHCR, and the MOH in Pakistan on communicable disease prevention, treatment, surveillance, primary health care, and integrated management of childhood illnesses and immunization. Dr. Saleem is a medical doctor and has a Master's in Public Health from University of Wollongong in Australia.

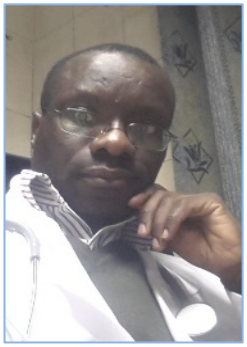
Ndoungou Salla Ba is a Medical Officer for the HIV/Hepatitis/TB Cluster for WHO AFRO REGION and a focal person for West and Central Africa HIV Catchup Plans based at the WHO intercountry support team office in Burkina Faso. Previously, she spent six years as the Executive Secretary of the National HIV/AIDS Council in Mauritania implementing HIV and TB programs. Dr. Salla Ba is a medical doctor, senior epidemiologist, and scientist in public health and digestive diseases. She graduated from the school of Public Health of Tulane University (USA) and the University of Felix Houphouet-Boigny, Abidjan (Côte d'Ivoire).

Angie Salomon is a research assistant at the McGill International TB Centre where she is involved in examining the quality of TB care within the private sector in South Africa, as well as a review of interventions to improve linkage gaps along the TB-HIV care cascades in low-and middle-income countries. She previously worked with Grand Challenges Canada (Toronto, Canada), and Population Council (Abuja, Nigeria). Ms. Salomon holds an MPH in Epidemiology from the Dalla Lana School of Public Health at the University of Toronto, where she explored quantitative methods in infectious diseases and maternal health, both at home and abroad.

Andrea Schaaf is a Strategic Information Specialist at ICAP in New York, where she supports CQUIN's portfolio of differentiated M&E activities. In addition to coordinating a facility level survey of DSD scale-up in 11 countries, Andrea works with the CQUIN M&E team to provide technical assistance on M&E of DSD to ministries of health, and to backstop provincial DSD review meetings. Andrea joined the CQUIN project following her graduation from the MPH program at the Mailman School of Public Health at Columbia, where she worked with ICAP.

Minesh Shah is an internal medicine physician and a medical officer in the CDC Division of Global HIV and Tuberculosis (DGHT). Dr. Shah is a member of the HIV Care and Treatment Branch, and co-leads the Priority Populations Treatment Unit and Granular Site Management Unit. He is also an implementation subject matter expert for adult HIV treatment for PEPFAR programs in Zambia and Ethiopia. Prior to joining DGHT, Dr. Shah was an officer in the Epidemic Intelligence Surveillance at CDC in the Division of Viral Diseases, where he worked on the prevention of viral gastroenteritis. Prior to joining CDC, he worked as an academic general internal medicine physician at Emory University and the University of Illinois-Chicago. Dr. Shah completed his medical and public health degrees at the University of Illinois-Chicago and his residency in internal medicine and social medicine at the Albert Einstein College of Medicine / Montefiore Medical Center in New York.

Adrienne Shapiro is an infectious diseases physician and epidemiologist at the University of Washington. She is based at the International Clinical Research Center in the Department of Global Health. Dr. Shapiro's research focuses on TB/HIV co-infection in resource-limited settings. She has worked in South Africa for more than 10 years on strategies to improve case-finding, diagnosis, prevention, and treatment delivery strategies for the twin TB/HIV epidemics. Dr. Shapiro's current projects include evaluation of novel diagnostic tools for TB, HIV self-testing approaches to engage men in care, and integration of TB preventive therapy into HIV care models. She has also worked on evaluating and strengthening MDR-TB treatment in Cambodia and on TB elimination in low-incidence settings. Dr. Shapiro holds MD and PhD degrees.



Charles Shumba is a Manager for Technical Programs, under the EPHO/CDC Cooperative Agreement (CoAg) [2017/2022] at the Eastern Provincial Health Office for the Zambia MOH. Over the past 18 years, Dr. Shumba has spent most of his time working in HIV treatment programs on both clinical work and public health technical programs. When ART became available in 2002/2003, Dr. Shumba was one of the first doctors in Zambia to start prescribing ART for people living with HIV/AIDS (at Ndola Central Hospital). He has for many years also worked (at separate times) for USAID- as well as CDC-funded projects including FHI's Zambia Prevention, Care, and Treatment (ZPCT) Partnership (Snr. Clinical Care Officer); Elizabeth Glazer Paediatric AIDS Foundation (Technical Advisor), AIDS Health Care Foundation (AHF-Zambia) (Snr. Medical Officer), and the Catholic Relief Services (CRS) (Regional/Provincial Project Coordinator). Dr. Shumba studied medicine at the University of Zambia School of Medicine and is registered with the Health Professions Council of Zambia.

Siphiwe Mabaka Shongwe is the CQUIN Clinical Advisor based in Eswatini. She has a Master's degree in international public health from the University of New South Wales, Australia and a nursing degree and midwifery certificate from the University of Swaziland. She has worked in different non-governmental organizations and also for the Ministry of Health, providing clinical services including HIV prevention and treatment and comprehensive sexuality education, as well as working in public health research. She worked for the MOH at the Mbabane public health unit as a nurse and midwife, since 2009, then joined the World Bank as a project officer for the Maternal, Neonatal and Child Health project in 2012. She joined World Vision Eswatini as a TB/HIV project coordinator in 2015 before joining ICAP Eswatini as a research advisor.

Izukanji Sikazwe is the Chief Executive Officer at the Centre for Infectious Disease Research in Zambia (CIDRZ. Dr. Sikazwe earned her medical degree from the University of Zambia, School of Medicine in 2002. She completed Internal Medicine specialty training at the Good Samaritan Hospital in Baltimore, Maryland and Infectious Disease specialty training at the University of Maryland. She has a Master's degree in Public Health from Michigan State University.

Dr. Sikazwe has worked for several years providing direct clinical patient care to people living with HIV and other infectious diseases in both urban and rural communities in Zambia. She continues to practice clinical medicine at the Adult Infectious Disease Centre of Excellent at University Teaching Hospital. She served as the technical advisor to the Zambian Ministry of Health National ART program starting in 2010 for two years. In addition to her executive management role as the CEO of the Center for Infectious Disease Research in Zambia (CIDRZ), Dr. Sikazwe is the Principal Investigator of a PEPFAR/CDC-funded HIV Care & Treatment cooperative agreement focused on transitioning HIV programs to the Ministry of Health. Dr. Sikazwe has special research interests in HIV and seizure disorders as well as implementation research focused on improving access and outcomes of patients in ART care and treatment programs.

Maureen Simwenda is the Director of Clinical Services on the USAID-funded Supporting An AIDS Free Era (SAFE) project, implemented by John Snow Inc in Zambia. She leads the clinical team on the project and is very passionate and excited about implementation of DSD for the HIV program in Zambia. Prior to joining JSI, Dr. Simwenda worked for the MOH as a Medical Officer and pediatrician in the clinical area, was involved in the care and treatment of HIV clients, and clinical research. She also worked for the Elizabeth Glaser Pediatric AIDS Foundation where she served in different positions including Research Advisor, Clinical Advisor, and Country Program Manager. Dr. Simwenda is currently a member of the DSD task force, a subcommittee of the National HIV Technical Working Group. She graduated with a Bachelor's Degree in Medicine and General Surgery from the University of Zambia in 2006. She also specialized and graduated with a Master's Degree in Pediatrics and Child Health from the same university.

Dr James Simpungwe is a Public Health Specialist – Quality Improvement in the Prevention, Care, and Treatment Branch with CDC in Zambia. In this position, Dr. Simpungwe is responsible for providing oversight for quality assurance and improvement of HIV prevention, care, and treatment programs and to monitor the effectiveness of CDC programs and ensure implementation of quality improvement initiatives. Prior to this, he served in the Zambian MOH for nine years, both in clinical and public health capacities. Dr. Simpungwe worked as a Medical Officer at two hospitals (provincial and tertiary) and as District Director of Health overseeing clinical and public health services, as well as health systems in the District. He also served as Public Health Specialist in Lusaka District.

Not pictured

Satvinder (Vindi) Singh is a medical officer and TB/HIV and Quality of Care Lead within the HIV Department at the WHO in Geneva, Switzerland. She is an HIV clinician, family physician, and public health specialist with over twenty-five years of experience providing clinical services and public health management in the areas of HIV, tuberculosis, primary health care, women's health, and pediatric/adolescent health, in a range of urban and rural settings in Africa, USA, and Canada. Prior to joining WHO, she was with CDC, Division of Global HIV and TB as the Senior Medical Officer within the HIV Care and Treatment Team in South Africa, as Deputy Director for Clinical Programs in Rwanda and Associate Director of Clinical Programs in Nigeria. She was previously an HIV consultant with the University of California San Francisco's National Clinicians Consultation Center and an HIV and primary clinician in the San Francisco Bay Area, primarily working with underserved and marginalized populations. She has also worked as an HIV clinician in Lesotho, as an HIV mentor in Liberia, and a clinician training consultant for UNICEF in East Africa. Dr Singh has degrees from Harvard College, Cambridge University, McGill University, and the London School of Hygiene and Tropical Medicine.

Alain Somian is the Executive Director of the Ivorian Network of Organizations of People Living with HIV and Coordinator of the Project RIP + Alliance CI NMF2 Global Fund. He is a lawyer by training and has been involved in the fight against HIV/AIDS since 2006. Mr. Somian is one of the first community actors that formed by Alliance-CI and the RIP+ to contribute to the national HIV response in Côte d'Ivoire. To this end, he was selected by the organizing committee for Scientific Days (CCM-CI) to present "Stigma and Discrimination: the Role of PHAs" in June 2010. Mr. Somian has been a representative of the Queer African Youth Network in Côte d'ivoire to map social justice advocacy actors in West Africa and Cameroon, and a member of the National Committee on Research Ethics in Côte d'ivoire.

Pria Subrayen is a Technical Advisor for TB/HIV at BroadReach (BR), a global healthcare solutions company, with whom she has served for the past 12 years. Having qualified as a medical doctor in 2002, she has extensive experience working in the public and private sectors both in South Africa and abroad. Dr. Subraven completed her MBA at the Graduate School of Business at the University of Cape Town in 2006, wherein she developed a keen interest in systems thinking, process re-engineering, and continuous quality improvement which has been her focus for the past ten years in TB/HIV. Her work in TB at BR includes technical and clinical support to the Department of Health at national, provincial, district, and facility levels with a focus on data analytics for evidence-based improvement and design of interventions. Dr. Subraven's passion and motivation is raising awareness, educating, and empowering healthcare workers for a more patient-centered approach, improved patient experience and service delivery in TB and healthcare.

Not pictured

Lana Syed is a Project Manager in the TB/HIV & Community Engagement Unit at the World Health Organization in Geneva.

Maureen Syowai is a HIV Care and Treatment Advisor at ICAP Kenya, where she supports the OPTIMIZE project, a consortium using innovation and partnership to accelerate the introduction of better, less expensive ART regimens for HIV patients in low- and middle-income countries. Dr. Syowai is a physician and public health specialist. In her previous role at ICAP, she worked to support the Kenyan MOH National AIDS Control Program to design, implement, and monitor DSD for HIV in Kenya. Within CQUIN, Dr. Syowai leads south-to-south learning and knowledge exchange focused on the implementation of differentiated care programs.

Cuc Tran is an epidemiologist with the Global Tuberculosis Branch of CDC. She is the point of contact for TB activities in Eswatini, Thailand, Laos, and the Caribbean Region. Her work also focuses on TB preventative therapy among persons living with HIV and TB infection among migrants. She has over ten years of public health training and experience in tuberculosis, influenza, rabies, and zika. Over the course of her career, she has obtained a total of $2.2 million of funding and worked in seven countries. She enjoys photography, jogging, and travelling.

Ronald Tusiime is medical doctor and public health expert with over 15 years' experience in TB/HIV services leadership and programming. He is currently the Coordinator of TB/HIV services in the CDC-funded ACE-FORT project in Western Uganda where he provides technical and strategic oversight for TB/HIV services. Dr. Tusiime successfully spearheaded the roll out of HIV Care and Treatment DSD Model in East Central Uganda.

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Lisulo Walubita is Deputy Director at the Western Provincial Health Office in Zambia.

Nancy Zyongwe works for ICAP as a Senior Advisor for Quality Improvement seconded to MOH. She is a public health professional with 17 years of health system strengthening, policy, quality Improvement, and clinical service delivery experience. Dr. Zyongwe has worked in various public and non-governmental organizations, where she has gained experience in management, capacity strengthening, collaborating with various partners and donors, and establishing and monitoring quality assurance and quality improvement in service delivery. She has served in different capacities in health management, project management, research, and has developed practical managerial competencies. Dr. Zyongwe is a passionate researcher and has presented several papers at both local and international conferences. She is a proven leader in arena of health system strengthening and quality improvement in Zambia.

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