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RESEARCH AND EVALUATION REPORT

Improving quality of HIV services and health worker performance in Tandahimba District, Tanzania: An evaluation

JULY 2013

This evaluation report was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) and authored by Hellen Maggige (consultant), Macdonald Kiwia (URC), Stella Mwita (URC), Yohana Mkiramweni (URC), Kim Ethier Stover (URC), Anna Nswila (Ministry of Health and Social Welfare, Tanzania), and Davis Rumisha (URC). The evaluation was funded by the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and carried out under the USAID Health Care Improvement Project (HCI), which is made possible by the support of the American people through USAID.

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DISCLAIMER

The views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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TABLE OF CONTENTS

List of Tables and Figures	i
Abbreviations.....	ii
EXECUTIVE SUMMARY	iii
I. INTRODUCTION.....	1
A. Evaluation Objectives.....	3
II. METHODOLOGY.....	3
A. Site Selection.....	3
B. Data Collection Tools.....	3
C. Sample Sizes.....	5
D. Data Collection Methods.....	5
E. HIV Care and Health Worker Performance Improvement Intervention.....	6
III. RESULTS	10
A. Organization of the Improvement Collaborative.....	10
B. Improvement Activities and Tools.....	11
C. Quality of Care Indicators	12
D. Changes in the Organization of Service Delivery.....	17
E. Changes in Performance Management.....	19
F. Effects on Health Worker Productivity and Engagement.....	21
IV. CHALLENGES	24
A. Staff Absence.....	24
B. Work Environment.....	24
C. Performance Evaluation.....	24
D. Incentives	25
V. CONCLUSIONS AND RECOMMENDATIONS	26
VI. REFERENCES	30
APPENDICES.....	31
Appendix 1: Health Worker Interview	31
Appendix 2: Site Manager Interview	35
Appendix 3: Example of a Job Model.....	39
Appendix 4: Example of a Job Description.....	40
Appendix 5: Example of Individual Workplan.....	41
Appendix 6: Example of Competence Model.....	42

List of Tables and Figures

Table 1: Characteristics of evaluated facilities.....	4
Table 2: Number of respondents per site, by cadre.....	5
Table 3: Overview of facility-level goal and activities of the HIV care and health worker performance improvement collaborative	7
Figure 1: Original process map for care and treatment services, Mahuta Health Center.....	9
Figure 2: Process map of improved care and treatment services, Mahuta Health Center.....	9
Figure 3: Percent of pregnant women attending ANC who tested positive for HIV and enrolled into CTC	13
Figure 4: Percent of exposed children under 18 months receiving daily Cotrimoxazole prophylaxis	14

Figure 5: Percent of HIV-positive patients on ART that are lost to follow-up.....	15
Figure 6: Percent of HIV-positive patients assessed for active TB at every visit.....	16
Figure 7: Percent of HIV patients from CTC receiving CD4 test once every six months	17
Figure 8: Average client waiting and contact time, three facilities.....	18
Figure 9: Overall average waiting and contact time before and after intervention	18
Figure 10: Areas in which health workers felt they need more training, baseline and evaluation.....	20
Figure 11: Changes in productive and unproductive time, 1 hospital and 3 health centers, Tandahimba (n=12 providers).....	22
Figure 12: Productive time by providers before and after the collaborative improvement intervention (n=15).....	22
Figure 13: Health provider productivity levels (n=15).....	23

Abbreviations

AIDS	Acquired immune deficiency syndrome
AMO	Assistant Medical Officer
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
ASSIST	USAID Applying Science to Strengthen and Improve Systems Project
CD4	Cluster of differentiation 4
CHMT	Council Health Management Team (District Level)
CTC	Care and Treatment Center
HBC	Home-based care
HC	Health center
HCI	USAID Health Care Improvement Project
HEI	HIV-exposed infant
HIV	Human immunodeficiency virus
HR	Human resources
HRH	Human resources for health
MCHA	Maternal Child Health Assistant
MOHSW	Ministry of Health and Social Welfare
OI	Opportunistic infection
OPRAS	Open Performance Review and Appraisal System
PLWH	People living with HIV
PMTCT	Prevention of mother-to-child transmission
QI	Quality improvement
RCH	Reproductive and Child Health
RHMT	Regional Health Management Team
STI	Sexually transmitted infection
TB	Tuberculosis
URC	University Research Co., LLC
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing

EXECUTIVE SUMMARY

The USAID Health Care Improvement Project (HCI) and Tanzania's Ministry of Health and Social Welfare (MOHSW) implemented an improvement collaborative aimed at improving the quality of HIV services and health worker performance in 12 health care facilities in Tandahimba District starting in June 2010. Tandahimba is one of six districts in the Mtwara Region, where a larger improvement collaborative to improve clinical processes related to antiretroviral therapy (ART) and prevention of mother-to-child transmission of HIV (PMTCT) had started in September 2009. The goal of the Tanzania HIV Care and Health Worker Performance Improvement Collaborative was to improve the efficiency of service delivery for patients receiving services related to HIV and to strengthen the performance and engagement of health workers providing HIV services.

The collaborative applied human resources management practices to address factors affecting health worker performance and improvement methods to strengthen the processes in the delivery of HIV services. The collaborative aimed to improve: enrollment of pregnant women attending ANC who tested positive for HIV in care and treatment centers (CTC); cotrimoxazole prophylaxis uptake among HIV-exposed children; screening for active TB among HIV-positive patients seen at CTC; CD4 testing every six weeks; retention in care and treatment of clients on ART; and performance, productivity and engagement of health workers providing HIV care. The human resources aspects focused on improving performance management, addressing the first three of seven steps in a performance management cycle: 1) establishing achievable workloads, clear expectations, and measurable objectives; 2) assuring health workers had the knowledge and skills necessary to accomplish the required tasks; and 3) providing frequent feedback to health workers on their performance according to defined expectations.

As implemented by HCI and the MOHSW, the HIV and health worker performance improvement collaborative was a coordinated effort of multiple quality improvement (QI) teams to implement changes in the process of how care is organized as well as changes to address factors affecting performance. QI teams were made up of facility staff who implemented the interventions at their facilities and who met periodically at learning sessions to share results, achievements, and lessons learned. These teams were supported in their improvement work by coaches, who in this case were improvement advisors from HCI as well as health care managers from the region who visited the facilities to provide assistance and on-the-job training in both the clinical and QI aspects of the work.

This report presents the findings of an evaluation of the collaborative performed in November 2011. The evaluation had four objectives: 1) document the process of and lessons learned in implementing changes to improve care and health workforce management, 2) assess workers' awareness of their roles and responsibilities and the impact the changes had on the way they work, 3) document changes in the way services were delivered and in process indicators, and 4) determine whether workers' productivity and engagement¹ improved. Engagement was assessed because research has shown that increased engagement of health workers can result in improved patient satisfaction, health worker retention, morale, and clinical measures.

The evaluation covered nine facilities (a district hospital, three health centers, and five dispensaries, all similar to facilities assessed in the baseline). Four site managers completed questionnaires specifically for them, and 16 health workers completed another for them. In addition, 12 workers were observed to measure their time use, and 20 completed a questionnaire on engagement. Finally, 25 clients at the hospital and two health centers were followed by data collectors as the clients visited the facility seeking care; the collectors recorded information on how long the clients waited, their time with providers, etc.

¹ In Tanzania, "health worker engagement" was defined as the extent to which health care providers proactively self-improve and apply their competencies to provide quality services with commitment, ethics and care to achieve organizational goals.

The QI teams created process maps to understand current service delivery processes and design better ways to do so. Based on revised processes, they developed job models and job descriptions, work plans of daily tasks and deliverables, and competency models for each worker listing gaps in knowledge/skills that needed to be addressed to ensure competent service delivery.

The evaluation also looked at data collected by the 12 participating sites for five quality of care process indicators. Improvements occurred in four of the five indicators between July 2010 and August 2012: The percentage of pregnant women attending antenatal care who tested positive for HIV and enrolled into CTC per month increased from 81% to 100%; the percentage of patients assessed for active TB increased from 35% to 98%; the percentage of exposed children under 18 months receiving daily cotrimoxazole prophylaxis increased from 13% to 95%; and the percentage of HIV-positive patients on ART that are lost to follow-up each month declined from 7% to 1%. The percentage of HIV-positive patients receiving a CD4 test every six months declined due to CD4 equipment failure.

In order to achieve these results, teams made changes in the care delivery processes, such as reallocating tasks among providers in the CTC, including tasks for outreach workers; reorganizing the care delivery steps to enroll women immediately following testing, rather than referring for follow-up appointment; and improving record-keeping, such as adding a “TB result” column to the ART card. Other improvements were made in human resources management. All 57 health workers involved in the collaborative now have job descriptions for their HIV- and PMTCT-related tasks, as compared to two who had job descriptions at baseline. Team members report having clearer roles and expectations for their work, better teamwork, and more involvement in decision-making. As of December 2011, 88% of staff said they were highly motivated compared to 67% at baseline in July 2010; 85% of health workers felt strongly that they knew what was expected of them, while only 56% had at baseline. Task shifting helped reduce wait times, but high staff absences continue. More than 80% of health care workers reported reduced workloads; tasks were mostly shifted from higher level staff to those at lower levels. For example, medical attendants’ productive time rose from 63% to 90%.

The evaluation found that overall the collaborative helped improve providers’ work planning, engagement, and service delivery. The evaluation team makes several recommendations to further improve the results. The intervention tools, such as competency models, were found to be difficult for providers to understand, so greater clarity is recommended. The implementation approach—especially QI team meetings and coaching and mentoring visits—was seen as very helpful and should be continued. With regard to focus on HIV services, the evaluation applauds success in improving task distribution, teamwork, supervision, follow-up with clients, and use of data to improve service delivery. Going forward, all facility staff should be involved, not just those providing HIV services.

While task shifting had balanced workloads more evenly, absences related to off-site training, vacations, and sickness and overall staff shortages remain problems that require intervention at higher management levels. Productivity, on the other hand, was seen as a facility-level problem that could be addressed at that level, through deliberate efforts by coaches and QI teams. Health providers felt that they understood the interventions well enough to sustain them at their facilities and could see the value of doing so, both in terms of workloads and improved services for clients. Recommendations to foster the interventions’ continuation include having QI coaching become part of the district supportive supervision checklist, expansion of the intervention to include all staff, and continuation of the monthly QI team meetings to monitor indicators and plan improvements.

Finally, the evaluation recommends that efforts continue to address other aspects of human resources management, including improving the work environment, rewarding performance, and career development, and that support be provided by the RHMT and CHMTs for scaling up the HIV and health worker performance improvement intervention to the rest of the region. Suggestions are made relative to supervision and coaching, components that should be spread, distinctions that should be made between large and small facilities, and working with other organizations.

I. INTRODUCTION

The USAID Health Care Improvement Project (HCI) and Tanzania's Ministry of Health and Social Welfare (MOHSW) began applying collaborative improvement to ensure the delivery of high quality HIV care to clients in the Mtwara Region in June of 2009. The aim of the collaborative in Mtwara was to improve the quality of antiretroviral therapy (ART) and prevention of mother-to-child transmission (PMTCT) services.

One problem area identified as key to improving the quality of HIV care was the management of human resources. In collaboration with the MOHSW, HCI conducted a baseline assessment of HIV service providers in Mtwara to gather information on health worker productivity and engagement.² The assessment took place in six sites from June 30–July 6, 2010 (see Wittcoff et al. 2011) and produced the following key findings:

- Providers observed spent 36% of their total time on direct patient care and 19% on indirect patient care. Providers thus spent 55% of their time caring for patients, 8% of their time on meetings/administration and 4% on cleaning/preparation.
- Five of six surveyed site managers said that staff absences occur on a regular basis ranging from 1-3 staff absences per week. All six site managers said that providers at their site have to work more than their scheduled hours.
- When providers were asked individually if they had written job descriptions that clearly defined their tasks and responsibilities, 73% said no (11/15) and 27% said yes (4/15).
- Lab staff and nurse/midwives were found to be engaged in their work, while clinical officers, counselors, and other personnel fell just below the threshold for engagement. Nurse assistants and pharmacist/dispensers were found to be somewhat disengaged.
- While a large percentage of health workers had received training within the past year, 80% did not feel that they received adequate training on a regular basis.
- Although health workers were being supervised, they did not appear to be receiving feedback about their performance on a regular basis: 7% of providers said they received feedback once a week, 13% once every two weeks, and 20% once a month. Half (47%) of providers responded 'other' when asked about frequency of feedback, which included the following: no feedback given, immediately on specific tasks, every two months, after supervision visits, and during performance evaluations. The other 13% did not respond to the question.
- Only 27% of the providers interviewed said they had ever received a performance evaluation.

The baseline assessment highlighted some specific areas which could be improved including clarifying roles and responsibilities through written job descriptions that clearly align their tasks and goals, developing clear processes for feedback and performance evaluation, and increasing productivity throughout the day.

To improve the efficiency of service delivery and strengthen health worker performance and engagement, the partners decided to integrate human resources interventions into the improvement work in Mtwara and initiate a second, more focused improvement collaborative in Tandahimba District,

² Health worker engagement is “the extent to which a health care provider proactively self-improves and applies their competencies to provide quality services with commitment, ethics and care to achieve organizational goals”. In the health care industry specifically, research by the Gallup and other organizations of health care workers in developed countries has shown that increased engagement among nurses resulted in increased patient satisfaction, nurse retention, and morale; lowered complications; and improved clinical measures (Harter, Schmidt, and Hayes, 2002).

one of six districts in the region. While the Tandahimba district hospital had participated in the earlier ART-PMTCT improvement work in Mtwara, the other facilities in the district had not.

The goal of the Tandahimba collaborative was to improve the effectiveness and efficiency of service delivery for patients receiving services related to HIV and to strengthen health worker performance and engagement. More specifically, this collaborative aimed to improve:

1. The percentage of pregnant women attending antenatal care (ANC) who tested positive for HIV that are enrolled into care and treatment centers (CTC)
2. Percent of HIV-exposed children receiving daily cotrimoxazole prophylaxis
3. Percent of HIV-positive clients that are assessed for active TB at every CTC visit
4. Percent of HIV-positive clients from CTC receiving CD4 test once every six months
5. Retention in care and treatment of clients on ART
6. The performance, productivity and engagement of health workers providing HIV care.

As part of the collaborative improvement intervention, the MOHSW and HCI introduced quality improvement (QI) techniques to facility managers and staff in 12 health facilities in Tandahimba that would help them improve their productivity and engagement as well as the care they were providing. These teams, representing one district hospital, three health centers, and eight dispensaries out of the total 35 health facilities in Tandahimba District, came together on a regular basis during a 15-month implementation period to share learning and improvements made.

The work in Tandahimba sought to address facility-level human resources dynamics to enhance productivity and improve staff retention based on work done by HCI in Niger and on the baseline results. As part of the collaborative's intervention package, HCI introduced the seven-objective human resources (HR) performance cycle in tandem with the application of quality improvement methods to address gaps in care quality.

The HR performance cycle focused on ensuring that all health care workers had:

1. Achievable workloads, clear expectations, and measurable objectives
2. The knowledge and skills necessary to accomplish the required tasks
3. Frequent feedback on their performance according to defined expectations
4. Fair evaluations, with clear and specific evaluation criteria based on expectations
5. Recognition and rewards for high performance and consequences for lack of performance that were clearly articulated and understood by the workers
6. Opportunities to develop and grow in their careers, and
7. Effective and efficient work environments which enable staff to perform their duties.

The interventions was planned to achieve all seven objectives over time but during the 15-month period of funding was only able to address the first three, which could be accomplished by health workers themselves as opposed to being the responsibility of their managers/supervisors. During that period, HCI conducted seven coaching and mentoring site visits and four learning sessions of representatives of all 12 facility-based QI teams to provide guidance and support and facilitate the sharing of results and experiences among the teams.

The improvement collaborative in Tandahimba also sought to help the district implement a new national performance review and appraisal system. The baseline assessment had indicated that districts were responsible for conducting performance evaluations using the Open Performance Review and Appraisal System (OPRAS). The OPRAS process is annual and has three main steps: 1) performance agreement: supervisor and subordinate agree on what the subordinate will do, what his or her objectives will be, how performance will be assessed, and what resources will be available; 2) mid-year review of progress: the initial agreement is reviewed and, where necessary, revised; and 3) end-year appraisal: the

subordinate's performance is assessed (Ministry of Finance 2008, p. 61). At the time the baseline was conducted, the OPRAS had not yet been implemented in Tandahimba. HCI laid the ground work for the implementation of the OPRAS by ensuring that health care workers had relevant job descriptions, which would make it easier for supervisors to complete the OPRAS forms based on the duties and responsibilities outlined in the job descriptions.

This report presents the findings of a November 2011 evaluation of the HIV care and health worker performance improvement collaborative's results and an analysis of teams' self-collected data through August 2012. The evaluation was requested by the Office of HIV and AIDS of USAID to help inform efforts to improve the efficiency and effectiveness of health worker performance in countries with a high HIV burden. The Mtwara Regional Health Management Team (RHMT) was also interested in applying the lessons learned and successes from the intervention in Tandahimba to improve care in health facilities in the region's other five districts.

A. Evaluation Objectives

The evaluation had four objectives:

1. Qualitatively document the process of and lessons learned in implementing changes to improve care and health workforce management at the facility level from the perspective of the health workers and managers in HRH QI sites,
2. Develop an understanding of how staff members' awareness of their roles and responsibilities changed since the baseline and what impact the HR improvement intervention has had on the way they work,
3. Document the changes made in the way care is delivered and the results in process indicators; and
4. Determine whether the staff's levels of engagement and productivity improved during the implementation period.

II. METHODOLOGY

The evaluation was a cross-sectional study conducted among a purposively selected sample of different cadres of health workers at participating sites. The evaluation team gathered data from three perspectives: those of the facility staff (managers and providers), the clients, and the delivery systems. In addition, project staff conducted an analysis of monitoring data collected by the 12 QI teams to review progress in improving quality of HIV care and the changes they made to care delivery processes which led to improvements.

A. Site Selection

Nine of the 12 facilities which participated in the collaborative—a district hospital, three health centers, and five dispensaries—were selected to take part in the evaluation, all similar to the six sites which had participated in the baseline. The nine sites provide both ART and PMTCT services. Other characteristics are summarized in Table I.

B. Data Collection Tools

The five data-gathering tools used for the baseline were revised to capture specific changes known to have been brought about by the intervention. The original baseline tools were adapted by HCI from tools used for similar studies conducted in Uganda and Niger. No pre-test was thought necessary since the tools were changed so little.

Health worker interview tool: The evaluation team interviewed 16 health workers representing the nine facilities and all cadres providing HIV services. This tool, included as Appendix I, had two sections. The first asked about project outcomes and challenges, and the second documented the workers'

Table 1: Characteristics of evaluated facilities

Site name	# staff on QI team	Catchment population	# PLWH clients	# ART clients
Tandahimba Hospital	16	19,097	1,380	765
Namikupa Health Center	9	12,621	337	83
Mahuta Health Center	6	15,152	712	163
Luagala Faith-based Health Center	3	3,738	121	52
Mdimba Dispensary	2	16,500	74	25
Kitama Dispensary	4	18,482	32	14
Nanyanga Dispensary	3	17,696	29	19
Maundo Dispensary	2	9,231	13	8
Mihambwe Dispensary	3	11,726	29	9

current workload, job satisfaction, working conditions, supervision, opportunities for advancement, performance management, motivation, and training. The evaluation team compared baseline and evaluation data to determine the extent to which these factors had changed during the course of the project.

Site manager interview tool: Interviews were conducted with managers in four sites to determine what changes they perceived had been brought about by the project. This questionnaire also had two parts and is found in Appendix 2. The first part covered approaches used to implement the HR improvement intervention, its impact and challenges, and its sustainability. The second part sought to document changes to staff workload, job satisfaction, working conditions, supervision, opportunities for advancement, performance management, motivation, and training.

Time utilization observation tool: The time-use tool was used to record a data collector's observations of health providers' use of time in the same three facilities that had been observed at baseline: a hospital, health center, and dispensary. Each was observed for one day to document providers' use of time. Starting at the clinic's official opening time and ending when it closed or the provider left for the day, a record was made every 15 minutes to note whether a provider was engaged in productive or unproductive tasks. The collectors observed a total of 12 health workers (four health workers in each of the three facilities). The analysis determined what changes had occurred since the baseline in the use of time.

As at baseline, productive time included time spent in direct care with patients or indirect care, such as preparing for the next patient, reviewing and updating charts, and consulting with other providers. Other productive activities are management tasks, such as meetings, routine maintenance, cleaning the facility, personal hygiene, outreach activities, and participating in training. Activities categorized as unproductive include time spent waiting for patients, breaks, social visits, conversation, personal errands, and absence not related to client care or service delivery.

Employee engagement questionnaire: This questionnaire was used to assess the extent to which health workers were engaged in their work. This relates to elements of motivation but goes beyond traditional definitions of motivation or satisfaction to include commitment to the organization and to performing high-quality work to help the organization advance. The analysis determined whether any changes had occurred since the baseline in specific aspects of employee engagement.

Client flow tool: This tool documented how clients moved from one service to another, how long they waited for services, how much time they spent with providers, and more. Data collectors initiated this tool at the facility's registration point in three health facilities; one district hospital and two health centers. Every client who presented at registration was asked what time he or she arrived at the clinic, which was recorded, as were the start and end times for registering. The collector moved with the client to each point of service he or she availed and recorded the events and times along the way.

C. Sample Sizes

All cadres of permanent workers providing ART/PMTCT services were eligible for inclusion in the evaluation, and all those available were interviewed. All these health workers were providing other services as well, such as family planning, reproductive and child health (RCH), immunization, and HIV/AIDS services other than ART/PMTCT. Sixteen health workers and four site managers were interviewed, and 25 clients were observed and timed as they moved through the facilities' services (Table 2). Five site managers were unavailable during the visits: the positions of the site managers at Nanyanga and Mdimba dispensaries were vacant, two site managers were at training, and one was on vacation.

Table 2: Number of respondents per site, by cadre

Instrument	Number of respondents per site									Total
	Tandahimba Hospital	Namikupa Health Center (HC)	Mahuta HC	Luagala HC	Mdimba Dispensary	Nanyanga Dispensary	Mahundo Dispensary	Mihambwe Dispensary	Kitama Dispensary	
Site manager	1	1	0	0	0	0	1	0	1	4
Health worker	3	2	2	1	1	2	2	2	1	16
Time use	4	3	3	2						12
Worker engagement	4	3	2	2	2	2	1	2	2	20
Client flow	12	6	0	7	0	0	0	0	0	25

D. Data Collection Methods

The four-member evaluation team consisted of a consultant, an HCI staff member, and one staff member each from the Tandahimba Council Health Management Team (CHMT) and the Mtwara RHMT. The consultant conducted a one-day orientation for the evaluation team, including practice using the tools and how to prepare the data collectors.

1. Field procedures

The data collectors were assigned tools before the data collection, which took place at the facilities listed in Table 1. Logistics, including scheduling meetings with the facilities and transport, were managed by HCI and the CHMT staff member. After each day's field work, the data collectors submitted hard and soft copies of the completed data collection forms to the evaluation team leader for review and filing. Access to these documents and the data was limited to evaluation personnel responsible for analysis and report preparation.

2. Analysis of monitoring data

HCI staff also analyzed monitoring data and changes made and reported by teams. Each facility-level team collected data and plotted a time series chart for five indicators related to ART and PMTCT care. HCI staff reviewed information from learning session reports, coaching notes, and team documentation to identify key changes made to care processes in the facilities which led to improved HIV services. Information and indicator data from all 12 project-supported facilities was included in this analysis.

3. Ethical considerations

The interviews and questionnaires were anonymous and confidential. The data collectors were instructed to explain the purpose of each interview/ tool to subjects and not to interrupt service

provision. Providers could opt out. The client flow tool was explained to each client at registration and permission requested to administer it. No data on clients or their medical services were recorded.

4. Limitations

As noted, five site managers were unavailable. Due to the small sample size of manager interviews, findings may not be representative of all project facilities. Findings at baseline and evaluation may not be directly comparable due to the fact that only five sites were evaluated at both baseline and endline. The patient load in the facilities varies, so findings from the time-utilization component may not represent the current situation. Furthermore, to properly document time utilization of health workers, health workers should be observed for more than a day; this was not possible due to time constraints. The engagement tool, intended to measure the extent to which health workers felt engaged, may not be sufficiently sensitive to measure engagement itself, so comparisons with the baseline were on engagement's components rather than engagement itself. Comparisons in engagement between baseline and this evaluation have been limited to those facilities which completed the engagement tool both at baseline and this evaluation. Cadres completing the engagement tool differed between baseline and this evaluation in one facility. Due to the limited number of days for field work, the evaluation did not include an assessment of the human resources situation in three additional non HCI-supported facilities within Tandahimba sites as originally planned. Interviews were not audio-recorded, which may have limited the completeness and accuracy of quotes presented in this report.

E. HIV Care and Health Worker Performance Improvement Intervention

The intervention design called for teams at each facility to implement both HR interventions based on the performance cycle and QI activities with help from coaches and HCI and CHMT staff. As described further in the next section, the collaborative improvement intervention addressed both clinical care processes as well as staff performance management, productivity, and engagement. As is a standard practice in collaborative improvement interventions, on a regular basis, teams were brought together to share results and learn from each other and coaches in learning sessions.

The ideas for changes to test in Tandahimba were adapted from successful work in Niger to address and improve the kinds of gaps identified in Tandahimba during the baseline assessment (see Crigler et al. 2012). These gaps included poor performance management, low productivity, absenteeism which overloads remaining staff, and absence of clearly defined duties and responsibilities. The intervention in Tanzania was designed to provide the fundamentals needed for fair evaluation, which was one of the objectives of the MOHSW's Open Performance Review and Appraisal System.

This section provides a description of the activities implemented in all 12 of the facilities that participated in the Tandahimba improvement collaborative; however, only nine of them were included in the evaluation. Three dispensaries were excluded due to the remoteness of the facilities and the limited time and budget for the evaluation. The team felt that the five dispensaries in which staff were interviewed for this evaluation adequately represented the group of dispensaries involved in the activity.

1. Organization of improvement activities

The HR approaches promoted by the collaborative addressed the seven objectives of the human resource performance management cycle related to workload and job expectations, knowledge and skills needed to perform expected tasks, feedback, fair evaluation, recognition and rewards, opportunities for advancement, and a supportive work environment. These seven objectives can be categorized into two sets: those to be accomplished by providers (Objectives 1–3) and those to be accomplished by managers (Objectives 4–7). All 12 sites implemented the first three objectives of performance cycle:

- I. Establishing achievable workloads, clear expectations, and measurable objectives

2. Assuring health workers had the knowledge and skills necessary to accomplish the required tasks
3. Providing frequent feedback to health workers on their performance according to defined expectations.

As outlined in Table 3, the facility-level interventions combined an improvement approach to strengthen the quality of clinical care delivery with human resources approaches to improve employee engagement and productivity. Before clarifying tasks and expectations, teams needed to improve the process of care. For instance, they would make a change, such as introducing home-based follow-up of patients, then assign a staff member to perform that role, and eventually codify that role as part of the staff member's job description. As such, the two approaches were mutually reinforcing. All 12 sites implemented a series of tools in order to achieve improved care and human resources management, including a process map (stratified by health worker), job models, job descriptions, individual workplans, and a competency model.

Table 3: Overview of facility-level goal and activities of the HIV care and health worker performance improvement collaborative

Facility level activity goals	Improvement approach	HR approach
Review existing process of delivering care (Part of performance cycle objective 1)	Process mapping (one for each area of service)	Process map is divided by provider to clearly see who does what step/task
Generate ideas to change and improve the process of care (Part of performance cycle objective 1)	Reorganization of process delivering care to improve efficiency, ensure all proper steps are taken	Reorganizing responsibilities and tasks between providers and clarifying individual task expectations for each step in the process to create more clear, manageable and efficient workloads. Map processes by provider.
Test ideas to improve the process and monitor results (Begins with performance cycle objective 1 and continues throughout)	<ul style="list-style-type: none"> • Test the ideas to reorganize the process of care • Monitor results of clinical processes to determine if reorganization and task shifting are improvements 	
Formalize roles of all health workers in new process (Part of performance cycle objective 1)		<ul style="list-style-type: none"> • Create job models and individual work plans for each provider to clarify tasks and goals • Develop job descriptions to outline all roles and responsibilities
Ensure all health workers have the competencies to carry out their roles and responsibilities (Part of performance cycle objective 2)		<ul style="list-style-type: none"> • Create competency models which clarify tasks, competencies needed to perform tasks and gaps in competencies • Develop plans for peer-based and self-directed learning to address competency gaps
Develop feedback mechanisms on performance (Part of performance cycle objective 3)		<ul style="list-style-type: none"> • Develop facility level approaches to providing feedback to staff.

QI teams

QI teams were formed at all 12 facilities. These facility-based teams were responsible for implementing all aspects of the HR improvement intervention within their respective facilities. The team members

were health care workers delivering ART and PMTCT services such as the clinical officer, nurse, nurse-midwife, and lab assistant. The teams took on slightly different forms in the small and large facilities. In Tanzania, most health centers have 4-12 providers, and dispensaries have 1-5 staff. The change package (process map, job model, etc.) affected all facility staff. In Tandahimba hospital, the team had 16 members working in three services (CTC, RCH, and TB/HIV). A team leader was selected by team members to coordinate team meetings, which usually occurred monthly. At such meetings, team members discussed their progress on agreed activities, challenges, strategies to address them, and plans for follow-up activities. Teams kept records of meeting minutes, process maps, workplans, and a team QI journal, updated monthly, of indicators and changes tested. They shared progress with HCI and CHMT staff as appropriate.

Coaches and MOHSW support

Coaches were selected from RHMT and CHMT staff who were also coaches of the ART/PMTCT improvement collaborative in the Mtwara Region as a whole. The role of these QI coaches was to support teams in implementing improvement activities and provide training, often on the job, in areas such as QI, HR, and clinical practice. The coaches included the District Health Secretary, who had a background in human resources management, and two QI team members from Tandahimba hospital, who were selected to foster local ownership and sustainability.

The team members were trained on the HIV and HR improvement interventions at the first learning session in September 2010. They received ongoing capacity building, guided by the HCI technical officer. The overall roles and responsibilities of the coaching team, articulated in a coaching guide, were to provide regular technical assistance to QI teams, including assessing the functionality of QI teams; reviewing QI team progress and providing support in overcoming barriers; assessing the QI team's understanding of clinical and HR indicators; supporting the team in documenting progress and using data; supporting documentation and testing of changes; and assisting the teams in identifying next steps and developing action plans to implement them.

Learning sessions

HCI conducted four three-day learning sessions, one every four–six months, with QI team representatives chosen to represent each of the 12 teams. The first three learning sessions averaged 34 participants. Knowledge acquired during learning sessions would then be shared with other team members during the monthly team meetings.

Learning sessions provided a forum for the teams to share their progress and lessons learned in implementing the HIV care and HR improvement interventions and for airing ideas for process changes. The learning sessions were also used to identify best practices generated in one facility that should be replicated in others, to address challenges in implementing the intervention and to develop action plans.

4. Improvement activities and tools

Process map

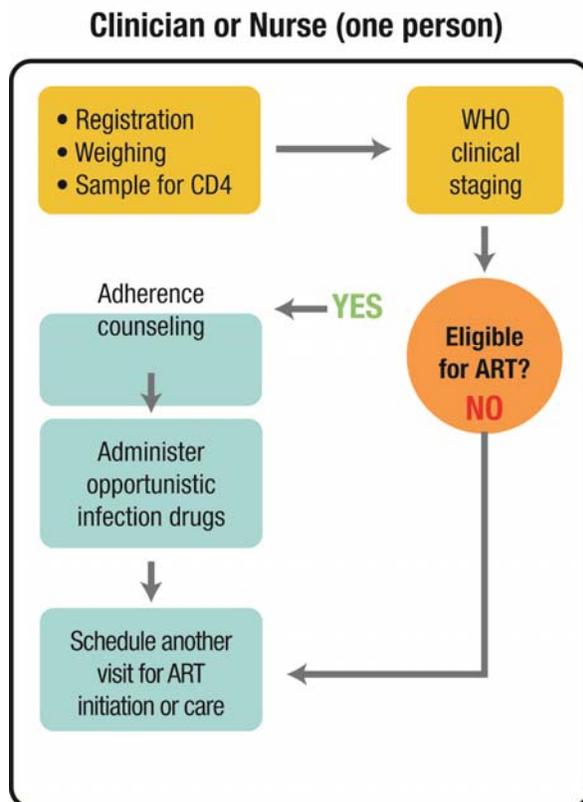
A process map is a diagram that displays the sequential steps in service delivery as a means for analyzing and planning, including indicating which cadre is responsible for providing different services. QI teams were initially taught how to create a process map at the second learning session and then were supported on-site by coaches. All evaluated facilities had developed two process maps: one for existing practice at the start of the intervention and one showing desired/improved practice. That is, the former indicated the steps in the provision of services at the clinic before any improvement, and the latter indicated the steps in an improved provision of services. The latter could change over the course of the intervention as teams developed insights for delivering services better. Figure 1 shows the original flow of health services at Mahuta Health Center, where initially, all services were offered by either the clinician or a nurse. Figure 2 shows the improved process map for the same health center, whereby the

tasks were distributed among the clinician, nurse-midwife, and medical attendant. The new distribution of tasks enabled patients to be seen more quickly since tasks were no longer all performed by the same provider.

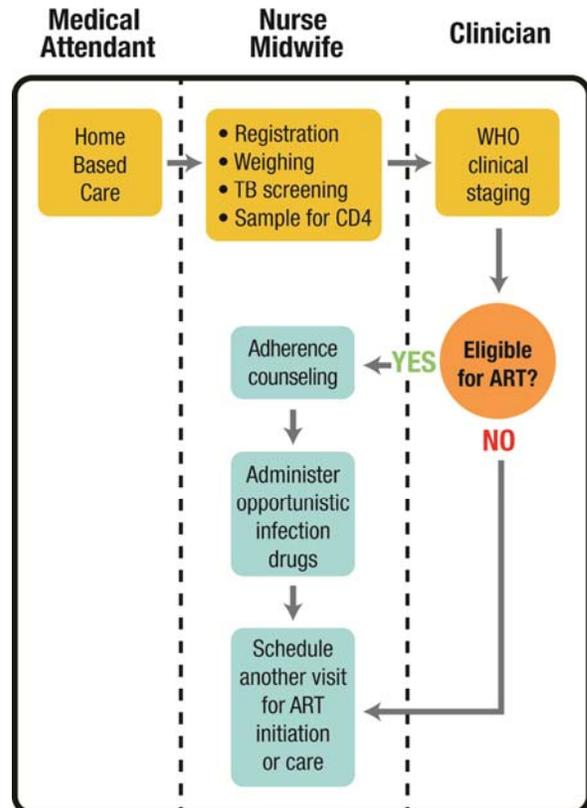
Figure 1: Original process map for care and treatment services, Mahuta Health Center

Figure 2: Process map of improved care and treatment services, Mahuta Health Center

Process Map for Mahuta Health Center



Improved Process Map for Mahuta Health Center



Job model and job description

A job model indicates the tasks, scope of work, and documentation plan that support the provision of a service. It helps in developing job descriptions by identifying the provider tasks in different roles. (Appendices 3 and 4 have examples of a job model and job description.) Team members received training during third learning session on how to develop job models and job descriptions. The process of doing so was very participatory and involved the providers and their supervisors. Next, providers developed their job descriptions in collaboration with their supervisors, using Kiswahili or English, depending on the provider’s preference. The job description format used was the same as that of the MOHSW except that the government format was not modified to reflect providers’ functions in a specific facility and lacked provider inputs. A copy of each job description was kept in the facility QI file and another retained by the health worker. The job description would serve as the basis for developing an individual workplan and for evaluating the worker’s performance.

It is important to note that the job descriptions were specific to the roles and responsibilities related to HIV care for each provider. For most health care workers, especially those at smaller facilities, HIV care is only a small part of their overall work at the facility.

Workplan

A workplan outlines the activities each health worker will do, the expected achievements, and the timeline. A daily workplan lists daily tasks and deliverables. (See Appendix 5 for an example of an individual workplan.) Health providers were guided by coaches in developing individual workplans based on their priorities and tasks, which supervisors reviewed and approved. Providers used their workplans to guide their activities. Although not everyone referred to his/her daily workplans on daily basis, the workplans did provide staff with a better understanding of the tasks required and how to perform them.

Competency model

During the learning sessions, facility representatives gained knowledge on how to develop a “competency model,” which defines the competencies (knowledge and skills) required to perform each task in the job model and prompts the development of individual and team strategies to address competency gaps. Health workers were asked to self-assess any gaps in their knowledge and skills and to record them on their competency model. After the second learning session, the QI teams, led by those who attended the session, developed competency models for every provider and the facility/HIV clinic itself. Each provider’s model was assessed during coaching, and the team made improvements to it. Having the team rather than the coach make most of the decisions about how to improve services helped ensure that every team member knew how to develop a competency model for new staff as they came on board, contributing to the intervention’s sustainability.

Feedback mechanisms

A feedback mechanism on staff performance was established during the monthly QI team meetings. All QI team members and all ART and PMTCT service providers at the particular facility attended these meetings. At the district hospital, the meeting was also attended by members of the hospital management team. In the health centers and dispensaries, all facility staff were invited to attend these feedback sessions. Feedback addressed individual progress and performance relative to each individual’s workplan. The teams used the meeting to discuss success and challenges in improving care, improving performance on QI indicators, and planning the next steps in implementing the intervention.

III. RESULTS

The evaluation assessed progress in implementing the HIV care and health worker performance improvement interventions, focusing on results related to the first three objectives of the performance cycle which were addressed during the 15-month implementation period of the collaborative.

A. Organization of the Improvement Collaborative

1. QI teams

QI teams formed in all facilities. In the dispensaries, all health workers participated in the QI team, while in the health centers and district hospital, only providers in CTC and PMTCT clinics did so. Each team reviewed the processes of service delivery in its facility and proposed changes they hoped would improve such delivery. For example, in the process map presented in Figure 2, the team tested a new approach to home-based care that shifted tasks from the nurse or clinician to clarify specific roles for the medical attendant, nurse and clinician. In evaluated facilities, the QI team members largely felt that the participatory way in which the changes were introduced meant that they “owned” (were responsible for) the process. They believed they had identified and solved service delivery problems and would continue to do so.

Before their participation in the collaborative, the facilities did not have a means to review their achievements. One nurse-midwife at Nanyanga Dispensary captured the overall attitude by saying, “We now know where we are and what is to be done. I thank the district and HCI for the support in developing a good workplan for serving clients and service journals for measuring the progress in reaching the set targets. Before QI interventions, I did not know how to measure my achievements, but now I can measure my achievement and identify areas for improvements.”

2. Coaches and MOHSW support

QI team members reported that the Tandahimba CHMT staff had been involved in supervising teams’ progress in implementing the HIV care and performance improvement interventions. The team members said that having regular coaching visits was very helpful in guiding them in developing and implementing improvements. Note that coaches were not interviewed about their roles as part of this evaluation.

3. Learning sessions

The QI team members interviewed also reported that the learning sessions were very useful as they acquired new knowledge and skills related to both HR and quality improvement approaches. They were grateful for the opportunities to share progress and learn from each other to improve the processes at their own sites. However, they felt three days for each learning session was insufficient for all the topics/work. They noted that the sessions did not provide answers to all the challenges they faced, especially those relating to staff and drug shortages, lack of transport for outreach activities and incentives for staff, and inadequate staff housing. They urged HCI to invite district and regional leaders to learning sessions, especially the District Executive Director and the Regional Medical Officer, to hear their challenges and provide guidance in resolving them.

B. Improvement Activities and Tools

1. Process map

The QI team members interviewed reported having used their process maps to redistribute tasks among themselves and other providers and to generate ideas for changes in service delivery. Data collectors viewed the original and then-current maps in all evaluated facilities. They noted that the original process maps revealed an uneven task distribution among ART and PMTCT providers. Usually, the nurse had more tasks than other staff, such as the lab assistants and medical attendants. The maps also revealed that services were not integrated, resulting in clients not returning for treatment and not being referred appropriately.

In every facility’s redesigned map (which all facilities were successful in implementing), some of the tasks done by nurses that require lower-level skills—e.g., registration, counseling, and completing registers—were shifted to medical attendants and lab assistants. Most (80%) nurses reported that this shift made their workloads more manageable. Interestingly, the medical attendants and lab assistants reported having acquired skills to perform new tasks and feeling more useful in their facilities.

The changes in service delivery introduced through the redesigned process maps contributed to better integration of CTC and RCH services, reductions in loss to follow-up, more feedback mechanisms, and improved referral systems. Some proposed changes, such as having more outreach activities to follow up with patients, were not fully implemented due to the lack of resources and transport.

2. Job model and job description

Eighty-one percent of QI team members evaluated had developed a job model and job descriptions by the time of the evaluation compared to 25% at baseline. However, those with job descriptions at baseline had generic ones based on their cadre rather than their particular responsibilities and actual practice in their current facility. Reasons that 19% of QI team members did not have job descriptions

included new staff, slow progress in finalizing job descriptions, and the retirement of an in-charge, implying lack of follow-up.

As noted, all dispensary and health center staff were providing HIV services and were encouraged to develop job descriptions aligned with their responsibilities. In Tandahimba Hospital, all 16 health workers providing PMTCT and ART services developed job descriptions. All of them reported that having a job description helped them know their roles and functions in providing HIV services, do more work in less time, and feel more responsible and accountable for results. More than half of those interviewed felt their job description would be even more useful in planning their work if all their responsibilities, not just those related to HIV care, were included.

3. Workplans

All interviewed health workers had developed their own individual workplan for service delivery. They reported that these plans helped them know their tasks, deliverables, and task schedules. The hospital workers all reported that they are planning their work better and serving more clients in less time.

4. Competency model

The evaluation team observed that all evaluated facilities had developed “competency models” showing required knowledge and skills for each worker. However, most QI team members did not clearly understand the model’s purpose. They had difficulty differentiating between knowledge and skills gaps and how to use the model to improve their work. In addition, they had concerns on how to obtain resources for addressing the newly identified skills and knowledge gaps. The findings indicate there were more training opportunities for health workers than when the baseline data was performed, but the training opportunities did not focus on the competency gaps that were identified by the teams: they mostly focused on the non-HIV aspects of service delivery. The providers reported the trainings were very useful to their work but were not what they needed from the identified needs. (See section III.E.2 below.) Opportunities for on-the-job training were limited.

5. Changes in clinical practice and results

Overall findings suggest the collaborative improvement interventions led to significant changes in service delivery. The health workers said it had brought about changes in task planning and allocation, service delivery, cooperation among QI team members, increased knowledge in new service domains, feedback mechanisms, referral systems, and an improved follow-up system. The next section summarizes key changes observed in clinical care quality.

C. Quality of Care Indicators

Five care process indicators were monitored by all 12 QI teams on a monthly basis throughout the implementation period to determine whether their work was leading to improvement in the targeted indicators of HIV care quality. This section presents the data collected and monitored by teams themselves. The QI teams, CHMT, and RHMT selected the indicators in a participatory process during the first learning session based on identified priority gaps in ART and PMTCT services. The majority of indicators were the same national indicators in order to remain in line with MOHSW priorities. The indicator on TB screening was the only one developed by the group which was not found on the list of national indicators. The five indicators were:

1. Percent of pregnant women attending ANC who tested position for HIV and enrolled into CTC per month.
2. Percent of exposed children under 18 months receiving daily Cotrimoxazole treatment per month.
3. Percent of HIV-positive patients on ART that are lost to follow-up per month.
4. Percent of HIV-positive patients that are assessed for active TB at every visit.
5. Percent of HIV-positive patients from CTC receiving CD4 test once every six months.

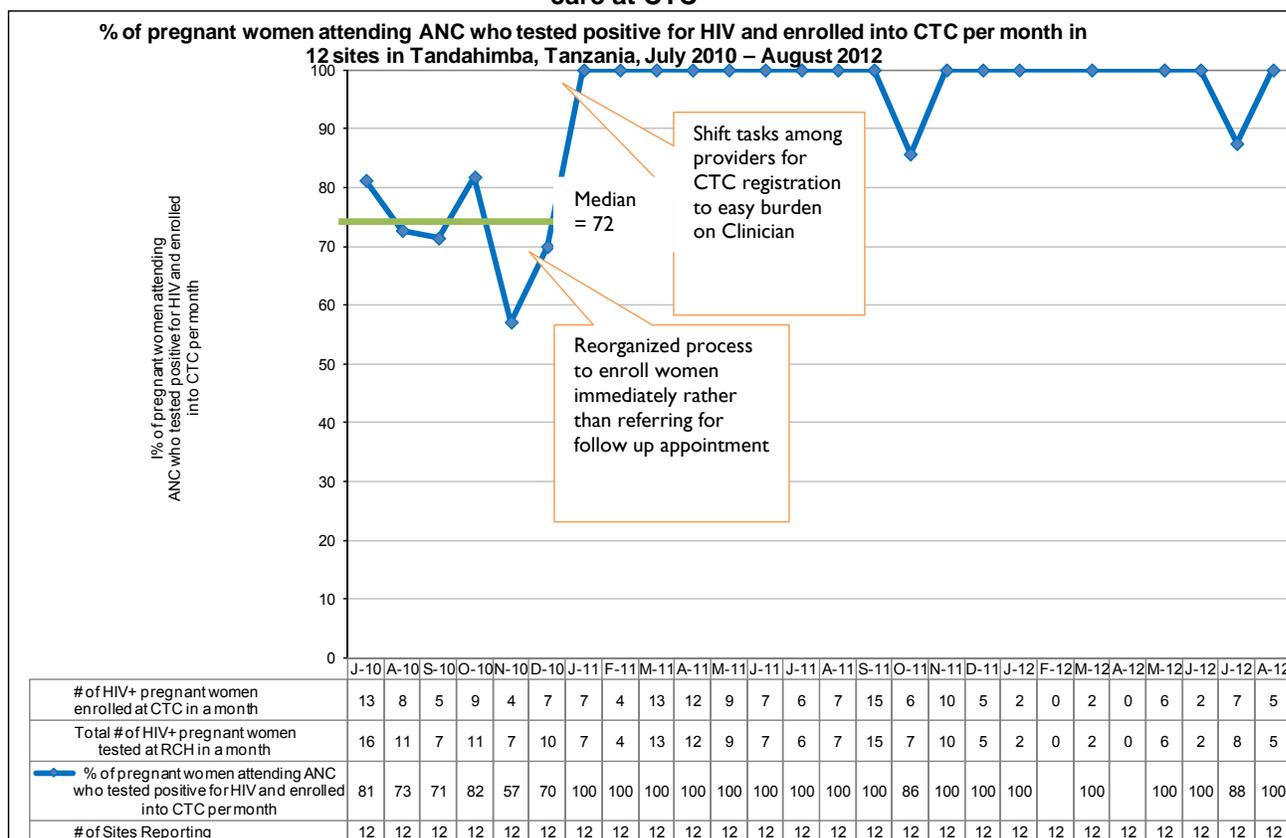
1. Changes in the clinical process: Referral of HIV-positive pregnant women

ART has been available free of charge in Tandahimba for years now. Treatment is provided and monitored at specialized HIV clinics within facilities called care and treatment centers (CTC). The CTCs monitor and care for people living with HIV and those who are not yet eligible for ART. Prevention of mother-to-child transmission of HIV is an integral part of antenatal care. PMTCT services are centered at the Reproductive and Child Health (RCH) departments. All pregnant women come to RCH for antenatal care and are counseled about and tested for HIV at the RCH department, unless they opt out.

Before the interventions, many women referred from prevention of mother-to-child transmission services at RCH to the CTC for ART never registered at the CTC. This was mainly because RCH and CTC were in separate locations. Subsequently, teams increased efforts to encourage referred women to report to the CTC, including extended post-test counseling, and escort to the clinic. Teams improved the process of referral for HIV-positive pregnant women by organizing all services to be provided at one service delivery point. Some of the key changes made included introducing community outreach services to provide health education and to follow-up with patients who have not come back to the facility; integrating ART into RCH, with immediate enrollment to CTC following a positive diagnosis (as opposed to referral to services at a later time); shifting tasks among providers for CTC registration to ease burden on clinician; and improving record keeping.

Analysis of the improvement: In July 2010, 81% of HIV-positive pregnant women were enrolled for ART at the CTC (see Figure 3). With the introduced changes, the proportion rose to 100% by January 2011 and has been maintained at a high level for over 18 months now. (Note that the denominators for this indicator are low because the district has low HIV prevalence among pregnant women—3%).

Figure 3: Percent of pregnant women attending ANC who tested positive for HIV and enrolled in care at CTC

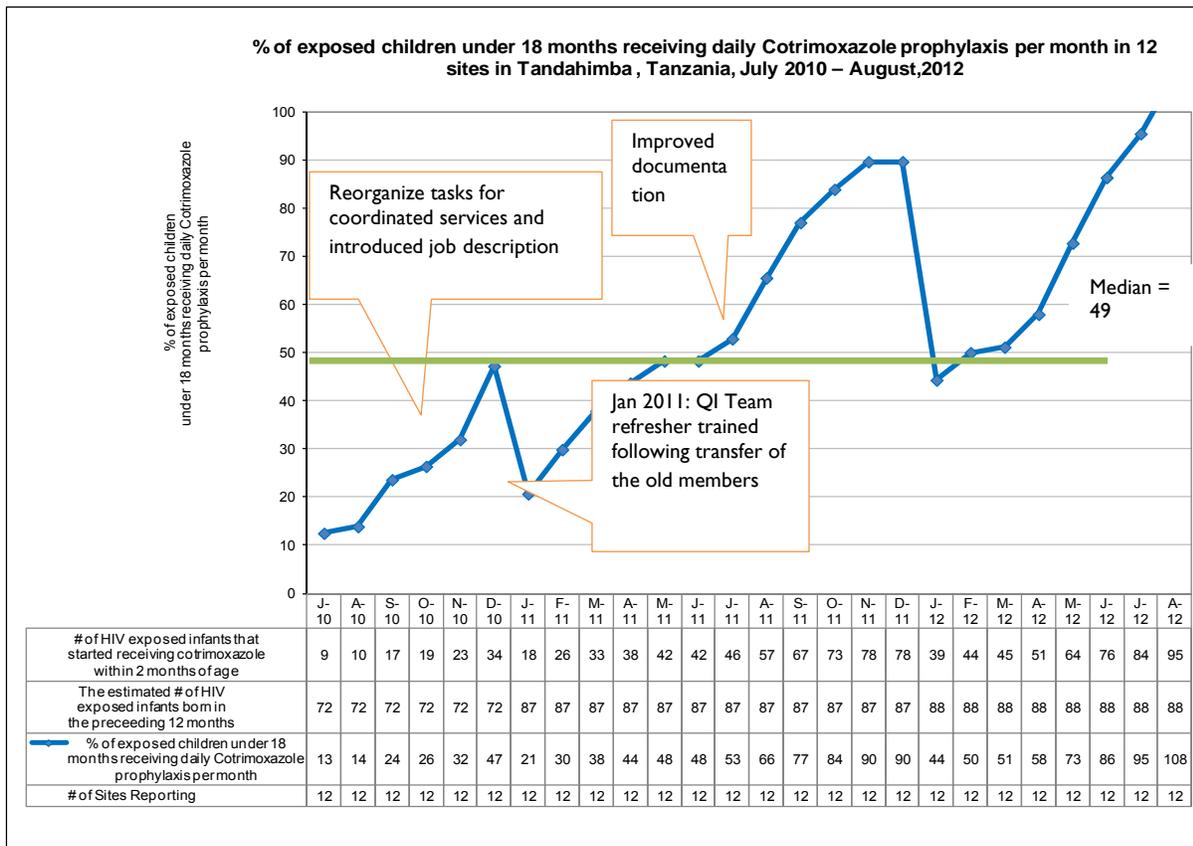


2. Changes in the clinical process: Daily Cotrimoxazole prophylaxis to exposed children

Prior to the interventions, no health education was provided to mothers on the usefulness of providing Cotrimoxazole prophylaxis to exposed children. When the facility re-organized the process of care and tasks and put them into job descriptions, the medical attendant was then given the role of providing health education during waiting time for service and also responsibility for community outreach for follow up. Before the reorganization of process and tasks, health education was provided by either clinician or a nurse. Some QI teams decided that medical attendants should provide health education to free up time of clinicians and nurses to provide core services. Records and data management to follow up children were also improved.

Analysis of the improvement: Before the intervention, on July 2010, only 12% of exposed children received daily Cotrimoxazole prophylaxis, with the intervention the percentage rose up to 95% by July 2012. Figure 4 shows both a statistically significant shift and trend reflecting sustained improvement in the performance of this process. Dips in January 2011 and January 2012 are due to a new calculation of the estimated denominator each year.

Figure 4: Percent of exposed children under 18 months receiving daily Cotrimoxazole prophylaxis



3. Changes in the clinical process: Retention in care (reducing loss to follow-up)

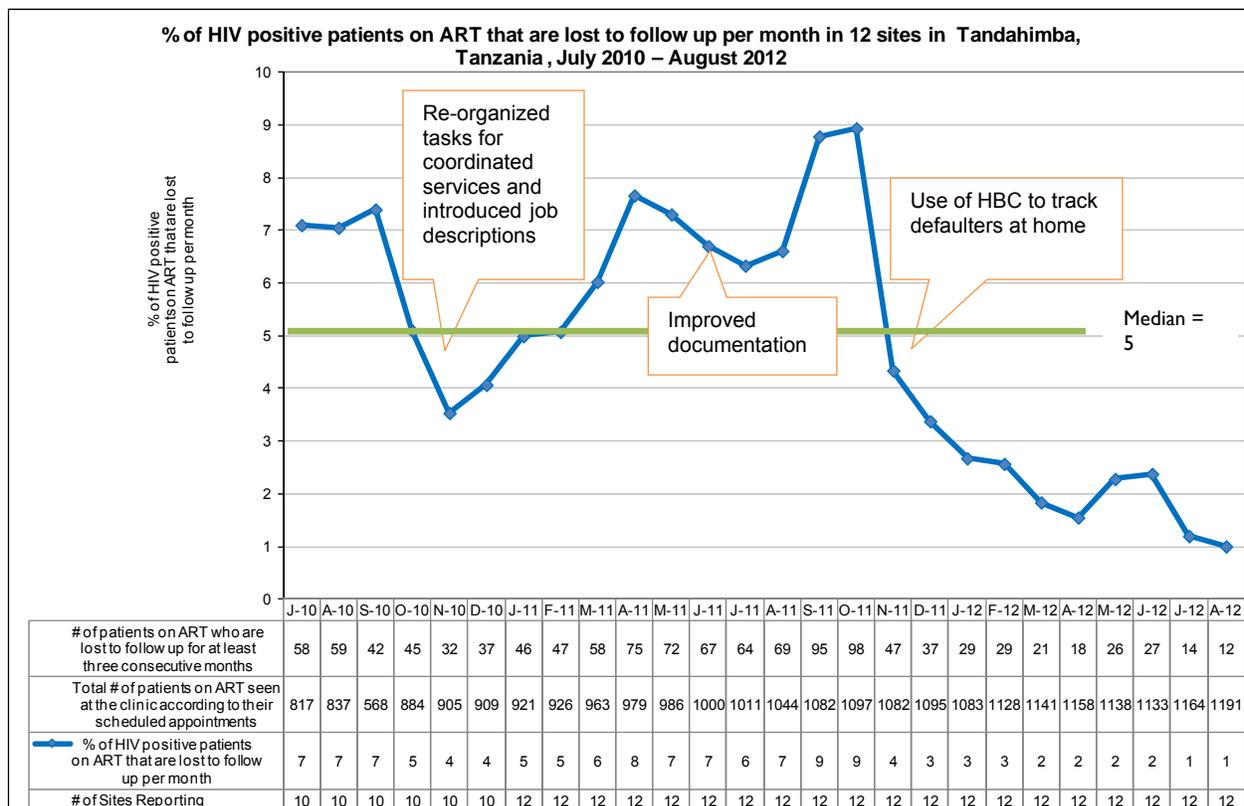
Before improving the process of care, lost patients were not followed up at all by health care workers. Teams first developed the strategy to add a step to the process of care to have medical attendants provide health education to patients in the waiting room. Next teams added the step of following up on lost patients and assigned a specific health care worker to the task. Facility-based health workers work hand-in-hand with home-based care (HBC) providers, who are formal and informal caregivers and provide comprehensive health services in the home. This pre-existing service of HBC focuses on

reducing stigma and discrimination, preventing further spread of HIV, and providing hope and comfort through appropriate care that helps patients and families improve their quality of life. In addition, HBC providers are now given a list of patients who are supposed to continue with ART with their addresses and are responsible for finding HIV patients who fail to show up for care at the facility. HBC providers managed to find several patients but reported challenges due to false names and addresses given by patients to avoid stigma. Some patients were enrolled in CTC in other facilities due to the nature of their social activities, such as business people who always move around. Patients who come from Mozambique find it difficult to cross the river during the rainy season to attend CTC services.

Health workers reported that the changes in this process made clients feel more cared for and supported and were more likely to attend appointments. The four facility managers interviewed felt that loss to follow-up could be further reduced if facilities had transport and could counsel truant or inaccessible clients not to give up. The site manager at Kitame dispensary told us, “There was no commitment to follow up our clients before QI was initiated. We now communicate with HBC volunteers on a monthly basis. Fifteen clients are on ART, two of them did not attend clinic in August; we contacted them in September 2011, and they all attended in October.”

Analysis of the improvement: In July 2010, loss to follow-up was 7%, and the intervention managed to reduce it to 1% by August 2012. The median of 5% on Figure 5 shows that there was a statistically significant shift in the process from the beginning of the intervention.

Figure 5: Percent of HIV-positive patients on ART that are lost to follow-up



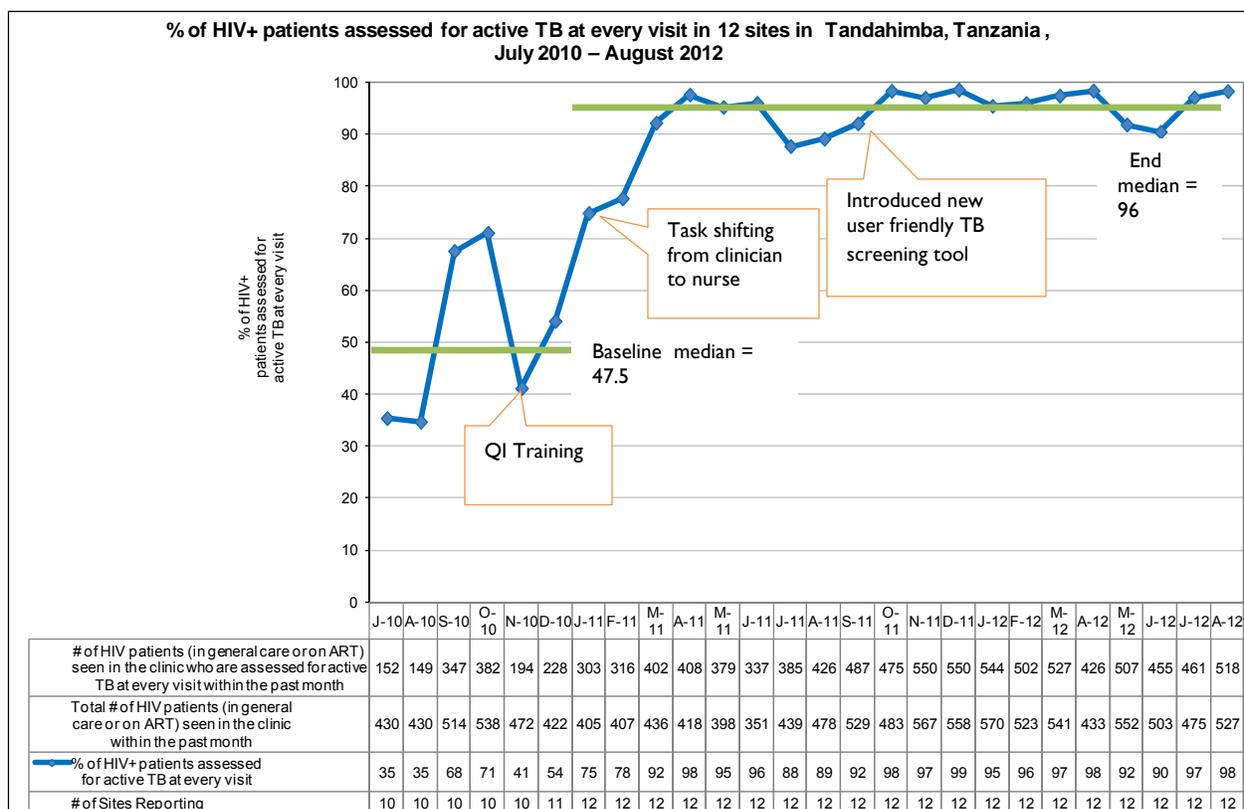
4. Changes in the clinical process: Assessment of HIV-positive patients for active TB

Initially TB screening of HIV-positive patients was conducted by the clinician only. Since the clinician was already overloaded with tasks, teams decided to re-organize the process to assign TB screening to a nurse. Nurses were then required to assess all HIV patients who come to the clinic. Task shifting increased capacity to provide HIV services and TB testing and counseling to individuals already in HIV

treatment or care programs. The MOHSW had introduced a TB screening form for assessing TB, so the collaborative improvement intervention in Tandahimba focused on operationalizing the use of the tool, including providing enough copies to all health facilities. As a result, all 12 facilities in Tandahimba started using the form. During learning sessions, teams reported challenges faced when using the tool. The original form required one form to be filled out for each patient per month which meant the patient would have a total of 12 forms at the end of the year. QI teams decided to improve the form and make it more user-friendly. A column with all 12 months was added to the form, allowing each patient to use a single form for 12 months.

Analysis of the improvement: The number of patients screened for TB rose from 35% in July 2010 to 98% in August 2012. Figure 6 shows a baseline median of 47.5 for the six months before the intervention, and a median of 96 after the intervention. The new process performance level has been maintained for 18 months.

Figure 6: Percent of HIV-positive patients assessed for active TB at every visit



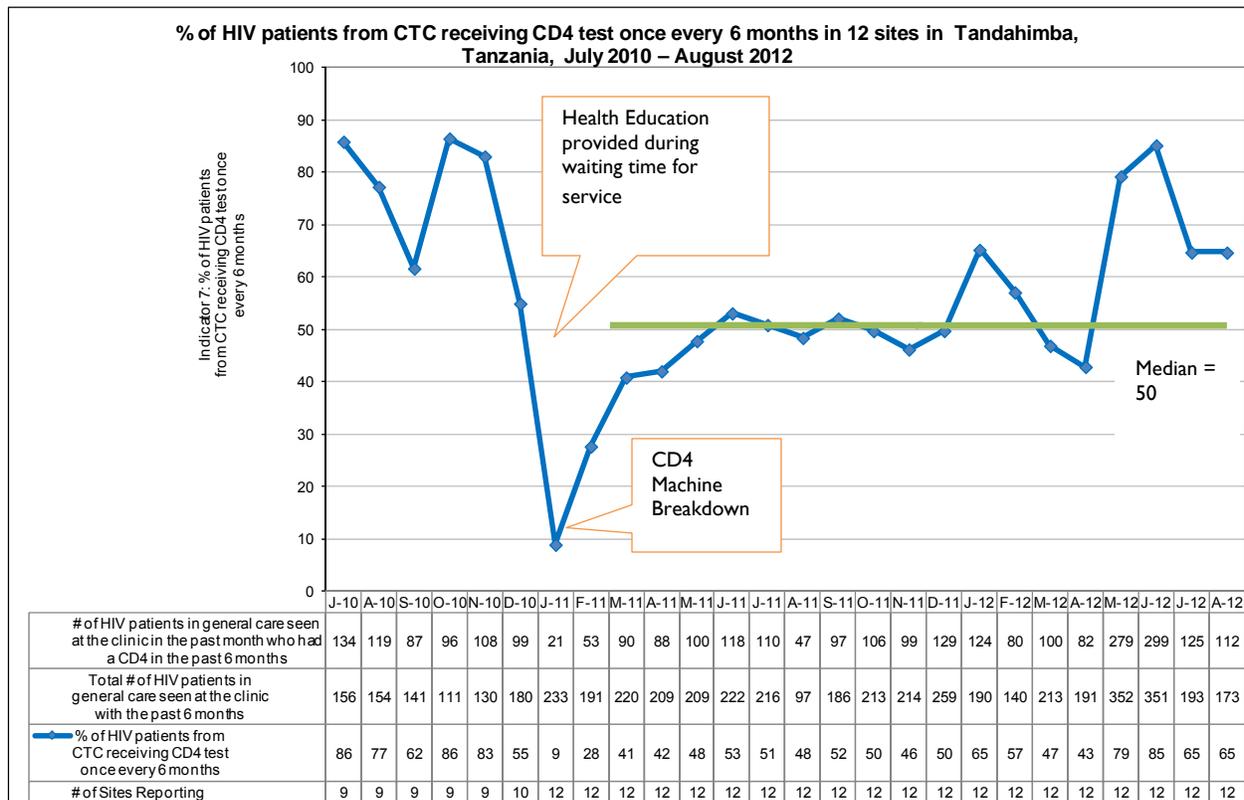
5. Changes in the clinical process: CD4 testing

In the existing process of care, individual health education about the importance of CD4 testing was provided by a clinician or nurse. The teams re-organized the process to provide group health education to clients in the waiting room, and the task was shifted to a medical attendant. Among other topics, clients were taught the need for regular CD4 testing and encouraged to remind providers when it was time for a repeat test.

Analysis of the improvement: CD4 testing is one of the areas that most of the facilities have been struggling to improve. Figure 7 shows a decrease in performance from 87% at baseline to a low of 9% in January 2011 due to a failure of CD4 testing equipment. By June 2011, the process stabilized at a new median value of around 50%. Facilities have been facing many challenges in getting CD4 tests for patients, including transportation of CD4 samples to the district hospital, frequent movement of HIV

patients, and frequent CD4 machine failure. In the May through August 2012 period, sites showed some signs of improvement, but the results are not yet stable.

Figure 7: Percent of HIV patients from CTC receiving CD4 test once every 6 months



D. Changes in the Organization of Service Delivery

1. Integration of RCH and CTC services

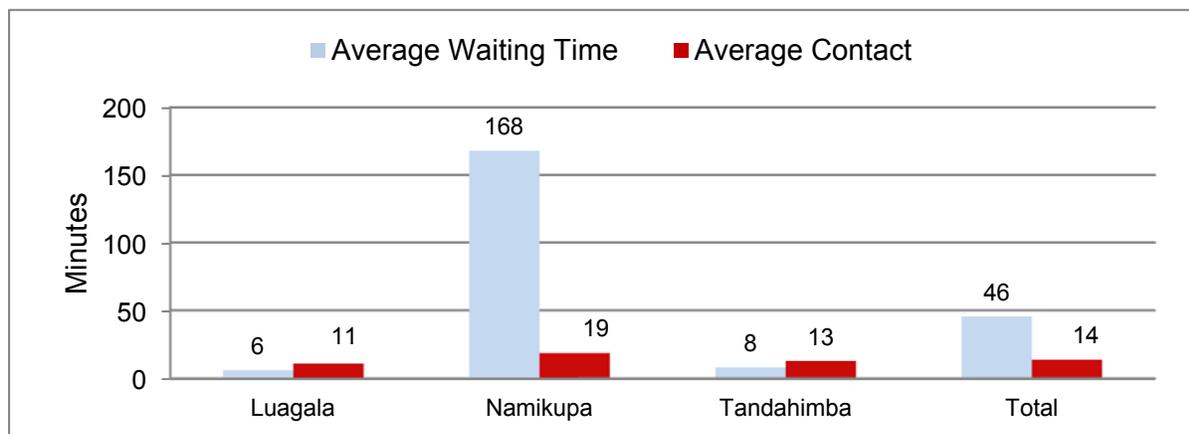
Eight of the nine evaluated facilities improved care by integrating RCH and CTC services. Previously, pregnant women who tested HIV-positive were referred to CTC for HIV services, but many of them failed to attend CTC, fearing that fellow patients would learn their HIV status. All facilities except the Namikupa Health Center had integrated RCH and CTC services such that when a pregnant woman tests positive, she receives both antenatal (ANC) and CTC services at one desk. Namikupa could not implement this change because its ANC room was too small, so this was not a suitable solution for them. Providers in the other centers reported that integration increased efficiency in service provision and reduced loss to follow-up.

2. Improved client flow

For the efficient provision of services, client should have short waiting times and adequate contact times with providers. The evaluation's client flow tool was administered in three health facilities (the same facilities where this tool was applied at baseline), tracking 25 patients in total. Figure 8 shows that two facilities (Luagala Health Center and Tandahimba Hospital) gave clients more contact time than patient waiting time. Previously in Tandahimba, the providers waited for all clients to arrive before initiating group counseling and CTC services, resulting in long client waiting times for those who arrived earlier in the day. At the time of the evaluation, clients were served as they arrived, significantly reducing waiting times. Namikupa Health Center had more waiting time than contact time because PMTCT and CTC services were delayed on the day of the evaluation visit due to the absence of three of the six staff

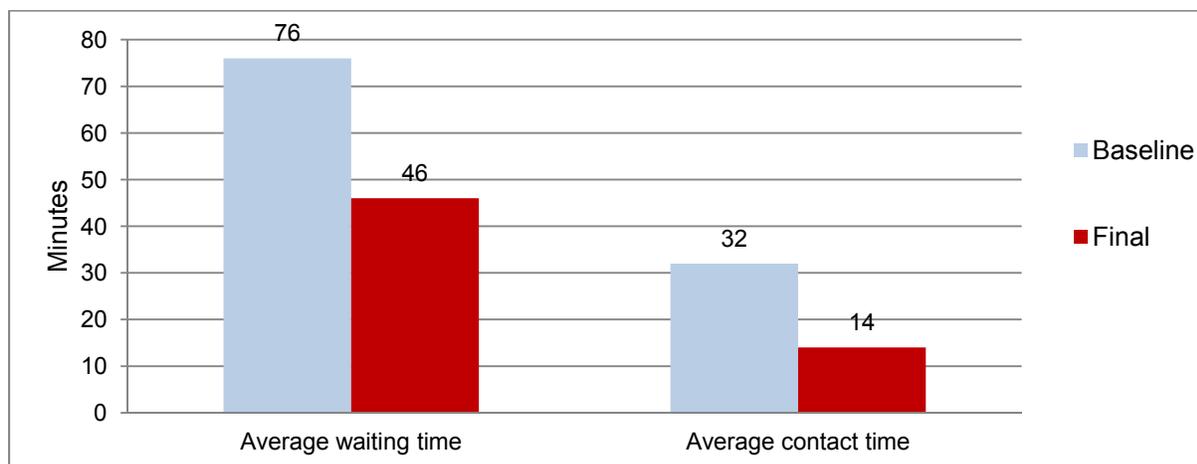
members. This situation skewed the data relative to overall waiting/contact times but calls attention to the problem of staff absence, which must be addressed if consistent, high-quality care is to be achieved.

Figure 8: Average client waiting and contact time, three facilities



As shown in Figure 9, the waiting time for all clients was reduced from 76 minutes at baseline to 46 minutes at the time of the evaluation. In all three facilities where time-use was measured, most services—registration, triage, consultation, clinical assessment, and HIV testing—were provided during the evaluation visit at one service point by one person, reducing waiting time. The changes in the service delivery process and shifting of tasks among providers likely contributed to reducing waiting times.

Figure 9: Overall average waiting and contact time before and after intervention



While the average client wait time declined, so did the average contact time with providers (Figure 9). This finding needs further exploration to determine whether it reflects more efficient contact time or an unintended consequence of less care.

3. Improved documentation and data use

Use and completeness of patient record forms and register tools were also found to have improved in the Tandahimba Hospital CTC. In Luagala Dispensary, the QI team now regularly reviews PMTCT and ART registers for accuracy and completeness and has developed a paper-based system for tracking patients in picking up their antiretrovirals (ARVs). If a patient misses his/her appointment, the dispensary has the HBC provider remind the patient to pick up his/her drugs.

In each site, the QI team maintains a file of all documents related to their work, including copies of process maps, job models and descriptions, and a journal of changes made and data for all indicators. The facilities now regularly monitor their results based on data displayed as time series charts, something they were not previously doing.

4. Improved patient referral system

The QI team also was able to strengthen the referral systems for voluntary counseling and testing (VCT) for TB (VCT/TB), CTC, and PMTCT services in Tandahimba District Hospital. The clinical officer at Tandahimba District Hospital told the data collector, “We used a monthly QI team meeting to revise the referral form for patients seeking VCT/TB, PMTCT, and CTC services and developed clear guidelines for referring patient from one section [of the hospital] to another. The referral system has improved a lot. When I refer my patients to CTC or the PMTCT clinic, I [can] now easily follow up [to learn whether] they have received services.”

5. Improved service coverage

The data strongly suggest changes in practices resulting from the HR improvement intervention have contributed to increases in ART/PMTCT service delivery in the 12 intervention sites. Several improvements were noted in the coverage and provision of services due to improved processes of care and clarity of individual tasks within those processes through job descriptions and workplans. Figure 3 showed the enrollment of pregnant women in CTC rose from 81% in July 2010 to 100% by August 2012; the delivery of Cotrimoxazole to exposed children increased from 13% in July 2010 to 95% by July 2012 (Figure 4); percentage of ART patients that were lost to follow-up declined from 7% in July 2010 to 1% in August 2012 (Figure 5); and TB screening for persons with HIV rose from 35% in July 2010 to 98% in August 2012 (Figure 6).

E. Changes in Performance Management

1. Clarifying tasks and task expectations

Task distribution and workload: In most facilities before the interventions, the nurse and clinical officer cadres were doing more tasks than the medical attendants and lab assistants. More than 80% of the health care workers interviewed reported reduced workloads after the process map was used to redesign the process of care and distribute tasks. For example, the enrolled nurse in Mdimba Dispensary reported she had been counseling clients, testing, and providing health education. After applying the map, some of her tasks were shifted to the medical attendant, reducing the nurse’s workload even though the dispensary was serving more clients.

“We now know where we are and what is to be done. I thank the district and HCI for the support in developing good workplans for serving clients and service journals for measuring the progress in reaching the set targets. Before QI interventions, I did not know how to measure my achievements but now I can measure my achievement and identify areas for improvements.”

--Nurse midwife, Nanyanga dispensary

Strengthened team work: All QI team members reported that the HR interventions had enhanced teamwork in terms of helping each other provide services, document progress, and teach each other. Staff interviewed in all nine facilities reported that the monthly QI meetings were used to share progress in implementing workplans, reporting challenges, and generating solutions to mitigate them. Before the interventions, facilities were not conducting such meetings.

“Before the intervention, my tasks were related to testing only. We used the process map to divide tasks among facility staff and realized [I] had few activities compared to other cadres. The QI team added the tasks of counseling and dispensing drugs to my workplan on top of my daily functions. The workload of the service providers in the CTC/PMTCT clinics declined, and our performance increased. We are serving more clients and spend adequate time in counseling the clients.”

--Lab assistant, Namikupa Health Center

“Before QI interventions, I was doing every thing—counseling the patients, performing HIV testing, providing HIV education, dispensing drugs. After the intervention, some of my tasks were distributed to the medical attendant. This helped reduce my work load. and we can serve more clients at once.”

--Nurse midwife, Nanyanga

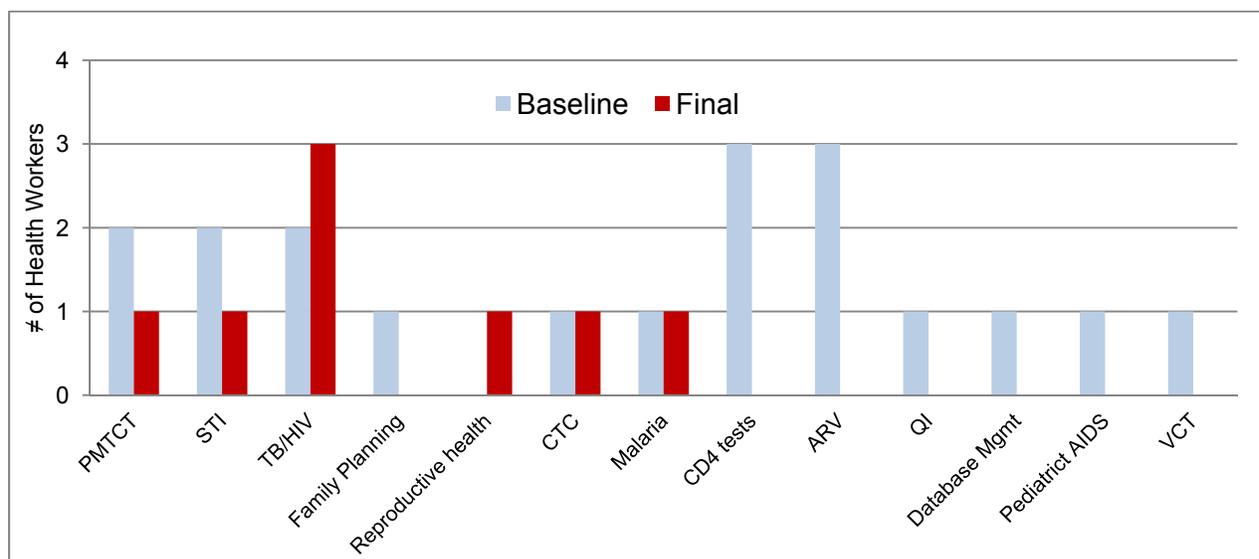
2. Competency development

Developing new competencies: The health worker performance management interventions helped the health workers who were given additional responsibilities to develop new competencies to perform their new tasks. Most workers (86%) who were assigned new tasks said they had developed new skills to perform them through on-the-job training by their colleagues. For example, the enrolled nurse at Mihambwe Dispensary reported that she had been trained to complete registers; at the time of the evaluation, she was assisting a co-worker to do so. Also, two lab assistants from the Namikupa and Mahundo health centers reported gaining new knowledge for counseling the patients following the process redesign.

Training: The four site managers said the health workers receive trainings quarterly. Asked if they had received training within the past 12 months, 76% (13/17) health workers said yes. This is similar to the baseline, where 80% (11/15) health workers said they had received training within the past 12 months. They usually receive a letter or phone invitation from the district or region to participate in training.

Only 35% (6/17) of providers felt they had not received adequate training. The areas lacking included TB/HIV, PMTCT, family planning, and reproductive health. Apparently, the district had taken measures to address the training gaps identified by the baseline. Six areas identified as needing training at baseline (CD4 tests, ARV, QI, data management, pediatric AIDS, and VCT) were not mentioned during the evaluation interviews. Figure 10 shows the areas where health workers interviewed for the evaluation felt they needed more training.

Figure 10: Areas in which health workers felt they need more training, baseline and evaluation



These results reflect training as it relates to all aspects of the health workers' responsibilities, not only HIV. These trainings may be a necessary part of their work. As mentioned earlier, there is still a gap in providing training for health workers based on their competency needs.

3. Improved feedback mechanism

The health worker performance management interventions also enhanced feedback mechanisms. All facilities reported reviewing their progress toward their QI targets and having feedback during monthly QI team meetings. They noted that the meetings were used to discuss how to overcome the challenges in implementation of the facility workplan and to plan for the next month. Before the intervention, the facilities were not conducting such meetings. Although the percentage of health workers who reported

that they were receiving feedback each week on their performance rose from 7% at baseline to 29% at the evaluation, more than half (53%) reported they were still not receiving feedback on regular basis.

QI team leaders also acknowledged the value of HCI support in implementing the intervention. They reported that regular follow-up visits made by HCI and CHMT or RHMT staff were very useful in coaching and mentoring the QI teams and monitoring progress in implementing the QI workplan.

4. Supervision

The supervision process for health workers varied by facility at both baseline and evaluation and had not changed since the former. All four site managers said more than one person supervises the staff. Supervision is done both by facility staff and by CHMT or RHMT staff.

At Tandahimba Hospital, the supervisors are department in-charges, a matron or patron, and the CHMT or RHMT. At health centers and dispensaries, the facility manager, CHMT, and nurse/midwife supervise. The frequency of supervision appeared to vary, as it had at baseline. Two site managers reported that supervision is performed daily, and the two other managers said monthly. Many providers reported having more than one supervisor: a facility supervisor and one from the CHMT.

According to the 16 health workers interviewed for the evaluation, supervision covered solving problems (14/16); tool inventory (13/16); examining records, including registers and Health Management Information System tools (13/16); providing feedback (11/16); observing work (9/16); and administrative updates (1/16).

Some improvement was seen in the supervision process, despite the fact that it was not a focus area during the collaborative. The health workers who reported receiving supervision within the last month rose from 29% at baseline to 44%. In addition, no health worker said he/she had not received supervision. This is a huge improvement compared to the baseline, when 14% said they did not receive any supervision. It is likely that the interventions contributed to the increase. All evaluated facilities reported conducting monthly meetings to discuss progress and challenges in implementation of QI activities.

The regular coaching visits from a team of coaches with members from the CHMT, RHMT, and HCI staff also contributed to improvements in the supervision process. However, more work must be done to ensure that supervisory discussions/visits are conducted as required in CHMT and RHMT guidelines.

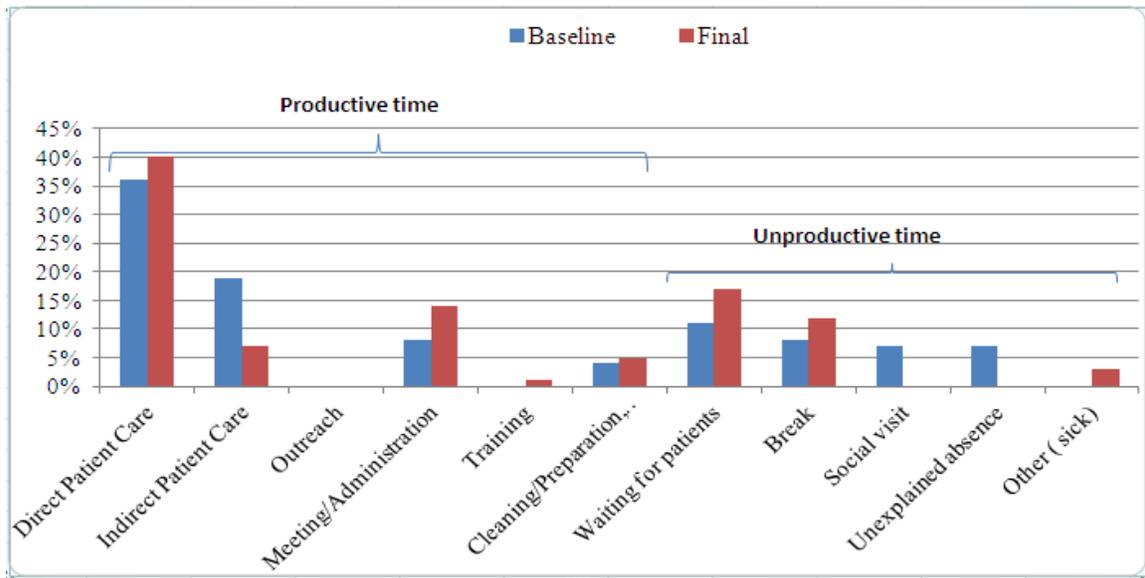
F. Effects on Health Worker Productivity and Engagement

1. Productivity

Overall findings show the time providers spent in performing productive tasks had not changed significantly since the baseline. The time spent in unproductive activities, such as social visits and unexplained absences, was reduced from 14% to 0%. More time was spent in training, cleaning, administrative work, and meetings. The time spent waiting for patients and in breaks increased by 10%. Most clients seek services in the morning time and very few at noon. Most health workers reported high patient loads at the beginning and end of week (especially on Monday and Friday), which may impact the levels of productivity throughout the week. In the early hours of observation, the evaluation team noticed some changes of behavior as a result of being observed, but soon health workers forgot about the presence of an observer. The evaluation only captured one day. Ideally, this would be done for several days but time and budget did not allow for more extensive observations.

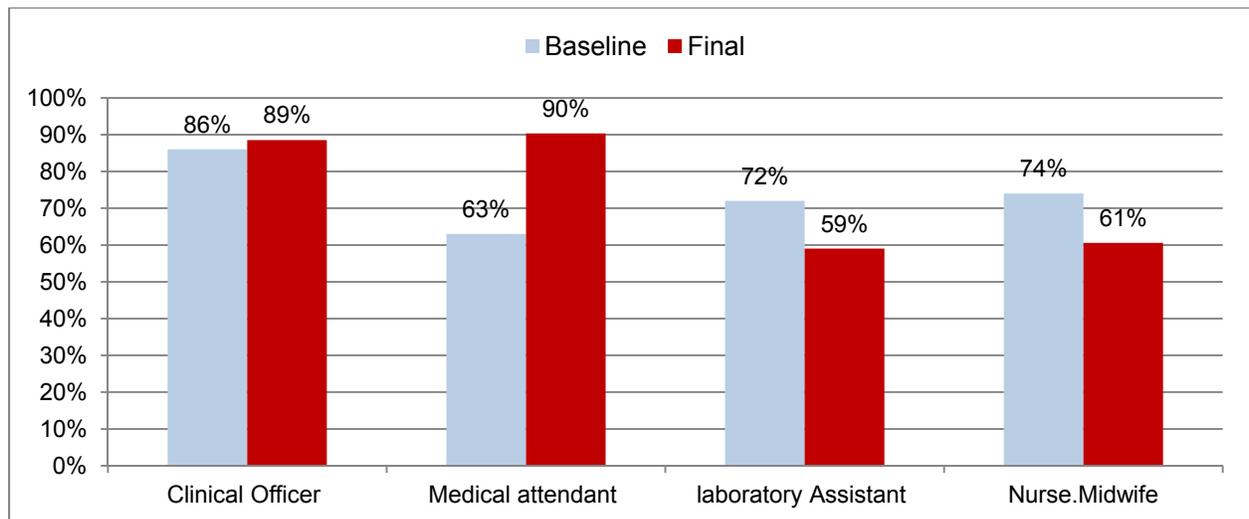
Provider time spent in direct patient care rose from 36% at baseline to 40% at evaluation, while time in indirect patient care fell by 12% (see Figure 11). Social visits and unexplained absences were eliminated, while sick leave came into being, albeit marginally. These changes may suggest that the interventions improved provider planning and preparation, leaving more time for direct service provision.

Figure 11: Changes in productive and unproductive time, 1 hospital and 3 health centers, Tandahimba (n=12 providers)



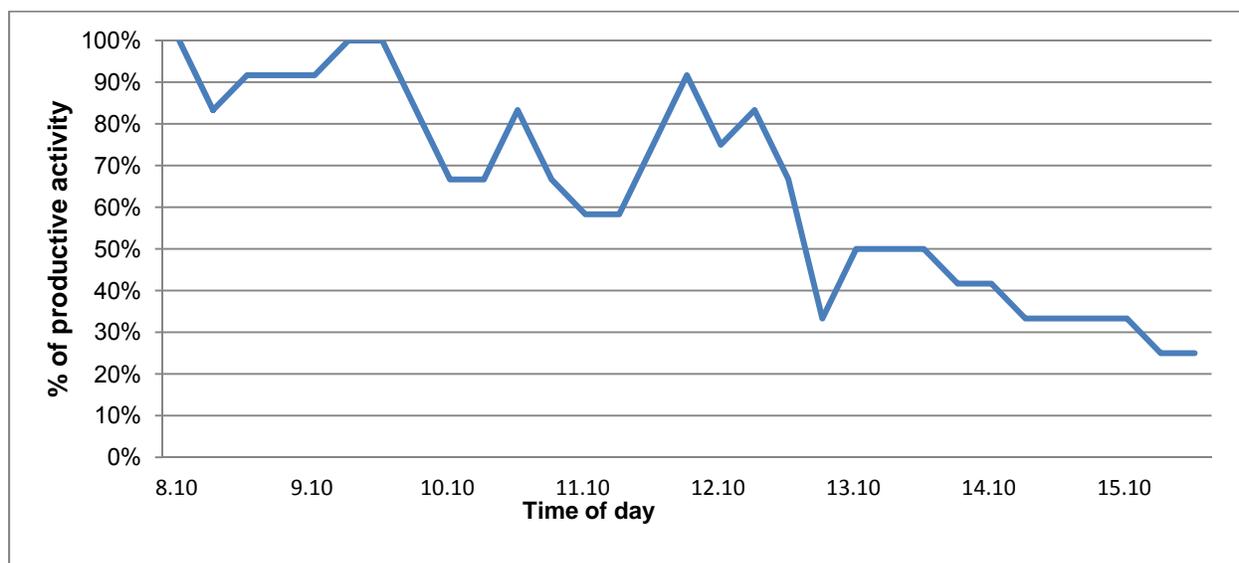
Providers' productivity levels changed after the baseline for all providers, most notably for medical attendants, whose productive time rose from 63% to 90% (see Figure 12), an increase likely associated with the redistribution of workload among providers. The increase in productivity of clinical officers was slight, from 86 to 89%. Laboratory assistant and nurse-midwife productivity fell, probably because some of their tasks were shifted to medical attendants. Also, the patient load was light when the evaluation team visited the facilities, especially in the afternoons.

Figure 12: Percent productive time by provider, before and after the collaborative improvement intervention (n=15)



The allocation of time for productive activities over a day shows a similar pattern between baseline and the evaluation, with morning having the highest patient loads and thus the highest percentage of time spent on patient care (Figure 13). Patient load tends to drop off in the afternoon at most sites, idling providers. This was not unexpected since the interventions did not attempt to alter the workload distribution over the course of the day.

Figure 13: Health provider productivity levels (n=15)



2. Employee Engagement

Health worker engagement is influenced by a number of factors relating to interactions with colleagues and supervisors and the work environment. Previous studies have found that health workers that are more engaged perform better. Due to the lack of sensitivity of the engagement tool in measuring engagement and the small sample size, each factor that comprised the engagement tool has been analyzed separately and compared to results at baseline. Data from facilities that did not participate in the baseline were excluded to ensure comparability. A total of 27 health workers completed the engagement tool at baseline compared to 15 in this evaluation from the same six health facilities.

Relationships and teamwork between health workers improved, with 60% strongly agreeing with the statement “My supervisor or someone at works cares about me as a person” compared to 37% at baseline; 93% indicated that they had a close friend at work with whom they can share ideas and problems, compared to 81% at baseline; 93% agreed that their opinions counted compared to 74% at baseline; and 100% of health workers felt that their colleagues openly listened to their ideas (compared to 82% at baseline).

With respect to performance expectations, 87% of health workers indicated that they strongly agreed with the statement “I know what is expected of me at work”, compared to 56% at baseline. More health workers received feedback on their work (87%) than at baseline (67%), with 60% indicating that they had received recognition or praise compared to 23% at baseline. However only two-thirds of health workers interviewed in this evaluation felt that there was someone at worked who encouraged their development compared to 77% at baseline, and there was no change in the proportion of health workers who felt that they were evaluated on the quality of their work (80%).

There was a slight improvement in this evaluation compared to baseline in the proportion of health workers that felt that they were able to solve problems at work (80% vs. 74%), felt respected at work (100% vs. 93%), and felt that they had enough opportunities to grow and develop in their job (73% vs. 69%). All continued to feel that their work as a health worker was important and that they could make meaningful decisions about how they do their job. A similar proportion of health workers were proud to work at their facility as at baseline (87% vs. 85%).

There was no improvement in the perception of health workers on the availability of materials, with around half agreeing or strongly agreeing with the statement “I have the materials I need to do my job right” (52% baseline, 47% evaluation).

3. Motivation

Motivation is another important determinant of health worker job satisfaction. Highly motivated staff are more likely to perform better and stay on post longer than unmotivated staff. The 15 health workers were asked if they felt highly motivated or not to work.

Most (87%) said they felt highly motivated to do their work, a noticeable improvement since baseline when 67% felt that way. Frequently mentioned factors that influenced motivation included good living and working conditions (81%), incentives (75%), regular supportive supervision and feedback (68%), and the possibility of professional advancement/growth (18%). Other factors were good cooperation from colleagues and clients and the availability of working tools and transport facilities. Similar factors were mentioned in the baseline assessment, although the responses vary significantly between the two surveys.

IV. CHALLENGES

Several evaluated areas were not directly addressed by the interventions and require attention at both the facility and district levels.

A. Staff Absence

Although the process maps have helped improve task distribution, the shortage of staff and excessive workloads remain a barrier to quality services. Staff absenteeism was one issue identified during the baseline assessment with five of the six interviewed site managers stating that staff absences occurred on a regular basis, ranging from 1-3 staff absences per week. Coaches encouraged teams to hold monthly QI meetings during which supervisors could provide performance feedback to health care workers, including issues of absenteeism. In addition, job descriptions and daily work plans made them more accountable for their performance.

According to the four site managers interviewed in this evaluation, absences continue to be frequent. Two site managers said one staff absence occurs per week, and the other two said one occurs per month. This rate is not very different from the baseline, when five of six site managers said one to three staff absences occurred per week. The site managers mentioned training as the leading cause³ for absence (3 out of 4 managers), followed by vacation (3/4), sick leave (2/4), and maternity leave (1/4). Similar to baseline, all four site managers said staff worked more than scheduled hours.

More than half of the 16 interviewed health workers (69%) said their co-workers' absences occurred regularly; at baseline, 93% had said so, indicating a reduced but continuing problem. More than half (56%) of providers told our data collectors that training was the main reason, followed by vacation and sick leave (50%) and maternity leave (12%). Similar to the baseline, 94% (15/16) said they worked more than their scheduled hours. Asked how often, 50% said they work more than their scheduled hours more than once a week; 25% once a week; and 25% said once a month. Asked why, they said a high number of patients (8/16), emergency calls (8/16), meetings (1/16), staff absence or shortage (5/16), supervision (4/16), and report writing (3/16).

B. Work Environment

Health workers said that their work environment is still a problem. Most (9/16) said the unreliable supply of drugs, reagents for PMTCT, and CD4 inputs prevented them from providing needed services.

C. Performance Evaluation

When site managers were asked whether the OPRAS existed, three out of the four said yes but that they had not received training on the system. When asked how often a provider completes the OPRAS

³ More than one response was allowed.

form, two of the three site managers who had said it existed said that providers complete them twice a year and the other said once a year. None could retrieve a completed OPRAS form, and all said OPRAS had not been effective in evaluating individual performance. The QI team leader at Tandahimba Hospital said “*OPRAS is not effective; we just complete a form, but no evaluation is done. I don’t see the impact of OPRAS in improving performance.*”

Less than half of health workers (44%: 7/16) said they had completed an OPRAS form; at baseline 27% said they had. Of those who completed an OPRAS form before the evaluation, three felt they were evaluated fairly, and four were not certain. The frequently mentioned reasons for not completing the OPRAS form were: 1) don’t know how, 2) forms not available, and 3) not asked to. These findings indicate only a slight improvement in the performance evaluation process since baseline. Nevertheless, it is unlikely this improvement is due to the interventions because they did not specifically address challenges in OPRAS implementation.

The original plan for the Tandahimba collaborative was to address all seven objectives of the performance cycle. However, only the first three objectives could be addressed within the 15-month timeframe of the collaborative’s implementation. The remaining objectives—related to fair evaluation, recognition and rewards, opportunities for advancement, and work environment—also require changes at the district level which did not take place during the intervention, although the foundations for these changes were put in place. For example, the OPRAS falls under the fourth step in the performance cycle to ensure fair evaluations, where clear and specific evaluation criteria should be based on actual job expectations. The collaborative improvement intervention was able to lay the ground work for the further implementation of the OPRAS through the completion of job descriptions.

D. Incentives

Incentives are not regularly provided in the district despite being a widely accepted means to reward and recognize providers for performing well. As indicated in the baseline, they can also help motivate health workers and generate a positive spirit of competition among them if distributed in a fair and transparent manner. While no intervention addressed incentives, the topic arose frequently during the evaluation.

Asked if incentives are available for staff, only two (50%) managers said they were; 66% had said so at baseline. One said staff receive non-financial incentives (verbal recognition), and the other said they received the financial incentives of extra duty allowance when they work more hours than scheduled. However, the extra duty allowance depends on the availability of funds.

Health workers said the lack of financial and non-financial incentives remained a challenge. Less than half, 47% (6/16), received verbal recognition, and only one received a written recognition for best worker award—in 2007. This percentage is a considerable improvement since baseline, when only 27% said they had received non-financial incentives and only 13% said they had received financial ones. At the time of the evaluation, one health worker reported that an extra duty allowance was provided if funds allowed but that it took a long time to receive it. Another said she had received a financial incentive only once when she was selected as best health worker. In discussing incentives, health workers also mentioned inadequate staff housing and lack of professional development opportunities.

These findings suggest the interventions contributed to improved recognition of staff performance, but that rather than financial incentives, the recognition provided has been non-financial, mainly verbal recognition through various forums, including monthly QI meetings, coaching visits, and learning sessions. It is not clear to what extent non-financial incentives are effective in improving staff performance. No significant efforts to provide financial incentives were revealed by the evaluation.

V. CONCLUSIONS AND RECOMMENDATIONS

The evaluation found that the interventions had contributed to improving providers' work planning, engagement, and delivery of services. Further effort is needed to increase productivity in delivering quality services. The QI team leaders from four sites (Tandahimba Hospital, Namikupa HC, and Mahundo and Kitame dispensaries) expressed very positive attitudes toward the interventions and their potential for sustainability. The QI teams have good knowledge of the interventions and have started to see changes in health worker performance management in their facilities.

Since the evaluation was conducted, lessons learned from this collaborative have been disseminated widely through national and regional meetings. Scale-up of the lessons learned has started to the other five districts in Mtwara Region. Eight high-volume facilities in the region (all hospitals and some selected health centers) were selected by the RHMT to start with. Some 36 health care providers from these facilities and 25 CHMT members attended first learning session facilitated by the RHMT, with technical support from HCI. Participants were trained on how to re-design the process of care delivery to ensure there is clear task division among ART and PMTCT providers and how to develop job models and job descriptions derived from re-designed process maps. The exercise addressed the goal of ensuring providers have clear roles and tasks aligned with program goals.

While the recommendations below are specific to the application in Tanzania, they reflect common areas for improvement found throughout the world in contexts where there are workforce shortages, unclear roles and responsibilities, and poor support for performance management. The recommendations below have already been incorporated into new applications of this joint improvement and human resources approach supported by the new USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project.

Ten areas of lessons and recommendations emerged from the evaluation:

I) Revision of intervention tools

Each step in the implementation process introduced new tools (e.g., process maps) to the providers. Below are lessons learned and recommendations specific to these tools.

- **Process mapping:** The evaluation found that the process map was very useful for improving client flow, service delivery processes, and distributing tasks among providers, who noted that developing the map took a long time but enabled them to gain new knowledge. Lacking such tools and understanding, it was difficult for them to analyze tasks, and mapping them and redesigning the process map fostered new thinking on service provision. HCI and the MOHSW should identify the concepts that were difficult to understand and develop clearer guidance for developing process maps.
- **Workplans:** Individuals' workplan targets should be stated in terms of denominator and numerator, not percentage, to facilitate understanding and analysis.
- **Competence model:** The competence model has the potential to ensure that trainings are provided based on individual needs. More work is needed to operationalize the model before scaling up its use. Providers did not sufficiently understand the concepts of skills and knowledge gaps. The training approach and materials should be reviewed and improved in follow-up to learning sessions. HCI and the MOHSW should develop clear guidance for providers on how to bridge the competence gaps providers identify.

Global application: HCI is currently in the process of developing case studies and a tool kit that will help others to implement a similar approach in their districts. The learning from the Tandahimba sites is already being spread to other facilities in Mtwara Region and is being applied to improve the performance of CHMTs in the Lindi Region of Tanzania as well. The tools applied in Tandahimba are

also being applied in Uganda to strengthen pharmaceutical human resources management. Lessons learned have also informed the integration of these approaches into all improvement work under the new USAID ASSIST Project.

2) Implementation strategy

The evaluation provided several recommendations related to the implementation strategy for the improvement interventions and the HCI support activities done in collaboration with the CHMT.

- **QI team meetings:** The facilities should continue with monthly QI meetings, which are very useful for reviewing progress in achieving indicators and in planning for future improvements.
- **Monitoring the HR improvement intervention:** Develop and implement a Performance Management Plan to assess progress in achieving desired results. Such a plan should include expected results after implementing the HIV care and health worker performance management interventions, including indicators and target for measuring results.
- **Coaching and mentoring visits:** Coaching and mentoring visits were very useful in supporting the QI teams to implement the interventions. For example, HCI's regular coaching visits were very useful in assisting each facility to develop its process maps. HCI should work with the district to include elements of QI coaching into the district supportive supervision checklist so that the CHMT can follow up on progress in implementation in the facilities and provide coaching to address challenges observed. The activity should be included into council comprehensive health plans where resources to support them can be solicited

Global application: Facility level teams can be empowered to make improvements in both their service delivery and human resources management leading to higher quality services and more efficient staff utilization. Regular team meetings and continuous support from facility and district leaders is critical to this effort.

3) Focus on HIV/AIDS services

The data examined in this evaluation indicate that the interventions implemented in Tandahimba resulted in better task distribution among providers, improved team work and collaboration, improved supervision and feedback, increased outreach activities to follow up clients, and increased use of data to improve HIV service delivery. Most of the health workers who participated in the improvement collaborative in the smaller facilities reported that they provided both HIV and non-HIV services, such as delivery, reproductive health care, and malaria treatments. The job descriptions and individual workplans supported in this intervention did not cover non-HIV responsibilities, and the interventions targeted only providers working in the provision of HIV services. However, the findings indicate that services are provided in an integrated manner. To build an effective human resources management system and increase overall staff productivity, it is important to include all facility staff and all their functions.

- **Job descriptions:** Future efforts should make all job descriptions and individual workplans comprehensive, including all tasks, not only HIV-related services. To implement OPRAS effectively, all the health workers should have a job description that covers all their functions.
- **Coverage:** Health worker performance management interventions should cover all facility staff. In order to leverage the resources needed, CHMTs should oversee the implementation of QI activities and collaborate with other HR stakeholders, like IntraHealth, Benjamin Mkapa HIV Foundation, and the Clinton Foundation. Performance improvement interventions can start with HIV service delivery providers and gradually expand to cover all staff in the hospital. The QI teams established as part of the collaborative, if supported, could orient other facility staff on the HR improvement

interventions already implemented (process map, job model, job description, and competence model).

Global application; While staff have found the job descriptions helpful in clarifying their tasks around HIV care, interventions need to focus as much as possible on clarifying each health worker's entire scope of roles and responsibilities.

4) **Workload and staff absences**

All facilities have shifted tasks among the providers to balance the workload more evenly. Nevertheless, the workload is still too heavy, since providers are working more hours than scheduled due to absenteeism and staff shortages. The main causes of absences are training followed by vacation and sick leave. The finding indicates trainings are the major cause of absences, but at the same time, the government has instructed the districts to eliminate in-service trainings in their budgets. Staff gaps should be filled and actions taken to reduce staff absence.

- **Training:** Given the reduction in budget for in-service training and high rate of absenteeism due to training, districts and facilities should be supported to find ways to provide on-the-job trainings.
- **Staff shortages:** The districts need to address the staff shortages facing all facilities, which implies a long-term effort requiring a special assessment to identify the facilities with extreme shortages serving a large population. These facilities should then be given high priority when allocating staff.

Global application: An overall effort is needed to think more creatively about in-service training approaches to avoid creating staff absences which increase workload on an already limited workforce. More on-the-job training, mentoring, and peer-to-peer training need to be utilized. In addition, teams working on improving care and human resources management should address, as part of their process improvements, mechanisms for covering workload during unavoidable absences.

5) **Productivity**

The evaluation confirmed results in care delivery, such as the increased coverage of HIV-exposed children with daily Cotrimoxazole, but did not find noticeable changes from baseline on providers' time-use patterns. This area requires further exploration and discussion.

- **Time use:** CHMT coaches should encourage facilities to review their productivity throughout the day to identify ways to productively use all working hours and reduce extra hours.

Global application: Health workers should be encouraged to review their processes of care and tasks to determine if there are steps or activities which can be moved to less productive times of the day. For instance, pre-counting pills for prescriptions, preparing materials, and other tasks can be done during low-volume periods.

6) **Performance evaluation and feedback**

The OPRAS performance evaluation process is still not well understood or effective in evaluating staff performance. As in the baseline, providers and managers don't sufficiently understand the purpose of evaluation, how to set performance targets, and how performance should be measured and rewarded. This was to be expected because the intervention did not try to alter performance evaluation trends, so the recommendation is the same as that provided at the time of the baseline assessment.

- **Performance Evaluation:** Facility-based providers need to be oriented on the OPRAS performance evaluation process. Both supervisors and providers need to understand the process, the purpose of performance evaluation, how to set performance targets, the performance review process, and when to conduct performance evaluation and midterm reviews. Job descriptions and workplans should be used as a basis for completing the OPRAS forms.

Global application: Performance evaluation purpose and processes need to be clearly defined and understood by everyone in the system, including health workers. Health workers should be assessed on their performance in their roles and responsibilities. The use of relevant and clearly defined job descriptions and workplans can facilitate clear understanding of task expectations.

7) Recognition, reward and incentives

Recognition, reward, and incentives were not addressed by the collaborative, but several challenges were noted, including lack of financial and non-financial incentives and systems for recognizing staff performance.

- **Recognition and reward:** Supervisors need to understand how to recognize and regularly acknowledge good performance through verbal and written forms.
- **Other incentives:** Districts need to consider implementing a cost-effective package of both financial and non-financial incentives. The process and criteria for receiving incentives should be clarified.

Global application: While financial incentives may not always be possible to reform or establish, building in non-financial incentives such as recognition and praise for good performance can boost health worker engagement and reinforce good performance. Such changes are often actionable at the service delivery level and should be supported by district-level management.

8) Sustainability

The health providers interviewed for this evaluation indicated they have developed adequate skills to develop process maps, job descriptions, and workplans and can introduce new staff to the use of these tools. They see the benefits of the intervention in their work. The intervention has not only helped to reduce the workload of overworked staff but also helped to increase patient enrollment in HIV care and strengthened teamwork. HCI and the MOHSW should continue to develop and implement strategies (as described below) to ensure sustainability in these sites while expanding to other districts in the Mtwara Region.

- **Coaching:** HCI should work with the district to include elements of QI coaching into the district supportive supervision checklist so that the CHMT can follow up on progress in the facilities and provide coaching to address challenges observed.
- **Coverage of all staff:** QI teams in the facilities should be supported to orient other facility staff (non-QI team members) in all aspects of the improvement interventions (i.e., process map, job model, job description and competence model) that have already been implemented.
- **Monthly meetings:** The facilities should continue with monthly QI team meetings. These meetings are very useful to review progress in improving performance and planning for future improvements.

Global application: Efforts to improve performance management should not be a one-time intervention. It is important to ensure that all current health workers have clear roles and responsibilities and are receiving continuous feedback on their performance. In addition, it is critical to have an ongoing process to orient new staff, ensure they receive clear roles and responsibilities, and have a mechanism to adjust the job descriptions of all staff as staffing changes occur in the facility.

9) Remaining objectives at 12 HR sites

For these 12 sites, HCI should work with CHMT and RHMT to continue to improve the remaining four objectives of the performance cycle, including performance management, improving working environment, rewarding performance, and career development. The facilities themselves can focus on reviewing tasks and responsibilities of providers for other non-HIV areas for overall improvement of provider work plan and time management.

Global application: Improvement of facility-level processes of care can take place with limited support and involvement from higher levels such as districts. However, the improvement of some human resources management requires the district level leaders to be actively involved. While facilities are able to make some improvements in HR management on their own, higher level issues of incentives, professional growth opportunities, and training often rely on higher levels of the health system.

10) Scale-up considerations

The care process and health worker performance improvement interventions implemented in the 12 facilities in Tandahimba can be applied at all levels of health delivery, including hospitals, health centers, and dispensaries. It is important before scaling up the intervention to ensure that it is comprehensive enough to achieve noticeable improvements. To scale up the interventions tested in Tandahimba in the entire Mtwara Region, the following should be considered:

- **Supervision and coaching:** The CHMTs and RHMT should oversee and supervise the implementation of health worker performance management improvement activities. For sustainability, the CHMT should continue to be actively involved in coaching and monitoring visits and should consider incorporating aspects of coaching for quality improvement in the district supportive supervision tool.
- **Components for spread:** The process map, job model and job description, and workplan are ready to be introduced in new sites, but further work is needed to develop the competence model.
- **Design considerations:** The number of staff in the facility is important to consider when planning for scale-up of interventions. District and regional hospitals have large numbers of staff. The scale-up plan for each facility should consider the number of staff, time required to develop and implement the tools of the intervention package (e.g., process map, job model and description, workplans) and staff capacity. The Tandahimba Hospital approach wherein the interventions focused only on providers from PMTCT and CTC units may be more feasible for larger facilities.

Global application: HCI will produce case studies that draw lessons learnt from the Tanzania and Niger experiences in applying performance management and will publish a toolkit to facilitate spread and scale-up of this approach.

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APPENDICES

Appendix 1: Health Worker Interview

ID _____ Date _____ Interviewer name: _____ Site #: _____
dd/mm/yyyy

The USAID Health Care Improvement Project is conducting an evaluation of an HRH quality improvement intervention aiming to improve productivity and engagement of health workers delivering ART services in your facility. Your responses will remain anonymous and confidential. May I proceed with the interview?

Section A: Demographic characteristics

Provider type: 1. Medical Officer _____ 2. Clinical Officer _____ 3. Nurse/ Midwife _____
4. Nurse's Assistant _____ 5. Lab _____ 6. Pharmacist/Dispenser _____ 7. Counselor _____
8. Other _____

Gender: Male _____ Female _____

1. What is your role at this HIV Clinic?

2. How long have you been working at this facility? Years _____ /Months _____

Section A: HRH QI processes (this section is only for facilities implementing HRH QI)

3. Are you a member of HRH QI team in your facility? Yes No
(if no, go to section b)

3.a If yes, what QI intervention have been implemented in your facility to date (circle all that apply)

4. What approaches are you using to implement the HRH interventions mentioned above?
(probe... Describe how you are involvement in QI activities, process of sharing feedback, discussing results and challenges)

5. Did you develop job models for your work? Yes No

5.a if yes please show me your job model _____ (mark X if job model is seen)

5.b if no, please describe why

6. Did you adjust your job description to accurate represent the tasks you are currently doing through HRH QI intervention? Yes a No

6.a If yes please show me your adjusted job description _____ (mark X if adjusted job description is seen)

6.b If no, please describe why

7. Did HRH QI interventions you have implemented (job model, job description and service journals)change how you are performing your tasks? Yes No

7.a If yes, please describe the key changes

8. Did HRH QI change the way you do work with your team and improved your performance? Yes No

8.a if yes, please describe the changes

Section B. HRH outcomes

(if the participant is from HRH QI intervention sites please skip question # 1)

1. Do you have a written job description that clearly defines your tasks and responsibilities?
Yes No **(If no, go to question #1b)**

1a. If yes, can you show me a copy (mark only when you see the job description)?

1b. Has anyone discussed your job description with you?
Yes No

If yes, who discussed with you?

- a. Supervisor
- b. Facility manager
- c. MO/CO
- d. Coworker
- e. other please specify _____

2. Have you participated in any training in the past 12 months?
Yes No **(If no, go to question #10)**

3. If yes, please note the theme(s) of the training(s) you attended:

Theme of training (circle all that apply)	Duration of training in days
3a)STI	
3b) OI	
3c) VCT	
3d) PMTCT	
3e) ART	
3f) Other 1: specify	
3g)Other 2: specify	
3a)STI	
3b) OI	

4. Do you know how health workers are selected to attend trainings? (Prompt: By whom? On what basis?)

5. Do you feel that you receive adequate training on a regular basis? Yes No **(If yes, go to question #7)**

6. If not, in which areas are you lacking?

7. Do absences of your co-workers occur on a regular basis at this facility? Yes No **(If no, go to question #9)**

8. Which of the following reason(s) accounts for the majority of staff absences? **(check all that apply)**

- a. Vacation _____
- b. Sick leave _____
- c. Maternity leave _____
- d. Training _____
- e. Don't know _____
- f. Other (specify) _____

9. Do you ever work more than your scheduled hours? Yes No **(If no, go to question #11)**

10. If yes, what are the reasons?

- a. High number of patients
- b. Coordination meetings
- c. Administrative matters
- d. Other: please specify _____

11. How often do you have to work more than your scheduled hours?

- a. Once a month
- b. Once a week
- c. More than once a week
- d. Other: please specify _____

12. Do you ever work less than your scheduled hours? Yes No **(If no, go to question #13)**

12.a If yes, what are the reasons?

- a. Low number of patients
- b. Worked more than scheduled hours on another day
- c. Other: Please specify _____

13. Do you have a supervisor? Yes No **(If no, go to question #15)**

14. If yes, who is your supervisor? **(circle all that apply)**

- a. Facility manager
- b. Medical Officer
- c. Clinical Officer
- d. Nurse/Midwife
- e. Other: specify _____

15. What happens when you are supervised? **(circle all that apply)**

- a. Records are examined
- b. Work observed
- c. Feedback given
- d. Discuss problems encountered
- e. Administrative updates given
- f. Other: please specify _____

16. How often do you receive feedback from your supervisor on your performance?

- a. Once a week
- b. Once every two weeks
- c. Once every three weeks
- d. Once a month
- e. Other: please specify _____

17. When was the last time you received a supervision visit?

- a. Within the past 7 days
- b. Within the last month
- c. Within the last 3 months
- d. I don't remember
- e. I never receive supervision visits

18. If you have been working at this facility for at least one year, have you ever received a performance evaluation?

Yes No **(If no, go to question #20)**

19. If yes, did you feel that you were evaluated fairly? Yes No
20. Please briefly explain why or why not:
21. Do you have opportunities for promotion in your position? Yes No **(If no, go to question #23)**
22. If yes, how were you informed about these opportunities?
23. Do you receive any non-financial incentives for working at this facility? Yes No **(If no, go to question #25)**
24. If yes, please briefly describe the non-financial incentive:
- a. Verbal recognition
 - b. Written recognition
 - c. Free health care/medicines
 - d. Other: please specify _____
25. Do you receive any financial incentives in addition to your regular salary?
Yes No **(If no, go to question #26)**
26. If yes, please explain.
Describe incentive:
- 26a. Team-based incentive? Yes/No
 - 26b. Individual? Yes/No
 - 26c. Performance-based? Yes/No
 - 26d. Rural/Hardship? Yes/No
 - 26e. General (for everyone)? Yes/No
27. How often are incentives given?
- a. Quarterly
 - b. Every six months
 - c. Yearly
 - d. Other (please specify)
28. Do you feel highly motivated to do your work at this facility? Yes No
29. Please explain why you feel this way
30. What are some important factors that you think influence health worker motivation? **(read options and circle all that apply)**
- a. Living and working conditions
 - b. Incentives
 - d. Supportive supervision
 - e. Possibility for professional advancement/growth
 - f. Ability to influence decision-making
 - g. Other: please specify _____
31. Do you have any suggestions about how your job or working conditions could be improved?

Appendix 2: Site Manager Interview

ID _____ Date _____ Interviewer name: _____ Site #: _____
dd/mm/yyyy

The USAID Health Care Improvement Project is conducting an evaluation of HRH Quality improvement intervention aiming to improve productivity and engagement of health workers delivering ART services in your facility. Your responses will remain anonymous and confidential. May I proceed with the interview?

Section A: HRH QI processes

1. Please describe the HRH Quality improvement interventions you are implementing to date?
(circle all that apply)
2. What approaches are you using to implement the HRH interventions mentioned above?
(probe... Describe the steps used to develop the intervention, involvement of staff, monitoring the QI process , providing feedback, discussing results, leadership, documenting QI progress etc)
3. Are there any changes/success you have observed in HCW performance as a result of QI intervention? Yes No **(select all that apply—discuss with Mac on expected changes)**
Please describe the major changes
4. Has QI approach influence the way you address challenges in service delivery? How please provide examples and evidence.
5. What are the key challenges you are facing in implementing QI interventions?
6. How are you addressing these challenges?
7. What measures/ steps are you taking to sustain QI interventions?
8. Can the facility continue implementing the QI intervention without external support? Yes or No
Please describe
9. Do you think QI intervention can be adapted to different settings such as large hospital and small dispensaries?) Yes or No
10. From your experiences, what are key factors to consider for successful scale up QI intervention in different setting?

Section B: QI intervention outcomes

1. Do all employees working at this facility have a written job description that clearly defines roles? and tasks for their position? Yes No
 - 1a. If yes, can you show me a job description? _____ **(mark with an X if job description seen)**
 - 1b. Briefly describe how job descriptions are developed and disseminated
 - 1c. Are job descriptions updated regularly? Yes No **(If no, go to question #3)**
2. If yes, how often are job descriptions updated?
 - a. Every six months
 - b. Annually
 - c. Bi-annually
 - d. Other: please specify _____

3. Do staff ever work more than their scheduled hours? Yes No
(If no, go to question #5)

4. If yes, what is the reason(s) staff work more than their scheduled hours? **(circle all that apply)**

- a. High number of patients
- b. Coordination meetings
- c. Administrative matters
- d. Other: please specify _____

5. How often do staff work more than their scheduled hours?

- a. Once a month
- b. Once a week
- c. More than once a week
- d. Other: please specify _____

6. Do staff ever work less than their scheduled hours?

Yes No **(If no, go to question #8)**

7. What are the reasons staff may work less than their scheduled hours?

- a. Low number of patients
- b. They worked more than their scheduled hours on another day
- c. Other: Please specify _____

8. Are staff at the HIV Clinic frequently absent due to training, scheduled leave or other reasons?

Yes No **(If no, go to question #11)**

9. If yes, on average how many staff absences occur per week? Number _____

10. Which of the following reason(s) accounts for the majority of staff absences?

- a. Vacation leave _____
- b. Sick leave _____
- c. Maternity leave _____
- d. Training _____
- e. Other _____

11. How often are staff at this facility reassigned to other facilities?

- a. Yearly
- b. Every two years
- c. Every three years
- d. Every four years
- e. Other: please specify _____

12. Are new staff given an orientation when they begin work at the facility? Yes No **(If no, go to question #15)**

12.a Do you have orientation guideline for new staff? Yes or NO

12.b. Please briefly describe the orientation for new employees

13. How often do health workers in your facility receive training?

- a. Monthly
- b. Quarterly
- c. Yearly
- d. Other: please specify _____

14. How are staff members chosen for trainings?

15. How do you assess the training needs for staff members at your facility?

16. How are staff at this facility supervised? Please describe

17. Who supervises clinical staff? (*circle all that apply*)

- a. Facility Manager
- b. Medical Officer
- c. Clinical Officer
- d. Nurse/Midwife
- e. RHMT/CHMT
- f. Other: specify _____

18. How often are staff supervised?

- 1. Weekly _____
- 2. Monthly _____
- 3. Quarterly _____
- 4. Other: _____

19. Do supervisors use a supervision checklist or form? Yes No

(If no, go to question #22)

19a. If yes, ask to see form _____ **(mark with an X if seen)**

20. Aside from salary, do health workers in your district receive any other financial or non-financial incentives? Yes No **(If no, go to question #23)**

20.a. (*If yes, describe and circle all appropriate*)

Non-financial

- a. Verbal recognition
- b. Written recognition
- c. Time off
- d. Other: please specify _____

Financial

- e. General Bonus
- f. Salary increase
- g. Hardship payment
- h. Other: please specify _____
- i. Performance based incentive

(If yes, go to question #24)

22. How often can staff receive performance-based incentives?

- a. Never
- b. Once a month
- c. Once every six months
- d. Once a year
- e. Other: please specify _____

23. Do you think these incentives motivate staff to perform well? Yes No

24.a. Why do you feel this way? Briefly explain

25. Is there a process to assess and appraise health workers?

Yes No **(If no go to question #30)**

25a. If yes, can we see an example of a performance evaluation form? _____ **(mark with X if form was seen)**

26. If yes, how often are performance evaluations given?

- a. Once a year
- b. Once every two years
- c. No set time-frame for evaluations exists
- d. Other: please specify _____

27. What are performance evaluations of health workers based on?

- a. Job descriptions
- b. Performance goals of health facility
- c. Health outcome indicators
- d. Performance objectives
- e. Other: please specify _____

28. Are there any opportunities for staff promotion at this site? Yes No

29. If yes, please describe:

30. Is retention of health workers a problem for the HIV clinic? Yes No

31. If yes, what are some of the reasons retention is a problem?

- a. Remote area
- b. Leave for position in the private sector
- c. Lack of supervision
- d. Burnout
- e. Migration to another country
- f. Lack of professional advancement opportunities
- g. Other: please specify _____

32. Are there any other human resources management challenges at this site you feel should be noted?

Section C: QI records reviews

Ask to see QI file to gather information on progress in implementation of QI activities and document the trends of the five care and treatment service indicators

Appendix 3: Example of a Job Model

JOB MODEL

FACILITY: MAHUTA HC

NAME:

TITLE: MCHA

NO.	TASK	MEASURE	GOAL	DOCUMENTATION
1	Take clients' history and physical examination	Number of pregnant women taken history and examined	To take history and physical examination to all pregnant women attending ANC	ANC Card
2	Provide Pre and post test counseling	Number of ANC women counseled and tested HIV	To conduct counseling and testing to all women attending ANC	ANC & PMTCT registers
3	Enrolment of HIV+ pregnant women to CTC	Number of HIV-positive pregnant women enrolled into CTC	All HIV-positive pregnant women are enrolled to CTC	PMTCT care register CTC1 and CTC2 and pre ART registers
4	Assess the need for ART treatment	Number of HIV-positive pregnant women checked CD4 and clinical staging	All HIV-positive pregnant women assessed for ART eligibility	CTC2 and PMTCT card register and pre ART register
5	Schedule another ANC visits	Number of women given appointment	Appropriate booking for all clients at RCH	Appointment book and ANC card

Appendix 4: Example of a Job Description

JOB DESCRIPTION

NAME:

POSITION: MCHA

DEPARTMENT: RCH

REPORTING TO: Facility Clinical Officer In-charge

PURPOSE OF THE JOB: To provide ANC services to all pregnant women coming to the facility and provide HIV testing and enrollment of HIV-positive pregnant women to CTC.

DUTIES AND RESPONSIBILITIES

1. Take history and conduct physical examination to all women attending ANC and document into ANC card.
2. Provide pre and post HIV test counseling to all women at ANC and document into ANC&PMTCT registers.
3. Enrollment of all HIV+ pregnant women into CTC and document into CTC1, CTC2 and pre ART registers.
4. Assessment of ART treatment eligibility through WHO clinical staging and CD4 check up to all HIV positive pregnant women and record into CTC2, PMTCT care register, pre and ART registers.
5. Schedule next ANC visit and document into ANC card and appointment register.

Appendix 5: Example of Individual Workplan

INDIVIDUAL WORKPLANS

Facility: NAMIKUPA HEALTH CENTRE.

Name:

Title: CLINICIAN (AMO)

Objective	Activity	Target	Time frame	Remarks
Number of HIV Positive pregnant women from RCH enrolled into CTC increased from 80% to 100% by December 2011	<ul style="list-style-type: none"> ▪ Monthly review of PMTCT and pre ART registers to ensure all HIV+ pregnant women are enrolled to CTC 	<ul style="list-style-type: none"> ▪ All HIV positive pregnant women are enrolled to CTC 	July 2011 – December 2011	
Increase number of exposed children under 18 months of age initiated on Cotrimoxazole from 83% to 100% by December 2011	<ul style="list-style-type: none"> ▪ Conduct outreach services to actively follow up HEI ▪ Weekly review of Mother-child follow up register to ensure proper documentation 	<ul style="list-style-type: none"> ▪ All HEI receive cotrimoxazole prophylaxis. 	July 2011 – December 2011	
Reduced number of clients on ART who are lost to follow-up from 4% to 2 by December 2011	<ul style="list-style-type: none"> ▪ Bi Monthly review of ART registers and appointment registers to identify clients missed appointment and share the list with HBC providers for follow up 	<ul style="list-style-type: none"> ▪ All clients with missed appointment are traced back to CTC 	July 2011 – December 2011	

Appendix 6: Example of Competence Model

COMPETENCE MODEL

Facility: NAMIKUPA HEALTH CENTRE

Name:

Title: CLINICIAN

Provider	Activity	Required skill	Required Knowledge
Clinician	TB screening	<ul style="list-style-type: none"> ▪ Communication skills (listening, analysis and feedback giving) 	<ul style="list-style-type: none"> ▪ TB prevention ▪ TB Signs and symptoms ▪ Benefits for TB screening
	Clinical staging	<ul style="list-style-type: none"> ▪ Use of charts to stage the clients ▪ Physical clinical examination 	<ul style="list-style-type: none"> ▪ Basic HIV and AIDs Management ▪ WHO clinical staging
	Taking blood sample for CD4 testing	<ul style="list-style-type: none"> ▪ Phlebotomy ▪ Communication skills ▪ Correctly label blood samples 	<ul style="list-style-type: none"> ▪ Standard precautions for taking blood sample ▪ A working knowledge of the factors involved in the procedure which could affect the quality of the sample
	Adherence counseling to all clients on drugs for opportunistic Infections (OI)	<ul style="list-style-type: none"> ▪ Counseling skills (communications) 	<ul style="list-style-type: none"> ▪ Medication administration safety ▪ Dosage and side effects of drugs
	Administer OI drugs, ART to the clients in CTC	<ul style="list-style-type: none"> ▪ Dispensing skills 	<ul style="list-style-type: none"> ▪ Dosage of OI drugs and ART to the different clients

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