TECHNICAL REPORT

Baseline Assessment of HIV Service Provider Productivity and Efficiency in Uganda
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SEPTEMBER 2010

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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.
**Acknowledgements:** The authors would like to thank Dr. Zainab Akol, Program Manager AIDS Control Program (ACP), for her support and collaboration in this effort. The authors would also like to thank the HCI team in Uganda for their assistance: Dr. Nigel Livesley, Dr. Anthony Musisi, Dr. Esther Karamagi Nkolo, Dr. Augustine Muhwezi, and Mr. Kenneth Kasule. We would also like to offer a special thanks to Ms. Rosette Birungi and Dr. Augustine Lubanga, Regional Coordinators with HCI, for their participation.

The USAID Health Care Improvement (HCI) Project is implemented by University Research Co., LLC (URC) under the terms of Contract Numbers GHN-I-01-07-00003-00 (HCI Task Order 1) and GHN-I-03-07-00003-00 (HCI Task Order 3). The Uganda HIV service provider productivity and efficiency baseline assessment was carried out under HCI Task Order 1, which is made possible by the generous support of the American people through USAID. Support for the HIV service provider assessment was provided by the U.S. President’s Fund for AIDS Relief (PEPFAR).

URC’s subcontractors for the HCI Project include EnCompass LLC, Family Health International, Health Research, Inc., Initiatives Inc., Institute for Healthcare Improvement, Johns Hopkins University Center for Communication Programs, and Management Systems International. Initiatives is the lead organization for HCI’s health workforce development activities. For more information on the work of the USAID Health Care Improvement Project, please visit www.hciproject.org or contact hci-info@urcchs.com.

Figure 5: Productivity of ART service providers, all sites ................................................................. 10
Figure 6: Average overall employee engagement score by provider type ........................................... 12
Figure 7: Average engagement score by question, all sites and providers .......................................... 12
Figure 8: Average wait and contact time for each service, all sites .................................................... 13
Figure 9: Client flow comparison: site with triage and site without triage ........................................ 14

ABBREVIATIONS
AIDS  Acquired immunodeficiency syndrome
ART   Antiretroviral therapy
ARV   Antiretrovirals
HC    Health center
HCl   USAID Health Care Improvement Project
HIV   Human Immunodeficiency Virus
HR    Human resources
MOH   Ministry of Health
NGO   Non-governmental organization
URC   University Research Co., LLC
USAID United States Agency for International Development
WHO   World Health Organization
EXECUTIVE SUMMARY

As in many developing countries, the health workforce in Uganda faces a human resources crisis of epic proportions. The World Health Organization (WHO) lists Uganda as one of 57 countries that have a “critical shortage” of health providers. The HIV/AIDS epidemic has compounded the human resources crisis, overburdening the country’s health system and providers with a huge load of chronically ill patients.

In 2009, the USAID Health Care Improvement (HCI) Project began implementing with the Ministry of Health an improvement collaborative aimed at increasing the number of clients accessing HIV/AIDS care and antiretroviral therapy (ART) and increasing the coverage of HIV/AIDS services. This “coverage collaborative”, implemented in 13 sites, is linked with a series of improvement collaboratives addressing different aspects of improving access to care, retention in care, and clinical outcomes for HIV-positive patients.

A central approach of the coverage collaborative is to improve the efficiency of service delivery. Health worker productivity and engagement—the extent to which workers believe in their work, are motivated to do their job well, and feel valued for doing it—are integral to improving efficiency as they determine how much workers do, how much they are able to do, and how driven they are to perform well.

As part of the collaborative, HCI conducted, for the Ministry of Health, a baseline assessment of HIV/AIDS provider productivity, efficiency, and engagement. Five data collection tools were used for the assessment including: a site manager interview, a time utilization tool, a productivity interview, a client flow assessment, and an engagement survey. The assessment included six health centers and hospitals and took place in November 2009.

Selected key findings from the assessment include:

- Providers observed spent 48% of their time caring for patients, but 12% of provider time was spent waiting for patients, and 12% of time included unexplained absences, usually due to late arrivals of staff at the clinic.
- Provider productivity was highly variable, with most productive work occurring in the morning between 9:30AM and 1:00PM. Productivity also varied by day in conjunction with daily variations in client load.
- Services at vertical sites (i.e., those offering only HIV services) were often structured so that client loads were heavy on some days and lighter on others, greatly influencing health worker productivity.
- Stock-outs and supply shortages were common occurrences, with 38% of providers reporting that they had lacked the necessary supplies to carry out their work properly in the past seven The inputs most frequently lacking were medications, reported by 47% of those providers who experienced some shortage, followed by lab supplies and testing kits (reported by 40%), and office supplies (reported by 13%).
- Health workers were not found to be engaged in their work: engagement scores ranged between 3.1 and 4.1 on a 5-point scale. The analysis of employee engagement by question showed that recognition and development opportunities scored lowest, at only 2.9 and 3.4 respectively, highlighting areas where improvements can be made.
- A number of significant bottlenecks were identified in client flow. Patients waited a total average of 3.25 hours for a total average of 27 minutes of provider contact time for all services combined. The greatest wait times occurred at triage (111 minutes on average), registration (41 minutes on average), and waiting for the clinician (27 minutes on average).
To support the Ministry of Health to improve the productivity and engagement of providers delivering ART services in Uganda, the sites participating in the coverage collaborative will use this information to make informed decisions about health worker allocation, time utilization, roles, efficiency and management that will result in improved HIV/AIDS service provider productivity and increased capacity to provide services to new patients. The successful interventions developed in the coverage collaborative will then be shared with other sites so that all sites participating in improvement activities can learn from each other and replicate successful interventions.
I. BACKGROUND

As in many developing countries, the health workforce in Uganda is facing a human resources crisis of epic proportions. The World Health Organization lists Uganda as one of 57 countries that have a “critical shortage” of health providers (doctors, nurses and midwives). The HIV/AIDS epidemic has compounded the human resources crisis, overburdening the country’s health system and providers.

Various factors contribute to the health human resources crisis in Uganda. Uganda’s health human resources management systems are weak, with too few trained human resources experts and conflicting and conflicting personnel management procedures. Turnover rates for health providers in Uganda are high. According to a study conducted in Uganda by the Capacity Project in 2007, approximately one in four health workers would leave their jobs soon if they could, and 57% of doctors said they would like to leave their job. Health workers also often lack the resources they need to do their work effectively and are inadequately supervised and supported.

In 2009, the USAID Health Care Improvement (HCI) Project and the Ministry of Health (MOH) began implementing an improvement collaborative in 13 government and NGO-run sites aimed at increasing the number of patients that get into HIV care, receive antiretroviral therapy (ART), and remain on treatment. This collaborative, known as the “coverage collaborative,” is linked with a series of HIV/AIDS improvement collaboratives being implemented in Uganda by HCI and the MOH that are addressing different aspects of improving access to care, retention in care, and clinical outcomes for HIV-positive patients.

One of the coverage collaborative’s central approaches is to improve quality by strengthening the efficiency of service delivery. Health worker productivity and engagement are integral to improving efficiency as they determine how much workers do, how much they are able to do, and how driven they are to perform well.

A. Assessment Objectives

In collaboration with the Government of Uganda, HCI designed this baseline assessment of HIV/AIDS treatment service providers to gather information on productivity and engagement. The coverage collaborative will use this information to identify changes that can be tested to improve health worker allocation, time utilization, roles, efficiency and management that will lead to improved quality of care. The assessment was designed to determine:

- The productivity of providers delivering ART services,
- Provider perceptions of their current workload,
- The engagement of providers delivering ART services, and
- Patient flow, wait times and contact times with providers.

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3 Engagement describes a health worker’s state of mind when he or she is not only satisfied with his or her job, but is also motivated to do the work, committed to doing it well, and feels valued for doing it. Extensive research conducted in both in the United States and internationally has shown that if a person is “engaged” in his or her job, the productivity of the organization improves significantly, and he or she performs far better in client-facing roles.
II. METHODOLOGY

A. Site Selection

HCI selected six ART sites for the baseline assessment. This purposive sample included roughly half the sites from both regions participating in the coverage collaborative. The sample also included different districts and levels of the health system (health centers and hospitals). Table 1 lists the sites and their characteristics, including whether services were “vertical” (HIV only) or “integrated” (HIV included as part of a larger, integrated package of service delivery). Sites with staff classified as “mixed” have some staff that are dedicated to only provide HIV/AIDS services and others who provide both HIV/AIDS and other health services. It should be noted that all sites provided a variety of health services, but that those facilities that offered HIV/AIDS services in a separate room or building and with separate staff from the rest of the facility were classified as “vertical,” although they were not “stand-alone” sites in the classic sense.

<table>
<thead>
<tr>
<th>Site</th>
<th>Site Type</th>
<th>Site Type</th>
<th>Staff Type</th>
<th>Days/week ART Service Offered</th>
<th>ART Clinic Staff - Total Numbers</th>
<th>Clients per Month (October 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>NGO hospital</td>
<td>Vertical</td>
<td>Dedicated</td>
<td>5</td>
<td>18</td>
<td>2813</td>
</tr>
<tr>
<td>2</td>
<td>Government health center</td>
<td>Integrated</td>
<td>Integrated</td>
<td>1</td>
<td>23</td>
<td>98</td>
</tr>
<tr>
<td>3</td>
<td>Government health center</td>
<td>Integrated</td>
<td>Integrated</td>
<td>2</td>
<td>6</td>
<td>130</td>
</tr>
<tr>
<td>4</td>
<td>Government hospital</td>
<td>Vertical</td>
<td>Mixed</td>
<td>4</td>
<td>12</td>
<td>1811</td>
</tr>
<tr>
<td>5</td>
<td>Government health center</td>
<td>Integrated</td>
<td>Integrated</td>
<td>2</td>
<td>15</td>
<td>680</td>
</tr>
<tr>
<td>6</td>
<td>NGO ART clinic in government hospital</td>
<td>Vertical</td>
<td>Mixed</td>
<td>5</td>
<td>24</td>
<td>3146</td>
</tr>
</tbody>
</table>

B. Instruments

Five data collection instruments were applied in the assessment: a site manager interview, a time utilization observation, a productivity interview, an employee engagement questionnaire, and a client flow assessment tool. The data collection instruments are included in the Appendix. Table 2 shows the sample size for each tool per site.

1. Site manager interview

Site manager interviews were conducted at all six sites to gather information on services provided, structure of services, staffing structures, human resource management systems, and client load.

2. Time utilization observation

How service providers spend their time during the day can have a great influence on client flow and service quality. Members of the data collection team directly observed providers for an entire day. Data collectors checked in on providers every fifteen minutes to identify whether they were involved in productive tasks or unproductive tasks. Data collection started at the clinic’s official opening hours and concluded when the clinic closed or the service provider left for the day. Activities classified as productive included: direct client care, indirect care, outreach, meetings/administration, training,
### Table 2: Sample size by data collection instrument and site

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Number Applied per Site</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td>Site 2</td>
<td>Site 3</td>
</tr>
<tr>
<td>Clinic/Site Manager Interview and Record Review</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Time Utilization Observation</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Productivity Interview</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Employee Engagement Questionnaire</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Client Flow Assessment</td>
<td>84</td>
<td>54</td>
</tr>
</tbody>
</table>

cleaning/preparation, and personal hygiene. Activities classified as unproductive included: waiting for patients (not doing any other work), breaks, social visits, and unexplained absences. In all, data collectors observed 23 health workers in four facilities. Data collection was not possible in site 3 because only one staff member reported to work on the day data were collected and that staff member closed the clinic early because he was ill. The assessment team did not complete the time utilization tool at site 2, where data were collected on only one day, as opposed to the two days spent at sites 1, 4, 5, and 6.4

### 3. Productivity Interview

Productivity interviews were conducted with 39 health workers to determine how they perceive their daily workload, gather information on clinic and provider schedules, assess average hours worked per day, and document staff absences. The health workers interviewed included: medical officers, clinical officers, nurses, midwives, counselors, lab personnel, and expert patients.

### 4. Employee engagement questionnaire

The employee engagement questionnaire enabled the team to assess engagement levels by site and by cadre. Employee engagement refers to elements of motivation, but transcends traditional definitions of motivation or satisfaction to include issues related to employee commitment to the organization and to doing quality work to help the organization advance. Baseline data on engagement were collected using a simple confidential questionnaire of 16 statements relating to self-efficacy, performance, work relationships, and work climate. The questionnaire included statements related to the worker’s belief in the importance of his/her work and the organization; belief in his/her ability to succeed; relations with colleagues and supervisors; opportunities for professional advancement; support and recognition; and the perceived influence he/she has in decision making. Members of the data collection team reviewed the sixteen statements with the providers individually to ensure that they understood each statement before leaving providers to complete the survey privately. The tool requires providers to rate their response to each statement on a five-point scale from “strongly disagree” (1) to “strongly agree” (5). A total of 39 health workers representing all cadres at the six sites filled out the engagement survey.

### 5. Client flow tool

To document information on how clients move from one service to another, how long they waited for services, and how much time they spend with providers, the data collection team administered a client

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4 The scheduling of HIV service delivery days at site 2, combined with the schedules of other sites and time limitations of the data collection team, made it impossible to allocate a second day of data collection.
flow tool. The team worked with clinic staff to initiate the tool at registration. Each client who presented at the clinic registration was asked what time he or she arrived at the clinic. The arrival time and the start and end time for registering the client were then recorded on the form. The form then went with the client to each point of service at the clinic. Each staff member was provided with a clock and instructed to record the start time of the service and the end time of the service. Services recorded included: registration, triage, clinical assessment, clinical care, counseling, laboratory, and pharmacy/dispensary. The form provided space for other types of services to be recorded as necessary. Data were collected for a total of 275 clients across the five sites where the client flow tool was applied.

C. Data Collection

Two data collection teams each visited three sites from November 13-19, 2009. The teams were made up of a representative from the HCI Workforce Development unit and one to two staff members from the HCI Uganda team. An MOH representative also accompanied one team. The HCI headquarters team provided a one-day training to HCI Uganda and MOH representatives on the tools, data collection methods, and ensuring data quality. Team members also had a chance to test out the tools and apply what they had learned in the training during the field test that took place prior to baseline data collection.

1. Ethical considerations

All interviews and questionnaires were anonymous and confidential. Data collectors were trained to explain the purpose of each interview or questionnaire to the provider, and providers were given an option to opt out of the interview or survey. The client flow tool was explained to each client at registration, and their permission was sought to administer the tool. No data on individual clients or details of the medical service provided to them was recorded on the form. Data collectors were instructed not to interrupt clinical services or counseling sessions when documenting time utilization. All time in which a client was in a room with a clinician or counselor was recorded as direct client care.

2. Limitations

The human resources assessment was only conducted at six HIV sites that are part of an ongoing HCI-supported improvement collaborative. Because of the small sample size, the findings and recommendations in this report should not be perceived as a solution or prescription for all HIV clinics in Uganda. HCI hopes that the findings and recommendations in this report will engender further discussion and research on how to solve the human resource issues present in the Ugandan health system and ways to improve the efficiency, productivity, and quality of care delivered by ART providers.

It is important to note that while HCI recognizes that supervision is an integral piece of improving human resource management systems and worker productivity and efficiency, the assessment was not designed to focus on supervision systems and only gathered preliminary data relating to supervision from the site manager interviews and the employee engagement questionnaire.

III. FINDINGS

A. Staffing and Human Resources Management

How clinics are staffed can have a significant impact on service provider productivity and efficiency. With too few clinicians, clients can back up at the clinician’s door; too many staff or staff members who do not have clear roles or responsibilities may lead to idle time. Few support systems or no means of recognition can leave staff disengaged from their work and uninterested in making the effort needed to provide a quality service. The site manager interview gathered data on service delivery, staffing levels and recognition and reward systems to provide a descriptive framework for understanding time utilization, productivity, client flow and engagement.
1. Staffing

Results of the site manager interview show variability in the numbers and types of staff allocated to sites, position vacancies, and percentage of staff time dedicated to HIV service delivery. Table 3 shows the types and numbers of providers working at each site. Three of the six sites assessed had neither a pharmacist nor a pharmacy assistant on staff. Instead, they allocated nurses or midwives to dispense drugs. Many of the site managers and providers complained of understaffing. Managers at five out of six sites noted that one or more posts were vacant. Vacancies compared with the perceived staffing standards for sites ranged from two posts to 24 posts. The posts that were vacant included counselors, pharmacists, nurse/midwives, lab staff, medical officers, and clinical officers. Existing shortages of staff in the public sector and limits on resources for contracting staff make it likely that vacancies will remain for the near future and that site managers will have to come up with creative solutions for improving staff efficiency and productivity in order to meet client needs for service delivery.

Table 3: Types and numbers of health workers by site

<table>
<thead>
<tr>
<th>Cadre</th>
<th>Site 1: Hospital</th>
<th>Site 2: Health Center</th>
<th>Site 3: Health Center</th>
<th>Site 4: Hospital</th>
<th>Site 5: Health Center</th>
<th>Site 6: Hospital</th>
<th>Total per Cadre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Officers</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>4,6</td>
<td>9</td>
</tr>
<tr>
<td>Clinical Officers</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>47</td>
<td>13</td>
</tr>
<tr>
<td>Nurses/Midwives</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Nurse Assistants</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Lab Staff</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Counselors</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pharmacist Assistants/Dispensers</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Expert Clients</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Peer Educators</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total Per Site</strong></td>
<td><strong>16</strong></td>
<td><strong>23</strong></td>
<td><strong>5</strong></td>
<td><strong>13</strong></td>
<td><strong>13</strong></td>
<td><strong>23</strong></td>
<td><strong>93</strong></td>
</tr>
</tbody>
</table>

Compounding staff shortages are the issues of staff absences and allocation; staff members often attend trainings or are called away by the MOH at short notice. Moreover, 59% of the staff members at study sites were integrated staff, providing HIV/AIDS services on a part-time basis while spending the other part of their time providing a variety of other health services. This is noteworthy because these providers are often called away to other departments in the facility on HIV clinic days. There may be periods of time when the clinical officer – who may be the only staff member providing clinical care for the HIV clinic – is called away to another department and does not return to the HIV clinic, stalling client throughput, and consequently increasing client wait times. When the medical officer or clinical officer does finally return to the HIV clinic, he or she may feel rushed to see all clients, potentially compromising the quality of care provided.

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5 Most managers acknowledged that they were unaware of a designated staffing standard for their site. They based their assessment of staffing expectations on staffing levels defined by the site or program overseeing the site, but the rationale for the staffing levels was not clear.

6 Two of the medical officers at site 6 provided HIV services full-time and two medical officers provided these services on a part-time basis.

7 One of the clinical officers provided HIV services full-time and three of the clinical officers provided services on a part-time basis.
While staffing challenges are significant, it is important to note that staff members are getting some degree of training. The baseline found that almost all staff (92%) had been trained to provide HIV services. This is a great achievement for the Ministry of Health and something that should be recognized and sustained.

2. Recognition and reward

Manager responses to interview questions about the availability of staff recognition and reward revealed these systems to be weak. Recognition is not targeted at individuals, but involves general recognition for all health workers at the site, regardless of individual performance. This general recognition usually occurs once a year through end-of-year parties or gift-giving. On the rare occasions when individual recognition occurs, site managers state that it typically involves some form of verbal recognition provided privately to the staff member.

Results of the employee engagement questionnaire make it clear that recognition systems are ineffective. Providers rated recognition the lowest of all engagement elements at only 2.92 out of 5, indicating that few staff had received recognition from a supervisor in the last seven days (see section III.D. for a more detailed discussion of employee engagement).

3. Promotion

Managers at only three sites noted that staff had promotion opportunities at the site, but all mentioned that even though some opportunities were available, they were rare. The employee engagement questionnaire substantiated this finding: providers scored the availability of professional advancement opportunities at only 3.44 out of 5.

B. Productivity

Providers need to maintain a high level of productivity throughout the day in order to effectively address the high demand for HIV services. To assess the productivity of health workers in HIV clinics during a regular work day, 23 health workers in four different sites were observed every 15 minutes for one full work day. Productive time included time spent in direct contact with patients as well as indirect patient care—preparation, review and updating of charts; consultation with other providers; management tasks such as meetings and routine maintenance; and off-site activities such as trainings and outreach.

Unproductive time included time spent waiting for patients, lunch breaks, social visits and conversation, personal errands, and absences not related to client care or service delivery.

Based on the direct observations of health providers in four facilities, the assessment found that providers spent 27% of their total time on direct patient care and 21% on indirect patient care. Providers thus spent 48% of their time caring for patients. However, providers also spent 12% of their time waiting for patients and 12% of their time was noted as “unexplained absences,” usually due to late arrival of staff at the clinic. Figure 1 below provides a breakdown of productivity for all staff observed. Improvements in timely attendance at work could help decrease morning bottlenecks typical of HIV clinics and possibly help increase the quality of care provided.

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8 Observations were not conducted at two sites, in one case because no staff were available that day and the clinic closed very early in the day and in the second case because there was only one service day the week data were collected and the team did not have the time necessary to conduct the productivity observations.
The data also indicate stark variations in productivity during the course of the day, with greater productivity in the morning and productivity diminishing as the day progressed. This is largely due to the fact that most clients come in the morning, and providers work furiously to attend to their needs as quickly as possible. Figure 2 shows the percentage of staff engaged in productive activities by time of day across all sites.

During the assessment the team found that several HIV clinics had many clients coming on a few days of the week and few to none on other days. In some cases this was due to how the clinic organizes its service delivery. Figure 3 shows the variability in client load per day for the month of October 2009 at site 6, a vertical site which offers services five days a week.\(^9\) Although services are offered five days per week and clients are never turned away, the clinic has set Mondays as a day for routine clients to come back for care and medication refills and Thursdays as a pediatric care day. Clients are simply encouraged to come on these days, while the clinic remains open to all services. The other days are “open” in the sense that no particular clients are encouraged to come on those days, although Tuesdays are also an outreach day. The managers and health workers at this site said they structured services in this way to organize their work, which makes some sense. Unfortunately, the system has also created large surges in clients on some days and dramatic dips in client load on others. These surges and dips are further reflected in worker productivity, and they also likely influence service quality, especially on busy days. Studies in the United States have shown that client bottlenecks in emergency and operating

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\(^9\) These data were collected by manually counting the clients registering at the clinic or entered into register books kept for outreach visits for each day of the month.
departments present serious risks to the quality of care.\textsuperscript{10,11} Providers may have the knowledge and skills to provide quality care, but if the work structure is such that they do not have the time to provide that care then quality is compromised, sometimes with dire consequences for the patient.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{Daily client load at site 6 for October 2009}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Percent productive time over the course of the day (all staff, all sites)}
\end{figure}


Figure 4 further illustrates the effect client load can have on productivity. At site 6, the observation took place on a day when client loads were very low; as a result, providers spent little time on direct or indirect patient care and a much greater proportion of their time waiting for clients. Most of the productive activity on the day observed at this site took place in the two-hour period between 10AM and 12PM, with little productive activity either before or after that period. The chart also shows health worker productivity for site 4 on a day when client loads were high. On this day, staff members were highly productive for a sustained period from 9:30AM to 2:30PM and continued productive activities from 3:30 to 5PM after their lunch break.

Productivity levels also varied by providers, with pharmacy personnel and dispensers engaged in productive tasks an average of 72% of the day, clinical officers 68% of the day, and nurses 59% of the day (Figure 5). In contrast, laboratory technicians, counselors, and medical officers were observed to be engaged in productive activities only 48%, 32%, and 31% of the time, respectively. These productivity levels are, to a large extent, a reflection of client needs, as almost all clients who attend clinics see the clinical officer and collect medications. However, the data also reveal service gaps and raise questions about how staff might be used more effectively. At all sites, little counseling was observed. Most site managers explained that new ART clients were not being taken in, so the site did not provide voluntary counseling and testing. This left counselors largely idle and raises questions about whether counseling for HIV/AIDS patients is being provided to the degree needed. Could these counselors be doing more psychosocial or adherence counseling? How else could their time be used? Medical officers often play dual roles as managers and clinical care providers, but at the two sites observed they saw few clients and were not actively engaged in management tasks. It is important to stress that only two medical officers were observed; thus, these data do not represent their overall productivity nor are they necessarily representative of medical officers as a whole. This is an area where further research may be needed to determine if medical officers are using their time effectively. Examining data on productivity enables sites to ask the questions: Which staff are taking on most of the workload? Which staff could do more and what could they do? How can productivity be increased and balanced among staff?
1. Materials and supplies

In order for providers to have high levels of productivity, it is important that the materials and supplies they need to do their job well are always available. According to the productivity interviews, stock-outs and shortages occur on a regular basis: 38% (15/39) of providers said that, within the past seven days, they had lacked the necessary supplies to carry out their work properly. Of these 15 providers, 47% (7/15) lacked medications, 40% (6/15) lacked lab supplies/testing kits, and 13% (2/15) lacked office supplies. Lack of supplies directly affects productivity; for example, when lab supplies or test kits are out of stock, health workers are unable to provide HIV tests or other lab services, decreasing the time they can spend on patient care and increasing the time clients must wait for services.

2. Absences of co-workers

Staff absences, whether for scheduled leave, training, illness, or some other reason, can also affect productivity at the HIV clinics. To get an idea of how often staff members were absent and how often HIV clinics were short-handed due to staff absences, we asked providers about the attendance of their co-workers in the past seven days. Most (59% or 23/39) providers responded that a co-worker had been absent. Reasons for absences included: workshop/training, annual leave, sick leave, bereavement, and unknown. The effect these absences can have on productivity was amply evident at site 3 during the day the data collection team visited. When the team arrived, only the clinical officer was in attendance. The remaining staff members were either away attending trainings or on annual leave. The clinical officer was also ill and, as a result, closed the HIV clinic early, barring clients from service that day. While this example may be unusual, sites should consider improving staff management to minimize such absences and ensure that staffing levels are always adequate to provide a minimum package of services.
C. Workload

To respond to the high client loads that HIV clinics see on some days, many providers periodically work beyond their scheduled hours. Of the 39 providers interviewed, 36% (14/39) said in the past seven days they worked beyond their scheduled working hours. The reasons providers gave for extended hours included: large numbers of patients at the facility, dispensing alone, reporting, and emergencies.

Respondents were also asked if they frequently had to work outside of their scheduled hours and how often; 64% (25/39) said they frequently worked beyond their scheduled hours. Of those that did work extra hours, 40% stayed late more than once per week, 32% once per week, 12% once in two weeks, and 16% once a month or less. It is important to note, however, that on days in which client loads are low, providers often leave early. Half the providers interviewed (49%, 19/39) said they sometimes worked less than their scheduled hours, most often when there were few patients. Some clinics even close early on days when the client load is very low.

1. Perception of workload

Perceptions of workload are important because providers who feel overworked are often less engaged in their job. They are also more likely to experience stress, feel burned-out, and call in sick to work. Providers were asked whether they thought their workload was very manageable, manageable, unmanageable, or very unmanageable. Most providers interviewed (79%) said their workload was manageable; 18% said their workload was unmanageable; and 3% responded that it was very unmanageable. However, many providers perceived simply completing their work to mean it was manageable, even if they still considered the work or patient load to be overwhelming at times and time was not adequate to provide a quality service. This perception may signal a lack of awareness about quality standards that improvement efforts should try to address. Efforts should be made to even out client load and ensure quality service delivery.

D. Employee Engagement

Employee engagement measures how workers feel about their job and the environment in which they work. Research has shown that health workers that are “engaged” (scoring 4-5 on the questionnaire) in their work have a higher level of productivity, are more loyal to their organizations, tend to perform better, and are absent less often. Employees that are “disengaged” (scoring 3-4) are less productive than engaged employees, are less loyal to their organization and are not having their needs met. Finally, those providers that are “actively disengaged” (scoring 1-3) have low levels of productivity, have high rates of absenteeism, feel compelled to spread their disillusionment with other colleagues, and are not loyal to their organization. To ensure high rates of efficiency and productivity, providers need to be engaged in their work.

Results from the employee engagement questionnaire, which was applied with 23 health care providers, were analyzed by type of provider, site, and question. When overall average scores on the employee engagement questionnaire were analyzed by provider, there was little variation in scores, with the exception of nurse assistants (see Figure 6). Lab staff, counselors, “other staff” (most often expert clients), and medical officers were engaged, with scores ranging from 4.02 to 4.07. Score for clinical officers and nurses/midwives fell just below the engagement threshold, at 3.83 and 3.93, respectively. Finally, nurse assistants’ scores showed them to be disengaged, with a score of 3.13. The data do not provide information on why nurse assistants scored lower than other providers; further research is needed to understand and explain this difference.
The analysis of employee engagement by question reveals more detail on specific areas where engagement is low. Figure 7 shows that recognition and development opportunities scored lowest, at only 2.92 and 3.44, respectively, highlighting areas where improvements can be made. Other areas, such as belief in their job being important and clarity of expectations, scored high, at 4.92 and 4.59, respectively, and signal areas of achievement.

E. Client Flow
Client flow is a key measure to understanding the effectiveness and efficiency of services being delivered in sites. If services are being delivered efficiently and providers have high levels of productivity, clients should have fairly low wait times and have adequate contact time with providers to receive good quality care. The client flow tool was used in five different health centers to track a total of 275 clients.
Patients on average waited a total of 3.25 hours for an average total 31 minutes of contact time for all services combined. The greatest wait times occurred at registration (41 minutes on average), at triage (111 minutes on average), and while waiting for the clinician (27 minutes on average). Figure 8 shows where clients observed at the HIV clinics in the five sites on average spent their time and how much time they spent waiting at each stage of their visit.

Figure 8: Average wait and contact time for each service, all sites

From a client perspective, waiting time is a significant determinant of patient satisfaction. Examples from the United States show that system changes can successfully address this issue, even in contexts such as emergency rooms where patient flow is often perceived as beyond the control of administrators and providers. In a case study conducted by the Boston Medical Center, improvements in the way client flow was managed resulted in an increase in the number of patients treated and a reduction in the average time clients waited for service from 60 to 40 minutes.12

Individual client flow results for each site show some interesting differences in where clients waited most for services and in the percentage of clients who see clinicians. Figure 9 shows that at sites such as site 2 that actually triage patients (i.e., assess their needs and direct them to the appropriate service), fewer clients (52%) receive clinical services than in sites where triage is not provided.13 In site 5, where triage is not performed, 86% of clients who are registered are seen by a clinician. These data suggest that, when done effectively, triage serves its purpose by directing clients to the services they need and reducing clinician client loads. Instituting effective triage at sites that do not currently perform it may provide one possibility for increasing both efficiency and the quality of service. While client wait times

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12 Institute of Medicine 2006, op cit.
13 Some sites claim to do triage, but merely weigh and take client blood pressure but do not appear to effectively assess clinical needs or direct clients to services other than the clinical officer.
for triage at site 2 were high (111 minutes), addressing client needs for triage will be easier than those for clinical care since a broader spectrum of providers—including nurses, nurse assistants and expert patients among others—may provide triage services as compared with clinical assessments and care, which require clinical or medical officers or nurses, all of whom are in short supply.

Figure 9: Client flow comparison: site with triage and site without triage

### IV. CONCLUSIONS AND RECOMMENDATIONS

The baseline assessment identified several areas where human resource management systems can be improved to strengthen provider efficiency and productivity and improve the quality of HIV/AIDS service delivery. Recognition and reward systems can be improved to ensure that health workers get the acknowledgement and praise they deserve when they perform well. Promotion and career advancement opportunities are rare, which may affect worker motivation. The current organization of services requires that many providers work extended days on some days of the week and go home early on others. The majority of employees are moderately engaged, regardless of the type of center or the position they hold, but specific areas of engagement, such as recognition and professional development, could be improved. Productivity appears highly variable, and efforts can be made to smooth out client flow and worker productivity to help ensure that quality services are always provided and to reduce patient waiting times.

To support the Ministry of Health to improve the productivity and engagement of providers delivering ART services in Uganda, the sites participating in the coverage collaborative are testing changes related to health worker allocation, time utilization, roles, and management to improve HIV/AIDS service provider productivity and increase their capacity to provide services to new patients. The successful interventions developed in the coverage collaborative will then be shared with other sites so that all sites participating in improvement activities can learn from each other and replicate successful interventions.
Suggestions for possible issues to be addressed are summarized in the recommendations below.

A. Recommendations

- **Client flow:** Task analysis and possible task shifting at sites might reduce wait times and increase contact times, particularly with clinicians. Improvements in triage could help address this issue as well.

- **Organization of services:** The spikes and dips in client load at some sites have implications for both productivity and quality of service delivery.
  
  - Sites that offer services several days a week should examine service organization to try and even out client loads as much as possible and ensure that staff do not find themselves idle on some days and running to keep up on others. In addition, some sites that only have one day of HIV services may need to add another HIV clinic day during the week. HIV client load, along with other clinic service delivery and staffing data, should be examined to determine the feasibility of increasing service days and come up with a viable strategy for ensuring that additional HIV/AIDS services can be delivered without compromising other health services.
  
  - Sites should look into improving or initiating effective triage services in order to guide clients who do not need to see the clinician away from clinical services and ensure that those clients who need clinical care receive timely and high quality care.
  
  - Heavy client loads in the morning were universal at all sites. Sites should explore and test ways of encouraging some clients to come in the afternoons to balance out client load within the day and ensure that clinicians and other service providers have the time they need to provide a quality service. Asking clients who live close to the clinics to come later so the clinic can prioritize clients traveling long distances in the morning may be one way of evening out client flow.

- **Productivity:** Several service providers were observed idly waiting for clients, while others were witnessed skipping lunch to attend to client needs. Sites may want to consider conducting task analysis of staff duties to help them assess which staff members are overburdened and where opportunities for task shifting exist. Improving timely attendance could also help decrease bottlenecks.

- **Engagement:** To raise levels of engagement, sites should look at the employee engagement results and pick one or two areas where scores were low to improve upon. This should be a joint exercise with both supervisors and staff so that providers feel empowered about being able to make a difference in their work environment. Ideas to improve areas where scores are low, such as feedback, should be tested and implemented. The employee engagement questionnaire should then be applied again in 3-4 months to determine if changes have improved engagement and identify new areas to work on.

- **Awareness of standards:** Efforts should be made to increase health worker awareness of service delivery standards to ensure that, to the greatest extent possible, providers focus not only on throughput and output but also on delivering high quality services. Provider perceptions of workload manageability should take into consideration not only how many patients they are able to see but how many they are able to provide a quality service to within the time available.

- **Site staffing levels:** Sites commonly experience staffing shortages due to staff absences for trainings, meetings, and leave. QI teams should consider developing strategies for improving daily staffing plans and creating staffing contingency plans to ensure that all tasks are covered and clients can be served even when some staff members are absent. For example, task shifting might occur on a periodic basis to cover select services when a specific staff member is absent: a nurse could be
trained to take on selected clinical tasks when the clinical officer is pulled away or is not present but would resume her routine tasks when the clinical officer is present.

- **Provider expectations:** Most providers view increasing the number of staff as the main solution for addressing client flow, efficiency, and engagement issues. Efforts should be made to increase provider’s awareness of staffing constraints and galvanize their interest and skills in developing creative solutions to addressing issues at the clinic level.
APPENDIX: DATA COLLECTION INSTRUMENTS

Site Manager Interview
Health Worker Productivity Interview
Time Utilization Form
Questionnaire on Employee Engagement
Client Flow Form
Site Manager Interview

1. Interviewer name: ____________________________________

2. HIV/AIDS services provided at site clinic (circle Yes (1) or No (0) for all):
   a. ART initiation  1  0
   b. ART monitoring  1  0
   c. OI  1  0
   d. STI  1  0
   e. Drug disbursement  1  0
   f. Adherence management  1  0
   g. ART counseling  1  0
   h. Psychosocial counseling  1  0
   i. Other  1  0__________________________
   j. Other  1  0__________________________

3. Site type:
   a. Government HC  1
   b. Government Hosp  2
   c. Other  3 Specify _________________________________________

4. HIV Service Type:
   a. Vertical  1
   b. Integrated  2

5. Staff Type at Site:
   a. All Dedicated  1
   b. All integrated  2
   c. Mixed (some dedicated some integrated)  3

6. How many staff of each cadre are on duty providing ART services at this site today

<table>
<thead>
<tr>
<th>Cadre</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>Medical Officers</td>
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<tr>
<td>Clinical Officers</td>
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<td>Nurses/ Midwives</td>
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<td>Nurses Assistants</td>
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<td>Counselor</td>
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<td>Lab</td>
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<td>Pharmacist/ Dispenser</td>
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<td>Other 1</td>
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<td>Other 2</td>
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14 Definitions: 1) Delivery Type – Vertical sites are sites that only provide HIV/AIDS services (voluntary counseling and testing, prevention of mother-to-child transmission, and/or ART); Integrated sites are sites that provide HIV/AIDS services as part of a larger package of health care. 2) HIV/AIDS Staff Type at Site: Dedicated refers to sites in which the staff who provide HIV/AIDS services provide no other health services (only HIV/AIDS services); Integrated refers sites in which the staff that provide HIV/AIDS services provide other health services as well, and Mixed refers to sites in which some staff may be dedicated to HIV/AIDS services while others provide both HIV/AIDS and other services.
### 7. Staffing levels, full time, part-time, contractual and civil service staff at ART Clinic

8. Are any staff currently absent from this site due to scheduled leave, training or other reason?
   - Yes  
   - No
   (If no, skip to Q.11)

9. If yes, how many?
   - Number _____________

10. What is or are the reason(s) for the absence?
    1. Vacation leave ______
    2. Sick leave ______
    3. Maternity leave ______
    4. Training ______
    5. Other __________

11. Do staffs at this site receive any special bonuses or incentives for providing HIV/AIDS services?
    - Yes  
    - No
    (If no, skip to Q.13)

12. If Yes, please describe:

13. If there are contractual staffs on site, is there any difference in the salaries and benefits provided to contractual staff versus staff employed through the civil service?
    - Yes  
    - No  
    - NA

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### Table: Staffing levels

<table>
<thead>
<tr>
<th>Cadre</th>
<th>Number of positions planned for this clinic</th>
<th>Number of positions filled</th>
<th>Number of vacancies</th>
<th>Of positions filled, Number of Contractual Staff</th>
<th>Of positions filled, Number of civil service staff</th>
<th>Total Number Trained in HIV/AIDS service delivery</th>
<th>No. of Staff providing HIV/AIDS Services Full Time all days/week</th>
<th>No. of Staff providing HIV/AIDS Services Part-time</th>
<th>No. of Staff providing HIV/AIDS Services Some days/week</th>
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Uganda HIV Provider Productivity and Efficiency Assessment • 19
14. If yes, please describe:

15. Are there any processes for staff reward or recognition in place?  Yes  No  
   (If no, skip to Q.17)

16. If yes, please describe:

17. Are there systems for staff supervision at this site?  Yes  No  
   (If no, skip to Q.20)

18. If yes, how often are staffs supervised?
   1. Weekly  ______  
   2. Monthly  ______  
   3. Quarterly  ______  
   4. Other: _____________________________

19. Please describe how staffs are supervised:

20. Are support systems in place to assist staff who experience stress or burnout due to working with patients who are HIV positive?  Yes  No  
   (If no, skip to Q.22)

21. If yes, please describe:

22. Are there any opportunities for staff promotion at this site  Yes  No  
   (If no, skip to Q.24)

23. If yes, please describe:

24. Are there any other human resources management challenges at this site you feel should be noted?  Yes  No  
   (If no, end interview)

25. If yes, please describe:
Record Review

Ask to see the **National HIV Care Monthly Report** to gather information on the total numbers of clients seen for the months of August, September and October 2009.

<table>
<thead>
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<th>Service</th>
<th>August</th>
<th>September</th>
<th>October</th>
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<tr>
<td>HIV Non-ART</td>
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</tbody>
</table>
Health Worker Productivity Interview

Interviewer Name: _______________________________

Provider type:  1. Medical Officer ____       2. Clinical Officer_____     4. Nurse/ Midwife_____
9. Other _____

(Read aloud to health worker)

The Quality of Care Initiative is gathering data to improve productivity and efficiency of ART services in your facility. I am going to ask you some questions pertaining to your workload. Your responses will remain anonymous and confidential. May I continue with the interview?

Yes  No  (If no, thank the provider and seek another to interview)

Please answer the following questions with regard to the past seven days:

1. In the past seven days, was there any point where you lacked the supplies or drugs that you needed to perform part of your job?

   Yes  No  (If no, skip to Q. 3)

2. If yes, specify and describe all such instances:

   ____________________________________________________________________________________
   ____________________________________________________________________________________
   ____________________________________________________________________________________

3. In the HIV clinic, have any of your co-workers been absent in the past seven days?

   Yes  No  (If no, skip to Q. 6)

4. If yes, please specify their position and day or days they were away:

   ____________________________________________________________________________________
   ____________________________________________________________________________________
   ____________________________________________________________________________________

5. If so, please explain the reasons for their absence if you know them.

   ____________________________________________________________________________________
   ____________________________________________________________________________________

6. Did you have to work beyond your scheduled hours at any time during the past seven days?

   Yes  No  (If no, skip to Q. 8)
7. If yes, specify the number of extra hours and the reasons:

Hours:
Reasons:
_______________________________________________________________________________________
_______________________________________________________________________________________

_Read out: “For the remaining questions, please answer with regard to the general working conditions you experience at this facility, not only during the past seven days.”_

8. What are the scheduled hours of this HIV clinic?
   ___________ to ___________

9. What are your scheduled working hours in this clinic?
   ___________ to ___________

10. Do you ever have to work outside of your scheduled working hours?
    Yes No
    
    *(If no, skip to Q. 14)*

11. If yes, how often?
    (Read out possible responses)
    a. More than once per week
    b. Once per week
    c. Once in two weeks
    d. Once a month or less often

12. Are you compensated for any extra time that you must work?
    Yes No
    *(If no, Skip to Q. 14)*

13. If yes, how?
    (Do Not Read Options – More than one is possible)
    a. Financial compensation
    b. Time off
    c. Non-financial gift or reward
    c1. Specify: ________________________________
    d. Other: ________________________________

14. Do you ever work less than your scheduled hours?
    Yes No
    *(If no, skip to Q. 16)*
15. If yes, what are the reasons you might do this?
_______________________________________________________________________________________
_______________________________________________________________________________________
_______________________________________________________________________________________

16. Do you have a clear understanding of your role in the HIV Clinic? Yes No

17. Do you know what tasks you are responsible for in the HIV Clinic? Yes No

(If no, skip to Q. 18)

18. If yes, please briefly describe those tasks:
_______________________________________________________________________________________
_______________________________________________________________________________________
_______________________________________________________________________________________

19. Did you receive an orientation to your role at the HIV Clinic when you started working here? Yes No

20. How do you feel about your work in terms of its load per day at the HIV Clinic? (Read out possible responses – only one should be selected)
a. Very manageable
b. Manageable
c. Unmanageable
d. Very Unmanageable

21. Please tell us any suggestions you have for improving your workload?
_______________________________________________________________________________________
_______________________________________________________________________________________
_______________________________________________________________________________________

Thank you so much for your time. We are very appreciative and we hope that the results of this baseline serve to help you improve your workload and the services you are able to deliver to clients.
# Time Utilization Observation Form

**Health Worker:**

**Evaluator Name:**

**Site:**

**Cadre:**

**Date:** (dd/mm/yyyy)

<table>
<thead>
<tr>
<th>Hour</th>
<th>Min</th>
<th>Direct patient care</th>
<th>Indirect Care</th>
<th>Outreach</th>
<th>Meetings/Administration</th>
<th>Training</th>
<th>Cleaning/preparation, personal hygiene</th>
<th>Waiting for patients</th>
<th>Breaks</th>
<th>Social visits</th>
<th>Unexplained Absence</th>
<th>Other</th>
<th>Missed Observation</th>
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**Uganda HIV Provider Productivity and Efficiency Assessment • 25**
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**Questionnaire on Employee Engagement**

Site Name: ___________________________ Date: ___________ ID #: _______

Provider type: (check all that apply):

CO___ MO___ Nurse/Midwife____  Nurse’s Assistant____  Lab personnel___
Dispenser/Pharmacist___  Counselor___  Other ___ Specify _____________________

*Instructions for the health worker: Please complete this survey by selecting one response for each statement that communicates how much you disagree or you agree with the statement. Please respond honestly thinking about how you feel today about each item. **Choose only one response for each question.***

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<tbody>
<tr>
<td>1. I believe that what I do as a health worker is important</td>
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<td>2</td>
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<td>2. I know what is expected of me at work</td>
<td>1</td>
<td>2</td>
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<td>3. I feel respected at work</td>
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<td>4. I have the materials I need to do my job right</td>
<td>1</td>
<td>2</td>
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<td>5. My supervisor or someone at work cares about me as a person</td>
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<td>6. When I face problems at work, I am able to solve them with the help of others.</td>
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<td>7. I have a close friend at work with whom I can share my ideas or problems.</td>
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<td>8. At work my opinions seem to count.</td>
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<td>9. My supervisor or someone at work gives me feedback on my work.</td>
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<td>10. I have enough opportunities at my job to grow and develop.</td>
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<td>11. There is someone at work that encourages my development.</td>
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<td>12. In the last 7 days I have received recognition or praise for doing good work.</td>
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<td>13. I believe that I am evaluated based on the quality of my work.</td>
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<td>14. My colleagues openly listen to my ideas and opinions</td>
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<td>15. I can make meaningful decision about how I do my job.</td>
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<td>16. I am proud to work at this health facility.</td>
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### Client Flow Form

**Date:** ________  
**dd/mm/yyyy**  
**Arrival Time:**  
24 hr                 _______:___  
hour                           min

**Visit Type:**
1. Initial Visit  __________
2. Pre-ARV  __________
3. ARV Initiation  __________
4. ARV Follow-up visit  __________

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<th>Time service started</th>
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<th>Waiting time (in minutes)</th>
<th>Contact time (in minutes)</th>
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