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IMPROVING THE QUALITY AND EFFICIENCY OF HEALTH SERVICES IN KENYA

A Practical Handbook for HIV Managers and Service Providers on Differentiated Care

NASCOP

2016

Improving The Quality And Efficiency Of Health Services In Kenya

A Practical Handbook for HIV Managers and Service Providers on Differentiated Care

This handbook highlights successful differentiated care approaches implemented in a number of settings in Kenya and nearby countries that improved efficiency of service delivery. The handbook will be further updated as more experience is gained with these and similar approaches.

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NOTE:
Comments *(Roman numerals: i, ii, iii …)* on items within the text of the handbook are footnotes at the bottom of the relevant page.
Reference citations (Arabic numerals: 1,2,3…) referring to published works are in the References section at the end of the handbook.

Acknowledgements

This handbook highlights successful approaches to making care more efficient in Kenya, complementing the Revised National HIV Treatment Guidelines 2016. Approaches include differentiated care, as well as laboratory and commodities management approaches that reduce workload and costs. Many of the examples presented have been implemented in Kenya. Where examples specific to Kenya are not available, successes from neighboring countries and organizations including The AIDS Support Organization and the Infectious Disease Institute of Uganda, *Médecins Sans Frontières* Malawi, Stop TB Partnership TB Reach programs in Ethiopia and Zambia, and FHI-360 in Senegal are highlighted. The Ministry of Health in Kenya appreciates the contribution of these groups in its efforts to learn of differentiated approaches that makes health workers more efficient while improving outcomes for patients.

The Ministry of Health wishes to acknowledge the contribution of various officials in Kenya at national, county and sub-county including facility level for their efforts and support in this process. MOH is also thankful for input and feedback from colleagues from the Global Fund to Fight AIDS TB and Malaria, the U.S. President's Emergency Plan for AIDS Relief, the Bill & Melinda Gates Foundation, the World Health Organization, civil society, including non-governmental organizations, community-based organizations, faith-based organizations, and the private sector for participation in the consultative and review process.

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List of Abbreviations

ART	Antiretroviral Therapy
ARV	Antiretroviral
CDDP	Community-based Drug Distribution Point
DHIS	District Health Information System
DOTS	Directly Observed Short Course
HAART	Highly Active Antiretroviral Therapy
HITS	HIV-Exposed Infant Tracking System
HTC	HIV Testing and Counseling
IPTp	intermittent Preventive Treatment in pregnancy
KHQIF	Kenya HIV Quality Improvement Framework
M&E	Monitoring and Evaluation
MIP	Malaria in pregnancy
MOH	Ministry of Health
MSF	*Médecins Sans Frontières* [Doctors Without Borders]
MSM	Men who have Sex with Men
MTCT	Mother-to-Child Transmission (of HIV)
NASCOP	National AIDS and STI Control Program
PITC	Provider-Initiated Testing and Counseling
PLHIV	People Living with HIV
PMTCT	Prevention of Mother-to-Child Transmission (of HIV)
PWID	People Who Inject Drugs
QI	Quality Improvement
SMS	Short Message Service
SP	Sulfadoxine-pyrimethamine
STI	Sexually Transmitted Infection
SWOP	Sex Workers Outreach Programme
TASO	The AIDS Support Organization
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organization

Executive Summary

The Ministry Of Health, through The National AIDS/STI Control Program (NASCOP) is taking the lead in ensuring safety and quality in Service Delivery by providing tools, training, and continuous mentorship towards ensuring a continuum of HIV care that accurately addresses patient needs in a respectful, effective, and efficient manner as described in the Kenya HIV Quality Improvement Framework (KHQIF).

In a number of countries, providers and policymakers are increasingly recognizing that clinic-based models provide care that does not tailor services to individual needs (Differentiated care) often resulting in wasted resources and untenable workloads for service providers while contributing to patient dissatisfaction and eventual disengagement with the health system. Driven by necessity, some sites in Kenya have developed promising approaches that differentiate between patients—matching HIV service delivery to patient populations, needs and constraints.

The Handbook for Improving Quality and Efficiency of Health Service in Kenya contains a collection of practices covering differentiated approaches in the cascade of care that will support scale-up of practices that have worked. This will complement the standards of care package in the Revised National Treatment Guidelines since they focus on reorganizing the structure of services already being implemented at the site level and rely on existing infrastructure and would not require significant additional resources.

This handbook is aligned to The Kenya HIV Quality Improvement Framework (KHQIF) with its intent being the implementation of Quality Improvement in health facilities and serves as a basis for implementing continuous mentorship towards ensuring a continuum of HIV care that accurately addresses patient needs in a respectful, effective and efficient manner.

This handbook is also aligned to The Kenya AIDS Strategic Framework that outlines improving health outcomes and wellness of all people with HIV in strategic Direction 2. Implementation of this book will therefore strengthen the capacity of counties and healthcare facilities to monitor quality of care and use care data for decision-making and promoting accountable leadership for achievement of results as described in strategic direction 6.

The Handbook is also consistent with The National Plan for Accelerating HIV Care and Treatment 2015–2017, which aims to fast-track operationalizing the Kenya AIDS Strategic Framework by using high-impact, efficient interventions to identify 80 percent of PLHIV, provide 90 percent of them with ART, and achieve viral suppression in at least 90 percent of those on ART by the end of 2017. The Acceleration plan highlights interventions across the HIV cascade of prevention, care, and treatment, differentiating them depending on the HIV burden of the counties and by population (children, adolescents and adults). This handbook provides site-specific operational examples of these Differentiated Approaches.

Through implementation of this handbook, the MOH will ensure that HIV care professionals learn to successfully employ Continuous Quality Improvement processes among other strategies to provide Differentiated Care Approaches by acquiring the necessary knowledge, skills, and abilities to identify and define problems, devise specific interventions, implement interventions, and continuously improve the results to ensure the best quality of care. The Continuous Quality Improvement model to be used for implementation of this handbook will be the Plan-Do-Study-Act cycle, as described in the KHQIF.

This document is meant for managers of health facilities in Kenya (site managers, clinicians, nurses, and other health workers) who are seeking greater efficiencies in health service delivery. **Managers at health facilities** will use the document to identify approaches that can help improve outcomes based on existing gaps and needs. Varying degrees of policy flexibility are allowed to facility managers, but the approaches identified in this document will typically fit within these flexibilities.

Program managers and national health programs can refer to this handbook for information on options for developing differentiated care, as observed in different settings. They can support and encourage the use of relevant practices through national guidelines and policies, referring site managers to this handbook for further information on how to implement the identified practices

The aims are to encourage greater use of differentiated care in increased number of facilities and to achieve the same or better results with the same or fewer resources, and without policy changes or additional resources.

Introduction

Background:

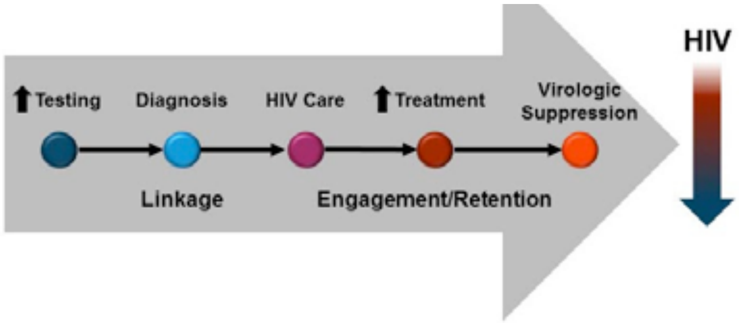
Health outcomes across different sites are variable, despite funding, and are often linked to the ability of health care workers to innovatively overcome common and sometimes severe health system challenges matching service delivery to patient or service provider barriers and constraints without necessarily requiring additional resources to deliver high quality services.

These innovations would relate to management of human resources, distribution of roles and responsibilities at facility level, patient flow design, facility management, local strategies and tools. To standardize quality of care across the country, dissemination of replicable practices in Kenya's devolved system of government cannot be over emphasized. Therefore among other strategies, the development of the Kenya HIV Quality Improvement Framework marked a key step in the institutionalization of Quality Improvement in HIV Programming in Kenya.

Kenya's situational Analysis

Kenya's vision, as described in the Kenya AIDS Strategic Framework, is to be free of new HIV infections, stigma, and AIDS-related deaths by 2030. With 1.6 million people living with HIV nation-wide, and an estimated 101,560 new cases added yearly, HIV and AIDS have been identified as one of the leading causes of death in Kenya, and a significant contributor to ill health.[1] The Ministry of Health (MOH) has continued to make significant progress in the fight against HIV and tuberculosis (TB). At the national level, mortality due to AIDS has dropped yearly since the year 2000, to currently stand at 35 per cent of what they used to be (58,465 in 2013 vs. 167,000 in 2003).[2] Prevalence and incidence rates have been decreasing consistently since mid-1990s. However, county-level variations are significant, with 9 of the 47 counties accounting for 65 percent of new infections,[3] thus highlighting the demographic complexities of the epidemic. Mother-to-child transmission (MTCT) rates remain high, at 14 percent, and 13,000 children are infected with HIV every year,[2] further highlighting the challenges of achieving that vision.

Figure 0[4]: HIV Implementation Cascade for the Continuum of Care



Viewed as a cascade (Figure 1), the continuum of HIV care has five steps: identification of people living with HIV (PLHIV), linkages to care, initiation of treatment, retention, and viral suppression. Life-saving services are not yet available to everyone who needs them. According to the 2015 data from the Kenya District Health Information System (DHIS) 2, Antiretroviral Therapy (ART) coverage rates were 64 percent for adults and 47 percent for children less than 15 years old Among those who know their status and are accessing care, ART uptake is very high for adults (88 percent) and 89 percent for children less than 15 years[6,7,8,] Viral suppression, a function of retention in care and adherence to treatment among those currently receiving ART, is 55 percent among adults, and 64 percent among children less than 15 years, highlighting a key challenge along the cascade of care and treatment[9] Thus, despite notable successes in the past 20 years, it is increasingly apparent that in order to improve on treatment coverage and retention rates with existing funds, program managers and service providers must find ways to work more efficiently along the cascade, with special focus on linking adolescents and children to treatment.

Reaching these targets requires a synergistic way of working, one based on efficiencies gained through continuous improvement of existing models of service delivery.

The use of differentiated care in service delivery has contributed to identifying more HIV-positive patients, improved coverage and uptake of ART, and improved quality of services, while facilitating more efficient use of resources as illustrated by case examples throughout this handbook. Three inter-related categories of successful approaches have been observed and documented from health facilities:

- **Differentiated care** in service delivery
- **Improved management** of the facility
- **Better utilization of site data** to identify potential improvements

This handbook is concerned primarily with differentiated care (see box).

Differentiated care is used here in its broadest sense, to describe the continuum of adaptations that can make delivery of HIV services and ART easier for patients to access and simpler for providers to deliver. Following the cascade of HIV care, this includes simpler, more efficient ways to identify PLHIV, link them to care, initiate ART, retain them in care, and enable them to achieve viral suppression. This is sometimes called *tiered care*, *patient-centered care*, or *patient-tailored care.* Differentiated care models offer health systems the opportunity to economize on resources such as staff time and clinic space and refocus these resources on caring for patients not yet in the system.

Programmatically, across the cascade of HIV care, providers may differentiate patients on the basis of:

- Clinical characteristics (well patients
    - [Newly diagnosed with HIV , presenting early, are asymptomatic (presenting with CD4 >200 with WHO stage 1 or 2),
    - Or delayed/unwell (presenting with, low CD4<200) or WHO stage 3 or 4]
        - Existing patients:
            - Stable
                - On current ART regimen for ≤12 months
                - With no active OI's(including TB) in the past 6/12
                - Adherence to scheduled clinic visits for the past 6 months
                - Most recent VL ≤1000 copies/ml
                - Has completed 6 months of IPT.
                - BMI ≤ 18.5
                - Age ≤ 20 years.
            - Unstable
                - Treatment failure,
                - On ART <12 months with most recent viral load of 1,000 copies/ml or higher.
                - With active OI's(including TB) in the past 6/12
                - Non-adherence to scheduled clinic visits for the past 6 months
                - Has not completed 6 months of IPT.
                - Mental illness
                - Substance Abuse-Alcoholics, illicit drug users
                - BMI ≤ 18.5
                - Age ≤20 years.
- Sub-population under consideration and their specific needs (e.g. Pregnant and breastfeeding women, adolescents, children, key populations, Mental Illness)
- Epidemic variation (low-prevalence vs. high-prevalence settings)

Differentiated care approaches at site level depend on:

I. Understanding specific needs and constraints of site patient groups;
II. Understanding site patient views on barriers to screening, testing and treatment;
III. Understanding health service provider views on barriers to screening, testing and treatment;
IV. **Adaptation and improvement of service delivery** for screening and testing, treatment and care, and delivery of drugs based on information gained from patients and providers about needs, constraints and barriers.

To succeed, the care options discussed are closely linked with, and often will require, improved facility management and effective data utilization. The Handbook is designed to provide intensive support that engages health facilities in defining, planning, implementing, and monitoring activities that successfully facilitate efficient service delivery in their local contexts.

Many of these approaches shift tasks to lower-cadre health workers, facilitate peer interaction by having similar types of patients meet on the same day, pre-package commodities, or decentralize delivery of services and commodities closer to patients' homes by leveraging community health workers. To date, these approaches have been documented in some health facilities in Kenya, and in Uganda, Malawi, Zimbabwe, Lesotho, South Africa, and Senegal.

Successful implementation of differentiated service delivery has the potential to realize **site-level cost efficiencies of up to 20 percent**, while maintaining or improving patient health outcomes. The approaches also empower service users to be more engaged in their treatment and care—leading, for example, to improved attendance rates and adherence to treatment. Service providers can also benefit from more effective and efficient working methods and the satisfaction of observing their patients' improved outcomes.

If these approaches are brought to scale the potential impact is significant. Shifting from a coverage approach to a resource maximization approach should make it possible for facilities in Kenya **to achieve better outcomes and ultimately reach more people with the same resources**. Figure 2 (next page) summarizes the overall technical content of this handbook, as well as how the information will be implemented using approaches described in the Kenya HIV Quality Improvement Framework.

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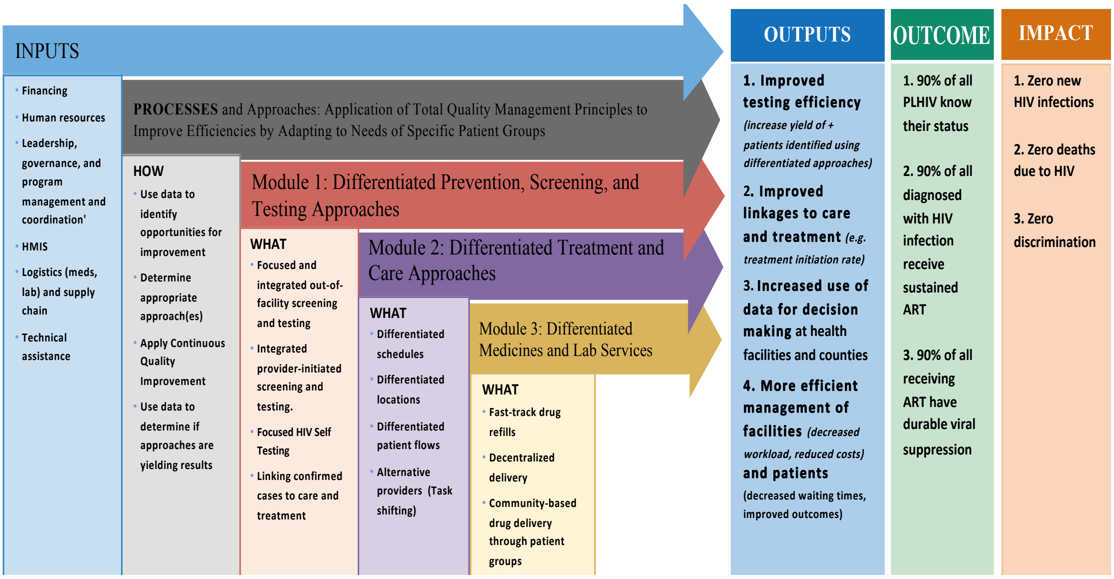
[i] *For community HIV drug dispensing and ART refill, this 20 percent figure is based on published research and direct observations of TASO in Uganda. For community-based DOTS, it is based on two published papers.*

Figure 2: Conceptual Framework for Improving Quality and Efficiency in Programs

CONTEXT: Reaching 90-90-90 targets with limited resources requires working more efficiently. There is evidence of best practices of innovations, in Kenya and elsewhere, that are scalable within existing "infrastructure" (policies, human resources, management, health information systems, service delivery)


INPUTS
Financing
Human resources
Leadership, governance, and program management and coordination'
HMIS
Logistics (meds, lab) and supply chain
Technical assistance
PROCESSES and Approaches: Application of Total Quality Management Principles to Improve Efficiencies by Adapting to Needs of Specific Patient Groups
HOW
Use data to identify opportunities for improvement
Determine appropriate approach(es)
Apply Continuous Quality Improvement
Use data to determine if approaches are yielding results
Module 1: Differentiated Prevention, Screening, and Testing Approaches
WHAT
Focused and integrated out-of-facility screening and testing
Integrated provider-initiated screening and testing.
Focused HIV Self Testing
Linking confirmed cases to care and treatment
Module 2: Differentiated Treatment and Care Approaches
WHAT
Differentiated schedules
Differentiated locations
Differentiated patient flows
Alternative providers (Task shifting)
Module 3: Differentiated Medicines and Lab Services
WHAT
Fast-track drug refills
Decentralized delivery
Community-based drug delivery through patient groups
OUTPUTS
1. Improved testing efficiency (increase yield of + patients identified using differentiated approaches)
2. Improved linkages to care and treatment (e.g. treatment initiation rate)
3. Increased use of data for decision making at health facilities and counties
4. More efficient management of facilities (decreased workload, reduced costs) and patients (decreased waiting times, improved outcomes)
OUTCOME
1. 90% of all PLHIV know their status
2. 90% of all diagnosed with HIV infection receive sustained ART
3. 90% of all receiving ART have durable viral suppression
IMPACT
1. Zero new HIV infections
2. Zero deaths due to HIV
3. Zero discrimination

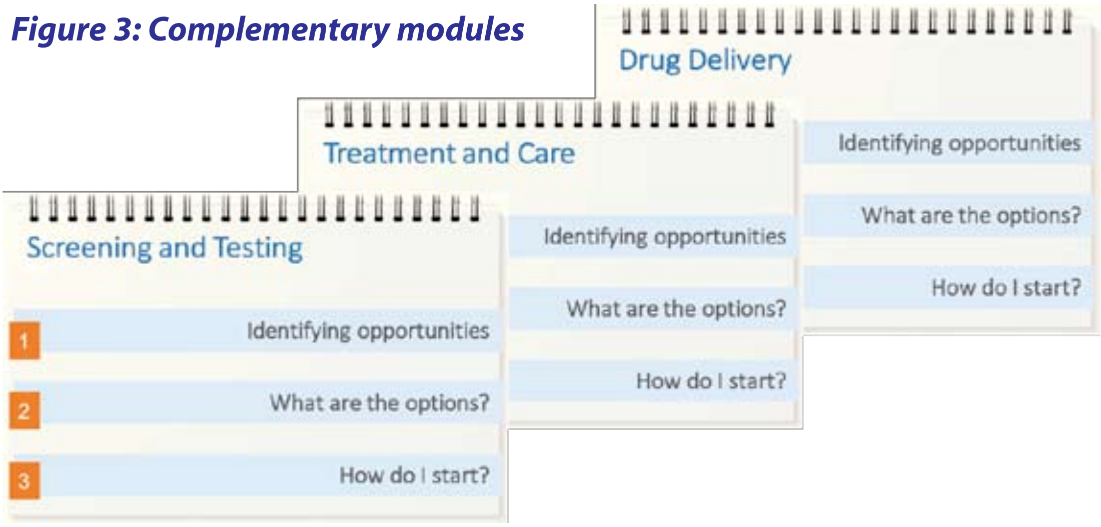
What does this handbook contain?

The handbook contains a set of inter-related modules covering differentiated approaches for **HIV Screening, Testing, and Linkages; Treatment and Care Approaches; Medicines and Laboratory Services Management; Data** Use, where the importance of supporting differentiated care with accurate data collection and analysis for planning and modifying approaches is stressed; and **Program Management and Coordination.**

Each differentiated care module contains brief operational guidance aimed at helping site managers:

- **Determine** if the approach is relevant to a facility's context and/or challenges (see "Identifying opportunities")
- **Understand** options and examples of the approach: what it means and what it looks like (see "What are the options?")
- Define how to adapt the practice or practices (see "How do I start?").

Figure 3: Complementary modules


Drug Delivery
Identifying opportunities
What are the options?
How do I start?
Treatment and Care
Identifying opportunities
What are the options?
How do I start?
Screening and Testing
1
Identifying opportunities
2
What are the options?
3
How do I start?

Following the modules, the handbook offers a selection of tools and further resources for developing differentiated approaches. References sections are included at the end of the document.

How was this handbook developed?

The handbook draws on a highly participatory process involving MOH Programs supported through grants by Global Fund in HIV, TB and Malaria and county governments. With support from Global Fund, field data was collected between March and May 2015, with results analyzed and discussed in various settings between July and December 2015. The following paragraphs describe key aspects of the development process undertaken to document this draft.

Table 1: Site selection based on key programmatic indicators (adapted from the Kenya HIS)

	OUTCOMES	INDICATORS FOR SITE SELECTION	SOURCE
HIV	HIV treatment and care coverage and yield	• % of HIV+ among tested population	DHIS
	ART coverage among PLHIV	• No. of patients started on ART in 2014	DHIS
	ART retention rate	• % of patients on ART, 12 months after start	DHIS
	Share of HIV+ pregnant women on ART	• % of eligible pregnant HIV+ women who received ART	DHIS
Malaria	Uptake of SP IPTp for MIP	• IPT 2 coverage • IPT 1 coverage	DHIS
	Continuous distribution of long-lasting insecticide-treated nets to pregnant women and children	• % of pregnant women provided with long-lasting insecticide-treated nets	DHIS
TB	TB screening	• Case notification rate (per 100,000 pop.)	TIBU
	Treatment success	• Treatment success rate for new TB cases • Mortality rate (# deaths/cases detected)	TIBU
	TB-HIV treatment	• % TB patients tested for HIV • % of HIV-positive TB patients receiving ART	TIBU

Site Selection: After reviewing the performance of sites within each county on key programmatic indicators in the DHIS, the MOH HIS team selected 18 of the best-performing sites for in-depth study through observations and interviews with staff.

Site Visits: During site visits, the joint team drawn from Malaria, TB and HIV Programs in collaboration with Global Fund conducted patient flow mapping exercises to identify areas for improvement, and documented approaches that sites were using to minimize patient wait times and maximize providers' time to enable them to serve more patients. In particular, the number of patients waiting for services and the number of service providers available to deliver the service was noted. Types of staff available, types of data collected, how data were collected and documented, and any adverse events were observed and documented. Finally, using a chronometer, wait times and the duration of the consultation for each patient were measured. Interviews with relevant stakeholders, including site managers, clinical and non-clinical staff, and volunteers were conducted. During these interviews, site organization and management (human resources management, supervision, and data management) were discussed and challenges and levels for implementation approaches identified.

Selection of Approaches and Examples: In reviewing the data collected on approaches and examples of their application, the main criteria for inclusion in this handbook included:

- Those that did not require any policy changes
- Those that require minimal additional investments, if any
- Those that had at least six months of data that demonstrated improvement in either cost efficiencies or patient health outcomes

Review of Results by larger MOH: The team presented the results to a large, diverse audience that included representatives from MOH leadership and County Governments from where approaches were documented. MOH leadership requested that the results be summarized in a handbook, and a sub-group of the team worked to generate the first full draft of the handbook, ensuring alignment with the Kenya HIV Quality Improvement Framework and other key strategies and policies.

Validation of Approaches and Examples: NASCOP provided leadership and strategic guidance for validation and finalization of the handbook. The validation process included using the Kenya HIV Quality Improvement Framework to work with health facilities to test the approaches and examples and monitor the results. The final handbook includes only those approaches and examples that were found to be replicable in at least one other health facility.

Integration of Kenya Best Practices: Simultaneous to this process, in June 2015 NASCOP launched a call for best practices, a traditional annual forum that allows sharing and dissemination of interventions within Prevention, Care and Treatment in Kenya. Abstracts came from health facilities and implementing partners that had presented at the National Annual Care and Treatment Conference earlier that year. Abstracts submitted in response to this call were reviewed and added if they met the following criteria:

- Implemented in Kenya
- Verifiable outcome data that shows improvement in the area of interest
- Replicable, with potential to be widely adapted and scaled up by other users

Subsequently, an editorial panel from NASCOP including external partners reviewed each abstract and distributed them along the cascade of HIV identification, treatment, care, and retention. Abstracts with similar concepts and indicators were merged; where needed, requests for additional information was sent to the authors.
To merge these two processes whose ultimate goal was similar, an external review process facilitated by Global fund in January 2016 provided an additional criteria which included:

- A clear description of the intervention
- Data measuring key indicators before and after the intervention was implemented
- Data analysis that supports efficiency of the intervention
- Interventions that are easy to implement, within existing frameworks, and not too costly

Each abstract selected for the handbook were discussed and validated in detail and as necessary, the facility or implementing partner was contacted to provide clarification or additional information. Abstracts were eliminated if the data did not make sense or appeared to be incorrect.

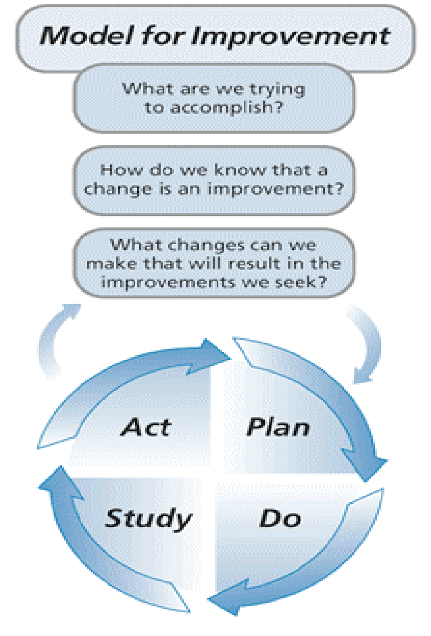
The handbook is presented as "work in progress." This first edition of the handbook describes examples from Kenya that focus mainly on HIV, with a smaller number focusing on TB. It is intended that further documentation on scaling up differentiated approaches for TB (especially multi-drug-resistant [MDR] TB), malaria care, and HIV, will be available for inclusion in future editions.

How can this handbook be implemented?

Consistent with the KHQIF, the Plan-Do-Study-Act cycle (*Figure 4*) provides an approach for developing, testing, and implementing the changes suggested in this handbook in real work settings, observing results, and then acting on what is learned to institutionalize the change as a *way of work*.

Using Plan-Do-Study-Act, health facility quality improvement (QI) teams are encouraged to select the most appropriate change by first evaluating three questions:

Figure 0: Plan-Do-Study-Act


Model for Improvement
What are we trying to accomplish?
How do we know that a change is an improvement?
What changes can we make that will result in the improvements we seek?
Act
Plan
Study
Do

Reference: Langley G, Nolan T, Norman C, Provost L (1966), The Improvement Guide: a practical approach to enhancing organisational performance, Jossey Bass Publishers, San Fransico

- **What are we trying to accomplish?** A QI team's response to this question vis-à-vis differentiated care will help clarify targets and desired results.
- **How will we know that a change represents** an improvement? Having decided on targets and desired results, the QI team will need to agree on indicators to measure the success of differentiated care that demonstrate whether changes are moving towards the desired result. The QI team will also need to agree on how to measure, and how often.
- **What changes will result in improvement?** Improvement occurs only when a change is implemented, but not all changes result in improvement. The QI team will need to work systematically, using process improvement tools to identify effective changes that will lead to successful implementation of differentiated care models that work for their environment.

Once teams answer these questions they may begin to set up PDSA cycles to test the changes they propose. This approach is well suited for this activity, as it allows for a systemic manner in which to test implementation of changes in a controlled manner (i.e. small scale or with a specific population, and the ability to make modifications, and implement in a larger scale). As described by the KHQIF, users of this handbook are encouraged to implement changes in manageable steps, and then evaluate the outcome, make modifications, and test again. Health facility managers go through some or all of these steps already in a less formal way. However, with implementing any of these examples, health facility providers will be able to focus and learn better by writing them down. Users of this Handbook are advised to keep the following in mind as they use the PDSA cycle .

- Implement one small change in each cycle
- Make each change cycle short (possibly be guided by the following question: what will you do by next Tuesday? Changes can also be as small as 1 hour or whatever makes sense in the health facility)
- Start the intervention on a small sample (maybe 1 or 2 providers, or certain group of patients), with plans to refine the process once the team knows whether or not the change is working

Using the data obtained from this evaluation, the QI team can plan the implementation of appropriate differentiated care models that are likely to create the most efficiencies for their clinic; implement the models; monitor the results using established, well-defined indicators; and act to modify/enhance the implementation for even greater impact.

Module 1: Differentiated HIV Prevention, Screening, and Linkage Approaches

MODULE 1 AT A GLANCE

Aim: Identify ways for sites to improve the efficiency of prevention services, screening and linkage strategies to increase the number of confirmed cases found within and outside facilities, and linked into care and treatment

Key points: Differentiated prevention, screening, and linkage services can improve the cost-efficiency of existing approaches by:

- Focusing attention on those in need, based on available data
- Adapting service delivery to the needs and preferences of patient groups and the constraints of services providers
- Providing service options and ensuring linkage to treatment and prevention services

1.1 Module Background

Kenya has made significant investments in the prevention, treatment, care, and support of HIV, TB, and malaria since 2002, with national and international support. Recent figures from UNAIDS indicate that Kenya invested $2,466 million on the continuum of HIV services during the 2009–2012 period.[1] For TB, the investment was $225.5 million.[2,3] The benefits of these investments could be maximized if measures were implemented to increase the number of positive cases found through HIV or TB screening and testing, which will help reach the country's ambitious goals:

- Ninety percent of people living with HIV know their status, 90 percent of people who know their status accessing HIV treatment, and 90 percent of people on HIV treatment achieving viral suppression by 2020
- GAP: Data from the Kenya AIDS Indicator Survey 2012 revealed that only 47 percent of people infected with HIV knew their status in Kenya.4
- Ninety percent decrease in new TB cases between 2015 and 2035,5 finding at least 90 percent of all TB cases in the population and reaching at least 90 percent of the most vulnerable, underserved, or at-risk people with treatment by 2025.6
- GAP: As of 2015, an estimated 3 million people with TB are "missed" every year.7

Recent policy changes (in 2015) have aligned HIV prevention and screening with the devolved system of governance under the Kenya Constitution of 2010, placing responsibility squarely at the county level, while clearly defining roles and responsibilities of the other levels.[8] The new guidelines shift from HIV testing and counseling (HTS) to HIV testing services, with an emphasis on the "5 Cs"—consent, confidentiality, counseling, correct results, and connection (linkage) to care.[9] Adolescents 15 years and older are now able to request for HIV testing on their own, given the increasing number of children born with HIV as well as the early sexual debut among adolescents in Kenya[10]. Importantly, they also stress integration with other programs, including TB, prevention of mother-to-child transmission (PMTCT), sexual and reproductive health services, voluntary medical male circumcision (VMMC) and other HIV prevention services.[11]

The aim of this module is to help facility managers to implement these new guidelines by identifying how to improve the efficiency and costs of their existing HIV prevention and screening approaches. Program managers will also find this module relevant; for example, to inform discussion of how to prioritize areas or population segments for out-of-facility testing.

Resource optimization at site level should aim to increase the number of confirmed cases found and/or decrease the cost of testing, and will depend on a number of site-level factors. World Health Organization (WHO) guidance on how to improve strategic program planning for HIV testing services provides support to inform decision-making in this area.[12]

It is important to recognize that there may be higher costs for some testing services for underserved groups (e.g., displaced persons), who may have greater barriers to access. Costs will also vary depending on which diagnostic tools are routinely available in a given setting, both for HIV testing and TB screening and testing.

Differentiated screening and testing approaches are based on the preferences of targeted groups, the cost of service delivery, and the expected testing efficiency. In line with the renewed emphasis on targeting locations, populations, and interventions that deliver the greatest impact,[13] Kenya has adopted the WHO recommendation that countries consider a **strategic mix of testing services for HIV**[14] to facilitate early diagnosis of as many people as possible, aiming to maximize yield, efficiency, cost-effectiveness, and equity. This mix includes:

- *Integration* of HIV testing and screening with other health services
- *Decentralization* of HIV testing and screening to primary healthcare facilities and outside the health system
- Task-shifting

This handbook provides examples of:

Integrated provider-initiated screening and testing: Providing screening and testing along with other services in facilities (e.g., HIV screening and testing in TB clinics or antenatal and child health clinics, or TB screening and testing in HIV clinics).

- *Focused out-of-facility screening and testing*: Testing campaigns for specific populations to maximize the number of confirmed cases found

- *Integrated out-of-facility screening and testing*: Providing screening and testing along with other services in outreach activities (e.g., immunization campaigns) to decrease the unit costs of services

The following questions taken from the QI Framework can be a helpful guide for health facility teams in narrowing the opportunities for improvement in screening and testing:

- **What are we trying to accomplish?** In particular, the team should be clear as to whether they are trying to test a greater number of people or to identify a greater proportion of HIV-positive individuals among those tested (testing efficiency). This clarity will drive selection of indicators, as well as how they design their approach for differentiated testing. It will also help shape targets and desired results, because targets set for proportion tested can certainly be different compared with the proportion of HIV-positive individuals tested.
- **How will we know that a change represents an improvement?** Having decided on targets and desired results, the team will need to agree on indicators that will measure their success, and decide on how often to analyze the data and how best to present the data. Answering these questions may also help them think about where data are currently being collected, data accessibility, and the people involved e.g. Positivity rate (Yield) vs just the number of tests.
- **What changes will result in improvement?** Improvement occurs only when a change is implemented, but not all changes result in improvement. The team will need to work systematically, using process improvement tools to identify effective changes that will lead to successful implementation of differentiated screening and testing models that work for their environment and the people they serve.
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1.2 Identifying opportunities for differentiated screening and testing

Facilities use a range of approaches for screening and testing, generally categorized as:

- *On-site:* Services offered within health facilities such as primary care clinics, inpatient wards, and outpatient clinics, including TB and HIV clinics
- *Out-of-facility:* Testing or screening offered in community settings; for example, home-based index testing, door-to-door outreach, or service provision in schools and workplaces including HIV Self Testing.

Managers can use the following questions to identify opportunities to adapt differentiated screening and testing approaches to their context:

- **What is the testing efficiency and cost of the different testing options?**
- **How can I improve testing and cost efficiency?**
- **How can I improve the site's mix of testing approaches?**

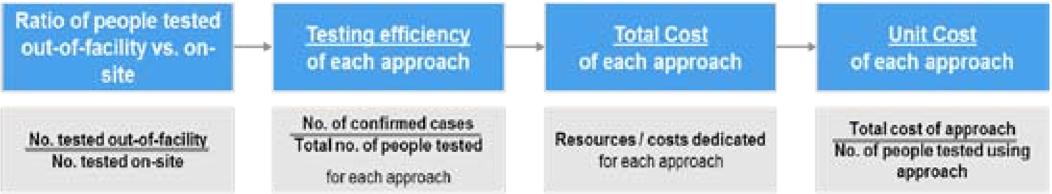
All testing approaches must be accompanied with proper linkages to care and treatment and referrals to other services.[15]

What is the testing efficiency and cost of the different testing approaches?

A comparison of the number of positive cases found from out-of-facility approaches and the number from on-site approaches, along with data on the resources and costs for each approach will, as shown in Figure 6, enable calculation of:

- Testing efficiency (i.e., confirmed cases as a ratio of total numbers tested)
- The costs of each approach, per person and overall

Figure 5 Calculation of testing efficiency and costs of a testing approachModule 1: Differentiated HIV Prevention, Screening, and Linkage Approaches


Ratio of people tested out-of-facility vs. on-site
Testing efficiency of each approach
Total Cost of each approach
Unit Cost of each approach
No. tested out-of-facility / No. tested on-site
No. of confirmed cases / Total no. of people tested for each approach
Resources / costs dedicated for each approach
Total cost of approach / No. of people tested using approach

How can I improve testing and cost-efficiency?

Three approaches can assist in maximizing efficiency of testing approaches:

- *Integration:* Offering testing and screening together with other care services (e.g., primary care, antenatal care, immunization), thereby decreasing the unit cost of testing per patient. This would generally be more relevant in high-burden settings.
- *Focus on specific population groups:* Increasing the number of positive cases found per number of people tested by focusing services on groups with a higher HIV or TB prevalence or on vulnerable groups with unknown prevalence.

Figure 6: Peer Educators conducting an outreach with truck drivers at a hotspot along the Highway

- *Geographical targeting of people most at risk:* Identifying locations within the facility catchment area where people are underserved or there is higher risk and specific localized epidemics (so-called "hotspots"), such as mines and factories with high levels of air pollution (TB risk), or fishing encampments, truck stops, and areas of poverty or overcrowding where there is the greatest need for HIV and/or TB treatment and prevention.[1] Some regional data, including small-area estimates for HIV prevalence, are available for key populations in Kenya and can be used to strategically target interventions to areas with the highest disease burden.[2]

How can I improve the mix of testing approaches?

Awareness of the efficiency and cost of their testing approaches will enable site managers to determine the best combination of in-facility and out-of-facility approaches. They may need to reduce inputs with lower testing efficiency or higher cost and redirect resources towards approaches with higher efficiencies and/or lower costs.

1.3What are the options?

1.3.3Focused out-of-facility screening and testing

Out-of-facility screening and testing approaches are diverse. In most cases, their aim is to move services away from the facility and closer to potential patients. *Focused* out-of-facility screening and testing aims to reach specific underserved groups or to prioritize implementation in specific geographical areas or clinical settings, based on epidemiology and current levels of testing coverage.

Prioritization should be based on knowledge gathered from existing data relevant to the location and on engaging communities and health providers in discussion, needs analysis, and planning processes to identify which groups to target, and how.

Typical populations that benefit from focused out-of-facility screening and testing:

- *Key populations* with a higher disease burden due to higher vulnerabilities, based on local epidemiological data, such as truckers, sex workers, and men who have sex with men (MSM), to address their access barriers to testing. It may be worth offering screening and testing at their workplace or gathering-places at times that are more convenient and offer more confidentiality(e.g., "moonlight clinics").[1]

Figure 7: Peer Educators offering Services to A key Population in an outreach

- *Family members of people with TB or HIV*: Offering index testing[2] to family members can help address barriers to testing for at-risk people who may not attend the facility.

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[1] Moonlight clinics are open from 6 p.m. until as late as 4 a.m. in high-risk settings (e.g., transport hubs, areas with larger LGBTI populations), targeting truck drivers, MSM, sex workers, and others who might not wish to be tested during the day due to stigma attached to their work and lifestyles.

[2] Index testing (index case testing) is a focused approach in which the household and family members (including children) of people diagnosed with HIV or TB are offered screening and testing services.

-

- *Populations living in specific areas*: For example, offering out-of-facility services in locations where people with high vulnerability to HIV or TB can be found, such as transport hubs, border crossings, or specific places where people most at risk reside or work (e.g., mines).

- *People with restricted access to treatment services*, who may avoid testing if treatment is not available to them or if confidentiality is not protected (e.g., adolescents, stigmatized minorities).

A variety of out-of-facility models exist, with different costs, such as temporary activities (renting space for service delivery), mobile outreach with trucks or vans, door-to-door outreach, and using community facilities or drop-in centers.

Costs should be assessed when designing strategies to ensure that focused out-of-facility approaches are cost-effective. The WHO provides an assessment of typical cost-per-person-tested for different types of focused out-of-facility activities in low- to upper-middle-income countries for HIV.[3]

Focusing on specific population groups: outreach for key populations and populations with specific needs

Optimal service delivery should be defined according to population needs and can include outreach (with key populations), integrated services (with high-priority populations such as children and infants) or specific clinic hours (e.g., adolescent-friendly health services and specific hours)

Managers need to prioritize locations for out-of-facility initiatives and maximize the efficiency of outreach. Key factors for these processes include the following:

- *Data analysis*: Using existing, site-relevant data concerning people with increased risk of HIV infection, such as key populations (sex workers, MSM, other sexual minorities, and people who inject drugs [PWID]) or other populations with specific needs, such as adolescents.

- *Vulnerability mapping* provides key data to prioritize highly vulnerable populations and areas where targeted outreach could be beneficial. These data can also be a basis for targeting specific groups and communities and for recruiting volunteers to sensitize communities to support and deliver HIV testing.

- *Community engagement*: Sites can engage with community members to increase their understanding of the needs of specific groups and determine the best places (e.g., hotels, clubs, and markets) and specific times to reach them. Community volunteers can be integrated into workforce planning for outreach activities.

A range of approaches is needed to reach different populations. The approach will depend on specific needs and preferences, but could include outreach visits, integrated services, and/or dedicated clinic hours for defined groups.

EXAMPLE 1-a:
Increasing Access to HIV services For Female Sex Workers.

Establishing Key-Population-Friendly Drop-In Centers
Homa Bay, Kisii, and Migori counties, Kenya

PROBLEM STATEMENT: Homa Bay, Migori, and Kisii counties in western Kenya have comparatively higher HIV prevalence than the national average of 5.6 percent. Started in 2010, the Tekeleza program's goal was to increase access to comprehensive HIV prevention services for female sex workers in these counties. By 2012, they noted that referral of female sex workers to government facilities was resulting in loss of follow-ups.

STRATEGY/INTERVENTION: Starting in 2012, drop-in centers were established, offering HTS services during enrollment, on a quarterly basis, and before administration of post-exposure prophylaxis, followed by immediate enrollment into care and treatment. Data tools were used to capture enrollment, HTS update, status, and retention to care and treatment. The data were analyzed and discussed with stakeholders from the MOH, peer educators, and patrons of "hotspots" on hotspot mapping, identification and training of peer educators, community mobilization and service delivery. This work was supported by continuous monitoring, mentorship, and supportive supervision.

RESULT: Increased efficiencies in testing female sex workers. As the number of drop-in centers increased, more female sex workers were reached, tested, and enrolled in treatment.

Table 2: Progress in identification of female sex workers in 3 counties

INDICATOR	2011	2012	2013	2014
Number of drop-in centers	0	4	6	7
Female sex workers reached	150	1,149	3,429	8,391
Female sex workers tested HIV positive				1,905 (22.7%)
Female sex workers enrolled for treatment				1,891 (99%)

RESOURCES/INPUTS REQUIRED:

- Staffing: Trained peer educators, 2 nurses, 1 clinical officer
- Supplies: STI drugs, test kits condoms, monitoring and evaluation (M&E) tools
- Capacity building: Training on provision of key-population-friendly services, competent staff to provide clinical services, training of peer educators
- Tools, job aids, and curricula: Sex workers and peer educator data capture tools, key population cohort register, MOH register, HTS tracking tool

EXAMPLE 1-b:
Hotspot-Based Peer-Led Outreach Model

Sex Workers Outreach Programme (SWOP) Clinics-University of Manitoba, Nairobi County

PROBLEM STATEMENT: Gaps in access to STI/HIV counseling, care and treatment throughout Nairobi County were highlighted by sex workers currently enrolled in SWOP clinic, commonly referred to as Peer Educators. The goal of this activity was to increase demand and coverage of free HIV prevention and care services for sex workers in Nairobi County.

STRATEGY/INTERVENTION: A detailed mapping exercise was conducted for each hot spot identified by sex workers. They were subsequently color coded to denote high vs. low volume of sex workers, and each hot spot was linked to the nearest SWOP Clinic.
Hot spots were grouped into clusters based on location, typologies of sex workers and peak working hours, and well defined clusters were assigned to an outreach worker (peer educators promoted and assigned supervisory and technical responsibilities) for management. The Outreach Worker, in collaboration with the Prevention Officer, identified other potential peer educators from each hot spot. They were enrolled in the program and trained, using the GOK PE training curriculum. The qualified peer educators provided services at assigned hot spots, including condom distribution and demonstration, as well as standardized health education sessions, encouraged enrollment into SWOP Clinics, and followed up on sex workers not yet enrolled or lost to follow up using a list generated by the data team. Peer educators also provided one on one or one-to-many education sessions at health facilities. Sex workers who accessed the clinics and were not linked to any of the Peer Educators were assisted by the clinic team to identify the peer educator for their hot spot. Peer educators met monthly with clinic staff at SWOP clinics, and quarterly at the county level to develop joint work plans.

RESOURCES:

- Staffing: Well-trained and passionate outreach team, prevention officers, and peer educators
- Supplies: Post-paid phone lines, MOH data collection tools for outreach and peer educators, venue hire, salaries, and reliable and confidential database
- Capacity building: ongoing training of peer educators, outreach workers and prevention officers on emerging prevention strategies; regular updates on peer educators in micro-planning and outreach tools; sensitization of bar owners and law enforcers about sex worker health rights; training on human rights and gender based violence reporting; continuous update on data entry, cleaning, sharing and security issues; Training and certification of Peers using the approved NASCOP MOH curriculum
- Tools, job aids, and curricula: KP tools from NASCOP-MOH, Outreach tools (bag with penile model, vagina model, condoms/lubricants and data collection tools)

RESULTS:

- Between 1st October 2014 and September 30th 2015, 80,102 FSW and 5,142 MSM were contacted with minimum package of services in the hotspots.
- Scaled up reach and coverage, with 28,036 (92 percent) of the estimated 30,501 sex workers in Nairobi enrolled
- A total of 9244 individuals tested HIV positive and were linked for care within the program, and 67% are active on ART
- Proportion lost to follow-up improved from 35 percent to 20 percent

EXAMPLE 1-c:
Improving access and linkage to care for Men who have sex with Men.

Community-Based Health Services for MSM
Health Options for Young Men against HIV, AIDS, and STIs (HOYMAS), Nairobi County, Kenya

PROBLEM STATEMENT: The staff at HOYMAS realized they were reaching very few MSM. Although HIV incidence and prevalence rates are relatively high, the HIV testing rate for MSM was only 3 percent. The team aimed to facilitate sustained access to healthcare for MSM, to increase overall well-being and give them a chance to make meaningful advancements in life.

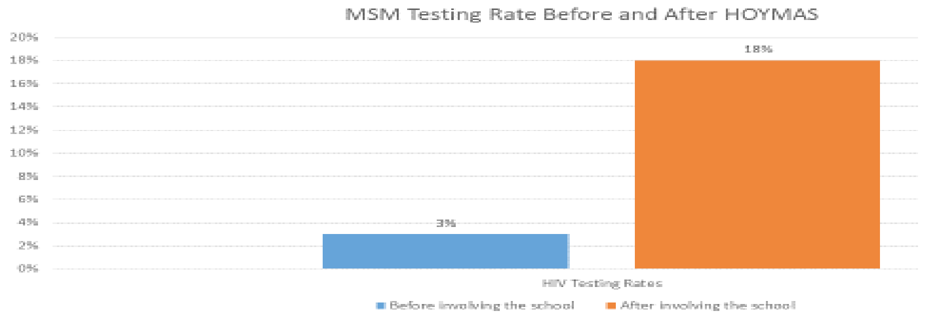
STRATEGY/INTERVENTION: HOYMAS is an exclusive, community-led program that works for and with MSM in Nairobi County, where there are an estimated 10,000 MSM, by offering HIV combination prevention interventions. As outlined in NASCOP-MOH's 2014 National Guidelines for Key Population, the program provides MSM-friendly and peer-led clinical and outreach services and conducts advocacy to reduce stigma and discrimination, with the aim of creating an enabling environment for better programming. M&E tools were developed to understand individual MSM HIV risks and provide tailored, individualized responses and tracking of services.

RESOURCES/INPUTS REQUIRED:

- Staffing: NASCOP-TSU, Program manager/officer, outreach supervisor, trained peer educators, clinical officer, HTS counsellor, data officer
- Supplies: NASCOP data collection tools
- Capacity building: Continuous supportive supervision, sensitization meetings and trainings for peer educators and program staff, on job mentorship
- Tools, job aids, and curricula: National guidelines for key population, NASCOP data collection tools, NASCOP reporting tools

RESULTS: Of those reached with different targeted HIV interventions (January–March 2015 baseline period; July–September 2015, intervention period), uptake increased from 62–84 percent; HTS improved from 3–18 percent (Figure 6); the HIV positivity rate dropped from 16–13 percent; STI screening services increased from 4–25 percent, with the STI positivity rate reducing significantly, from 68–8 percent; and 76 percent of all violence cases being addressed by MSM groups internally. It is crucial for planners and policymakers to ensure that MSM programs are friendly and community-led. Creating safe spaces where MSM can freely access HIV and other health services translates to more MSM coming out and seeking services in safe and familiar settings, thus improving their health status.

Figure 8: MSM Testing Rate Before and After HOYMAS



EXAMPLE 1-d:
Reaching People who Inject Drugs.

Migrating HIV Prevention and Treatment for PWID from Outreach Worker Programming to Peer Educator Outreach Programming: A Case Study of Coast Region

PROBLEM STATEMENT: Uptake of HIV prevention services among PWID was generally low in 2014, and individual tracking of PWID was difficult, due to lack of cohorts.

STRATEGY/INTERVENTION: Kenya's national guidelines for programming with key populations were revised to recommend the use of peer educators in delivering routine combination prevention interventions through planned community outreach. In Coast, programs began adopting the peer education model during the last quarter of 2014, in line with changes in the national guidelines. By the end of 2015, two programs in Kilfi, one in Mombasa, and one in Kwale had fully adopted the peer-led model. Three others are implemented through peer-led and outreach-worker-led models. The table below summarizes differences in the two models.

Table 3: Differences between the models

OUTREACH WORKERS (NON-PWID)	PEER EDUCATORS (PWID)
– Majority are not PWID	– PWIDs or recovering drug users
– Ratios quiet high, with 1 outreach worker on average per 100 patients	– Peer ratios within national guidelines, with 1 peer educator per 50 patients
– Outreach workers carry out all the activities	– Programs also have outreach workers who support and build peer educators' capacity (average ratio of 1:7)
– Cohorts are difficult to maintain and follow up monthly due to the large 1:100 ratio	– Cohorts are maintained and followed up monthly

RESOURCES:

- Staffing: Trained peer educators, outreach workers, field coordinator, M&E person, clinical staff (Clinical Officer and HIV Testing and Counseling counselor)
- Supplies: STI drugs, HTS kits, needle-and-syringe kits, condoms, M&E tools
- Capacity building: Training on provision of key-population-friendly services, competent staff to provide clinical services, training of peer educators
- Tools, job aids, and curricula: PWID peer educators' data capture tools, key population cohort register, key population clinical forms, MOH register and HTS tracking tool, needle-and-syringe distribution register

RESULTS:

- From Quarter 1 (January–March 2015), contacts stabilized to between 78 percent and 71 percent in programs, and peer educators were the key to maintaining PWID cohorts and follow-up. Access to HTS services also increased, from 29 percent in 2013 to 38 percent by the end of 2015 in Kilifi; 25–76 percent in Kwale; and 21–40 percent in Mombasa.
- STI screening increased from 68 percent (January–March 2015) to 109 percent in Kwale County and from 32–60 percent in Kilifi County against allocated targets; one reason was the inclusion of a clinic set up together with the peer education in programs.
- Through the peer education model, programs are able to determine needle-and-syringe requirements by initiating a process of understanding and tracking individual needs.
- PWID peer educators were allocated specific hotspots, a practice that ensured effective tracking of their cohorts while eliminating duplications.

1.3.2 Integrated out-of-facility screening and testing

Many health centers provide out-of-facility services to reach people who have difficulties accessing facilities. Such initiatives can include door-to-door primary-care (e.g., testing blood pressure, providing basic health checks, or de-worming) or a full campaign of immunization. HIV testing or TB screening are often combined with these services in areas or settings with high HIV and/or TB burdens.

This approach can be combined with other out-of-facility initiatives to provide HIV or TB testing in remote areas or to reach specific populations. Nurses or community health workers conduct testing or collect samples for the laboratory, where a dedicated technician analyzes the results.

Integrated out-of-facility screening and testing can make it possible to test more people at a marginal cost. The WHO also now recommends HIV testing through trained lay providers working in the community as a task-sharing measure to increase effectiveness and efficiency of services.

Typical population groups that benefit from integrated out-of-facility testing include:

- *Potentially co-infected TB patients (integrating HIV testing into sputum-collection campaigns)*
- *Infants and children (targeting through immunization campaigns)*
- *Pregnant women, new mothers and infants (testing for HIV and screening for TB during maternal, newborn, and child health outreach)*
- *Rural communities in remote areas (HIV testing and TB screening alongside primary care services)*
- *Injecting drug users (integrating HIV testing with harm-reduction outreach; integration of HIV testing with opioid substitution treatment outreach for the same population)*
- *Men (offering HIV testing during community health campaigns, on weekends or in locations such as markets or bars where men are more likely to attend)*

FURTHER READING

TB REACH case study collection, "Improving Tuberculosis Case Detection"

EXAMPLE 2:
Integrated TB screening and testing[32]

Sputum Collection by Community Health Workers from Molo Sub-county Hospital in Nakuru, Kenya, and TB-REACH, Ethiopia

PROBLEM STATEMENT: Patients of Molo Sub-county Hospital were not returning to give their second sputum samples for TB screening, due to distance from the facility and lab wait time.

STRATEGY/INTERVENTION: In January 2015, hospital staff trained six community health volunteers to collect sputum samples in the community and transport them to the facility. The volunteers received sputum mugs and transport allowances to get them safely to the lab. In March 2015, they expanded the initiative to include the collection of follow-up samples for patients on TB treatment. The volunteers are trained on a quarterly basis to ensure the quality of sputum samples. A tool was created to track the samples collected in the community.

RESOURCES:

- Staff: Volunteers
- Capacity building: Community advocacy and awareness-raising; a specimen transport system; engagement of key stakeholders

RESULTS:

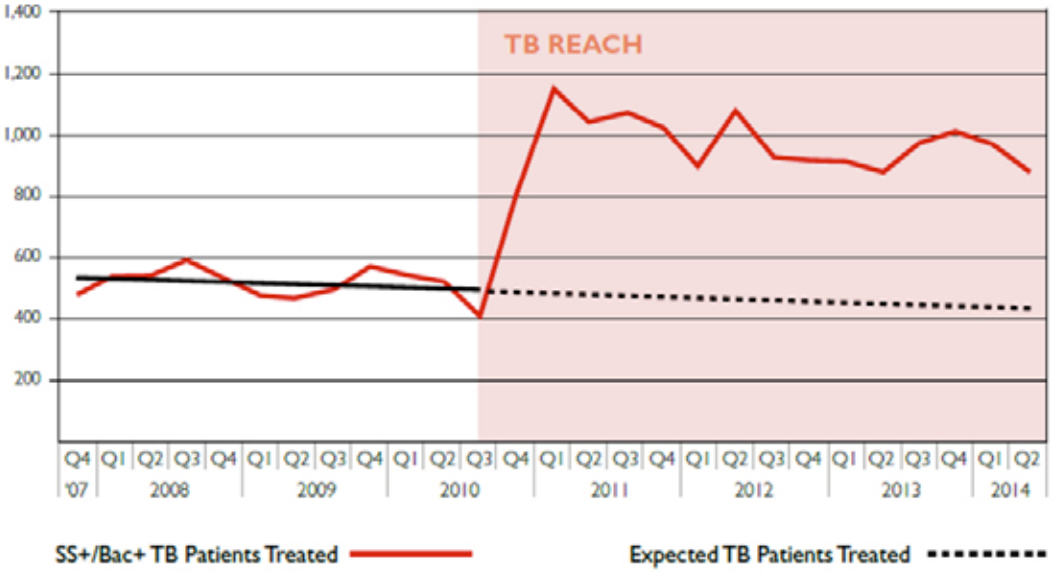
- The number of smears tested by the lab increased by about 60 percent (from 75 to 122) between December 2014 and March 2015, and the number of positive cases identified increased from 8 to 18 cases (a 125 percent increase) over the same period.
- The percentage of follow-up completed for sputum-positive patients increased from 33–80 percent for two-month and six-month follow-up between February and April 2015.

Further evidence from TB REACH in Ethiopia

In Sidama, a rural area of Ethiopia with an estimated 7.4 million inhabitants and high TB prevalence, TB REACH worked with health extension workers who were already conducting routine door-to-door visits in remote communities. TB REACH contributed to their salaries and training to enable them to integrate TB testing and awareness-raising. Patients thought to have TB (e.g., coughing for two or more weeks) were asked to provide sputum samples, which were then analyzed at the nearest lab, with coordination and support from project supervisors. Smear-positive patients were initiated on treatment by supervisors in the same community, without oversight from a presiding clinician; supervisors also screened household contacts and initiated isoniazid preventive therapy for asymptomatic children. Health extension workers provided treatment support through follow-up visits, collection of sputum specimens to monitor treatment, and reporting on drug side effects and treatment outcomes.

The number of people identified and treated for TB more than doubled, increasing by 110.8 percent over historical trends. The fact that health extension workers were female helped boost the number of confirmed cases found among women. Major costs included personnel-related expenses (e.g., salary, training, phone credits) and laboratory sputum analyses.

Figure 9: Evolution of smear-positive/bacteriological-positive (SS+/Bac+) TB patients treated after the start of TB REACH outreach vs. "business as usual"



1.3.3 Integrated, Facility-Based Provider-Initiated Testing and Counseling

Kenya's provider-initiated testing and counseling (PITC) policy follows the WHO's recommendations for PITC in a generalized epidemic. Specifically, the policy is to make HTS part of routine service delivery and offer HTS to all patients attending any health facility as part of routine care.

In non-integrated settings, PITC often requires the patient to move from one clinic room or station to another for testing. For instance, a pregnant woman at an antenatal clinic would have to move to a laboratory or testing center and wait in line with other patients for testing.

In-facility integration consists of offering and providing testing at multiple stations onsite. This can include HIV testing in TB care settings and TB screening in HIV care settings to identify co-infected patients. Integration is especially relevant for sites that offer many types of health services and have a high volume of patients (particularly important in high-prevalence settings).

Typical groups that benefit from in-facility integrated testing (as recommended by the WHO for HIV) include:

- Patients in areas with high HIV and TB burden (HIV testing offered in TB clinics and TB screening offered in HIV clinics)
- Pregnant women (testing offered in antenatal clinics; the service should also be available to partners of women attending the clinics)
- Infants and children (screening and testing integrated into child health programs, particularly among infants and children with HIV-positive parents)
- Male adolescents and adult men (screening and testing integrated with VMMC in countries where this is offered)
- Inpatients (screening and testing integrated with inpatient services, especially in nutrition wards)

EXAMPLE 3:
Integrated HIV testing [iv]

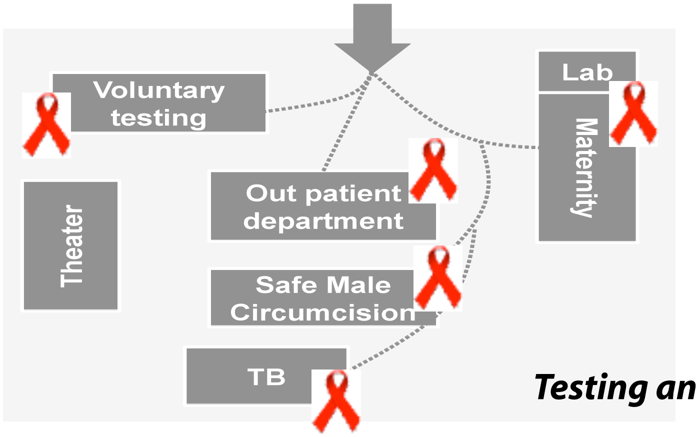
Integrated HIV Testing in Uganda
Mukono Health Centre IV

PROBLEM STATEMENT: Mukono Health Centre IV is situated in a peri-urban area in the vicinity of Kampala, Uganda. Administered by the MOH, it employs 110 health workers, supported by 17 volunteers, serving about 500 patients daily. Uganda's adult HIV prevalence is 7.2 percent.

STRATEGY/INTERVENTION: Mukono provides HIV, TB, antenatal care, and maternity services. As part of its HIV services, Mukono dedicated a testing clinic that patients attend on a voluntary basis. Realizing that patients for other services were likely to be HIV-positive yet not get tested, management decided to integrate testing across the different clinics. HIV testing was therefore made available at clinics for VMMC, TB treatment (focusing on potentially co-infected patients), antenatal care, and maternity. Mukono trained its nurses and clinicians to run HIV tests and to channel HIV-positive patients to pre-treatment counseling. In addition, it equipped all stations with testing kits, a cooler for conservation of sputum samples, and a flow chart on every table.

[iv] Global Fund 2014–2015 field visits and follow-up.

Figure 10: Mukono Health Centre IV facility map



Testing and screening point

RESULTS: With integrated HIV testing at all stations, Mukono has tested some 100 additional patients every day and initiated treatment for HIV-positive individuals.

Key messages:

- A relatively simple change in the way HIV testing is offered can significantly increase uptake and ensure that people testing positive are referred quickly for treatment and care
- Availability of testing across the facility's clinics supports messaging on HIV prevention.
- Health workers in all clinics are more aware of and able to follow-up on patients with HIV.

EXAMPLE 4:
Focused Testing for Higher Yield-A Case study in Mozambique

PROBLEM STATEMENT: CDC supports Mozambique's Ministry of Health to deliver HIV services, and strengthen health system capacity. It provides clinical support for 7 provinces with 75% of the country's people living with HIV. An estimated 11.5% of adults (age 15–49) in the country live with HIV. In 2011, 17% adult women and 9% adult men received HIV testing. In 2011, CDC conducted a review of its HIV testing and counseling approaches, considering cost, testing efficiency and alignment with overall programmatic priorities such as prevention of mother-to-child transmission and voluntary medical male circumcision (VMMC). Testing activities had focused on gross number of people tested, without considering population group characteristics and constraints, and the costs and health service ability to ensure linkages to care.

STRATEGY/INTERVENTION: CDC changed its testing strategy to focus on finding more confirmed HIV-positive cases with the same effort and ensuring that all people testing positive for HIV initiated treatment. Key populations and areas with higher prevalence were targeted. Trained local community counselors now provide HIV counseling and testing in the community and refer people who are HIV positive to health units, also screening for TB and educating residents on hypertension, malaria and diarrheal diseases.

RESOURCES/INPUTS REQUIRED:

- Staffing: Local community counselors
- Supplies: unknown
- Capacity building: train local community counselors on provision of HIV counseling and testing, and TB screening, in the community and on the importance of referrals of HIV+ individuals to health units;
- Tools, job aids, and curricula: unknown

RESULTS:

- In 2012, a review of the revised strategy's implementation showed that the testing efficiency of the approaches had increased by 27% while the overall volume of testing had decreased by 6%;
- The proportion of outreach activities compared to overall testing activities had fallen from 59% to 32%.
- The change of focus reduced out-of-facility efforts and increased their efficiency by targeting at-risk populations or areas with higher prevalence.
- Successful partnership with NGOs reached more people through community testing and referral expanded the health workforce and increased access for rural communities.

1.3.4PMTCT in Kenya

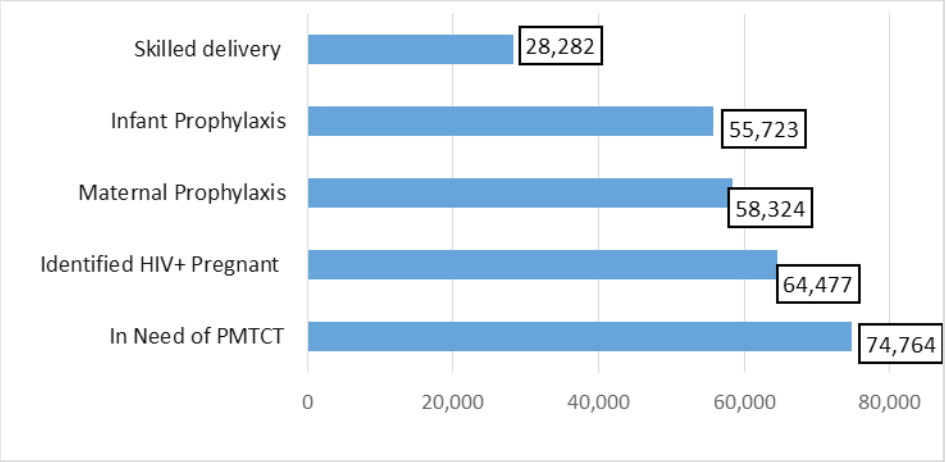
Background

Elimination of mother-to-child transmission of HIV (eMTCT) is one of the strategic directions articulated in the Kenya AIDS Strategic Framework (2014–2019) to reduce new infections. The national target for MTCT is transmission rate of less than 5 percent and "Keeping Mothers Alive" by reducing HIV-related maternal mortality by 50 percent. These targets were adopted from the eMTCT targets, which were to be achieved by 2015. Successful eMTCT depends on the successful delivery of all prongs of PMTCT and relies on a cascade of successful steps, including HTS, ensuring safe and acceptable contraceptive access for non-pregnant HIV-positive women, ART provision for HIV-positive pregnant and lactating mothers, infant testing, and highly active ART (HAART) provision for HIV-positive infants. Strategic interventions that reduce the risk of HIV acquisition focus on uninfected women of reproductive age, such as appropriate post-rape care, reduction of gender-based violence, STI control, and provision of effective contraceptives.

Situation analysis

PMTCT is interrelated with maternal and child health services and challenges. For example, only 53 percent of pregnant women complete four ANC visits, and the rate of skilled deliveries is 76 percent. At the end of December 2015, out of the 74,764 women in need of PMTCT interventions in Kenya, 64,248 had been identified although only 58,881 received efficacious antiretroviral (ARV) prophylaxis. In the same year among infants, only 89 percent (uptake), 80 percent (coverage), and 56,684 received early infant diagnosis and ARV prophylaxis. This performance, though a marked improvement from the previous year, fell far short of the expected progress to enable Kenya achieve its 2015 eMTCT targets. In particular, results of interventions targeting infants were far below the targets. Follow-up and linkage of HIV-exposed children to care remain major challenges.

Figure 11: MTCT cascade, NASCOP 2015



Infrastructural limitations such as inefficient laboratory flow, inconsistent commodity supply for essential lab services, suboptimal data collection systems, and poor provider knowledge have been cited as some of the reasons for the observed poor performance. Low stakeholder involvement, including from the private sector, poor integration of services, and ineffective referrals are other important factors. Low PMTCT knowledge, poverty, stigma/fear, and denial are other known factors that prevent women from accessing or adhering to PMTCT interventions. Optimal implementation of the treatment guidelines launched in June 2014, which recommended ART for HIV-positive pregnant and lactating women regardless of CD4 or WHO stage, is seen as an important intervention in accelerating progress. The devolution of health services also provides a new opportunity for leveraging shared accountability towards eMTCT and new strategies.

Engaging men in the process of PMTCT is of paramount importance to the MOH in Kenya. Several interventions, including those that provide differentiated care to male partners, seem promising in their ability to increase PMTCT uptake.

EXAMPLE 5:
A Male-Centered Approach to Improving Uptake of PMTCT Services

FACES-Supported MOH Facilities in Western Kenya

PROBLEM STATEMENT: The relationship between increased male involvement, skilled delivery, linkage to care and treatment, and time to receiving ARV services was unknown.

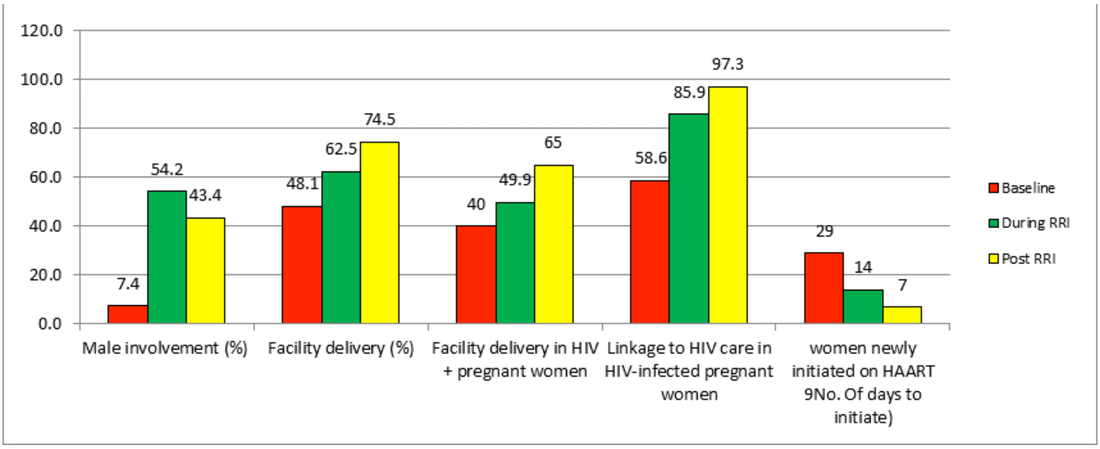
STRATEGY/INTERVENTION: Pregnant women coming to antenatal clinics without their partners were given personalized letters inviting their male partners by name to the clinic. If the women consented, healthcare workers called their male partners while the women were still at the clinic, inviting the partners to come for a health check-up for their own benefit at the same time as their female partner's next antenatal care appointment. Healthcare workers sent reminders via text message to reinforce the benefits of clinic attendance and remind the couple of the date of the visit. Chiefs, sub-chiefs, and village elders were involved to promote male involvement in antenatal care within the community. Male involvement was promoted at community gatherings (chiefs' meetings, women's groups, churches, and beaches). Pregnant women accompanied by their partners were given first priority, thus reducing their clinic wait times. Male partners received more education on male involvement during their visit. Male-friendly services were introduced, including blood pressure checks, chest examinations, and counseling on prostate cancer. Men who accompanied their female partners were given first priority to see a healthcare worker. Healthcare workers reviewed progress quarterly, and received supportive supervision as well as onsite continuous medical education for male involvement.

RESOURCES:

- Staffing: 44 mentor mothers, each paid 10,000 Ksh per month
- Capacity building: Mentor mothers were trained using the NASCOP-Mother to Mother, Kenya Mentor Mothers Training Program Curriculum and monitored monthly on use of onsite data for improvement.
- Tools, job aids, and curricula: Manuscript for the intervention; indicators

RESULTS: There were 7,236 pregnant women at baseline, 7,426 during the intervention, and 7,123 in the post-rapid results initiative (RRI) period.

Figure 12: Male Involvement in PMTCT



1.3.5 Infants and children: high-priority populations

All infants of mothers who have received PMTCT services and tested positive should receive follow-up and be routinely offered early infant diagnosis. Those diagnosed with HIV should immediately be initiated on ART. However, some infants are lost to follow-up and some mothers with HIV may not have received PMTCT services.

Prioritizing additional pediatric case identification is important, and can be achieved through integrated HIV testing, depending on the epidemiological situation. In high-burden settings, HIV testing should be routinely available through a variety of services that are accessed by the mothers with their infants and children. Scale-up of early infant diagnosis can be facilitated through task-sharing with lay providers.

In low-prevalence settings, immunization and under-5 clinics should test HIV-exposed infants who were not tested for HIV as part of PMTCT services. HIV testing for children and other family members of anyone known to be living with HIV should be prioritized in all settings.

EXAMPLE 6:
Improving Early Infant Diagnosis

EMR improves Early Infant Diagnosis and Prompt ART Initiation
Nyagoro Health Center, Rangwe Sub-county, Homa Bay County

PROBLEM STATEMENT: There are many missed opportunities for infants and children born to HIV-positive mothers, because of the difficulty in identifying, testing, and linking them to care.

STRATEGY/INTERVENTION: Nyagoro Health Center used electronic medical record (EMR) real-time (Point of Care (POC)) to generate a list of infants due for PCR testing and shared the list with mentor mothers/peer educators for immediate follow-up. Mentor mothers used contact addresses, including the physical address women provided during enrollment in antenatal care, to trace the mothers of listed infants. Lists are also generated for patients needing CD4 and those ready for ART. For CD4 testing, patients are notified promptly by peer educators who work closely with the healthcare workers to come to the laboratory for testing. Subsequently, results are documented immediately in the EMR. For ART, patients on the list are approached by peer educators and counseled in preparation for ART initiation.

RESOURCES:

- Equipment: Computer hardware (six monitors (10,000 Ksh each), server, UPS, and software (available through the PEPFAR-funded I-TECH program and other partners, depending on region).
- Infrastructure: One room/space for computer server, cabling for computer terminals to user points in case of PoC (80,000 Ksh), 10 availing power sockets (200 Ksh); electricity and alternative power backup to avoid interruptions in PoC during power outages
- Security: Securing the computer rooms included burglar-proofing two doors, grilling for four windows (about 60,000 Ksh) and hiring a facility guard (monthly pay of 4,500 Ksh)
- Capacity building: Training of a mentor (a staff member with basic computer skills) to troubleshoot the system and address basic issues and consult with the system developer for additional support; staff training on basic computer skills, followed by EMR-specific training based on user rights; ongoing, as-needed mentorship to support use of system

RESULTS: The proportion of HIV-exposed infants 6–8 weeks old identified and tested with PCR rose from 79 percent (January–April 2014) to 100 percent (January–April 2015). In the same period, the proportion of eligible patients initiated on ART increased from 85–100 percent.

Figure 13: HIV-exposed infants 6–8 weeks old with PCR and results available

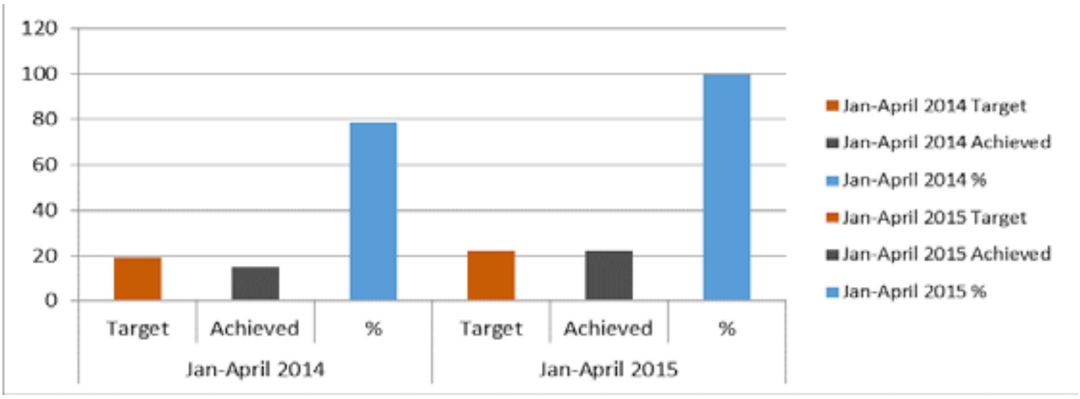
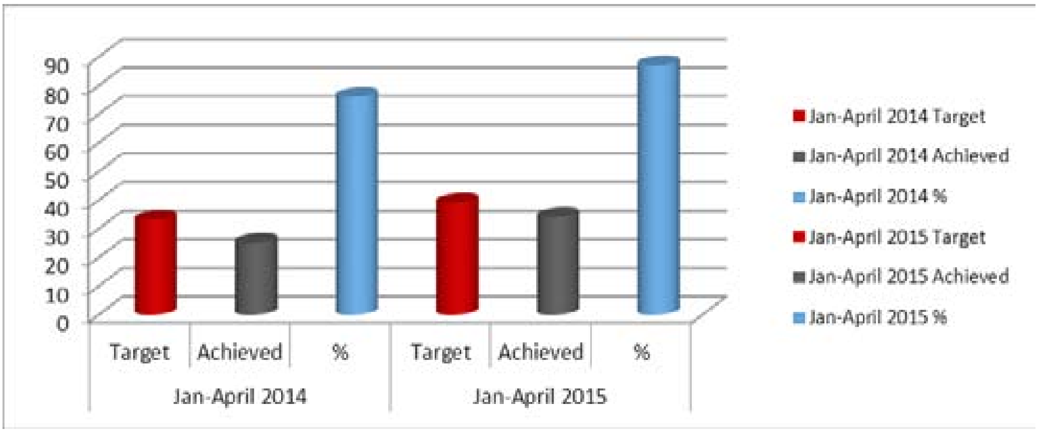


Figure 14: Patients eligible and initiated on ART



1.3.6 Linking patients to care and treatment

As defined by the Emory Center for AIDS Research, linkage is the process of connecting those who are diagnosed with HIV to treatment, care and support . Ideally, HIV+ patients should be fully engaged with their care, resulting in good adherence and retention, and ultimately viral suppression. In Kenya this is true for adults; while only 54% of adults living with HIV have been identified, the majority of those identified, or 89% were enrolled in care, and the majority (81%) were enrolled within three months of knowing their status . For adolescents and for children, there still remains a gap in linkage. HIV Program data suggests that only 51% of HIV positive children have been diagnosed and linked to care , and only 40.5% of parents of infected children know of their status . The resulting data for viral suppression further emphasize this challenge: 75 percent among adults, compared to 65 percent among adolescents, and 65 percent among children who are receiving care. For Kenya to meet its 90-90-90 goals, improving linkage is crucial.

Some health facilities have found innovative ways to improve linkage. They include improved integration of HIV linkage activities with other health services, as well as improving access to data and tracking systems. These are captured in the examples below.

EXAMPLE 7:
Improving identification and linkage to care for Mother-Baby Pairs

Integration in maternal, newborn, and child health to improve mother-baby pair identification, linkage, and services, Umoja Health Centre

PROBLEM STATEMENT: Despite efforts to eliminate mother-to-child transmission of HIV, linkage of mother and baby pairs remain low, with negative impacts on HIV testing among infants of HIV-positive women. Umoja Health Center found that it could not account for all HIV-positive pregnant mothers; its records lacked adequate information, and patients provided wrong contacts, hindering follow-up.

STRATEGY/INTERVENTION: Clinic staff set aside a day for PMTCT, when mothers and HIV-exposed infants received all services (integration of family planning, Comprehensive Care Clinic, Polymerase Chain Reaction (PCR), and immunization services). They merged the infant's card with that of the mother to ensure they would both be completed at every visit. A case manager physically linked mothers of infants testing positive at six weeks postnatal to care and treatment providers in the facility. Baseline data was analyzed for six months before intervention (April–September 2013) and monitored from October 2013 to March 2014 for results. Monthly review of data informed decision-making, adjustments to the interventions, and tracking of intervention trends.

RESOURCES:

- Staffing: Facility in-charge rationalized staff and allocated two healthcare workers to cover maternal, newborn, and child health at all times.
- Capacity building: Facility staff received training and sensitization on the KHQIF, including facility in charge, clinical officer, nurses, laboratory technologist, mentor mothers, and community health volunteers. Training on KHQIF was also provided to the Sub-County AIDS Coordinator (SCASCO).
- Tools, job aids, and curricula: Data sources include MOH 405 antenatal care register, MOH 362 HTS laboratory register, HIV-exposed infants cards and register, EMR IQ care (an EMR software used at the point of care), immunization register, and Kenya Mother Mentor Program (KMMP) HIV log book.

RESULTS: Mother-baby pair linkage increased from 52 percent in 2013 to 97 percent in 2014, and PCR uptake at six weeks increased from 52–89 percent during the same period.

Table 4: Results summary

INDICATOR	APRIL–SEPTEMBER 2013	OCTOBER 2013–MARCH 2014
Mother-baby pair linkage	12/23 (52%)	38/39 (97%)
PCR uptake at 6 weeks	12/23 (52%)	34/38 (89%)
Uptake of measles vaccine	0/23 (0%)	38/38 (100%)

EXAMPLE 8:

Improving identification and Linkage of HIV -Exposed infants

Effectiveness of a Tracking System in Improving Care and Follow-Up for HIV-Exposed Infants Kericho County Referral Hospital, Kapsabet Hospital, Longisa Hospital, Kapkatet Hospital, and Tenwek Hospital (Kericho County)

PROBLEM STATEMENT: Many hospitals find it challenging to link and track HIV-positive mothers and their HIV-exposed infants. This makes it difficult to ensure timely enrollment and longitudinal follow-up of HIV-exposed infants up to 18 months, in line with the guidelines.

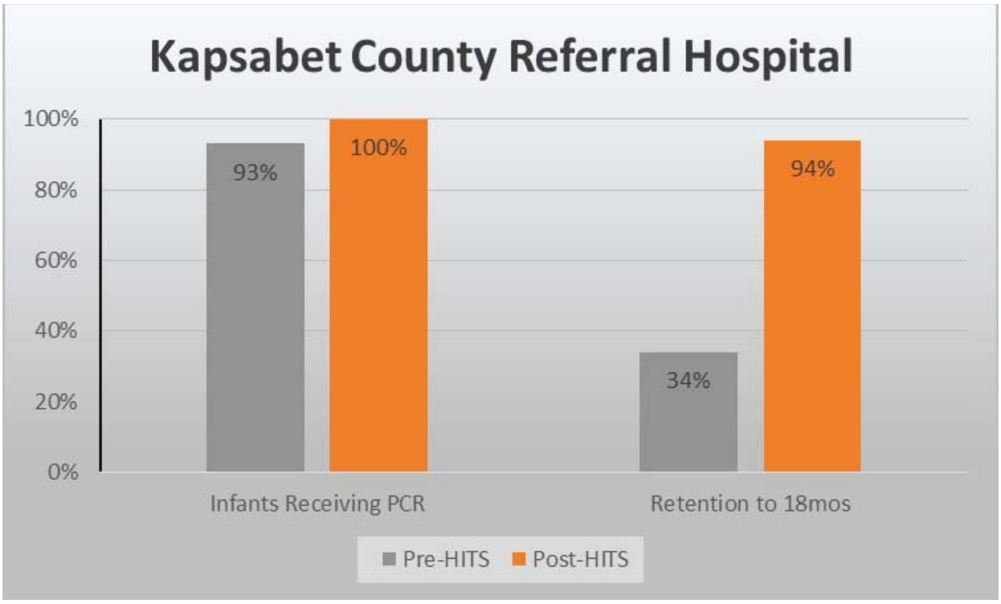
STRATEGY/INTERVENTION: The HIV-Exposed Infant Tracking System (HITS) uses mobile broadband technology via modems for Internet connectivity, computers and short message service (SMS) texting to encourage the mothers of HIV-exposed infants to get their infants tested. Once the infants are tested, the results are posted on the HITS, and mothers receive a message from the system, telling them the results are available at the hospital. When mothers return, they are provided with the results and counselled, and those with infants in need of ART are linked to treatment.

RESOURCES:

- Staff: One mentor mother in each facility to register pregnant HIV-positive women
- Supplies: Data storage, text messaging, information technology, one peer educator per site, daily supportive M&E, initial and follow-up training, all with a total cost of $1,578.
- Capacity building: Training service providers to use the system; as-needed technical assistance

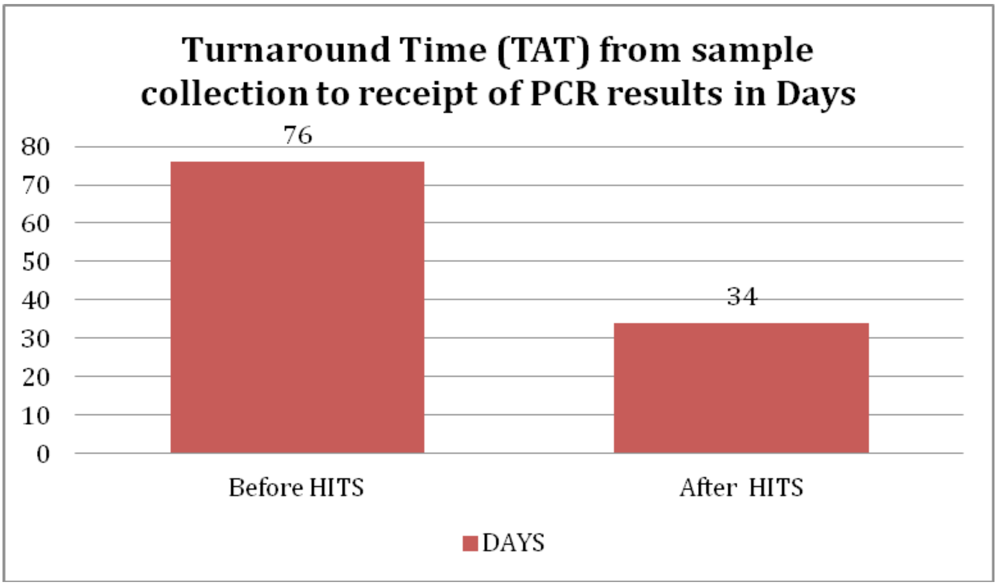
RESULTS: On introduction of the tracking system in Kapsabet County Referral Hospital (June 2011), 100 percent (n=103) of infants received PCR test, compared with 93 percent (n=91) before the intervention (p=<0.001). Follow-up of infants up to 18 months increased from 34 percent (n=33) to 94 percent (n=97) in the same period (p=<0.001).

Figure 15: Results at Kapsabet County Referral Hospital



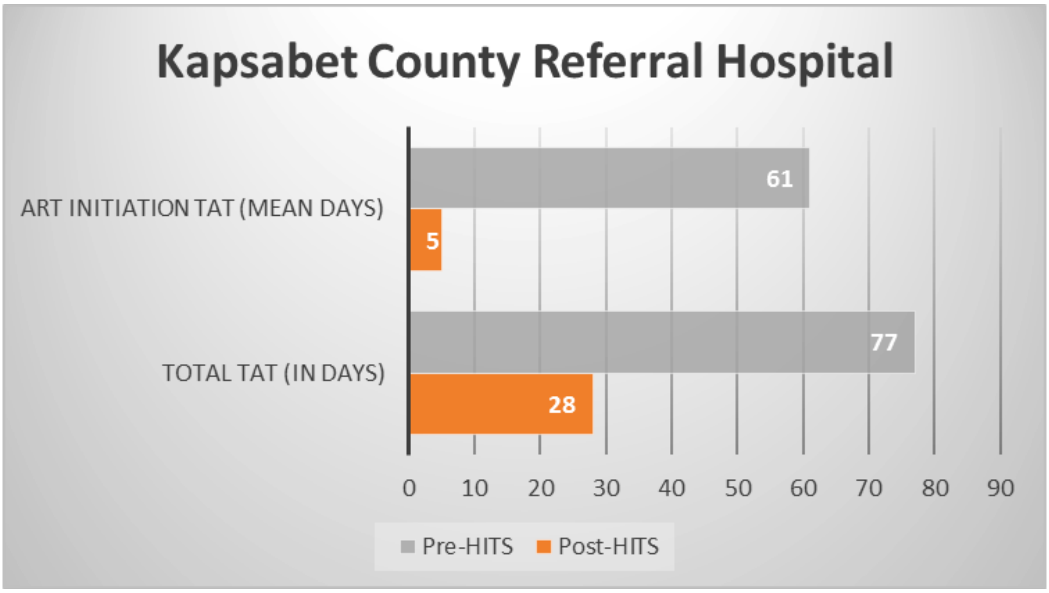
Moreover, duration from sample collection to results being received by the caregiver decreased from 10.9 weeks to 4.9 weeks (p=<0.001).

Figure 16: Reduced turnaround time for results



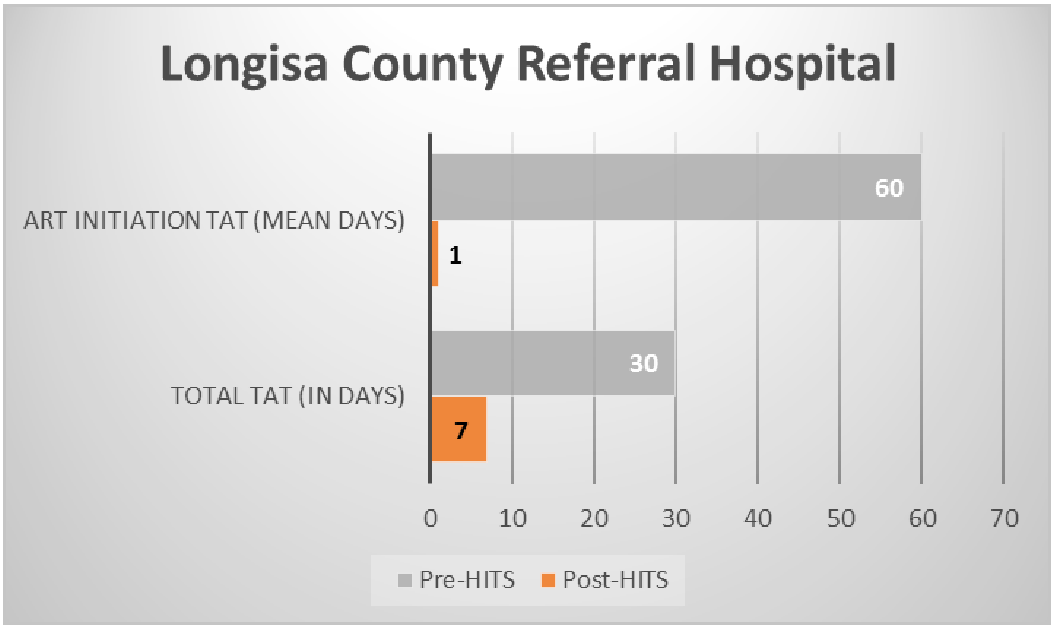
Mean days to initiation of ART also decreased, from 61 to 5 days (p=<0.001). HITS has been in place for four years and still registers impressive results.

Figure 17: Difference in Number of Days to ART Initiation at Kapsabet County Referral Hospital



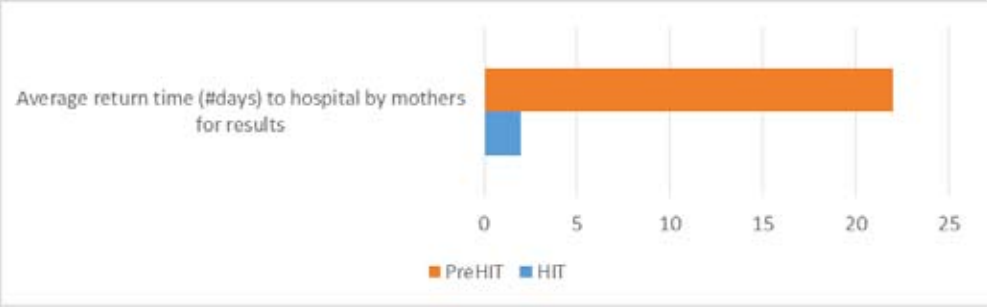
HITS was introduced at Longisa District Hospital in November 2012. The system drastically reduced turnaround time between sample collection and receipt of results to 7 days (vs. 30 days previously). The HIV positivity rate (MTCT rate) did not change significantly: 3.2 percent (n=63), vs. 4.1 percent (n=97) previously. Both confirmed HIV-positive infants (100 percent; n=2) were initiated on ART, compared with 75 percent (n=4) previously. The children were initiated on ART the same day the caregiver was informed of the results, vs. 60 days previously.

Figure 18: Difference in Number of Days for ART Initiation Longisa County Referral Hospital



In Kericho County Referral Hospital, the average time for mothers to return to the hospital after receiving the text message about their results was 2 days, vs. 22 days (4.4 weeks) before HITS.

Figure 19: Average return time among mothers, Kericho County Referral Hospital



1.4 Improving Commodity Management of HIV Test Kits

Foundationally, availability of test kits play a vital role in a health facility's ability to increase identification of HIV+ individuals, no matter what approach is used. At all levels, the supply chain is not only affected by lack of the actual commodity, but by weaknesses in forecasting, which are largely due to weaknesses in reporting. In Kenya best practices are emerging to help improve commodity supply chain, including test kits. Key to their success is country ownership at all levels. The example below demonstrates an approach that counties can use to increase reporting with regards to test kits

Regular County commodity data review increases reporting and hence accountability for HIV Test kits

PROBLEM STATEMENT: Health managers need data to inform them on available stocks for HIV testing commodities in their counties and status of commodity resupply so as to make supply chain and service related decisions, for example, concerning need for resupply and re-distribution of testing commodities. Before the year 2014, data were not easily available and accessible to managers at County and Sub-county level. Facilities were submitting data in hard copy summary reports to the sub-county level for direct onward transmission via courier or email to the national level managers. This meant that County level managers were bypassed. County level reporting rates for HIV Test kits were very low: Bungoma, 27.5%, Busia, 2.2%, Kisumu, 1.2%, and Kisii, 6.1% as on November 2013.

STRATEGY/INTERVENTION:
The HCSM project worked with the County Health Management teams to use the following strategies for corrective action:

- Advocacy for and adoption in counties of a single reporting platform for upload and transmission of data on HIV RTKs – both for commodity and testing data. This was agreed on as the District Health Information System (DHIS) run by the Ministry of Health's Health information System section.
- Two day Orientation for Health workers at management level – County and Sub-county medical laboratory coordinators (CLCs, SCLCs), and health records and information officers (SCHRIOs) on how to use DHIS2 for uploading and validating facility data
- Sub-county medical laboratory coordinators and health records and information officers committed on monthly basis to look at reports submitted by facilities and determine non-reporting and poor reporting facilities, and follow-up with them through phone calls

-- County-level convened quarterly data review meetings to review HIV RTK commodity data, assess performance and determine relevant commodity management related gaps. During the earlier meetings, there was further sensitization to CLCs, SCLCs, and HRIOs focusing on reporting and analyzing the data to identify overstocking or understocking of supplies. They also verified the data for accuracy and completeness.

RESOURCES

- Staff: Staff time (County and Sub-county, project)
- Supplies: Monthly data review workshop costs; airtime for calling facilities; modems for internet connection; computers; funds for undertaking supportive supervision site visits and other planned actions
- Capacity building requirements:
  - Formation at county level of a governance structure to address health commodity management issues including for HIV-RTKs, i.e. County Commodity management TWG with relevant membership, led by the County directors of health or their representatives. TWG members sensitized on their roles.
  - The County commodity management TWG discussed and prioritized the problem/gap, identified the county and sub-county staff to address HIV-RTK issues.
  - Inclusion of lab commodity management focal persons in supportive supervision missions
  - Sensitization of sub-county staff on completing the reporting tools so as to assist facility staff to provide good quality monthly reports.
- Tools, job aids and curricula:
  - Reporting tools for HIV RTKs - MOH 643 Facility Consumption Data Report And Request (F-CDRR) for Laboratory commodities
  - HCSM in-house customized orientation materials on use of DHIS2 for health commodity data reporting and use
  - Guide for counties for formation of County commodity management TWGs
  - Orientation package on use of DHIS for health commodity reporting
  - Guidelines for Commodity Data Review and Assessment at County level

RESULTS

- All the counties adopted the DHIS as their national reporting platform.
- HIV RTK data became more accessible at and visible at the Sub-county, County level and National levels. Consequently, counties and the national level could now access data at the click of a button, extract historical data and monitor trends on usage and supply of HIV RTKs.
- Reporting rates for HIV RTKs increased over time to above 80% across the supported counties compared while the national average generally remained below 50%; hence accountability for HIV RTKs improved in all four counties.

County	**Baseline data (pre-intervention)**	**Post intervention data**						
	% Reporting rate	***% Reporting rate***						
	Nov 2013	Mar 2014	June 2014	Sep 2014	Dec 2014	Mar 2015	June 2015	Sep 2015
Bungoma	27.5%	87.2%	90.6%	91.9%	91.3%	92.6%	76.5%	90.6%
Busia	2.2%	88.9%	88.9%	87.8%	90%	78.9%	91.1%	92.2%
Kisii	6.1%	62.2%	70.3%	87.2%	91.9%	95.3%	97.3%	96.6%
Kisumu	1.2%	7.9%	58.8%	86.1%	90.9%	93.3%	95.8%	99.4%

Based on the case studies described above on differentiated HIV prevention, screening and linkage, a facility identifying with performance gaps in these areas may choose to begin implementation using the following guidance.

1.5 How do I start?

The core strategy promoted for adapting differentiated approaches to HIV Testing Services is a systematic, continuous process for improving health services delivery. Using the scientific method of plan-do-study-act cycle, health facilities can engage in adapting examples that are relevant to them, or developing new ones that can lead to the same or better efficiency in testing. Step by step details on how this can be done can be found in the next few pages.

1.5.1 Defining the plan ("Plan")

Prioritization of approaches should be based on knowledge gained from existing data and on engaging communities and health providers in discussion, needs analysis, and planning.

Key elements of the implementation plan include:

- Identifying a lead person, in charge of conducting the analysis, proposing the approach, and reporting on progress
- Devising a clear plan and schedule for implementation and monitoring, with key milestones
- Planning for communication to staff and patients

Analyses to be conducted before starting include:

- Assessment of which approaches are relevant to the site, based on current testing approaches, populations with increased risk of HIV infection and specific needs (e.g., key populations and infants, children, and adolescents), accessibility of services, and patient demographics
- Assessment of barriers to identifying a greater number of HIV-positive individuals
- Assessment of available resources

1.5.2 Assessing additional resource needs

Sites need to assess resource requirements and costs before starting. Upfront investments may be required for training additional staff on screening, testing and counseling, and possibly some basic equipment (e.g., coolers for diagnostic tests or sputum samples). Data collection and recording tools (e.g., registers, computers) may need to be upgraded.

1.6 Establishing the baseline for screening and testing approaches

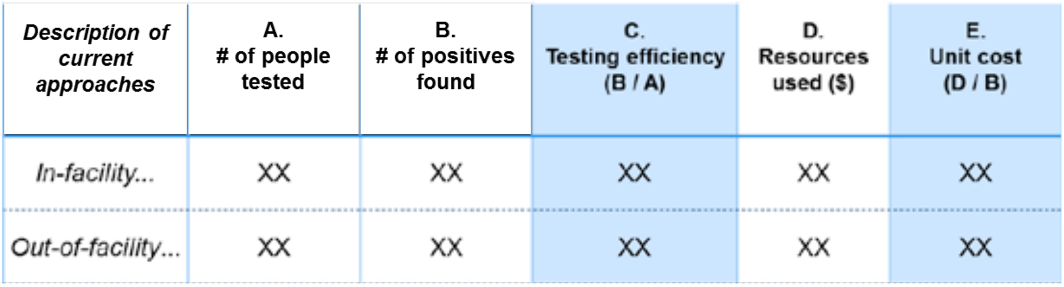
Sites can start by listing all the screening and testing initiatives (in- or out-of-facility) conducted in a year, and then calculate the number of people being tested and the number of confirmed cases found by each approach. They can also calculate the cost of each approach (including human resources, equipment and other expenses such as travel costs). With this information, sites can compute two ratios for each approach to assess the potential for optimization:

Further reading

- **WHO consolidated guidelines on HTS**

- Testing efficiency of each approach: the number of confirmed cases found per person tested. This ratio can be compared to the prevalence of people not knowing their status in the site's catchment area. Note that testing efficiency can be increased by focusing on specific groups.
- Unit cost of testing

Figure 20: Example of baseline table for screening and testing practices



Description of current approaches	A. # of people tested	B. # of positives found	C. Testing efficiency (B / A)	D. Resources used ($)	E. Unit cost (D / B)
In-facility...	XX	XX	XX	XX	XX
Out-of-facility...	XX	XX	XX	XX	XX

1.7 Focusing on specific population groups

This section is intended for both program managers and site managers. Program managers can use it to prioritize areas for out-of-facility initiatives. Site managers can use it to maximize the efficiency of the outreach activities that they conduct.

- Data analysis: epidemiology data (higher risk groups such as sex workers, MSM and transgender, drug injectors)
- Community engagement: Sites can engage with community members to refine their understanding of specific groups' practices, and determine the best places (e.g. hotels, clubs) and time (e.g. specific hours) to reach them. Community volunteers can be integrated into workforce planning for outreach activities.

Example of vulnerability-mapping in Senegal[vii]

Context and objective: The USAID health program in Senegal, supported by FHI 360 for local implementation, designed a methodology to map population groups with vulnerabilities. Vulnerability is defined as "unequal opportunities, social exclusion, unemployment or precarious employment and other social, cultural, political, and economic factors that make a person more susceptible to HIV infection and to developing AIDS."

What they did: Four medical regions were mapped. Mapping incorporated general socio-economic information (e.g. unemployment rates) and epidemiological information (e.g. HIV prevalence). The main vulnerability factors were outlined, such as poverty, illiteracy or certain type of economic activities (e.g. mining). Service providers have access to the vulnerability profile of each area with a high level of detail. Each hotspot is highlighted whether it is an entire neighborhood, a settlement, or even a bar or a train station.

What it involved: The mapping necessitated 3 months of work. Extensive data research and analyses were conducted with the support of statisticians. Sociologists engaged with informants from local communities who provided insights both on the local social fabric and on the barriers to HIV service delivery. In addition, focus groups with people from vulnerable communities were organized to refine the understanding of how to improve service delivery.

1.7.1 Establishing optimal approaches for screening and testing

Sites can start to establish which approaches to prioritize with a list of all the screening and testing approaches (in- or out-of-facility) conducted in a year. For each approach, they can then use the method outlined at the beginning of this module (Figure 5) to calculate the testing efficiency and cost-efficiency of the approach. They can also calculate the estimated costs of each approach, including the costs of human resources, testing supplies and equipment, travel costs, and other expenses.

Sites can then compare different approaches in combination with the data collected on patient needs and preferences and information about locations and populations most in need. This will support informed decision-making about the optimal approaches to be planned and implemented by a facility.

1.7.2 Initiating implementation ("Do")

Once optimal approaches have been identified and agreed upon, it is important for sites to establish a date to begin implementation. Sites may wish to develop materials to communicate the change to patients and take other action that will facilitate implementation of the differentiated care approaches; these actions should be considered when planning the start date.

1.7.3 Monitoring implementation ("Study")

The box at right lays out the indicators to be measured for this method.
Sites can also use productivity indicators to monitor the effectiveness of implementation; for example, with simple ratios such as:

- Number of patients tested per health worker
- Number of patients who test HIV positive per number of patients tested, per health worker, or both

In both cases, sites will need to collect data on baseline values (before implementing differentiated approaches) so they can compare them with the actual values when the approach has been used for a defined amount of time. The difference between the two sets of values will help them assess the effects of differentiated care.

INDICATORS TO MONITOR

Cost-effectiveness indicators:

- Unit cost per person tested: total cost of the testing approach over total number of patients tested
- Share of testing cost vs. site's total expenditures (to be compared with guidelines provided by NASCOP and used for adjusting the type of differentiated approaches implemented)

Testing Efficiency

- Percent of individuals who test HIV-positive (number of confirmed cases over number of people tested)

Linkage to care

- Percentage of patients who test HIV+ and initiate treatment within the next month (number of patients tested positive initiating treatment in the next month over number of confirmed cases found

Throughout the implementation cycle, and until the change becomes part of the way work is done, site QI teams will have to be able to analyze the results of the selected approach(es) to see if they match the theory or predictions—whether they improve HIV test yield or HIV test numbers. QI teams will need to document the improvement (or lack of improvement) and visualize trends over time. This will allow them to see how many days/weeks/months it took to reach a certain testing yield; combined with documentation on the type of changes tested, this will serve as powerful evidence for changes that worked vs. those that did not. Internal discussions should identify any unintended consequences (e.g., additional stigma, de-stigmatization, peer support, peer pressure), and analyze whether the changes have made care delivery more difficult for patients or providers. The more seamless the implementation of the new changes, the more likely they are to be sustained at the clinic and scalable to surrounding clinics.

1.7.4 Modify and Continue Implementation ("Act")

As the site QI teams study the implementation process, they may decide that the changes being tested would work better if they were modified or that the change needs to be dropped altogether, because it is not helping to get more people tested or identify more HIV-positive individuals. In this case, the QI teams would plan a new cycle.

If the change works well, the QI team will work with their site leadership to decide whether to adopt the change and make it a way of working for the clinic, while continuing to monitor.

1.8 MODULE SUMMARY

This module presented several differentiated care approaches for HIV Prevention, Screening and Linkage of HIV positive patients in Kenya. For testing, these include out-of-facility screening and testing, integrated out-of-facility screening and testing, and integrated provider-initiated screening and testing. Examples of good practices were shared for reaching key populations in Kenya, integrating HIV testing in Uganda, as well as revising a national strategy in Mozambique. Kenya based best practices for integrating HIV testing with other clinical service delivery, including TB, were also discussed. Examples from Kenya came from a number of counties, including Homabay, Kisii, Migori, Nairobi, Nakuru, and Kericho, among others. They demonstrate that such approaches are not only feasible, but they result in improved testing services. The module concluded with a discussion of the Plan-Do-Study-Act cycle, with a focus on demonstrating a hands-on approach for health facilities to adopt/adapt these practices in the daily routine of health services delivery, if properly supported to do so.

TOOL 1: Annex 1
Patient preferences and needs survey

TOOL 2: Annex 2
Template to measure average patient waiting times & satisfaction

TOOL 3: Annex 3
Tables to monitor differentiated care

TOOL 4: Annex 4
PDSA Worksheet Guide

Module 2: Differentiated Care and Treatment Approaches

MODULE 2 AT A GLANCE

Aims:

- Identify ways to improve the cost-efficiency, patient-centeredness, and acceptability of treatment services
- Explain how to leverage site- and community-level data to inform decisions
- Discuss differentiated options for patients to access services

Key outcomes: Differentiated treatment and care approaches can improve the outcomes, quality and cost-efficiency of treatment by:

- Leveraging available data to define service-delivery models
- Adapting service delivery to patients' needs and preferences, improving treatment adherence and success
- Enabling simpler approaches and processes for service-delivery
- Increasing clinic capacity in ways that reduce loss to follow-up, support better adherence, and enable more efficient use of human resources

2.1 INTRODUCTION

This module focuses on successful approaches to differentiated treatment and care for HIV. Its purpose is to support site managers in Kenya in the design and implementation of service-delivery models that address patients' needs and providers' constraints. Each approach aims to improve the efficiency of services by addressing patients' specific needs and lowering barriers to care.

Sites can implement one of the following approaches, or a combination:

- Differentiated schedules: Adapting or dedicating hours or clinic days for specific patient groups (e.g., adolescents, sero-discordant couples)
- Differentiated locations: Providing services to certain groups of patients (e.g., TB/HIV co-infected patients, children) in a dedicated area of the site (e.g., room, tent), or at separate sites
- Differentiated patient flows: Adapting the patient pathway at the facility for specific patient groups (e.g., new patients, sick patients)

2.2 BACKGROUND

In Kenya, as of January 2015, 65 percent (766,264) of all adults 15 years and older, and a little more than half of all children (74,808) aged 0 to 14 years, who need ARV in Kenya are receiving treatment. This represents tremendous strides forward, though ARV coverage is hampered by a lack of robust information management and feedback system, as well as inadequate infection control and biomedical waste management. Although the majority of those who know their HIV status are linked to care, retention decreases steadily over time, from 68 percent at 12 months to 66 percent at 36 months and 61 percent at 60 months. This high attrition rate is largely due to suboptimal integration of screening, prophylaxis management of co-infections and co-morbidities, and experience of stigma on disclosure and adherence. Viral suppression remains unacceptably low among children on ART. While the viral load uptake may not be optimal, 65% of children on ART achieve viral suppression.

In line with the 2014 Kenya ART Guidelines, Kenya intends to enroll 80 percent of all eligible adults on ARV by 2017. At the same time, there is recognition that such a scale-up will increase the burden on the health system, particularly at the health facility level. The recent devolution of service delivery to county governments is helping to decentralize delivery of care services. Frontline healthcare providers are strongly encouraged to develop functional models for providing care and initiating treatment to HIV-positive patients that will lead to expected outcomes, while remaining in line with national guidelines.

In line with the Kenya AIDS Strategic Framework, which calls for decentralization of the delivery of healthcare services and encourages the development of functional models for service delivery, this module focuses on successful differentiated service delivery models to ensure timely enrollment, treatment initiation, and care for HIV patients. Its purpose is to support facility site managers in the design and implementation of service-delivery models that address patients' needs and providers' constraints as they initiate new patients on treatment. Each approach aims to improve the efficiency of services by addressing patients' specific needs and lowering barriers to care.
Sites can implement either one or a combination of the following approaches in support of timely treatment initiation:

- Differentiated schedules: adapting or dedicating hours, or clinic days, for specific patient groups (e.g. adolescents, sero-discordant couples);
- Differentiated locations: providing services to certain groups of patients (e.g. TB/HIV co-infected patients, children) in a dedicated area of the site (e.g. room, tent), or at separate sites; This is in line with recommended actions in the Kenya AIDS Strategic Framework that providers use integrated and decentralized HIV delivery models that increase access to care and treatment at community and other non-ART service points
- Differentiated patient flows: adapting the patient pathway at the facility for specific patient groups (e.g. new patients, sick patients).

Differentiated treatment initiation and care approaches are most applicable to facilities that have high patient volumes and provide health services along the continuum of care. The approaches should increase cost-efficiency by optimizing staff work load, and further improve health outcomes for patients through higher adherence to treatment and retention in care through the combined effects of targeted counseling, peer support, reduced waiting times, and reduced congestion at the facility (an issue that Module 3 addresses further).

The design of approaches can start from what is known about patient perspectives on existing arrangements for treatment initiation and the proposed new models of service delivery. Managers will be assisted in their work if they actively seek patients' suggestions on how best to adapt and use these models to their benefit. Community and patient engagement is vital to bring meaningful improvements in services.

The first part of this module focuses on identifying opportunities to adapt context-specific differentiated treatment and care approaches for treatment initiation. The second part of the module provides examples of successful practices observed at sites. The third part provides guidance on how to begin implementing the practices.

Differentiated medicines and laboratory service approaches are detailed in Module 3 of this handbook, since although drug delivery is a key element of treatment and care, it offers specific and cost-effective opportunities to innovate that are best described in a separate module. Approaches detailed in Module 3 can be used in conjunction with those in Module 2; in most cases, it could be beneficial to implement both together.

2.3 Identifying differentiated treatment and care opportunities

The following four questions will help managers use available data to identify opportunities to adapt differentiated treatment and care approaches to their context:

What different patient groups use the facility and what are their specific needs and constraints?

This information may come from available data on patients' characteristics. However, more detailed and up-to-date information can be obtained from patients and community representatives, and they should be invited to contribute their experiences and suggestions. Some examples include:

- Demographics: Children, adolescents, men, women, marginalized or minority groups

KEYS TO SUCCESSFUL IMPLEMENTATION

- Use available data for planning
- On average, how many patients visit my site per day?
- Are there enough health workers to treat all patients?
- For HIV-positive patients: How does the patients' retention rate compare to national/regional averages?
- For TB-positive patients: How high is the treatment success rate for all new cases?
- Are there some disparities in retention rates/treatment-success rates between different patient groups?
- Are my patients complaining (for instance, about waiting times, or the number of visits required before starting treatment)?

(e.g., undocumented migrants, ethnic and sexual minorities)
- Health conditions: Those with TB-HIV co-infection; pregnant women; people with drug-resistance or with chronic conditions
- Physical constraints (e.g., people with disabilities, those who live or work far from facilities, or those with little or no financial means)
- Increased vulnerability, such as injecting drug users, sex workers

What barriers are patients and service providers facing?

Patient perspective: Examples may include:[52]

- Access difficulties (e.g., distance from facilities, constraining work hours, travel costs)
- Clinic difficulties (e.g., crowded spaces, lack of privacy, lack of confidentiality or respect from service providers, long waiting times, repeated visits for checks before starting treatment)
- Stigmatization by community members, service providers, or other patients at the site (actual/enacted or perceived/feared by the patient)

Service-provider perspective: Examples may include:

- Insufficient resources (e.g., lack of trained workers, space, infrastructure, financial means, equipment; drug shortages)
- Unclear/insufficient guidance to health workers (for example, sensitization on care and stigma reduction for different patient groups, management of facilities and supplies, guidance, direction and mentoring on monitoring requirements and making use of data for service improvement)

What are the opportunities to adjust the current service-delivery model?

Service-delivery models are a combination of:

- Who provides the service (opportunities for task-shifting): Doctors, nurses, lay community health workers, peer patients or patients;
- Where the service is provided: At various points in the health centers (regional and district hospitals, health centers, dispensaries, etc.) vs. distribution points in communities or at home
- How often the service is provided: For clinical consultations and for drug refills (depending on maximum duration of refill that may be given)

Various combinations of approaches are possible based on site analysis of the above categories. Patient feedback will help managers find combinations that best serve patient needs and constraints and help them to work around their own constraints as service providers. Sites often offer several options to meet different patient needs.

How large are the patient groups?

If patients from a specific group were all to attend on the same day or at the same place, would there be enough patients for a dedicated service (i.e., is there a "critical mass"), or would there be too many in relation to the available human and other resources?

If there are not enough patients for a site to implement a dedicated service, they should be integrated into the general clinic routine, as should patients who are unable to benefit or do not want to use the differentiated services. If there would be too many for a single day or place, it is necessary to plan, for example, for multiple clinic days for that patient group. Differentiated treatment and care approaches are particularly relevant at sites with high patient volumes. In high-volume settings, patient sub-groups are likely to be large enough to justify dedicated services. However, adaptations of these approaches can still be considered for implementation at smaller sites; for example, less frequent clinic days for smaller patient numbers, which could still benefit some patient groups. The relevance of a combination of approaches depends on the sites' setting (rural, peri-urban, urban), the volume of patients, and patients' expressed preferences.

2.4 What are the options?

2.4.1 Differentiated schedules

What this means: Sites can dedicate specific clinic days to specific groups of patients. This has the added advantage of facilitating group counseling sessions and targeted health talks.

Frequent barriers: Many health centers provide services to all types of patients during the same hours, regardless of patient preferences and needs. This situation can create barriers to quality for patients and for the site.

- Patient perspective: For some patient groups, such as working adults, the requirement to visit the site during daytime hours could mean that they would have to skip work and therefore risk loss of income, worsened by extended wait times. For others, attending facilities at the same time as the general population can risk exposing them to stigma (e.g., pregnant women, adolescents, sex workers, sexual minorities)
- Site-management perspective: Lack of staff is often an issue (e.g., there should be sufficient counselors or nurses to provide counseling or health talks). There may also be a lack of space for these activities and for infection control related to people with active TB. Differentiated approaches may help sites be more efficient; for example, by reducing congestion and providing opportunities for group counseling sessions.

Description of the approach: Typical clinic days could include:

- Clinic day for pregnant women/adolescents/couples (including sero-discordant couples): A dedicated clinic day helps maintain privacy and avoid stigma, and improves quality of care through group counseling and health talks to address each patient group's specific needs (e.g., pregnancy management, nutrition advice, prevention practices).

- Clinic day for co-infected patients: Providing integrated TB-HIV services enables patients to receive both treatments in the same setting, instead of attending two different facilities, and to receive targeted group-counseling sessions. Facilities should invest in effective infection control measures, such as separation of TB infected patients from uninfected HIV patients and ventilation in waiting areas.
- Late or early opening hours and/or Saturday clinics: Providing flexibility for people who work long hours and avoiding the stigma and potential cost of taking time off to attend the site. This may be particularly useful for drug refills. This approach may require some rearrangement of staff schedules, additional staff, and/or financial incentives.

Individually scheduled appointments could include:

- Special clinic days or hours for TB patients assists with infection control and facilitates group health talks and defaulter follow-ups.
- Separate clinic days for patients in different phases of treatment (e.g., intensive phase vs. continuation phase for TB) simplifies delivery of group health talks and defaulter follow-up;
- Drug-resistant (MDR or XDR) TB clinics or clinic days reduces transmission risks and differentiates TB patients to provide specialized care to drug resistant patients.

How many clinic days should be dedicated to a specific group?

This depends on the size of the target group. Health workers should aim to see at least as many patients during the dedicated schedule as are seen in the regular schedule. Then, sites can decide how many clinic days should be dedicated, ranging from one day per month to several days per week.

EXAMPLE 9-a:
Differentiated schedules for children

Differentiated Schedules for Children, Riruta, Kenya[ix]

PROBLEM STATEMENT: Riruta Health Centre is situated on the outskirts of Nairobi and provides HIV, TB, and parent/child healthcare. The facility's 42 staff members (including 11 volunteer community health workers) serve about 120 patients per day. Of approximately 5,000 patients active on ART at Riruta Health Centre, some 200 are children. Initially, children followed a similar pathway through services as adults, and health talks targeted adults and children together. However, the staff found that they were not focusing enough time on the specific needs of children.

STRATEGY/INTERVENTION: In 2011, Riruta began implementing differentiated schedules, with the last Thursday of each month dedicated to children. Health workers delivered child-focused health talks on issues specific to them (e.g., stigma in school) or health talks for parents to explain specific aspects of childcare.

RESOURCES: No additional staff or supplies were needed.

[ix] Global Fund 2014–2015 field visits and follow-up.

[x] Patients as of March 30, 2015 who have been on ART for more than 12 months.

RESULTS: Retention of children on ART has improved at Riruta. Before 2011, the average loss to follow-up after 12 months was 26 percent, but this figure has dropped to 19 percent (28 percent decrease). Moreover, CD4 counts increased significantly among children, improving fourfold over the period (from 11 percent on average before 2011 to 46 percent after 2011).

EXAMPLE 9-b:

Differentiated schedules for children

Appointment Setting to Scale Up HAART among Children
Dream Center, Langata Sub-county, Nairobi County

PROBLEM STATEMENT: Following changes in the national guidelines that led to expanded and simplified eligibility criteria for ART initiation for children living with HIV, Dream Center staff developed an acceleration plan to have all eligible children initiated on ART.

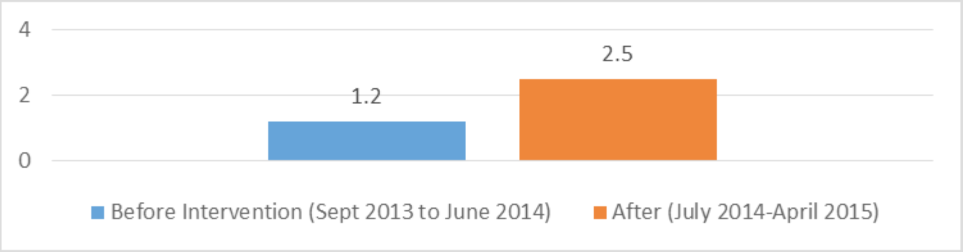
STRATEGY/INTERVENTION: The staff used the facility EMR to generate a list of all eligible children not on HAART, tagged their files, and placed a reminder in their files. They then set monthly ART initiation targets and received refresher training on the new guidelines through CMEs. They scheduled all guardians and parents of eligible children living with HIV for group and individual adherence counseling and HIV disclosure processes. All patients were updated on the new requirements as they attended the clinic and participated in daily health talks and group meetings. Staff participated in monthly review meetings chaired by the clinical coordinator. During the meetings, staff reviewed achievements against targets and shared and addressed challenges.

RESOURCES: No additional staff or supplies were reported.

RESULTS: Before the release of the revised guidelines in June 2014, the site was enrolling, on average, 1.2 patients per month, and 88 percent of eligible children had been initiated on ART. By the end of April 2015, the site had doubled its enrollment to 2.5 patients per month, and as many as 99 percent of eligible children initiated on ART, leaving only three eligible children aged 0–10 years who had not yet been initiated on ART.

Figure 21: Average number of pediatric and adolescent patients enrolled on HAART per month

Figure22: Proportion of children and adolescents eligible and enrolled on ART



2.4.2 Differentiated clinics

What this means: Sites can dedicate waiting areas or clinic space to specific patient groups.

Frequent barriers: Often, all patients are seen by health providers in the same clinic space and wait in the same area. This can lead to overcrowding, and sometimes to stigmatization (e.g., between adolescents and adults)[56,57] and providers can offer only general health talks; individual counseling sessions are limited by staff capacity and space.
By integrating services (e.g., providing HIV care in maternal and child health clinics, TB services in HIV settings, or HIV services in TB settings)[58,59,60] or by dedicating clinics to specific patient groups, it is possible to reduce stigma and improve the efficiency of service provision.

Description of the approach: Typical examples of dedicated spaces include:

- Children's clinic: Staff can progressively specialize to care for children; talks and counseling sessions can be grouped and targeted in a child-friendly environment (e.g., space to play while waiting).
- Adolescent clinic: Adolescents can have a dedicated area with access to targeted communication on prevention and specialized counselors. Adolescents with HIV generally prefer to interact with their peers to share experiences. They value support from peer groups, teen clubs, and providers trained to discuss adolescent-specific issues.
- Antenatal clinic: TB or HIV services can be provided in antenatal clinics , so pregnant women do not have to go to several places within the health facility, thus reducing their waiting time and time away from home.
- TB-HIV co-infected patients' area: Services for HIV and TB, delivered either at the TB clinic or the HIV clinic so patients do not have to go to more than one clinic or facility. Effective TB infection control measures would be essential in both settings.
- TB clinics for drug-resistant patients: Separate space or clinic for drug-resistant TB patients for infection control and to serve their specific needs.

Implementation when space at the facility is limited

Some sites have enough space to dedicate separate rooms to specific patient groups. Sites with limited space have found different ways to dedicate locations to specific groups:

- Waiting or service areas in outdoor spaces or temporary structures (e.g., tents)
- Combining this approach with differentiated schedules
- Providing dedicated space to specific groups on specific days or times of day

Implementation when the target group is small

The above suggestions may not be workable if the target group is small. In such a case, patients who would benefit from this approach could be referred to a nearby facility, with sufficient patients, that can offer dedicated spaces and times for different types of patient. This will require appropriate referral systems that allow the service provider to follow up on the referral and ensure that the patient is receiving treatment at the referral facility.

EXAMPLE 10:

Integrated TB and HIV Clinics

Integrated TB and HIV Clinic: Kericho, Kenya [66]

PROBLEM STATEMENT: In Kenya, TB and HIV patients generally receive their treatment in two separate clinics linked by a referral mechanism. This system increases the wait time for co-infected patients who have to access both sites—and wait twice for treatment.

STRATEGY/INTERVENTION: Aiming to serve co-infected patients better, in 2005 the clinic initiated integrated services that provide TB and HIV treatment at the same delivery point. TB-treatment facilities were expanded to include HIV-treatment facilities; TB staff were trained for ART delivery and HIV counseling; and HIV patients without TB were treated in a separate clinic (situated a few yards away for infection control purposes), to which co-infected TB patients were channeled once cured of TB.

RESOURCES: No additional resources were reported

RESULTS: In 2010, co-infected patients had a TB treatment success rate of 75 percent, vs. 40 percent, before services were integrated in 2005. Loss to follow-up in ART also dropped, from 35 percent in 2005 to 13 percent in 2010.

2.4.3 Differentiated onsite patient flows

What this means: Sites can designate specific service pathways for specific patient groups.

Frequent barriers: In many settings, patients follow the same steps of the patient-management process, whatever the purpose of the visit. For example, new patient files have to be created for new patients, yet returning patients often have to follow the same route, causing frustration and delay (which can discourage clinic attendance). Similarly, returning patients who only need drug refills or laboratory tests may have to go through all the new-patient consultation steps.

Description of the approach: Patient groups that would be eligible for differentiated patient flows need to be identified (e.g., new patients vs. returning patients, stable vs. non-stable). Once identified, sites need to define specific criteria and different clinic flows for each group. Examples of these criteria as observed at sites include:

- New patients (e.g., first visit to the facility)
- Returning new patients (e.g., less than two months on ART, less than three clinic visits for HIV, less than 1 month on TB treatment)
- Returning patients with good adherence record (e.g., fewer than two missed appointments in one year of ART for HIV patients, 100% adherence during intensive treatment phase for TB patients)
- Stable patients (e.g., undetectable viral load, no opportunistic infections)
- Special needs (e.g., pregnant women, children, adolescents, people with HIV-TB co-infection)

Patient flows (pathways) through the site can vary depending on the purpose of the visit and the patient's eligibility to be "fast-tracked," omitting some steps. Different patient flows require processes and tools to ensure that patient records are updated promptly and accurately (e.g., laboratory or pharmacy tracking tools for fast-track patients). Examples of differentiated patient flows could include the following:

- New patients for ART: Enrollment, triage, consultation, pre-ART counseling and adherence counseling sessions, pharmacy, and other required services (e.g., nutritionist, social worker).
- Returning ART patients due for CD4 or viral load tests: Go directly to the laboratory, see clinician to get their results, and then go to the pharmacy.
- Returning stable patients with good adherence records and coming only for drug refill can go directly to the pharmacy.[xiii]
- HIV+ women of reproductive age can also receive cervical cancer screening also during their visit.

[xi] "Fast-tracked" refers to when a patient can skip unnecessary steps of the complete consultation process.

[xii] Fast-tracking can include skipping a step (e.g., registration, consultation, or counseling) and proceeding directly to testing for CD4 count/sputum or to the pharmacy.

[xiii] There are several differentiated care possibilities for managing stable patients; this is the subject of forthcoming WHO guidelines.

Differentiated patient flows increase patient satisfaction by reducing wait times while providing all required health services. This approach allows health workers to focus on patients who need the most attention (e.g., new or unstable patients). From the site perspective, this represents efficiency gains in terms of reduced cost of treatment and increased productivity of workers.

EXAMPLE 11:

Differentiated patient flows

Cervical Cancer Screening
Karuri Sub-county Hospital, Kiambu County, Kenya

PROBLEM STATEMENT: Clinicians at Karuri Sub-county Hospital noted that uptake of cervical cancer screening among eligible HIV-positive women was very low.

STRATEGY/INTERVENTION: Five eligible patients were identified daily and escorted by a peer educator to the maternal and child health clinic, where adequate space was created for cervical cancer screening. Screening was conducted using visual inspection after cervical staining with acetic acid or Lugol's iodine. The results were recorded in the cervical cancer screening register and in the patient screening form, filed in the individual patient folder.

RESOURCES:

- **Staff:** No additional staff were needed.
- **Supplies:** Acetic acid and Lugol's iodine (1 liter of each for every 25 women), gynecologic bed, lamps, speculums
- **Capacity building**: Mentorship and on-the-job training
- **Tools, job aids, and curricula:** Printed and distributed existing job aids, cervical cancer screening register and form, and guidelines on cervical cancer screening

RESULT: Between March and August 2013, screening rates increased from 0.3 percent (1 in 324) to 67.9 percent (220 in 324). Among those tested, 14 percent (33) had suspected lesions and were referred for further assessment as per the division of reproductive health (DRH) screening algorithm.

Based on the case studies described above on differentiated Care and Treatment Approaches, a facility identifying with these performance gaps or who wish to improve on Care and Treatment Approaches may choose to begin implementation using the following guidance.

2.5 How do I start?

The following questions, taken from the KHQIF, can be a helpful guide for health facility teams to narrow the opportunities for improvement in Differentiated Care and Treatment Approaches:

- **What are we trying to accomplish?** In particular, the team should be clear as to whether they are trying to use differentiated schedules, locations, and patient flows to increase the number of people on treatment or the number retained in treatment and care; the number of people who complete treatment successfully (TB patients), or the proportion of patients who are satisfied with their care. This will drive the selection of the approach and the indicators, as well as how they design their approach for differentiated patient flow. It will also help the team shape targets and desired results; certainly, targets set for number or proportion of eligible patients who are on treatment compared with the proportion of those on treatment who are retained on treatment at 6, 12, or 18 months can be different.
- **How will we know that a change represents an improvement?** Having decided on targets and desired results, the team will need to agree on appropriate indicators to measure success, and decide on how often to analyze the data and how best to present the data. Answering this question may also help them think about where the data are being collected, who has access, and what analyses they are doing (or need to do) on a regular basis.
- **What changes will result in improvement?** Patient outcomes will improve only when a change is implemented, but not all changes result in improvement. The team will need to work systematically, using process improvement tools to identify effective changes that will lead to successful implementation of differentiated schedules and patient flows that work for their health facility and the people they serve.

2.5.1 Defining the plan ("Plan")

Key elements of the implementation plan include:

- Identifying a lead person in charge of conducting the analysis, proposing the approach, and reporting on progress
- Devising a clear schedule for implementation, with key milestones
- Planning for communication to staff and patients

Analyses to be conducted before starting include:

- Assessment of which approach is relevant to the site, based on treatment approaches

PRE-IMPLEMENTATION CHECKLIST

Clearly defined:

- **Lead person**
- **Priorities**
- **Work plan**
- **Monitoring plan**
- **Communication plan**

currently in use, populations with increased risk of HIV infection and specific needs (e.g., key populations, infants, children, and adolescents), service accessibility, and patient demographics.
- Prioritization of which relevant approaches should be implemented. It is safer to implement new approaches one at a time, so that staff can more easily manage disruption and sites can learn from the experiment.
- Assessment of current barriers to service delivery.
- Assessment of available resources.

2.5.2 Assessing resource needs

The approaches described in this handbook do not require additional resources for implementation, but they require upfront investments. Sites need to have a clear understanding of requirements for human resources, extra materials/equipment, financial support, and other resource requirements before starting.

This may include the following:
- Training, forming, supervising, and monitoring the approaches: Sites need to ensure that these tasks are clearly defined and assigned to specific staff in the facilities.
- Training staff to conduct group-counseling sessions and targeted health talks.
- Ensuring adequate communication to staff and patients about differentiated service-delivery models (e.g., via signboards, leaflets, or wall posters).
- Needs assessments on questions such as whether the site will implement longer working hours or weekend services and whether additional financial compensation to existing staff or hiring additional staff is needed.
- Upfront investment in extra equipment, TB infection control measures.

2.5.3 Understanding patient group needs and barriers

Sites can rely on patients' and healthcare workers' knowledge to:
- Pre-identify patient groups
- Understand specific needs and constraints for each patient group
- Identify the site's barriers in delivering services to specific groups
- Test the choice of service-delivery model before implementation

Information about needs and barriers relevant to the facility can be obtained through methods such as:

FURTHER READING

HIV/AIDS Alliance Participatory Tools for Community Engagement

WHO Guidelines on Systematic Screening for Active Tuberculosis

WHO Consolidated Guidelines on

Human resource requirements may include extra staff, reallocation of tasks and training for new tasks/processes/tools. Additional resources may include extra equipment for different testing stations and financial resources for human resources/equipment needs.

- Informal discussions during staff meetings or with patients (during exit interviews or as they wait for treatment). These provide insights into patients' preferences and barriers to treatment. Findings need to be synthesized and shared with managers;
- Focus group interviews with health workers (doctors, nurses, volunteers) or specific patient groups. Site managers should identify relevant patients for these groups; a typical focus group would include 5 to 15 people interviewed for 1 or 2 hours. Group facilitation should be either by an external person or a staff member who is experienced in guiding group discussions.
- Surveys: A confidential list of questions can be distributed to staff or patients waiting at the site, and the results are collected and analyzed. Anonymous surveys allow respondents to answer freely and can reach a large number of patients.

Data from patient feedback should be analyzed in relation to the facility's current services to provide a basis for selecting relevant treatment and care options.

EXAMPLE 12:

Focus Group interviews to understand patient needs

The AIDS Support Organization (TASO) Jinja, Uganda
(See Tool 2 for examples of activities conducted during these sessions)

PROBLEM STATEMENT: TASO Jinja is a dedicated urban HIV center in eastern Uganda. In 2014, 26 health workers, half of them volunteers, were serving some 120 patients per day.

STRATEGY/INTERVENTION: TASO Jinja organized four focus groups to establish what was important to patients and identify barriers they faced. Each focus group lasted about 1.5 hours and included a clinician or counselor, the M&E officer, and six to eight people from a single patient group (pregnant women, children, adolescents, or working adults). Discussions aimed to come up with four to five key actions that could improve the user experience.

LEARNING: The focus groups enabled TASO to identify the root causes of low adherence and the drivers of high adherence. The main behaviors patients highlighted were missing one or several appointments, interrupting treatment for a couple of days, and not completing a full visit due to long wait times. Behaviors were dependent on perceptions about the convenience of appointments and quality of service provision (relationship with health workers, health talks).

KEY MESSAGES

- Focus groups provided key information for optimizing ART care and support.
- The focus groups could also be used to get patient feedback to see if selected approaches suit their needs or should be adapted to serve them better.
- Varying membership of focus groups can add fresh perspectives; for example, service users with a community leader as facilitator and no facility staff in attendance could offer different perspectives from a group with perceived "authority figures."

2.5.4 Initiating implementation ("Do")

Defining eligibility criteria and referral procedures

Sites need to define clear criteria that establish which patients can participate in the selected differentiated approaches. For example, the criteria for fast-track drug refills will need adjustment to the local context, but will likely include:
- How long the patient has been on ART: Preferably more than 6–12 months
- How long the patient has been on the current treatment regimen: Preferably at least 3 months
- Demographics: Older than 18 years and not pregnant
- Response to ART: Undetectable viral load, if testing is routinely available; alternatively, demonstrated adherence using an objective measure (e.g., pharmacy records)
- Overall health: No current illness; stable weight/nutritional assessment

Even when patients meet all the criteria, they should make the final decision to participate and should be free to choose the differentiated model they prefer, depending on their clinical care requirements. They may need to be referred back to the health facility for closer monitoring if health issues arise. Any patient can opt to go back to regular ART care within the facility at any point, but there can also be specific procedures for referring patients to the clinician/facility immediately for closer follow-up. Such patients include:

- Patients newly diagnosed with TB or other active opportunistic infections
- Patients with a change in viral load to above 1,000 copies/ml or with other evidence of clinical or immunological failure (e.g., reducing CD4 count)
- Patients with evidence of medication-related toxicity (e.g., anemia)

Familiarization and training of providers

Health workers and other service providers in direct contact with patients need to be familiar with the models, trained to implement the selected approach, and trained to enter data and maintain records that will help in future analysis of results. Regular training sessions should be offered to all new staff.

- Clinicians/nurses/counselors should become advocates for the selected approach, and need to be able to communicate the different options to patients and encourage eligible patients to enroll; they should also know how to transfer or refer patients when relevant.
- Community/primary health workers/expert patients need to understand how the model works and how to use tools to assess and monitor the health status of patients. Before implementation, training should be provided and any concerns should be addressed.

Promoting different models among patients

Existing communication channels should be used to help patients make informed decisions on which option they prefer for treatment and drug delivery. Channels include health talks in waiting areas, support groups, home visits by community health workers, and discussion during clinical consultations.

The information should also be incorporated into adherence counseling sessions, both during ART preparation and in the first few months on ART, so patients know what options are available from the outset. Posters and leaflets at the facility can be used to reinforce information and messages. The main items to communicate are:

- What the available options are
- How these models work
- Who is eligible to participate
- Whom to contact

2.5.5 Monitoring implementation ("Study")

Program managers and site managers should monitor key indicators (see the box at right) to ensure the effectiveness of implementation.Sites need to compare the baseline value (at least six months before implementing differentiated approaches) with values after the approach has been in use for a defined amount of time. The difference between the two sets of values will help assess the effects of the differentiated care approach.

Sites should also track the outcomes and costs of delivering differentiated services. Very often, these indicators are already part of routine data collection systems.

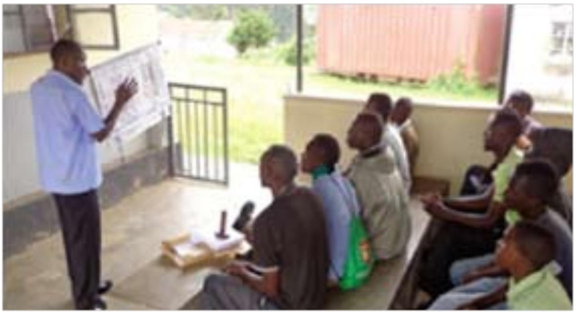


Figure 23: A peer Educator conducting a health talk in a Clinic Waiting Bay

INDICATORS TO MONITOR

Differentiated schedules:

- Percent of HIV-positive adults and children on ART who participate in differentiated schedules for drug pickup

Differentiated Locations:

- Percent of HIV-positive adults and children on ART who participate in differentiated locations for drug pickup

Differentiated onsite patient flows:

- Percent of patients who adhere to differentiated patient flow

Crosscutting indicators:

- Percent of appointments missed
- Percent of patients retained on ART over 12 months
- Percent of patients with virological suppression over 6 months
- TB success rate
- Number of patients receiving care compared with the number of health workers
- Number of patients receiving care per day
- Percent of patients "satisfied" or "very satisfied" with the care they receive
- Average patient waiting time

2.5.6 Modify and Continue Implementation (“Act”)

As the site QI teams study implementation, they may decide that the changes being tested to improve patient treatment and care outcomes would work better if they were modified, or that the change needs to be dropped altogether because it is not improving patient treatment and care or not improving patient outcomes. In this case, the QI teams would plan a new cycle to test a new approach.

If the change works well, the QI team will work with site leadership to adopt the change and make it the method of dealing efficiently with patients along the continuum of care.

2.6 MODULE SUMMARY

This module presented several differentiated care approaches for care and treatment of patients with HIV in Kenya. The approaches presented includes 1) differentiated schedules, which includes adapting or dedicating hours or clinic days for specific client groups; 2) differentiated locations, including providing services to certain groups of clients in a dedicated areas (room, tent) or at separate sites; and 3) differentiated client flows, which refers to having different pathways during a clinic visit for different types of patients. The Module discussed how to go about identifying the opportunities, including a review from the perspectives of the patient, the service provider, and also taking in consideration the size of the client groups. Examples from several counties in Kenya were shared, demonstrating that a thoughtful differentiated approach to care and treatment yields measureable benefits. The module concluded with a discussion of the Plan-Do-Study-Act cycle for adopting/adapting these practices in the daily routine of health services delivery, if a health facility is properly supported to do so.

TOOL 5: Annex 5

Poster of Adherence Club

TOOL 6: Annex 6

Examples of activities conducted during focus group discussions

TOOL 7:

Example of a poster on ARV adherence clubs

Module 3: Differentiated Drug Delivery and Management

MODULE 3 AT A GLANCE

Aim: Improve the efficiency, acceptability and uptake of drug delivery services by developing differentiated options based on patient needs and preferences

Key outcomes:

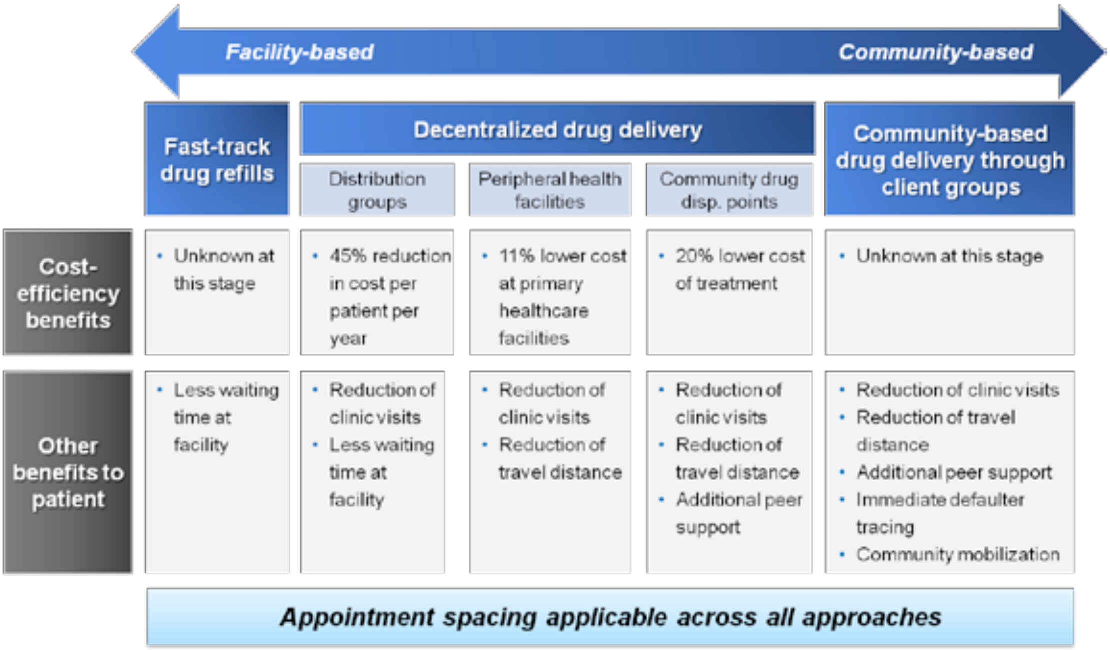
- o Differentiated drug delivery approaches can improve the outcomes, quality and cost-efficiency of treatment by:
- o Improving the quality of service by rationalizing drug refill times and adapting drug delivery to the needs and preferences of patient groups, with improved treatment adherence and success
- o Allowing service providers to focus resources on those in need

3.1 Introduction

This module focuses on differentiated drug delivery approaches. Delivery includes providing (dispensing) drugs to patients as well as ensuring continuous, reliable, and high-quality supplies of drugs and other commodities for treatment and care.

Differentiated drug delivery approaches offer specific and cost-effective opportunities to innovate. They can differ to match the needs and preferences of specific patient groups. Service providers have considerable flexibility for designing options based on service location, frequency of visits, and type of provider. , Specific examples include:

- Facility-based drug delivery, such as:
  - Fast-track drug refill: Patients have direct access to the pharmacy for drug refills (useful for facility-based and community-based models).
  - Facility-based distribution groups: Peer counselors distribute drugs to group members (also possible for community-based adherence clubs).
  - Decentralized drug delivery at peripheral/lower-level health facilities
  - Decentralized drug delivery by health facility staff in communities.
- Community-based drug delivery through patient groups or lay providers.
- Appointment spacing: Supplying drugs for longer periods, thereby reducing the frequency of clinical consultation (for facility- and community-based models).



Facility-based ↔ Community-based

	Fast-track drug refills	Decentralized drug delivery			Community-based drug delivery through client groups
		Distribution groups	Peripheral health facilities	Community drug disp. points	
Cost-efficiency benefits	• Unknown at this stage	• 45% reduction in cost per patient per year	• 11% lower cost at primary healthcare facilities	• 20% lower cost of treatment	• Unknown at this stage
Other benefits to patient	• Less waiting time at facility	• Reduction of clinic visits • Less waiting time at facility	• Reduction of clinic visits • Reduction of travel distance	• Reduction of clinic visits • Reduction of travel distance • Additional peer support	• Reduction of clinic visits • Reduction of travel distance • Additional peer support • Immediate defaulter tracing • Community mobilization

Appointment spacing applicable across all approaches

Figure 24: Summary of approaches for differentiated drug delivery

The following questions, taken from the KHQIF, can be a helpful guide for health facility teams to narrow down the opportunities for improvement in screening and testing. Health facility teams should become clear on:

- **What are we trying to accomplish?** In particular, the team should be clear about whether they are trying to increase the number of people who are on treatment, retained in treatment and care, or remain adherent to treatment regimens; maximize treatment responsiveness; the number of people who complete treatment successfully (TB patients); or the proportion of patients who are satisfied with their care. This will drive the selection of the approach and the indicators, and the design of the approach for differentiated patient flow. It will also help shape targets and desired results; certainly, targets set for the number or proportion of eligible patients who are on treatment, vs. the proportion of those on treatment who are retained on treatment at 6, 12, or 18 months, can certainly be different.

- **How will we know that a change represents an improvement?** Having decided on targets and desired results, the team will need to agree on appropriate indicators that will measure their success, decide on how often to analyze the data, and decide how best to present the data. Answering this question may also help them think about where the data are being collected, who has access to it, and what analyses are they doing with it on a regular basis.

- **What changes will result in improvement?** Patient outcomes will improve only when a change is implemented, but not all changes result in improvement. The team will need to work systematically, using process improvement tools to identify effective changes that lead to successful implementation of differentiated drug delivery options that work for their health facility and patients.

3.2 Identifying differentiated drug delivery opportunities

The following questions will help managers to use available data to identify opportunities to adapt differentiated drug delivery approaches to their context:

What is the profile of patients in my facility?

To address this question, one can look at factors such as:

- Patient composition (e.g., stable patients who have been on treatment for a long time vs. numbers of new patients)
- Personal constraints (e.g., number of patients located in remote communities with long travel time, distance, or high travel costs to the facility)

What barriers are patients or service providers facing?

Substantial loss to follow-up is frequently a feature of HIV and TB treatment, , , influenced by a range of barriers that affect patients and service providers:

- Patient perspective: Examples of typical barriers for access and adherence to treatment include:
  - Physical barriers to access (distance to the facility, difficult travel conditions, poor availability of drugs)
  - Time and cost constraints (remote location, constraining work hours, travel cost, loss of income while accessing health services, long wait times)
  - Stigma from community, family or service provider (lack of privacy, confidentiality or respect)
  - Lack of treatment support from peers, community, or family
- Service-provider perspective: Barriers may include:
  - High volume of patients at the facility, leading to congestion and lengthy wait times for clinical appointments and at the pharmacy
  - Supply chain difficulties (national or local shortages, logistics problems, problems with quantification, ordering and inventory management)
  - Inadequate tools and space for dispensary recordkeeping, storage, and security against theft of drugs
  - Lack of human resources for pharmacy management and dispensing

What are the opportunities to adjust the current service-delivery model?

Sites need to develop approaches that best address patients' needs and constraints, while working around the constraints of service providers—potentially offering several combination options to patients. Any service-delivery model is a combination of three factors, each of which has potential for adjustment:

- Who provides the service (e.g., doctors, nurses, lay community health workers, patients)
- Where the service is provided: At various points in the health centers (regional and district hospitals, health centers, dispensaries, etc.) vs. distribution points in communities or at home
- How often the service is provided (e.g., every 3 months for drug refills, depending on the maximum duration for refills)

Facilities can vary the frequency of visits, type of service provider, or service location to improve patient satisfaction. These should improve retention in care and are observed to be more cost-effective in most instances. Improving drug management systems such as stock control, theft prevention and maintaining effective relationships with suppliers will also support cost-effectiveness, help to maintain consistent service quality and influence retention in care.

Which site contexts are most relevant for implementing these approaches?

All sites should consider differentiated drug delivery approaches, based on patient feedback and interest in uptake of these models, and assessment of available data. However, they are particularly suitable for sites with a high volume of patients or patients traveling from remote areas.

High-volume sites with long waiting times will benefit from innovations that reduce congestion and the time that patients spend at the facility. For patients from remote areas, a differentiated approach could be utilized to bring treatment closer to them and reduce or eliminate their transport costs/times.

Figure 25: Community Health Workers reviewing a drug delivery list

The community context should also be taken into account, for example what levels of stigmatization are there, what peer networks are available? Staff will need to work with patients to understand these factors and help to minimize stigmatization and make optimum use of peer support for adherence and follow-up.

3.3 What are the options?

3.3.1 Appointment spacing

Description of the approach: Appointment spacing can be applied across community- and facility-based approaches. In facilities, frequent clinic visits and follow-ups are often required for all patients, regardless of how long they have been on treatment; sometimes, several check-ups are required even before treatment is started.

Treatment for new HIV patients is monitored closely (e.g., at weekly or biweekly appointments). Established and stable patients typically get the maximum duration of drug refill possible (three months in most settings). TB treatment is monitored weekly during the intensive phase, then every two weeks for the continuation phase.

Based on WHO criteria, sites can offer different appointment frequencies on the basis of the patient's profile. For example, they can offer separate appointments for clinical consultations (once every three or six months) and for drug refills. Frequency of clinical consultations could reduce to once every 6 months for stable HIV patients who have been on treatment for more than 12 months, are virally suppressed, and have good adherence. They can be allowed drug refills for extended periods (e.g., every three months).

For TB patients, the duration of drug refills can vary based on the treatment model. For example, if the patient comes to the facility for directly observed short course (DOTS), then the drugs are given on a daily basis. If the patient chooses to have a family member or community health worker facilitate DOTS, drugs can be provided for one or two weeks (or longer during the continuation phase, if the patient is stable).

EXAMPLE 13:
Appointment spacing

Appointment Spacing
Riruta Health Centre, Riruta, Kenya

PROBLEM STATEMENT: Riruta Health Centre is situated on the outskirts of Nairobi and provides HIV, TB and parent/child healthcare. In 2014, 42 staff members (including 11 volunteer community health workers) served about 120 patients per day.

STRATEGY/INTERVENTION: With large numbers of HIV patients each day, the center realized an opportunity to reduce the frequency of drug refills for their more stable patients who had been on treatment for more than 12 months.

RESULTS: As of February 2015, 50 percent of ART patients had drug-refill durations longer than three months. The percentage of patients lost to follow-up on three- and four-month drug refills was 10 percent and 4 percent, respectively, vs. 26 percent overall for the facility. While there is a bias in the selection of more stable patients with good adherence history, it suggests that appointment spacing does not increase the likelihood of loss to follow-up.

KEY MESSAGES:

- Drug supply planning: Long-term forecasting was needed to ensure adequate drug supplies. The facility realized that although they submitted monthly drug requests to the procurement agency, they had to do quarterly forecasting of their needs to cater to patients receiving three- and four-month drug refills.

- Regular viral load monitoring is needed to track patient health outcomes such as adherence, to ensure there is no deterioration in health despite less frequent clinical interactions.

EXAMPLE 14:

Fast-track refills and appointment spacing

Fast-Track Refills and Appointment Spacing
Homa Bay County Referral Hospital, Homa Bay, Kenya

PROBLEM STATEMENT: Homa Bay County Referral Hospital is a regional Level 5 hospital that has provided ART since 2004, with some 8,000 patients currently on ART. In 2014, 156 health providers and 60 community health workers served about 150 patients per day. The clinic identified a high proportion of stable ART patients.

STRATEGY/INTERVENTION: In November 2014, the staff began offering six-month clinical appointments and fast-track drug refills every three months for stable patients.
Figure 26: Decision-making criteria for appointment spacing in HBCRH

RESULTS: As of May 2015, more than 1,800 patients were enrolled in the six-month appointment-spacing pilot, with encouraging preliminary results in the attendance of expected patients: 83 percent of patients on three-month refills and 86 percent of patients on six-month refills attended their appointments on time.

KEY MESSAGES:

- It took time for clinicians to buy into the new approach. Initially, they were either uncomfortable giving six-month appointments or did not spend enough time sensitizing the patients to it, and uptake was low. When clinicians understood the benefits of the model for the patients and the facility, however, they became vocal advocates.
- Regular reporting in customized templates to track the success and progress of the six-month appointments was important, to track the number of appointments given by clinicians (which highlighted the initial low up-take) and patient attendance.

OBSERVED EFFICIENCY: Data from other sites illustrates some potential cost efficiencies:

- Preliminary cost analysis from TASO in Uganda shows that up to 20 percent cost-efficiency can be achieved by reducing the operational and staff costs of treatment per patient through three-month or six-month drug refills.
- Similar results from the Infectious Diseases Institutes in Kampala, Uganda, showed that cost per person per year fell by nearly 20 percent when stable individuals had three-monthly consultations with a nurse, six-monthly consultations with a physician, and monthly pharmacy-only ART refills, although individual outcomes were similar between patient groups.

[xxi] Qualitative feedback from medication adherence club members and service providers in 2015 in Kibera, Kenya.
[xxii] Qualitative feedback from medication adherence club members and service providers in 2015 in Kibera, Kenya.

3.3.2 Facility-based drug delivery

Fast-track drug refill

Sites can adapt the patients' pathways based on the purpose of their visit and eligibility to skip a few steps. For example, stable ARV patients with a good adherence record could be "fast-tracked" and access the pharmacy directly for refills; they would see the clinician at longer intervals, depending on their condition and treatment protocols. By adapting patient flows to the purpose of patients' visits, average patient time at the facility and service bottlenecks can be reduced. Patient satisfaction is likely to rise and adherence to treatment should improve. [76]

Facility-based drug delivery groups

This involves group distribution of drugs for stable patients attending adherence clubs at the facility. Clubs are facilitated by peer educators or expert patients, with referrals to nurses and/or doctors when required. They also function as peer-support groups. Such groups have been piloted and implemented by *Médecins Sans Frontières* (MSF) and other organizations in several contexts.

The evidence indicates that patients receiving their drugs through such groups have similar health outcomes to those receiving facility-based treatment. The clubs receive positive feedback from patients and service providers alike. , They typically consist of groups of up to 30 patients who meet every few months (according to the maximum drug refills available) for less than an hour.

Participation is offered to all adults who have been on ART for at least 12 months and are considered clinically stable with an undetectable viral load (where available). Essential tasks such as weighing and symptom-based health assessments are provided by a trained peer educator or expert patient who acts as the club facilitator. Assessments are captured in patient records and monitored by clinic staff via a reporting linkage between the club facilitator and the clinic. The club facilitator is also responsible for completing the club register.

Any patient reporting symptoms is referred back to the main ART clinic for prioritized assessment by a nurse. All members of the club see a nurse twice a year: once for blood tests and two months later for an annual clinical check-up.

Observed efficiency: Other data illustrate potential cost efficiencies from onsite clubs:

- A cost-effectiveness study in South Africa showed that the cost per patient year was 45 percent lower in the adherence-club model than in the mainstream model of care.
- The adherence-club model poses fewer barriers to ongoing access to care, with shorter wait times, higher acceptability of services, and fewer missed clinic appointments.

Adherence clubs decongest facilities by shifting consultations and drug collections for stable patients to non-clinical staff (e.g., peer educators). The clubs reduce the time patients spend at the clinic, provide peer support, and offer more flexibility (e.g., meetings on Saturday morning for working adults). For the facility, task-shifting helps reduce the cost of treatment and the workload

EXAMPLE 15:

Medication adherence clubs

Medication Adherence Clubs
Kibera, Nairobi, Kenya [80]

PROBLEM STATEMENT: In Kibera, the health clinic provides primary healthcare, HTS (more than 5,000 active patients), non-communicable diseases (more than 2,000 patients), TB services (about 30 active patients), and maternity services.

STRATEGY/INTERVENTION: In 2013, MSF and the Kenyan MOH introduced medication adherence clubs as an alternative to standard care for stable HIV, diabetic and hypertension patients in Kibera, Nairobi. The clubs enable groups of up to 30 HIV/non-communicable disease patients to collect medication refills every three months on Saturday mornings.

RESOURCES: No additional resources mentioned.

RESULTS: Of 5,028 HIV/non-communicable disease patients at Kibera, 44 percent were eligible and 1,432 (64 percent) enrolled in the clubs. A total of 43 (2 percent) were referred back for clinical care. A total of 109 meetings were held, representing 2,208 individual refills. Patient feedback indicates that participants see the clubs as acceptable, time-saving, and a source of information and peer support.

3.3.3 Decentralized drug delivery

Two options are utilized for drug delivery outside the facility and closer to the community. Both options are still under the supervision of medical staff , and include delivery at existing peripheral health facilities and community drug distribution points.

Decentralized drug delivery at peripheral health facilities

Facilities can decentralize treatment and care to peripheral facilities (e.g., Level 2 health facilities). These facilities refer patients to the higher-level facility in the event of any complications. Patient health outcomes at primary health clinics is typically as good as or better than those at a hospital-based clinic, and the cost of treatment per patient is lower.[81]

Additional logistics and training are needed, so decentralization of drug delivery only makes sense if it serves a specified minimum volume of patients. For instance, a group of 10–15 patients was cost-effective for health posts to provide treatment and care in Senegal. This number will vary depending on context and prevalence; sites should conduct an analysis before planning decentralization.

Decentralized drug delivery in communities by health-facility staff

Facilities can bring drug delivery closer to patients through community drug distribution points. Patients visit the distribution point every two or three months for drug refill and report to the facility every six months, or annually, for clinical tests. The tests could also be facilitated by collecting blood samples at the distribution point and transporting them to the laboratory in the facility for processing.

Observed efficiency: Community-based drug distribution points (CDDPs) are a means of reaching patients in their own communities and reducing treatment costs for the facility. Preliminary analysis shows that CDDP models have a lower cost of service delivery (about a 20 percent reduction in cost per patient per year), while achieving similar or better health outcomes.

MSF launched similar CDDPs in Kinshasa, Democratic Republic of Congo. Three CDDPs were opened throughout the city, enabling 2,500 HIV patients to access ART in their communities. Preliminary research indicates that the cost of the CDDPs is just 40 percent of the cost at a public health center (mainly attributed to lower human-resource expenditures in response to task-shifting). From the patient's perspective, travel costs to attend health centers were estimated at three times higher than travel costs to the CDDPs, and average wait time was 85 minutes at the health centers, compared with just 12 minutes at CDDPs.

EXAMPLE 16-a:
Decentralization

Decentralization of TB Medicines and ART Delivery in Kombewa, Kenya[xxiv]

PROBLEM STATEMENT: Kombewa District Hospital is a high-volume site in Seme Sub-county, Kisumu that needed to decentralize HIV and TB treatment and care services to health centers and dispensaries in order to bring services closer to patients and reduce congestion.

STRATEGY/INTERVENTION: Hospital staff proactively transferred and started managing patients at peripheral facilities from three high-volume facilities in Seme Sub-county (Kombewa, Manyuanda, and Ratta). The process involved matching active patients from catchment areas with another clinic. This was done for newly diagnosed HIV-positive and TB patients as well. These patients were then encouraged to transfer to the nearest clinic. The sub-county also ensured that drugs and all related commodities followed the patient to the transferred clinic and that there was adequate follow-up to ensure proper transfer. At the same time, training and capacity building activities for peripheral facility staff were undertaken to ensure the same level of care was provided to patients.

RESULTS: More than 800 patients have been transferred to peripheral facilities. The share of decentralization varies widely, even across a county. For example, in Kisumu, Seme Sub-county manages about half of all HIV patients and about 40 percent of all TB patients at dispensary level. In contrast, Kisumu West Sub-county manages about 15 percent of HIV patients and about 20 percent of TB patients at dispensary level.

EXAMPLE 16-b:
Decentralization

Decentralized Drug Delivery in Communities
Maseno Mission Hospital, Vigetse, Kenya

PROBLEM STATEMENT: Maseno Mission Hospital noted less than ideal rates of retention and mortality among patients on ART, particularly among patients who lived farther from the facility.

STRATEGY/INTERVENTION: Hospital staff set up a three-day clinic each month as a satellite site in Vigetse community (about 3 hours' walk from Maseno). HIV testing and TB screening are among the services provided. Patients confirmed with TB were transferred to a facility closer to their homes, as it was difficult for them to meet appointments every week at Maseno during the intensive phase. HIV-positive patients were linked to care and initiated on ART, with monthly drug refills at Vigetse.

RESULTS: As of February 2015, about 10 percent (287) of Maseno Mission Hospital's total patients on ART were on the community-based model in Vigetse. These patients on the community model of care have higher retention on ART (91 percent vs. 82 percent for patients treated at the facility) and a lower mortality rate (6 percent vs. 10 percent for the patients treated at the facility).

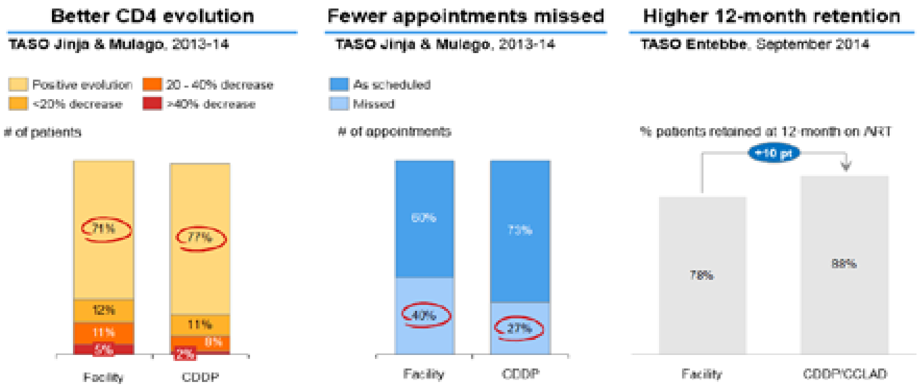
Further evidence from TASO, Uganda

Similar community-based models are seen at TASO in Uganda, where stable patients with HIV on ART receive their drugs and CD4 tests via a CDDP every two to three months in their own communities, from a professional health worker. Expert patients are in charge of supporting adherence and remind patients of appointments. Sixty percent of TASO patients on ART are on community-based models of care. This has contributed to reduced clinic congestion for consultations and reduced wait time for patients. Outcomes from the CDDP model are better than or equivalent to those from facility-based models: better CD4 evolution, fewer appointments missed, and higher 12-month retention.

[xxiii] In French, CDDPs are referred to as Points de Distribution Communautaires (PODIs).

[xxiv] Global Fund field visits in 2014–2015 and follow-ups.

Figure 27: Impact of TASO's CDDP model on outcomes



3.3.4 Community-based drug delivery through patient groups

This out-of-facility approach is similar to the facility-based adherence clubs described above. Members of a group of stable ART patients in a community take turns collecting drugs from the clinic or CDDP and deliver them to individual members; they also provide adherence support and outcome monitoring for one another. Each member receives a clinical consultation and blood tests when they visit the clinic or community point to collect the drug refills, or once a year when the entire group attends together for consultations.

Figure 28: A community Based Drug Delivery Session in Uganda

This model can be adapted in different ways. One variation involves groups electing a leader who is delegated to collect the drugs from the clinic or CDDPs and distribute them to the other group members. The members typically contribute a fee to cover the leader's transport costs. All patients are required to attend the site or the CDDP every 6–12 months for a clinical consultation.

For patients, this model reduces the number of visits for treatment and reduces travel time and costs. Facilities benefit from reduced numbers of patients visiting. Groups also provide additional peer support to patients, the opportunity for immediate defaulter tracing, and the potential for community mobilization. The groups help to maintain and improve patient retention and health outcomes, while reducing the cost of treatment.

EXAMPLE 17:

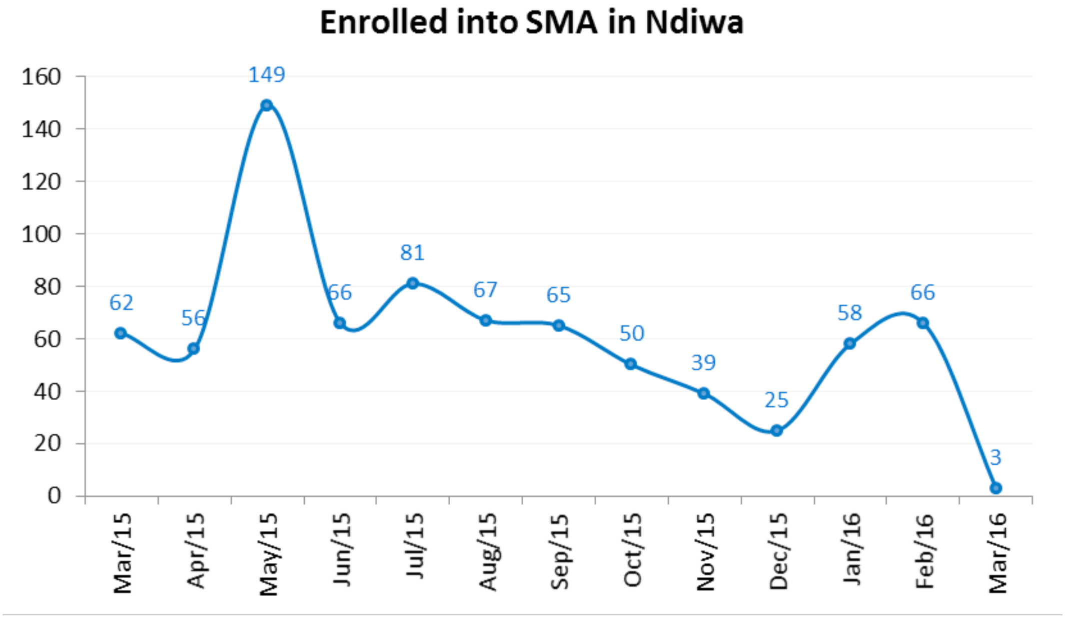
Community ART groups

Community ART Groups Supported by MSF in Ndhiwa, Homa Bay[xxvii, 84]

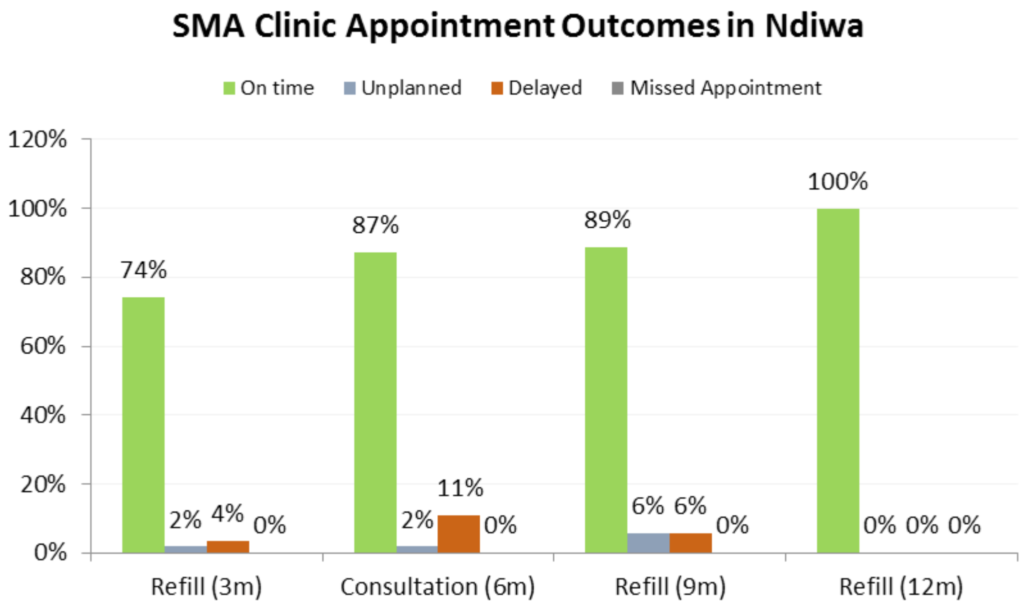
PROBLEM STATEMENT: There is high HIV disease burden in Homa Bay and Ndhiwa Sub-county. A sub-county survey in 2013 revealed that only 6.2 percent of total patients in Ndhiwa were followed at dispensaries and there was congestion in high-volume facilities, affecting the quality of care and increasing workloads for health workers.

STRATEGY/INTERVENTION: MSF, along with the county and sub-county health teams, is piloting community ART groups for stable patients in Ndhiwa Sub-county. Representatives attend sites every second month for drug refills, have clinical consultations once every six months, and viral load tests once every year.

RESULTS: The pilot in Ndhiwa was initiated in 2015 and the evaluation as illustrated below shows improvement in appointment keeping for client cohorts on Six Months Appointment.(SMA)



[xxvii]Global Fund field visits in 2014–2015 and follow-ups.



Results from other countries as illustrated below are equally very promising.
Malawi: In 2012, MSF supported the MOH to implement community ART groups for stable patients. At the end of 2013, more than 1,500 patients on ART were regrouped in more than 250 community ART groups, supported by four sites in the rural area around the town of Thyolo. Site support consists of setting up the groups, training members, and monitoring activities. The average number of ART refill visits per person per year dropped from 6.5 to 2.6 (62 percent) in 20 months—the period starting 10 months before the groups were implemented CAGs to 10 months after. The MOH is considering implementing community ART groups across Malawi.

– Mozambique: MSF piloted the community ART groups for stable patients in 2008 and supported the national rollout in 2012. As of September 2013, more than 8,000 patients had been enrolled in the groups. The 12-month ART retention rate for patients in community ART groups is 98 percent (vs. Mozambique's national average of 74 percent).

EXAMPLE 18:
School-based support for adolescent ART adherence

Matter Comprehensive Care Center, Nairobi County, Kenya

PROBLEM STATEMENT: Staff at Mater Comprehensive Care Center noted that just over half (55 percent) of all adolescents on treatment were considered adherent (95 percent of pills taken).

STRATEGY/INTERVENTION: The staff used a multi-pronged approach to involve the school in helping 20 adolescents deal with being HIV-positive and taking medicines while in school. They worked with peer mentors to integrate health education programs in school clubs and reached out to teachers and parents during annual general meetings. They also held a seminar with teachers and matrons during the school holidays to help improve their ability to create a stigma-free environment. They held transition sessions for parents of children going from primary to secondary school and those leaving secondary school to help them develop an ideal plan for continuing with treatment and identify what support they might need. They then encouraged each parent-child pair to connect directly with a teacher or matron (who had participated in the sessions) to support the child on adherence to ART.

RESOURCES:

- Staff: Eight peer mentors, five staff, youth social workers, youth counselor, statistical information team
- Supplies: Transport, peer education incentive, refreshments, flipcharts, markers, pens, notebooks
- Tools, job aids, curricula: Tuko Pamoja curricula adopted; partnership with gender-based violence programs to facilitate; life-skills education curriculum for primary and secondary school; phone calls to follow up

RESULTS: Adherence rates increased from 55 percent to 75 percent post-intervention.
Figure 29: Before-and-after adherence among adolescents

3.4 How do I start?

3.4.1 Defining the plan ("Plan")

Key elements of the implementation plan include:

- Identifying a lead person in charge of conducting the analysis, proposing the approach, and reporting on progress
- Devising a clear schedule for implementation, with key milestones
- Planning for communication to the staff and to the patients
- Conducting analyses before start-up, including:
- Assessment of which approach is relevant to the site among the options, based on current treatment approaches, populations with increased risk of HIV infection and specific needs (e.g., key populations, infants, children, and adolescents), accessibility of services, and demographics of patients.

PRE-IMPLEMENTATION CHECKLIST

Clearly defined:

- **Lead person**
- **Priorities**
- **Work plan**
- **Monitoring plan**
- **Communication plan**

- Prioritization of which relevant approaches should be implemented. It is generally safer to implement new approaches one at a time, so that staff can more easily manage disruption, and sites can learn from the experiment.
- Assessment of current barriers to service delivery
- Assessment of available resources.

3.4.2 Assessing resource needs

Resource needs for differentiated treatment approaches may require some reallocation of resources or a minimal upfront investment in training and/or additional materials, including:

- Training, forming, supervising and monitoring the approaches: Sites need to ensure that these tasks are clearly defined and assigned to specific staff in the facilities.
- Training staff to conduct group-counseling sessions and targeted health talks.
- Ensuring adequate communication to staff and patients about differentiated service-delivery models (e.g., via signboards, leaflets, or wall posters).
- Needs assessments on questions such as whether the site will implement longer working hours or weekend services, and whether additional financial compensation to existing staff or hiring additional staff is needed.
- Upfront investment in extra equipment, TB infection control measures.

3.4.3 Understanding patient groups' needs and barriers

Sites can rely on patients' and healthcare workers' knowledge to:

- Pre-identify patient groups
- Understand specific needs and constraints for each patient group
- Identify the site's barriers in delivering services to specific groups
- Test the choice of service-delivery model prior to implementation

Information about patient needs and barriers relevant to the facility can be obtained through methods such as:

- Informal discussions during staff meetings and with patients (during exit interviews or as they wait for treatment). These provide insights into patients' preferences and barriers to treatment. Findings need to be synthesized and shared with managers.
- Focus group interviews conducted with health workers (doctors, nurses, volunteers) or specific patient groups. Site managers should identify relevant patients for these groups. A typical focus group would include 5–15 people interviewed for 1–2 hours. Group facilitation should be done either by an external person or a staff member who is experienced in guiding group discussions.
- Surveys: A confidential list of questions is distributed to staff or patients waiting at the site, and the results are collected and analyzed. Anonymous surveys allow respondents to answer freely and can reach a large number of patients.

Example of Group interviews conducted at TASO Jinja – see Annex 2 for examples of activities conducted during those sessions

Description: TASO Jinja is a dedicated HIV peri-urban center in Uganda. In 2014, 26 health workers, half of them volunteers, served ~120 clients per day.

What TASO did: TASO Jinja organized 4 focus groups to establish what matters to clients and identify barriers they face. Each focus group lasted ~1.5 hours and included a clinician or counsellor, the monitoring and evaluation officer, and 6-8 people from a single client group. The groups were pregnant women, children, adolescents, and working adults.

Learnings: The focus groups enabled TASO to identify the root causes of low adherence and the drivers of high adherence. The main behaviors highlighted by clients were: missing one or several appointments, interrupting treatment for a couple of days, and not completing a full visit on-site owing to long waiting times. These positive behaviors were driven by convenience of appointments and quality of service provision (relationship with health workers, health talks). These focus groups could also be used to get client feedback on selected approaches to see if it suits their needs or should be adapted in a different way to better serve them.

Once patient feedback is received, the data should be analyzed in relation to the facility's current services in order to serve as the basis for selecting relevant treatment and care options.

3.4.4 Initiating implementation ("Do")

Defining eligibility criteria and referral procedures

Sites need to define clear criteria that establish which patients can participate in the selected differentiated approaches. For example, the criteria for fast-tracking drug refills will need adjustment to the local context, but will likely include:

- How long the patient has been on ART: Preferably more than 6–12 months)
- How long the patient has been on the current treatment regimen: Preferably at least three months)
- Demographics: Older than 18 years and not pregnant
- Response to ART: Undetectable viral load, if testing is routinely available; alternatively, demonstrated adherence using an objective measure (e.g., pharmacy record)
- Overall health: No current illness, stable weight/nutritional assessment

Even when patients fulfill all the criteria, they should make the final decision to participate. The doctor will be able to offer options based on the patient's clinical status, and the patient should be free to choose from these options, depending on their personal circumstances and preferences.

Patients may need to be referred back to the health facility for closer monitoring if any health issues arise. Any patient can opt to go back to regular ART care within the facility at any point, but there can also be specific procedures for referring patients to the clinician/ facility immediately for closer follow-up. Such patients include:

- Patients newly diagnosed with TB or other active opportunistic infections
- Patients with a change in viral load to more than 1,000 copies/ml or with other evidence of clinical or immunological failure (e.g., reducing CD4 count)
- Patients with evidence of medication-related toxicity (e.g., anemia)

Example of Group interviews conducted at TASO Jinja – see Annex 2 for examples of activities conducted during those sessions

Description: TASO Jinja is a dedicated HIV peri-urban center in Uganda. In 2014, 26 health workers, half of them volunteers, served ~120 clients per day.

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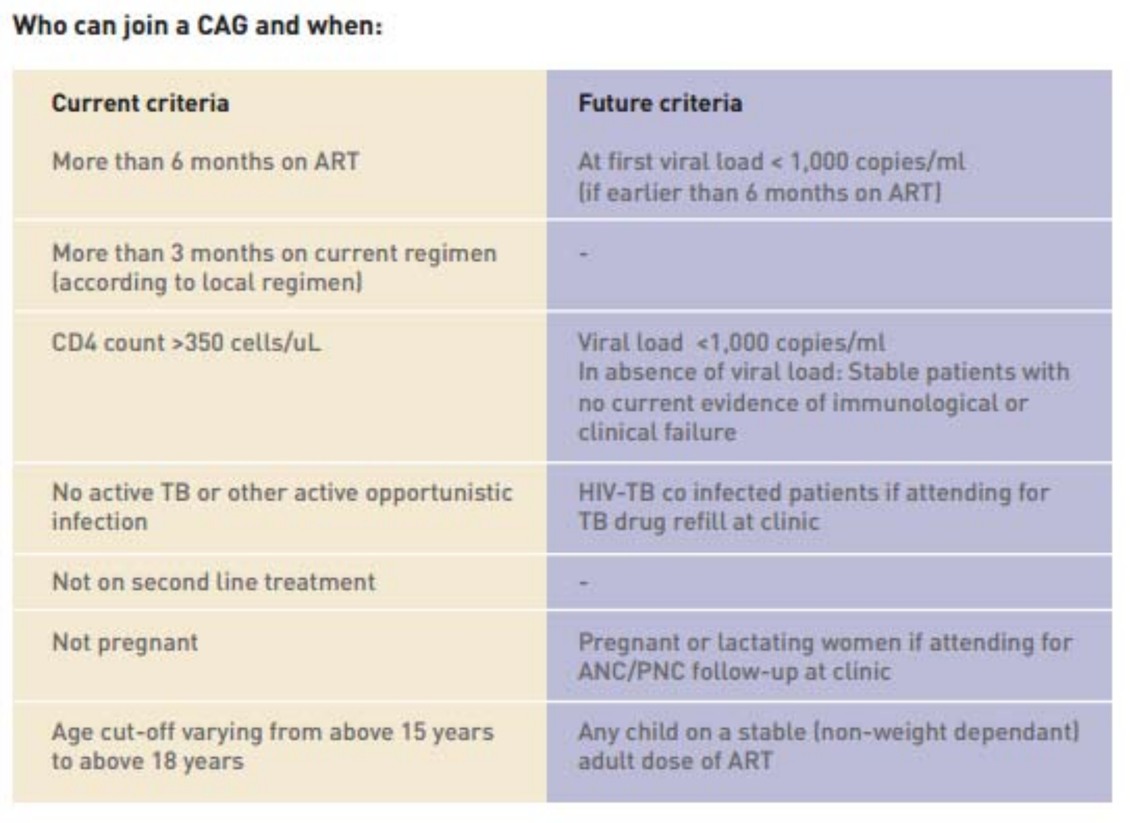
Learnings: The focus groups enabled TASO to identify the root causes of low adherence and the drivers of high adherence. The main behaviors highlighted by clients were: missing one or several appointments, interrupting treatment for a couple of days, and not completing a full visit on-site owing to long waiting times. These positive behaviors were driven by convenience of appointments and quality of service provision (relationship with health workers, health talks). These focus groups could also be used to get client feedback on selected approaches to see if it suits their needs or should be adapted in a different way to better serve them.

[xxix] Community ART Group Toolkit. How to implement the CAG model. Médecins Sans Frontières, Dec. 2013
[xxviii] Global Fund 2015 field visit



Who can join a CAG and when:

Current criteria	Future criteria
More than 6 months on ART	At first viral load < 1,000 copies/ml (if earlier than 6 months on ART)
More than 3 months on current regimen (according to local regimen)	-
CD4 count >350 cells/uL	Viral load <1,000 copies/ml In absence of viral load: Stable patients with no current evidence of immunological or clinical failure
No active TB or other active opportunistic infection	HIV-TB co infected patients if attending for TB drug refill at clinic
Not on second line treatment	-
Not pregnant	Pregnant or lactating women if attending for ANC/PNC follow-up at clinic
Age cut-off varying from above 15 years to above 18 years	Any child on a stable (non-weight dependant) adult dose of ART

Even when clients fulfill the criteria, they may need to be referred back to the health facility for closer monitoring if any health issues arise. Any client can opt to go back to regular ART care within the facility at any point, but in addition, there can be specific procedures for referring clients to the clinician / facility immediately for closer follow-up. Such clients include:

- Clients newly diagnosed with TB or other active opportunistic infections
- Clients with a change in viral load to above 1000 copies/ml or with other evidence of clinical or immunological failure (e.g. reducing CD4 count)
- Clients with evidence of medication-related toxicity (e.g. anemia)

3.4.5 Familiarization and training of providers

Service providers or health workers in direct contact with clients need to be familiarized with the models and to be trained for implementing the selected approach. Specifically:

- Clinicians / nurses: They should become advocates for the selected approach, and must be able to communicate the different options to the clients and encourage the eligible clients to enroll in them; they should also know how to transfer or refer out the clients when relevant.

- Health workers / expert clients: They need to understand the functioning of the model and the use of tools to assess and monitor the health status of clients in their group. Training should be provided before the implementation in order to address any concerns, and regular training sessions should be offered to new staff members.

As detailed in Annex 5, there are specific additional tasks that different cadres of workers will need to perform as part of implementing these approaches.

TOOL 7: Annex 7
Additional tasks for differentiated drug delivery

Promoting different models among patients
As mentioned in Module 2, patients need sufficient information to help them to make informed decisions on their preferred options for treatment and drug delivery. Health talks in waiting areas, support groups, home visits by community health workers, discussions with a clinician, and adherence counseling sessions can all be used to help with decision making. Messages can be reinforced through posters and leaflets available at the facility and from community organizations.

The main items of information to communicate are:
- What options are available
- How these options work
- Who is eligible to participate in specific options
- Whom to contact

3.4.6 Planning for drug supply and operations management

Where the facility wants to implement appointment spacing and fast-tracking, the pharmacy needs to be equipped with sufficient drug supplies to provide three to four months of treatment to patients (based on the maximum duration of drug refill allowed by national guidelines). For the other models, it is important to ensure that peripheral sites and communities receive the right quantity of drugs, with a proper system in place to ensure drug quality and manage constant supply.

There are three steps to ensuring the required sufficient and flexible drug supply:
- Planning: Plan and order the required drug quantities in advance, based on the number of patients and the change in supply that the selected approach involves (e.g., a longer refill duration may require moving from monthly to quarterly or annual planning of drug supply).
- Managing transport and logistics: Approaches that relocate drug delivery to peripheral sites or use community-based models will need drugs that are pre-packed or dispensed for individual patients (e.g., CDDPs and community ART groups).

- Tracking consumption: The pharmacist might need new tools, or adjustments to existing tools, to track drugs supplied outside the facility and monitor them against the quantity delivered to the patients.

3.4.7 Monitoring implementation ("Study")

Both program managers and site managers should monitor key indicators to ensure the effectiveness of implementation. Sites will need to compare baseline values (at least six months before the implementation of differentiated approaches) with the actual values when the approach has been used for a defined amount of time. The differences will help with assessing the effects of differentiated drug delivery.

Sites should also track the outcomes and costs of delivering differentiated services. Very often, these indicators are already part of routine data collection systems.

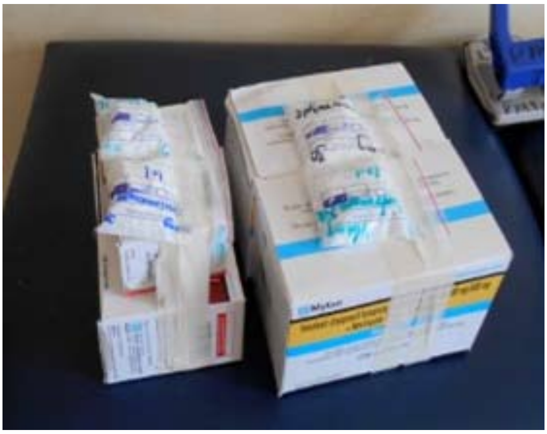


Figure 31: Samples of pre-packed and Labelled drugs to be distributed to clients in the community

3.4.8 Modify and continue implementation ("Act")

As the site QI teams study the implementation process, they may find the need to modify the processes and approaches associated with the differentiated approaches they are testing to improve drug delivery outcomes. They may also find that certain approaches work better than others, and that some should be dropped altogether because they are not improving ART drug delivery or patient outcomes. In such cases, the QI teams would again plan a new cycle to test a new approach. If the change works well, the QI team will work with their site leadership to adopt the change and make it the way to deal efficiently with drug delivery.

In addition, sites need to develop standard tools and processes for each approach to monitor their respective implementation. Examples of tools include:

- Client register customized to monitor the membership (e.g. membership to service-delivery models) and appointments of the clients, and to identify defaulting members
- Group monitoring form for the community ART groups to monitor the attendance and health status of group members
- Reports to the facility (e.g. quarterly or monthly) to follow progress of the clients and ensure no deterioration in health outcomes

3.4.8 Modify and continue implementation (“Act”)

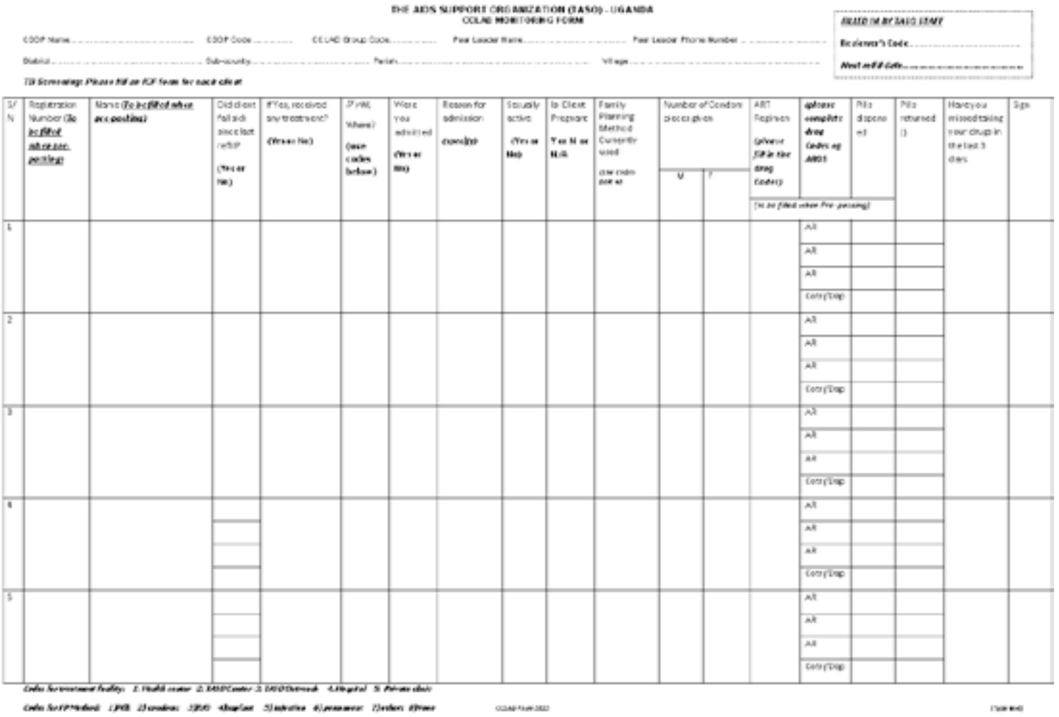
INDICATORS TO MONITOR

Appointment spacing:
- Percent of stable HIV-positive adults and children on ART who receive 3 months’ supply of ARV
- Percent of stable HIV-positive adults and children on ART who receive 6 months’ supply of ARV

Facility-based drug delivery:
- Percent of stable HIV-positive adults and children who are fast-tracked to pharmacy for drug refill
- Percent of stable HIV-positive adults and children on ART who receive ART drug refill through Adherence clubs

Decentralized drug delivery:
- Percent of HIV-positive adults and children who receive ART refill at their nearest health facility
- Percent of HIV-positive adults and children who receive ART refill through community-based patient groups

Crosscutting indicators:
- Percent of appointments missed in patient group over time (1 month, 3 months, 6 months, 12 months)
- Retention of different client groups over 12 months
- Percent of patients with virally suppressed (6 months, 12 months)
- New smear positive TB treatment success rate [HIS113]
- Number of patients receiving care compared with the number of health workers,
- Number of patients receiving care per day
- Percent of patients “satisfied” or “very satisfied” with the care they receive
- Average patient waiting time



THE AIDS SUPPORT ORGANIZATION (TASO) - UGANDA
CCLAD MONITORING FORM

3.5 MODULE SUMMARY

This module presented several differentiated care approaches for drug delivery and laboratory services management. Three types of approaches were presented: First, facility based drug delivery, and community-based drug delivery. For facility-based drug delivery, recommended approaches were 1) fast-track drug refill, in which stable patients have direct access to the pharmacy for drug refills without having to go through a clinician at every visit; 2) facility –based distribution groups, in which peer counselors distribute drugs to group members; 3) decentralized drug delivery at peripheral or lower level health facilities, in which patients have to travel less to pick up their medicines, and 4) decentralized drug delivery by health facility staff in communities. Second, community-based drug delivery in which drugs are delivered through patient groups or by lay providers. Third, appointment spacing, during which stable patients are supplied with drugs for a longer period of time, thus reducing the frequency of clinical consultations. The Module discussed how to go about identifying the opportunities, including a review from the perspectives of the patient, the service provider, and also taking in consideration the size of the client groups. Examples came from a number of counties in Kenya, including Homa Bay, Nairobi and Kisumu, but also from partners in neighboring countries, specifically TASO from Jinja and Mulago, Uganda. They all demonstrate feasibility of these approaches, and some with results on key indicators like retention to care and treatment. The module concluded with a discussion of the Plan-Do-Study-Act cycle for adopting/adapting these practices in the daily routine of health services delivery, if a health facility is properly supported to do so.

Annex – tools for developing differentiated approaches

Annex 1: Example of survey to identify client groups' preferences and needs

- Are you a male / female? **MALE** **FEMALE**

- If a female, are you pregnant? **Yes** **No**

- How old are you?

- What is your occupation?

……………………………………………………………………………………………

- Are you infected with TB / HIV? **Yes** **No**

- How often do you come to the site?

- How much time do you spend at the site on average?

- How far from the site do you live?

……………………………………………………………………………………………

- How long does it take you to reach the site?

……………………………………………………………………………………………

- Have you ever missed an appointment? **Yes** **No**

If yes, why? ……………………………………………………………………………………		
While waiting at the site, do you feel disturbed by other clients? Please elaborate	Yes	No
Do you choose the time of your visit based on the type of client you expect to be with you at site?	Yes	No
Do you feel comfortable when interacting with health workers?	Yes	No
Do you feel that they listen to you and understand your needs?	Yes	No
Do you consider health workers to be fully competent to treat you?	Yes	No
While at the site, do you think that you spend enough time with doctors?	Yes	No
Do you feel you spend enough time with clients?	Yes	No
Do you think that you have all the equipment you need for carrying out your tasks?	Yes	No
Do you feel you need additional support from peers to carry out your tasks?	Yes	No
Do you feel your client interactions (including health talks) are	Yes	No

focused enough to address clients' specific needs?

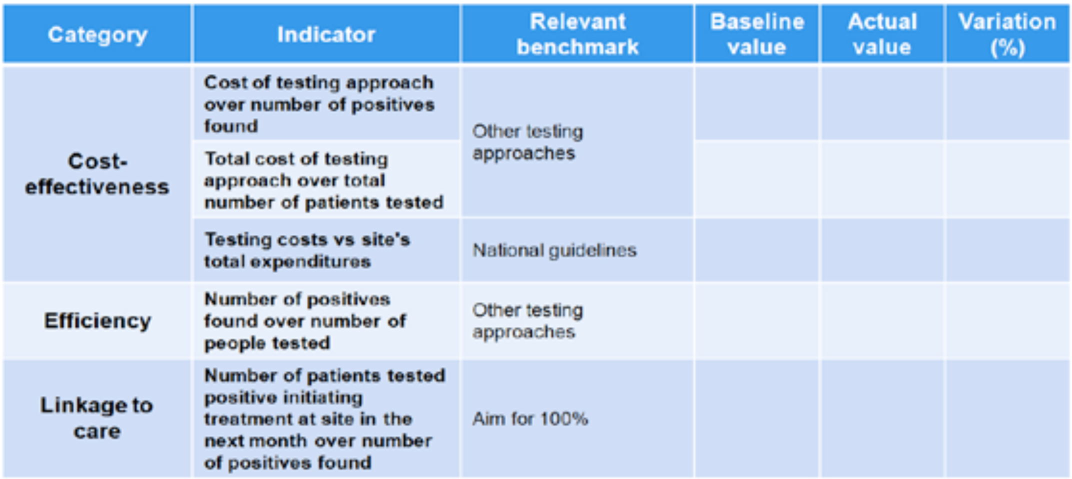
Annex 2: Template to measure average waiting time at the site per client

The following is a template that sites can use to measure waiting time at the site and client satisfaction with service delivery. With this information, sites can assess the importance of waiting-time management to improve client satisfaction.

Patient #	At what time did you arrive at the facility? (a.m. or p.m.)	Time of departure / exit	How satisfied are you regarding your health-status improvement over the last 12 months / since you started your treatment	How satisfied are you regarding services delivered by the facility?
1			😀 🙂 😐 😕 ☹	😀 🙂 😐 😕 ☹
2			😀 🙂 😐 😕 ☹	😀 🙂 😐 😕 ☹
3			😀 🙂 😐 😕 ☹	😀 🙂 😐 😕 ☹
4			😀 🙂 😐 😕 ☹	😀 🙂 😐 😕 ☹
5			😀 🙂 😐 😕 ☹	😀 🙂 😐 😕 ☹
6			😀 🙂 😐 😕 ☹	😀 🙂 😐 😕 ☹

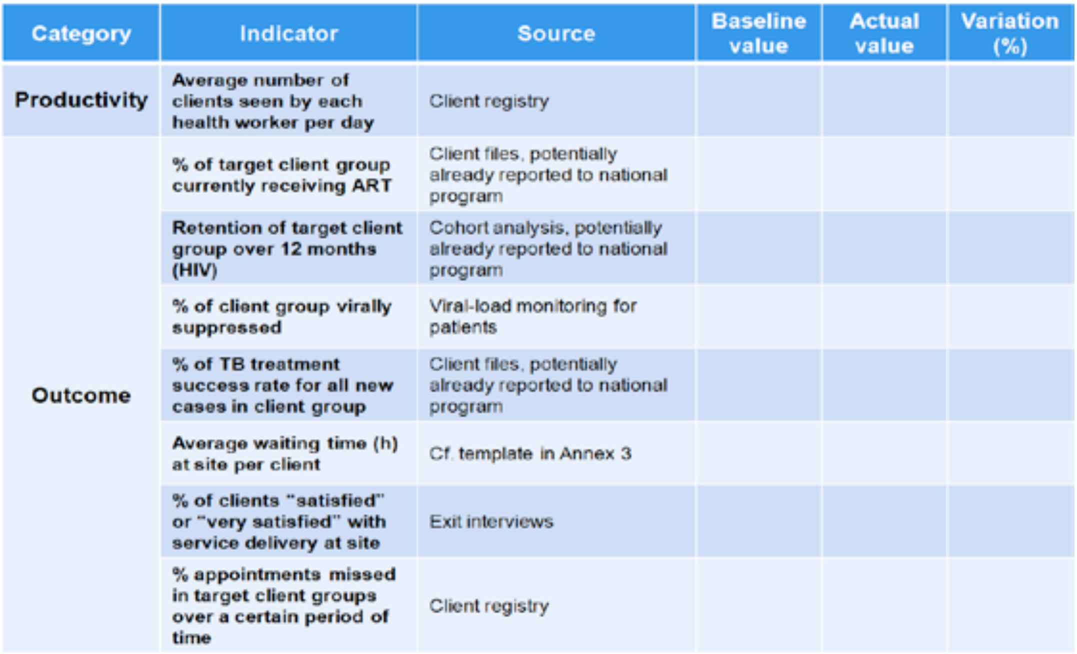
Annex 3: Examples of tables to monitor implementation of differentiated care practices

Table for differentiated screening and testing approaches



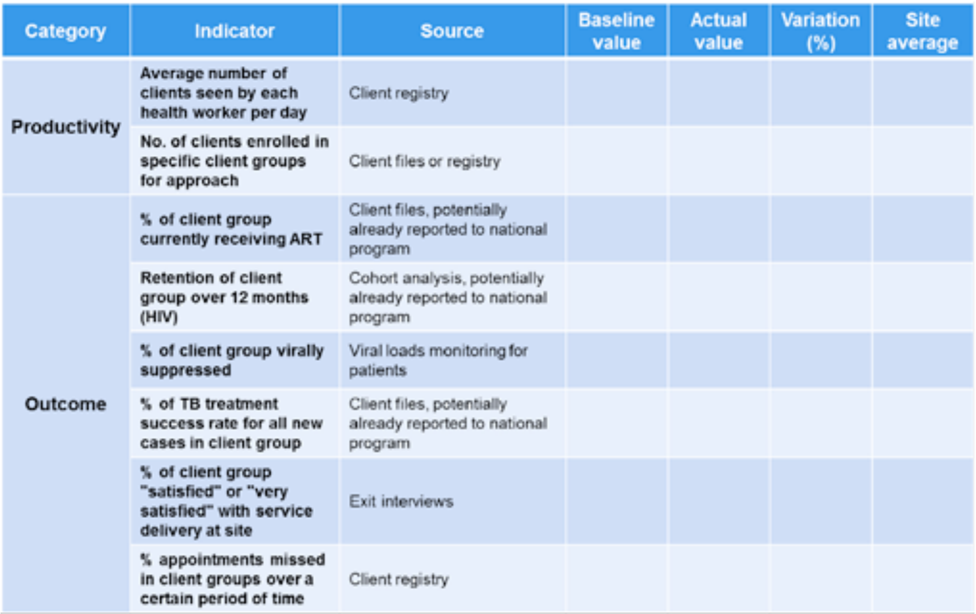
Category	Indicator	Relevant benchmark	Baseline value	Actual value	Variation (%)
Cost-effectiveness	Cost of testing approach over number of positives found	Other testing approaches			
	Total cost of testing approach over total number of patients tested				
	Testing costs vs site's total expenditures	National guidelines			
Efficiency	Number of positives found over number of people tested	Other testing approaches			
Linkage to care	Number of patients tested positive initiating treatment at site in the next month over number of positives found	Aim for 100%			

Table for differentiated treatment and care approaches



Category	Indicator	Source	Baseline value	Actual value	Variation (%)
Productivity	Average number of clients seen by each health worker per day	Client registry			
Outcome	% of target client group currently receiving ART	Client files, potentially already reported to national program			
	Retention of target client group over 12 months (HIV)	Cohort analysis, potentially already reported to national program			
	% of client group virally suppressed	Viral-load monitoring for patients			
	% of TB treatment success rate for all new cases in client group	Client files, potentially already reported to national program			
	Average waiting time (h) at site per client	Cf. template in Annex 3			
	% of clients "satisfied" or "very satisfied" with service delivery at site	Exit interviews			
	% appointments missed in target client groups over a certain period of time	Client registry			

Table for Differentiated drug delivery approaches



Category	Indicator	Source	Baseline value	Actual value	Variation (%)	Site average
Productivity	Average number of clients seen by each health worker per day	Client registry				
	No. of clients enrolled in specific client groups for approach	Client files or registry				
Outcome	% of client group currently receiving ART	Client files, potentially already reported to national program				
	Retention of client group over 12 months (HIV)	Cohort analysis, potentially already reported to national program				
	% of client group virally suppressed	Viral loads monitoring for patients				
	% of TB treatment success rate for all new cases in client group	Client files, potentially already reported to national program				
	% of client group "satisfied" or "very satisfied" with service delivery at site	Exit interviews				
	% appointments missed in client groups over a certain period of time	Client registry				

Annex 4: PDSA Guide (adapted from the Institute for Healthcare Improvement)

The Plan-Do-Study-Act method is a way to test a change that is implemented. By going through the prescribed four steps, it guides the thinking process into breaking down the task into steps and then evaluating the outcome, improving on it, and testing again. Most of us go through some or all of these steps when we implement change in our lives, and we don't even think about it. Having them written down often helps people focus and learn more.

For more information on the Plan-Do-Study-Act, go to the IHI (Institute for Healthcare Improvement) Web site

Keep the following in mind when using the PDSA cycles to implement the health literacy tools:

- **Single Step** - Each PDSA often contains only a segment or single step of the entire tool implementation.
- **Short Duration -** Each PDSA cycle should be as brief as possible for you to gain knowledge that it is working or not (some can be as short as 1 hour).
- **Small Sample Size -** A PDSA will likely involve only a portion of the practice (maybe 1 or 2 doctors). Once that feedback is obtained and the process refined, the implementation can be broadened to include the whole practice.

Filling out the worksheet

Tool: Fill in the tool name you are implementing.
Step: Fill in the smaller step within that tool you are trying to implement.
Cycle: Fill in the cycle number of this PDSA. As you work though a strategy for implementation, you will often go back and adjust something and want to test if the change you made is better or not. Each time you make an adjustment and test it again, you will do another cycle.

PLAN

I plan to: Here you will write a concise statement of what you plan to do in this testing. This will be much more focused and smaller than the implementation of the tool. It will be a small portion of the implementation of the tool.

I hope this produces: Here you can put a measurement or an outcome that you hope to achieve. You may have quantitative data like a certain number of doctors performed teach-back, or qualitative data such as nurses noticed less congestion in the lobby.

Steps to execute: Here is where you will write the steps that you are going to take in this cycle. You will want to include the following:

- The population you are working with – are you going to study the doctors' behavior or the patients' or the nurses'?
- The time limit that you are going to do this study – remember, it does not have to be long, just long enough to get your results. And, you may set a time limit of 1 week but find out after 4 hours that it doesn't work. You can terminate the cycle at that point because you got your results.

DO

After you have your plan, you will execute it or set it in motion. During this implementation, you will be keen to watch what happens once you do this.

What did you observe? Here you will write down observations you have during your implementation. This may include how the patients react, how the doctors react, how the nurses react, how it fit in with your system or flow of the patient visit. You will ask, "Did everything go as planned?" "Did I have to modify the plan?"

STUDY

After implementation you will study the results.

What did you learn? Did you meet your measurement goal? Here you will record how well it worked, if you meet your goal.

ACT

What did you conclude from this cycle? Here you will write what you came away with for this implementation, if it worked or not. And if it did not work, what can you do differently in your next cycle to address that. If it did work, are you ready to spread it across your entire practice?

Examples

Below are 2 examples of how to fill out the PDSA worksheet for 2 different tools, Tool 17: Get Patient Feedback and Tool 5: The Teach-Back Method. Each contain 3 PDSA cycles. Each one has short cycles and works through a different option on how to disseminate the survey to patient (Tool 17: Patient Feedback) and how to introduce teach-back and have providers try it. (Tool 5: The Teach-Back Method).

PDSA (plan-do-study-act) worksheet

Name of Organization

Date City

Selected improvement area (identify only one per worksheet)

Organizational Commitment_____ Community ____ Residents and Families ____

Prevention Strategies ____ Treatment ____ Assessment and Monitoring __X__

TOOL: Patient Feedback **STEP:** Dissemination of surveys **CYCLE:** 1st Try

PLAN

I plan to: *We are going to test a process of giving out satisfaction surveys and getting them filled out and back to us.*

I hope this produces: *We hope to get at least 25 completed surveys per week during this campaign.*

Steps to execute:

1. *We will display the surveys at the checkout desk.*
2. *The checkout attendant will encourage the patient to fill out a survey and put it in the box next to the surveys.*
3. *We will try this for 1 week.*

DO

What did you observe?

- *We noticed that patients often had other things to attend to at this time, like making an appointment or paying for services and did not feel they could take on another task at this time.*
- *The checkout area can get busy and backed up at times.*
- *The checkout attendant often remembered to ask the patient if they would like to fill out a survey.*

STUDY

What did you learn? Did you meet your measurement goal?

We only had 8 surveys returned at the end of the week. This process did not work well.

ACT

What did you conclude from this cycle?

Patients did not want to stay to fill out the survey once their visit was over. We need to give patients a way to fill out the survey when they have time.

We will encourage them to fill it out when they get home and return back to us on a separate visit that may not necessarily be clinical –we'll arrange to have these collected at the customer desk.

PDSA (plan-do-study-act) worksheet

TOOL: Patient Feedback **STEP:** Dissemination of surveys **CYCLE:** 2nd Try

PLAN

I plan to: *We are going to test a process of giving out satisfaction surveys and getting them filled out and back to us.*

I hope this produces: *We hope to get at least 25 completed surveys per week during this campaign.*

Steps to execute:

1. *We will display the surveys at the checkout desk.*
2. *The checkout attendant will encourage the patient to take a survey and an envelope. They will be asked to fill the survey out at home and mail it back to us.*
3. *We will try this for 2 weeks.*

DO

What did you observe?

- *The checkout attendant successfully worked the request of the survey into the checkout procedure.*
- *We noticed that the patient had other papers to manage at this time as well.*
- *Per Checkout attendant only about 30% actually took a survey and envelope.*

STUDY

What did you learn? Did you meet your measurement goal?

We only had 3 surveys returned at the end of 2 weeks. This process did not work well.

ACT

What did you conclude from this cycle?

Some patients did not want to be bothered at this point in the visit – they were more interested in getting checked out and on their way.

Once the patient steps out of the building they will likely not remember to do the survey.

We need to approach them at a different point in their visit when they are still with us – maybe at a point where they are waiting for the doctor and have nothing to do.

PDSA (plan-do-study-act) worksheet

TOOL: Patient Feedback **STEP:** Dissemination of surveys **CYCLE:** 3rd Try

PLAN

I plan to: *We are going to test a process of giving out satisfaction surveys and getting them filled out and back to us.*

I hope this produces: We hope to get at least 25 completed surveys per week during this campaign.

Steps to execute:

1. *We will leave the surveys in the exam room next to a survey box with pens/pencils.*
2. *We will ask the nurse to point the surveys out/hand then out after vitals and suggest that while they are waiting they could fill out our survey and put it in box.*
3. *We will see after 1 week how many surveys we collected.*

DO

What did you observe?

- *Upon self report, most nurses reported they were good with pointing out or handing the patient the survey.*
- *Some patients may need help reading survey but nurses are too busy to help.*
- *On a few occasions the doctor came in while patient filling out survey so survey was not complete.*

STUDY

What did you learn? Did you meet your measurement goal?

We had 24 surveys in the boxes at the end of 1 week. This process worked better.

ACT

What did you conclude from this cycle?

Approaching patients while they are still in the clinic was more successful. Most patients had time while waiting for the doctor to fill out the survey.

We need to figure out how to help people who may need help reading the survey.

PDSA (plan-do-study-act) worksheet

Name of Organization
Date City

Selected improvement area (identify only one per worksheet)

Organizational Commitment_____
Prevention Strategies ____
Community ____
Treatment ____
Residents and Families ____
Assessment and Monitoring ____

TOOL: **STEP:** **CYCLE:**

PLAN

We plan to:

We hope this produces:

Steps to execute:

DO

What did you observe?

STUDY

What did you learn? Did you meet your measurement goal?

ACT

What did you conclude from this cycle?

PDSA (plan-do-study-act) worksheet

TOOL: **STEP:** **CYCLE:**

PLAN

We plan to:

I hope this produces:

.

Steps to execute:

DO

What did you observe?

STUDY

What did you learn? Did you meet your measurement goal?

ACT

What did you conclude from this cycle?

Annex 5: Examples of activities conducted during focus groups

TASO Jinja is a dedicated HIV peri-urban center in Uganda. There, 26 health workers, half of them volunteers, serve ~120 clients per day.

In May 2015, TASO Jinja organized 4 focus groups to identify what matters to clients and the barriers they are facing.

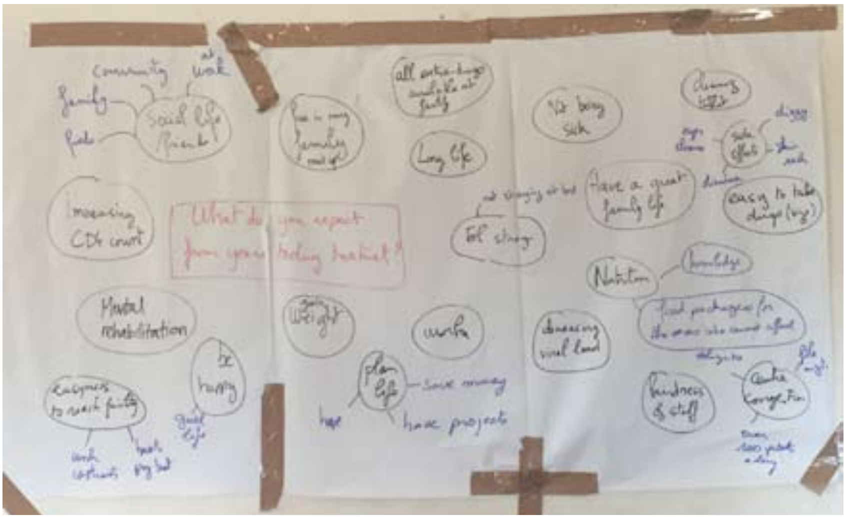
Facilities selected groups of 8 to 12 patients, who participated in an open discussion with facilitators chosen by the facility.

Each session lasted approximately two hours and comprised 4 major activities, including:

- **Roundtable (20 mins)**: Patients were asked to introduce themselves by giving their name, age, work and marital status and year of treatment initiation. In addition they were asked if they had missed an appointment since the beginning of treatment, or had forgotten to take their pills once or several times over the past three months.

- **Mind-mapping (60 mins)**: Facilitators started by asking patients: “What do you expect from your treatment at TASO?” Patients were invited to give their opinion and share their experience. Key insights / inputs / ideas were written on the board.

Figure 11: Output of mind-mapping at the first focus group conducted at TASO Jinja

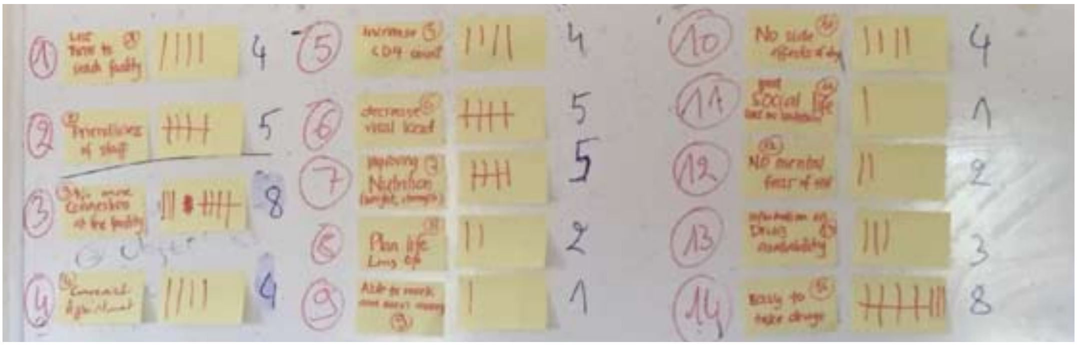

community
at work
family
Social life
Increasing CD4 count
What do you expect from your treatment?
Mental rehabilitation
be happy
good life
Weight
Long life
work
plan life
save money
have projects
Not being sick
Have a great family life
Feel strong
easy to take drugs
side effects
Nutrition
knowledge
Food packages for those who cannot afford
decreasing viral load
kindness & staff
save money

- **Emotional faces (20mins)**: Facilitators showed patients photos of people conveying different emotional expressions, and asked them to propose an interpretation of what the people could be thinking with regard to their treatment. This activity enabled patients to remember personal experiences and share concrete aspects of their life in treatment.

Figure 12: Examples of photos shared with patients

- **Outcome prioritization (20mins)**: The last activity consisted of asking patients to select the top five items identified during the focus group, in order to enable the facility to prioritize outcomes.

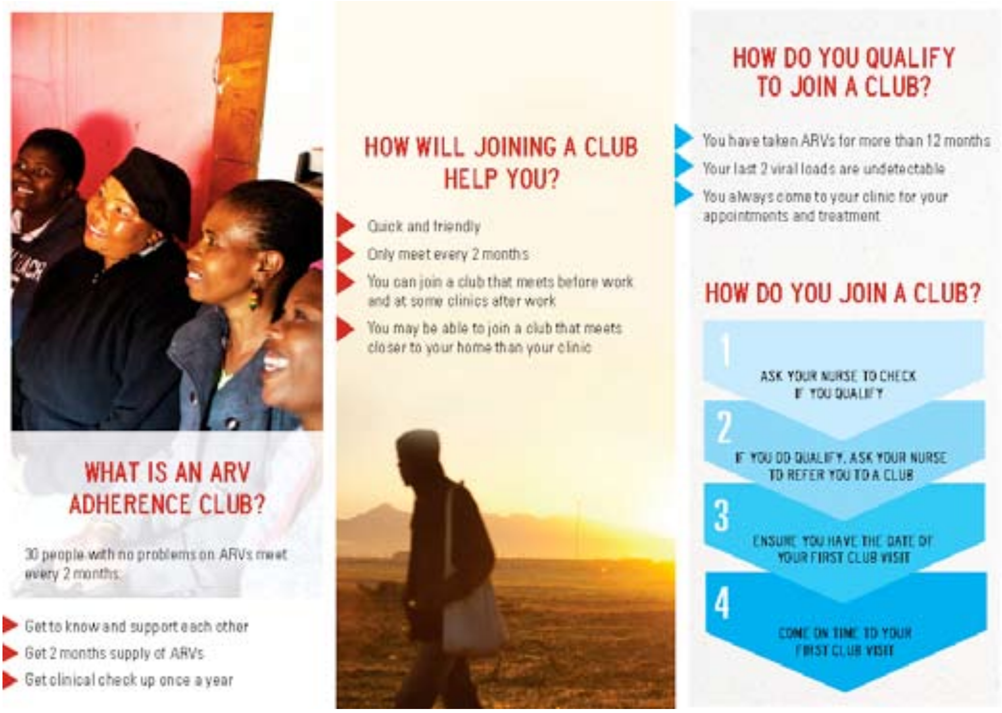
Figure 13: Prioritization exercise


1
4
2
Promotions of staff
5
3
8
4
4
5
Increase CD4 count
4
6
decrease viral load
5
7
Improving Nutrition
5
8
Plan life
2
9
1
10
No side effects of drugs
4
11
Social life
1
12
No mental fears
2
13
Information on Drugs availability
3
14
Easy to take drugs
8

Overall, this exercise enabled TASO Jinja to identify the drivers for treatment adherence amongst clients.

These focus groups can also be used to get client feedback on the proposed changes to the service delivery models (e.g. special clinic days or different flows) and understand if they address their needs and constraints or if the services should be adapted differently.

Annex 6: Example of a poster on ARV adherence clubs



WHAT IS AN ARV ADHERENCE CLUB?

30 people with no problems on ARVs meet every 2 months.

- Get to know and support each other
- Get 2 months supply of ARVs
- Get clinical check up once a year

HOW WILL JOINING A CLUB HELP YOU?

- Quick and friendly
- Only meet every 2 months
- You can join a club that meets before work and at some clinics after work
- You may be able to join a club that meets closer to your home than your clinic

HOW DO YOU QUALIFY TO JOIN A CLUB?

- You have taken ARVs for more than 12 months
- Your last 2 viral loads are undetectable
- You always come to your clinic for your appointments and treatment

HOW DO YOU JOIN A CLUB?

1. ASK YOUR NURSE TO CHECK IF YOU QUALIFY
2. IF YOU DO QUALIFY, ASK YOUR NURSE TO REFER YOU TO A CLUB
3. ENSURE YOU HAVE THE DATE OF YOUR FIRST CLUB VISIT
4. COME ON TIME TO YOUR FIRST CLUB VISIT

Annex 7: Additional tasks required by Differentiated drug delivery

Differentiated drug delivery approaches may require that the tasks of some non-medical staff (e.g. counselors, CHWs, expert patients) be adapted. MSF has highlighted the importance of recognizing these "lay cadres,"[xxx] as they contribute greatly to the service delivery for HIV and TB by supporting testing and counseling, adherence-counseling and community-based delivery models.[xxxi] There is a need for a framework to systematically recognize, train, supervise and include them in the national policies.[xxxii]

Additional tasks and support for appointment spacing / fast track

- Receptionist: perform triage by identifying clients coming for drug refills, finding their records, and directing them to pharmacy
- Pharmacist: dispense drugs for longer periods as agreed with prescribers (planning and ensuring drugs' availability – refer to Module 3, section 3.5 on drug-supply planning)
- Clinician: monitor progress of clients to ensure that health outcomes are maintained and ensure pharmacy staff are kept informed of any prescription changes

Additional tasks and support for adherence clubs

- Nurse / Counselor: identify and train expert clients to facilitate the club
- Data clerk / M&E manager: collect, verify and enter data collected during the health assessments at the clubs

Additional tasks and support for drug distribution at lower-level facilities

- Clinician / Nurse: train relevant staff in these facilities; transfer-out existing clients or refer new clients and monitor progress in initial months
- Pharmacist: liaise closely with clinicians/nurses and ensure that drugs and other commodities are delivered to the peripheral facility, and track usage

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[xxx] "Lay cadre" is a term used to describe any health worker who performs functions related to healthcare delivery; he or she is trained in the context of the intervention, and has no formal professional or paraprofessional certificate or degree in tertiary education – as defined in Lewin 2010:
Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases. Lewin S et al., Cochrane Database Syst Rev 3:CD004015, 2010

[xxxi] *Consolidated guidelines on general HIV care and the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach*. Geneva: WHO, 2013. Available from: http://apps.who.int/iris/bitstream/10665/85321/1/9789241505727_eng.pdf
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A qualitative assessment of a community antiretroviral therapy model in Tete, Mozambique. Rasschaert F at al., , PLos One 20;9(3):e91544e. 2014
Community-supported models of care for people on HIV treatment in sub-Saharan Africa. Bemelmans M et al., Tropical Medicine & International Health 19;8:968-977, 2014.

[xxxii] Lay Counsellors' report by MSF in April 2015

Additional tasks and support for community drug distribution points

- Nurse / Counselor: dispense drugs, measure patient's weight and conduct symptom-based general health assessments
- Expert clients: provide peer support and counseling at the time of drug distribution
- Pharmacist: liaise with supervisors of expert clients and community health workers, plan for required drug supplies on the specific days, and ensure safe transportation of packages
- Clinician / Nurse: support team on six-monthly appointments to collect blood samples and conduct health assessments

Additional tasks and support for community ART groups

- Expert clients: dispense drugs, measure weight and conduct symptom-based general health assessments; provide counseling and support while dispensing drugs
- Nurse / Counselor: identify and train expert patients to facilitate the club
- Pharmacist: pre-pack drugs for individual patients marked with their name and details, and ensure safe transportation of packages
- Data clerk / M&E manager: collect, verify and enter data collected from the health-assessment forms completed by expert patients

Glossary

ANC: antenatal clinic

ART: anti-retroviral therapy (for HIV)

CAG: community ART group

CCLAD: community client-led ART delivery

CDDP: community drug-distribution point

Client flow / patient flow: the movement of patients at the health facility, from one station to another, from the moment they enter until the moment they exit

Client segmentation: grouping of clients into subgroups that share similar characteristics, face similar constraints, or have similar needs

Confirmed cases: people infected by HIV or TB

Decentralization: the process of delegating or transferring significant authority and resources from the central ministry of health to other institutions or to field offices of the ministry at other levels of the health system (provincial, regional, district, sub-district, primary health-care post, and community)

Differentiated treatment and care: service-delivery models that are adapted to address the specific requirements of a subgroup of clients

DOTS: Directly Observed Treatment, Short-course (TB): a TB control strategy recommended by the World Health Organization[xxxiii]

Health facilities: centers where health services are delivered; they can range from small health posts to larger dispensaries or hospitals. In this document, the terms *facilities* and *sites* are used interchangeably.

HTS: HIV Testing and Screening

Index testing: a focused approach in which the household and family members (including children) of people diagnosed with HIV are offered HIV testing services; also referred to as *index case HIV testing*

Integration: the co-location and sharing of services and resources across different disease areas. In the context of HIV, this may include the provision of HIV testing, prevention, care and treatment services alongside other health services, such as TB, STI or viral-hepatitis services, antenatal care, contraceptive and other family-planning services, and screening and care for other conditions, including non-communicable diseases

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[xxxiii] http://www.who.int/tb/dots/whatisdots/en/

Key populations: defined groups that, owing to specific higher-risk behaviors, are at increased risk of HIV irrespective of the epidemic type or local context. These guidelines refer to the following groups as key populations: men who have sex with men (MSM), people who inject drugs, people in prisons and other closed settings, sex workers, and transgender people.

Lay community health worker: any person who performs functions related to health-care delivery and has been trained to deliver specific services but has not received a formal professional or paraprofessional certificate or tertiary education degree

MSF: Médecins Sans Frontières

MSM: men who have sex with men (aka males who have sex with males)

OI: opportunistic infection

PODI: community distribution point for ART (from "POint de DIstribution communautaire")

Prevalence: the proportion of a population infected with HIV / TB

Sites: see *health facilities*

Stable patient (HIV): (definitions vary from site to site: but would typically involve one or more of the criteria listed here) a patient receiving ART for at least 6–12 months, without treatment regimen change for at least three months, with undetectable viral load and no disruption in ART adherence.

Sero-discordant couple: a couple in which one partner is HIV-positive and one is HIV-negative

Task-shifting: a process of delegation in which tasks are conducted, where appropriate, by less specialized health workers

TASO: The AIDS Support Organization, an HIV service organization working alongside the Ministry of Health in Uganda

VMMC: voluntary medical male circumcision

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