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HIV TRAINING EVALUATION

Evaluation of a Ministry of Health ART Training Workshop in Uganda

MARCH 2010

This report was prepared by Family Health International (FHI), the Ugandan Ministry of Health, and University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID). It was authored by Karen Katz, Leine Stuart, Angela Akol, Abner Tagoola, Patricia Wamala, and Jennifer Headley. The evaluation was carried out under the USAID Health Care Improvement Project, 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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EXECUTIVE SUMMARY

Background

The HIV Training Section of the Uganda Ministry of Health (MOH) trains clinicians in ART management based on World Health Organization (WHO) guidelines and curriculum. In the fall of 2009, Family Health International (FHI), in collaboration with University Research Co., LLC (URC) and the Uganda (MOH) conducted an evaluation of an MOH training workshop on the patient management of ART took place on September 14-23, 2009 in Soroti, Uganda. The evaluation targeted nurses and midwives who participated in the workshop and focused on the ART chronic care portion of the training.

Objectives

The overall objective of the evaluation was to provide information to the MOH on participant knowledge and practices related to the ART chronic care portion of the training for nurses and midwives six weeks post training.

Sub-objectives were as follows:

- To examine participant knowledge of material learned during the training
- To assess changes in provider practices related to the training
- To determine participant perspectives and satisfaction with the training
- To determine challenges and supporting factors participants encounter in implementing training material.

Methods

The evaluation used a combination of surveys and in-depth interviews to measure trainee knowledge and practice, and investigate factors that might influence the effectiveness of the training, including:

- A pre-training scenario in which respondents identified best clinical practices in HIV case studies
- A post-training scenario similar to but different from the pre-training scenario
- A post-training knowledge test on HIV related topics, and
- A post-training in-depth interview of trainees.

(A review of medical records was planned but later dropped.)

The pre-training scenario was administered to all participants on the first day of the training. Approximately six weeks after the training a sample of the participants were contacted in their health facilities and asked to participate in a second round of data collection. Those who were contacted and agreed to participate were administered the post-training scenario, the post-training knowledge test and the in-depth interview.

Thirty-five participants showed up for the training, but five were sent home because they had already attended a similar training, and another five did not complete the pre-training scenario, resulting in a final pre-training sample of 25. Many of the trainees who completed the workshop were not able to apply what they had learned because their facilities were not yet eligible to provide ART or had not yet received ARVs. As a result, only 13 trainees who had completed the training had used the learning. The post-training knowledge test and in-depth interviews were administered to these 13, and 8 of these completed the post-training scenario so that it could be compared to their answers on the pre-training clinical practice scenario.

Results

- The average age of the 25 workshop participants who completed the pre-training scenario was 36-37 years old, most were female and nearly all were nurse/midwives. On average they had 12 years of work experience.
- Out of nine questions on the pre-training clinical practice scenarios, the average correct score of the 25 trainees who completed the scenario was 3.3 (37%).
- Out of the 25 questions on the post-training knowledge test, the average number of correct responses was 16 (64%). Questions having the lowest percent of correct responses were the appropriate management of common opportunistic infections, including chronic papular itching and TB, or the major side effects of two ARV drugs, Zidovudine and Nevirapine.
- Eight trainees took both the pre- and post-training clinical practice scenarios and had provided ART since the training. Their percentage of correct responses more than doubled at the post-training evaluation, from 32% on the pre-training scenario to 67% on the post-training scenario.
- The 13 in-depth interviews demonstrated that most of the participants felt that the training was useful and that it was sufficient to enable them to provide good quality care. However, many felt that there were sections in the training that needed more time. Many also felt more time was needed for practice sessions.
- Most felt that the workshop influenced the way they provide care. Improved counseling skills and being able to administer ART were mentioned the most. More than half noted that their workload had increased since the training and most felt that they needed additional training.
- Eleven of 13 participants said that they received all eight job aids/handouts distributed during the training. Of those that used the tools, almost all felt that they were very useful. The participant manual and ART cards were the job aids reported being used by the most number of respondents.

Discussion/ Recommendations

- The average post-training knowledge score of 64% and scenario score of 67% are reasonably good though show there is still a need for improvement.
- A longer term follow-up period would give training participants more time to assimilate and implement the tremendous amount of material they were exposed to during the workshop. Good supervision and reinforcement of material would also likely help participants.
- Five of the original training participants were sent home because they had already done a similar training before, 14 were from facilities not yet eligible to provide ART, and four said their facility had not yet received any ARVs when they were interviewed 6 weeks after the training workshop. To ensure cost-effective training, the MOH may want to work to coordinate the various inputs required to enable effective ART (such as ART facility certification, ARV supply, and provider training) so as to minimize the time between training and application of the learning, and other possible activities such as refresher training when ART certification or ARV supplies are delayed.
- The evaluation was small in scope and the sample size decreased over time for various reasons. More information could be obtained with a larger scale evaluation that includes more participants, participants from different geographic areas, different types of providers and with a short-term and longer term follow-up period.

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ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ALT	Alanine Transaminase
ART	Antiretroviral Therapy
ARV	Antiretroviral
AST	Aspartate Aminotransferase
AZT	Zidovudine
CD4	Cluster of differentiation 4
d4T	Stavudine
DBS	Dried Blood Spots
EFV	Efavirenz
FHI	Family Health International
g/dl	Grams/deciliter
HCI	Health Care Improvement project
Hbg	Haemoglobin
HIV	Human Immunodeficiency Virus
HIV+	HIV-positive
IMCI	Integrated Management of Childhood Illness
kg	Kilogram
MOH	Ministry of Health
mm ³	Cubic millimeter
NRTI	Nucleoside Reverse Transcriptase Inhibitor
NVP	Nevirapine
OI	Opportunistic Infection
PEPFAR	President's Emergency Plan for AIDS Relief
PMTCT	Prevention of Mother-to-Child Transmission
po	<i>per os</i> (by mouth)
TB	Tuberculosis
TBA	Traditional Birth Attendant
3TC	Lamivudine
URC	University Research Co., LLC
USAID	United States Agency for International Development
WHO	World Health Organization

I. INTRODUCTION

A. Background

The Uganda Ministry of Health (MOH) operates a training workshop for health facility providers in the patient management of antiretroviral therapy (ART), based on World Health Organization (WHO) guidelines and curriculum¹. One or more providers from different facilities attend a 2-week training session at a central location (not necessarily in Kampala) that follows the WHO curriculum, and includes lectures, role-playing, practice with and feedback from “Expert Patients.” The training sessions are operated directly by the Uganda MOH HIV/AIDS Division Training Unit. In July 2009, representatives of the Health Care Improvement Project (HCI) and the Uganda MOH agreed to undertake an evaluation of this training that would assess the changes in knowledge and practices of providers who participate in one of these workshops. This information would enable the MOH to improve the training program. The evaluation was a joint effort of the Uganda MOH and HCI, under the leadership of HCI partner Family Health International (FHI).

The full 2-week training includes both acute care of HIV/AIDS and ART for chronic care. Two trainings operate concurrently, one for nurses and midwives and one for clinical officers and doctors. It was agreed that the evaluation would only address the ART chronic care portion of the training for nurses and midwives and that the training to be evaluated would be the one that took place on September 14-23, 2009 in Soroti (Eastern Uganda).

B. Objectives

The overall objective of the evaluation was to provide information to the MOH on participant knowledge and practices as related to the ART chronic care portion of the training for nurses and midwives six weeks post training. Sub-objectives were:

- To examine participant knowledge of material learned during the training
- To assess changes in provider practices related to the training
- To determine participant perspectives and satisfaction with the training
- To determine challenges and supporting factors participants encounter in implementing training material

II. METHODS

A. Overview

In order to produce information that the MOH can use to make improvements in the training program as well as due to budget and time limitations, this was designed as a small scale evaluation with a small sample size and short data collection period. The evaluation planned for a combination of surveys, in-depth interviews and a review of client medical records. In the first part of the evaluation, a member of the evaluation team attended the training, met the trainees, and at the opening of the training session administered a short survey using scenarios on ART patient management to all trainees that examined how the trainees would handle these situations in actual practice. These pre-training scenarios were administered before any training had taken place.

¹ World Health Organization, et al. 2009. Participant Manual for the WHO Basic ART Clinical Training Course. Geneva: World Health Organization.

The second part of the evaluation was planned and carried out approximately six weeks following completion of the training in the home facilities of all trainees selected for this part of the evaluation. Post-training measurements included a 25-question knowledge test, a clinical practice scenario using case studies, and an in-depth interview with all participants who were available on the day that the interviewers were at their facility. The survey form measured knowledge and practices post-training and the in-depth interviews examined participant perceptions about the training. A review of patient medical records was also planned that was intended to ascertain changes in provider practices as evidenced through the records (i.e., if providers were documenting ART visits in the medical records there could be an assessment of provider practices prior to the training and afterwards), but this measurement was dropped because the quality of the records proved to be insufficient for the intended purpose.

1. Target population and sampling

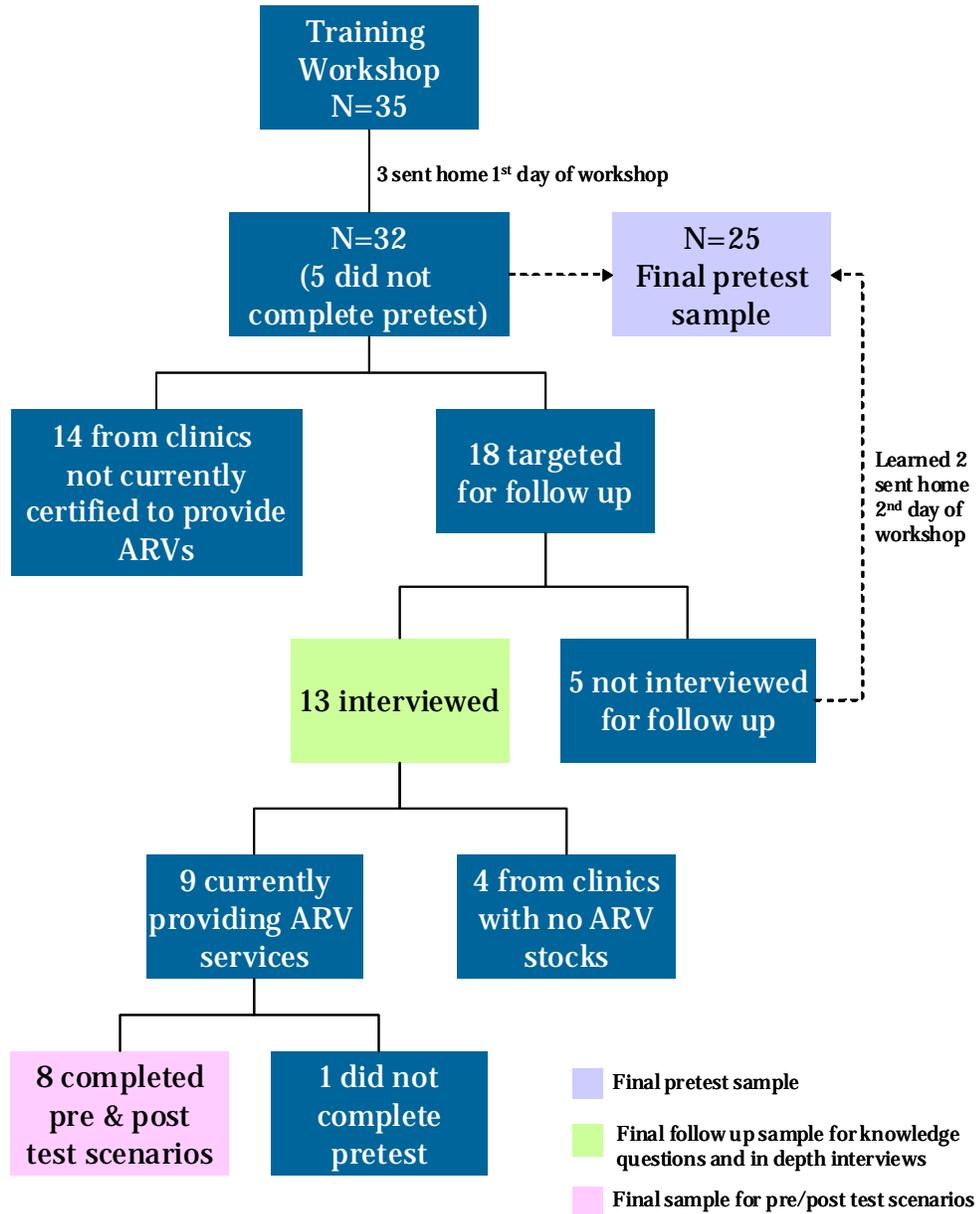
The target population was participants in the September 14th training for nurses and midwives. All of the participants came from health care facilities (hospitals or health clinics) located in seven districts of Karamoja Region: Amuria, Bukedea, Kaabong, Kotido, Moroto, Nakapiripirit, or Soroti. There were 35 participants on the first day of the training, but five were sent back to their home facilities on the first or second day because they had already attended a similar training. Another five of the remaining 30 trainees did not take the pre-training scenario, yielding a pre-training scenario sample of 25.

Following the training it was learned that 10 of the 25 trainees who completed the pre-training scenario came from facilities that were not yet certified to provide ART. Given that there could be a difference in retention of training information between those who were able to immediately manage ART after the training versus those that could not, the target population for the follow-up evaluation was revised to include only the participants coming from facilities that were certified to provide ART. Thus, trainees from the uncertified facilities were excluded from post-training measurements, leaving a sample of 13 trainees from 10 facilities who participated in the post-training knowledge test and in-depth interviews. Only 8 of these 13 completed the post-training scenario because 4 came from facilities that had not yet received any ARVs or provided any ART care and one was excluded for other reasons. (See Table 1 and Figure 1.)

Table 1. Sample size for the different measurements

Measurement	Reason for including or not including in the measurement	Number	Explanation
Completed Pre-Training Scenario	Started ART Training	35	
	Sent home, previously took training	- 5	
	Did not take Pre-Training Scenario	- 5	
		25	
Completed Post-Training Interview	Facility not ART-certified	- 10	14 of original 35 from uncertified facilities, 10 of which were in the 25 who completed Pre-Training Scenario
	Not present on interview day	- 3	
	Interviewed but had not completed the Pre-Training Scenario	+ 1	
		13	
Completed Post-Training Knowledge Test		13	Same 13 that completed the Post-Training Interview
Completed Post-Training Scenario and Pre-Training Scenario	No ARV so no chance to use training	- 4	
	Did not complete Pre-Training scenario	- 1	
		8	
Medical Record Checklist		0	Records proved to be insufficient for intended purpose of the study and so were dropped from evaluation

Figure 1: Sample sizes used in evaluation



2. Data collection forms

Four types of data collection forms were designed. Copies of the first four forms can be found in Appendix #1. (The post-training Knowledge test and post-training Scenario were included as two sections of the same form in Appendix #1.)

- Scenario for clinical practice, pre-training:** This scenario examined provider practices using case studies on topics such as HIV clinical staging, eligibility for ART, ART adherence, opportunistic infections, pediatric AIDS and HIV in postpartum women. The pre-training scenario included 9 questions.

- **Knowledge test, post-training:** This survey form was composed of two sections. The first section assessed knowledge of the training participants on the training topics. This test contains 25 knowledge questions, covering concepts similar to those on the MOH administered pre- and post-training knowledge tests, such as basics of HIV, specifics about various antiretrovirals, HIV staging, ART adherence, opportunistic infections (OI), TB in HIV-positive patients, etc. The post-training knowledge test administered by this evaluation 6 weeks after the training also included other important information from the training. While the knowledge questions were similar to the ones in the MOH tests, they were not identical.
- **Scenario for clinical practice, post-training:** This instrument included provider practice questions similar to those administered in the pre-training scenario. While the pre- and post-training scenarios examined similar topics, the case studies and questions themselves were not identical. The post-training scenario included 12 questions.
- **In-depth interviews:** An in-depth interview guide was used to learn more about the participants' perceptions toward the training. It was a combination of pre-coded and open-ended questions. Specifically, the form asked about the usefulness of the training, participant reports of how they've applied what they learned in their practice and what were some of the challenges and supporting factors in implementing what they learned.
- **Medical record checklist:** Two patient scenarios were identified (patients newly diagnosed with HIV and patients continuing on ART) and checklists developed to list important items that should be included in the medical record during a client visit matching the patient scenario. (The quality of the data in the patient medical records proved to be insufficient to assess provider practice as described below, and so this measurement was dropped.)

3. Field implementation and revision of samples

Data collection was led by the FHI office in Kampala. One of the trainers from a previous training workshop (not the September 14th workshop), a physician, coordinated the evaluation. Four interviewers were hired. They were all health providers conversant with the WHO ART care package and were not involved in the training of the participants involved in the evaluation. During the interviewer training, which was led by the study coordinator, the interviewers learned about the evaluation, reviewed the data collection forms, pretested the forms in a clinic setting and learned about administering informed consent. Issues of privacy and confidentiality were emphasized. The data collection forms were pretested in four health facilities in Jinja district with nurse/midwives who had previously been trained in the WHO training package and who were working in active ART sites. Minor revisions were made following the pretest.

Data collection took place November 9-17, 2009. The two teams divided up the list of clinics to visit. Prior to the beginning of data collection, permissions were secured from the MOH and the clinics to be visited. During the visit to the clinics, interviewers approached the participants, explained the evaluation to them and asked for their permission to continue with the interview. Participants were told that they have the right to refuse to be interviewed but no one refused.

For the field visits, interviews were scheduled with all trainees from ART-certified facilities. During these visits, we learned that two of the trainees were sent home on day 2 of the training after it was learned they had taken the training previously. Interviews were not scheduled with the 14 trainees from non-certified facilities or with the three persons sent home on day 1 of the training. Of the 18 scheduled interviews, five participants were not at the facility on the day the interview teams arrived or had been sent home the second day of the training because they already had a similar training, resulting in 13 follow-up interviews. Of the participants who were not interviewed because they were absent on the day of the interview, one had been transferred to another facility immediately after the training, one was away due to a medical problem, and one was on maternity leave. (See Table 1 and Figure 1.)

For the most part, interviewers were not able to complete the medical record checklist. The two main reasons were that some of the facilities were not yet providing ART and in some others the medical records were not sufficiently well documented. ART was not provided in four of the clinics, in another three the records were either not being kept or were incomplete and in one clinic the interviewers could not obtain access to them. The checklists were completed in only one clinic and they could be partly completed in another. Given the inability to collect data, it was decided not to use even the little that was collected.

4. Data management

Data collection forms were brought back to the FHI office in Kampala and sent to FHI headquarters in North Carolina. Epi Info was used for data entry, and Epi Info version 6.0 and Stata version 10 were used for analysis. Quantitative analysis was descriptive, and no statistical tests were used.

To analyze the open ended questions in the in-depth interviews, the text responses were entered into Epi Info and the responses summarized according to content area. The responses are described in the text but no percents were assigned, although the magnitude of responses (e.g., many, few, most) is given. Direct quotes noted in the text are quotes as reported by the interviewers who documented what the respondents stated.

The pre-training scenario data are reported as percents of correct answers as well as the actual number of correct answers. However the post-training knowledge test data are reported as the actual number of correct answers rather than percents because of the small sample size. The pre- and post-training scenario scores are compared using percent correct rather than number correct because the two scenarios are different lengths (different number of questions).

Sample sizes used for analysis

The sample sizes used for analysis were revised several times on the basis of information obtained during the field implementation and at other points in the study process, as summarized in Table I and Figure I. In addition to the three participants who were sent home on the first day of the workshop, during analysis it was learned that two other participants who were part of the follow-up sample had been sent home on the second day of training because they had also previously attended a similar workshop. These participants were therefore taken out of both the pre-training and post-training samples. Also, there were five participants who did not complete the pre-training scenarios which resulted in a final pre-training sample size of 25. The post-training sample of 13 was used for the analysis of the knowledge portion of the post-training survey (i.e. the 25 knowledge questions) as well as the in-depth interviews. From the in-depth interviews it was learned that four of the participants from facilities in Kotido and Kaabong districts that were not yet stocked with ARVs, so these participants had been unable to begin implementing what they had learned in the training. Therefore, these four were not included in the pre/ post-training scenario comparison. Finally, one participant in the post-training sample did not complete the pre-training scenario because the person had arrived late to the workshop. This resulted in eight participants who completed both the pre-training and post-training scenarios and were working in facilities that were currently providing ART. These changes in sample size are summarized in Table I and Figure I.

III. RESULTS

1. Characteristics of the respondents

The characteristics of the study population are summarized in Table 2 and show that the sample selected for the post-training measurements are reasonably comparable to the evaluation group as a whole. The majority of those in the pre-training sample were female and the age range was 23 to 57 years old with an average age of 36 years. All but one of the trainees were nurse/midwives; the other

was a nurse trainee. Their years of work experience ranged from 1 to 34 years with an average of 12 years. About three-fourths reported that they currently provide HIV care and treatment. Nine (36%) said that they had previously attended a training on HIV care and treatment with a range of 1-4 previous trainings (data not shown).

Approximately three-fourths of the respondents in the post-training sample of 13 were female and all were nurse/midwives by profession. Their ages ranged from 23-57 years old with an average of 37 years. Their years of work experience spanned from less than a year to 29 years with an average of 12 years. All but one of the respondents said that they were currently providing HIV care and treatment. While nine of the respondents cited HIV as their area of primary responsibility, the rest reported that they had other or multiple areas of responsibility (data not shown).

Table 2. Characteristics of the evaluation sample

Data item	Pre-training Scenario (N=25)	Post-training Interviews and Knowledge tests (N=13)
Average age	36 years	37 years
Age range	23-57 years	23-57 years
Percent female	80%	77%
Percent nurse/ midwife	96%	100%
Avg. years work experience	12 years	12 years
Range years work experience	<1- 34 years	<1- 29 years
Currently providing HIV care and treatment	76%	92%

2. Pre-training scenarios

The clinical practice pre-training scenario was composed of two case descriptions followed by three questions for each. There were also three shorter questions targeting different types of patient scenarios. The results of the pre-training scenarios are shown in Table 3.

Table 3. Percent of correct responses to the pre-training scenario questions (n=25)

<p>Case 1. A case about WHO clinical staging and ART eligibility</p> <p>A 27 year-old male recently discharged from hospital with pneumonia. In hospital learns he is HIV +. Is also being treated for pulmonary tuberculosis (TB). He has lost 9 kg in past 11 months, has mild shortness of breath, CD4 243, taking Cotrimoxazole x 2 weeks and Isoniazid + Ethambutol po x 4 months.</p>		
<p>Correct responses:</p> <ul style="list-style-type: none"> • WHO clinical staging- Stage III • Eligible for ARV therapy • Should not initiate at today's visit 	<p><u># correct</u></p> <p>9</p> <p>6</p> <p>4</p>	<p><u>% correct</u></p> <p>36%</p> <p>24%</p> <p>16%</p>
<p>Case 2. A case about ART adherence and how to help a patient to be successful in adhering on a long-term basis</p> <p>A 37 year-old woman diagnosed with HIV 14 months ago. CD4 count 135 and is eligible for ART. Started on Triomune 30. Stopped taking medications 2 months ago, has missed monitoring and drug refill visits. Now has fever, wet cough, poor appetite and lung sounds diminished in lower left quadrant. Wants to resume taking ARV drugs.</p>		
<p>Correct responses:</p> <ul style="list-style-type: none"> • Recommend to her to refer her for intensive adherence counseling and prepare her for same ART combination that worked before • To help her be successful, have her select a treatment supporter who has been trained on ART • Will assess success if she does not miss any clinic visits or ARV drug refill visits during the next 6 months 	<p><u># correct</u></p> <p>21</p> <p>20</p> <p>13</p>	<p><u>% correct</u></p> <p>84%</p> <p>80%</p> <p>52%</p>
<p>Short Question 1. Adult HIV+ patient on ART one month. At start of treatment had CD4 of 98 and no opportunistic infections. Now has cough and fever. What should be done?</p>		
<ul style="list-style-type: none"> • Refer him to the district hospital for further evaluation 	<p>1</p>	<p>4%</p>
<p>Short Question 2. 23 years old HIV+ patient comes for postpartum checkup. CD4 380 but she says she has no signs or symptoms of illness. What should assessment include?</p>		
<ul style="list-style-type: none"> • Family planning needs, eligibility for ART, weight, & alcohol use 	<p>8</p>	<p>32%</p>
<p>Short Question 3. Grandmother brings her 4 year old grandchild to the clinic. Child has diarrhea, poor appetite and weight loss. Has had occasional rashes. Father left 2 years ago and may have died. What should you do?</p>		
<ul style="list-style-type: none"> • Obtain grandmother's consent to perform an HIV test and refer to district hospital 	<p>4</p>	<p>16%</p>

Table 4 provides a summary of the number of correct responses on the pretest. The highest number correct out of the nine questions was 6 and the average number of correct responses was 3.3.

Table 4. Distribution of scores on pre-training scenarios (n=25)

Number of correct responses (out of 9)	Number (%) of trainees with this score
0	2 (8%)
1	1 (4%)
2	7 (28%)
3	3 (12%)
4	5 (20%)
5	4 (16%)
6	3 (12%)
7-9	0 (0%)
Average number of correct responses = 3.3 (3.3/9 = 37%)	25 (100%)

3. Post-training knowledge

Knowledge scores on questions based on the topics covered in the training were moderately good. The average number of correct responses out of 25 was 16. The distribution of correct responses is shown in Table 5. For questions where less than 60% of the respondents answered correctly, the subject matter dealt with the appropriate management of common opportunistic infections, including chronic papular itching and TB, or the major side effects of two ARV drugs, Zidovudine and Nevirapine. Table A-1 in Appendix #2 shows the number of correct responses for each individual question. When partial credit was given for partially correct answers, the average score increased to 18 out of 25 (72%).

Table 5. Distribution of scores on post-training knowledge test (n=13)

Number of correct responses (out of 25)	Number of trainees with this score
0-10	0
11	2
12	0
13	1
14	2
15	2
16	1
17	1
18	1
19	1
20	2
21-25	0
Average number of correct responses = 16 (16/25 = 64%)	13 (100%)

4. Pre- and post-training scenarios

The post-training scenarios to assess clinical practices were similar to the pre-training scenarios in terms of content areas though the post-training form itself had 12 questions instead of 9. Table 6 shows a comparison of the pre and post-training scenario scores of the eight participants who completed the post-training scenario, were interviewed at follow-up and are in facilities currently implementing what they learned.

The table shows that these eight participants scored higher on the post-training scenario than on the pre-training scenario, essentially doubling their percent correct score. On the pre-training scenario, the highest score was 56% with an average of 32% correct. On the post-training scenario, the average correct score was 67% with 6 of 8 scoring 67% or higher.

Table 6. Distribution of pre- and post-training scenario scores for eight trainees

Percent correct responses	Number of trainees with indicated percentage of correct answers on pre- and post-training scenarios	
	Pre-Training (9 questions)	Post-training (12 questions)
0%	1	--
11%	1	--
22%	2	--
33%	--	1
44%	2	--
56%	2	--
58%	--	1
67%	--	4
83%	--	1
92%	--	1
Average score	32%	67%

5. In-depth interviews

Perceptions of training workshop

Table 7 summarizes participants' responses about their feelings toward the training workshop. All but one thought it was very useful and all but one also said they had some familiarity with the information before attending the workshop. When asked what about the workshop was most useful or helpful, most respondents mentioned certain aspects of ART including administration of ART, preparing patients for ART, interventions for different ARVs, adherence, detecting side effects, and documenting ART (registers). Other topics mentioned as helpful included preventing maternal to child transmission (PMTCT), patient management and HIV prevention.

Only two respondents said that they thought there were sections that had too much time devoted to them; these sections were HIV prevention and counseling. In contrast, nine respondents felt that there were sections that needed more time. One respondent reported that *"in fact the time spent was considered inadequate for most sessions."* Specific sections mentioned as needing more time were various aspects of ART provision including ART guidelines, side effects, and switching regimens. Switching regimens was the specific topic mentioned by the most respondents. Also mentioned as needing more time was home-based care, skills stations (practice session), TB assessment and treatment, and skin and HIV.

The majority felt that the training was sufficient to enable them to provide good quality care. In the words of one participant, after the training she now thinks she is *"very confident and capable of managing HIV patients."* However, another noted to the interviewer that while the training was good, the expectations of her work were now different. *"As a nurse, yes. But clients expect much more as she does the work of the clinician."* Finally another pointed out that while it was a good training workshop the training should not stop. *"As of now, yes. But need to continuously update and orient the trainees."*

Table 7. Participant perceptions about the training workshop from in-depth interviews

Perceptions	Number of responses (out of 13)
Training information useful to work: - Very useful - Not at all useful	12 1
Familiarity with information before workshop: - Somewhat familiar - Not at all familiar	12 1
Adequacy of time spent on sections: - Thought too much time - Thought too little time	2 9
Thought training was enough to provide good quality care and treatment to HIV patients: - Yes - No, or don't know	9 2

Overall, the respondents were very positive about the training. Several felt there was no need for improvement. Others commented that the facilitators had good skills, the training methods were “conducive to learning”, the environment was good for learning and the tools were good. In the words of one provider, the “knowledge and skills are enough to empower the provider in providing ART care.”

While the overall opinion of the workshop was good, respondents also voiced some suggestions for improvement. The issue mentioned the most often was that the workshop was too short. In particular there were suggestions to extend the amount of time devoted to the practical or clinical sessions. One respondent also suggested that this section should include a visit to an actual clinic. A few respondents also said that the workshop was too crowded, or that the distance to the venue was too far.

HIV care in the facilities

Most of the respondents felt that the workshop influenced the way they provide care in the clinic. All but one mentioned at least one way in which the workshop changed their clinical practices. Improved counseling skills and being able to administer ART were mentioned the most (by five respondents each). Also mentioned by more than one respondent were working as part of a team, being able to screen or treat opportunistic infections, improved monitoring/recording skills and using/maintaining the duty roster. A few respondents mentioned that they were now providing HIV services whereas they had never worked in HIV before attending the training.

The workshop had other effects as well. Over half the respondents noted that their work load has increased since attending the training. As one participant reported, “I have more workload since now I spend more time with clients during counseling. Completing monitoring tools also takes more time.” Another noted to an interviewer that the “training had increased workload because she has to do work that she was not doing before, such as client assessments, and clients have increased.” While one agreed the workload had increased, the respondent pointed out that the work had also become more efficient. “The workload is higher but now more integrated and shared skills.”

Nearly all the respondents said that they felt that they needed additional training in HIV care and treatment. Areas for additional training included pediatric HIV care and treatment, postnatal care for HIV-positive (HIV+) patients, opportunistic infections (including TB) and additional training on various aspects of ARVs. Job mentorship was also mentioned as something that would be helpful.

Respondents were asked if there were things they learned at the workshop that they could not do at the clinic. Many mentioned that they could do everything they learned. However, four respondents reported that they couldn't do much because they did not yet have ARVs in stock. One mentioned that they couldn't order drugs because there were no order forms. Finally, a few mentioned difficulties in processing Dried Blood Spots (DBS).

Finally, respondents were asked about their challenges to providing care and treatment to HIV patients and what could be done to help provide services. It was acknowledged that not all of these challenges could be addressed through training. The challenges mentioned the most often were the need for more space for providing care, the workload and need for more staff, the lack of follow up and the need for a nearby facility to process samples for CD4 counts. Other challenges mentioned included the need for nutritional support, lack of a referral system and the lack of a clinician at the clinic. Aside from resolving these challenges other suggestions to help provide services included simple treatment guidelines, supportive supervision and training in ordering and logistics.

Job Aids

At the workshop a number of handouts and provider job aids were distributed to the participants for their use in their clinics. The respondents were asked if they received each of these handouts, if they had ever used them, and if so, how useful they thought the handout was. Table 8 shows that all of the respondents took home most of the handouts; there was one person who did not receive the flip chart for integrated management of childhood illness (IMCI) and two who did not receive the flip chart on patient education. All of the handouts had been used by approximately half or more of the respondents. The handouts used by the most participants were the participant manual and the ART cards. Almost everyone who used a tool felt it was very helpful; no one identified any tool as being not at all helpful.

Table 8. Receipt and use of handouts and provider job aids used at the workshop

Handout/ job aid	Number of responses (out of 13)				
	Number Received	Used	If used, how helpful		
			Very	Some what	Not at all
<i>Interim guidelines for first level health workshops on palliative care: symptom management and end of life care</i>	13	7	7	--	--
<i>Interim guidelines for first level health workers on general principles of good chronic care</i>	13	5	5	--	--
<i>Interim guideline for first level health workers on acute care</i>	13	8	7	1	--
<i>Participant manual</i>	13	9	9	--	--
<i>Chronic care manual</i>	13	8	8	--	--
<i>ART cards</i>	13	9	9	--	--
<i>Flip chart on patient education</i>	11	6	6	--	--
<i>Flip chart: IMCI for high HIV settings</i>	12	8	7	1	--

IV. DISCUSSION AND RECOMMENDATIONS

With the rapid increase in the availability and provision of ante-retroviral drug therapy, public sector clinics are increasingly facing the burden of increased and more complicated client case loads coupled with limited staffing capabilities. Trainings, such as the ones currently being conducted by the Uganda MOH, have the potential to alleviate this burden by shifting many of the tasks involved in ART provision to midlevel providers such as nurses and midwives. This modest evaluation suggests that these trainings

have the potential to positively influence the practice behaviors of the trainees though it also illustrates many issues that should be considered so that the training workshops operate most effectively.

For the most part, the trainees who took part in the in-depth interviews expressed satisfaction with the training itself. They felt the training itself was good and praised the training methods and facilitators. Nearly all received the job aids that were distributed and if they used them felt they were very useful to their work.

More importantly, nearly all of these trainees felt that the workshop positively influenced the way they provide care to HIV patients. They felt the training was sufficient to enable them to provide good quality care and that it built skills and confidence. They reported that they learned a lot about various aspects of ART provision in particular and other aspects of HIV care and treatment in general.

This evaluation attempted to quantitatively measure the knowledge learned, though the small sample size makes it difficult to draw conclusions. The average knowledge score at the follow-up evaluation, 16 out of 25 or 64%, is difficult to interpret without knowing the results of the similar pre- and post-test administered by the MOH at the training. The score does suggest that there is still a need for more and reinforced information on the topics discussed at the workshop. It should be pointed out that many of the questions had multiple responses and that many respondents had partially correct responses. A recalculation that includes partially correct responses as correct increases the average correct responses to 18.

The pre- and post-training scenarios were used to assess how providers would handle specific types of HIV cases in practice. The pretest scores were low as one would expect given that most of these providers would not have had experience with the types of patients described in the scenario. While the average post-training score was still modest, 67%, it was twice as high as the pre-training average score, an impressive increase. The suggestions by some respondents to have job mentorship after the training could be one way of enhancing the performance of the trainees and lessen the need for additional trainings.

While the average post-training knowledge test and post-training scenario scores show there is still a need for improvement it should be kept in mind that the follow-up evaluation was only approximately six weeks after the training workshop. The workshop covered a large amount of material and it would be unrealistic to expect any one individual to fully absorb and put into practice in just a few weeks all that had been covered in the workshop. In fact, in the in-depth interviews, many respondents felt that the training was too short and that more time was needed on many of the sessions. In particular, several voiced the need for more time in practical sessions. Many also acknowledged that they need more training. Assimilating and applying this amount of knowledge takes time, reinforcement and supervision — suggestions that were voiced by some of the evaluation respondents.

Many respondents also remarked about their increase in workload following the training. It will be very important to monitor the performance of these trainees to ensure that quality of care is being maintained not only in their HIV care and treatment work, but also in care that they may be providing in other areas.

While not originally part of the evaluation plan, throughout the process of conducting the evaluation information was gained that can have implications on the training workshops and on ART provision, and may be useful in improving the cost-effectiveness of the workshop. In general, there should be the shortest time possible between training and beginning ART provision; otherwise, one would expect a drop in retention of material learned during the training if it cannot be applied promptly. Various information obtained during the evaluation suggests that the selection of participants for the workshop is important: (1) five trainees were sent home early because they had already done a similar training, (2) one trainee was transferred to another clinic immediately upon return and did not have responsibility for HIV care and treatment in the new position, (3) 14 of the trainees came from facilities that were not

yet eligible to provide ART, (4) four of the 13 trainees interviewed six weeks after the workshop were from facilities that had not yet received any ARVs. In addition to selecting workshop participants who will be able to apply their learning right away and thus be most likely to help their facilities the most, other actions that might help achieve higher cost-effectiveness of the workshop include coordinating the timing of workshop attendance with ART certification, speeding up delivery of ARVs to facilities, and providing refresher training after ARVs arrive.

Finally, in attempting to complete the medical record checklists, the evaluation staff found that many of the clinics had medical records that were very incomplete. They also noted that most sites have a weak data management culture and are not used to using data to drive services. Maintaining good quality records is essential for maintaining good quality and efficient care. An easy-to-use tool in the local conditions should be developed to assist in monitoring medical records management. Also, more needs to be done to instill an appreciation of the value and need to maintain good quality records.

While this evaluation can provide some indications of the knowledge and practices of the respondents who took part in the training workshop that began on September 14th, there are many limitations to this assessment. The sample size was small to begin with and decreased over time as some of the trainees had to be eliminated from the analysis sample for various reasons. Also, the respondents all came from just this one training and they were all from the same geographic area. Budget and time limitations also constrained the methods that could be used and the follow-up period. In order to get a better sense of the changes in knowledge and practices on the training participants, a future evaluation could sample trainees from various trainings, and those from different geographic areas. Also, it could be useful to evaluate the training for clinicians in addition to the one for mid-level providers. Different methodologies for measuring practices could be investigated, each with its strengths and weaknesses, such as direct observation, patient interviews, clinician interviews, audio recording, and improved medical records review, or a combination thereof. Finally, having two follow-up measurements such as six weeks and six months would allow for an evaluation of both short term and longer term changes.

APPENDIX #1

DATA COLLECTION FORMS (Note: These forms are reformatted from the originals.)

Pre-training Scenarios

The Health Care Improvement Project (including URC and Family Health International) is working with the Ministry of Health to conduct an evaluation of comprehensive HIV care training. Right now we'd like to ask you a few questions about yourself and about HIV care and treatment. All of your responses will be kept confidential. Your name and answers will not be shared with anyone. In October interviewers will visit the health care facilities for about 20 of the participants in this training to ask further questions for this evaluation. The participants for this part of the evaluation will be selected randomly. The goal of the evaluation is to provide the Ministry with information that can help make this training more effective.

Thank you.

SECTION I. Please write in your response or check the box that corresponds with your answer. If there are any questions you do not want to answer, you do not have to.

<u>Q#</u>	<u>Question</u>	<u>Answer</u>
Q01	What is your name?	_____ (please print)
Q02	Sex?	<input type="checkbox"/> Female <input type="checkbox"/> Male
Q03	How old are you?	_____ years
Q04	What is your employment cadre?	<input type="checkbox"/> Doctor <input type="checkbox"/> Clinical Officer <input type="checkbox"/> Nurse/midwife <input type="checkbox"/> Nursing assistant <input type="checkbox"/> Other (specify) _____
Q05	What is the name of the health facility where you work?	_____
Q06	What level of health facility is this?	<input type="checkbox"/> Regional hospital <input type="checkbox"/> District hospital <input type="checkbox"/> Health centre <input type="checkbox"/> Dispensary <input type="checkbox"/> Clinic <input type="checkbox"/> Other (specify _____)
Q07	How many years have you worked as a health care provider?	_____ years
Q08	Do you currently provide any HIV care and treatment?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Q09	Have you ever attended a training on HIV care and treatment before? If yes, how many?	<input type="checkbox"/> Yes <input type="checkbox"/> No _____ Number of previous trainings

SECTION 2. Please read the following two case studies. Each case study is followed by three questions. To answer the questions, write in the space provided or circle the letter corresponding to your answer. If you need more space to write you can use the back of the paper.

ART Management at First-Level Health Facility

Adult ART Case 1:

John, a 27 year-old male, presents to your clinic following discharge 1 week ago after hospitalization for pneumonia (presumed bacterial). At the hospital he learned that he is HIV positive. He brings documentation confirming his HIV status when he visits your clinic. He is also currently being treated for pulmonary TB for 4 months and is responding well.

History: Pneumonia treated 11 months ago

Physical exam:

- Current weight = 47 kg (down from 56 kg 11 months ago)
- Mild shortness of breath upon exertion

Labs: (Drawn at the hospital)

- Hgb – 14.3 CD4 – 243 (20%)
- AST – 32 ALT – 28

Social History:

- Married 8 months ago; no children
- Currently working as a night security guard
- Moderate alcohol use with occasional bingeing

Current Medications:

- Cotrimoxazole x 2 weeks
- Isoniazid + Ethambutol po x 4 months

Questions:

1. According to the WHO clinical staging system, John is in what stage of HIV/AIDS?
2. Is he medically eligible for ARV therapy at this time?
Why or why not?
3. Would you initiate ART at today's visit at your clinic?
Why or why not?

Adult ART Case 2:

Achom is a 37 year-old woman. She is married and has two children, ages 14 and 9 years. Her husband is in the armed forces and stationed at a remote area of the country. He returns home only when on military leave. Achom works on the family's small farm raising goats. She is very religious and active in her church.

About 14 months ago, Achom was diagnosed with HIV. She was very upset and initially denied her status. However, after becoming ill with meningitis, she accepted the diagnosis and came to your clinic after being treated at the district hospital. Her CD4 was 135 cells/mm³ and she was evaluated as being eligible for ART. Achom was started on Triomune 30.

For 11 months, Achom attended scheduled visits at the clinic and picked up her ARV drugs on time. However, in the last 3 months, she missed one clinic monitoring appointment and 3 drug refills visits. She is now back at the clinic, complaining of fever, wet cough and poor appetite for 3 weeks. Her lung sounds are diminished in the lower left quadrant.

Achom reports that she stopped taking her ARV medications about 2 months ago because she “felt well” and her church encouraged her to try local herbs instead of the ARV drugs. She states, however, that she wants to resume ARV drugs because she felt well when she was taking them.

Questions:

1. What will you recommend to Achom regarding re-starting ART?
 - a. Observe her regularly and re-evaluate her health status in 1 month
 - b. Refer her for intensive adherence counseling and prepare her for the same combination of ART that worked before
 - c. Refer her to the district clinician

2. What follow-up do you think Achom might need to be successful in adhering to her medications if she re-starts ARV drugs?
 - a. She selects a treatment supporter
 - b. She visits the clinic daily for directly observed treatment support
 - c. Members of her church visit her at home every week

3. How will you assess whether or not Achom will be successful on a long-term basis in adhering to her medications if she re-starts a treatment regimen?
 - a. Ask her to count her ARV pills at the end of each month and inform the clinic if she missed > 3 pills
 - b. Her daughter picks up Achom’s ARV drugs from the clinic pharmacy
 - c. She does not miss any clinic visits or ARV drug refill visits as scheduled during the next 6 months

SECTION 3. Please circle the letter corresponding to your response to the following 3 questions.

1. An adult HIV+ patient was initiated on ART 1 month ago. When he started treatment, he had a CD4 count of 98 cells mm³ and no opportunistic infection. Today he comes to your clinic with a cough and fever. What would you do in this case?
 - a. Give him an antibiotic for the presumed pulmonary infection and continue ART
 - b. Refer him to the district hospital for further evaluation
 - c. Stop the ARV drugs and ask him to return in a week to re-evaluate his status
 - d. None of the above
 - e. All of the above

2. A 23 year-old HIV+ patient comes to your clinic for a post-partum check-up. Her baby was delivered at home by a TBA without complications. Her CD4 count is 380 cells mm³, and she denies any signs or symptoms of illness. At this visit, what will your assessment include?
 - a. Family planning needs
 - b. Eligibility for ART
 - c. Weight
 - d. Alcohol use
 - e. All of the above

3. You are conducting consultations in the Under-5 Clinic, and a 4 year-old child is brought to the clinic by his grandmother. She reports that the child has had diarrhea, poor appetite and weight loss for 1 month. Prior to now, the child had occasional rashes, but no other symptoms. When you ask about his parents, the grandmother reports that the child’s mother, who is her daughter, is working and the child’s father left the family 2 years ago and she thinks may have died. What would you do?

- a. Prescribe Metronidazole and ask the grandmother to bring the child back in 2 weeks if the symptoms haven't resolved
- b. Obtain the grandmother's consent to perform an HIV test and refer to the district hospital
- c. Counsel the grandmother on nutrition for the child and prescribe a nutritional supplement
- d. Offer routine counseling and testing and counsel the grandmother on nutrition for the child and prescribe a nutritional supplement

2. Post-training knowledge questions and practice scenarios
(To be completed by the participant)

PART I: KNOWLEDGE QUESTIONS

Instructions:

- Please read the question carefully and circle the number with the ONE BEST answer
- Some questions may have more than one correct answer; circle each number that is a correct answer
- For True or False questions, circle the number with the appropriate answer

1. *True or False*
HIV destroys parts of the body's immune system over time and the HIV-infected person becomes ill because the immune system is unable to fight infection.
 - a. True
 - b. False
2. Which of the following HIV-infected persons has clearly progressed to **AIDS (severe disease category)**?
 - a. Mr. S who has Tuberculosis
 - b. Mrs. M who has an unexplained fever for more than one month
 - c. Mrs. K who has had a persistent cough for more than three weeks
 - d. Mr. A whose CD4 count is 175 and has been diagnosed with Cryptococcal Meningitis
3. An HIV-infected person who has had a weight loss of more than 10% as well as pulmonary TB within the last year is classified in WHO clinical stage:
 - a. 1
 - b. 2
 - c. 3
 - d. 4
4. An HIV-infected woman of childbearing age comes to the clinic for a routine visit. She indicates that she is sexually active, but is not using contraception and does not want to become pregnant. What would be the best recommendation to give in her situation?
 - a. Advise her to use a condom each time she has intercourse
 - b. Explain to her about various options of modern contraceptives
 - c. Advise her to both use a condom and a modern contraceptive method
5. A patient has been referred to the health centre after testing HIV positive. At the first clinical visit, you conduct all of the following **except**:
 - a. Assess weight
 - b. Inform the patient's wife about his HIV status

- c. Assess patient's knowledge of HIV disease
 - d. Determine allergies to medications or foods
 - e. Assess alcohol and other substance use
6. An HIV-infected patient comes to the health centre complaining of mouth ulcers and a papular itching rash. He had herpes zoster over a year ago and no other OI. His CD4 count, taken 1 month ago, was 298 cells/mm³. What is the most appropriate action in this situation?
- a. Advise him to avoid spicy foods and rinse his mouth with clean water four times a day
 - b. Start ART immediately
 - c. Prescribe Cotrimoxazole prophylaxis
 - d. Ask him to return in 1 month to re-assess the symptoms
7. An HIV-infected patient with no CD4 cell count on record presents at the health centre with diarrhea > 1 month, oral candidiasis, loss of > 10% of body weight and moderate dehydration. Which of the following is **false**?
- a. A cell count testing is indicated
 - b. No medical treatment is available for the candidiasis
 - c. Referral for a nutritional assessment is needed
 - d. The patient is in clinical stage 3
8. *True or False*
The following ARV regimen is appropriate for HIV+ pregnant women on treatment:
AZT + 3TC + NVP
- a. True
 - b. False
9. Preparing the patient to start life-long ARV treatment includes informing the patient about the following:
- a. ARV drugs do not cure HIV
 - b. Complete adherence to daily treatment
 - c. ARV drugs do not prevent HIV transmission to others and safer sex must be consistently practiced
 - d. Do not share ARV drugs with family or others
 - e. Willing to come for required clinic follow-up
 - f. All of the above
10. A patient who was recently diagnosed HIV-infected has just started treatment for pulmonary TB. His baseline CD4 count is 250/mm³. When should this patient begin ART?
- a. The patient should begin ARVs immediately.
 - b. When his CD4 count falls below 200 cells/mm³
 - c. When he completes the first month of his TB regimen
 - d. When he completes the full TB treatment of 6 months
- 11-15. Before starting ART, patients who are eligible for ARV treatment and have an existing opportunistic infection should be stabilized. Tick the appropriate column on whether you would **refer** to the district hospital for management or **treat the condition and start ART** at the health centre in each of the following cases:

Question #	Item	a. Refer	b. Treat/Start ART
11	Chronic itching of the skin		
12	Oral thrush		

13	Persistent fever		
14	Haemoglobin of 9.8 g/dl		
15	Malaria with persistent fever in spite of treatment		

16. All are well-known side effects of Zidovudine (AZT) **except**:
- Headache
 - Anemia
 - Fatigue
 - Rash
 - Blue/black nails
 - Gastrointestinal intolerance (nausea, vomiting, diarrhoea)
- 17 & 18. A patient who started ARV drugs 10 days ago comes to the health center with a severe skin reaction, blistering sores in his/her mouth and a fever. She is taking Triomune (Stavudine, Lamivudine and Nevirapine), as well as cotrimoxazole and an oral contraceptive.
17. What is the **most likely** diagnosis of these symptoms?
- Candidiasis
 - Eczema
 - Herpes zoster
 - Stevens-Johnson Syndrome
 - Angular cheilitis
18. Which drug is **most likely** causing the symptoms?
- Stavudine
 - Lamivudine
 - Nevirapine
 - Cotrimoxazole
 - Oral contraceptive
19. *True or False*
Adherence to medications means that the patient takes the correct number of pills each day, even if not always at the same time.
- True
 - False
20. Six weeks after starting ART, a patient who completed a full course of TB treatment two years ago, develops high-grade fever, productive cough and dyspnea. His CD4 count is 65 cells/mm³. What is the **most probable** cause of the symptoms?
- Therapeutic failure of the ARV drugs
 - Bacterial pneumonia
 - Immune reconstitution inflammatory syndrome
 - TB re-infection
21. Adherence to ARV medications is essential for treatment effectiveness. Which statement about adherence is **true**?
- Missing 4 or 5 doses every week does not indicate poor adherence
 - Treatment preparation of the patient before starting ART is important
 - Side effects of ARV drugs can be disregarded as a reason for poor adherence

- d. A patient's prior history of adhering to medications should not be considered before initiating ART
22. The management of HIV as chronic condition includes:
- a. Schedule next clinic appointment according to follow-up visit schedule
 - b. Assess patient's adherence to treatments at each clinic visit (e.g., OI prophylaxis, ARV drugs)
 - c. Discuss prevention at each clinic visit
 - d. Follow up on missed clinic appointments
 - e. Assess nutritional status
 - f. All of the above
23. A 35 year-old HIV-infected patient has been on ART (Triomune) for almost 2 years. Since beginning ART, she has never missed a clinic appointment or had a major illness (e.g. OI) and her self-reported adherence is excellent. She has a routine CD4 cell count (every 6 months) which is 43 cells less than her count 6 months before. The correct management of this patient is:
- a. Repeat the CD4 test
 - b. Provide intensive adherence counseling
 - c. Refer her to the district hospital for assessment
 - d. Ask her to return to the health centre in one month
24. What is the **most frequent** cause of ART treatment failure?
- a. Poor adherence
 - b. Interactions between ARVs and other drugs
 - c. Malabsorption of drugs due to vomiting
 - d. Incorrect ARV regimen prescribed
25. What would be the **first** step you would take when you have an accidental needle prick on your finger?
- a. Squeeze the finger to force the blood to flow, then wash hands
 - b. Do on HIV test on the patient on whom the needle was used
 - c. Immediately & thoroughly wash the wound with soap and running water
 - d. Initiate OI prophylaxis

PART 2: SCENARIOS: ART Management at First-Level Health Facility

INSTRUCTION: Please respond to the questions in the following 3 sections. For the first two sections, read the case scenarios and respond to the questions following the scenario. Section 3 contains 3 questions; they are not related to any scenario.

Section 1: Adult ART Case 1:

Harriet is a 31 year-old married woman who was tested HIV-positive 18 months ago when her husband was diagnosed with HIV after being hospitalized for cryptococcal meningitis. She had no prior major illnesses, and her baseline CD4 count conducted at her initial clinic visit was 345 cells/mm³.

Today is the first visit Harriet has made to the health centre since her initial assessment. She complains about an itchy papular rash on her arms and legs that began about 3 months ago. She has lost 1 kilo since her last visit and reports occasionally missing a meal because she isn't very hungry. She has no other symptoms or complaints.

What steps will you take in Harriet's case? Circle yes or no to each question.

26. Repeat her CD4 cell count	Y	N
27. Refer her to the district hospital for assessment	Y	N
28. Prescribe Cotrimoxazole prophylaxis	Y	N
29. Refer her for a nutrition consultation	Y	N
30. Begin ART	Y	N

Section 2: Adult ART Case 2:

Joseph, a 49 year-old farmer, was started on ARV drugs 4 weeks ago at the health centre. He had not taken ART previously. He attended 3 treatment preparation sessions before beginning the regime of d4T + 3TC + NVP (Triomune).

Joseph returned to the clinic for the 2-week post-ART initiation visit and had no complaints had that time. He reported that he is adhering to the medications and his wife, who is his treatment supporter, confirmed this.

Joseph comes to the health centre today with his wife stating that he stopped taking his ARVs because he developed numbness and tingling in his fingers and toes as well as a mild rash on his chest which is now subsiding. His wife persuaded him to visit to discuss the symptoms with his health care provider.

31. Which drug is most likely associated with the tingling and numbness in his fingers and toes?
 - a. d4T
 - b. 3TC
 - c. NVP
32. Which drug is most likely associated with the rash?
 - a. d4T
 - b. 3TC
 - c. NVP
33. What steps will you take in Joseph's case (circle all that are correct)?
 - a. Re-start the ART regime of d4T + 3TC + NVP
 - b. Prescribe a different NRTI drug to replace the offending drug
 - c. Provide intensified adherence counseling
 - d. Recommend a different treatment supporter
34. Which of the following suggests that Joseph will be adherent to his ARV drugs in the future except?
 - a. He has a treatment supporter
 - b. He attended 3 preparatory treatment sessions
 - c. He stopped taking the ARVs before discussing with his provider
 - d. He attended the 2-week post-ART initiation visit

Section 3: Individual questions

35. A 19 year-old patient comes to your clinic for a post-partum check-up. She was diagnosed HIV-positive during ante-natal care, and her baseline CD4 count was 359 cells mm³. Her baby was delivered without complications at the health centre, and both the patient and the infant received ARV prophylaxis according to national guidelines. The patient has no complaints. At this visit, what will your assessment include?
 - a. Weight
 - b. Family planning needs
 - c. Infant feeding practice

- d. Alcohol use
- e. All of the above

36. You are conducting consultations in the Under-5 Clinic, and a 3 year-old child is brought to the clinic by his mother. She reports that the child has had intermittent diarrhea, poor appetite, and weight loss for 1 month. During the past 6 months, the child had occasional rashes and one respiratory infection that was treated and resolved. The mother responds negatively when you ask if she and the child have been tested for HIV infection.

What would you do? (Circle all that are correct)

- a. Counsel the mother on nutrition for the child and prescribe a nutritional supplement
- b. Prescribe an anti-diarrhoeal medication and ask the mother to bring the child back in 2 weeks if the symptoms haven't resolved
- c. Obtain the mother's consent to perform an HIV test on the child
- d. Assess the child for oral ulcers or thrush

37. An adult HIV+ patient was initiated on ART 1 month ago. Her baseline CD4 count was 58 cells mm³, and her only serious prior illness was pulmonary TB for which she was diagnosed 18 months ago and subsequently completed treatment. Today she comes to your clinic with a cough and fever. What would you do in this case?

- a. Refer her to the district hospital for further evaluation
- b. Manage as immune reconstitution syndrome and continue ART
- c. Stop the ARV drugs and ask her to return in a week to re-evaluate her status
- d. None of the above

3. Post Training In-depth Interview Guide (To be administered by the interviewer)

<<To Interviewer>>

For pre-coded questions, please circle the response given. There should only be one response circled for these questions. For open-ended questions, write the responses given as neatly as possible. Remember to probe to see if there is any additional information the participants would like to add. If you need more room to write, use a blank piece of paper and attach it to this form. Be sure to indicate the question number you are adding information for.

<u>Q#</u>	<u>Question</u>	<u>Answer</u>
Q01	Sex?	1. Female 2. Male
Q02	How old are you?	[] [] years
Q03	What is your employment cadre?	1. Doctor 2. Clinical Officer 3. Nurse/midwife 4. Nursing assistant 5. Other (specify) _____

Q04	What level of health facility is this?	<ol style="list-style-type: none"> 1. Regional hospital 2. District hospital 3. Health centre IV 4. Health centre III 5. Health centre II 6. Other (specify _____)
Q05	How many years have you worked as a health care provider? <i>(If less than 1 year enter 00)</i>	[__ __] years
Q06	How many years have you been working at this clinic? <i>(if less than 1 year enter 00)</i>	[__ __] years
Q07	Do you currently provide any HIV care and treatment?	<ol style="list-style-type: none"> 1. Yes 2. No
Q08	What is your current primary responsibility in the clinic?	<ol style="list-style-type: none"> 1. HIV/AIDS 2. Family planning 3. Antenatal care 4. Child health 5. Other
Q09	Approximately how many HIV clients do you see on an average day?	[__ __] clients
<p>Now I would like to ask you questions about the training you attended in September on comprehensive HIV care. These questions are all related to the first part of the training from 14th September – 18th September. The topics during these days were on antiretroviral therapy, comprehensive HIV care, opportunistic infections, psychosocial support and special considerations in children.</p>		
Q10	Did you find the information in this workshop useful to your work? Would you say it was very useful, somewhat useful, or not at all useful?	<ol style="list-style-type: none"> 1. Not at all useful 2. Somewhat useful 3. Very useful
Q11	How familiar were you with the information in the workshop prior to attending? Would you say you were very familiar, somewhat familiar or not at all familiar?	<ol style="list-style-type: none"> 1. Very familiar 2. Somewhat familiar 3. Not at all familiar
Q12	What about the workshop did you find most helpful/useful to your work?	

Q13	Were there sections that you felt too much time was spent on them? Which sections?	
Q14	Were there sections you felt needed more time? Which sections?	
Q15	How has what you learned at the workshop changed the way you work? What types of changes have you made in the way you provide services to HIV patients? If you haven't made changes please explain why not.	
Q16	Do you feel the training you received is enough to enable you to provide good quality care and treatment to HIV patients? Please explain.	
Q17	Before you attended the training, were you providing care and treatment services to HIV patients? What types of services were you providing?	
Q18	Has the training affected your workload? How? Do you have more or less work to do since the training?	
Q19	Are there areas for providing HIV care and treatment that you feel you would like more training in? What areas?	
Q20	Do you have any suggestions or comments about the training? What do you think was good about the training? What do you think can be improved?	
Q21	Are there things you learned at the workshop that you cannot do at the clinic? What kinds of things? Please explain.	

Q22	<p>What do you view as the biggest challenges to providing care and treatment services to HIV patients at your clinic?</p> <p>How do you think these challenges can be overcome?</p> <p>Do you think the training helps in overcoming some of these challenges? How?</p> <p>What else can be done to help?</p>	
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Finally, I'd like to ask you some questions about some handouts/provider job aids that you may have received at the workshop.

Do you receive a copy of these handouts/job aids at the training workshop to take with you?	For data entry: Yes = 1 No = 0
Say each job aid listed below, circle corresponding response	
Interim guidelines for first level health workers on Palliative Care: Symptom Management and End of Life Care	Yes No
Interim guidelines for first level health workers on general principles of good chronic care	Yes No
Interim guidelines for first level health workers on acute care	Yes No
Participant manual	Yes No
Chronic care manual	Yes No
ART cards	Yes No
Flip chart on patient education	Yes No
Flip chart: IMCI for high HIV settings	Yes No

Now, I would like to ask you about your use of these materials...

Follow skip pattern. If respondent answers “no” to an odd number question, you must skip the next even question number.

For data entry
 Very helpful = 2
 Somewhat = 1
 Not helpful = 0

Since you have returned to your clinic, have you used the interim guidelines for first level health workers on palliative care: symptom management and end of life care	Yes		No -> Q33
If yes, in your opinion would you say the document is very helpful, somewhat helpful or not helpful at all in performing your work?	Very helpful	Somewhat helpful	Not helpful at all
Since you have returned to your clinic, have you used the Interim guidelines for first level health workers on general principles of good chronic care	Yes		No -> Q35
If yes, in your opinion would you say the document is very helpful, somewhat helpful or not helpful at all in performing your work?	Very helpful	Somewhat helpful	Not helpful at all
Since you have returned to your clinic, have you used the Interim guidelines for first level health workers on acute care	Yes		No -> Q37
If yes, in your opinion would you say the document is very helpful, somewhat helpful or not helpful at all in performing your work?	Very helpful	Somewhat helpful	Not helpful at all
Since you have returned to your clinic, have you used the Participant manual?	Yes		No -> Q39
If yes, in your opinion would you say the document is very helpful, somewhat helpful or not helpful at all in performing your work?	Very helpful	Somewhat helpful	Not helpful at all
Since you have returned to your clinic, have you used the chronic care manual?	Yes		No -> Q41
If yes, in your opinion would you say the document is very helpful, somewhat helpful or not helpful at all in performing your work?	Very helpful	Somewhat helpful	Not helpful at all

Since you have returned to your clinic, have you used the ART cards?	Yes		No -> Q43
If yes, in your opinion would you say the cards are very helpful, somewhat helpful or not helpful at all in performing your work?	Very helpful	Some-what helpful	Not helpful at all
Since you have returned to your clinic, have you used the flip chart on patient education?	Yes		No -> Q45
If yes, in your opinion would you say the chart is very helpful, somewhat helpful or not helpful at all in performing your work?	Very helpful	Some-what helpful	Not helpful at all
Since you have returned to your clinic, have you used the flip chart: IMCI for high HIV settings?	Yes		No -> end
If yes, in your opinion would you say the chart is very helpful, somewhat helpful or not helpful at all in performing your work?	Very helpful	Some-what helpful	Not helpful at all

Wrap-up

Thank you again for taking time to talk to me today. Do you have any questions for me?

Thank you very much for your help.

APPENDIX #2

**Table A- 1: Number of correct responses to knowledge questions on the post-training survey
(Questions 1-25 of Tool #2: Post-training Knowledge Questions and Practice Scenarios;
refer to Appendix #1 for exact questions)**

Question #	Number of correct responses to question (out of 13 participants)
Q1	13
Q2	11
Q3	8
Q4	8
Q5	8
Q6	3
Q7	8
Q8	9
Q9	12
Q10	3
Q11	7
Q12	12
Q13	8
Q14	8
Q15	11
Q16	4
Q17	8
Q18	1
Q19	11
Q20	8
Q21	9
Q22	11
Q23	6
Q24	9
Q25	8

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