



# **Tool for Estimating HRH Requirements for Implementing Differentiated ART Service Delivery in High HIV Burden Settings**

A Reference Guide

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## DISCLAIMER

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## Acronyms

AIDS	acquired immune deficiency syndrome
ART	antiretroviral therapy
CASAs	community ART support agents
CCLAD	community client-led ART delivery
CDC	Centers for Disease Control and Prevention
CDDPs	community drug distribution points
CFR	Code of Federal Regulations
DSD	differentiated service delivery
FBA	facility-based auxiliary
FBGs	facility-based groups
FBIM	facility-based individual management
FGDs	focus group discussions
FSWs	female sex workers
FTDR	fast-track drug refill
FTEs	full-time equivalents
GoU	Government of Uganda
HC	health center
HRH	human resources for health
HRH2030	Human Resources for Health in 2030 Program
IRB	Institutional Review Board
LoE	level of effort
MARPI	Most-at-risk Population Initiative
MoH	Ministry of Health
MSM	men who have sex with men
NGO	non-governmental organization
OPD	outpatient department
PBFW	pregnant and breastfeeding women
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PLHIV	people living with HIV
PWID	people who inject drugs
RRH	regional referral hospital

STD	sexually transmitted disease
TASO	The AIDS Support Organization
TB	tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNCST	Uganda National Council for Science and Technology
URC	University Research Co., LLC
USAID	United States Agency for International Development
WHO	World Health Organization

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The tool, described in this reference guide, was developed in collaboration with USAID/Washington, USAID/Uganda, and other key Ugandan in-country stakeholders. Tool development was done in Uganda and piloting and refinement was done in both Cameroon and Uganda. We would like to thank the Ugandan Ministry of Health's STD/AIDS Control Program, which provided permission and letters of introduction and support for the data collection at the participating health facilities. We also extend our appreciation to the Differentiated Service Delivery Models Technical Working Group in Uganda, which graciously gave its time and provided valuable feedback during the tool development process.

We also thank USAID/Cameroon, Centers for Disease Control and Prevention (CDC) in Cameroon, the Ministry of Public Health, and the National AIDS Control Committee that helped HRH2030 to coordinate and implement the pilot in Cameroon.

We also express appreciation to the facility managers, antiretroviral therapy (ART) clinic staff, and ART clients at all the health facilities from Uganda and Cameroon who participated either in the development or piloting of the tool. We would like to acknowledge the role played by the local data collection firm International Research Consortium that managed the Uganda portion for this activity. Finally, we would like to acknowledge the team from University Research Co., LLC that led the implementation of this activity.



## Executive Summary

This reference guide is a background document that accompanies the tool to estimate human resources for health (HRH) requirements for implementing differentiated antiretroviral therapy (ART) service delivery. It provides tool users an overview of the process, methodology, and approach the USAID HRH2030 program used to develop the tool.

In Section 1, the document provides a brief description of the activity including the rationale for implementing differentiated models of ART service delivery in HIV management, the goal and objectives of the tool, and the methodology used to develop the tool. Section 2 covers the ethical considerations and institutional review board approval, while Section 3 provides operational definitions of terms commonly used throughout the reference guide.

Section 4 describes the context within which the tool was developed by providing details on how the data collected from 20 ART facilities in Uganda were used in the tool development process. Section 5 of the document provides reasons why differentiated models of ART service delivery were started in Uganda, and Section 6 describes the efficiency challenges that were reported while implementing these models. The final section of the reference guide, Section 7, lays out the lessons learned from this activity and provides some suggestions on how to address the efficiency challenges based on experiences from Uganda and elsewhere. These lessons learned will be useful to implementers in many high HIV burden countries that are just beginning the process of rolling out and harmonizing the implementation of differentiated models of ART delivery.

While the data used to develop the tool is from the Ugandan context, the tool is adaptable to other countries that face similarly high ART client caseloads and health systems contexts. This reference guide is meant to enable facility managers and others seeking to implement differentiated models of ART service delivery to understand the context in which the tool was developed and how the benchmarks were used to calculate full-time equivalents (FTEs) for the various health service providers involved in the continuum of ART service delivery.

It is worth noting that implementation of differentiated service delivery (DSD) is rapidly evolving and global and country-specific guidance for both stable and unstable ART clients is still being refined. HRH2030, therefore, anticipates the tool will evolve as new approaches, drug administration technologies, task-shifting and task-sharing practices, and international and country-specific policies and guidelines to support HIV treatment and care are developed.

What is presented is a standardized, client-centered tool which has both site- and above-site-level functionality in the hands of planners and facility managers to enable them to better estimate and optimize HRH needs for rolling out differentiated models of ART service delivery. These HRH estimates will depend on several factors including ART client caseloads, ART client sub-populations, health workforce numbers, types and availability to provide HIV services, DSD models that are currently implemented or planned to be implemented at site, and what national policies and guidelines allow for task-shifting, task-sharing, location, and the frequency of performance of the various tasks that constitute differentiated ART service delivery.

# I. Activity Description

## I.1 Background

The adoption of the World Health Organization’s (WHO) “Test and Start” strategy<sup>1</sup> to accelerate the achievement of the Joint United Nations Programme on HIV/AIDS (UNAIDS) 90-90-90 goals<sup>2</sup> by 2020 and the current PEPFAR Strategy for Accelerating HIV/AIDS Epidemic Control (2017-2020)<sup>3</sup> increase the opportunity for a higher proportion of people living with HIV (PLHIV) to receive antiretroviral therapy (ART) and achieve viral suppression. However, a rapid increase in the number of clients on ART because of these initiatives requires streamlined service delivery approaches to combat potential health systems constraints, one of which is the shortage of human resources for health (HRH) for delivering needed services in the highest HIV burden countries.

In recent years, a range of innovative strategies and guidelines on how to provide comprehensive HIV services more effectively and efficiently, and to enhance retention and adherence to ART, have been documented.<sup>4,5,6,7,8</sup> These innovations relate to management of HRH, distribution of roles and responsibilities at health care facility and community levels (including task-shifting and task-sharing), health care facility client flow design, overall management and commitment, country-specific strategies, availability of the required supplies and commodities, and availability of the appropriate health information management tools.

Adopting differentiated service delivery (DSD) models for ART service delivery is part of the package of available interventions as this enables service delivery to respond to the preferences and expectations of ART clients; reduces unnecessary burdens on the health system by separating clinical visits from drug refills; reduces the need for facility visits by ART clients; and maximizes the use of available resources – including the health workforce – to ensure access to quality care and treatment.

Differentiated care is a client-centered approach that adapts ART service delivery to respond to the fact that stable clients do not require frequent clinical and laboratory follow-up visits. This adaptation takes into consideration various client and site-level contextual specificities including clients’ clinical characteristics, client sub-populations, where clients reside, level of health care facility attended, and duration on ART. DSD models can accommodate different client schedules, alternative locations for ART refills, and modified client flow patterns that reduce waiting times.

Guidance on who benefits from DSD models is rapidly evolving and there is growing recognition that groups previously excluded from DSD criteria (such as pregnant women, adolescents, and children) may also benefit from models of care specifically for clinically stable clients. The most recent guidance on this issue from WHO states: “Clinically stable children, adolescents and pregnant and breastfeeding women (PBFW) as well as members of key populations (people who inject drugs [PWID], sex workers, men who have sex with men [MSM], transgender people and people living in prisons and closed settings) can benefit from access to clinically stable client differentiated ART delivery models.”<sup>5</sup>

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<sup>1</sup> WHO. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach – 2nd ed. 2016.

<sup>2</sup> UNAIDS 90-90-90. An ambitious treatment target to help end the AIDS epidemic 2014.

<sup>3</sup> PEPFAR. Strategy for Accelerating HIV/AIDS Epidemic Control (2017-2010).

<sup>4</sup> Differentiated care for HIV: A decision framework for antiretroviral therapy delivery. International AIDS Society; 2016. <http://www.differentiatedcare.org>

<sup>5</sup> A Toolkit for Health Facilities: Differentiated Care for HIV and Tuberculosis. The Global Fund, November 2015.

<sup>6</sup> Key considerations for differentiated antiretroviral therapy delivery for specific populations: children, adolescents, pregnant and breastfeeding women and key populations. Geneva: World Health Organization; 2017.

<sup>7</sup> Differentiated care for HIV: A decision framework for differentiated antiretroviral therapy delivery. For children, adolescents and pregnant and breastfeeding women. International AIDS Society; 2017. <http://www.differentiatedcare.org>

<sup>8</sup> Implementation Guide for Differentiated Service Delivery Models of HIV Services in Uganda. Ministry of Health; 2017.

Differentiated care hinges on the fact that reaching more PLHIV will require an approach that has the potential to reduce costs and to increase efficiencies using already existing resources while delivering care in ways that improve the quality of care and life. Facility managers implementing DSD models need strategies for maximizing the use of the available health workforce, learning from successful implementation experiences, and adapting those solutions to their context.

## **1.2 Introduction**

This document describes the process that the USAID HRH2030 program used to develop a standardized, client-centered, Excel-based tool with both site and above-site functionality that aims to assist both facility managers and above-site managers and planners to maximize the use of their health workforce for the rollout of “Test and Start” using various DSD models. The tool considers the annual ART client caseloads and client sub-populations; the health care worker types, numbers, workload, and availability; and the workflows and frequency of performing specific tasks along the service delivery continuum for the various DSD models that are available for implementation.

The tool contains built-in benchmark client-service provider contact time estimates for various service providers who implement tasks along the ART service delivery continuum for the DSD models. These contact time estimates were modeled by using data from service provider and ART client observations and interviews from 20 “experienced”<sup>9</sup> health facilities that offer various DSD models in Uganda. The tool was further refined after piloting testing at ten health facilities each in both Cameroon and Uganda.

To use the Excel-based tool, facility managers and other users will input site- or above-site-specific information into cells in several sheets closely following the instructions provided on each sheet of the tool or in the user guide. The tool will then utilize built-in algorithms to interact the inputs with the contact time benchmarks to estimate FTEs for the various service providers implementing DSD models. Based on these HRH estimates and other contextual factors, the users will then be able to determine the best combination of DSD models to implement or retain at the facility and whether to reconfigure their staffing options, workflows, and task distribution<sup>10</sup> or to request for additional staff to meet treatment targets. The tool allows the user to run several scenarios based on task-shifting, task-sharing, and model-shifting to arrive at the most optimal HRH solution for the specific context.

## **1.3 Goal and Objectives**

The tool was developed for use by facility managers and others at the above-site (e.g., district, regional, or national) level to identify the following regarding ART service delivery:

- Staffing needs for implementing one or a combination of ART service delivery models according to their context
- Efficient task distribution among an existing health workforce to support the implementation of the various ART service delivery model
- Service provider-specific imbalances (excesses or gaps) in the health workforce
- ART service delivery model combinations to optimize the use of existing HRH (including facility- and community-based health care workers)

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<sup>9</sup> Detailed information about these “experienced” sites that were used to the tool development is provided in Table I of this document.

<sup>10</sup> Staffing options will depend on country-specific guidelines about task-shifting and task-sharing.

Outputs from the tool will enable users to make informed decisions to maximize the use of their available workforce or to request for more HRH where appropriate.

## I.4 Methodology

Two PEPFAR-supported countries, one with a generalized epidemic and another with programming concentrated on key populations, were identified in consultation with USAID. The countries selected were Uganda and Cameroon, respectively. Tool development was conducted in the generalized epidemic setting (Uganda), and piloting and fine-tuning of the prototype tool was conducted at sites in both Cameroon and Uganda.

To develop the tool, HRH2030 worked with 20 USAID-supported sites in Uganda that were already implementing DSD models in various settings (see Table I). Selection criteria for these sites included implementation of DSD models for at least six months or more prior to participation in this activity; a USAID-supported site; and willingness to participate in the activity.

**Table I: List of the “Experienced” Sites in Uganda Where Data Collection Was Done**

No.	Facility Name	Level	PLHIV Enrolled at Facility	Current ART Client Caseload at Facility	Location	DSD Model at Facility	Age of DSD Model (by Sept. 2017)
1	Aboke	HCIV	5,603	5,603	Rural	CCLAD, FBIM	6-12 months
2	Anyeke	HCIV	3,686	2,335	Rural	CCLAD, FBIM, FBGs	6-12 months
3	Apac	Hospital	5,246	3,320	Rural	CCLAD, FBIM, FTDR	6-12 months
4	Bala	HCIII	3,159	2,940	Rural	CCLAD, FBIM, FBGs, FTDR	6-12 months
5	Banda	HCIII	1,566	771	Rural	CCLAD, FBIM, FBGs, FTDR	6-12 months
6	Kitgum	Hospital	9,669	9,454	Urban	CCLAD, FBIM	6-12 months
7	Kityerera	HCIV	2,800	2,000	Rural	CCLAD, FBIM, FBGs, FTDR	6-12 months
8	TASO Jinja	HCII	7,088	6,837	Urban	CDDPs, CCLAD, FBIM, FBGs, FTDR	3-5 years
9	Lokung	HCIII	709	637	Rural	CCLAD, FBIM, FTDR	6-12 months
10	MARPI	HCII	700	697	Urban	FBIM, FTDR (Key populations)	6-12 months
11	Mubende	RRH	9,977	5,288	Rural	FBIM, FTDR	3-5 years
						FBGs	6-12 months
12	TASO Mbarara	HCII	6,393	6,388	Urban	CDDPs, CCLAD, FBIM, FBGs, FTDR	3-5 years
13	Namasale	HCIII	1,311	998	Rural	CCLAD, FBIM	6-12 months
14	Nsambya Police	HCIV	1,200	658	Urban	CCLAD, FBIM, FTDR	6-12 months
15	Olilim	HCIII	939	540	Rural	CCLAD, FBIM, FBGs	6-12 months

No.	Facility Name	Level	PLHIV Enrolled at Facility	Current ART Client Caseload at Facility	Location	DSD Model at Facility	Age of DSD Model (by Sept. 2017)
16	TASO Rukungiri	HCII	7,036	7,036	Urban	CDDPs, CCLAD, FBIM, FBGs, FTDR	3-5 years
17	Orum	HCIV	2,685	1,395	Rural	CCLAD, FBIM, FBGs, FTDR	6-12 months
18	Otwal	HCIII	3,134	2,600	Rural	CCLAD, FBIM	6-12 months
19	Soroti	RRH	3,623	1,595	Urban	FBIM, FBGs, FTDR	6-12 months
20	Wabulungu	HCIV	1,382	529	Rural	CCLAD, FBIM, FTDR	6-12 months

**Legend for DSD Models**

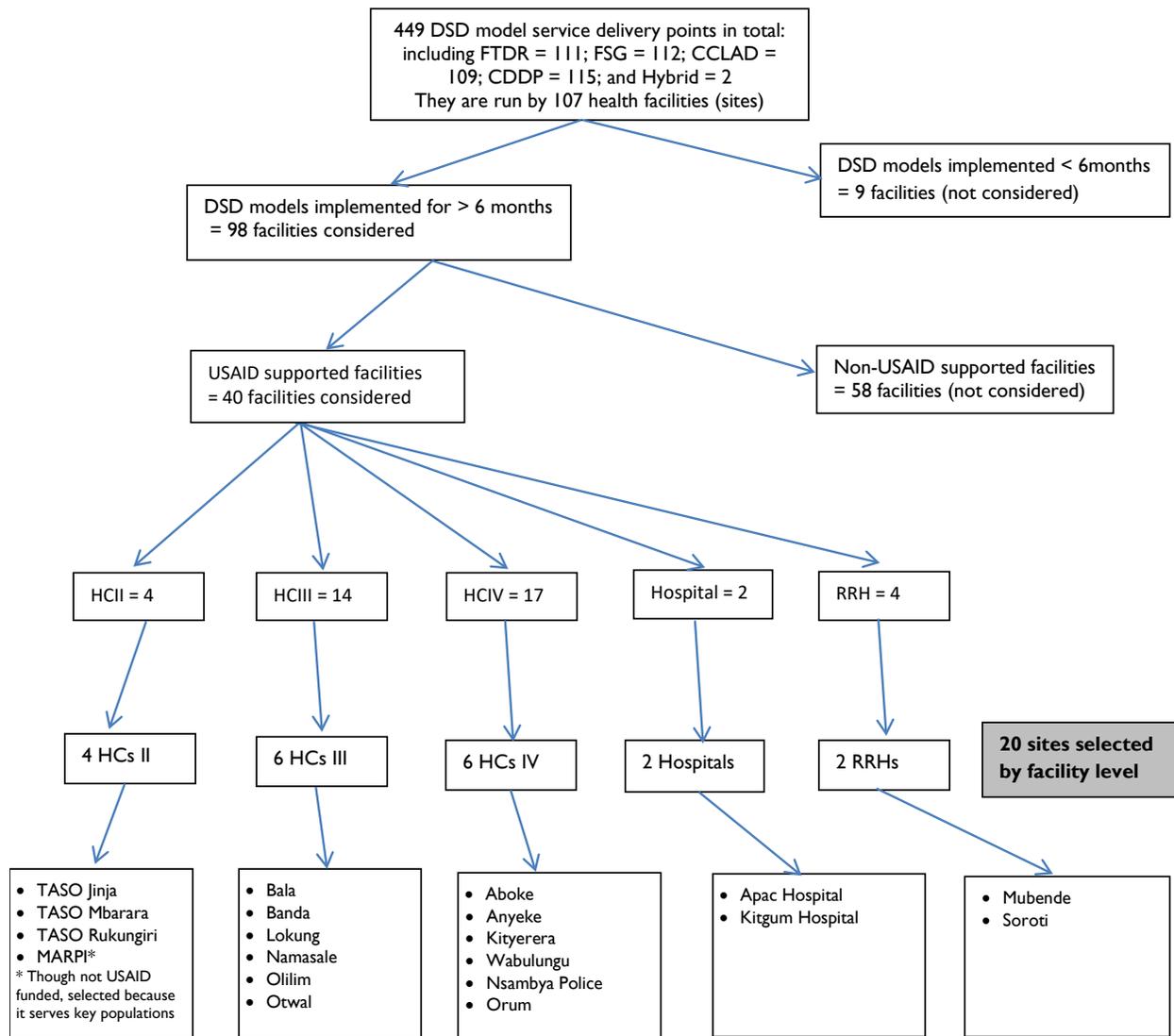
CCLAD: community client-led ART delivery  
CDDPs: community drug distribution points  
FBGs: facility-based groups  
FBIM: facility-based individual management  
FTDR: fast-track drug refill

**Legend for Other Acronyms**

HC: health center  
RRH: regional referral hospital

Figure I shows the process used to select the 20 sites.

**Figure I: Decision Tree for Selection of the 20 “Experienced” ART sites in Uganda**



A mixed methods approach was used, triangulating both quantitative and qualitative research methods. Data were collected between August and November 2017. Trained, locally sourced data collectors made field visits to each of the sites to interview facility managers, ART managers, representatives of staff involved in direct ART service delivery, and ART clients about DSD models and to collect information (through document review, key informant interviews, focus group discussions, and observation) that was used to develop the back end of the tool.

The following data were collected:

- Current and forecasted ART client caseloads over the next 12-month period
- Number of PLHIV registered at the site

- ART client classification into stable or unstable groupings<sup>11</sup>
- Type of ART service delivery models implemented at the site
- Sub-populations of the ART clients (including adults, pregnant and breastfeeding women, adolescents, and children) managed through the DSD models
- Numbers and types of the service providers involved in HIV service delivery at the site
- Task distribution and breakdown for the different service providers involved in ART delivery
- Average time spent by various service providers performing each task along the ART service delivery continuum for each DSD model implemented at the site
- Client flow processes for the various types of DSD models implemented at the site
- Time spent by various service providers to provide “standard care” along the ART service delivery continuum for new or unstable ART clients at the site
- A record of any site-specific characteristics that may influence the type of DSD model implemented at the facility, including the proportion of time various service providers spend on ART service delivery

Workload-specific information was used to develop client-service provider contact time benchmarks for each service provider involved in ART service delivery for the various tasks performed under each DSD model implemented at the sites.<sup>12</sup>

The tool development used an iterative process whereby data were collected from participating facilities in three phases (six sites during Phase I, eight sites during Phase II, and six sites during Phase III). After each phase, data were analyzed, and findings were used to guide the focus of the next phase of data collection. For example, during Phase III, more data were collected on DSD models that were under-represented during the previous phases of data collection. Additionally, some sites were revisited to fill in gaps in information that had previously been collected.

After Phase I of data collection, a stakeholders’ workshop that involved members of the Ugandan Differentiated Service Delivery Technical Working Group<sup>13</sup> and participants from the six sites where data had already been collected was convened in Kampala, Uganda. The purpose of the workshop was to present findings from the activity and solicit feedback and guidance from stakeholders on specific challenges and gaps that had been identified during that phase of the activity.

Workload assessment was done in three ways: i) through non-intrusive observation of client flows during service provision for each of the DSD models being implemented at a facility and recording the steps and how much time an ART client takes to go through the continuum of service delivery; (ii) by requesting at least three staff (where applicable) from each of the various service provider types at the ART facility to fill out daily timesheets recording the amount of time they spend providing various services during ART clinic days; and iii) asking ART managers to estimate what they think the average time spent to perform specific tasks is. Triangulation of time spent by various service providers to perform various tasks was done to obtain inputs for the tool with an effort made to identify, explain, and decide whether to use potential outliers during the benchmark modeling process.

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<sup>11</sup> For the definition for stable and unstable clients on ART in the Uganda context, please see Section 3.1 of this document.

<sup>12</sup> The assumption was that “experienced” ART sites have over time worked out service provider type needs for implementing DSD models and observations at these sites could therefore be used as benchmarks.

<sup>13</sup> The Uganda Differentiated Service Delivery Technical Working Group consists of members from the Ministry of Health, USAID, CDC, PEPFAR implementing partners, and civil society.

### **I.3.5 Data Management and Analysis**

#### Data Management

Quantitative data collected from the participating facilities and interviews were entered into an Excel data repository. Qualitative data were transcribed from audio recording and transcripts were made. No translation was necessary as all interviews and focus group discussions with respondents were conducted in English. To protect the confidentiality of respondents, data were collected in such a way that unique identifiers were used in place of personal details.

#### Data Analysis

After data cleaning and coding where necessary, raw data from the 20 participating sites was tabulated using Excel crosstab tables, combining similar data points from the different data collection tools for triangulation and validation. The tables contained the time spent by various types of service providers to carry out tasks along the ART delivery continuum. Data points included the range, most common values (modes), averages, and weighted averages. Data were scrutinized to rule out outliers and identify the data points to be used in the modeling process for the tool.

In addition to the above process, a conceptual design of the mathematical models (algorithms) to be used to drive the back end of the tool was drafted. This conceptual design guided the logic behind the functionality of the tool. For instances in which essential data points were not observed, these were modeled based on the available data points and pre-formed assumptions<sup>14</sup> to create a fully operational tool.

A codebook was developed for the qualitative data through a combination of evidence from the literature and data-driven analysis. Evidence from the literature was used to drive a priori codes, and emergent codes were identified through the reading of the transcripts, as well as discussions and reflections with the data collection team. Coded data were reduced into themes, and findings were presented in short form to some of the respondents to validate interpretation and conclusions drawn from the data. Quotes from respondents were used to strengthen thematic information. Qualitative data were mainly used to examine why particular ART service delivery models were selected by facilities, the efficiency challenges related to DSD model implementation, and the potential solutions to these challenges.

## **2. Ethical Considerations**

### **2.1 Ethics Review**

Before conducting the activity, Institutional Review Board (IRB) approval was sought and received both in the United States and in Uganda. The URC Institutional Review Board granted the activity an exemption from review since, as per the Code of Federal Regulations 45 CFR 46.101, the involvement of human subjects in this activity was solely for the purpose of studying a public benefit program with a view to better understanding the procedures for providing differentiated ART service delivery and how this service could be improved for the benefit of the clients and staff providing it.

The AIDS Support Organization (TASO) Research Ethics Committee in Uganda granted the activity IRB approval, and the Uganda National Council for Science and Technology (UNCST) granted approval to conduct the activity on behalf of the President's office.

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<sup>14</sup> The assumptions driving the tool are provided as a separate document.

## 2.2 Informed Consent

Before conducting any interviews, participants were given a statement of consent form to read. Where necessary, the form was verbally explained by the interviewers in a language that the participants could understand. The consent process included a description of the purpose of the activity, why they were being asked to participate, the right to withdraw at any time without consequence, and contact information for the team conducting the activity. Participants signed the consent form indicating that they understood that they were being asked to participate in the activity, that they could refuse to answer any questions with which they were not comfortable, and that the information they provided would only be utilized for the purposes of the activity.

## 3. Operational Definitions

### 3.1 Definitions for Terms Frequently Used in Differentiated ART Service Delivery

***Differentiated HIV treatment and care.*** This refers to a strategic mix of approaches to address specific requirements of a sub-group of clients living with HIV. It includes approaches aimed at modifications of client flow, schedules, and location of HIV treatment and care services for improved access, coverage, and quality of care.

Differentiated ART service delivery focuses specifically on clients who are on treatment and puts the client at the center of those services. The central influence in adapting service provision is the client's needs. The aim of differentiation is to lead to better treatment outcomes for clients based on meeting individual needs, including improved coverage and quality of services, while using resources effectively and efficiently.

***WHO definition of stable ART clients.*** Stable clients are those who have received ART for at least one year and have had no adverse drug reactions that require regular monitoring, have no current illnesses or pregnancy, are not currently breast feeding, have good understanding of lifelong adherence, and show evidence of treatment success (i.e., two consecutive viral load measurements below 1,000 copies/mL). In the absence of viral load monitoring, rising CD4 cell counts  $>200/\text{mm}^3$  — an objective adherence measure — can be used to indicate treatment success.

It should be noted that there is some flexibility in the way that countries and programs identify who is “stable” (sometimes less strictly than the official WHO assessment). In South Africa and Zimbabwe, for example, PLHIV are eligible for differentiated ART delivery following their first suppressed viral load three to six months after ART initiation.<sup>15</sup>

***Ugandan definition of stable ART clients.*** This is an adult client receiving ART for at least 12 twelve months, without treatment regimen change during the same period, with a suppressed viral load, good adherence to treatment of  $>95$  percent, not pregnant or lactating, on first or second line drugs, and with no co-morbidities. Approximately 70 percent of patients in Uganda are considered stable on treatment.

***Ugandan definition of unstable/complex ART clients.*** These include ART naïve patients, PLHIV who have been on treatment for less than six months, children, adolescents, pregnant and lactating women, PLHIV with non-suppressed viral load, those experiencing treatment failure, on third line ART regimen, in advanced disease stage (WHO stages 3 or 4), or with co-morbidities.

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<sup>15</sup> International Treatment Preparedness Coalition and the AIDS Rights Alliance of Southern Africa. “What works for me: Differentiated service delivery activist toolkit.” 2017.

### 3.2 Descriptions and Definitions for Differentiated ART Delivery Models

Models of differentiated ART delivery can be divided into four broad categories: health care worker-managed models; client-managed models; facility-based individual models; and out-of-facility individual models. In all these models, clients continue to have clinical consultations as part of their package of care. These models are flexible to accommodate clients who may want or require up referral to the standard model of care.

Multiple DSD models can work in parallel so that a client can move between them over the course of his or her lifetime.

The four main models of differentiated ART delivery described in the literature<sup>1</sup> include:

**Health care worker-managed groups.** Clients receive their ART refills in a group and either a professional or a lay health-care staff member manages this group. The groups meet within and/or outside of health care facilities.

**Client-managed groups.** Clients receive their ART refills in a group, but this group is managed and run by clients themselves. Generally, client-managed groups meet outside of health care facilities.

**Facility-based individual models.** ART refill visits are separated from individual consultations. When clients have an ART refill visit, they bypass any clinical or adherence support and proceed directly to receive their medication.

**Out-of-facility individual models.** ART refills and, in some cases, clinical consultations are provided to individuals outside of health care facilities.

### 3.3 Descriptions and Definitions for Differentiated ART Delivery Models in Uganda

The differentiated ART service delivery models implemented in Uganda fit into the globally described models.

Facility-based models in Uganda include:

- Facility-based individual management (FBIM), also referred to as comprehensive clinical evaluation (CCE) at some facilities
- Facility-based groups (FBGs), also referred to as family support groups (FSGs) or psychosocial support groups (PSGs) at some facilities
- Fast-track drug refill (FTDR), also referred to as pharmacy-only visits (POVs) or facility drug distribution points (FDDPs) at some facilities

Community-based models in Uganda include:

- Community client-led ART distribution (CCLAD)
- Community drug distribution points (CDDPs)

Detailed descriptions of the ART service delivery models practiced in Uganda are provided below:

**Facility-based individual management (FBIM).** This is the standard care model at every facility through which all new clients are initiated on ART. It is also the treatment model used for unstable/complex clients where each individual client is given a scheduled appointment with a clinician and other service providers for a thorough clinical assessment, a blood draw and review of laboratory

tests, and other services (e.g., adherence counseling). In Uganda, new ART patients are managed under FBIM for six to 12 months until service providers deem that their adherence history, clinical status, country guidelines, and other contextual factors qualify them to be transferred to either facility- or out-of-facility DSD models.

**Facility-based groups (FBGs).** These are support groups of stable or unstable/complex clients based at the facility that may be used as avenues for ART refills. FBGs could include family support groups for pregnant and breastfeeding women (mother-baby pairs), adolescent support groups, etc. Occasionally, some clients who are still hesitant to begin ART, find it difficult to cope with the diagnosis of HIV, or have other issues like adherence, non-disclosure, poor compliance, denial, or stigma (complex/unstable clients) may join FBGs to learn from the testimonies of other group members and receive peer support.

In Uganda, group size for FBGs ranges from 15 to 30 clients and large volume facilities may have several groups. These groups meet on a regular basis (e.g., once every two to three months) to receive their ART refills and undergo a nutritional assessment, basic screening for adherence, symptomatic tuberculosis (TB) screening, and screening for other opportunistic infections. In FBGs, peer leaders may collect the drugs on behalf of the group members from the pharmacy and account for them.

**Fast-track drug refill (FTDR).** This is an approach in which stable clients with no complaints on the appointment date are fast-tracked to get their drug refills without having unnecessary clinical evaluations. The clients pass through triage where basic assessments, such as adherence, nutritional status, and TB screening, are done. If no problems are detected, the client proceeds directly to the pharmacy or dispensing point to receive his or her ART refill. Should there be any issues identified or complaints on the part of the client, he or she is redirected accordingly – usually for a more comprehensive evaluation. Facilities implementing this model dispense drugs to their clients to last at least three months. It is important to note that stable clients under the FTDR model undertake a clinical evaluation at least once every six months and have a viral load done at least once a year.

**Community client-led ART delivery (CCLAD).** This is delivery of ART at community level to a community ART group by one of the group members on a rotational basis. CCLAD groups consist of three to 12 stable ART clients who live within the same community or locality. Clients monitor their own health, provide peer psychosocial support by sharing experiences about living positively with HIV, and act when necessary with the support of health care workers.

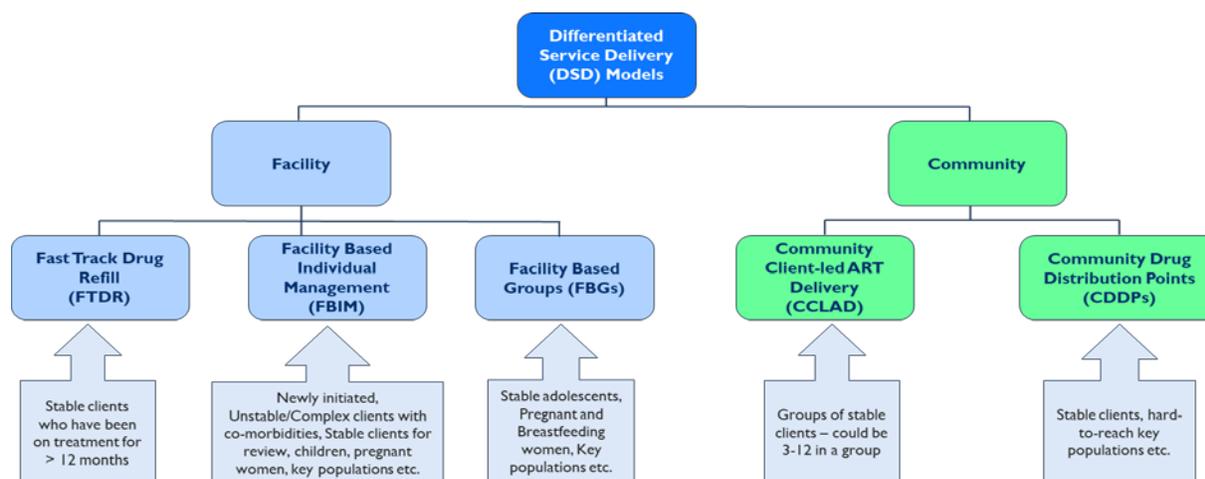
Basic information about CCLAD group members' health is recorded on a monitoring form (a community client card) and taken to the health care facility during the next refill to update client records. In this model of care, each member of the group must visit the health care facility at least twice a year for comprehensive clinical evaluation and laboratory work. In the CCLAD model, a team leader is selected by the group members in collaboration with the health care workers and is responsible for the coordination and communication between the group and the health care facility. Clients in the group can be up referred to the health care facility at any point in their treatment when need arises. The frequency of the drug refills under CCLAD depends on the number of clients in the group and can vary from every month to every three or more months.

**Community drug distribution points (CDDPs).** In this approach, ART care is delivered at designated community-based sites. This model offers increased community participation and ownership of ART care by the clients. Health care workers, with support from community ART support agents, pre-pack medicines and other supplies (including ARV drugs, opportunistic infection drugs, family planning supplies, and condoms) and obtain transportation from the facility to deliver ART services to a

group of clients at a particular community venue. CDDP groups range from 10 to 50 stable clients who come from within the catchment area of the health care facility, and CDDP meetings are held up to four times a year.

Figure 2 summarizes the differentiated ART service delivery models currently being implemented in Uganda.

**Figure 2: Uganda’s Differentiated ART Service Delivery Models**



All Uganda’s models fit into the global models for differentiated ART delivery<sup>16</sup>

Table 2 shows how Uganda’s DSD models fit into the broad global models that are described in the literature.

**Table 2: How Uganda’s DSD Models Fit into the Global Models for Differentiated ART Service Delivery**

Global Differentiated ART Delivery Model	Model as Described in Tool	Ugandan Model Equivalent
	Standard care model	Facility-based individual management
Health care worker-managed groups (at facility or out-of-facility)	Health care worker-managed group model	Facility-based groups (FBGs)
Client-managed groups (out-of-facility)	Out-of-facility client-managed group model	Community client-led ART distribution (CCLAD)
Facility-based individual models	Facility individual model	Fast-track drug refill (FTDR)
Out-of-facility individual models	Out-of-facility individual health care worker-managed model	Community drug distribution points (CDDPs)

#### 4. Data Analysis Done for Tool and Reference Guide Development

To develop the tool benchmarks and reference guide document, a variety of data analyses were done. These are presented in this section. Depending on country-specific policies and guidelines, different

<sup>16</sup> Uganda currently does not have a group out-of-facility, health care worker-led DSD model. In the tool, data for this model was modelled from the CDDP model taking into consideration that for some tasks, clients are seen as a group in this missing model.

client sub-populations can receive their ART under various DSD models. Table 3 summarizes this information for the case of Uganda.

**Table 3: Clients Qualified to Receive ART Under Each Differentiated ART Service Delivery Model in Uganda**

Location	DSD Model	Qualifying Client Groups						
		Stable Clients	Complex, Unstable, New, Transfers-in	Children (<10 years)	Adolescents (10-19 years)	Pregnant Women and up to 3 Months Post-partum	Mother-Baby Pairs (3-18 Months Post-partum)	Key Populations
Facility	FBIM	✓	✓	✓	✓	✓	✓	✓
	FBGs	✓	✓		✓		✓	
	FTDR	✓						✓
Out-of-facility	CCLAD	✓						
	CDDPs	✓						✓

#### 4.1 Interviews Performed

Table 4 summarizes the overall number of interviews carried out during the study. Information from these interviews was used to obtain an in-depth understanding of differentiated ART service delivery in Uganda; obtain data points for calculating benchmarks necessary for the back end of the tool; as well as to identify and describe efficiency challenges with DSD model implementation in Uganda.

**Table 4: Number of Interviews Undertaken**

Data Collection Method	No. of Interviews Done
Facility Managers	18
ART Managers	20
ART Staff	130
ART Clients	329
Focus Group Discussions	18
Individual Timesheets	130
Other*	40

\* Opinions were obtained from key stakeholders who included members of the Uganda Differentiated Service Delivery Technical Working Group during a one-day meeting in September 2017.

#### 4.2 Client Flow and Critical Tasks for ART Delivery for Each Model as Described by the Service Providers

Health care workers were asked to describe what happens when a client comes to the facility for ART services, where clients start from, and the steps or path taken until exit from the facility. The following was noted about each DSD model:

Under **FBIM**, the client is registered, then undergoes health education, followed by triage. Then his or her file is retrieved, after which the client goes for consultation or clinical assessment followed by counseling and psychosocial support if he or she is not adhering well to his or her drugs. The client is then sent to the laboratory in case he or she is due for viral load testing or other blood work. Finally, drugs are dispensed, and the client exits the facility.

The **FBG** model is mainly used in Uganda for pregnant and breastfeeding women. In cases of a mother-baby pair, health education is conducted upon arrival, and the record book the mother carries with her is used to retrieve their file. Afterward, triage is done for both the baby and the mother. Triage for the baby involves taking weight, height/length, and mid-upper arm circumference; as well as checking for immunization status. Thereafter, the pair is scheduled for the next appointment. In cases where the infant is due for dried blood spot, he or she is sent to the laboratory or has blood drawn at the ART clinic. If the mother is due for viral load testing, she is also sent to the laboratory or has blood drawn at the ART clinic. ART drugs are then dispensed to them, and they exit the facility.

Under **CCLAD**, when group representatives come with the group members' books or cards, they are given a health education talk (usually as part of the group of ART clients attending the clinic that day). Their files are retrieved, and the representative who usually comes on the day his or her own clinical examination and laboratory work is due then goes to receive these services. Community client cards are reviewed at the facility because CCLAD members are supposed to have monthly meetings for peer support and to monitor adherence among themselves. These monthly meetings, which are normally held two days prior to the appointment day, are used as a platform for group members to share their challenges. These challenges are then reported by the group representative to the health care workers on the day of the appointment.

ART drugs for the various group members are then provided, and the dispensing log is filled. The group representative is then scheduled for his or her next appointment and exits the facility. The CCLAD groups are instructed to hold two meetings in the community per month: one is the pre-medication meeting that is conducted before picking up the drugs, and the second meeting is done after picking up the drugs so that they can be distributed to the respective recipients.

For the **CDDPs**, the health care worker delivers the drugs to the drug distribution point, and the leader of the group picks up the drugs for the rest of the team members. When the group leader comes to the distribution point, he or she is supposed to bring relevant documentation for all the team members. The team leader also carries the completed TB intensified case finding assessment forms and is provided with others to use on future occasions. If there's nothing to discuss at that point, the team leader receives the pre-packaged drugs.

In some CDDPs, all ART clients managed under this model meet at the drug distribution point to interact with the health care workers. When the clients are due for viral load testing, the team leader gathers them at the CDDP so that the counselor-in-charge can draw blood samples and take them to the facility for testing.

Under the **FTDR** model, clients go straight from the registration desk to collecting their drugs. They don't go to the clinician for consultation unless they are feeling sick or are experiencing other complications. The clients in this model have viral load testing once a year and a clinical examination once or twice a year.

### **4.3 Client Flows and Most Common Critical Tasks Performed by Service Providers under Each DSD Model as Observed**

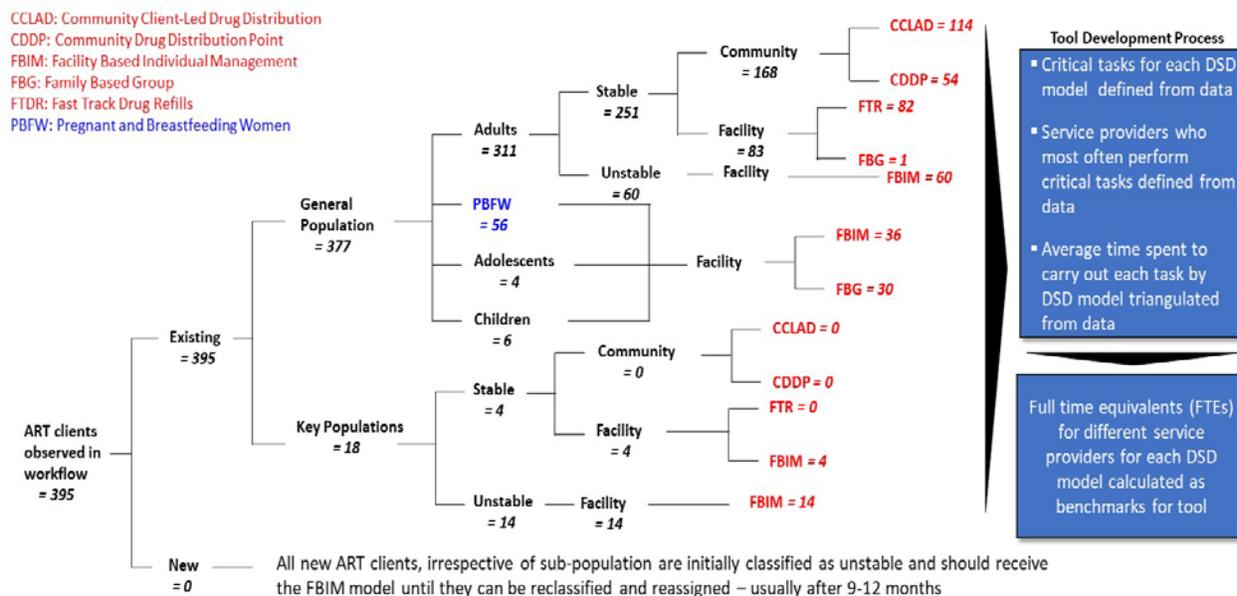
Client flow observations were done for various types of clients receiving ART under the DSD models. Table 5 summarizes the number of client and critical task observations during client flow observations by model.

**Table 5: Number of Client and Critical Task Observations by Differentiated ART Service Delivery Model**

Uganda ART Differentiated Service Delivery Model (Global Equivalent)	No. of ART Clients Observed	No. of Critical Task Observations by Model
CCLAD (Client-managed group)	114	477
CDDPs (Out-of-facility individual)	54	232
FBGs (Health care worker-managed group)	31	147
FBIM (Standard)	114	508
FTDR (Facility-based Individual)	82	356
<b>Total</b>	<b>395</b>	<b>1,720</b>

The number of client flows by client sub-population are summarized in Figure 3. As shown in the schematic, critical tasks for each model were defined from the data. Service providers who most often performed the critical tasks were also identified and the average time spent to carry out these tasks was triangulated from the data. This information was then modeled for the benchmarks in the tool.

**Figure 3: Number of Client Flows Observed by Sub-population and DSD Model**



Through the client flow observations, the commonest tasks performed under each ART service delivery model were identified. Table 6 summarizes these critical tasks.

**Table 6: Most Common Critical Tasks Observed in Workflows by DSD Model**

FBIM	FBG	CCLAD	CDDP	FTDR
Registration/ Enrollment	Registration/ Enrollment	Registration/ Enrollment	Registration/ Enrollment	Registration/ Enrollment
Health Education	Health Education	Health Education	Health Education	Health Education
Triage	Triage	Triage	Triage	Triage
Consultation/Clinical assessment	Consultation/Clinical assessment*	Consultation/Clinical assessment*	Adherence counseling <sup>¶</sup>	Drug dispensing
Adherence counseling <sup>¶</sup>	Adherence counseling <sup>¶</sup>	Laboratory testing <sup>§</sup>	Drug dispensing	Updating records
Laboratory work <sup>§</sup>	Drug dispensing	Drug dispensing	Updating records	
Drug dispensing	Updating records	Updating records including CCLAD forms		
Updating records				

**Notes:**

<sup>¶</sup> Adherence counseling is sometimes provided as part of health education by service providers at some facilities.

\* Consultation/Clinical assessment for the models for stable clients is not routinely performed at every drug refill. It is normally done twice a year for each client.

<sup>§</sup> Laboratory work (normally refers to viral load testing) is usually done once a year for stable clients and twice a year for unstable clients.

Client flow data were analyzed to identify the service providers who most commonly perform critical tasks along the ART service delivery continuum. Table 7 summarizes this information for each model in order of which service provider performs them most frequently. The rows highlighted in yellow represent those tasks that are not routinely performed at every client visit for that specific model.

**Table 7: Service Providers Who Most Commonly Carry out Critical Tasks by DSD Model at Health Care Facilities in Uganda**

Model	FBIM		
Task	Service Provider by how often they perform task		
Enrollment/Registration	Facility-based Auxiliary	Peer	Nurse
Health Education	Nurse	Facility-based Auxiliary	Community Health care worker
Triage	Nurse	Facility-based Auxiliary	Peer
Consultation	Nurse	Medical Doctor	Non-Physician Clinician
Laboratory work	Laboratory Technician	Nurse	
Adherence counseling	Social Service Worker	Nurse	Facility-based Auxiliary
Dispensing drugs	Nurse	Facility-based Auxiliary	Pharmacist
Updating records	Peer	Nurse	Facility-based Auxiliary

Model	FTDR		
Task	Service Provider by how often they perform task		
Enrollment/Registration	Facility-based Auxiliary	Peer	
Health Education	Counselor	Nurse	Facility-based Auxiliary
Triage	Facility-based Auxiliary	Peer	Nurse
Consultation	Nurse	Facility-based Auxiliary	
Laboratory work	Laboratory Technician		
Adherence counseling	Counselor		
Dispensing drugs	Pharmacist	Nurse	Facility-based Auxiliary
Updating records	Nurse	Non-physician Clinician	Peer

Model	FBG		
Task	Service Provider by how often they perform task		
Enrollment/Registration	Peer	Nurse	Facility-based Auxiliary
Health Education	Nurse	Peer	
Triage	Nurse	Facility-based Auxiliary	
Consultation	Nurse		
Laboratory work	Laboratory Technician		
Adherence counseling	Nurse		
Dispensing drugs	Nurse	Peer	
Updating records	Nurse	Facility-based Auxiliary	

Model	CCLAD		
Task	Service Provider by how often they perform task		
Enrollment/Registration	Facility-based Auxiliary	Social Service Worker	Counselor
Health Education	Nurse	Non-physician Clinician	Social Service Worker
Triage	Facility-based Auxiliary	Peer	Non-physician Clinician
Consultation	Nurse	Non-Physician Clinician	Community Health care worker
Laboratory work	Laboratory Technician	Nurse	Counselor
Adherence counseling	Social Service Worker		
Dispensing drugs	Counselor	Community Health care worker	Facility-based Auxiliary
Updating records	Facility-based Auxiliary	Nurse	Social Service Worker

Model	CDDP		
Task	Service Provider by how often they perform task		
Enrollment/Registration	Peer	Counselor	
Health Education	Nurse	Counselor	Facility-based Auxiliary
Triage	Peer	Facility-based Auxiliary	Counselor
Consultation	Nurse		
Laboratory work	Laboratory Technician		
Adherence counseling	Facility-based Auxiliary		
Dispensing drugs	Facility-based Auxiliary	Nurse	Medical Doctor
Updating records	Medical Doctor	Facility-based Auxiliary	

#### 4.4 Utilizing the Uganda Data to Develop the Tool

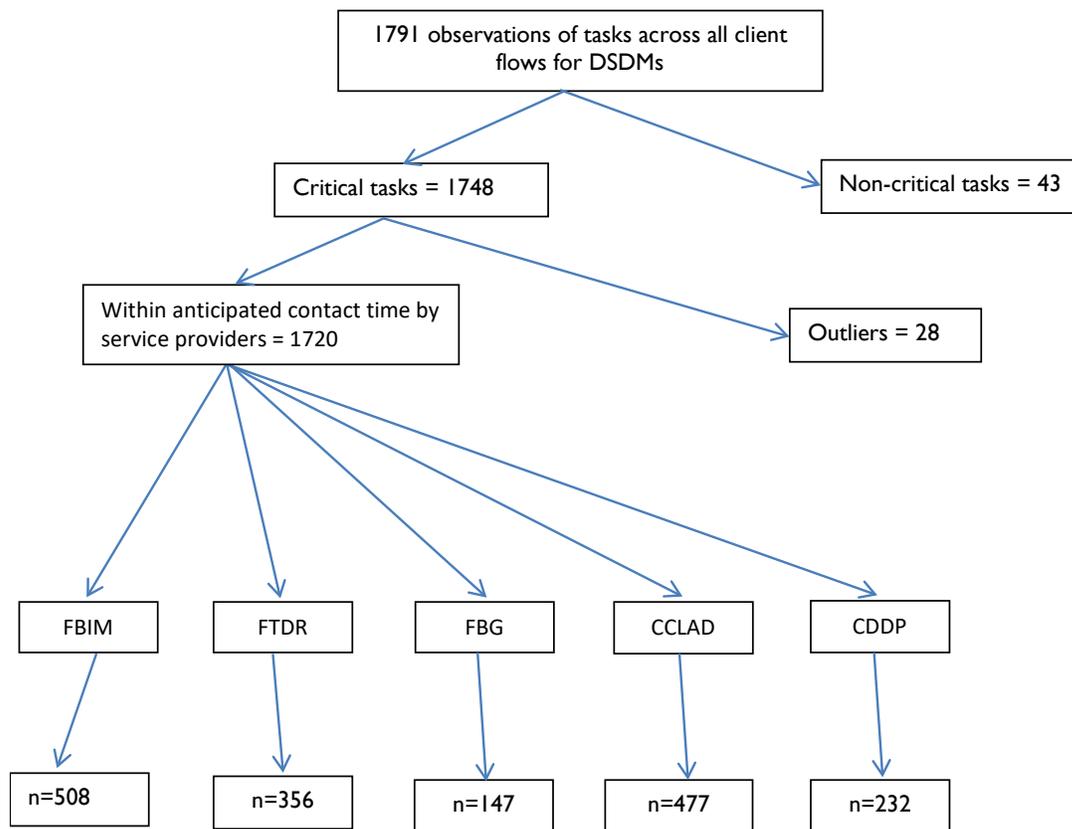
Data from client flows primarily provided the information that went into calculating the benchmark estimates for the tool. These client flows involved directly observing individuals (for individual models) or groups of clients (for group models) under each model when they were receiving their ART services either from the facility (for facility models) or within the community (for out-of-facility models). Such observations helped to determine:

- The most common tasks performed under each DSD model. For the purposes of the tool, these have been deemed as “critical tasks”
- Most common service providers who carry out each of the various tasks under each model for the various levels of health care facilities that participated in the activity

- Time spent serving individual clients for the various tasks under each model. For the purposes of the tool, this time is called the “contact time”

Figure 3 shows the number of critical tasks that were analyzed for contact time by model.

**Figure 3: Decision Tree for Selection of Data Points for Contact Time from Client Flow Observations**



The method of following specific ART clients as they received services along the ART service delivery continuum in order to log client-service provider contact time was more efficient compared to the alternative option of following service providers implementing multiple tasks along the ART service delivery continuum (see Table 7) for the DSD models at the health care facility.

Once the benchmarks for each potential service provider for the various tasks under the different ART models (as laid out in Table 7) were entered into the tool, a user-friendly interface spread across several sheets was designed for the tool in Microsoft Excel to allow facility managers and other users to enter the information to be used to estimate ART-specific HRH needs for that facility or above-site entity. A separate user guide with instructions on how to use the tool has been developed as a separate document and instructions have also been embedded in each sheet of the tool itself.

Having provided the relevant inputs, the tool is then able to calculate model- and service provider-specific full-time equivalent HRH needs for the facility and display them in the Results tab. Facility managers and above-site users can then compare these outputs with the HRH availability at their sites/above-site and identify excesses or gaps. The tool is also designed to allow users to carry out

various task-shifting, task-sharing, and model-shifting scenarios dependent on what is allowable in line with national policies and guidelines. This can allow them to optimize the human resources they have available.

#### **4.5 Limitations of the Tool**

It should be noted that despite its utility and innovativeness in estimating HRH needs at the facility and above-site levels, the tool has some limitations that users should be aware of. These include the following:

- The tool does not account for the time taken to conduct an HIV test. It assumes that all clients who are entered into the tool have already been tested and confirmed HIV positive
- The Ugandan “experienced” ART sites that were the source of data for the benchmarks used in the tool experience their own constraints when providing ART services. These challenges (some of which are detailed in Section 6 of this document) affect client-service provider contact time. This is the reason why the tool incorporates contact time ranges in the algorithms used
- ART services in other countries may be organized differently than those in Uganda and tool users should take this into account. The tool however provides an allowance to add other ART service delivery activities that are currently not in the list provided in the Treatment Models tab
- The tool utilizes client-service provider contact time as one of the main drivers of the algorithms to estimate FTEs. Client waiting time in-between service provision is not taken into account
- The tool cannot adjust for clients who come to the facility/out-of-facility site more frequently than the DSD model they are being managed in (as per frequencies entered in the Treatment model tab)
- For out-of-facility DSD models, the tool does not account for travel time of health care workers to community-based sites. Tool users will have to take this into consideration depending on their context when deciding to allocate DSD models to their clients
- For group models, some facilities pre-pack client drugs the day before the ART clinic. The time taken to pre-pack drugs is not taken into account by the tool
- The tool excludes the provision of maternal and child health and TB services to PLHIV

Countries will have to utilize the tool with the above limitations and many other health service delivery challenges not specifically related to this tool in mind. For this reason, this reference guide contains a section (6) on efficiency challenges that were reported from the Uganda experience. Facility managers can use this knowledge to identify bottlenecks in their own ART service delivery affecting HRH efficiency and productivity and develop mitigation plans as suggested in Section 7 of the document.

### **5. Reasons Given for Starting DSD Models in Uganda**

For health care facilities that are just starting to implement ART service delivery models, it may be important to establish reasons why and which models should be implemented. In order to provide guidance on this, health service providers in Uganda were asked why they started implementing the types of DSD models at their facilities and why they chose them.

Many of the reasons cited cut across different ART service delivery models as described below and could be of interest to the users of the tool.

## 5.1 Reducing Service Provider Workload

Health care workers reported that ART clinics are understaffed and yet they have high client loads. Additionally, it was noted that often the same health care workers who run ART clinics also provide health services elsewhere within the facility. DSD models were therefore introduced to help reduce the number of ART clients seen at the facility on clinic days to manageable levels.

To quote a service provider: *“The workload was a challenge since we do not have separate ART staff but instead we could use the same facility staff that do all the work and the workload was too much so we decided that if we took some of the clients back to the community; the workload would be reduced at the facility since if you are to work on a file that means you would have worked on six clients, we have six clients per group.”* – Health care worker providing CCLAD at a level III health center

## 5.2 Decongesting Health Care Facilities

The health care workers further explained that the ART clinics have many clients enrolled into care at the facility and yet they have limited space and staff to accommodate them and therefore clients often must wait in long lines to obtain the required services.

To mitigate this, alternative models of ART delivery were developed. The CCLAD model, for instance, results in only one client instead of all group members coming to the facility on a rotational basis to pick up drugs on behalf of the others each clinic day. Similarly, the CDDP model involves extending services to the community by the health care workers and thus reduces the number of ART clients coming to the facility.

## 5.3 Saving Client Resources

Respondents reported that the DSD models showed the potential of saving the clients’ resources in terms of money spent on transportation and the time spent at the facility. Before the implementation of these models, some clients had to travel very long distances to the health care facilities to access ART services; the transportation costs were also quite high as clients had to come to the facilities frequently. Additionally, due to high caseloads, facilities were often congested on clinic days leading to long waiting times. Clients reported that they often missed out on doing economically productive activities during ART clinic days. These challenges often led to many missed appointments and affected client adherence to drugs. One of the health care workers at a level III health center had the following to say:

*“Some of these communities are very far, some of these clients stay 20 kilometers away from the facility, which makes it very difficult for them to come to the facility every month. For instance, those clients from Mushola landing site pay 15 thousand shillings [equivalent to about \$4] each time they come to the facility, there is only one [public transportation] vehicle at the site and it doesn’t come to the facility so they have to use motorbike taxis to come which makes it expensive for them.”*

Health care workers implementing the FBG model also reported time savings on the mother’s side as one of the main reasons for implementing this model. This is because mothers and their babies are seen at the same time, hence reducing the time spent at the facility as well as the number of times they must return to pick up drugs as opposed to when the mother and baby have different appointment days.

The CLADD, FBG, and CDDP models were therefore viewed by health care workers as effective and efficient timesaving solutions that they had long waited for:

*“But when we move services nearer to them, we save on their time and transport... and it was a way of sustaining retention to ART because when someone’s drugs are brought nearer, then they know they can easily go back and pick more.”* – Health care worker, level II health care facility

## 5.4 Improving the Quality of Early Infant Diagnosis Services

The health care workers reported that before the FBG model, many HIV-exposed infants were lost to follow up. They were hard to track because the mothers couldn't go to the facility to get services for the baby only. The FBG model presented an opportunity to improve the retention of babies in care as well as lowered the risk of mother-to-child HIV transmission through routine monitoring since their appointments were scheduled on the same day with their mothers (as mother-baby pairs).

A respondent at a level III health center remarked: *“We realized that when family support groups had not yet started, we lost many children. They were lost because the mother would be here alone and nobody would bother looking for the baby. Others had baby-sitters at home and left the child at home. They would not mind if the child was due for PCR. But with this model, we realized that when the child was due for PCR, you must bring the baby together with the mother. They are actually following this and it has reduced the death of the babies.”*

Previously, some of the mothers on ART were breastfeeding their babies up to two years, which increased their HIV exposure rate. The FBG model provided health care workers with a platform to advise these mothers on what is best for the baby nutritionally as well as remind them to stop breastfeeding when the time was due.

## 5.5 Increasing Vulnerable Clients' Access to Drugs

While administering ART services, the health care workers at some of the health care facilities realized that it was hard for elderly and disabled clients to keep their appointments if they had to keep travelling to the facility. The introduction of CCLAD meant that these clients would only have to come to the facility twice a year which made their lives easier.

*“There are other groups of people in the community who cannot access this facility especially the elderly and disabled. Coming here every month would make it difficult for them so we decided that if we could put them in groups, only those that made six months would be the ones to come to the facility.”* – Health care worker, level III health center

## 5.6 Models were Introduced after Receiving Training Received from the Ministry of Health and Implementing Partners

Some facilities reported that they were invited for training on the different ART service delivery models by the Ministry of Health (MoH) and implementing partners and were thereafter asked to initiate the implementation of DSD models. This was part of the MoH drive in Uganda to systematically scale up these models.

*“We went for a training in Lira and from there we were asked to get the stable clients meaning those ones who have been in care for more than a year, then their viral load must be low, also they must not be pregnant or lactating. Then that person must be an adult like from 20 years and above. So, we were asked to group them.”* – Health care worker, level III health center

# 6. Efficiency Challenges in Implementing Differentiated ART Service Delivery Models

Whereas there have been some significant benefits because of implementing DSD models such as saving clients' and health care workers' time, decongesting ART facilities, and reducing the workload of the healthcare workforce on some activities, some challenges were reported by both health care workers and ART clients that compromised the efficiency of implementing DSD models. These challenges were

identified through key informant interviews, focus group discussions, and ART client interviews are very similar to what has been described elsewhere in the literature.<sup>17,18</sup> These challenges are described below.

## **6.1 Increase in Workload for Some of the Staff**

Although the ART service delivery workload of some health care workers has been reduced in that they now see fewer clients on an ART clinic day, the workload of others notably pharmacy staff has increased as they must pre-pack and individually label drugs for the clients under the group DSD models.

*“It is tedious...for example some CDDPs have 80, others 100 clients and we are only two pharmacy staff and then you work on the CDDPs and then you have to get masking tape and start writing names and registration numbers one by one...on our side it’s a lot of work. I don’t know but I feel we need help on this...”* – Health care worker, ART facility providing an out-of-facility DSD model

There is also sometimes a shortage of laboratory staff for the sites that are implementing the CDDP model on the days when clients are due for viral load testing. Additionally, staff are often overstretched as they also must work in the other departments at the facility. For most facilities, there are no specific staff assigned to work in the ART department only, therefore the health care workers on duty have to provide services at the ART clinic, outpatient’s department (OPD), as well as other departments at the facility – sometimes during the same day.

*“Just imagine there are only two staff doing triage, receiving all these clients who are around 50 to 60 on an ART day. We have also an adolescent clinic every day where we get about 20 to 50 clients, so there is overload because the staffing is not all that the best.”* – Health care worker, RRH

## **6.2 Lack of Facilitation to Carry out Some of the Tasks Associated Especially with Out-of-facility DSD Models**

Health care workers cited lack of facilitation as one of their biggest challenges. They lack funds for transportation to conduct client follow-up, and yet some of the communities from which their clients come from are very far. Ideally, linkage facilitators (who are facility-based auxiliaries) are supposed to follow up with clients, but unfortunately, they are often not adequately resourced. Linkage facilitators play a major role at ART clinics because clients are often very well acquainted with them and trust them, and their participation eases the work of health care facility staff. At some facilities it was found that linkage facilitators volunteered for a while but eventually gave up and stopped coming because they could no longer afford to.

*“They [the volunteers] have homes...they have children...they have husbands or wives. They spend the whole day here [at the facility]. They have children at school... and at the end of the day, they go empty-handed!”*  
*...actually, they carry the biggest portion of some of the work...and if they are not there, we can really fail...*

– Health care worker on lay volunteers

Even when they receive a stipend, it was reported that volunteers are often underpaid and thus lack the motivation to go an extra mile in doing assigned tasks.

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<sup>17</sup> Mills EJ, Nachenga JB, Bangsberg DR, Singh S, Rachlis B. et al. (2006) Adherence to HAART: a systematic review of developed and developing nation patient reported barriers and facilitators. PLoS Med 3: e436.

<sup>18</sup> Ankomah A. et al. ART access-related barriers faced by HIV-positive persons linked to care in southern Ghana: a mixed methods study. BMC Infectious Diseases, 2016.

*“Late payments, they have little money, and they come here in the morning yet they are expected to leave late, they have very long working hours and that money cannot pay for what they do.”* – Health care worker, RR

### **6.3 Challenges with Implementing Some Out-of-facility DSD Models**

Health care workers reported some challenges with implementing out-of-facility DSD models. For example, the cost of implementing these models could be prohibitive and many public facilities reported that they lacked transportation to CDDPs especially if these drug distribution points were several within the health care facility’s catchment area as is often the case. Some public facilities also noted that they lacked dedicated teams to go out to the community to manage CDDPs.

*“Some of these communities are very far and we often lack reliable transportation and staff to go and deliver the drugs to them...”* – Health care worker, general hospital

Additionally, others noted that it was difficult to initiate CCLAD in some communities as it is hard to ascertain the residential addresses of ART clients. This is most often the case in congested informal settlements such as slums and fishing villages and complicates the tracing of those clients who are lost to follow up.

### **6.4 Drug Stock-outs**

Some of the staff interviewed reported that they experience drug stock-outs, which are a big challenge because clients on ART should not miss taking their medication. Nevirapine syrup was cited as one of the drugs mostly likely to experience stock-out, yet HIV exposed infants need it to prevent mother-to-child HIV transmission. The health care facilities also sometimes run short of other ART regimens and drugs for preventing and treating opportunistic infections.

Additionally, clients on the FTDR model at some health care facilities are unable to get ART supplies to last them six months as health care workers would have wanted because if such large amounts are dispensed, then drugs run out sooner and other clients may not be able to get their refills.

### **6.5 Stigma**

Health care workers at some health care facilities reported that some of the clients receiving ART services through the FTDR model have stigma-related concerns, which lead them to prefer coming to the facility on non-ART clinic days to avoid being seen by their peers. Other clients come on the days of their appointments but opt to miss out on group health education talks and are in a rush to leave so that other ART clients do not see them lining up for drugs.

Other clients under out-of-facility models such as CCLAD may relocate to new residences but still prefer to maintain their original groups because they do not want to join other groups and meet new people, thereby increasing the number of people aware of their HIV status. These stigma-related issues have been especially observed among clients who look well and don’t have any outward signs or symptoms that indicate that they are HIV positive.

It was also reported that some key populations (notably female sex workers [FSWs]) may not want to join out-of-facility DSD models as the fear that their peers knowing their HIV status may affect their ability to attract transactional sexual partners. Again, it is difficult for those clients who haven’t disclosed their HIV status to others to join group DSD models.

## 6.6 Challenges with Implementing DSD Models for Some Sub-populations

Implementation of DSD models for some sub-populations that may need them most (such as key and priority populations (including MSM, FSWs, PWID, fisherfolk, uniformed services, adolescents, etc.) often proves a challenge due to a variety of factors such as the lack of specific national guidance on how to implement DSD models for these groups who also often face other challenges such as stigma, criminalization, high mobility, poor health seeking behaviors, etc.

Some clients, such as FSWs, reported that they are highly mobile and therefore prefer longer periods between refills and also want the flexibility of being able to obtain their medication from other facilities if they have left the area where they initially registered. Other most-at-risk populations mentioned they were frequently imprisoned and needed to have their ART with them during such periods.

## 6.7 Misunderstandings Among Group Members and Breaches of Confidentiality

These challenges are most common in group DSD models. It was reported that some group members may develop disagreements with each other or gossip to outsiders about specific group members and this affects group dynamics and harmony. For instance, if the person meant to pick up drugs that month doesn't like a certain group member due to some misunderstandings, he or she may not deliver the drugs to that person, which could result in poor adherence.

*“They may be having problems with this man, and since it is his turn to come and collect the drugs, he doesn't hand them over...they may call the parish leader or nurse saying that so and so has refused to give me my drugs which he collected just because we are having problems with each other.”* – Health care worker, level III health center

Group fatigue was also reported among some members, who although they had willingly joined groups and liked each other at the beginning of implementation, had since grown wary of receiving ART in a group and had requested to leave.

## 6.8 Inadequate Supplies and Equipment to Use During DSD Models Implementation

The facilities reported a shortage of a wide range of materials necessary for implementing DSD models. Some facilities reported that they lack community client cards for the CCLAD model. These cards are used to capture information when the groups hold meetings in the community. Data on these cards keeps health care workers informed about what transpires during meetings.

Facilities also reported a lack of up-to-date tools to report what is being performed under each DSD model. Available registers and client cards are not tailored toward capturing all the information required for ART delivery under the DSD models, making it a challenge to record some key indicators like the type of ART service delivery model the client is in.

Some facilities also reported not having a dedicated weighing scale for the ART clinic, which means they must share with other departments. This situation complicates client triage when the weighing scale is being used elsewhere.

*“The person who takes the weight does it and immediately they are done, the scale is taken to the OPD; like I have told you we have a weighing scale problem. And that scale can't be accessed thereafter until the next day because even OPD has its clients and they need to weigh them.”* – Health care worker at a level III health center

For the case of some out-of-facility models like CDDPs, it becomes even harder to weigh the clients because there may not be enough weighing scales to distribute to all the teams that go out to the community on appointment days.

Some of the facilities also lack adequate furniture for both the clients and the health care workers. Some clients must sit on the floor while others opt to stand, which is very tiresome especially for those who have to travel long distances to obtain services.

Some facilities also reported running out of HIV test kits, dried blood spot kits, and kits for other tests. These stock-outs affect DSD model implementation as some tests end up having to be postponed even when some clients are due.

## **6.9 Low Literacy Rates Among Some Clients Leading to Communication Barriers**

Some models like CCLAD require some level of literacy for at least the group leader – otherwise communication and coordination between the group and the facility can be a challenge. Monitoring forms such as client cards are written in English but some of the clients cannot read in this language, so it is difficult for them to understand what is written on them.

*“It would be much better because you may find a group and of all six members there is none who understands the language on the cards. That is another challenge within CCLAD as group members sometimes fear asking who is going to write for them on the card. So usually, selecting a leader is a problem because the leader is supposed to be somebody who knows how to read and write.”* – Health care worker, level IV health center

Low literacy rates among some clients also affects the formation of, and the rotational basis of, drug refill collections that models like CCLAD depend on. In such instances, groups may have to depend on a literate group leader more than usual to fill in the client monitoring forms that are taken to the health care facilities during appointments.

*“I wanted to be in CCLAD, but the problem is that we haven’t gotten a literate group member to head the group yet a group leader should be able to read and write.”* – ART client

## **6.10 Missed Appointments**

Some clients especially in the facility-based DSD models don’t honor their appointment dates and when asked, they say that they have been sick or that they did not have transportation to the facility.

*“The transport cost to the facility is very high...and when we arrive, we spend a lot of time waiting for the health care workers.”* – ART client

Rainy seasons also make the roads impassable and impede some clients’ travel to the health care facilities, leading to missed appointments. This affects the ability to adhere to their drugs. This problem even occurs in the out-of-facility models and, every once in a while, the person meant to collect drugs on part of the group does not show up either because he or she had other commitments or simply forget about the appointment date. It was also reported that some CCLAD members do not want to contribute towards the transportation fee of the group member going to the facility to collect drugs on their behalf.

*“We thought that putting people together in groups would help them improve their appointments but we have realized that even those people in CCLAD who are six in a group and are meant to only come once in six months also miss out on their appointments.”* – Health care worker, level IV health center

### 6.11 Poor Infrastructure and Space Limitations

Some of the facilities have dilapidated buildings while others have very limited space in the ART clinic, leading to congestion. Space limitations for FBGs also affect the implementation of this model at some public facilities. The issue of lack of privacy when attending congested facilities was also reported.

*“So as small as you see it, it works as a clinical room, cancer examination room, counselling room, dispensing room, and they had wanted to bring family planning to be in this room because it is not supposed to be outside but rather inside.”* – Health care worker at ART clinic

*“This house is old and if you have not observed the status of this . . . it has cracks and we are like sitting on a time bomb. Anytime it may collapse. Even when it rains, we really don’t know where to go to because water leaks through the walls.”* – Health care worker at dilapidated level IV health center

### 6.12 Lack of Systematic Training, Coaching, and Mentoring on DSD Models

Some facilities reported that they are implementing DSD models out of need since they have a high client caseload but have not yet received formal training from the MoH on how to implement the models. Health care workers noted that they would like to be trained on DSD models and have a support mechanism in place to assist them to deal with the complexities of successfully applying these models at their facilities. It is worth noting that the Ministry of Health in Uganda has begun the process of systematically training trainers and implementing the DSD model scale up and a timetable is in place to roll these models countrywide out to all eligible ART sites by the end of 2018.

### 6.13 Other Challenges Reported

Some ART clients noted inefficiencies in client flow that affect the time spent at the facility. One CCLAD member for example noted that files for all ART clients are mixed together at the facility, which results in them having to wait long for these files to be sorted out before they can get attended to. Another client noted that health care workers tend to wait for most of the expected ART clients to arrive at the facility on the day of the ART clinic before starting service delivery, which leads to congestion and long waiting times especially for those who arrived early.

Other clients reported that they prefer facility models to out-of-facility ones, as those who receive ART at the facility have access to other supplies like mosquito nets and seedlings.

## 7. Lessons Learned and Suggestions on How to Mitigate Some Challenges

It has been reported that successful implementation of differentiated ART service delivery has the potential to realize site-level cost efficiencies of up to 20% while maintaining or improving health outcomes.<sup>19</sup> In most cases, DSD model implementation may not require policy changes or significant additional resources since they are adaptations of what is already being implemented at the site level in most facilities.<sup>3</sup> However, if required, countries should try to develop policies and guidelines for DSD models that allow for task-shifting and task-sharing and ensure that training is provided at the facility level and that there are opportunities for coaching, mentoring, and reorientation to properly implement the models based on facility contexts.

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<sup>19</sup> For community HIV drug dispensing and ART refill, this 20% figure is based on published literature and direct observation of TASO in Uganda.

The study of the Uganda and Cameroon experiences resulted in the learning of some useful lessons. For example, seeing clients as a group rather than as individuals creates some efficiency gains for some critical activities along the ART service delivery continuum such as health education and adherence counseling. Again, since on an appointment day, most clients tend to come to the facility early, triage can be done on all patients at the beginning of the clinic day irrespective of what DSD model clients are managed under after which subsequent service delivery can be provided through the different models.

Where possible, it would also be more efficient after triage to organize ART clients by the model they are being managed under. This would improve workflow and would result in those clients who are under the fast-track models being attended to faster and hence decongesting the clinic and leaving time for staff to attend to new, complex, or unstable clients.

Shifting tasks from overburdened service providers or those who require more FTEs than are likely to be available at the facility to those who are less burdened or are more available in number as well as the sharing of human resource-intensive tasks among several types of service providers at a facility are some options that facility managers can adopt to increase efficiency. Additionally, since there is an option in the tool to conduct model-shifting scenarios, facility managers can try out options and see which DSD model distribution is most optimal for their facility.

Additionally, when implementing differentiated care, health care facilities could dedicate specific hours (e.g., early, late, on weekends, etc.) to specific sub-population groups such as adolescents, PBFV, couples, key populations, clients co-infected with TB, and men who work long or unusual hours. Such client-tailored arrangements provide an opportunity for high adherence risk clients to attend clinics at times of their convenience and receive targeted counseling sessions and health talks.

In the case of HRH constraints, administrative work that takes a considerable part of service provider time could be shifted to lay volunteers or even to the ART clients themselves as has successfully been done elsewhere.<sup>20</sup> For example, TASO is utilizing Community ART Support Agents (CASAs) to carry out some of the out-of-facility DSD model work, and the CCLAD model utilizes the ART clients themselves to pick up their refills as well as to record aspects of their management of the community client cards. However, when shifting responsibility to lay workers, the issue of long-term voluntarism without pay should be carefully considered as these workers are unlikely to be motivated to work for sustained periods of time without any form of salary or stipend.

To mitigate infrastructure challenges, clients could benefit from being referred to other nearby facilities that may be able to offer dedicated space, times, and staff for different types of clients. This however requires appropriate referral systems to be in place that allow service providers to follow up the referrals to ensure that clients are receiving treatment at the referral facilities. This approach could work for highly mobile populations such as female sex workers who need flexibility in their treatment approaches. Additionally, when space is limited, innovative approaches such as the use of temporary structures such as tents can be considered. To address privacy concerns, use of curtains to demarcate various service delivery points could also be considered. Funding for such innovations however is usually an obstacle, but implementing partners could be approached to provide needed support.

Forming ART treatment groups among certain sub-populations (e.g., PBFV and adolescents) provides a social network and encourages psychosocial support among peers, promotes disclosure of HIV status, and may help reduce stigma or result in discussion of better ways to combat it. It can also result in better adherence to treatment as group members support each other to keep appointments. Health care workers at some facilities also reported that group models have created unity among members and improved on the sense of responsibility since individuals no longer just go to the facility to collect drugs for their own health but also for the wellbeing of the entire group. It was also noted that the rotational basis of collecting ART is seen as a good thing as it saves on the costs of frequent travel to

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<sup>20</sup> Decroo T, Lara J, Rasschaert EH, Bermudez-Aza, Couto A. et al. *International STD Research & Reviews* 1(2): 49-59, 2013.

the health care facility. Additionally, group members can contribute towards the transportation costs for one of them to and go pick up their refills.

The issue of stigma, whether perceived or real among otherwise healthy-looking individuals, is likely to become more significant due to “Test and Start” and as more clients receive ART for increasingly longer periods of time. Differentiated ART service delivery models will have to take this into account as they evolve so that they may better be able to cope with the challenges of continuing to maintain long-term stable clients on effective adherence and treatment.

Additionally, to mitigate against breaches of confidentiality among members, groups elsewhere (for example, the Community ART Groups [CAGs]) in Mozambique have established a “code of conduct.”<sup>21</sup> Members not obeying the rules are counselled and could be asked to leave the group. However, the implementing partner supporting this model, Médecins Sans Frontières, cautioned that such rules need to be closely supervised to avoid misuse or too rigid application.

Incorporating the above lessons into interventions will help facilities that are just starting to implement DSD models to mitigate common pitfalls and ensure the models they adopt are implemented as efficiently as possible. It is important to note that efficiency in implementation will also depend on other key factors that are beyond the scope of this activity such as availability of a regular supply of drugs. Mitigating these other contextual challenges will be key to success.

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<sup>21</sup> Rasschert F, Decroo T, Remartinez D, Relfa B, Lessitala F et al. Adapting a community-based ART delivery model to the patients’ needs: a mixed methods research in Tete, Mozambique. *BMC Public Health* 2014, 14:364.



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