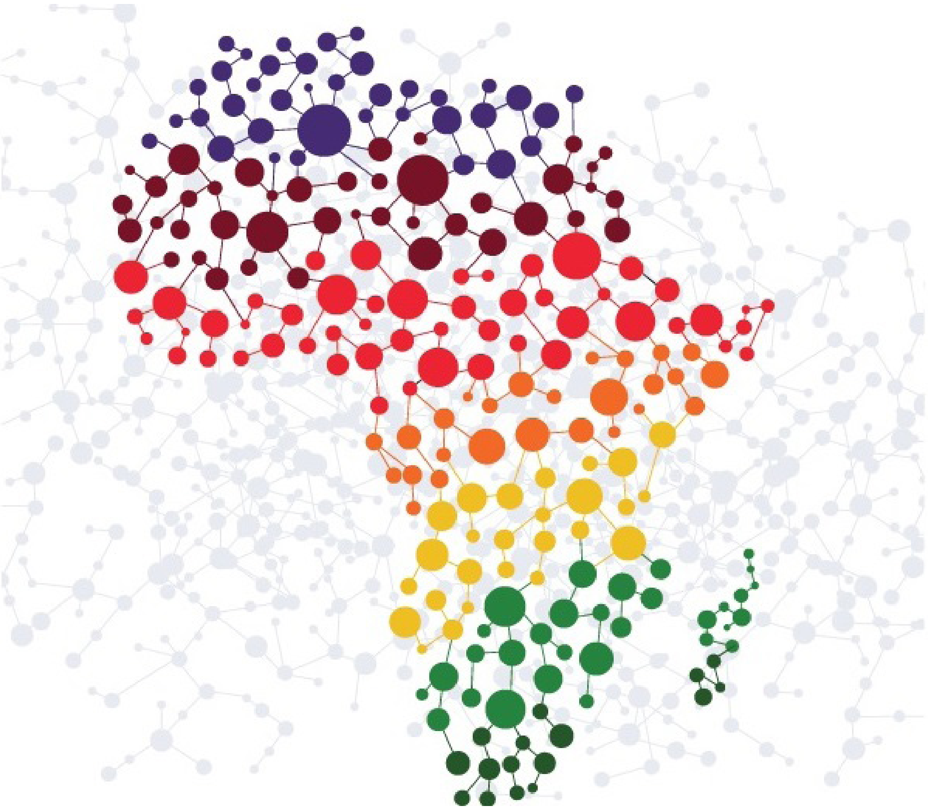
The CQUIN Learning Network

Differentiated Care for Adults at High Risk of HIV Disease Progression

Meeting Summary



July 17-19
Harare, Zimbabwe

ICAP
GLOBAL. HEALTH. ACTION.
Columbia University
Mailman School of Public Health

HIV LEARNING NETWORK
The CQUIN Project for Differentiated Care

Executive Summary

Background

ICAP at Columbia University launched the HIV Coverage, Quality and Impact Network (CQUIN) in March 2017 to support the expansion of differentiated service delivery (DSD) for HIV. At the launch, network members identified priority areas for DSD communities of practice, in which countries would work together to exchange information, identify shared barriers to DSD coverage and quality, and co-create solutions and tools. DSD for patients at high risk of disease progression (P@HR) was among the topics prioritized by CQUIN members, leading to the decision to convene a workshop on DSD of P@HR.

Meeting Dates and Objectives

The P@HR community of practice workshop was held in Harare, Zimbabwe from July 17-19, 2017. The goal of the workshop was to initiate the P@HR Community of Practice and south-to-south exchange by:

- Defining P@HR and identifying challenges and opportunities to optimize treatment outcomes
- Facilitating the exchange of knowledge and experience related to differentiated service delivery for P@HR
- Discussing barriers and gaps related to providing differentiated services to P@HR
- Identifying opportunities for joint learning and co-creation of resources and tools

Meeting Participants

The three-day workshop was attended by 72 participants, 55 from CQUIN member countries (Ethiopia, Kenya, Malawi, Mozambique, South Africa, Swaziland, Uganda, Zambia, and Zimbabwe). Country teams were led by ministries of health, and included representatives from other key stakeholders including the U.S. Centers for Disease Control and Prevention (CDC), the U.S. Agency for International Development (USAID), the President's Emergency Plan for AIDS Relief (PEPFAR), civil society, and implementing partners. Other participants included representatives from the Bill & Melinda Gates Foundation, the African Society for Laboratory Medicine (ASLM), the International Treatment Preparedness Coalition (ITPC), and the University of Zimbabwe.

Key Issues Presented/Discussed

Dr. Wafaa El-Sadr, ICAP's Global Director, set the stage for the workshop by highlighting that DSD is not only for stable patients. Instead, many groups can benefit from differentiating key elements of service delivery, such as service intensity, service frequency, service location and the type of service provider. Expanding the range of DSD models may be a key element towards enhancing the coverage and quality of HIV services, and achieving epidemic control. Dr. El-Sadr noted that results from the pre-workshop survey indicated that few if any CQUIN network countries had implemented DSD models for P@HR, despite the critical importance of improving care for this population.

In his framing remarks, Dr. David Allen from the Bill & Melinda Gates Foundation stressed the importance of improving access and adherence to antiretroviral treatment (ART) to reaching the global HIV-related targets. Dr. Bactrin Killingo and Ms. Rumbidzai Matewe, representing civil society, urged participants to think beyond the UNAIDS 90-90-90 targets, noting that these translate to only 73 percent of all people living with HIV achieving sustained viral suppression. They noted that the 27 percent "left behind" in this formulation may include individuals presenting with advanced disease or at high risk of disease progression – the focus of the workshop.

Dr. Miriam Rabkin, ICAP's Director for Health Strategies, made the case for focusing on P@HR, noting that although the proportion of people starting ART with advanced HIV is dropping, 30-40 percent of patients in low-resource settings still initiate ART at CD4 < 200 cells/mm3. These individuals are particularly vulnerable to poor outcomes, with studies showing that 8-26 percent die within 3-6 months.

Other presentations focused on new data regarding the package of care for P@HR, including updated WHO guidance. Dr. James Hakim presented results from the recently published REALITY trial, noting the impact of enhanced prophylaxis for opportunistic infections on patients with advanced disease.

The workshop used a variety of methods to share information, best practices, and challenges, as well as to discuss solutions to the common challenges identified. Plenary presentations, panel discussions and breakout sessions ensured that all participants were engaged, and that a wide range of voices could be heard. All the nine ministries of health represented at the workshop described the state of DSD for P@HR in their respective countries, discussing the policy environment, national guidelines, scale of implementation and existing best practices. Implementing partners also shared innovations and experience on DSD for P@HR.

Notable innovations shared by the ministries and partners include: the Intermediary Outpatient Referral Center model for P@HR (CRAM) from Mozambique; the Severely Immunosuppressed Package of Care (SIPOC) approach from Kenya; Advanced Clinical Care (ACC) from South Africa; the use of Point of Care viral load monitoring for P@HR in Malawi; the Advanced, Late, and Unstable Patients (ALUP) model from Malawi; and early morning ART refills from Swaziland for patients at risk of defaulting due to work requirements.

All nine country teams used the CQUIN DSD dashboard to assess the scale up and spread of differentiated care and identify priority areas for DSD for P@HR. Presentations from people living with HIV highlighted the importance of ensuring appropriate psychosocial screening and care, noting that these are likely to be different for P@HR than for stable patients and those with early HIV disease. Effective identification of P@HR was another "hot topic", with the recognition that the phase-out of baseline CD4 testing in some countries is a threat to identifying patients who present with advanced disease. Participants also discussed non-lab-based screening tools to identify and prioritize services for P@HR in cases where lab services are limited or turn-around-time for CD4 is very long.

Common/Cross-Cutting Issues and Challenges

- In many countries, the use of DSD for populations other than stable adults has not yet been explored. Participants noted that DSD is often felt to be synonymous with *decreasing* the intensity and frequency of clinical services as opposed to *tailoring* services to different categories of patients.

- Although there are diverse guidelines about the appropriate package of care for P@HR – the "what" – there is very little experience with diversifying the way services are delivered – the "how".
- Words matter – terms like "patients in great need" may be less stigmatizing than terms like "high risk patients".
- Viral load results are underutilized for clinical decision-making, even in countries that have significantly scaled up access to viral load services.
- There was consensus on the need to retain access to baseline CD4 testing as a critical tool for identifying P@HR

Key Outputs

- Each country conducted a rapid situational analysis on DSD for P@HR using the CQUIN dashboard
- Each country developed individual country action plans to scale up DSD for P@HR
- Preliminary recommendations re: further activities for the Community of Practice, including:
    - Co-creation of a screening tool for P@HR, including psychosocial barriers
    - Development of a consensus definition for P@HR

Next Steps:

- Virtual convening of the P@HR community of practice, focused on co-creation of tools and resources
- Follow up on individual country action plans and track progress towards implementation

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Introduction

Background

The HIV Coverage, Quality and Impact Network (CQUIN) was launched by ICAP at Columbia University in March 2017 to increase the coverage and quality of differentiated HIV services to achieve enhanced health outcomes and programmatic efficiencies. CQUIN is designed as a participant-driven network, and participants worked together to identify shared priorities for differentiated service delivery (DSD). The topic of DSD for patients with "unstable" HIV disease – patients who present to care with advanced disease, or those with risk factors for disease progression – was highlighted in these initial discussions, and selected as a focus for one of CQUIN's first communities of practice (CoP). CQUIN CoPs convene member countries around a specific DSD-related topic, enabling them to exchange best practices and to work together to co-create resources and tools.

A CQUIN Call to Action position paper was developed to highlight the rationale for DSD for patients at high risk of disease progression (P@HR). The authors note that although clinical guidelines and policies regarding optimal packages of care for P@HR exist, most suggest (or imply) that these services should be delivered as per usual facility-based models. In general, treatment guidelines give few, if any, recommendations about differentiating care for P@HR – e.g., options for varying visit frequency, service location, and/or health worker cadres. In addition, very few examples on the "how" of differentiated care for patients with advanced or "unstable" HIV disease exist in either the published or grey literature. Nonetheless, the poor outcomes observed for P@HR strongly suggest that innovative approaches to differentiating models of care are required.

The CQUIN Call to Action provides a definition of P@HR derived from the ICAP Approach to Differentiated Care; this includes (1) patients with advanced disease who have initiated ART within the past year, and (2) patients who have been on ART for a year or more but are considered "unstable" due to a range of challenges, including unsuppressed viral load, adverse drug reactions, advanced immunosuppression, active opportunistic infections, non-adherence with ART, substance use, mental illness and other comorbidities requiring close follow-up (Fig. 1, Table 1).

Figure 1: Overview of Patient Classification for Differentiated Care (*ICAP Approach to Differentiated Care*, 2017)

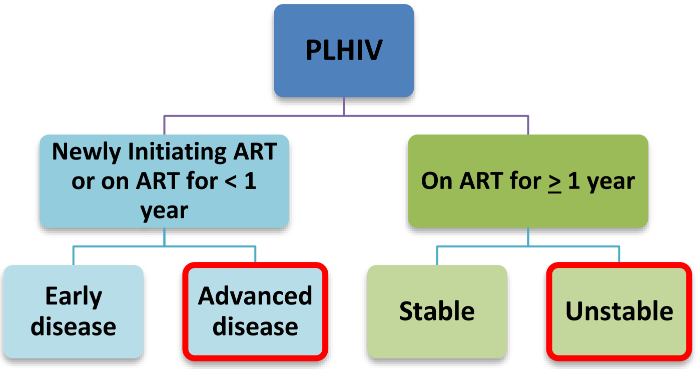


Table 1: Defining "High Risk" Patients

New to ART / Advanced Disease	On ART for > 1 year / Unstable
Newly initiating ART or on ART for < 1 year and	*On ART for > 1 year and any of the following:*
CD4 < 200/mm^3 and/or	Not virally suppressed*
WHO stage III/IV	CD4 < 200/mm^3
	Adverse drug reaction requiring ongoing monitoring
	Active opportunistic infection, including TB
	Non-adherent with ART**
	Substance use
	Comorbid condition(s) requiring frequent follow up

*Not virally suppressed = most recent VL > 1,000 and/or no VL in the past 6 months

** Non-adherent = 2+ missed doses a month for patients on once-daily regimens, 4+ missed doses a month for patients on twice-daily regimens; and/or misses drug pickups

The objectives of the workshop were to:

- Define P@HR and identify challenges and opportunities to optimize treatment outcomes
- Facilitate the exchange of knowledge and experience related to differentiated service delivery for P@HR
- Discuss barriers and gaps related to providing differentiated services to P@HR
- Identify opportunities for joint learning and co-creation of resources and tools

Session Summaries

Monday, 17 July

Dr. Wafaa El-Sadr

Global Director, ICAP Columbia

Dr. El-Sadr opened the meeting, and set the stage for the three-day workshop. She discussed why patients at high risk of disease progression are important to the global response to the HIV epidemic and reaching the UNAIDS 90-90-90 targets. She emphasized the need to focus on achieving coverage, quality, and efficiency, and the importance of identifying new and more effective approaches to identifying and supporting P@HR. "DSD is really about the how, not the what," she noted. "It is about how we all work together with recipients of care, how we shape services based on their needs. When we think about program design, we want to achieve 90-90-90. We also want to achieve quality of life, efficiency, equity, and epidemic control."

Dr. El-Sadr noted that most existing DSD models have focused on stable patients, noting the importance of this strategy, but also the need to think beyond this population. "Our goal here is to initiate the community of practice for patients at high risk, and to nurture and support south-to-south exchange," she said. "Our objectives are to define who is in this group, identify challenges and opportunities to optimize treatment outcomes, facilitate knowledge exchange related to DSD for this population, discuss knowledge gaps, and find opportunities for joint learning and co-creation," she concluded.

Dr. David M. Allen

Deputy Director, HIV Southern Africa, Bill & Melinda Gates Foundation

Dr. Allen echoed Dr. El-Sadr's opening remarks by noting the importance of DSD to the Gates Foundation and to his South African colleagues. "South Africa has just completed its new National Strategic Plan. In it, there are nine goals, and the second goal relates to improved treatment and adherence. The National Plan is very clear about the importance of differentiated care to promote adherence and achieve the 90-90-90 treatment targets. I know that is important for many of the countries represented here," he said.

Dr. Allen spoke of the importance of improving access and adherence to ARVs to achieve global targets. "In an already challenged health system, there is a need to examine different models of care to achieve those treatment targets and satisfy the test and treat model," he said. "Differentiated care is an important part of our priorities and we value our partnership with ICAP and all of you to meet those goals."

Dr. Allen emphasized the importance of learning networks and south-to-south exchange. "There are partnerships that need to happen between and among countries, because there are models that need to be tested and adapted to be successful. These models cannot come from Geneva, New York or Seattle – they need to come from the countries themselves, the communities themselves, and the people themselves. Each of you will have recommendations, positive experiences, and lessons to teach one another."

Dr. Peter Preko
CQUIN Project Director, ICAP

Dr. Preko focused his talk on the importance of joint learning and co-creation, reviewing ways in which the CQUIN network is facilitating experience-sharing, exchange of best practices, and joint learning. Drawing upon both practical and theoretical frameworks, he outlined some of the factors that make a learning network a success: a shared goal, participant-driven solutions, and availability of resources. "Individually, our resources are limited, but as we work together, funding and resources become available to enable us to achieve more," he said.

Dr. Preko noted that DSD focuses on program design and delivery – on the "how" not the "what" of service delivery. He explained: "We don't want to lose sight of the public health approach, which has been critically important to scaling up HIV services. But we also know that one size really doesn't fit all, and that different groups of patients are best served by adjusting the four key elements of DSD: service location, service intensity, service frequency and type of service provider."

He discussed the progress that CQUIN has made since the network was launched, expanding from six to nine countries, and ways in which network members are implementing the plans they made at the launch meeting. Dr. Preko thanked the ministries of health for their support, and encouraged engagement between all of the partners to co-create new solutions to scale up DSD for patients at high risk of advanced HIV disease progression.

Dr. James Hakim
Chair, Department of Medicine, University of Zimbabwe

Dr. James Hakim began by acknowledging the significance of the moment, "For those of us who have had our professional life superimposed on by the HIV epidemic, this is a nice place to be – to be able now to tease out differentiated care and looking at patients using different models," he said. He described his long experience in the field of HIV and how the situation has changed from the 1990's when taking care of many patients with opportunistic infections was overwhelming, to the present day where we are now talking about differentiating care for different groups of patients.

Dr. Hakim talked about the difficulties in working out the "how" of differentiated care – the programmatic models that allow you to deliver the package of care. He asked the question: "What package of care has been identified for this population?" The answer, he said, is not clear-cut, and it needs to be determined how it can be improved and adapted for different environments.

Dr. Hakim spoke briefly about the results from the REALITY trial, a study that he and his colleagues conducted in four countries: Kenya, Malawi, Zambia, and in Zimbabwe. "Policy makers should consider adopting and implementing this low-cost broad infection prevention package which could save 3.3 lives for every 100 individuals treated," he said citing the findings.

Dr. Bactrin Killingo

Treatment Education Lead, International Treatment Preparedness Coalition (ITPC)

Dr. Killingo thanked ICAP for including ITPC and civil society in the community of practice, emphasizing that all successful programs have engaged recipients of care. He questioned what having communities at the forefront really means, emphasizing that it is critical that recipients of care understand what you are talking about. "Do they understand the concept of DSD? What efforts have we put into creating awareness and knowledge around what DSD means?" He said.

Dr. Killingo spoke about a recent ITPC meeting in Thailand, where more than 30 individuals from civil society came together to talk about DSD and what it entails. "What we found was that people were actually surprised, and explained that some of their programs have already been implementing DSD in one way or another," he said. "Just creating that understanding made people think about how they would like to get involved to create demand for this new concept".

He stressed the need for recipients of care to be involved at the level of planning because at the end of the day, they are the ones who know what they need, and have the solutions. "They will tell you what it is that counts in ensuring they start treatment, stay on treatment, and stay well on treatment," he said.

Dr. Killingo concluded by noting the importance of language and labels: "When we come up with terminologies, who comes up with them? What is the process of coming up with terminologies? Stable, unstable, high risk? I can tell you for free that when you have those terminologies, no one is going to come and receive your care…So, there needs to be conversations around what we call these things…What can we term these things that are friendly? We used very stigmatizing language referring to people with HIV 20 years ago. The "high risk" terminology could perhaps be replaced with 'recipient of care in great need' or something that is friendly."

Ms. Rumbidzai Matewe

Acting Director, Zimbabwe National Network for People Living with HIV/AIDS (ZNNP+)

Ms. Matewe also emphasized the critical need to put patients at the center when planning program design, and stressed the importance of involvement and engagement of people living with HIV in identifying innovative DSD models. Speaking on behalf of civil society and patients living with HIV, she challenged the idea that the 90-90-90 goals are sufficient, noting that these targets will result in only 73% of people living with HIV having achieved viral suppression. "We can do better," she urged, "especially if we engage people living with HIV in both program design and program delivery." She noted that current DSD models might not be appropriate for key and priority populations, raising concerns that they may be "left behind" unless services are tailored for their needs.

Ms. Matewe highlighted the gap between policies and services, noting that implementation of DSD often lags behind guideline development. Educating patients and communities about the new models of care can accelerate their deployment, she argued: "We have a number of models that are enshrined within the operational service delivery manual for Zimbabwe, providing options for people living with HIV, but do they [patients] know about these options or models?" She reminded the audience of the importance of demand creation, noting "people living with HIV need to move the policy from the shelf of MOH to ensure we implement it at the community level."

Finally, Ms. Matewe asked: "What do we want to put in place? To what extent are we engaging communities? And in what ways are the interventions we're proposing adaptable for communities?"

Panel 1: Patients at High Risk: Experiences, Guidelines, and Best Practices

The panel was by moderated by Dr. Andrew Reid from the University of Zimbabwe and Dr. Maureen Syowai, Regional Technical Specialist at ICAP Kenya. Panelists presented on their country context; scope of the problem; treatment guidelines; and strategies to address differentiating care for patients at high risk of disease progression.

Panelists:

Dr. Tsitsi Apollo, Deputy Director for HIV/AIDS and STIs, MOHCC Zimbabwe
Ms. Lillian Diseko, Deputy Director for HIV Care & Treatment, NDOH, South Africa
Dr. Maureen Kimani, HIV Care and Treatment Manager, MOH Kenya
Dr. Hudson Balidawa, Public Health/M&E Specialist, MOH Uganda

Key Takeaways:

- Zimbabwe has made good progress in controlling the HIV epidemic and is well positioned to achieve the 90-90-90 targets. With scale up of ART, the proportion of patients presenting with advanced disease has dropped from 83% in 2009 to 35% in 2016, much improved, but still high. Data from Zimbabwe indicate that men are more at high risk of presenting with advanced disease than their female counterparts.
- South Africa has developed a package of care for P@HR, including daily/weekly home visits; spot pill counts; enhanced adherence counseling; clinical monitoring with viral load monitoring every two months and decentralized pharmacovigilance. South Africa is also conducting home-based care for patients with advanced disease, albeit on a small scale.
- Kenya has national guidelines on differentiating care for P@HR, and has established a national HIV clinical support center and regional clinical technical working groups to facilitate clinical decision making for clinicians in peripheral sites when managing P@HR. Kenya also uses assigned case managers for high-risk PLHIV to tailor services.
- In Uganda, there is no specified package of care for P@HR, but patients presenting with advanced disease (<100 cells/ml) are termed "unstable" and managed accordingly. Some partners like TASO have started small pilots of management of patients at high risk of disease progression. Uganda plans to introduce the topic of differentiating care for P@HR to the national technical working group.

Panel 2: Patients at High Risk: National Guidelines and Best Practices

Dr. Appolonia Aoko, Public Health Specialist in HIV Prevention and Treatment at CDC Kenya and Dr. Samuel Biraro, Country Representative at ICAP Uganda, moderated the panel. Panelists presented on their country context; scope of the problem; treatment guidelines; and strategies to address differentiating care for patients at high risk of disease progression.

Panelists:

Dr. Jose Tique, QI Technical Advisor, MOH Mozambique
Dr. Fethia Keder, HIV Program Team Leader, FMOH Ethiopia
Dr. Nomthandazo Lukhele, ART Coordinator, MOH Swaziland
Dr. Michael Odo, HIV Care & Treatment Advisor, MOH Malawi

Key Takeaways:

- Differentiated service delivery packages for P@HR were described in a number of country guidelines, however, countries were unable to measure the magnitude of the problem; assess the coverage of the described package of care; or define the different models of delivering these packages of care for P@HR.
- The following models can be considered in designing formative projects to catalyze the implementation of DSD models for P@HR:
    - Family-centered approaches (facility or community models)
    - Community adherence group models to support non-adherent PLHIV
    - Population-specific needs in designing DSD models for P@HR

Differentiated Care for Patients at High Risk: A Call to Action

Dr. Miriam Rabkin

Director for Health Systems Strategies, ICAP at Columbia University

Dr. Miriam Rabkin, CQUIN's Principal Investigator, talked about the key themes that led to ICAP's Call to Action document for patients at high risk, citing recent data showing that the proportion of patients who starting ART with low CD4 counts is still between a quarter and a third of all patients, and the high mortality rate among the population.

"Our Call to Action provides a review of the published and grey literature on patients at high risk, and asks: How can we improve outcomes? One way is to think about the package of care, or the 'what', and the other is to think about how these services are delivered and programs are designed – the 'how'. Both questions are important, but much more attention has been given to the former. "

She pointed out that, while many national guidelines point to the "what" of DSD, very few address the "how", in terms of recommendations about the key variables in DSD – service intensity, service frequency, service location, and service providers. "We want to think about innovations driven by patient needs and best practices, and that brings us back to this concept of differentiated care and differentiated services," she said. "A lot of the times we think of differentiated care as a simplification of services, which makes sense for stable patients. But for other groups, what we should be talking about is tailoring service design to the population – it's about adapting treatment for groups of people, including unstable patients."

Dr. Rabkin spoke about the programmatic and delivery challenges with reaching patients at great need, including identification of patients at high risk, delays with ART initiation, prevention and management of acute co-morbidities, as well as chronic co-morbid conditions.

"We don't want to just think about tweaking existing models for patients in great need," she said. "That's interesting, but we need to take a step back and think about what resources we have at our disposal that we didn't in the past." She cited Kenya's Severely Immunosuppressed Package of Care (SIPOC) as an example that demonstrates simple things that can improve care, and the increasing availability of point-of-care testing as another resource when thinking about P@HR service design. .

Country Team Breakout Sessions

Country teams reviewed the CQUIN staging dashboard for differentiated service delivery models (DSDM), conducted a self-assessment concerning overall DSDM in their countries, and discussed the status of DSDM for patients at high risk of disease progression, identifying best practices, resources, and needs. Each country team reported back, describing the stage/status of DSDM for P@HR in their countries, sharing relevant best practices and resources, and what is needed to optimize DSD for P@HR in their countries.

Ethiopia

Ethiopia's national guidelines include a package of care for patients presenting with advanced disease. However, the care is provided through a standard model; services are not differentiated for this group. Standard Operating Protocols (SOPs) and job aides are not specifically developed for DSDM for P@HR. Relevant best practices include quality improvement projects at ART facilities.
To optimize DSD for P@HR moving forward, the team from Ethiopia identified sensitization for policy and decision makers, inclusion of DSD for P@HR in national guidelines, engagement of civil societies, capacity building for health care providers and community level adherence support, development of supporting materials (SOPs, job aides), and awareness creation among ART clients as priorities.

Kenya

Guideline provide for differentiated P@HR service delivery in Kenya. Challenges include a lack of awareness of nationwide coverage of interventions and difficulty measuring impact at the national level. Kenya identified plans for evaluating effectiveness of interventions as an opportunity. Relevant best practices and resources include the differentiated care toolkit, a national clinical support center, regional technical working groups, a mentorship program, Project ECHO, which supports clinical case management, and special group clinics.

To optimize DSD for P@HR, Kenya will need to involve communities of PLHIV in implementation of services for P@HR and create a comprehensive eluviation to measure patient satisfaction, coverage, quality, impact, and the cost-benefit of DSD.

Malawi

Malawi is in the process of finalizing its DSD policies and guidelines, which are in a in pilot phase. In Malawi, clinicians provide adherence assessments, screening for TB and other OIs, nutritional assessment and support, referral for cytomegalovirus (CMV) screening by ophthalmologists, and a prophylaxis package. Isolated centers of excellence provide monthly care for patients until stable, and then vists occur every three months thereafter. Relevant best practices and resources include a viral load register, the Acute, Late and Unstable Patients (ALUP) algorithm implemented by the Lighthouse Clinic, and exchange visits between centers of excellence and less specialized facilities (when possible).

To optimize DSD for P@HR, Malawi identified a need for policy alignment, a scale up of best practices from the centers of excellence, supporting materials (tools, job aides, SOPs), training, in-country ART site exchange visits and south-to-south exchange visits.

Mozambique

The focus in Mozambique is the development and implementation of DSDM for stable patients with the goal of providing patient-centered care with reduced workload at the health facility level to allow providers to focus on unstable patients. The MOH also recognizes the need to better define guidelines on DSDM for P@HR. Relevant best practices and resources include written guidelines, SOPs, and job aides for Community ART Groups (CAGs); piloting of the family approach in select provinces; and hotline services to support clinicians with complex patients.

To optimize DSD for P@HR, Mozambique will need to develop a simplified and standardized package of care that includes identification, provision of treatment, and prophylaxis. For unsuppressed patients, they will need to develop a standardized package to work on adherence and easier access to second line treatment.

South Africa

South Africa currently has facility-based care for P@HR, with limited community-based models in place. South Africa has adherence and treatment guidelines addressing P@HR and has piloted Advanced Care Clinic (ACC) models that are currently in place in selected facilities. There is also a limited, generalized home-based model but with no available SOPs for P@HR. Relevant best practices and resources include SOPs, guidelines, and the CAPRISA ACC model.

To optimize DSD for P@HR, South Africa will need to strengthen its Monitoring and Evaluation (M&E) system through integration of multiple systems, optimize the use of the district clinical specialist teams, create standardized training and SOP materials for ACC, and include PLHIV in planning.

Swaziland

Swaziland's DSDM strategy initially focused on stable patients. Best practices and resources include a CommART policy, CommART SOPs, HIV treatment guidelines, a TB LAM Ag test algorithm, high VL register, report on TB LAM Ag test study, CrAg, as well as semi-annual regional and national HIV review meetings. Additional resources will available soon, including a Step Up Adherence Counseling (SUAC) toolkit, CommART IEC, and CrAg screening algorithm.

To optimize DSD for P@HR, Swaziland will need a DSDM scale-up plan; to increase capacity-building for health care workers including intensified mentorship; increase access to genotyping for those in need of third line ART; finalize the 2017 HIV management guidelines and train health workers; integrate DSDM indicators in Regional HIV Semi-Annual Review (ReHSAR) and National HIV Semi-Annual Review (NaHSAR) meetings; procure Fluconazole, CrAg, and TB LAM tests while advocating for nurses to prescribe them; and advocate for a national DSDM focal person.

Uganda

Uganda has a specific package of care for patients with high viral load that includes SOPs, a package of care, and a register for non-suppressed clients. They also have an algorithm, in addition to SOPs and job aides, for patients at high risk of cryptococcal meningitis. Uganda is focused on DSD for patients who are co-infected with TB/HIV, pregnant women, children and adolescents. Best practices and resources include mother-baby care point, pediatric clinics, adolescent clinics, peer and family support groups, TB/HIV clinics (one stop center including MDR-TB), a hub system for labs with electronic results transmission that ensures quick turnaround time.

To optimize DSD for P@HR, Uganda aims to harmonize the definition of DSD, review and update the package of care for patients at high risk, and finalize the M&E framework, including collection and reporting tools and indicators.

Zambia

In Zambia, health care workers at facilities manage all P@HR. Guidelines are available for advanced treatment centers for third line management. Relevant best practices and resources include clear guidelines on switching ART regimens and OI management, and a toll-free line for easy consultation.

To optimize DSD for P@HR, Zambia will need a DSD coordinator at the national level; operational guidance (SOPs) including guidelines, training materials and capacity building of providers; evaluation; civil-society involvement; resources for implementation; and peer-to-peer learning both in country and between countries.

Zimbabwe

Zimbabwe has a clear direction on the "what" of DSD for P@HR, with the "how" needing more development. Relevant best practices and resources include Community Adolescent Treatment (CAT) support and Community ART Refill Groups (CARGs); HIV/TB and other services integration; risk stratification for pregnant women; public-private sector partnerships; research and implementation science; clinical mentorship and community based training; flagging files with high VL; and defaulter tracing system by low cadres, CAT, HP, expert clients.

To optimize DSD for P@HR, Zimbabwe will need to differentiate P@HR who are clinically stable from those clinically unstable and define the what, where, who, and when at the facility, community, and hospital levels. They will need to identify patients with high VL in the Electronic Medical Record (EMR) system; find gaps in referrals and continuum of care between community, facility and hospital; improve documentation and use of data for health system improvements; improve diagnostic tools; improve the package of care for mobile populations; foster cross-border collaboration at the national level; conduct case-based audits for patients failing ART or those with poor outcomes; and provide multidisciplinary care for advanced disease.

Opening Reception

Dr. Gibson Mhlanga
Principal Director, Preventive Services, MOHCC Zimbabwe
Permanent Secretary of Health and Child Care

Dr. Mhlanga began by welcoming everyone on behalf of the Permanent Secretary of the Ministry of Health and Child Care, Brigadier General Dr. Gerald Gwinji. He reviewed Zimbabwe's strategy to rapidly scale up DSD to control the HIV epidemic by 2030 and encouraged everyone to learn from one another to take DSD to scale, reminding participants of the goal to achieve 90-90-90. "While some countries may achieve this, it's inevitable that some sub-populations will be left behind," he said. "With a concerted effort, devoid of reinventing wheels and not piloting interventions already known, we can achieve success. This is what a learning network is about."

Dr. Mhlanga referred to the ZIMPHIA results that show Zimbabwe's significant progress toward achieving the 90-90-90 targets. About 70 percent of PLHIV in Zimbabwe have been diagnosed. Of those, 87 percent are on treatment, and of those on treatment, 87 percent have achieved viral suppression. He also highlighted the adolescent gap where only 49 percent of young females and 40 percent of young males aged 15-24 years are virally suppressed. Dr. Mhlanga acknowledged that although Zimbabwe has fully embraced DSD, it is not a panacea for all of the problems facing PLHIV, but it is a way to address their needs and improve the coverage, quality, and impact of services.

Ms. Rumbidzai Matewe
Acting Director, ZNNP+

Ms. Matewe presented on behalf of networks of people living with HIV, in Zimbabwe and elsewhere. She began by summarizing outcomes from the recent civil society meeting in Bangkok, Thailand. She emphasized that key populations and vulnerable groups like people living with disabilities, prisoners, and others may be left behind as countries aim to achieve the 90-90-90 targets.

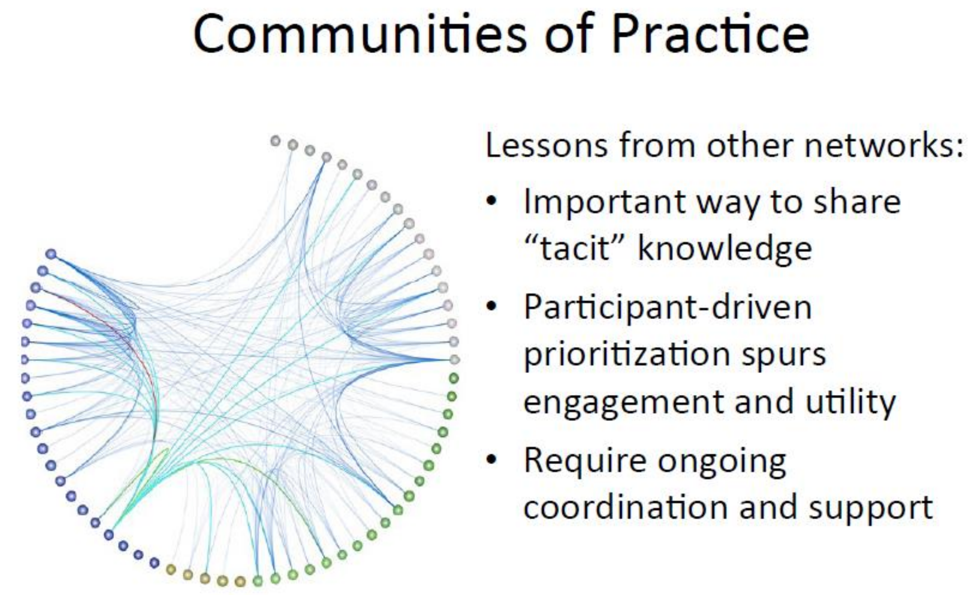
Ms. Matewe talked about the increasing numbers of people initiating ART, pointing to a wealth of knowledge on how to successfully get people on treatment. She also mentioned the barriers to quality of services for people living with HIV. Ms. Matewe applauded the efforts of CQUIN to incorporate the views of PLHIV and engage with them in this important work. She emphasized the need for both the global community and countries to involve the views of PLHIV, and vulnerable populations, from guideline development, through program planning all the way to evaluation, to ensure PLHIV are satisfied with the models of care being provided. Citing CARGs in Zimbabwe as an example, she said, "We realized that CARGs are not the only implementation model for DSD. There are some people that prefer to simply go to a facility, collect their refill, and go. And the three or six month refills that PLHIV are lobbying for would be ideal."

She concluded by asking some salient questions; "Do we have data informing our models? If the models are not preferred by the communities in rural or urban areas, how can we then tweak them to suit clients we want to serve?" She said. "Our stories are our data. There are things we always talk about at the community level, things that affect us, and we need to ensure these things are documented through M&E systems."

Tuesday, 18 July

Dr. Miriam Rabkin
ICAP/CQUIN

Dr. Rabkin set the stage for day two by reminding the audience about learning networks, and highlighting the CQUIN communities of practice as one of the platforms for exchanging best practices and co-creating solutions to gaps in DSD. She noted that CQUIN's aim is to bridge the gap between policy and implementation, by bringing countries together for timely diffusion of knowledge and best practices to catalyze scale up of DSD.



Communities of Practice

Lessons from other networks:

- Important way to share "tacit" knowledge
- Participant-driven prioritization spurs engagement and utility
- Require ongoing coordination and support

Dr. Rabkin highlighted CQUIN's resources for encouraging joint learning, including the network website, the webinar series on DSD, the monthly project briefs, the quarterly journal club, communities of practice (CoP) workshops, and south-to-south learning visits.

"Our communities of practice are structured around specific knowledge gaps that participants have identified," said Dr. Rabkin. "They're demand-driven communities intended to facilitate joint work around a shared challenge, to bring people together who want to create or adapt a tool, generate a generic training module, and work together to co-create useful tools."

Panel 3: Perspectives from the Front Line: Providers and Patients

The panel was moderated by Ms. Rumbidzai Matewe, Acting Director at the Zimbabwe National Network for People Living with HIV (ZNNPP+) and Dr. Sombo Fwoloshi from MOH Zambia.

Panelists:

Dr. Andrew Reid, University of Zimbabwe
Dr. Andrew Reid's presentation drew attention to the need for integration of mental health care programs into clinical care for P@HR. Recounting his experience as a provider, and using case scenarios involving adolescents and adults living with HIV, Dr. Reid argued that many P@HR have mental and/or social issues that if identified earlier and managed, could prevent treatment failure or lost to follow-up. He argued that, "a lot of treatment failure is the ambulance at the bottom of the cliff scenario. The person has jumped and we are picking up the pieces at the bottom of the cliff. We need to move to an ambulance at the top of the cliff and identify psychosocial risk factors, and then prevent the person jumping off the cliff…we need to identify and teach people about these risk factors and need to connect them to be connected to [mental health services]."

Mr. Sipho Mahlangu, ZNNP+
Mr. Mahlangu stated that a poor outcome in public health and HIV care is a community problem. He defines the community as a combination of clinicians, teachers, patients, and a village. As a community activist, Mr. Mahlangu believes that the community wants to achieve a good return on quality of life for itself and the only way to do this is to bring people living with HIV and other community members together. He highlighted that examples of barriers to increased community and healthcare collaboration to end the HIV epidemic include, beliefs that "drawn blood is being used for witchcraft," or a doctor refusing to change traditional attitudes on the hierarchy of patient-doctor or doctor-nurse relationships.

Ms. Sekai Thikateli, ZNNP+
Ms. Thikateli testimony illuminated the need for psychosocial support and counseling, as well as good clinical care. She told a harrowing account of her own personal experience of HIV treatment failure when she had a CD4 count of four and could not access third line treatment:

"I had stopped taking ARVs …my CD4 count was so low and I looked so frail, at times I would walk down the street and people would think I was a beggar. They would offer me money…my family was not supportive at all, but I had to trudge on."

She mentioned that it was a supportive healthcare environment that made the difference in her recovery, along with the correct second line treatment. As a result, she was inspired to become a peer counselor for PLHIV. Today she is 53 years old and doing well.

Dr. Baker Bakashaba, Regional Project Manager, The AIDS Support Organization (TASO) Uganda

Dr. Bakashaba made the case that patient centered care is a human rights based approach:

"Differentiation is not a favor to the client. It is actually a right to healthcare that we are promoting and providing…the people who care coming for [services], it is their right to access these services. How we make it accessible, available, and to the quality that is required is what we now need to do."

Dr. Fred Busuulwa, Doctor in-charge, Good Shepard Hospital, Swaziland

Dr. Busuulwa described the reality of working in a high volume HIV clinic at Mbabane Government Hospital, Swaziland, and the burden that overcrowded facilities placed on both patients and health workers. Among other things, he described how the hospital used a shift system to meet the needs of working clients or those who because of stigma, want to pick up their refills very early. He explained that staff living within seven kilometers of the hospital, start their shift at 5am to run the early morning refill clinic, and conclude their day at 2.30pm. The staff members who start at 8am continue their shift up to 5pm.

There was a vibrant discussion by participants after the panel presentations. The following were some of the key recommendations/take home messages:

- Psychosocial support (PSS) services can improve the lives of P@HR, with the recommendation for a psychosocial risk assessment tool that can be integrated into routine service delivery to help early identification of patients at risk of disease progression for timely intervention
- Training health workers in psychosocial support, including psychosocial risk assessments, and identification and management of chronic grief, chronic anger, depression could improve outcomes for P@HR
- It is important to address psychosocial issues of health workers, such as issues of burn out to ensure they are in the best frame of mind to deliver quality services, with respect and dignity
- Public health strategies require partnerships and active participation and engagement from clients and community members
- P@HR often experience emotional stress, lack of support systems, social isolation, stigma, lack of treatment literacy, poor health worker to patient communication
- Distance from health facilities can be a significant barrier to care for P@HR
- The use of satisfaction surveys can enhance quality of care

Panel 4: Differentiated Care for Patients at High Risk: Innovations and Experiences

Dr. Norah Namuwenge, National ART Programme Coordinator at MOH Uganda and Dr. Salome Okutoyi from USAID Kenya, moderated the panel.

Panelists:

Dr. Lucas Molfino, Head of Mission, MSF Mozambique

Dr. Lucas presented the MSF Alto Mae Reference Center (CRAM), an innovative outpatient model established in 2009 as an intermediary referral center in Maputo to provide differentiated care for patients with advanced HIV disease. The CRAM model aims to provide a safety net for clients with advanced or complicated HIV who do not require hospitalization, and helps to reduce the workload on the main referral hospital in the city. The CRAM has clear enrolment criteria and SOPs that ensure standardized service delivery. To relieve strain on the healthcare system, the CRAM also provides technical support to frontline healthcare workers, while not overloading the Maputo hospital. Sustainability and cost effectiveness need to be considered if this model is to be adopted.

Mr. Eric Mtemang'ombe, Clinician, Lighthouse Clinic, Malawi

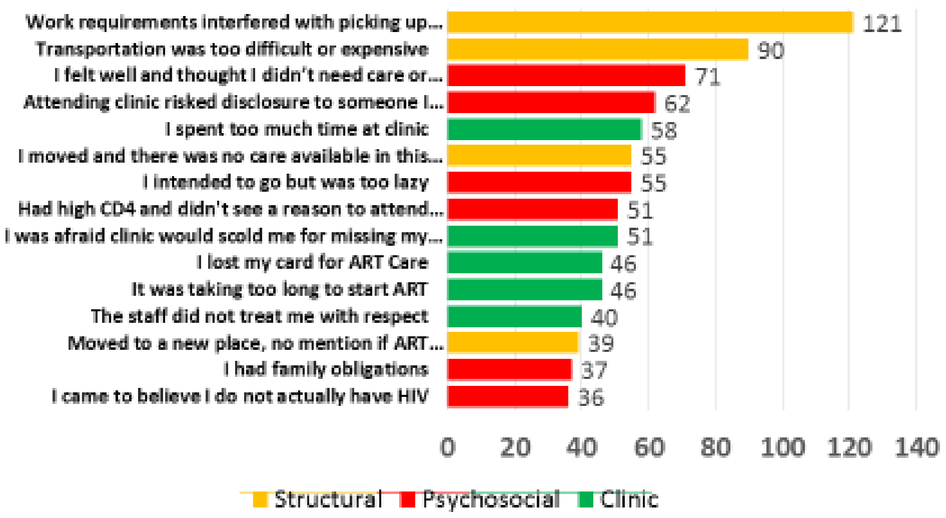
Mr. Mtemang'ombe discussed the Lighthouse Clinic's Advanced, Late and Unstable Patients (ALUP) pilot and their point of care (POC) viral load for patients suspected to be failing ART. Patients with CD4 count less than 100 cells/mm3 are enrolled into the ALUP project to receive a package of enhanced OI prophylaxis, plus nutritional supplementation if needed. Lighthouse also uses POC equipment to provide "targeted" VL for patients failing treatment. Mr Mtemang'ombe stressed the need for good procurement system to guarantee continuous supply of cartridges to keep the program running efficiently. This type of immediate monitoring is expensive and unavailable in many settings. Mr. Mtemang'ombe acknowledged that routine viral load monitoring turnaround is three months in

Malawi; hence, the POC viral load is a critical tool for immediate diagnosis of suspected treatment failure to facilitate regimen change where necessary.

Dr. Daniel Mwamba, ART Provincial Coordinator (Lusaka), CIDRZ, Zambia

Dr. Mwamba shared the experience of CIDRZ in Zambia, including study findings among stable patients which revealed that barriers to patient engagement and ultimately viral suppression include; low HIV literacy, stigma, mental health issues, primary HIV drug resistance, and incorrect dosing. Reasons for patients stopping treatment include among others, work requirements and transport (see chart below). Because of these findings, CIDRZ has proposed revised criteria for their DSD models to make adjustments and target interventions to improve outcomes for "unstable" clients. The revised eligibility criteria, which is now being piloted and will be evaluated later, includes patients over 14yrs, on ART for more than 6 months, regardless of viral load or WHO clinical stage. Any newly identified "unstable" clients could receive care through this DSD model. The model also includes a multidisciplinary team, laboratory support, and enhanced counseling services for sexual and metal health.

Most common patient-reported reasons for stopping care (N = 603). Better info Study



HIV LEARNING NETWORK
The CQUIN Project for Differentiated Care

CIDRZ

ICAP
GLOBAL. HEALTH. ACTION.
Columbia University
Mailman School of Public Health

Dr. Sylvia Ojoo, Country Director, University of Maryland Programs, Kenya

Dr. Ojoo described how the University of Maryland (UMB) used whole system mentorship to improve uptake of viral load in supported health facilities, and sustained the gains over time. The UMB VL cascade shows that for the over 22,000 patients on ART, 90% of them received VL monitoring with 92% being virally suppressed. Of the unsuppressed, 92% were counseled and 74% received repeat VL at 3months.

Key Takeaways from Panel 4:

- DSD models for P@HR are rare, and those that exist tend to be pilot projects, limiting available data as to their feasibility, acceptability or impact
- Identifying "unstable" patients is challenging in many settings, both because of lack of access to routine viral load (VL) testing and because the results of VL testing are not always used to manage patients
- Most patients will transition in and out of an "unstable" state, meaning that DSD programs must pay close attention to monitoring, up-referrals and down-referrals.

Breakout Sessions: Diving Deeper into DSD for P@HR

Group One: Appropriate Models of Care for P@HR

Should some P@HR be included in DSDM originally designed for "stable" patients (e.g., CAGs, visit spacing, other)?

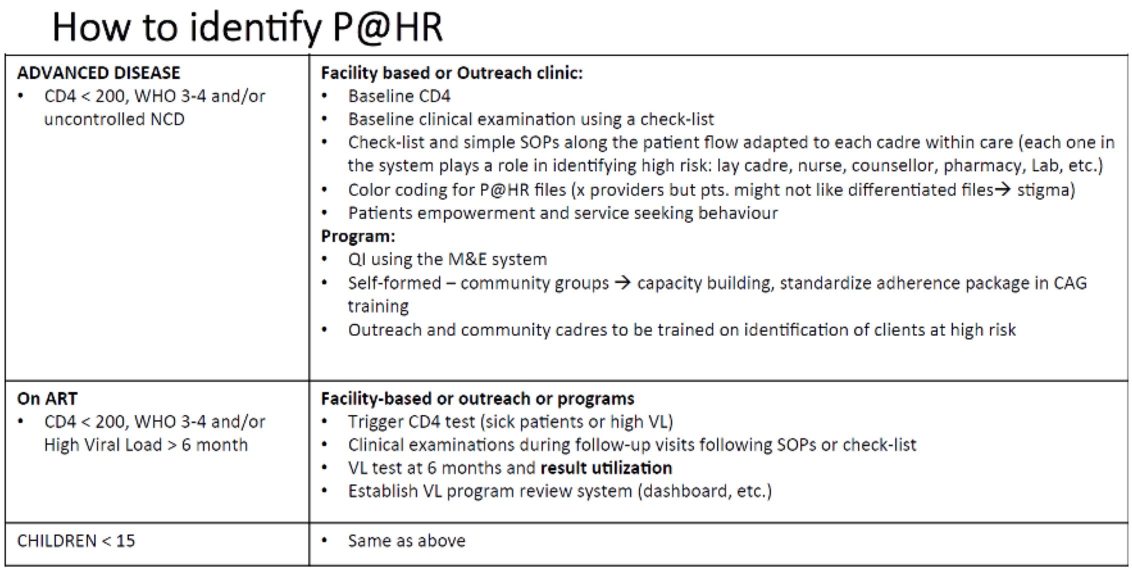
The group agreed that some "unstable" patients could be included in many DSDM, such as teen clubs, adherence clubs, moonlight centers, CARG/CAGs, family approaches, mothers' support groups and healthcare worker managed groups. However, the group agreed that patients presenting with advanced disease should initially not be included in DSDMs and should instead receive a package of intensified care.

The group thought a fundamental step to answering the assigned question required defining P@HR and identifying eligibility criteria for "unstable" patients who might be included in current DSD models.

Group Two: Identifying P@HR and Linkage to Care

How can programs better identify P@HR and link them to appropriate care?

The group suggested the following criteria could be used to determine "how" to identify P@HR:



How to identify P@HR

ADVANCED DISEASE • CD4 < 200, WHO 3-4 and/or uncontrolled NCD	**Facility based or Outreach clinic:** • Baseline CD4 • Baseline clinical examination using a check-list • Check-list and simple SOPs along the patient flow adapted to each cadre within care (each one in the system plays a role in identifying high risk: lay cadre, nurse, counsellor, pharmacy, Lab, etc.) • Color coding for P@HR files (x providers but pts. might not like differentiated files→ stigma) • Patients empowerment and service seeking behaviour **Program:** • QI using the M&E system • Self-formed – community groups → capacity building, standardize adherence package in CAG training • Outreach and community cadres to be trained on identification of clients at high risk
On ART • CD4 < 200, WHO 3-4 and/or High Viral Load > 6 month	**Facility-based or outreach or programs** • Trigger CD4 test (sick patients or high VL) • Clinical examinations during follow-up visits following SOPs or check-list • VL test at 6 months and **result utilization** • Establish VL program review system (dashboard, etc.)
CHILDREN < 15	• Same as above

In order to take P@HR identification to scale (table above), an identification tool needs to be rolled out nationally. Group two suggested that job aides, operational manuals, trainings, and SOPs would need to be adapted further to include revised P@HR definitions and care criteria. Another suggestion is that providers would need to be given refresher training on any updated national tools.

The group noted the dangers of phasing out CD4 testing on the identification and management of P@HR, urging that countries transitioning to viral load monitoring retain access to baseline CD4 testing and "targeted" CD4 testing for patients with high viral loads and/or clinical illness.

Group Three: Impact of Phasing Out CD4 Testing on P@HR Identification and Mgmt

Can DSDM improve coverage of isoniazid preventive treatment (IPT) in resource-limited settings where excluding TB is challenging?

WHO suggests that Isoniazid Preventive Therapy (IPT) should be offered as preventive therapy after a negative TB screening. The group offered a mixed answer to this question of including IPT as part of DSDM. An argument to not include IPT in DSDM models was given by participants from Kenya.

In Kenya, completion of IPT is a pre-condition for "stable status." IPT is offered monthly at clinics in Kenya, which makes it difficult to integrate in the DSDM models for stable patients who are given longer refills. Alternative group suggestions to include IPT as part of a DSDM were that the service could be given by enhancing patient education and making the first two refills of IPT monthly, and then aligning ART refills as per client needs.

Group Four: M&E Challenges

What are some of the M&E challenges specific to management of P@HR? How can these be addressed?

Group four identified many current challenges in the M&E of P@HR, including a lack of unique identifiers, issues in operationalizing data, and sub-optimal use of electronic medical records (EMR). The team from Swaziland mentioned that the country has currently updated its electronic system because the former system was not capturing all the relevant DSD indicators. Most countries agreed that they struggle with updating indicators to include P@HR because they have preexisting M&E systems and that DSD is still in its infancy. Data is a challenge from both the community level and because of the extra burden on the healthcare system.

The group noted that the expectations of M&E systems for DSD varied by country. However, the group agreed that optimally, M&E systems should be able to report how many P@HR were identified and the type of care each patient receives (viral load, etc.). Swaziland suggested that a list of indicators provided at the facility level were needed to define DSD for P@HR and could be programmed into their EMR. However, updating DSD for P@HR is more complicated in countries with only paper-based systems.

Differentiated Care for Patients with TB and HIV

Dr. Felix Ndagije
ICAP/CQUIN

Dr. Ndagije reviewed the global burden of TB and HIV, and its relevance for programs targeting P@HR. Dr. Ndagije reported: "Data from high-burden countries have indicated sub-optimal uptake among TB-HIV patients, and few initiate ART within the recommended period of time stipulated by guidelines. Why is it important that we differentiate the care of patients infected with TB and HIV? From the 2015-2016 WHO Guidelines, we see that diverse groups of patients need to be differentiated: those presenting well, those with advanced disease, those that are stable, and those that are unstable."

"Compared to the general population, patients living with HIV have a significantly higher risk of TB, even if they are stable and on treatment," he said. "A number of clinical trials have demonstrated that initiating ART during TB treatment, at least within the first four weeks, greatly increases survival (by almost 70 percent among individuals with advanced HIV disease). However, even with ART, those patients with TB and HIV are at greater risk of dying." He pointed to several meta-analyses showing evidence that TB is the leading cause of death for people hospitalized with HIV.

Dr. Ndagije presented highlights from the START study in Lesotho (Start TB Patients on ART and Retain them on Treatment), a cluster-randomized trial that evaluated a combination intervention package (CIP) aimed at improving treatment outcomes among TB-HIV patients, vs. standard of care. The CIP included ongoing health education, adherence counseling from facility-based village health workers, routine follow-up from health workers, SMS medication adherence messages, transport reimbursement, and small vouchers for cell phone usage. The results demonstrated a higher probability of survival in the study arm compared to standard care, and that timely HIV diagnosis and ART initiations mitigated high mortality associated with HIV-related TB.

Dr. Ndagije reaffirmed there is evidence of community-based models of care that can improve TB treatment outcomes, citing a study in South Africa, where researchers compared delivering MDR-TB treatment in communities with the standard, centralized hospital model.

"At community-based sites, significantly more patients were cured, and fewer patients defaulted," he explained. "In addition, more patients achieved successful treatment outcomes than at the centralized hospital."

Dr. Ndagije concluded by sharing a differentiated care model to address HIV and TB services among migrant miners in Lesotho, a country with the second-highest TB burden in the world. Noting Lesotho's high HIV prevalence, and the risk that miners face due to the nature of their work, Dr. Ndagjie explained, "Migrating miners don't have time to go to the clinics and often default on their medication. ICAP designed a pilot project to differentiate their care by collaborating with the Employment Bureau of Africa, and integrating TB-HIV services at the border posts where these miners go to pick up their monthly pay."

He explained that miners were able to access TB-HIV services six days a week via screening, testing, treatment, and education. "Care supporters provided education, adherence counseling, and medications were dispensed when clients came to collect their pay," he said. "The results have been phenomenal, and we've had a very high uptake in services."

He concluded: "Studies show that even with sick patients managed in facilities, community follow-up in between visits is beneficial, and innovations in how to reach communities can really be a game changer…so as stable patients are managed in clinics and communities, increasing our focus on advanced disease is important. Non-traditional delivery approaches need to be brought to scale to address the high mortality and poor treatment outcomes for patients with TB and HIV."

Panel 5: Differentiated Care for Patients at High Risk: Innovations and Experiences

Dr. Sikathele Mazibuko, Care and Treatment lead at CDC Swaziland and Dr. Gloria Gonese, Technical Advisor at I-TECH Zimbabwe, moderated the panel.

Panelists:

Prof. Sylvester Kimaiyo, Chief of Party, AMPATH Kenya

Dr. Kimaiyo provided an overview of two AMPATH models: differentiated care for high-risk patients at ART initiation and differentiated care for failed second line patients. The first model was a nurse-led model where nurses were responsible for interim weekly patient visits either physically or by telephone for a period of three months. Patients were sent directly to an express care room for one-stop care if they presented with a condition that a nurse could not manage. Overall, patients were much more likely to be alive and in care after a median of nearly 11 months of follow up.

In the second model, clinicians offered genotypic resistance testing with results used to design appropriate third line ART regimens with a multi-disciplinary team. Of the patients switched to third line, all had a VL <1000 copies/ml and no reported adverse effects of third-line ART.

Dr. Juliet Tumwikirize, Quality Improvement Advisor, URC ASSIST Uganda

Dr. Tumwikirize gave a talk on improving adult care for clients with unsuppressed viral load. In 2016, Uganda adopted VL monitoring as a preferred approach for monitoring patients on ART and to diagnose treatment failure.

In 2015, USAID ASSIST worked with Uganda on a QI project to improve viral load access in the 34 facilities and identified several best practices, including labeling, changing client flow on HIV clinic days, preparing VL-eligible lists and following up with patients in the community. The QI intervention, which included staff orientations, health workers differentiating clients with unsuppressed VL for special clinic days, provision of individual intensive adherence counseling and community-level follow up was able to reduce viral load in previously unsuppressed clients in the 34 pilot sites.

Dr. Maureen Syowai, Regional Technical Advisor, ICAP Kenya

Dr. Syowai spoke about a quality improvement collaborative in Western Kenya to improve utilization of routine viral load data. Dr. Syowai stressed the importance of swift identification and management of patients on ART with unsuppressed viral load, and noted the absence of systems that foster effective utilization of VL results.

With support from NASCOP, CDC, and HRSA, ICAP conducted a rapid baseline assessment at 30 high-volume sites in Siaya County, Kenya. Using ICAP's QI approach, the project was launched in early 2017. The team is hoping to improve the QI skills of facility-level teams; identify systems and strategies to improve utilization of VL results towards attaining the third 90, and generating feasible, practical strategies that can be taken to scale. Initial results are very promising.

Key Takeaways from Panel 5:

- Intensive psychosocial support improves clinical outcomes for patients with advanced disease
- Use of quality improvement approaches are can be to enhance DSDM
- A multidisciplinary HIV resistance clinic can help improve patient adherence to ART
- Successful stable differentiated care gives more time for complex and unstable patients

Breakout Sessions: Guidelines and Resources

Demand Creation/Designing Patient-centered Care

The demand creation group discussed the implementation gaps of DSD for P@HR by focusing on patients as a primary target group and the community as a secondary target group.

The group consisted of members from civil society, MoH, and implementing partners. The group came to a consensus that many DSD gaps exist within communities, such as limited information of DSDMs, programmatic data, tools and guidelines for both healthcare providers and civil society. They recognized an overall lack of understanding about the benefits of differentiating care on the part of healthcare professionals, patients, and communities. A general lack of understanding leads to gaps in the involvement of clients and communities to rollout DSD programs.

The demand creation group identified that priorities for joint learning on how to increase demand creation for clients, communities, and healthcare providers through the CQUIN network work could include a knowledge repository to share evaluations on implementation for scale up, M&E tools, and job aides. One topic identified for CQUIN network co-creation could be a training curriculum for health facility staff.

Pediatric ART

This breakout group discussed children at high risk of advanced disease progression. The group suggested that the latest national data indicates that there are low rates of viral load suppression amongst children on ART. They shared that TB diagnosis in children remains challenging and monitoring of this population is difficult because national level data is not disaggregated in some countries.

The Pediatric ART group suggested that there were many gaps in pediatric ART care, but suggested this was a place where co-creation of resources could be beneficial at the policy level. They suggested that children have been largely excluded from differentiated models of care in national operational guidelines, and that healthcare provider competencies have not generally been assessed for pediatric HIV management. The group identified that other challenges in managing DSDM for children include issues of HIV status disclosure to children and lack of psychosocial support to pediatric clients.

Challenges for DSDMs at the family and community levels were also identified. A few examples given in these settings include the timing of clinic attendance, school days and ART doses not being adjusted for weight changes in the pediatric population.

The group suggested CQUIN could support joint learning through creation of country level policy guidance, analysis and monitoring of disclosure in children, development and sharing of capacity building materials for health workers, and a platform for sharing of best practices. They suggested that CQUIN could lead an evaluation of DSDM models for the pediatric population by assessing feasibility, acceptability, and scalability for network learning.

Research Priorities

In light of the adoption of DSD programs, there are many emerging questions and a growing number of research priorities for P@HR. Suggested research topics within the subject of DSDM for P@HR include cost effectiveness, costing, and current situational analysis of DSDM implementation gaps. Community-level research themes that emerged were male engagement, feasibility, and acceptability of DSDMs in a variety of contexts as well as user perspectives.

At the healthcare level, potential research topics included characteristics that allow a DSDM to be scaled-up at facilities including effective training approaches for P@HR and how the staff should be shifted to maximize the needs of P@HR. Areas for co-creation of resources identified were adapting DSDM according to different contexts, protocols for cost effectiveness, or the development of provider satisfaction tools.

Scale Up

The scale up of DSD group comprised at least one participant from each CQUIN Network country. Through in-depth discussions of each country's progress in DSD scale up for P@HR, the group agreed that overall, most countries were missing the guidelines, tools, SOPs, curricula, and other key facilitators of DSD implementation for P@HR.

All countries agreed that scale up requires a coordinated effort from the national to district level. One concern for countries was limited availability of VL and CD4 monitoring which are fundamental components to an effective DSD scale-up. The group also agreed that ensuring a robust system of DSD for stable clients is the principal foundation for any system scale up, including P@HR.

In terms of network resource co-creation, the group identified that resources and health systems should be the focus of guidelines for scale up. Areas for joint work identified specially within this focus were viral load monitoring guides, target setting, and aligning DSD with Quality Improvement (QI) indicators for M&E.

Training and SOPs

The countries represented in the training and SOP breakout group included Mozambique, Kenya, Zimbabwe, Ethiopia, Swaziland, Malawi, and Zambia. Each country within the group has already developed DSD policies for stable patients, as well as management guidelines for TB, OI, or high viral load. However, the countries all agreed that there was no specific mention of "unstable" patients or P@HR in their current guidelines.

The group suggested that a key starting point for joint work would be to clearly define "unstable patients" and develop an algorithm for healthcare workers to quickly identify P@HR and link them to the necessary services. Monitoring and evaluation frameworks and tools that include indicators on P@HR are resources that the group felt appropriate for CQUIN Network co-creation. The group also suggested co-creating a training package for healthcare workers to identify P@HR and link them to appropriate care.

Country Team Breakout Sessions

In the final breakout session, country teams were asked to identify next steps and meeting takeaways to continue policy dialogue and the scale up of DSD to improve outcomes for P@HR in their respective countries. Key next steps for each country are outlined below:

Zimbabwe

- Provide feedback to stakeholders through technical working group meetings and partnership forum meetings and share lessons learned
- Disseminate the DSD scale-up plan
- Make the DSDM dashboard a standing agenda in every DSD technical working group meeting and develop an action plan to address issues highlighted
- Promote sharing of best practices for DSDM among implementing partners

Zambia

- Set up a DSD task team nested within the National ART technical working group
- Identification/engagement of a National DSD coordinator
- Adaptation of tools and SOPs for programming
- National level training followed by a dissemination to lower levels
- Evaluation of current DSD models

South Africa

- Compile a report and present post-meeting recommendations to DDG
- Pilot the use of a mobile application for linking out-of-facility Adherence Clubs and medicine distribution systems to web-based DHIS 2
- Conduct status review of current DSDM for P@HR in South Africa
- Continue standardization of training material for P@HR processes within DSD
- Engage PLHIV communities

Kenya

- The DSD task force under Kenya's HIV Quality Improvement Framework should expand the DSD discussion
- Co-creation should begin in Kenya by focusing on improving patient care and reviewing outcomes for groups of patients on DSDM
- Review current situation for DSD: measure patient satisfaction, coverage, quality, impact, and cost-benefit analysis
- National government to give oversight on the scale up of DSD for harmonization
- Utilize QI to drive patient care changes to provide quality services

Swaziland

- National level: finalization of HIV guidelines inclusive of P@HR; develop a scale-up plan; completion of data tools and DSD M&E; target setting to encourage coverage, access, and outcomes
- Regional & facility level: collaborate on scale-up plans, have P@HR focused days, MDTs for P@HR, and focus on demand creation
- Community level: focus on DSDM demand creation, training and sensitization of community support groups and networks

Uganda

- Provide feedback on P@HR to the TWG for DSDM for support
- Finalize M&E section in the implementation guide to include indicators for P@HR
- Establish implementation review mechanisms for DSD
- Update DSD for P@HR in the current implementation guide for DSD

Ethiopia

- Consider different DSDMs in Ethiopia through agenda setting with higher officials and sharing lessons learned on P@HR with colleagues
- Revisit guidelines, SOPs, and job aides with new considerations for DSDM and P@HR
- Prepare for the evaluation of the DSD-ASM pilot

Mozambique

- Include P@HR in the national technical working group agenda focusing on the package of DSDM for stable patients
- Develop tools to identify P@HR

Closing Remarks
Dr. Wafaa El-Sadr
Global Director, ICAP Columbia

Dr. El-Sadr closed the workshop by acknowledging the commitment of everyone in the room. "We are all together to have an impact on the epidemic through enhancing coverage and quality," she said. "This workshop was not just for people to sit and listen; everyone had to be engaged, which made it very special."

Dr. El-Sadr talked about the importance of continuous learning. "It is within our reach to think about the models of care that will reach these patients and provide the best possible outcomes, because they are very vulnerable and are often forgotten, because they are more complex to take care of. Nonetheless, they present us an opportunity to demonstrate our commitment. I think we all have a collective believe that DSD is not only for stable patients, but that it's necessary for other populations, including patients at high risk, pediatrics, and many others."

“The energy generated in a workshop like this does not end when we say goodbye. The success of workshops and meetings is what happens after,” she said. “I certainly felt the commitment by the country teams to go home with a plan and to work on it together so we can advance the agenda that’s ahead of us. We hope the work and planning will continue and the achievements will be garnered, and the findings, results, and successes will then be harvested across countries so we can all collectively move forward. There are many opportunities to share between the workshops.”

She concluded by highlighting the importance of reporting on the successes and challenges as meetings continue to keep momentum, and thanking Zimbabwe for hosting CQUIN; ICAP staff for making the meeting possible; and the Bill & Melinda Gates Foundation for their support.

APPENDIX

Agenda

Monday, July 17

Welcome and Opening Remarks

Dr. Wafaa El-Sadr, ICAP Global Director
Dr. David M. Allen, Deputy Director, HIV Southern Africa, Bill & Melinda Gates Foundation

The CQUIN Learning Network

Dr. Peter Preko, CQUIN Project Director, ICAP at Columbia University

Patients at High Risk of Disease Progression: Global Best Practices

Dr. *James Hakim, University of Zimbabwe*

Differentiated Care for Patients at High Risk: Community and Client Perspectives

Dr. Bactrin Killingo, Treatment Education Lead, International Treatment Preparedness Coalition

Q&A

Moderators: Dr. Wafaa El-Sadr, ICAP Global Director and Dr. James Hakim, University of Zimbabwe

Panel 1: Patients at High Risk: Experience, Guidelines, and Best Practices

Moderators: Dr. Andrew Reid, University of Zimbabwe; Dr. Maureen Syowai, ICAP Kenya

- Dr. Tsitsi Apollo, Deputy Director for HIV/AIDS and STIs, MOHCC Zimbabwe
- Ms. Lillian Diseko, Deputy Director for HIV Care & Treatment, NDOH, South Africa
- Dr. Maureen Kimani, HIV Care and Treatment Manager, MOH Kenya
- Dr. Hudson Balidawa, Public Health/M&E Specialist, MOH Uganda

Panel 2: Patients at High Risk: National Guidelines and Best Practices

Moderators: Dr. Appolonia Aoko, CDC Kenya; Dr. Samuel Biraro, ICAP Uganda

- Dr. Jose Tique, QI Technical Advisor, MOH Mozambique
- Dr. Fethia Keder, HIV Program Team Leader, FMOH Ethiopia
- Dr. Nomthandazo Lukhele, ART Coordinator, MOH Swaziland
- Dr. Michael Odo, HIV Care & Treatment Advisor, MOH Malawi

Differentiated Care for Patients at High Risk: a Call to Action

Dr. Miriam Rabkin, Director for Health Systems Strategies, ICAP at Columbia University

Country Breakout Sessions and Report Back

Moderators: Dr. Clorata Gwanzura, MOHCC Zimbabwe; Dr. Batanayi Muzah, ICAP South Africa

Wrap-up and Plans for Day 2

Opening Reception Dinner

- Dr. Godfrey Musuka, ICAP Zimbabwe Country Director
- Dr. Gibson Mhlanga, Principal Director, Preventive Services, MOHCC Zimbabwe
- Dr. Wafaa El-Sadr, ICAP Global Director
- Ms. Rumbidzai Matewe, Acting Director, Zimbabwe National Network for People Living with HIV/AIDS (ZNNP+)

Tuesday, July 18

Welcome and Recap of Day 1

The CQUIN Learning Network: Communities of Practice
Dr. Miriam Rabkin, ICAP/CQUIN

Panel 3: Perspectives from the Front Line (Providers and Patients)
Moderators: Ms. Rumbidzai Matewe, ZNNP+; Dr. Sombo Fwoloshi, MOH Zambia

- Dr. Andrew Reid, University of Zimbabwe
- Mr. Sipho Mahlangu, ZNNP+
- Ms. Sekai Thikateli, ZNNP+
- Dr. Baker Bakashaba, Regional Project Manager, Soroti Region, TASO Uganda
- Dr. Fred Busuulwa, Senior Medical Officer, GSMH Swaziland

Panel 4: Differentiated Care for Patients at High Risk: Innovations and Experience
Moderators: Dr. Norah Namuwenge, MOH Uganda; Dr. Salome Okutoyi, USAID Kenya

- Dr. Lucas Molfino, Head of Mission, MSF Mozambique
- Mr. Eric Mtemang'ombe, Lighthouse Malawi
- Dr. Daniel Mwamba, ART Provincial Coordinator (Lusaka), CIDRZ, Zambia
- Dr. Sylvia Ojoo, Country Director, University of Maryland Programs, Kenya

Breakout Sessions – Diving Deeper into DSD for Patients at High Risk and Report Back
Moderators: Dr. Munyaradzi Pasipamire, Swaziland MOH, and Dr. Annie Mwila, CDC Zambia

Wrap-up and Plans for Day 3

Wednesday, July 19

Welcome & Recap of Day 2

Differentiated Care for Patients with TB and HIV
Dr. Felix Ndagije, ICAP/CQUIN

Panel 5: Differentiated Care for Patients at High Risk: Innovations and Experience
Moderators: Dr. Sikathele Mazibuko, CDC Swaziland; Dr. Gloria Gonese, I-TECH Zimbabwe

- Prof. Sylvester Kimaiyo, Chief of Party, AMPATH Kenya

- Dr. Juliet Tumwikirize, Quality Improvement Advisor, URC ASSIST Uganda
- Dr. Maureen Syowai, Regional Technical Advisor, ICAP Kenya

Breakout Sessions: Co-Creation of Resources and Report Back

Moderators: Dr. Daniela Belen Garone, Country Medical Coordinator, MSF Zimbabwe; Dr. Marcelo de Freitas, ICAP Mozambique

Country Team Breakout Sessions, Report Back, and Discussion

Closing remarks / Next steps

Participants

Dr. David Allen is Deputy Director, HIV Southern Africa for the Bill & Melinda Gates Foundation. Dr. Allen received his MD from the New York University School of Medicine and his MPH degree from the Johns Hopkins School of Public Health. He worked as a pediatrician in Washington D.C. before joining the Centers for Disease Control and Prevention (CDC) for a twenty-year career. At CDC, Dr. Allen worked in a variety of public health areas including infant mortality, homeless health, community health, epidemiology training and HIV/AIDS. He served as an advisor to the South African Department of Health, and as Director of the CDC Global AIDS Program for South Africa, the Regional Director of the Global AIDS Program for Southern Africa, and the Director of the Global AIDS Program, Caribbean Regional Office.

Dr. Clarice Ambale is the Technical Advisor for Pharmacy with the Center for Health Solutions (CHS) Kenya. She is the differentiated care lead for the Shinda project located in Siaya –the county with the second highest HIV prevalence in Kenya. Dr. Ambale is a pharmacist with a masters' degree in pharmacoepidemiology and pharmacovigilance with close to 10 years' experience working in both the public health sector and non- governmental organizations.

Dr. Appolonia Aoko works for CDC in Kenya as a Public Health Specialist (HIV Prevention and Treatment), leading the Adult Treatment and Prevention team for CDC-Western Kenya Region. Prior to joining CDC, she worked with US-DOD and Kenya's Ministry of Health. Dr Aoko has rolled-out novel programs such as mentorship, cervical cancer screening, community strategy, Isoniazid Preventive Therapy, pharmacovigilance, Clinical Quality Improvement, integration of ART in Maternal, New-born, Child Health and TB clinics, and child and adolescent friendly services in HIV clinics. She is currently leading efforts to roll out PrEP and Differentiated Care in Western Kenya region. She is passionate about Adolescent Health and building resilience among adolescents. She holds a Bachelor of Medicine and Surgery degree from the University of Nairobi- Kenya and a Master of Science in Public Health from the University of London- UK.

Dr. Tsitsi Apollo is Deputy Director for HIV/AIDS and STIs at the Zimbabwe Ministry of Health and Child Care (MOHCC). Dr. Apollo is a medical doctor and a public health specialist who has been practicing in Zimbabwe's public health system for over 18 years. She previously worked as the National Tuberculosis Control Programme Manager, and for John Snow Incorporated as an HIV/AIDS Advisor. She is an active member of the National Medicines Therapeutics Advisory and Policy Committee in Zimbabwe. She participated in the 2013 and 2015 World Health Organization Guidelines Development Group for Consolidated ARV Guidelines. She plays an Advisory role to the WHO Director General as a member of the Strategic and Technical Advisory Committee for HIV/AIDS and Hepatitis.

Mr. 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 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. He is also 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.

Dr. Shirish Balachandra is Branch Chief for HIV Services at CDC Zimbabwe. Prior to joining CDC, Dr. Balachandra served as Public Health Officer for the UN High Commissioner for Refugees in Rwanda, where he was responsible for all health and nutrition programming for approximately 75,000 refugees from eastern DRC. He also represented UNHCR on the Joint UN Task Force on AIDS and the UN Joint Task Force for Ebola Preparedness and Response. Dr. Balachandra studied molecular biology and French literature at the University of California at Berkeley and medicine at McGill University, and completed residency training at the University of Rochester.

Dr. Baker Bakashaba is a medical doctor, with a Bachelor of Medicine & Surgery Degree from Makerere University; he is currently pursuing an MSc. in Project Management at the University of Salford, UK. During his seven years at TASO Uganda, he managed HIV/AIDS programs, focusing on design and implementation of facility and community-based client centered projects and health systems strengthening. He has had the opportunity of contributing to the design of community ART models in TASO, such as Community Drug Distribution Points (CDDP) and Community Client led ART Delivery (CCLAD) and other national level Differentiated Service Delivery Models. He is currently the Regional Project Manager for the "Accelerating HIV Epidemic Control in Soroti Region" project, a regional HIV/AIDS project funded by PEPFAR via CDC.

Dr. Sam Biraro is ICAP's country representative in Uganda and leads UPHIA, the PEPFAR-supported population-based HIV impact assessment survey that is reaching 15,000 households. He began his career in clinical practice with Mulago Hospital in Kampala and later with Kisiizi, a missionary hospital in rural Uganda. He then worked in clinical research with Epicentre/MSF on strategies for HIV care and treatment and treatment of malaria. At the Medical Research Council and the Uganda Virus Research Institute, Sam conducted population-based surveillance of HIV, HSV-2, and sexually transmitted infections. Most recently, his work has focused on non-communicable diseases (NCDs). Dr. Biraro graduated as a medical doctor (MBChB) from Mbarara University and earned an MPH from Loma Linda University. He completed his PhD at the London School of Hygiene and Tropical Medicine.

Dr. Ruth Bulaya-Tembo is a Medical Specialist at USAID in Zimbabwe. She manages and oversees cooperative agreements with implementing partners who are focused on strengthening the provision of clinical services within the Zimbabwean public health sector. She has been at USAID Zimbabwe for eight years. Prior to USAID, Dr Bulaya-Tembo served as a clinician within the public sector as well as a lecturer at the University of Zimbabwe Medical School's department of clinical pharmacology.

Ms. Lillian Diseko is a Program Manager in the HIV, AIDS and STI Cluster at the National Department of Health, South Africa. She worked for 10 years as a professional nurse/ midwife and HIV coordinator in Johannesburg before joining the Gauteng provincial office as a TB/HIV integration manager. She provides all provinces with logistical and technical support to efficiently implement the National Strategic plan and other relevant policies aimed at improving the delivery of quality HIV and TB services in the public sector. Her passion is to improve the quality of life and health outcomes for persons living with HIV and TB. She has a Degree in Nursing Sciences (UNISA), post graduate diplomas in Community Health Nursing (Wits Tech) and Health Management (UCT) as well as a Certificate in Project Management from UNISA Business School.

Dr. Wafaa El-Sadr is the Director of ICAP at Columbia University, University Professor of Epidemiology and Medicine at Columbia University's Mailman School of Public Health and College of Physicians and Surgeons. She is also Mathilde Krim-amfAR Professor of Global Health at Columbia University and leads the Global Health Initiative at the Mailman School of Public Health. Dr. El-Sadr's interests include: HIV/AIDS, tuberculosis maternal/child health, capacity building and health systems strengthening. She has led research studies that have focused on HIV prevention and management and currently co-leads the NIH-funded HIV Prevention Trials Network (HPTN). Through ICAP, the center she established more than a decade ago at Columbia University, she has led efforts that enabled the establishment of large-scale programs in 24 countries in Africa and Asia that link research, education, training and practice with a focus on HIV, other public health threats and health system strengthening. Through ICAP's work, more than two million people have received access to HIV programs around the world. This was accomplished in partnership with ministries of health, academic institutions, non-governmental and community-based organizations. ICAP has championed the integration of research into programs and investment in health system strengthening and quality improvement.

Dr. El-Sadr received her medical degree from Cairo University in Egypt, a master's in public health from Columbia School of Public Health and a master's in public administration from Harvard University's Kennedy School of Government. Her scholarly work has appeared in leading scientific journals. She was named a MacArthur Fellow in 2008 and is a member of the National Academy of Medicine.

Dr. James Hakim is Chairman of the Department Medicine at the University of Zimbabwe College of Health Sciences in Harare. He is an internal medicine specialist and a clinical epidemiologist at the University. He has worked collaboratively with colleagues at the University of Colorado Health Sciences Centre and University of California, San Francisco to establish an AIDS research and care program in Zimbabwe over the past 6 years. Dr Hakim has been on the faculty of the University of Zimbabwe since 1992. Following graduation from Makerere University Medical School in Uganda, he undertook specialization in internal medicine at the University of Nairobi, Kenya and the Royal Colleges of Physicians in the United Kingdom. He later received training as a clinical epidemiologist with the University of Newcastle, Australia.

Maureen Amagove Inimah serves as the Quality Improvement (QI) Lead for HEALTHQUAL International in the Southern Highlands of Tanzania project and is currently Focal person in Kenya for Program Quality and Efficiency for Differentiated Care at NASCOP on a contract basis. Ms. Inimah previously served as Focal Person for QI in the National AIDS/STI Control Program (NASCOP) within the Ministry of Health in Kenya. Maureen has facilitated numerous trainings and mentorship opportunities for health workers on Quality Improvement and Monitoring and Evaluation (M/E) ART data tools, including coordinating the strategy for implementation of differentiated care approaches in Kenya.

Maureen has worked closely with other branches of government in the development of key policy documents for Quality Improvement, including: The Kenya HIV Quality Improvement Framework (KHQIF), The Kenya Quality Model of Health (KQMH) Training Curriculum for in-service Training, and The Differentiated Care Toolkit. She holds a diploma in Clinical medicine and surgery, a B.A. in psychology and an MPH.

Dr. Marcelo A. Freitas is a Brazilian Medical doctor, Public Health Specialist, and holds a Masters in Infectious Diseases. He spent ten years at the Ministry of Health in Brazil working on HIV/AIDS Programmes as the HIV Care and Treatment Coordinator, and more recently as Deputy Director. In 2016, he joined ICAP Mozambique where he is currently the Clinical Director.

Dr. Sombo Fwoloshi is an Infectious Diseases Registrar at the Department of Internal Medicine at University Teaching Hospital in Zambia. She completed her post graduate training in internal medicine and infectious diseases and holds DTM&H from the London School of Hygiene and Tropical Medicine. Dr. Fwoloshi is currently involved in clinical care of patients, running HIV/AIDS clinics, training all health care cadres on HIV prevention and treatment and advising on appropriate antibiotic use in the hospital. Her infectious disease team offers complicated HIV care and advice across the university teaching hospitals in Lusaka. Her research interests include adolescent HIV care and interactions of infectious diseases with non-communicable diseases. She also participated the in National epidemic preparedness committees on various diseases including viral hemorrhagic fevers, cholera and meningitis. Most recently, she conducted research on treatment outcomes in patients with TB/DM, as partial fulfilment towards obtaining her Master's degree in Infectious Diseases.

Dr. Ignace Gashongore began his career in 2004 with the day-to-day care of patients, and subsequently worked at the district, provincial, and National levels. He is now a member of the Zambian Ministry of Health PMTCT and ART Technical Working Groups, and Chief of Party and Senior Technical Advisor for SMACHT-*Plus* and Z-CHECK projects of the University of Maryland. Both projects implement the Community HIV Epidemic Control (CHEC) model, an innovative community-based approach to the continuum of HIV care, in which CHWs equipped with electronic tablets go door-to-door to deliver health messages and offer HIV testing in the community. Persons found to be HIV-infected are immediately referred to a health care facility, and HIV-uninfected are referred for preventative measures and are followed up to be retested. Once a person has been stable on treatment for at least year, they are offered community ART, whereby the CHW conducts a health screening in their home and delivers a refill of their ART.

Dr. Daniela Belen Garone is an Argentinean Medical Doctor specializing in Internal Medicine, Infectious Diseases, Tropical Medicine and Clinical and Pharmacological Research. Daniela has over 23 years working in the provision of Clinical Care, mentorship and training support in Infectious Diseases in general and HIV/TB in particular. Her main area of expertise is HIV, TB and MDR-TB programs, research and strategic support and she has worked in Zimbabwe; South Sudan; South Africa, Malawi and Mozambique. Since 2009, she has played the Medical Coordination role at project level (Khayelitsha, Cape Town and Thyolo, Malawi) as well as country level (Malawi and Mozambique Medical Coordination) working with MSF and Dignitas International supporting Ministry of Health for the implementation of HIV-TB programs. During her work in Argentina, Sudan, South Africa, Malawi, Mozambique and Zimbabwe, she was part of national Technical Working Groups and writing committees for the development of NSP, country Global Fund concept notes and National ART and TB Guidelines providing strategic and programmatic technical support.

Dr. 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.

Dr. Aster Shewaamare Gebremedhin received her undergraduate medical doctorate degree from Belarus, Minsk medical school. Since her graduation, she has been working in Zewditu Memorial Hospital in Addis Ababa, Ethiopia. Since 2003, she has been actively engaged in the provision of care and treatment services for people living with HIV, and she was one of the first clinicians in Ethiopia to prescribe ART. Currently she is the Chief Clinical Coordinator of the ART clinic at Zewditu Memorial Hospital HIV/AIDS clinic, which has more than 15,000 individuals ever started on ART and 7,200 individuals currently receiving ART. In addition to clinical service delivery and program management, she has conducted clinical research and has trained and mentored large number of health professionals both local and international. She has received various recognitions for her contribution in the care of PLHIV; "Person of the Year" in 2006; "PEPFAR Hero" in 2009, "Medical Hero" in 2012 and "Women of Excellence" in 2015.

Dr. Clorata Gwanzura, is the Differentiated Care Medical Officer: HIV Care and Treatment at MoHCC Zimbabwe. With support from the CQUIN project, she supports differentiated care projects in the AIDS and TB Unit. She recently joined ICAP in Zimbabwe and has 5 years' experience working at various levels in the Zimbabwe Ministry of Health, implementing and managing health programs including HIV programming. Key areas of interest include health systems strengthening and program management. Clorata is a medical doctor and holds an MPH degree.

Dr. Hudson Balidawa is a Public Health and Monitoring and Evaluation expert with vast experience in design, monitoring and research for public health programs in resource-limited settings. He is also a pediatrician who has worked in design and implementation of public health interventions for maternal and child health, and clinical management for the last 15 years. He has supported scale up of the public health approach to ART management in Uganda, Namibia, Zimbabwe and Nigeria using the adapted WHO IMAI, IMPAC and IMCI guidelines. He is an Honorary Senior Quality Improvement Advisor for URC to institutionalize Quality Improvement in public health services. With support from URC, he supported HIV care quality initiatives that have now spread to other health services programs.

He worked with the Global Fund consulting teams on Program Quality Assessment (PQA) to develop the Toolkit for Health Facilities Differentiated Care for HIV and Tuberculosis. He currently monitors Global Fund funded interventions for HIV and TB, and heads the National Technical Working Group for Differentiated Service Delivery Models (DSDM) in Uganda.

Dr. Hervé Nzereka Kambale is a Differentiated Care Advisor for the Swaziland National AIDS Programme (SNAP). He is dedicated to scale up the implementation of differentiated care for P@HR in Swaziland. Dr. Kambale has 8 years' experience in HIV clinical and program management, as well as 5 years' of clinical experience in general medicine. His major contributions include; successfully raising standard of care through health education and capacity building, mentoring and supervision, effective collaboration with the Ministry of Health and other Non-governments agencies in the following fields: Palliative Care, Cancer Management, PMTCT, HIV/AIDS, Maternal and Child Care. Dr. Kambale graduated with an Mphil, HIV/AIDS Management from Stellenbosch University in 2013, and MBChB from the Catholic University of Bukavu in 2005. He has previously worked in Rwanda, DR Congo, Botswana, and Swaziland.

Dr. Fred Busuulwa Kayongo is the Medical Doctor In-charge at Good Shepard Mission Hospital in Swaziland. Since 2008, he has worked in the hospital's ART clinic, which has 12,009 active ART patients and 59 patients on Drug resistant TB treatment (28 patients so far completed treatment). Dr. Busuulwa has also worked in the hospital's Obstetrics and Gynecology department. He has trained nursing students and staff and other nurse cadres at over 28 clinics with 8278 active HAART patients within Lubombo region. He obtained an MBchB in 2001 at Mbarara University of Science and Technology in Uganda and certified in Advanced Health Management Program (AHMP) by Foundation of Development (PDF) at Yale school of Public Health 2013-2014. Has 17 years' experience in various Advanced Management Trainings and Programs in HIV/TB, Drug resistant HIV and TB, Pain Management and Palliative care. In 2001, he worked at Kabale Regional Referral Hospital Uganda and Nyakibale Mission Hospital Uganda until 2007 when he joined EDINA Adan Maternity Hospital in Somaliland for one year.

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Dr. Fethia Keder is the HIV Program Team Leader at the Ethiopian Federal Ministry of Health.

Dr. Bactrin Killingo is the Treatment Education Lead, ITPC. 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, Dr. Killingo has been involved with 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, he has been instrumental in empowering communities with the knowledge and skills needed to mobilize resources and take charge not only of the small projects they run but also of their own health. Dr. Killingo is currently based in Nairobi, Kenya and is the lead on the Treatment and Knowledge Program that serves the needs of PLHIV communities and key affected populations.

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Professor Sylvester Kimaiyo is the Chief of Party at AMPATH, Kenya.

Dr. Maureen Kimani works with Kenya’s Ministry of Health at the National AIDS/STI Control Program (NASCOP). Dr. Kimani is the HIV care and treatment Program Manager, and coordinated the development of Kenya's differentiated care operational guidance for health care providers. She will also provide coordination in national roll out of differentiated care models. She is committed to contributing to the country vision 2030 of zero new HIV infections, AIDS related deaths, stigma and discrimination.

Dr. Nomthandazo G. Lukhele is the National ART Coordinator at the Swaziland Ministry of Health. Dr. Lukehele coordinates HIV care and treatment services in Swaziland, and has extensive hands-on experience in the delivery of HIV care and treatment services at both clinical and programme level. She holds a Bachelor of Medicine and Surgery Degree (MBCB) from Witwatersrand University, South Africa (2006) and a Bachelor of Science Degree from the University of Swaziland (2000). She is currently studying for a Master of Public Health degree at Witwatersrand University, majoring in Health systems strengthening.

Dr. Nyikadzino Mahachi is the deputy Chief of Party (Technical) for FHI360 in Zimbabwe. He completed his medical degree in Zimbabwe and his MSc at the London School of Hygiene and Tropical Medicine. He has worked within the public, private and not-for-profit sectors. Nyika has been involved in the development of HIV treatment guidelines and operationalisation in Zimbabwe, with a particular emphasis on PMTCT & pediatric HIV. In 2013, he spearheaded the transition to Lifelong ART under the country's PMTCT program. He joined FHI360 in 2015 as Deputy Chief of Party/technical lead with the overall responsibility of designing and implementation of the Zimbabwe HIV Care and Treatment Project (ZHCT), a community focused project aiming to scale up differentiated care services in Zimbabwe. Under this project, FHI360 has implemented high yield home based index testing and community ART refill groups in 13 priority districts in Zimbabwe. He is currently Vice President of the Zimbabwe College of Public Health Physicians.

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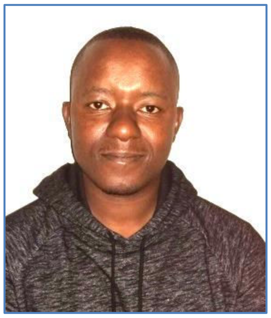
Mr. Sipho Mahlangu, resides in Victoria Falls, Zimbabwe and is representing ZNPP+.

Dr. Kenneth Malisita is the ART Manager for MoH Malawi.



Dr Talent Maphosa has had over 12 years' experience in the field of health management. In his current position as technical advisor for OPHID, Talent is responsible for ensuring that health programs are technically sound in line with international and national guidelines. As the Technical Advisor I actively participate in policy development, donor and implementing partner meetings and with technical working groups with the AIDS and TB Unit in the MOHCC. I am responsible for contributing to the program's strategic direction, and building the technical HIV Clinical service capacity and expertise within the FACE-Pediatric HIV Consortium.

Ms. Rumbidzai "Rumbi" Praise Matewe holds a Master's Degree in Development Studies and is currently working towards her PhD on Community Development with a focus on Resilient Health Systems. Rumbi has more than 10 years working experience in community development**.** Currently employed by the Zimbabwe National Network of People Living with HIV (ZNNP+), she has been instrumental in the rolling out of differentiated service delivery for a constituency she represents which id PLHIV. Over the past 3 years she has worked in improving the programme design and monitoring for community ART refill groups.

Dr. Sikathele Mazibuko is the Care and Treatment lead for PEPFAR Swaziland. A medical doctor by training, he graduated with an MBChB from the University of Zimbabwe in 2000 and later received training as a Clinical Epidemiologist at the University of Pretoria, South Africa. Dr. Mazibuko has extensive HIV management experience and has worked as an HIV clinician at the facility level and a program officer at provincial and national level before joining CDC Swaziland in his current position.

Mr. Eric Mittochi is a Malawi National HIV/TB Clinical Mentor. He has attended several international conferences on HIV.

Mrs. Phumlile R. Dlamini Mkhabele is has worked as a nurse for fourteen years at the Mbabane Government Hospital in Swaziland. She has attended courses on STS, PP, family planning, and Pediatric ART.

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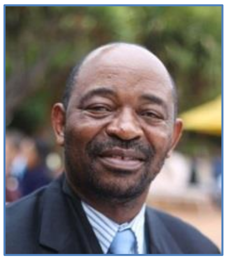
Dr. Tshepo Molapa is the Deputy Director for Monitoring and Evaluation for the HIV Cluster at NDOH in South Africa.

Dr. Lucas Mofino is the Head of Mission and medical coordinator of MSF in Mozambique. He completed his medical training at University of Buenos Aires in Argentina. He did a specialization in Internal Medicine and after working for several years in Argentina he joined MSF in 2006. Since his first mission in Uganda, he has over 10 years' experience working in humanitarian medical work with Médecins sans Frontières focusing mostly on HIV and TB in Africa and South-East Asia.

Mr. Eric Mtemang'ombe is a Clinician at Lighthouse Trust, Malawi. His current work with differentiated care includes the clinical management of both stable and unstable patients.



Dr. Owen Mugurungi is Director of MoHCC Zimbabwe.

Dr. Pasipamire Munyaradzi is the National ART Programme Officer for Swaziland's National AIDS Programme. He has more than eight years of clinical and programmatic experience in HIV and TB Health services. He was instrumental in the development of Swaziland Differentiated Care (CommART) policies and SOPs. He is passionate with research, monitoring and evaluation, and is a recipient of the Lange/ Tongeren Young Investigator Prize for Clinical Research at International AIDS Conference 2016. He holds bachelor's degree in medicine and surgery from University of Zimbabwe and a Master of Science degree in Epidemiology and Biostatistics from University of the Witwatersrand and a certificate in Health Economics.

Dr. Godfrey Musuka is the Country Director at ICAP Zimbabwe. He is an HIV/AIDS M&E and public health expert with 20 years of experience implementing health interventions in Zimbabwe, Botswana, and Nigeria. He has worked for UNICEF, 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. His key areas of interest include strategic information and program management. Godfrey is a Doctor of Veterinary Medicine and holds MPhil and MSc degrees.

Dr. Gloria Mutukwa-Gonese is a Technical Advisor who works for I-TECH-Zimbabwe in the Care and Treatment Program, a PEPFAR funded program supporting Zimbabwe MOHCC in the provision of comprehensive HIV services in five Provinces. Gloria has worked at various levels and in different roles supporting health delivery systems in Zimbabwe. Post clinical life, she served as District Medical Officer for Harare City and landed herself the post of Health services Director with Chitungwiza Municipality in 2012 before joining I-TECH Zimbabwe as part of the senior leadership team in 2015. She is a seasoned Public Health Specialist with over 8 years' experience, six of which have been at senior management level. Gloria is a trained Medical Doctor who holds MBChB and MPH degrees from University of Zimbabwe College of Health Sciences (UZ-CHS).

Dr. Batanayi Muzah possesses a medical degree, diploma in HIV management and MSc. in Epidemiology and Biostatistics. He has extensive HIV and TB clinical medicine experience from Zimbabwe and Namibia before starting a career in Public Health in South Africa. Dr. Muzah has held management positions with several institutions in South Africa. He is currently a Senior Technical Advisor with ICAP-SA on works closely with the South Africa National Department of Health on various projects.

Dr. Daniel Mwamba is a dedicated HIV clinician with more than 10 years' work experience, gained from working in hospitals both in the public and private health facilities including the mining sector. He has growing interest in HIV research, striving for evidence to improve patient outcomes in HIV prevention, care and treatment programs. As a certified trainer of trainers for the Zambian Ministry of Health, he is dedicated to improving the knowledge and skills of various cadres of health workers to improve the quality of services for people living with HIV and related co-morbidities. He is currently working as a Provincial ART Coordinator for Lusaka province, Zambia for the five year "Achieving HIV Epidemic Control in Zambia" (ACHIEVE) project, a U.S. President's Emergency Plan for AIDS Relief and Centers for Disease Control and Prevention supported project.

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Dr. Annie Mwila is the Pediatrics Advisor at CDC Zambia.

Dr. Norah Namuwenge is a National ART Programme Coordinator at the Ministry of Health in Uganda.

Dr. Felix Ndajige works with ICAP in Lesotho.

Mr. Ndlovu Nqobile is the ASLM Director of UNITAID Project that focuses on accelerating access to innovative point of care diagnostics. He holds a bachelor's degree in medical laboratory sciences and a master's degree in public health (MPH) from the University Of Zimbabwe. He joined ASLM in 2013 and has managed and implemented PEPFAR programs in many African countries and the Caribbean region focusing on laboratory quality and accreditation. Before joining ASLM, Mr. Ndlovu served as the Laboratory Project Coordinator for the African Field Epidemiology Network (AFENET) in Kampala, Uganda, where he also implemented laboratory programs. He also served as Assistant Field Coordinator for the Master in Public Health training program at the University of Zimbabwe.

Dr. Ponesai Nyika is a Public Health Specialist (Care, Support and Treatment) at CDC Zimbabwe, focusing on ART and PMTCT. He previously worked as the Director, Performance Monitoring and Evaluation and as Deputy Director of National Health Information and Surveillance, both in the Ministry of Health and Child Care, Zimbabwe at national level. He has 12 years' experience in the health sector. During this period, he worked at various levels of health services delivery, i.e. facility level, district level, provincial level and national level. Dr. Nyika managed PEPFAR and Global Fund budgets as well as coordinating implementing partners at national level, spearheading the identification, adoption and adaption, and implementation of innovative technologies in HMIS. He also spearheaded the successful introduction and roll out of DHIS, mobile Health (mHealth), Electronic Patient Management Systems (ePMS), Laboratory Information Management Systems (LIMS) among others in Zimbabwe. He has been supervising the ZimHISP (Zimbabwe Health Information Support Project).

Mr. John Obicho is a Senior Technical Advisor Supply Chain and Logistics at the EGPAF. He currently works on the USG funded project USAID/RHITES-SW, which is implementing in the Southwestern region of Uganda. Mr. Obicho obtained a degree in Pharmacy from Makerere University Kampala. He has a particular interest in HIV and TB programing, care and treatment and prevention and supply chain and logistics. He has worked in HIV for over ten years and has worked with many USAID projects. He is currently a member of technical working groups and national task force platforms including the Uganda National DSD task force.

Dr. Michael Odey Odo is a HIV/AIDS Expert and Public Health Physician with sixteen years of health management experience. He is a medical graduate of the University of Calabar- Nigeria, and Public Health from the University of Liverpool, UK. Dr. Odo is the former Technical team lead in HIV/AIDS and TB care, treatment and support under the $450 million USAID country-wide GHAIN project and the $350 million follow-on SIDHAS project in Nigeria. He served as the FHI360/TBCARE1 Nigeria Team leader implementing community TB/HIV Care and treatment, as well as programmatic management of DR TB in facility and community. Dr. Odo is currently the Technical Advisor for HIV Care and Treatment for the Department of HIV/AIDS, Ministry of Health in the Republic of Malawi.

Dr. Sylvia Ojoo, MBChB is the Country Director for Kenya Programs at University of Maryland. She is an Assistant Professor of Medicine with the Clinical Infectious Diseases Division of the University of Maryland, Baltimore, USA. Over the past 11 years Prof. Ojoo has led the development, implementation and ensured the technical quality of large-scale HIV care and treatment programmes across all levels of health institutions in Kenya, serving over 100,000 patients on antiretroviral treatment. In addition, she was responsible for leading the Ministry of Health in developing an innovative competency-based curriculum that has been adopted for HIV in-service training in Kenya and is set to cut the cost of training significantly, while ensuring health worker capacity to provide services is maintained.

Prof. Ojoo leads a technical team of highly accomplished health professionals that have demonstrated clinical care delivery systems improvement capacity, and the ability to equip other healthcare workers with skills and competences required for HIV and tuberculosis services development. Additionally she has served as a technical resource for HIV practice guidelines development locally in Kenya, as well as with the World Health Organization from 2004 to 2014.

Not Pictured

Dr. Salome Okutoyi works for USAID Kenya.

Dr. Caroline Olwande is the HIV Global Fund Grants Manager at the National AIDS and STI Control Program (NASCOP) in Kenya. She has over 15 years of experience in in HIV programs management in the public sector at health facility, provincial level and national level. Ms. Olwande previously managed the HIV commodities supplies chains management portfolio and holds a Master of Science degree in pharmaceutical services and medicines control. She is currently coordinating the preparation of the next GF Funding Request to be implemented over a three year period (2018 to 2020). She supported the development, dissemination and monitoring of implementation of relevant HIV prevention, care, treatment and support policies and guidelines, most recently the 2016 test and treat guidelines and the handbook on differentiated care for improved HIV program quality and efficiency.

Dr. Pascale Ondoa is a virologist currently serving as the Director of Science at the African Society of Laboratory Medicine (ASLM). Dr. Ondoa obtained her medical degree from the University of Yaoundé, Cameroon and her PhD in Biomedical Sciences from the University of Antwerp, Belgium. After her studies in 2002, she worked at the Institute of Tropical Medicine in Antwerp focusing on models of resistance to HIV infection, in non-human primates, incomplete immune restoration upon suppressive ART and the development of alternative laboratory assay to monitor ART in resource-limited settings. In 2009, Dr. Ondoa joined the team of the late Prof. Joep Lange at the Amsterdam Institute for Global health and Development (AIGHD). She was involved in the research and implementation aspects of various projects looking at HIV drug resistance in sub-Saharan Africa, exploring ways to mitigate barriers to laboratory test uptake, and addressing gaps of the laboratory systems in resource in African countries. Since the beginning of 2017, Dr. Ondoa provides scientific leadership to the ASLM team, for the building of medical laboratory services, systems and network capacity throughout Africa.

Dr. Peter Preko is the Project Director for ICAP's CQUIN HIV Learning Network. Dr. Preko started 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. Prior to his current role, he was with ITECH – University of Washington, seconded to the Malawi Ministry of Health as the Senior Care and Treatment Advisor. Dr. Preko worked with CDC Swaziland from 2011 to 2016 as the PEPFAR Swaziland Care and Treatment Lead. Before joining CDC, he was the Senior Care and Treatment Specialist at ICAP in Swaziland. In Ghana, before moving to Swaziland, Dr. Preko was the Senior Program Manager (HIV/AIDS) at AED-SHARP and Engender Health respectively. Dr. Preko obtained his BSc Human Biology and medical degrees from the Kwame Nkrumah University of Science and Technology and an MPH from the University of London School of Hygiene and Tropical Medicine.

Dr. 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 strengthening 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 (IPC) in sub-Saharan Africa, and to improve refugee health services in Turkey, Jordan, and Lebanon. She also leads several training and education projects, including ICAP's multi-country course in quality and quality improvement for US government field staff and their Ministry of Health counterparts.

Not Pictured

Dr. Andrew Reid is an HIV Physician and Researcher at the University of Zimbabwe Clinical Research Center.

Dr. Maria Ruano is a Medical Doctor and Internal Medicine Specialist. She has worked at I-TECH Mozambique as clinical advisor since 2008 and currently manages distance learning and warm line programs. Dr. Ruano is also a Senior Advisor for the TB and HIV program at the central level.

Dr. Maureen Syowai is a Regional Technical Specialist at ICAP Kenya, where she works on the Optimize and CQUIN projects.

Dr. José Tique is a Medical Doctor and Public Health practitioner with more than 8 years of experience on the implementation of HIV related quality improvement (QI) initiatives in Mozambique. Dr. Tique currently serves as the Senior Quality Improvement Advisor at the National HIV Program in Mozambique where he leads the implementation of a novel standardized HIV QI strategy, currently implemented in more than 400 health facilities.

Dr. Juliet Tumwikirize is a Quality Improvement Advisor at the URC, USAID Assist Project in Uganda.

Dr. Joyce Wamicwe is a medical doctor with post-graduate training in Applied Epidemiology under the Field Epidemiology and Laboratory Training Program (FELTP) – Kenya. Her goal is to contribute towards achieving greater good for humankind through her work. She is currently based at the Ministry of Health - at the National AIDS & STI Control Programme (NASCOP) where she is the Strategic Information Unit Team Lead. In her capacity, she has steered improvement in health sector HIV data quality through promotion of cascade approach of data collection and analysis and increased HIV data visibility through extensive use of dashboards. In addition, she has been key in expanding the scope of HIV surveillance in Kenya with introduction of Mortuary and Case Based Surveillance. She remains a champion for promotion of use of electronic health records systems as a key innovation for health systems strengthening and overall improvement and ease of client/patient clinical experience.

Full Transcripts

Monday, July 17th

Welcome and Opening Remarks

Dr. Wafaa El-Sadr, ICAP at Columbia University

"Thank you all for welcoming us to Harare. When we first began conceptualizing the CQUIN network, we had a meeting here in Harare. Dr. James Hakim was there, along with others, and it's really heartening to come back with all of you and continue this important work.

Adults at high risk of HIV disease progression are very important in the global response to the HIV epidemic. Over the past decade and a half there has been remarkable success confronting the epidemic globally, especially in low- and middle-income countries. In the early 2000's there were probably 50,000 individuals in low- and middle-income countries receiving ART, and since then, there's been an amazing response, largely due to the work done by people on the ground – m ministries of health, program managers, and others. More than 18 million people in low- and middle-income countries are now accessing treatment. What is most stunning is that the major contribution of people on treatment comes from patients in sub-Saharan African countries. On one hand, it's not surprising because this region bears a large burden of the HIV epidemic, but on the other hand, it is surprising because many perceive sub-Saharan Africa as having very fragile health systems.

This is an enormous public health victory and achievement, and it's a testament to the work done by all of you and others around the globe. We also know that there's a lot ahead of us, particularly the global target of achieving the UNAIDS 90-90-90 targets by 2020, which is right around the corner. Many say these should be more ambitious to achieve 95-95-95 and we should be digging deeper to achieve 90-90-90, not just globally, but within specific sub-populations in countries. Across the globe, the gaps in the continuum remain large. As of 2016, it's estimated that 56 percent of persons living with HIV know their status, and of those 54 percent are on ART. Of those 54 percent on ART, 45 percent are virally suppressed. These global numbers mask within them remarkable achievements as well as other areas of the world that lag way behind. For instance, the recent Population Health Impact Assessment (PHIA) surveys in Zimbabwe, Malawi, and Zambia demonstrated remarkable progress toward the 90s, and they should be congratulated for that. There are, however, specific sub-populations that lag behind significantly.

So how do we achieve impact? We have to focus on Coverage, Quality, and Efficiency. By coverage, we mean coverage in the geographical sense, and coverage across sub-populations. Of course, to achieve high coverage, we need to engage populations we wish to reach – to involve them in an appropriate, sensitive, and constructive way. Then there's quality; coverage is insufficient without quality. Patients need to start the cascade, they need to start and then stay on treatment. There's two types of quality: technical quality (safety with interventions, quality of lab services, etc.), and then there's quality in terms of perceptions of the recipients of services, and ensuring that they receive the services they need from sensitive, knowledgeable, and skilled health workers that welcome them to receive care.

Efficiency is very important. It's recognized that global funding for HIV programs has plateaued, so more efficiency is needed if we are to continue this critical scale up and to reach more people and engage them in the services. That means we need efficiencies reflected in the services themselves, as well as from the providers who are often overburdened and overworked. We also need efficiencies from the client services so clients are not spending hours and hours reaching services and using their resources to access what they need.

The goals of CQUIN are then to achieve Coverage, Quality, and Impact. These principles are important to keep in mind as we continue through this workshop. Can DSD come to the rescue? It remains a question and it's up to us to demonstrate that in our work in our communities of practice. What is DSD, exactly? One definition from IAS describes it as a client-centered approach to care that adapts HIV services across the cascade. It also reflects the preferences of PLHIV and addresses burdens of the health systems and the needs of the recipients of care to expand coverage for those who need it.

At the core of DSD is putting people at the center of all our work, so you adapt and modify the service intensity, frequency, providers, and location to adapt to the needs of PLHIV that we're working with. You think of where services are provided, who is delivering the service, how frequently these visits should take place, and what assessments are needed for specific models of care. Adjustments are then made along the way for the patients at the center of care.

DSD is really about the how, not the what. It is about how we all work together with recipients of care, how we shape services based on their needs. When we think about program design, we want to achieve 90-90-90. We also want to achieve quality of life, efficiency, equity, and epidemic control. We can dial these different components one way or another in terms of service frequency, intensity, location, and service providers. Adjustment of these components based on populations of interests will lead to the goals and objectives of services. Differentiated services are for a number of groups; including people who are stable on ART, and patients whose treatment has failed. It also includes key and vulnerable populations such as migrants and co-morbid conditions, as well as different contexts (rural, urban, etc.). At the core is the individual living with HIV, and recognition that we have to identify the clinical characteristics of the individual and context in which they exist and sub-population to which they belong.

Most of the DSD models that have been piloted and scaled up have focused on stable patients. There have been several models put fourth including CAGs, facility-based ART clubs, as well as drop-in centers for certain populations. All of these have been focused on patients who are stable on ART, who have been on medication for a year or more, who have a good CD4 response, and of course excluding those with co-morbidities and NCDs.

We all know that there is a large population that goes beyond what people call stable patients, and this includes a diversity of patients that CQUIN is interested in moving the agenda forward for. This includes pregnant and postpartum women; we have evidence from many countries showing that this group of patients have started ART in large numbers, yet retention in postpartum period remains sub-optimal. There are also patients with advanced disease or those with high viral load, and men, who are less likely than women to be aware of their HIV status and engaged in services.
This network is aiming to do work with this population as well as children and adolescents. We're currently working in Kenya, focusing on adolescents and then patients with HIV and co-morbid conditions such as TB and NCDs, and there's work planned in Swaziland for patients with HIV and

hypertension. Finally, it is worth mentioning migrants and mobile populations that have received little attention in terms of DSD planning.

You are all here representing your countries, who are members of the network. We welcome you all here to be part of this important project. The overarching goal is joint learning, which is focused on learning together and moving an agenda forward – not just an exchange of information. We are focused on scaling up DSD models to improve the three elements of coverage, quality, and efficiency. Knowledge exchange and, more importantly, co-creation, are at the heart of this network. That is why it's so important we come together. This workshop is part of a series of workshops that align with the CQUIN communities of practice. Adults at High Risk of Advanced HIV Disease Progression was one of the priority areas identified at our launch meeting in March in South Africa.

We did a pre-survey before the workshop that asked several questions. The majority of you indicated that DSD is strongly supported at policy level in your countries. A substantial proportion also said it's somewhat or not supported. We also asked whether treatment guidelines in your countries address DSD for this population, and a majority of you said yes.

We also asked if you were aware of pilot projects that implemented models for this population, and there was a number of suggestions for pilot projects that should focus on patients with high viral load, having specific days for support groups, special registers, and also specific packages of care – these are what we refer to as the "what". Home-based care and delivery for young patients was also mentioned.

We asked if you aware of any training curricula in your country for this population, and the majority of you said no, so that's a significant gap that need to be addressed. We asked to what extent DSD for this population was implemented in your countries, and a majority of respondents said it was to some extent or not at all, so there's a lot of room for all of your work to advance this agenda; there's a clear need for these models to be designed, implemented an evaluated.

What are some of the barriers to implementing DSD models in your country? We saw several: a lack of access to guidelines and SOPs, difficulty identifying patients at high risk, lack of on-site point of care labs, a focus on stable patients, lack of pilot programs which are essential for innovation and testing new ideas.

Finally, we see that busy clinics, staff shortages, lab costs, treatment for opportunistic infections, medications stock outs, and lack of health worker buy in as barriers. These are all very important issues we need to reflect on. We asked what you would like to learn from other countries. You mentioned optimizing community-facility linkages, identifying patients at high risk, experiences with patients transitioning between high and low risk models, protocols that can be shared across countries, outcomes data that shows models associated with improved care outcomes, experiences with implementation and scale up, and finally M&E systems and tools

It is so wonderful many of you are walking in with ideas of what you would like to get out of this workshop. Our goal here is to initiate the community of practice for patients at high risk, and to nurture and support south-to-south exchange. Our objectives: to define the population, identify challenges and opportunities to optimize treatment outcomes, facilitate knowledge exchange related to DSD for this population, discuss knowledge gaps, and find opportunities for joint learning and co-creation. I want to end by encouraging everyone to always think about the process of joint learning and co-creation, because I believe this is the way to achieve health and well-being for all populations living with HIV.

Thank you."

Dr. David Allen, the Bill & Melinda Gates Foundation

"One of the big priorities of the Bill & Melinda Gates Foundation is to accelerate the decline of HIV and TB in the world, especially in sub-Saharan Africa. With respect to HIV, we have two broad strategic priorities: the first is promoting and implementing new HIV prevention methods, and the second is to promote access and adherence to ARV-related treatment. This meeting is closely related to that second objective.

I have been fortunate to be living in South Africa for the last several years, so for my South African colleagues, this is a particularly important issue. South Africa has just completed its new National Strategic Plan. In it, there are nine goals, and the second goal relates to improved treatment and adherence. The National Plan is very clear about the importance of differentiated care to promote adherence and achieve the 90-90-90 treatment targets. I know that is important for many of the countries represented here.

We will not achieve global HIV-related targets unless we improve the issue of access and adherence to ARVs. In South Africa, there are an estimated 7.1 million people living with HIV, and 3.6 million are on ARV treatment. That is a big gap that will not be solved all at once, but in an already challenged health system, there is a need to examine different models of care to achieve those treatment targets and satisfy the test and treat model. Differentiated care is an important part of our priorities and we value our partnership with ICAP and all of you to meet those goals.

There are two aspects of this meeting that are very important to us: one is to explore different models of care, and Wafaa described that these models need to be adaptable to patients; the second important part of this meeting is the partnerships needed to achieve that. There are partnerships on different levels. There are partnerships between the technical experts among ICAP and all of you, but then there are partnerships that need to happen between and among countries, because there are models that need to be tested and adapted to be successful. These models cannot come from Geneva, New York or Seattle – they need to come from the countries themselves, the communities themselves, and the people themselves. Each of you will have recommendations, positive experiences, and lessons to teach one another.

I want to emphasize the notion of practice and sharing of different models. I look forward to being here the next couple of days. Thank you to our hosts, our partners in Zimbabwe, and ICAP. I want to thank you all for coming to this meeting. It is very important for our Foundation and for all of you, and I am happy to be part of it."

The CQUIN Learning Network

Dr. Peter Preko, ICAP at Columbia University

"Thank you, and good morning. If we work together, we can prevent some of the challenges we have now, but we can also solve the challenges, together. What is a learning network? When I visit most countries, the question I'm often asked is: "What are you bringing to us?" What we are bringing is an opportunity to learn together, to solve problems together, and to co-create solutions, and that is what a learning network is about. Some of the key elements is making sure you are able to access information and best practices when you need them.

I recently spoke with the Mozambique team; they were explaining how timely these workshops are, because they are now in the process of developing their guidelines for DSD. That's a great example of why a learning network is important: coming together for a country like Mozambique that is in the process of developing guidelines. For those of you who will also be developing guidelines, you will be able to learn from those who have already done it, to gather information and use it to improve what you're doing.

For a learning network to be successful, there are several key elements that need to be present. First, we need a shared goal. For all of us, it's using DSD to achieve the 90-90-90 targets. Second, a network needs to be participant driven. This workshop is a direct result of this topic being chosen by network countries at our launch meeting in March. The six countries identified differentiated care for patients at high risk of HIV disease progression as a gap, and this workshop was driven and conceptualized by the six countries at the launch. The third thing is a need for resources.

Together, we have many resources we can tap into. Individually, our resources are limited, but as we work together, funding and resources becomes available to enable us to work together. As Fiscal year 2018 approaches, I think that the PEPFAR implementing partners will have more resources to support these workshops.

CQUIN provides technical assistance to network countries, and we support south-to-south learning exchange through activities like this workshop and others. Our major goal is focusing on the how, which can be very elusive. A big question we are trying to answer is: how do you move guidelines into practice? Many times guidelines are not developed with front-line stakeholders, so as a network, we want to find the best ways to move guidelines into the health facilities, ensuring services are provided.

Our aim is to increase coverage, quality of differentiated services, and enhance outcomes and efficiencies. Our general function is to exchange knowledge, joint learning, and facilitate innovations by sharing what we already know. Our approach is to work together so we can identify gaps.

We have made progress since we started this network. We've expanded to a total of nine countries, from six in March. I think we're at a point now that we're moving together with some of our recommendations from the launch. All of our members are in East Africa, but we're working on expanding to include some of our West African neighbors. The south-to-south learning exchange is the main part of the network. This has started to grow, and we want to ensure we're all participating in learning exchange so we are able to meet our goals.

We've had stakeholder meetings with some of the countries, and spoken with the ministries of health; I want to thank the ministries for your support of CQUIN and being engaged throughout. We want to ensure we're able to use the DSD dashboard that some of you have seen to identify gaps so we can work on closing them. We also encourage you to engage with all of the partners here so we're not reinventing the wheel.

We are supporting some of the countries to have DSD coordinators, and we've set up some of these communities of practice. We encourage you all to visit our website, where you can access valuable resources. We are going to have webinars each month, have started a quarterly journal club, and are hosting these multi-country workshops.

I want to end by asking: Where do we want to be in 2020? We have many questions to consider, but ultimately, we want there to be robust south-to-south exchange, and for knowledge exchange to happen between countries. By 2020, we want to reach 90-90-90 for all of the sub-populations. I want to end by saying that a single bracelet does not jingle, so let us all make sure we work together to achieve our objectives.

Thank you very much."

Patients at High Risk of Disease Progression: Global Best Practices

Dr. James Hakim, the University of Zimbabwe

"Thank you, and greetings. For those of us who have had our professional life superimposed on by the HIV epidemic, this is a nice place to be, to be able now to tease out differentiated care and looking at patients using different models. I remember back in the 1980s when I was doing my training at Kenyatta National Hospital in Kenya, we had the first few patients admitted with HIV/AIDS and it was a novelty. When I came to practice at Parirenyatwa Hospital in Zimbabwe in the early 90's, the medical and pediatric wards were full with HIV patients, and it was nearly impossible to do anything meaningful, with all of the opportunistic infections they had, but today, we're talking about differentiated care. Wafaa was able to show us the different groups that we are now able to address: pregnant women, high-risk patients, and so forth. So for many of you who have not known this entire journey and have only read about it, this is history.

Patients at high risk are divided into those with advanced disease and those with unstable disease. This is such a heterogeneous group, and dividing them so neatly into these two groups is more for convenience, but it is important to have this kind of division. This working framework will enable you to approach patient management in a way that is meaningful. Patients at high risk are obviously at greater risk of disease progression, they will present with opportunistic infections, and mortality rates are higher, so treatment outcomes tend to be poor.

The ICAP working model is to divide patients at high risk into those with advanced disease and those with unstable disease. Those with advanced disease are patients that are severely immunosuppressed with CD4 count of 200 or less and those who present with WHO stage three or four disease. Seven or eight years ago, these patients were targeted for ART, but over the years, the thresholds have changed. Those with unstable disease are a much broader group: those who are not virally suppressed (viral suppression threshold of 1000), those with a CD4 count less than 200, patients with adverse drug reactions (there is a great move to use better regimens), those who require ongoing monitoring, and patients with active opportunistic infections. Keep in mind that the treatment duration is the important differentiator here.

Non-adherence is a critical aspect of ART and that is very important. Substance abuse, which many clinicians tend to overlook, has been relevant in our environment – in Europe, America, Eastern Asia – in Africa, though, it's also critical and very broad. There are also co-morbid conditions, and these have become extremely important: cardiovascular disease, renal disease, and other conditions have become critical aspects of disease management if you want to achieve quality care.

Now I'm going to talk about differentiating people living with HIV into those who are newly initiating ART less than one year and those on treatment more than one year. You can see that patients with advanced disease have been on treatment less than one year, but you also have patients with early disease falling in the same broad category, and those who have been treated for more than one year, the stable patients, make up the majority of patients in care. We are often able to work out the "what" but what is often more difficult is to work out the "how" – the programmatic models that allow you to deliver the package of care: the difference between these two is very important.

The rationale for considering this group of patients as having advanced disease comes from the knowledge that these patients have high rates of mortality. And with advanced disease there's less robust CD4 count to cover it again, putting these patients at very high risk of poor outcomes and high mortality, with occurrence of opportunistic infections. In our environment, TB is extremely important.

That brings us to the question: what package of care has been identified? The answer is something that needs to be debated; we also need to determine how it can be improved and adapted for different environments. For advanced disease, achieving immune system recovery with ART is a critical way to reduce morbidity and mortality, so critical patients initiate treatment. That is something you want to prioritize, but especially with patients with advanced disease – you do not want to delay treatment. You also want to ensure you address opportunistic infections.

When it comes to screening and treatment of co-morbidities, remember that we are moving on to management of HIV as a chronic disease, and this will occur against a background of many co-morbidities: cardiovascular and renal disease, mental health disorders, and others. You need to ensure safe initiation of ART in the absence of cryptococcal disease. Many of you are aware of the studies that show if patients have active cryptococcal disease that needs to be treated first, because if it's not, the risk of mortality tends to increase, mainly due to immune reconstitution inflammatory syndrome (IRIS). These issues are critical: adherence, addressing adverse drug reactions, and IRIS.

Important aspects of the package of care include screening and treatment of TB, which can be difficult in children and adults with advanced disease, the question of isoniazid preventive therapy (IPT). It is important to note that even though there is a clear benefit to IPT, there are very few patients that benefit from this mainly because of programmatic issues and that requires discussion.

Cryptococcal infection and preventive treatment is another important issue that comes into the package of care for patients with advanced disease. I'm going to talk about a few models of packages of care for patients with advanced disease. The WHO guidelines come out later this month, but the model emphasizes rapid initiation of ART; screening for cryptococcol infection in the blood; screening for TV and prescription or IPT; cotrimoxazole; and intensive follow up. ICAP has identified intensive management of any presenting illness; close monitoring for IRIS; and ongoing adherence counselling to be important. Finally, I want to talk briefly about the REALITY trial, a study we conducted in four countries: Kenya, Malawi, Zambia, and in Zimbabwe.

The REALITY trial was a study of 1,805 adults and children with a CD4 count less than 100. The study was broken up into three arms. For the first arm, participants were given enhanced prophylaxis at ART initiation, or standard prophylaxis. The second arm was to give our participants additional nutrition, irrespective of if they appeared nutritionally compromised. The results showed no difference.

For the third arm of the study, we gave participants prophylaxis, along with a drug to reduce the risk of TB, and we saw early mortality decrease from 12.2 percent to 8.9 percent (a 25 percent relative reduction, and 3.3 percent absolute reduction). We also saw reduced adverse events and hospitalizations. The conclusion: policy makers should consider adopting and implementing this low-cost broad infection prevention package which could save 3.3 lives for every 100 individuals treated. Other studies have also shown the importance of prophylaxis, but it has never been studied on this scale before.

Unstable patients, those that have been on ART for more than one year, are a very heterogeneous group. These patients are not virally suppressed and have a CD4 count of less than 200, have adverse drug reactions, opportunistic infections, and co-morbidities, are non-adherent with ART, can have issues with substance abuse, and so on. Unstable patients are at very high risk of poor clinical outcomes, including complications with treatment failure, opportunistic infections, mental illness, substance use, co-morbidities, and very high risk of drug-resistant mutations. We also know that if a patient fails their first line of ART, going on to second line treatment has several issues, in addition to implications on logistic and cost. The package of care for unstable patients will include intensive and advanced clinical care, enhanced adherence support, advanced ART management, and other overarching elements such as frequent visits, specialist care, intensive psychosocial and adherence support.

Other issues to consider when delivering care include timely identification of patients at high risk; ART initiation and management; switching to second or third line regimens; prevention and management of acute co-morbidities; protocols and procedures; prophylaxis for opportunistic infections; up-referral; inpatient and outpatient treatment link; integration of HIV and NCD services; specialized education, counselling, and community services; and strengthening home care systems."

Differentiated Care for Patients at High Risk: Community and Client Perspectives

Dr. Bactrin Killingo, the International Treatment Preparedness Coalition

"Good morning. I want to begin by saying thank you very much to ICAP for once again inviting us to your workshop, and more importantly, for putting us at the beginning. Usually community engagement and conversations around civil society come at the tail end of a workshop out of convenience, so that the organizers can say that folks from the community are involved. I have said this before, and I will say it again: you cannot achieve success in any program, health related or otherwise, without engaging the persons being served. In this case, with regard to HIV care, we have demonstrated repeatedly that all successful programs have engaged recipients of care.

My teacher here, Professor Sylvester Kimaiyo, can attest that. He and his colleagues at AMPATH have been successful because they have put communities at the forefront of their programs. What does having communities at the forefront mean? First, how well do recipients of care understand what you are talking about? Do they understand the concept of DSD? What efforts have we put into creating awareness and knowledge around what DSD means?

Two weeks ago, we embarked on answering that question. ITPC and civil society organizations put 30 people in a room to talk about this new concept of DSD and talk about what it entails. What we found was that people were actually surprised, and explained that some of their programs have already been implementing DSD in one way or another. They were happy we were talking about it. Just creating that understanding made people think about how they would like to get involved to create demand for this new concept. After that, we begin to think about how to involve civil society and people living with HIV when we are putting together policies and programs. Many thoughts came out of that meeting in Bangkok, which Rumbi will share with you soon.

What was clear was that many recipients of care need to understand why it's important for them to be involved in these programs, because they have the solutions. They will tell you what it is that counts in ensuring they start treatment, stay on treatment, and stay well on treatment. I want to conclude by talking about the terminologies we use. Who comes up with them? What is the process for coming up with terminologies like stable, unstable, high-risk? I can tell you that when you use those terms, no one is going to receive the care you are providing; we need to have a conversation about that.

In the past, we have used very stigmatizing language, and we need to move away from that. So what terminologies can we use that are friendly? Maybe we can start by replacing "high-risk" with "a recipient of care in great need" or something more friendly. I would now like to invite Rumbi to share some of the outcomes from our meeting in Bangkok, as well as a few thoughts we need to consider over the next two days so we can ensure that every time we have a conversation about what's needed in DSD, we put communities at the forefront.

Thank you."

Ms. Rumbidzai Matewe, ZNNP+

"Thank you so much. I am so happy that Wafaa started by addressing the issue of terminology, and it's already starting to change. What we don't yet have is the terminology to define this group of patients in need of advanced care. In Thailand recently, participants of our "think tank" meeting stressed the importance of involvement and engagement of people living with HIV (PLHIV) whenever we are designing programs, and I am so glad that CQUIN is taking that on, with community members' part of this workshop.

The first key concern that came up during our meeting was the 90-90-90 targets, and the patients who may be left behind as we try to reach those targets. When you look at those targets, it seems as if they're not paying too much attention to the "10-10-10". In the treatment cascade, when we're looking at viralogical suppression, there's a lot of focus on having 73 percent viralogically suppressed, but what about the additional 27 percent of patients? We need to understand who they are, and that's brought a lot of confusion and concern. What does the introduction of DSD mean for those patients? What patients are within that 10 percent that are not rich with testing, and how do we address that gap?

This was a multi-country meeting, so there were quite a number of country perspectives and reflections. One of the main concerns was survival rate; we're talking about patients at high risk of advanced disease, and we know there are a lot of issues to be concerned about, but at the end of the day, we want to ensure these patients survive. We also discussed issues around enhanced adherence and what that entails. It's a multi-layered process which includes the individual at the health center initially, the individual within the family context, and the individual within the community. I know here in Zimbabwe the community ART refill groups have become popular, but not everyone wants to be part of a group.

We have a number of models that are enshrined within the operation service delivery manual for Zimbabwe, providing options for PLHIV, but do they know about these options or models available at facilities? Even though these models may be available on a policy level, it may not be the same in terms of practice. PLHIV need to move the policy from the shelf of MOH to ensure we implement it at the community level. Other issues are the transition process for enhanced adherence, community preparedness, and knowledge generation. There is the nexus between scientific evidence and personal experience – how do we balance the two?

Let's not forget demand generation and documentation. Most of the time, M&E systems are within a health institution or within a system, but to what extent are we also documenting experiences at the community level? There are many problems to be solved. Countries still have drug stock outs, and drug regimens have side effects adverse reactions. We need also to start looking at treatment optimization, policy review, and service delivery. One thing I was very proud of was that many people at the meeting acknowledged the work happening in Zimbabwe, as well as Malawi, in terms of rolling out DSD. It is also great that this particular meeting is happening in Zimbabwe – we have a lot of experiences to share.

The big takeaway from our meeting in Thailand was that the health system needs to be very responsive to PLHIV. The big questions are: What do we want to put in place? To what extent are we engaging communities? And in what ways are the interventions we're proposing adaptable for communities?

Thank you."

Differentiated Care for Patients at High Risk: a Call to Action

Dr. Miriam Rabkin, ICAP at Columbia University

"My charge for this presentation is to wrap up the morning by highlighting some of the key themes that brought us together with this call to action. The questions come up: why focus on patients with high risk? The answer's we've heard from panelists and presenters is simple: they're dying. These are patients that are not doing well, and that's why we do what we do, to improve the lives of patients so they can live longer.

We've seen from the country presentations that the proportion of patients who are starting ART with low CD4 counts is falling, but it's still between a quarter and a third of all patients. We know that mortality among this population is high. If you look at meta-analysis, the range is between eight and 16 percent in sub-Saharan Africa, so there's room to improve. Patients in great need are not just patients in that first category who are presenting with advanced immunosuppression, but also patients who have been on ART for a while and are not thriving or are virally suppressed. We've heard about many guidelines for the management of these patients but there's not a lot of evidence that it's effective.

Our Call to Action spells this out in greater detail, and was a literature review on the subject. The question we posed is: How can we improve outcomes? One way is to think about the package of care, or the "what" and the other is to think about how these services are delivered and programs are designed, or the "how". For this meeting we're not focusing much on the what, but the WHO is updating their guidelines, which will be presented at IAS. They did an updated review that included the REALITY trial, and REMSTART. Both were studies of enhanced OI prophylaxis. REMSTART looked at an enhanced screening package in Tanzania and Zambia; their summary of the updated data is that the benefits of these enhanced approaches are reduced all-cause mortality, reduced incident morbidity of TB and Cryptococcus, and a simplified package which is consistent with the public health approach focused on patients in great need.

They do acknowledge the unknowns: the potential for antimicrobial and antifungal resistance if these medicines are given to large numbers of people empirically; potential increased absolute cost, which remains to be seen; and the possibility that the simplified package may reduce attention to other important co-morbidities.

They are recommending the package of interventions including screening, treatment and prophylaxis, and rapid ART initiation, as they do for everyone. They are not recommending a different package for patients at high risk, and intensified adherence support interventions. There's movement at WHO and in national guidelines toward looking at the "what" and there's always new data that we look forward to seeing. But we also know that even with their current packages, they're not reaching everyone that needs to be reached, and that's what we're hoping to focus these next three days on: unpacking the "how" and thinking about the patient centered approach.

We want to think about innovations driven by patient needs and best practices, and that brings us back to this concept of differentiated care and differentiated services. A lot of the times we think of differentiated care as a simplification of services, and that's the goal, but it's not the only goal – it's about adapting treatment for groups of people, including unstable patients.

So what are some of the programmatic and delivery challenges with reaching patients at great need? To reinforce what some of our colleagues have already said: identification of patients at high risk is important. It's not getting easier – it's getting harder. Back in the old days, many people walking through the doors of the clinics had advanced disease, and as we switched to test and treat that number is still high but now it's only 1 in 3 and many of them are not symptomatic, so finding the patients who present at high risk is a different programmatic challenge.

If you don't find them it leads to delayed eligibility assessment, delayed identification of failing regimens, and delayed linkage from testing to treatment. There are programmatic considerations that we'll hear as people share innovations and experiences. We'll talk about innovative ways we can identify patients at high risk.

We've heard already about delays with ART initiation and management, prevention and management of acute co-morbidities, and also chronic co-morbid conditions. How can we use the creativity that's been harnessed or leveraged to bring something like a CAG from a crazy idea to a standard of care? How can we convince health systems to space their appointments differently or pick up drugs in the community? How can we think of some of those innovative solutions to programmatic challenges for patients at great need? Two of the things we heard this morning are these issues of identification, flagging, linkage, and also being innovative about services that are intensified but also patient-centered.

We don't want to just think about tweaking existing models for patients in great need. That's interesting, but we need to take a step back and think about what resources we have at our disposal that we didn't in the past. The Severely Immunosuppressed Package of Care (SIPOC) from Kenya, which was presented at our launch meeting, is a very systematic standard operating protocol for just identifying and flagging patients. It's an example of how you can do simple things to improve care, like systematically place a sticker on the chart, or file patient's charts in a different place. How can we ensure patients are identified, linked to care, and are receiving the package they want to receive?

When we're thinking of service frequency, we're not necessarily thinking about simplification, we may be thinking about increasing the service frequency for categories of patients. Similarly, when we think about service intensity, we're talking about enhanced prophylaxis and enhanced counselling. We also heard this morning about service providers. If a certified second line physician can switch regimens, there are some advantages of that in terms of quality control, but there are also disadvantages in terms of coverage, and that will affect impact down the road.

There's a nice example in Kenya, a model of super-mentors, it's a training model for nurses prescribing first-line ART. Do we want to think about training models for nurses prescribing second-line ART? We've heard about oversite committees as well, and thinking about service location, that could be within a health facility - do we want a dedicated clinic? We've heard about resistance clinics with a specific day/time. We're going to hear about an innovation with an immediate care facility. We've heard people suggest that for patients who are unstable there should be housing near the facility to make care more accessible. We've heard about home-based ART delivery, and better options for service providers to use tablets or smartphones, improving care in homes and communities with some of our new technologies.

Our call to action is to think creatively about possibilities and innovations. I don't think we can assume that, because we're talking about decongesting our health facilities, it's going to create better care for our patients in great need. One of the reasons is the move to test and start. Many countries are doubling the number of patients that need to be on treatment, so nurses or doctors in a clinic are not going to go from seeing 60 patients a day to ten a day and have extra time; that's an illusion. Assuming things are going to get better is not plausible, because as practitioners, we want to see evidence. We're looking forward to seeing people coming up with ideas and sharing them, and I hope this is a conversation we have all week.

Thank you."

Opening Reception

Dr. Gibson Mhlanga, MoHCC Zimbabwe

"Good evening everyone, and welcome on behalf of the Permanent Secretary of Health and Child Care, Brigadier General Dr. Gerald Gwinji, who wishes us a very fruitful workshop.

Let me first recognize ICAP's Global Director, Dr. Wafaa El-Sadr; the CDC Branch Chief for HIV Services at CDC Zimbabwe, Dr. Sherish Balashandra; USAID Health Office Director, Dr. Ruth Bulaya-Tambo; the Deputy Director at the Ministry of Health and Child Care in charge of HIV Care and Treatment, Dr. Tsitsi Apollo; the ICAP Country Director, Dr. Godfrey Musuka; the Gates Foundation representative, Dr. David Allen; fellow Ministry of Health colleagues from Zimbabwe and other countries who have graced this occasion; and all CQUIN management and implementing partners. I am very delighted to be here this evening at the opening reception of this important workshop on patients at high risk of HIV disease progression.

Zimbabwe has embarked on a strategy to rapidly scale up differentiated service delivery in response to universal coverage of ART as a public health approach to control the HIV epidemic by 2030. As you are all aware, DSD is a patient-centered approach which seeks to ensure that the different needs of categories of patients within our national programs are met. I am excited to mention that the revised edition of Zimbabwe's Operational and Service Delivery Manual, which was released in February, makes more DSD models available to the people of Zimbabwe. Whereas we know how to differentiate services for stable patients, evidence on how to do this for patients with advanced disease, or those at high risk of disease progression, is quite limited. I am glad that ICAP has chosen Zimbabwe as the convening point for nine CQUIN countries to discuss this important topic and work together create solutions for this gap.

I have been informed that this HIV learning network, which Zimbabwe is proud to be part of, stands for coverage, quality and impact. I personally like the name because it clearly explains what we have to do as individual countries to realize the benefits of achieving the 90-90-90 targets. From the name CQUIN, we know we have to take DSD to scale, as well as maintain and improve the quality of service delivery in order to have impact. I encourage all of you to roll up your sleeves, get to work, and learn from one another as we take DSD to scale. The year 2020, our target for achieving 90-90-90, is just around the corner. While some countries may achieve this, it's inevitable that some sub-populations will be left behind. With a concerted effort devoid of reinventing wheels, and not piloting interventions already known, we can achieve success. This is what a learning network is about.

The ZIMPHIA results show that Zimbabwe has made very significant progress toward achieving the 90-90-90 targets. About 70 percent of PLHIV in Zimbabwe have been diagnosed. Of those, 87 percent are on treatment, and of those on treatment, 87 percent have achieved viral suppression. As we applaud this achievement, we know that about 48.6 percent of young females and 40.2 percent of young males aged 15-24 years are virally suppressed. DSD is not a panacea for all of the problems facing HIV-positive adolescents, but it is a way to address their needs and improve the coverage, quality, and impact of services.

Zimbabwe has some local lessons for differentiating services for adolescents that we can share with the network members, however, we hope to learn from other network countries that have best practice models. I hope that your communities of practice for adolescent care we will find common solutions to address gaps. As a country, Zimbabwe fully embraces DSD. We started by rolling out CARGs and family refills some years back to ensure ART services are available to stable patients who live far from health facilities and face challenges accessing their medicine. With help from the Global Fund and the U.S. Government, we are rapidly scaling up this model of care as well as others that I mentioned earlier. It is important to observe, however, that although men comprise 41.3 percent of adults on ART in Zimbabwe, initial programmatic data suggest that only 30 percent of CARG participants are men.

To optimize the benefits of DSD for men on ART, I'm happy to mention that CQUIN is assisting Zimbabwe to conduct a study that will inform us of ways to improve male engagement. We hope lessons from this study will inform the scale up of CARGs and other DSD models here and in other network countries. Before I end let me once again extend our thanks to Dr. El-Sadr and Dr. Musuka for organizing this meeting in Zimbabwe. The Ministry fully appreciates the relationship we have with ICAP and looks forward to enhancing collaboration moving forward. It is our pleasure to host you all for the next three days, and it is my honor to welcome you."

Ms. Rumbidzai Matewe, ZNNP+

"Good evening. I'm presenting on behalf of networks of people living with HIV, in Zimbabwe and elsewhere. We recently had a think tank for networks of people living with HIV and civil society in Bangkok, Thailand. Some of the issues I'm going to articulate are from Zimbabwe and the region. So we talk about the 90-90-90 targets, and the impression is we have the 10-10-10: people that are being left behind, but why? In reality it's 10-19-27; we've got key population groups and vulnerable groups like people living with disabilities, we've got people in confined spaces like prisoners which we haven't been talking about. Yes we have DSD models for some of these sub-populations, but is it really what they want? Or is it a barrier to services?

When we talk of differentiated service delivery in testing, what it means is there are more people that will be initiated on ART, we already have a burdened health system, and there is still more we need to do in order to improve. I was looking at the number of people initiated on ART over the past year and you see the numbers increasing tremendously, so it points to what needs to be done, and what communities and civil societies need to do. We also look at the barriers to quality of services, the systematic engagement of those consumers of services. Yes, we are talking about models of care that are on the table, that are within our policy documents, but is it all we can do for PLHIV?

As I indicated earlier, it's good that this second meeting incorporates the views of PLHIV. Tomorrow I'm happy that we'll hear the perspectives of PLHIV, and it's an opportunity to engage with them. Then there's the one-size-fits-all approach. I remember in March in Durban we said that we are not trying to privatize service delivery but we want to accommodate as many PLHIV within the existing frameworks, but the question is: is it ideal? Especially within our different settings.

I know we have been lobbying for CARGs for a very long time, but in implementation we realized that it's not the only implementation model for DSD. There are some people that prefer to simply go to a facility, collect their refill, and go. And the three or six month refills that PLHIV are lobbying for would be ideal – we need to consider that. We also need to re-operationalize and make sure we don't have a one-size-fits-all approach. We need to keep in mind the key considerations for vulnerable population groups, such as sex workers, who would not want to be involved in a CARG.

We talked about the WHO guidelines, the test and treat policies. If we're saying "treat all" we want everyone living with HIV, by tomorrow, to go on treatment, which would increase the burden on health facilities, so are we ready for that? Then there's issues of funding of course. When we talk about grants, there are many changes in funding, and that affects Community Service Organizations (CSOs). CSOs have been the mecca for treatment literacy education at the community level, they've been the referral network and support system.

There are many issues that are changing. The treatment literacy education that the community cadres and the expectations we have at the community level does not incorporate issues of TB, hepatitis, and reproductive cancers. All of these issues challenge the community system network. Without funding we cannot upgrade those community models that strengthen service delivery at the community level, which compromised both CSOs and networks. As we're planning at our various ministries of health, we need to think about that.

Whenever we are training service providers we should ensure there are key community groups and civil societies that are also trained so they can provide the cascade of services at the community level. How do we know PLHIV are satisfied with the models of care we're putting on the table. Do we have data informing our models? If the models are not preferred by the communities in rural or urban areas, how can we then tweak them to suit clients we want to serve? Our stories are our data. There are things we always talk about at the community level, things that affect us. Then, when we see a doctor, they will ask us for data to back those things up, but your service provider never documents anything you say, so those stories, that data, it gets lost.

We need to ensure these things are documented through M&E systems. Then human rights considerations – we need to ensure issues of choice are adhered to. We have decentralized ART; people can access ART at the nearest facilities, but do PLHIV want that? Some want it at a particular institution for different reasons and would rather travel for a particular service. These issues of choice are important. Finally, if we do not address key issues like TB, cancers, and other infections, what then will the survival rate be for PLHIV?

Thank you."

The CQUIN Learning Network: Communities of Practice

Miriam Rabkin, ICAP at Columbia University

"I want to begin by bringing us back to the idea of the learning network and a community of practice. CQUIN is intended to address the gap between policy and implementation. There has been lots of important work done to create policies and share examples, and we want to contribute by working with one another to take differentiated service delivery to scale for the purposes of achieving coverage, quality, and impact.

We've spent a lot of time thinking of how this would work. How do we get to our end goal of enhanced quality, leading to better health outcomes? One way to think about it is that there are three complementary activities. One has been done by many of you in this room: the demonstration of successful differentiated care models. We've learned from a lot of implementing partners, especially ministries of health, about the innovations that have allowed us to think about CAGs, drug pick-ups, or visit spacing. If done right, this can create increased demand, most importantly from communities, ministries of health, donors, and partners to scale up differentiated care.

There's also room for technical assistance, including knowledge sharing for policies and guidelines, M&E, training curricula, SOPs, and job aides which will help create increased supply and demand of high quality differentiated care services. We also need to focus on evaluation and analysis to ensure this works and that we're contributing to change.

How are we going to do this? One component is knowledge exchange: sharing information across countries and generating new knowledge and best practices. Joint learning comes from knowledge. Because this is a new field, there are a lot of gaps in practice and knowledge, or ways that solving problems together can be very catalytic. This can spur not only innovation, but diffusion of innovation. So if someone has a good idea in one place, we don't want it to wait until the data is ready, the research is published, and eventually shared at a technical working group; we want to accelerate the sharing of innovation.

Within CQUIN we've spent a lot of time thinking about how to accelerate knowledge exchange. Our website is a great resource, where we have archived webinars, articles, or tools from other partners; it's also a way to find out what's coming next. There's also differentiatedcare.org, which is mostly focused on policy and decision framework, but also has tools and resources.

We're organizing a series of webinars on differentiated care, because we believe that bringing expert opinions and sharing case studies are a great way to exchange information. We have a monthly project brief where we try to share information like what we're reading this month, or upcoming events. We also have a quarterly journal club for those interested in doing a deeper dive into the knowledge and evidence base, which we'll evaluate.

We've also organized a series of multi-country workshop to bring people together. We've recognized that a lot of the benefit of these meetings comes from the informal settings over tea or in breakout groups and we want to foster that. There are south-to-south learning visits, and we notice CQUIN is spurring ad-hoc exchanges between people who have already met in person.

Our communities of practice are structured around specific knowledge gaps that our participants have identified. They're demand-driven communities intended to facilitate joint work around a shared challenge, to bring people together who want to create or adapt a tool, generate a generic training module, and work together to co-create useful tools.

The format isn't the same for each community of practice, they're adapted for each specific issue. They are not meant to be meetings, but instead ongoing joint work. Some of the initial communities of practice are: a stream of work around M&E of DSD; improving male engagement in health and

HIV care and differentiated service delivery; patients at high risk of disease progression; adolescents and young people; QI, and finally HIV and NCDs, which is important, because in some countries with high prevalence of CVDs, that can be an exclusion criteria for differentiated care services, which is a real barrier.

I want to share some examples of our communities of practice. We have a stream of work around M&E, which was identified very early on. One challenge with M&E is that, as we move different services out of the facility and into the community (and de-link them to one another), M&E systems cannot keep pace. So at the moment in many countries the key information we're using is at the facility level on something like an ART card or an EMR. But if patients are now getting treatment at a CAG or if they're coming to the facility only once or twice a year for a clinical visit, but coming for a drug pick up here or a lab service there, or psychosocial support elsewhere, all of a sudden that becomes very difficult to track using existing tools. For these reasons, many countries are thinking of ways to capture that information and aggregate the key parts so we can monitor and evaluate our treatment programs.

Another challenge is that some of our indicators might need to be adapted because of these shifts in program design. So if my definition of loss to follow up is a patient did not come to the facility for six months, but I'm not switching to appointment spacing, enabling the patient to visit less frequently, I may accidently start categorizing those patients as "lost to follow up". These are issues that many ministries of health are struggling with as they adapt their guidelines. Many countries have adapted their country guidelines and are now thinking of M&E guidelines. And so, rather than having each country do that in isolation, in addition to providing country-specific TA and working with a technical working group, we're thinking of ways to modify M&E data flow and indicators and archive tools from several countries so we don't reinvent the wheel.

We also want to synthesize some of this information, not to tell countries how to do it, but instead provide broad recommendations and consensus documents. So as you can see, these are not a series of meetings, but more of a virtual community: a series of country visits, phone calls, and email exchanges which may evolve. Right now, we're all in a community of practice for patients at high risk, so some may look like this where we have a multi-country workshop and over the course of three days we're steering you to think about areas where we can co-create.

In terms of CI, CQUIN is supporting teams from Malawi and Zambia to attend ICAP's QI training course – the flagship PEPFAR course, and they're coming with DSD-focused projects. We're trying to foster the growth and sharing of QI projects focused on specific things like visit-spacing, retention in CAGs, and other topics.

We have a community of practice focused on adolescents and young people, where we're supporting some qualitative research in Kenya to ask adolescents what they want from care, and have supported several south-to-south visits so people can look at various teen club models and learn from one another. We also plan to have a multi-country workshop.

One of the things we learned from other networks is that there's a lot of tacit, or practitioner knowledge, where people may know how to get something implemented, the best way to engage communities, or experience bridging policy-implementation gaps. This practitioner knowledge is very useful, but difficult to share. Bringing people together to find out how to implement something is a benefit of these types of learning networks.

Participant-driven participation is what keeps networks alive, and they require ongoing coordination support. Many of you are going to leave here and will want to create something. We know that as soon as you get home, there are going to be many email exchanges and meetings, and although you can stay engaged on an intellectual level, you'll need support to organize the first draft of the documents, or organize calls and take minutes. Providing support for this work is one of CQUIN's main functions, and we hope to continue this conversation going throughout the workshop, as well as identify any of the key questions you might have along the way.

Thank you."

Differentiated Care for Patients with TB and HIV

Dr. Felix Ndagije, ICAP at Columbia University

"Thank you for this opportunity. This was a very productive three days with a very active group. We've discussed this topic of TB and HIV throughout the workshop; it's an important issue for patients with advanced disease. In 2015 about 1.2 million people who developed bacterial disease were HIV positive and TB accounted for a third of HIV-related deaths. With the advent of treat all, HIV-associated TB epidemic is expected to be mitigated, but alone is not sufficient to prevent TB among PLHIV.
Data from high-burden countries have indicated sub-optimal uptake among TB-HIV patients, and few initiate ART within the recommended period of time stipulated by guidelines. Why is it important that we differentiate the care of patients infected with TB and HIV? From the 2015-201616 WHO guidelines, we see that diverse groups of patients need to be differentiated: those presenting well, those with advanced disease, those that are stable, and those that are unstable.

There is a category of patients presenting with opportunistic infections, and these are patients who will often present with TB, so why is it important that we differentiate? Compared to the general population, PLHIV have a significantly higher risk of TB, even if they are stable and on treatment. A number of clinical trials have demonstrated that initiating ART during TB treatment, at least within the first four weeks, greatly increases survival (by almost 70 percent among individuals with advanced HIV disease). However, even with ART, those patients with TB and HIV are at greater risk of dying.

The WHO conducted a meta-analysis of studies focused on causes of hospitalization among PLHIV between 2007-2015 and they concluded that among patients being hospitalized with HIV, TB remained the leading cause of death, and is the leading cause of hospital deaths among children and others living with HIV worldwide.

As you can see in Africa, around 24 percent of hospitalization are due to TB among PLHIV but the highest proportion are in the Western Pacific at 33 percent. When it comes to children, however, Africa leads. Again, another group from WHO did a systematic review searching for literature, reporting on health and facility based studies on adults and children living in resource-constrained settings, and they came to the conclusion that TB was accounting for approximately 40 percent of facility-based HIV-related adult deaths, and almost half of those that died were diagnosed at the time of death.

Another meta-analysis from WHO looked at TB as a cause of mortality among adults initiating treatment in low- and middle-income countries. They concluded that mortality was highest across sub-Saharan Africa, and among adults initiating ART, TB accounted for between five and 44 percent of all deaths. So as we talk about patients with advanced disease and where to focus our efforts, we need to look at TB. As part of their thought leadership, ICAP initiated the Start TB Patients on ART and retain them on Treatment (START) study in Lesotho.

START was a cluster-randomized trial evaluating a combination intervention package (CIP) aimed at improving treatment outcomes among TB-HIV patients. This was to evaluate the standard of care, comparing it with CIP, and look at ways to improve treatment outcomes. Patients receiving CIP received ongoing health education, adherence counseling from a facility-based village health workers, routine follow-up from health workers, SMS medication adherence messages, transport reimbursement, and small vouchers for cell phone usage.

Looking at TB treatment outcomes, there were some differences between CIP and standard of care, but there wasn't a statistically significant difference. However, when we look at CIP compared to standard of care, the probability of survival for the study arm was very high. The START combination intervention significantly improved survival of TB-HIV patients, and timely HIV diagnosis and ART initiations mitigated high mortality associated with HIV-related TB. We also looked at Multi-drug Resistant Tuberculosis (MDR-TB) and found outcomes to be sub-optimal at centralized hospitals.

So people have been thinking of a community-based model of care that can improve TB treatment outcomes. Looking at a study that was done in South Africa, researchers compared delivering MDR-TB treatment in communities compared to centralized hospital model (which is what most of the people that treat MDR-TB are doing), and they looked at the differences in clinical outcomes.

At community-based sites, significantly more patients were cured, and fewer patients defaulted. In addition, more patients achieved successful treatment outcomes than at the centralized hospital. Finally, I want to share another innovation out of ICAP on provision of treatment services among migrant minors in Lesotho. Lesotho is a country that has the second-highest TB burden in the world, and the highest in relation to population size.

We also have a high HIV prevalence. As you all know, minors are at a high risk of TB acquisition because of the nature of their work, and Lesotho has a number of migrant minors who move from Lesotho to work in the mines in South Africa. Because of the nature of their work, they don't have time to go to the clinics and often default on their medication. ICAP thought of a way to implement differentiation by collaborating with the Employment Bureau of Africa, and integrating TB-HIV services at the border posts where these minors go to pick up their monthly pay.

Minors were able to access TB-HIV services six days a week, which includes a lay counselor providing HIV-TB screening, testing on site for those who have screened positive, and nurses providing same-day TB treatment or ART initiation. Care supporters provided education, adherence counseling, and medications were dispensed when clients came to collect care given in the introduction. The results have been phenomenal, and we've had a very high uptake in services.

Patients screened with presumptive TB has increased, and cases identified have also risen when you compare April 2016 to October 2016 and November 2016 to February 2017. We have a bigger dataset we'll share in the next meetings, but the lessons learned from this study and others is that differentiation considers clinical, social and contextual needs of TB-HIV clients. The clinical with advanced patients, contextual with minors, and social and clinical with bed-ridden MDR-TB patients.

Studies show that even with sick patients managed in facilities, community follow-up in between visits is beneficial, and innovations in how to reach communities can really be a game changer. So as stable patients are managed in clinics and communities, increasing our focus on advanced disease is important. Non-traditional delivery approaches need to be brought to scale to address the high mortality and poor treatment outcomes for patients with TB and HIV.

Thank you very much."

Closing Remarks

Dr. Wafaa El-Sadr, ICAP at Columbia University

"I think it's evident to everyone here that this is a group truly committed to achieving coverage and quality. It came through loud and clear in all the conversations whether it was from the funders, implementers, the ministries of health, or the civil society groups of people living with HIV. We are all together to have an impact on the epidemic through enhancing coverage and quality. This workshop was not just for people to sit and listen; everyone had to be engaged, which made it very special. I want to thank Miriam and Peter for putting together an agenda to create the environment for this cross-learning.

I think Sylvester Kimaiyo said it best when he said: this workshop is not about sharing, but about learning, and someone else told me that we all have the answers, they're all in this room. It's just a matter of taking those answers and building on all of our experiences and success. Another thing that is very heartening at the end of the workshop is the fact that there's a collective ethos that it's critically important to ensure patients at high risk of disease progression also have better outcomes. There's the realization that continually high rates of disease and death are unacceptable, and it is within our reach to think about the models of care that will reach these patients and provide the best possible outcomes, because they are very vulnerable and are often forgotten, because they are more complex to take care of. Nonetheless, they present us an opportunity to demonstrate our commitment. I think the realization, the appreciation, and the collective belief that DSD is not only for stable patients, but that it's necessary for other populations, including patients at high risk, pediatrics, and many others.

I also think that there was also a realization that there's this perception that DSD is about simplification, and yes, it is about simplification but it's about simplification of care when it's appropriate, and that's largely for patients who cannot receive simplified care so they don't have to travel to the clinic repeatedly. For other populations, it's not simply about simplification but also in a way, about being more thoughtful, it might be more intensive, but hopefully through more intensive work with these patients one can get them to the stage where they become stable on ART and can move on to simplified models of care.

The energy generated in a workshop like this does not end when we say goodbye. The success of workshops and meetings is what happens after. I certainly felt that the commitment by the country teams to go home with a plan and to work on it together so we can advance the agenda that's ahead of us. We hope the work and planning will continue and the achievements will be garnered, and the findings, results, and successes will then be harvested across countries so we can all collectively move forward. There are many opportunities to share between the workshops.

I encourage you to visit the website where there are lots of interesting topics and tools, so please try to utilize the resources. There's also webinars and a journal club, and we encourage you all to give us suggestions for topics for the webinars and journal clubs, and these are important ways for us to exchange information. Much of the information from this meeting will be on the website and shared with you so you can utilize what was presented here to share with others in your teams on the ground.

Part of keeping the momentum going will be to report on the successes and challenges that have been accomplished at our upcoming meetings. I want to thank all of you for making this workshop a success. The engagement has been amazing, every breakout has been a vibrant discussion, so thank you for taking time from your busy schedules, sharing your experiences and learning from others.

Thank you to our host Zimbabwe, it's great to be here and experience the warmth of people here, and to have your support. Thank you to our team and to Godfrey and our ICAP staff here on the ground in Zimbabwe. Last but not least I want to thank the Bill & Melinda Gates Foundation for providing their support for this work and this way of moving their agenda forward. Their vision and belief in this effort and what it can yield down the line is really worthwhile. I'll end by saying 'we'll see you again and let's move forward together'.

Thank you."

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