



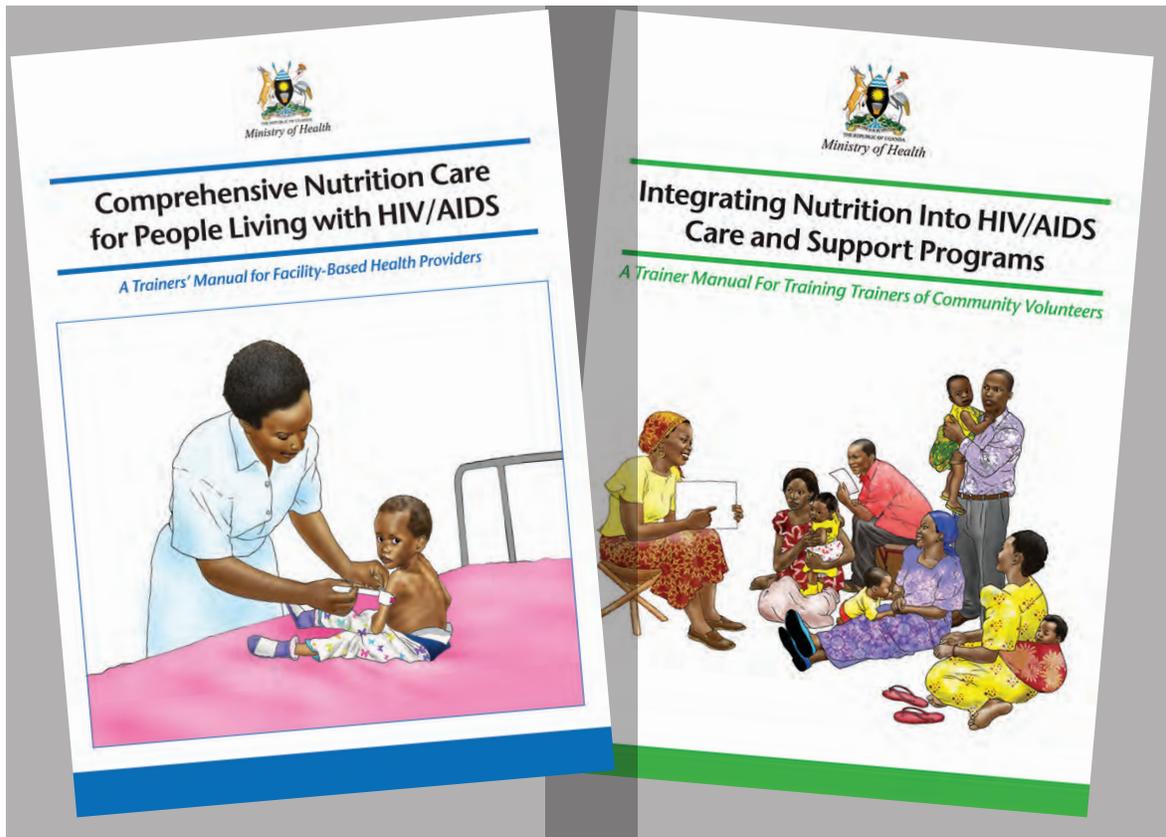
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NuLife
FOOD AND NUTRITION
INTERVENTIONS FOR UGANDA



Technical Report

Integrating Nutrition Interventions into Routine HIV/AIDS Care: Challenges, Solutions, and Lessons Learned from Uganda



May 2012

The report was prepared by University Research Co., LLC (URC) for review by the United States Agency for International Development (USAID) and was authored by staff of the NuLife–Food and Nutrition Interventions for Uganda Project and USAID Health Care Improvement Project (HCI). NuLife and HCI are made possible by the support of the American people through USAID.



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PROJECT

On the cover: Images from the national-level counseling tools, job aids and training curricula developed, adapted and updated by NuLife in close collaboration with the MOH Nutrition Unit and STD/AIDS Control Programme (STD/ACP), and other nutrition stakeholders: Joint Clinical Research Centre (JCRC), International Committee of the Red Cross (ICRC), Uganda Health Marketing Group (UHMG), Food and Science and Technology Dept. of Makerere University, UN agencies (United Nations Children's Fund [UNICEF], World Health Organization [WHO], United Nations World Food Programme [WFP]), Ministry of Education, Ministry of Agriculture, Mwanamugimu Nutrition Unit at Mulago Referral Hospital, FANTA project, and other USG IPs). Images designed by URC.

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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.

Acknowledgments

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Acronyms

ART	Antiretroviral Therapy
ARV	Antiretroviral Drugs
CBO	Community Based Organizations
CHW	Community Health Workers
CME	Continuing Medical Education
CPD	Continuous Professional Development
HCI	USAID Healthcare Improvement Project
HCIV	Health Centre Four
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
IEC	Information, Education and Communication
MAM	Moderate Acute Malnutrition
MOH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
OPD	Outpatient Department
OTC	Outpatient Therapeutic Care
PLHIV	People Living with HIV
QI	Quality Improvement
QOC	Quality of Care
RRH	Regional Referral Hospital
RUTF	Ready-to-Use Therapeutic Food
SAM	Severe Acute Malnutrition
URC	University Research Co., LLC
USAID	United States Agency for International Development

Introduction

The NuLife—Food and Nutrition Interventions for Uganda project, funded through the United States Agency for International Development (USAID), was a three-year project (2008-2011) managed by University Research Co., LLC (URC) in partnership with the Uganda Ministry of Health (MOH). In January 2009 the project began providing direct technical support to the 34 health facilities countrywide to integrate nutrition interventions into their HIV/AIDS care, treatment and support services. Later that year, the program scaled up to support to a total of 54 sites. The target groups for nutrition interventions were infants aged six months to six years, children aged six to 18 years, adults, and pregnant and postpartum women.

Support to the 54 facilities followed a year of preparation work that included conducting a baseline survey; assessing the capacity and readiness of the sites to implement nutrition interventions; dialoguing with representatives of people living with HIV/AIDS (PLHIV), district officials, and other stakeholders; reviewing and updating resource materials to support nutrition programming; developing policies and guidelines; developing training manuals for comprehensive nutrition care; training national-level trainers; and procuring commodities essential for nutrition interventions, including ready-to-use therapeutic food (RUTF), anthropometric equipment, and job aids.



The process of integrating nutrition interventions into routine HIV/AIDS care varied across the 54 sites. As a group, the sites learned valuable lessons in providing nutrition support to PLHIV. This document recounts site experiences, reviews challenges encountered, and explains solutions developed.

Background

Quality Improvement Approach

Prior to 2009, the 54 NuLife-supported health facilities were already receiving technical support from the MOH Quality of Care (QOC) Initiative and USAID’s Health Care Improvement Project (HCI), also implemented by URC, to form quality improvement (QI) teams, intended to aid facilities in developing strategies to deliver better care for their patients. QI enables teams of health workers to systematically improve care by analyzing the reasons for gaps between current practices and desired standards and developing ways to close those gaps. It emphasizes the importance of thinking about the system in which care is delivered and designing more efficient processes, which ensure that the essential elements of care are provided, while cutting out unnecessary steps. Another important aspect of the QI approach is the regular learning sessions which allow supported facilities to exchange best practices and share with each other about implementation progress. The QI approach was essential for successfully adding nutrition care into HIV/AIDS services that were already overstretched.

Process of Implementation

To guide quality improvement (QI) and integrate nutrition into HIV/AIDS care, the 54 facilities followed the process described as follows.

Simplification of the Nutrition Care Process

To isolate the key elements necessary to improve nutrition care in a busy clinic, NuLife and HCI developed the Seven Steps to Good Nutrition Care, shown in Figure 1 and discussed further later in this document. In order to keep the implementation process manageable, QI teams in the health facilities worked to integrate only one step at a time.

- **Assessment and Categorization.** Clients are assessed for malnutrition using mid-upper arm circumference (MUAC) measurements and weight. Color-coded MUAC tapes and weighing scales were provided to all 54 facilities. Clients’ nutritional status is categorized based on the colors of the MUAC tapes and weight measurements. Green on the MUAC tape indicates a normal nutritional status; yellow indicates moderate acute malnutrition (MAM); and red shows severe acute malnutrition (SAM). Clients’ results are recorded on their HIV Care/anti-retroviral therapy (ART) Cards (see Appendix 5).
- **Counseling.** All malnourished clients receive counseling on nutrition and the use of RUTF. NuLife provided health facilities with nutrition counseling cards and job aids.
- **Food by Prescription.** In most NuLife-supported facilities, clients identified with severe or moderate acute malnutrition are prescribed RUTF. In some facilities, clients with moderate acute malnutrition are prescribed fortified blended food.

Figure 1. The Seven Steps to Good Nutrition Care

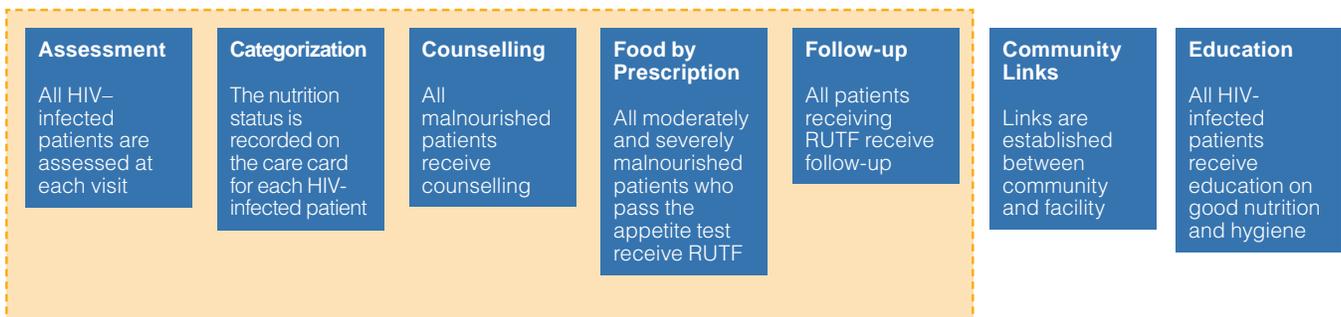
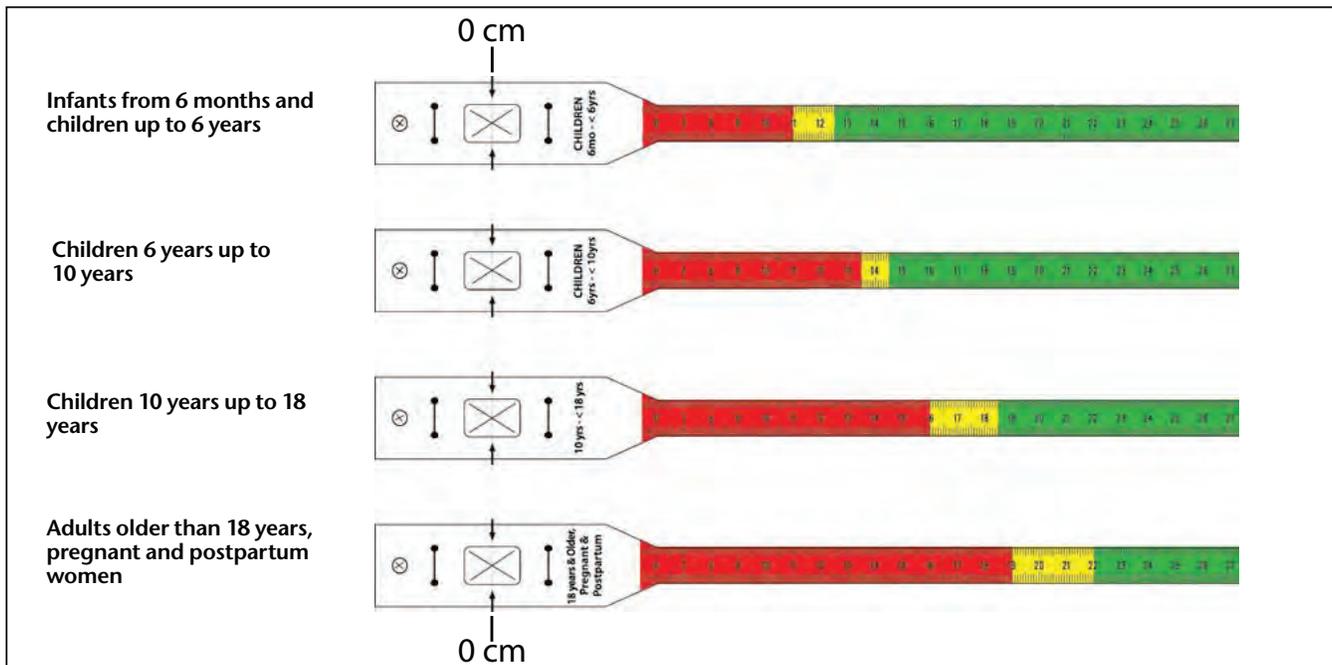


Figure 2. Color-Coded MUAC Tapes Used to Assess the Different Age Categories



- Follow-Up.** All malnourished clients who received RUTF are requested to return to the facility for follow-up. During follow-up visits, health workers again assess and categorize clients, verify their adherence to RUTF prescriptions, and check for any complications. Clients enrolled into outpatient therapeutic care (OTC) usually stay in the program for a maximum of four months; the majority of the clients are cured within two months, and clients not showing improvement are referred for further medical treatment.
- Community Links.** Because most nutrition care happens at the community level, it is essential that patients receive support outside of health facilities. To ensure this support, NuLife trained volunteer community health workers (CHWs) to identify, assess, refer, and follow-up with malnourished clients. CHWs give clients referral forms to show health providers on arrival at facilities. Facility-based providers then use the same referral forms to provide feedback on clients to CHWs, detailing action taken and follow-up needed.

- Education.** All PLHIV receive health and nutrition education.

Training of Health Workers

Before implementation, NuLife trained key health workers in comprehensive nutrition care for PLHIV. Following the training, the 54 sites began integrating nutrition interventions into HIV/AIDS care. During the second phase of training, a module on the principles of QI and the process for testing changes to integrate nutrition care was included in the training manual. The existing QI teams were reconstituted to focus on integrating nutrition care into current processes for HIV/AIDS treatment.

Monthly and Bi-Monthly Coaching

NuLife set up a system to provide regular on-site coaching to help QI teams integrate nutrition care into their HIV/AIDS clinics. The coaching teams were comprised of nutritionists and QI coaches who were appointed by the MOH and had been trained by the QOC Initiative supported by HCI. The role of the coaches was two-fold: (a) to

enable the site-level teams and team leaders to become self-sufficient in making quantifiable and sustainable quality improvements in health service delivery and (b) to support the site-level teams and the team leaders in developing solutions based on appropriate use and application of QI tools and procedures.

Spreading Change

In addition to providing regular on site coaching, NuLife also organized learning sessions, in which the facility teams came together to share challenges and solutions. These sessions helped motivate teams because they did not want to meet with their peers having not made any progress. The sessions also helped spread effective ideas to multiple sites.



Peer-to-peer learning session in progress.

Photo by Ana Vlahov.

Key Results

Assessment and Categorization of Clients

Before NuLife started supporting sites to integrate nutrition in routine HIV/AIDS treatment and support, health facilities only took weight measurements to enable them to prescribe anti-retroviral drugs (ARVs); no sites were carrying out nutritional assessments in their HIV/AIDS clinics. When the sites did start conducting nutritional assessments, they faced a number of challenges, as follows.

Gaps in Assessment and Categorization of Clients

- Human Resources
 - Some members of staff were not trained in comprehensive nutrition care for PLHIV and, therefore, were unable to assess and categorize clients.
 - In most sites, especially hospitals, staff must work in various units of the facility, and the HIV/AIDS clinic does not have a permanent staff. As a result of the many duties assigned to staff, some clients who came to the HIV/AIDS clinic were not assessed. For example, some sites were not assessing clients in the afternoons because the staff in the HIV/AIDS clinic had to report for duty on other wards.
 - In a number of facilities, the hospital administration would transfer the staff trained in comprehensive nutrition to other units to fill staffing gaps or, often the trained health workers left the health facility to return to school or to pursue employment for which they would be better compensated. These transfers or departures created a resource gap in the HIV/AIDS clinics. Some facilities had an attrition rate of nearly 50% in December 2009.
- Assessment and Categorization Process
 - In some facilities, clinicians were assigned to assess and categorize the clients.



Obtaining a MUAC measurement at Luwero HCIV.

However, clinicians with heavy client loads were not able to assess all clients, and some resorted to assessing only clients that appeared malnourished.

- Data System and Documentation
 - Because sites were recording client assessment in ART care books, which are kept by the clients, as opposed to the HIV Care/ART Cards which are filed at the health facility, staff was unable to tally the total number of clients assessed for nutrition status (see Figure 3).

Changes Made to Improve Assessment and Categorization of Clients

- Human Resources
 - All 54 sites provided on-the-job training to expert clients in assessment and categorization using MUAC tape. This training was supported by the use of job aids provided by NuLife. Sites that run teaching programs ensure that student nurses are trained to assess clients with MUAC tape so that they can support the health workers on clinic days.

“ 85% of our health workers have been trained to assess clients using MUAC. All clients in the HIV/AIDS clinic are assessed and expert clients are involved in this. ”

– Nyapea Hospital QI Team –

- Some sites trained staff who are less likely to be transferred to other units so that there is always a member of staff to assess and categorize clients.
- Two sites requested that the hospital administration allow staff in the HIV/AIDS clinic to be excused from night duty so that the staff can effectively assess and categorize all clients reporting to the HIV/AIDS clinic the following day.

- Two sites decided to increase the number of days on which their clinics run to decongest the clinics and reduce the daily workload for staff. Health workers were thus able to more regularly assess and categorize clients.
- Some sites trained both expert patients and community volunteers to assist in the assessment and categorization of clients.
- Assessment and Categorization Process
 - All 54 sites started assessing and categorizing at client registration or triage, which is the entry point for all clients into the clinic.
 - Some sites decided that only clients with red and yellow MUAC results (SAM and MAM) would see a clinician to assess them further and then prescribe RUTF. The clinicians also saw clients who had medical complications but were not malnourished. All other clients were seen by a counselor and continued to the pharmacy or laboratory if necessary. This process meant that clinicians and nurses saw fewer clients, and clients who

Figure 3. Snapshot of HIV Care/ART Care showing where nutrition data is recorded

HIV CARE/ART CARD													
Unique #										Name			
Date	Follow-up date	Duration in months since first starting ART/ since starting current regimen	Wt	If Pregnant EDD? PM TCT? Write gestation in weeks and ANC #	TB status	Potential SIDE EFFECTS	New OI, Other PROBLEMS	Functional	WHO clinical stage	CPT	Other meds dispensed (including nutritional supplements/ RUTF)	ARV drugs (incl. prophylaxis)	
			Ht	FP/no FP If FP write method(s)	If TB Rx, start/stop date (mm/yyyy)		If child, include nutritional problems	Work/Playing Amb Bed		Adhere # of pills / # of days Dispensed		Adhere/Why	Regimen/ # of pills / # of days dispensed
			If child (0-5yrs) record +/- oedema	MJAC If child (≤5 yrs) Write age in months	and District TB reg #								
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did not need to see a clinician did not need to wait long in the clinic.

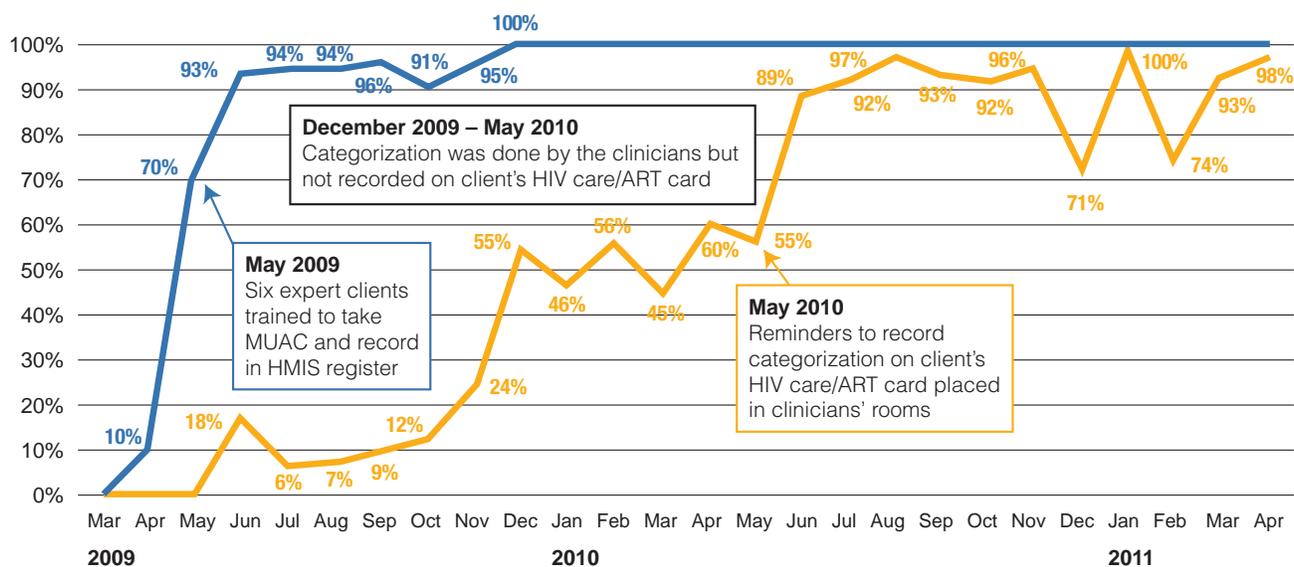
- Some sites placed reminders to assess and categorize clients in clinicians' rooms.
- Data System and Documentation
 - All sites have a clinic attendance register on which client details are recorded. Most sites added a column in the clinic register to record MUAC results instead of opening up a new register. Sites reported that using one register made it easier for staff to transfer nutrition information onto the client HIV Care/ART Cards and to aggregate data at the end of the month.
 - Some sites assign data compilation to one person at the end of clinic day so that all data is captured in one single register or report.
 - Some sites stopped including the number of treatment supporters (relatives or friends of a client who can pick up drug refills on their behalf) as part of the overall number of clients seen in the clinic, thereby making their data on percentage of clients assessed more accurate.

Case Studies

Kayunga Hospital

Between March and April 2009 a number of staff in the Kayunga clinic were trained in comprehensive nutrition care for PLHIV; however, not all of them worked in the HIV/AIDS clinic. Untrained staff in the HIV/AIDS clinic needed to wait for trained staff to come from their various units to assess and categorize clients. When trained staff members from other units were unavailable, clinicians in the HIV/AIDS clinic could only assess clients that appeared to be malnourished. Although the clinicians categorized clients using MUAC tape, they did not record the results in the clients' HIV Care/ART Cards. The QI team decided to assess all clients at registration and record MUAC results in the client register. Initially the nurses tried to assess all the clients, but they were overworked. The team agreed to train six expert clients on-the-job to use MUAC tape, categorize clients, and record the results in the register and on the client HIV Care/ART Card (May 2009 text box in Figure 4). This change led to the 100% assessment of clients. Between October 2009 and May 2010, categorization was done by these expert clients and clinicians, but

Figure 4. Percentage of Clients Assessed and Categorized, Kayunga HIV/AIDS Clinic



still not recorded systematically on the clients' HIV Care/ART Card. Instead, it was largely recorded in the clinic register. In May 2010, reminders to record MUAC and categorization on the HIV Care/ART Card were placed in the clinicians' rooms where categorization took place. This change, highlighted in Figure 4, led to an improvement in documentation of the categorization of clients.

Kyegegwa Health Center

After being trained in comprehensive nutrition care for PLHIV in April 2009, all the staff at Kyegegwa HCIV started assessing and categorizing clients at registration. Initially, the percentage of clients assessed and categorized increased to 52%, but the number was probably higher, as some staff was not documenting assessment. Assessment numbers dropped in August 2009 with the stock-out of RUTF and again in September 2009, with an ARV and septrin stock-out, both of which discouraged staff. In December 2009, more staff was assigned to the clinic, and although assessment was done, it was not well documented. Finally in March 2010, CHWs were trained to provide support to the facility-based staff by assessing clients, recording

assessment in the registration book, and checking that every client's card was filled in correctly. The addition of the CHWs led to improvement and sustained change in assessment of clients. Now all clients are assessed, and their MUAC results are recorded on their HIV Care/ART Cards.

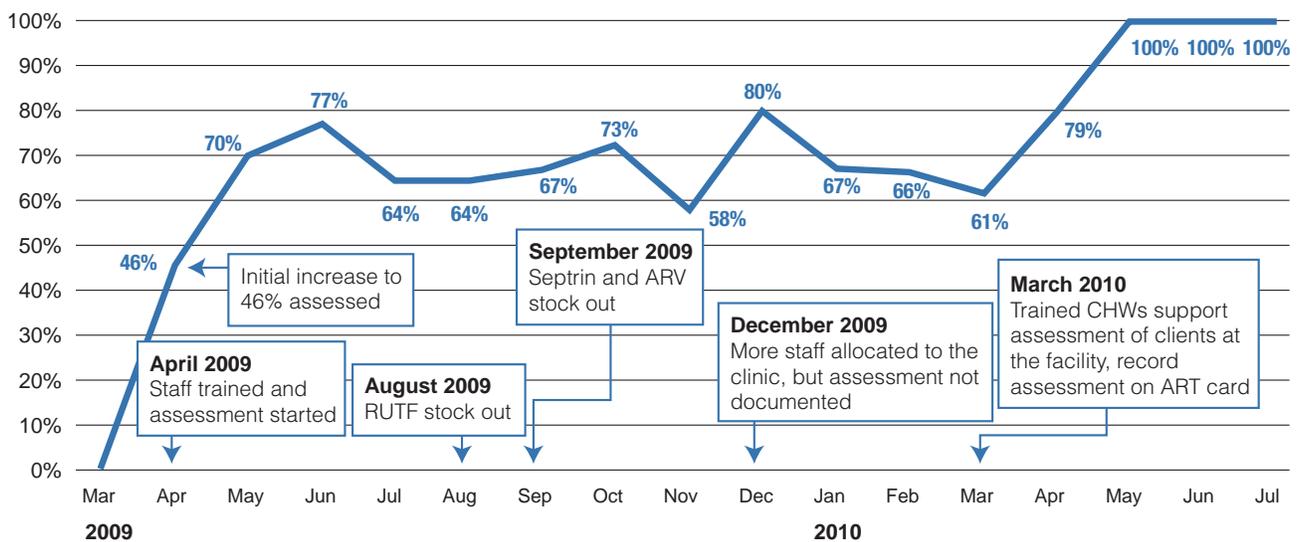
Counseling of All Malnourished Clients

By the end of the project, client counseling was done routinely in health facilities; however, sites still faced some challenges in counseling malnourished PLHIV. Often, facilities would rely on staff that was available to conduct nutrition counseling regardless of counseling skills or understanding of the issues clients faced in terms of malnutrition.

Gaps in Counseling of Malnourished Clients

- Human Resources
 - Most health facilities faced staff shortages and a high clinic case load. Consequently, few staff were available to do individual counseling of malnourished clients, and less time was allocated to counseling.

Figure 5. Percentage of Clients Assessed and Categorized, Kyegegwa HCIV (April 2009 – July 2010)



- Some nutrition counselors were not trained in comprehensive nutrition care for PLHIV, and it took them some time to fully integrate nutrition into counseling sessions.
- Documentation
 - Most sites were not documenting counseling sessions, so it was difficult to track the number of clients that had been counseled on nutrition.
- Insufficient Job Aids
 - Facilities did not have adequate nutrition counseling aids to use when counseling clients, making it more challenging to pass on important messages.

clients and volunteers received training from NuLife to identify, assess, counsel, refer, and follow-up with malnourished clients.

- Documentation
 - To document the number of clients counseled, sites included a column in the general register for recording counseling information. The new MOH HIV Care/ART Cards (Appendix 5) also allow for recording counseling information.
- Job Aids
 - All 54 sites were provided with the national counseling cards designed by NuLife to inform clients on appropriate nutrition practices and the use of RUTF.

Changes Made to Improve Counseling of Malnourished Clients

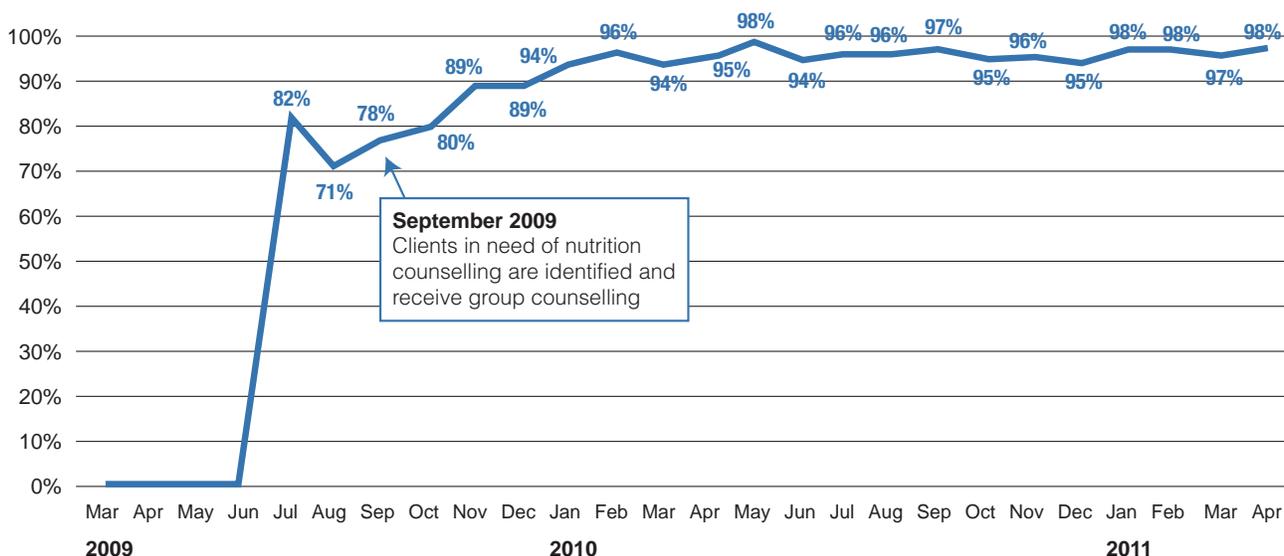
- Human Resources
 - Given the shortage of staff available to do individual nutrition counseling, some sites organized group counseling for malnourished clients.
 - Some facilities used volunteer counselors and expert clients to overcome staffing challenges and carry out nutrition counseling. In most cases, these expert

Case Studies

Kayunga Hospital

At Kayunga Hospital, some malnourished clients initially did not receive counseling because the HIV/AIDS clinic had a heavy client load and few staff. In September 2009, the QI team agreed that the clinic would counsel malnourished clients as a group to save time and use staff more efficiently. Group sessions have enabled the site to consistently counsel over 90% of malnourished clients.

Figure 6. Percentage of malnourished clients counseled on nutrition, Kayunga HIV/ART clinic



Counseling at All NuLife-Supported Sites

Figure 7 shows the percentage of malnourished clients who received nutrition counseling in NuLife-supported sites. The drop between May 2009 and January 2010 was the result of sites not documenting nutrition counseling. Documentation practices improved after the first learning session which took place in December 2009. Significant improvement in documentation of counseling continued as NuLife expanded to new sites during Phase 2 of the project and the staff was trained in nutrition counseling. A list of Phase 1 and Phase 2 sites may be found in Appendix 2: NuLife-Supported Sites. By February 2011, nearly all malnourished clients were receiving nutrition counseling.



A sachet of locally produced RUTF

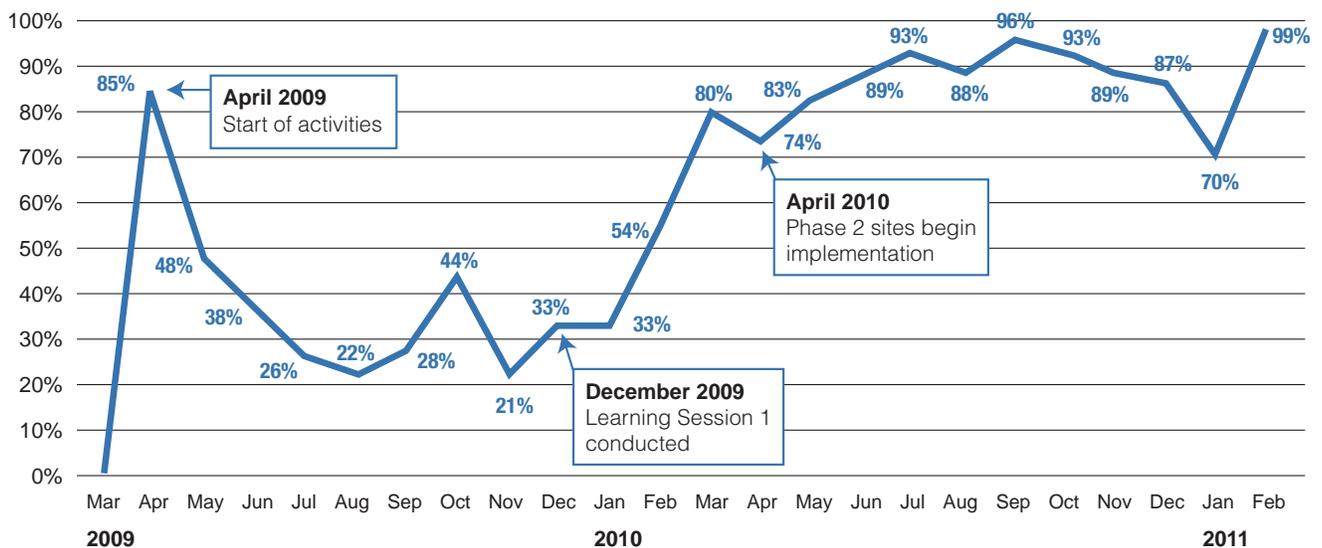
Prescription of Ready- to-Use Therapeutic Food (RUTF)

All health facilities received RUTF to be used in the treatment of malnutrition. By June 2011, over 21,000 malnourished individuals had been prescribed and treated with RUTF. Many facilities experienced challenges in the prescription and dispensation of RUTF.

Gaps in the Prescription and Dispensing Processes

- Knowledge and Human Resources
 - Medical officers and clinicians had insufficient knowledge of prescription procedures and dosing, so already-overworked nurses, dispensers, and counselors had to calculate the dosage of RUTF.

Figure 7. Overall Nutrition Counseling in NuLife-Supported Sites



- Clinicians in some facilities were not sure which clients were eligible for RUTF prescriptions; HIV-negative clients who were not necessarily eligible for RUTF received it.
- Supply Chain and Distribution Process
 - All the sites experienced stock-outs of RUTF during the course of implementation. Some of the stock-outs were due to logistical setbacks during production and delivery, but most of them occurred because sites did not requisition RUTF at the appropriate time.
 - In large regional referral hospital (RRHs) and general hospitals, clients are assessed and categorized in different units. Having one distribution point for RUTF for all of the units led to loss of clients, as the distribution point was often busy.
 - Some facilities required clients to go to another location to pick up their RUTF. As a result, some clients would return home without RUTF or did not return to the clinic for follow-up once they received it.

Changes Made to Improve the Prescription and Dispensation Process

- Knowledge and Human Resources
 - RUTF dosing charts supplied by NuLife were photocopied and put into all clinician rooms so that they could calculate the number of sachets of RUTF to prescribe patients. NuLife replenished the sites with these charts on a quarterly basis.
 - Job aids with clear guidelines on RUTF eligibility were placed in all clinician rooms, and staff received on-the-job training and guidance on the subject.
 - Dosing charts provided by NuLife were displayed in dispensaries so that the dispenser could calculate the number of sachets to give to clients.
 - Some RRHs trained nurses on-the-job in using the job aids and prescription charts to write prescriptions, easing the workload for clinicians.



Child diagnosed with severe acute malnutrition is treated with RUTF

- Supply Chain and Distribution Process
 - Sites work to requisition RUTF well in advance and to complete consumption reports on time so that supply chain managers can order and supply RUTF to sites before they have stock-outs. Staff was also trained in supply chain management and forecasting.
 - Most RRHs and general hospitals opened up a second RUTF distribution point to reduce client waiting time.
 - Some facilities decided to integrate nutrition services with regular community based outreach activities and began to distribute RUTF to registered clients to reduce cost and time spent by clients.

Case Studies

Kayunga Hospital

Before January 2010, the gaps observed between clients who received RUTF and those who should have received it were wide. Often, visiting clinicians at the site were not aware of RUTF and RUTF eligibility. Additionally, health workers did not fully document RUTF prescriptions, particularly when clients returned on a second or third follow-up visit. To address these issues,

the QI team held a continuing medical education (CME) session to inform the clinicians on RUTF and eligible clients. Wall charts showing eligibility and admission criteria and dosing guidelines were placed in all clinician rooms, and by January 2010, all eligible clients received RUTF (see Figure 8). The QI team decided to use clients' HIV Care/ART Cards and OTC registers instead of the health management information systems (HMIS) register to track clients and improve documentation. This enabled the facilities to capture and analyze longitudinal data as well as fully document clients for the 4-8 weeks they were receiving treatment.

Follow-Up of Malnourished Clients Enrolled in OTC

All 54 sites experienced challenges in following up with malnourished clients who did not return for scheduled appointments for various reasons.

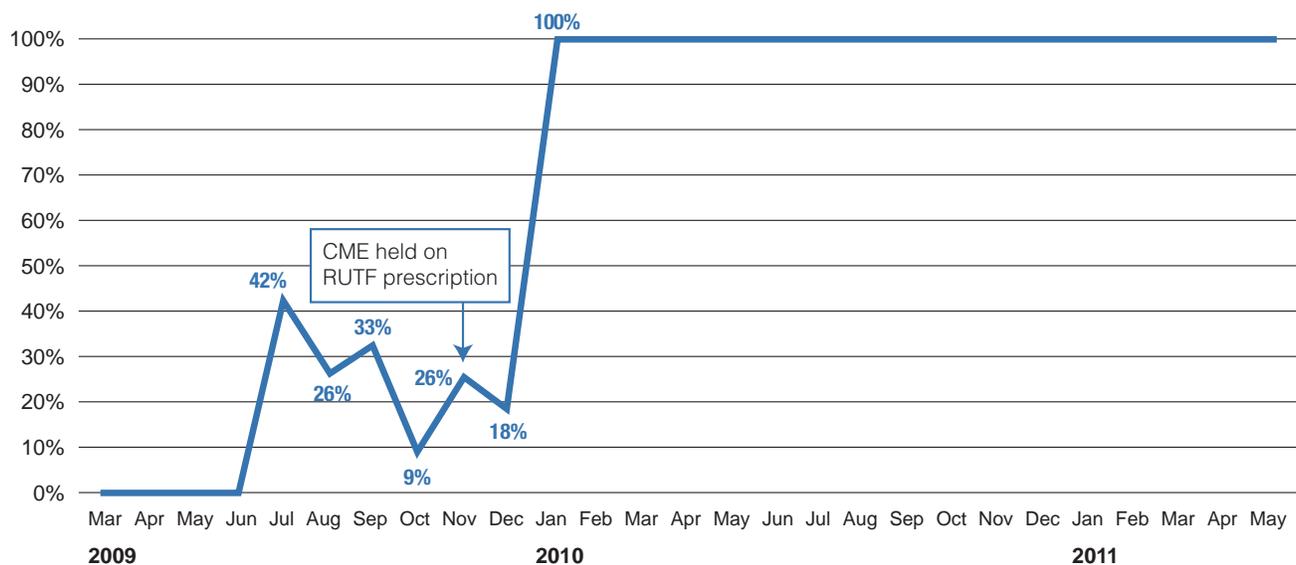
Gaps in Follow-Up with OTC-Enrolled Clients

To understand the reasons for clients not returning for follow-up visits, NuLife staff interviewed clients from four health facilities. The rest of the sites were also encouraged to ask

their clients why they did not return for follow-up to test appropriate interventions. Responses were categorized and are discussed in the following paragraphs. See Appendix 3: Clients' Suggestions for Improving Follow-Up.

- System and Tracking
 - Initially, most facilities did not work out a system for following-up with clients. Clients returning for follow-up and refills had to wait in line with first-time clients, even if they only needed to go to the pharmacy for refills. Consequently, many clients were discouraged from returning for follow-up. Clients on RUTF were asked to return for follow-up every two weeks, while clients on ART were required to return monthly. Having two different return dates was problematic for malnourished HIV-positive clients, who did not have the financial resources or time to return for multiple visits.
 - There was no column to record client addresses in the OTC register. Consequently, it was difficult to follow-up with clients that had missed follow-up appointments.
 - Limited coordination between facilities and communities.

Figure 8. Prescription of RUTF, Kayunga ART Clinic



- Time constraints
 - Many clients live far away from the health facility.
 - Transport was difficult to guarantee or was too expensive.
 - Waiting times at the clinic often discouraged clients from respecting scheduled appointments.
- Counseling and Education
 - Lack of client knowledge about the importance of follow-up and adherence to RUTF prescription.
 - Forgetting OTC appointments.
 - Stigma caused many clients to be reluctant about waiting at the facility or even attending scheduled appointments.



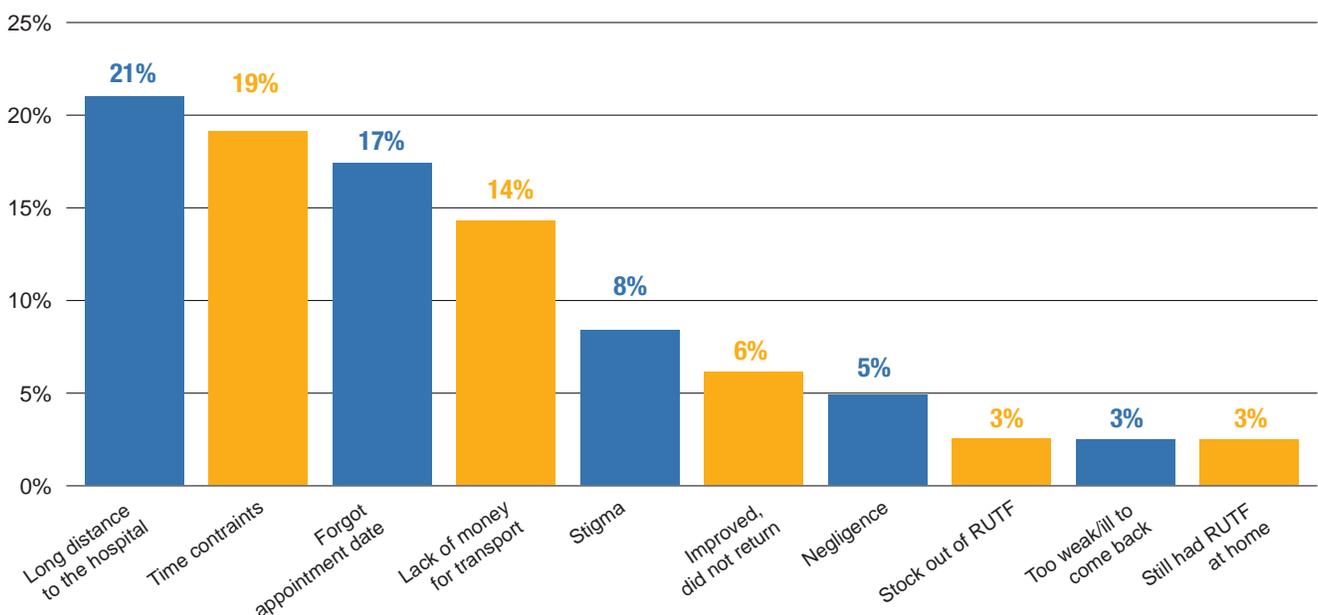
Patients waiting outside a health facility

Figure 9 shows the most common reasons given by clients to explain why they missed an OTC appointment. Most clients cited the distance and cost of travel to the facility as a major setback; many others also mentioned time constraints including other engagements, high number of hospital appointments and long waiting time at the facility.

Changes Made to Improve Follow-Up with OTC-Enrolled Clients

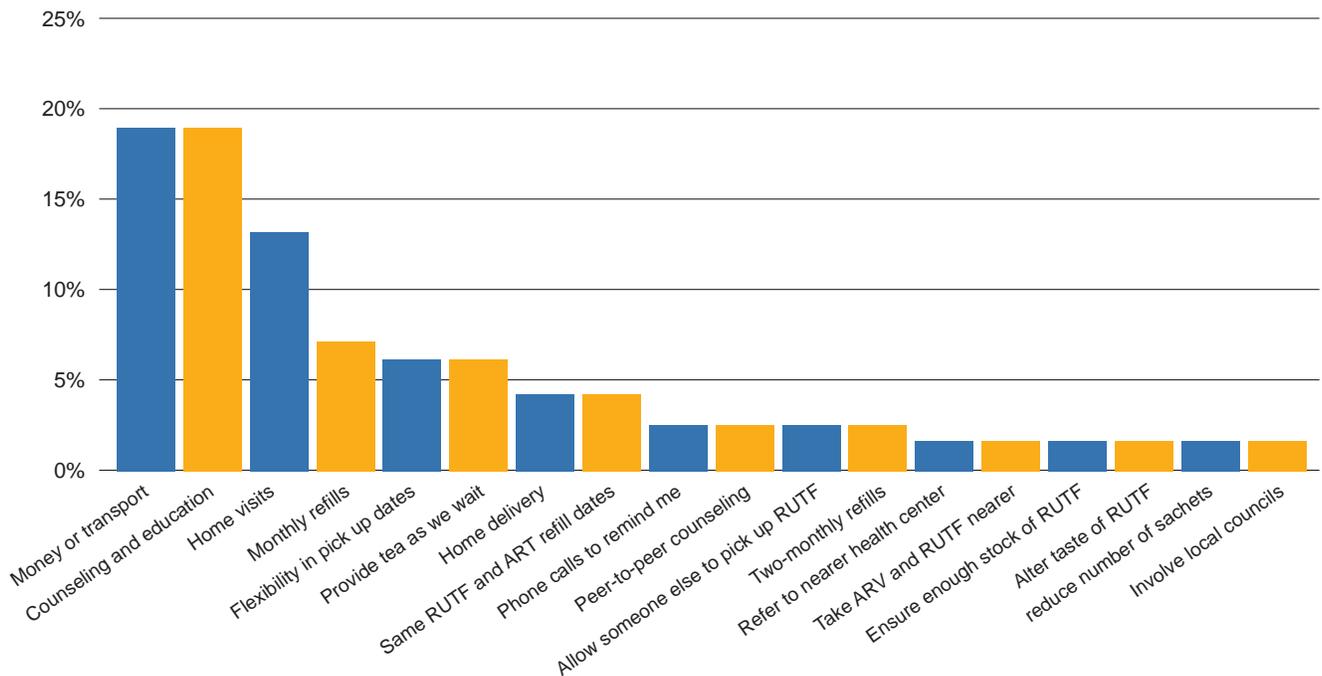
- System and Tracking
 - Staff at the sites committed to updating the OTC registers daily so that data could be easily retrieved. They trained staff members who were assigned to this task specifically. At Orum, this improvement led to an increase in follow-up from 0% to 72%.

Figure 9. Reasons for Missing Scheduled OTC Appointments



-
- Appointment lists that monitored clients who had missed appointments were shared with CHWs for follow-up in the communities of the catchment area.
 - To improve coordination between facilities and communities to ensure a continuum of care, staff held monthly joint review meetings with CHWs. As a result, Kagando Hospital in Kasese registered an improvement in follow-up from 86% to 94% of OTC enrolled clients.
 - Time constraints
 - For clients who lived far from the facility, the use of community nutrition outreach and CHWs to mobilize them improved follow-up. Often clients would be assigned to specific CHWs to improve adherence and follow-up which also led to fewer appointments being forgotten.
 - Efforts were made to refer clients who came from far away to health centers that were closer to their homes after client evaluation and counseling.
 - Integrating nutrition into ART outreaches and carrying RUTF to outreaches led to an increase in client follow-up at Kagando Hospital from 86% to 94%.
 - Attendance registers for both ART and OTC reveal that clients attended the clinics on the same days and kept appointments. Therefore, facilities synchronized ARV and RUTF refill dates to reduce the number of times clients come to the facility. They also began to give monthly refills of RUTF rather than more frequent to reduce the number of visits to the clinic.
 - To reduce waiting times once clients arrived at the facility, staff relocated RUTF dispensaries to the HIV/AIDS clinic instead of the outpatient department (OPD). When this change was made in Kalangala, the percentage of clients who returned for follow-up increased from 25% to 77%, as they spent less time moving between the two departments.
 - Another strategy was to identify returning clients and seeing them first to reduce the time spent waiting in line. For example, Arua RRH staff used colored stickers on patient files to identify clients returning for follow-up and to serve them faster. Follow-up improved from 50% to 94% between November 2010 and January 2011 as a result.
 - Counseling and Education
 - Improved adherence and nutrition counseling to client and/or patient's guardian by packaging a few key messages for clients to focus on rather than providing too much information
 - Some facilities organized peer-to-peer sharing led by cured clients during treatment club meetings to encourage adherence to treatment by currently enrolled clients.
 - Counselors provided health talks to all clients on the importance of keeping appointments.
 - Clinicians provided counseling services before consultation at triage for clients who missed appointments. In addition, some facilities assigned a counselor on clinic days to document and counsel clients.
 - Health education and sensitization meetings conducted aimed to reduce stigma and improve follow-up.
 - For OVCs, facilities decided to place RUTF in the pediatric ward and the pharmacy instead of the HIV/AIDS clinic so that HIV-negative clients were able to access treatment without feeling stigmatized.
- Clients' suggestions for potential measures to ensure that clients returned for their scheduled appointments are shown in Figure 10. Based on the major impediments to attending scheduled appointments, it was expected that most clients would also site the need for a transport stipend to be able to travel to the facility or a more decentralized approach such as home visits and more flexible follow-up appointments and dates. Sites used the information presented in Figure 10 to test changes potentially leading to improvements in follow-up with clients.

Figure 10. Clients' Suggestions for Improving Follow-Up



Case Studies

Tororo Hospital

Tororo Hospital improved follow-up with OTC-enrolled clients by spreading clinic days throughout the week to ease congestion in the clinic and enable clients to return any day of the week to pick up refills. In addition, the site decided to improve

the quality of nutrition counseling by providing specific messages on RUTF and the importance of follow-up, which led to an improvement from 36% in January 2011 to 81% in March 2011.

Kayunga Hospital

At the beginning of the nutrition program, Kayunga Hospital did not document the number of clients returning for follow-up. By August 2010, record-keeping improved and the hospital team began to involve patients who had benefitted from RUTF to share survival stories during peer-to-peer meetings for PLHIV; the team reported that these stories encouraged other patients enrolled on OTC to return for follow up and adhere to their RUTF regimen, thus improving follow up. At the same time, the site also harmonised ART and RUTF appointment dates. Lastly, the site created an appointment file to record the number of clients expected each clinic day and the number of clients that returned while also adjusting refill appointments to a month to month basis rather than more frequent. All of these changes led to an overall improvement of follow-up shown in Figure 12.

Figure 11. Number of OTC-Enrolled Clients Returning for Follow-Up, Tororo Hospital

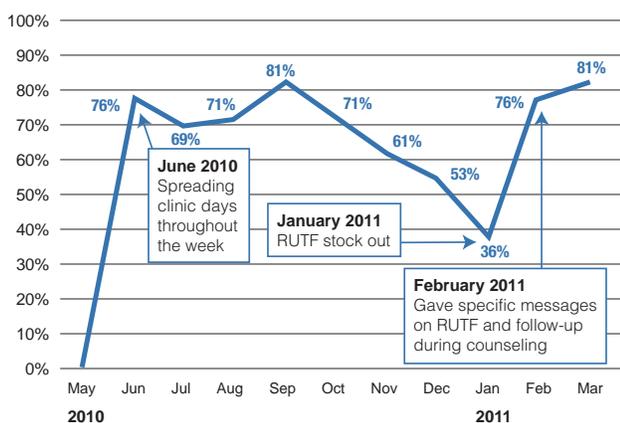
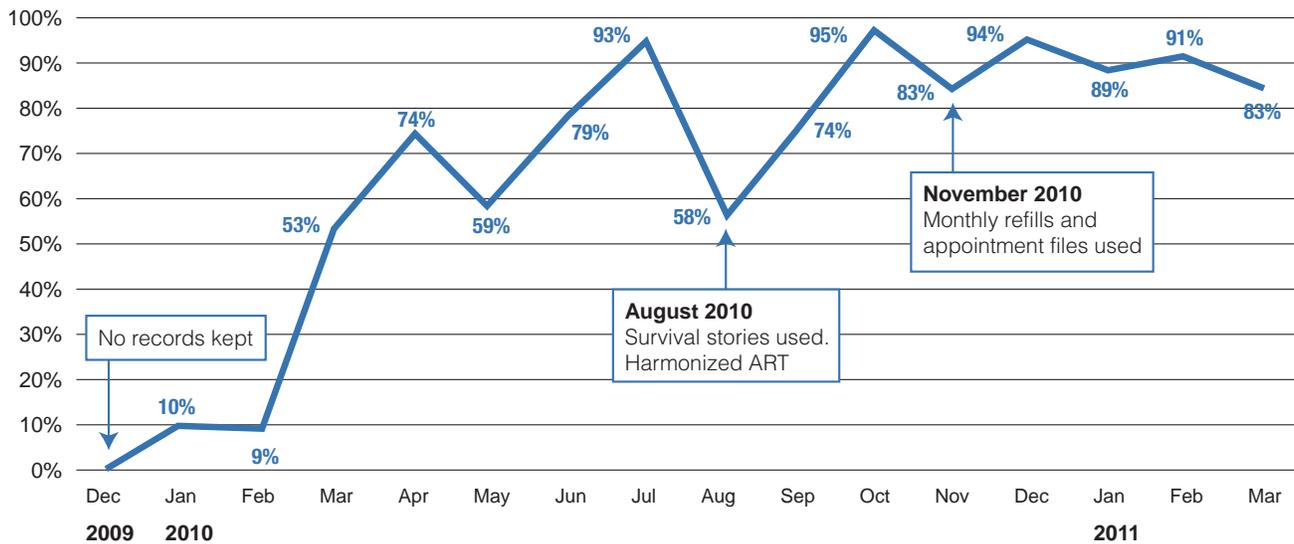


Figure 12. Percentage of OTC-Enrolled Clients Returning for Follow-Up, Kayunga Hospital



Community-Facility Linkages

NuLife trained 1,208 CHWs to routinely assess, refer, counsel and follow-up with malnourished clients in the catchment areas of the 54 health facilities. However, there were some gaps in the linkages between communities and facilities.

Gaps in Facility-Community Linkages

- Coordination
 - Initially, most facilities reported that lack of coordination and communication between facilities and communities was a major challenge. In most cases, facilities did not know who the trained CHWs were and therefore did not meet with them.
- Systems and Processes
 - Under the referral and counter-referral system, facility-based providers should give feedback to the CHWs; however, facility-based providers could not provide feedback if clients referred did not actually reach the facilities.
 - Most sites did not have a system in place to deal with referrals from the communities. Clinicians and nurses were often not aware of the CHW referral forms and thus did not

do anything with them. Consequently, the sites could not accurately report the number of referrals received and provide feedback to the CHWs.

- Resources
 - Providing funds to support CHW activities and motivation for CHWs was regularly mentioned as a challenge to fostering community-facility linkages. CHWs often requested transport, rain coats and facilitation to do their work.

Changes Made to Improve Facility-Community Linkages

- Coordination
 - Some sites began using facility-based volunteers to liaise with community-based volunteers to improve facility-community linkages.
 - Sites started joint monthly meetings with volunteers and community coordinators to improve coordination and communication between facilities and communities. These meetings were used to discuss client progress and to plan for activities.

Collaboration with our partners...has helped us with nutrition activities. Expert clients and community health workers assist with assessment and documentation.

– Kiboga Hospital QI Team –

- Systems and Processes
 - Some sites file the referral forms given to clients by CHWs; these forms are then used to tally the total number of clients referred to the facility by the CHWs.
 - Community coordinators served as a liaison between the CHWs and the facilities. They were also invited to join QI team meetings at the facilities.
- Resources
 - Some sites sought support and funding from existing non-governmental organizations (NGOs) and community-based organizations (CBOs) that support CHWs in doing referral, counseling and follow-up.
 - Kisoro Hospital engaged the district health teams to support CHWs and train more volunteers.
 - Some sites sought other ways of motivating CHWs by providing them with additional training, involving them in clinic work and outreaches, and prioritizing them and their families for care at the health facility.

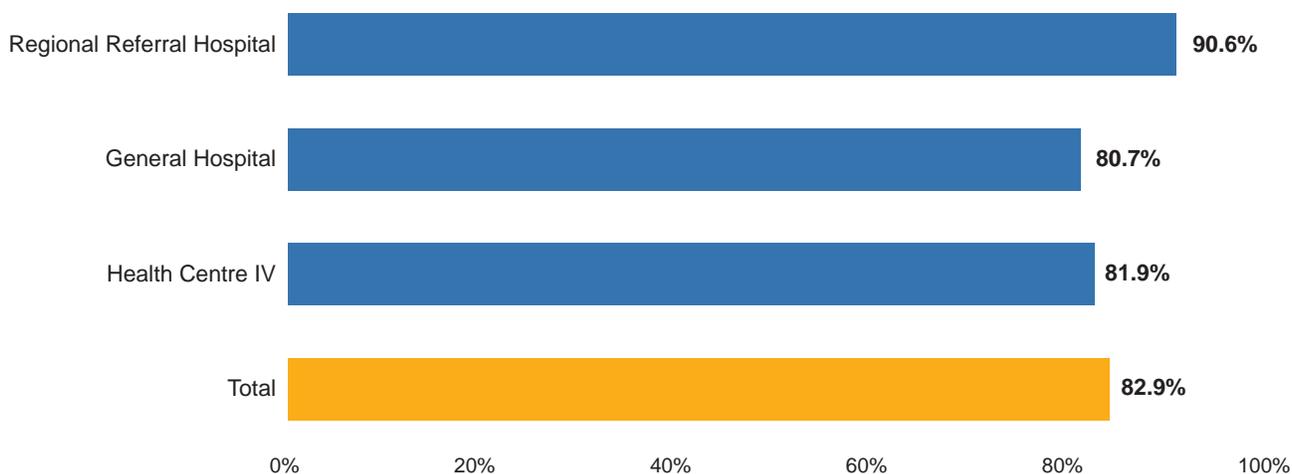
Our strengthened community component has helped us with case finding, which in turn has reduced malnutrition.

– Arua RRH QI Team –

Health and Nutrition Education

All facilities carry out routine health education each clinic day. Health education is done in the waiting area before clients see the clinicians.

Figure 13. Percentage of Clients Assessed and Referred by Community Volunteers



The main challenge for the sites was to integrate nutrition information into health education sessions and monitor their success.

Gaps in Health and Nutrition Education

- Client Reach
 - Health education was usually done first thing in the morning. In most sites, clients arrived early, but some clients who arrived later missed the health education sessions.
- Human Resources
 - Overworked clinical staff was sometimes unavailable to conduct health education sessions.
- Nutrition Information, Education, and Communication (IEC) Materials
 - Sites reported that they lacked sufficient nutrition materials and food demonstration kits, which hindered their ability to carry out nutrition education.
- Documentation
 - Documentation of health and nutrition education was not done regularly, and the sites were often unable to accurately measure the number of clients that had been educated each clinic day.

Changes Made to Improve Health and Nutrition Education

- Client Reach
 - Some sites provided at least three health education sessions per clinic day so that clients who came later could be educated.
- Human Resources
 - Expert clients were trained on-the-job to carry out health education sessions to bridge the human resource gap.
- Nutrition IEC Materials
 - Some sites engaged implementing partners to support them with IEC materials for health and nutrition education, including food and cooking demonstrations and demonstration gardens.

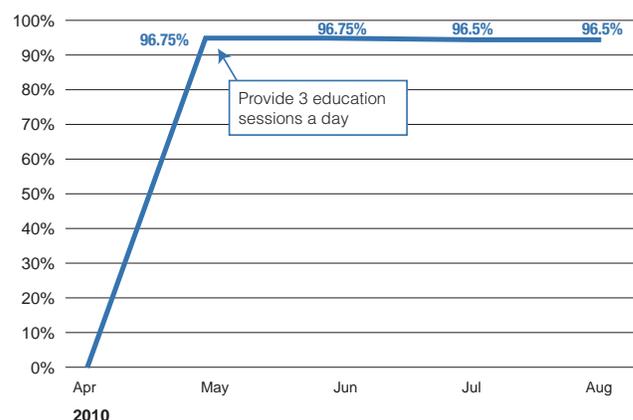


Health education session taking place in the community

- Documentation
 - Health education sessions were recorded and summarized in a book to keep track of topics taught and number of clients educated.

Although health education was routinely carried out in Kayunga Hospital, a number of clients were missing sessions. In April 2010, the hospital started providing three health and nutrition education sessions throughout the day. As a result, the hospital maintained a rate of over 95% of clients receiving health and nutrition information.

Figure 14. Percentage of PLHIV Who Received Nutrition Education at Kayunga Hospital (April – August 2010)



Remaining Challenges

During implementation, the health facility sites faced a number of challenges that still require further interventions. These challenges are summarized in Table 1.

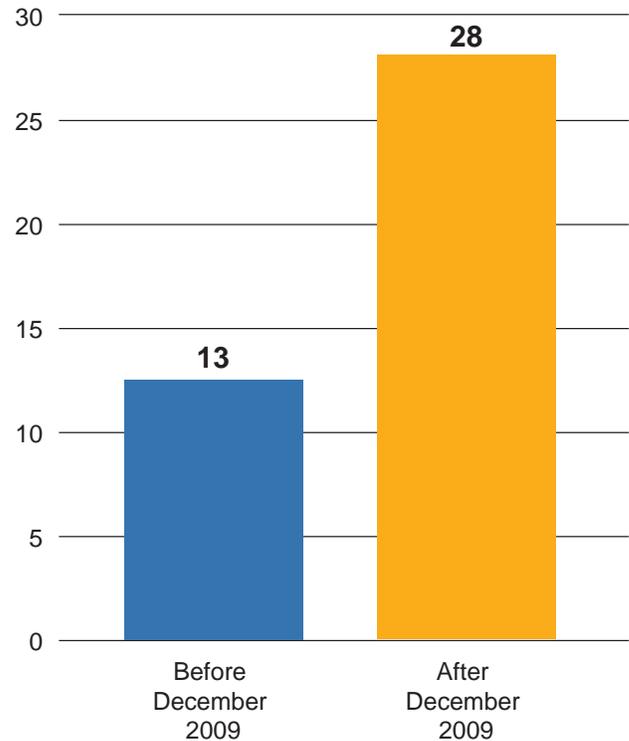
Table 1. Challenges and Recommendations

Challenges	Recommendations
<p>Staff attrition was singled out as the most challenging factor in implementing nutrition interventions. A number of staff trained in comprehensive nutrition care were either transferred to other wards or moved to other facilities.</p>	<ul style="list-style-type: none"> • Engage expert clients and CHWs to support facility-based workers to assess clients and carry out health education. • Engage the facility administration so that trained staff is not transferred from the ART clinic to other wards. • Health facilities should organize monthly sessions of Continuous Medical Education (CME) or Continuous Professional Development (CPD) to share information with new staff or all staff in the clinic and facility.
<p>Stock-outs of RUTF affected nutrition activities; in some instances sites would not assess clients for malnutrition if they did not have RUTF to treat them.</p>	<ul style="list-style-type: none"> • Prompt ordering for RUTF. • Ensure that enough RUTF is produced and distributed to the sites promptly. • Encourage sites to continue providing assessment and nutrition counseling even during stock-outs.
<p>Stock-outs of ARV and septrin affected work in the clinics and demoralized clients. Often if there was an ARV or septrin stock-out, clients enrolled in OTC would not return for follow-up, leading to high default rates.</p>	<ul style="list-style-type: none"> • Improve the supply chain system at the national level.
<p>High expectations for financial incentives from both facility and community-based health workers are difficult to meet.</p>	<ul style="list-style-type: none"> • Other ways of motivating health workers, such as coaching, involvement in decision making, appreciation and recognition, and opportunities to share and present their work, should all be explored.

Summary and Recommendations

- Isolating and simplifying the key elements of nutrition care into the seven steps enabled health workers to integrate nutrition into routine HIV/AIDS care. In busy, overwhelmed health facilities, this model allows QI teams to think about simple steps and implement one step at a time.
- The QI approach accelerates uptake of successful approaches through sharing of tried best practices and lessons learned across clinics. For example, Figure 15 shows the number of sites that had more than 80% of clients assessed for malnutrition prior to and after the first learning session in December 2009, when QI teams shared best practices for assessment and categorization. Collaborative learning should be used to spread change when integrating nutrition interventions in routine healthcare.
- Health workers and CHWs are often aware of the problems within clinics and have suggestions to address these challenges. QI teams should be supported to explore all possible changes to improve the quality of care they provide.
- Implementation is affected by staff attrition, availability of equipment, and supply of RUTF, ARVs and septrin. Lack of any of these components affects the work and morale of both community- and facility-based health workers. Before interventions are started, all health facilities should receive adequate equipment and supplies, and stock-outs must be minimized.
- Collaboration with the district health management teams improves buy-in and increases support for health workers. For example, some districts created a budget line for nutrition activities, and others supported lower health facilities to start providing nutrition assessment and referral of clients.

Figure 15. Impact of Learning Sessions



The NuLife—Food and Nutrition Interventions for Uganda project demonstrated that by simplifying the process of nutrition care and supporting an already overwhelmed health workforce to gradually make small changes to their systems and processes, nutrition care can be successfully integrated into routine HIV care. Managing to have individual QI teams to work on particular problems and share results of their efforts with other QI teams during learning sessions speeds up the process of spreading best practices in a large volume of sites and in turn impacts a greater number of clients.

Appendix 1

Indicator Definitions for the Seven Steps to Good Nutrition Care

Steps for Integration	Goal/Definition	Guideline	Indicators
Assessment and Categorization	All HIV-infected patients are assessed at each visit. Nutrition status is recorded on the care card.	MUAC Result: <ul style="list-style-type: none"> • Green – Well nourished • Yellow – Moderately malnourished • Red – Severely malnourished 	% of HIV-positive clients who have been assessed for malnutrition using MUAC
Counseling	All malnourished patients (mild, moderate or severe) receive nutrition counseling	Job aids	% of HIV-positive clients who receive counseling on nutrition and use of RUTF
Food by Prescription	All moderate and severely malnourished patients receive RUTF	Moderate or severe malnutrition - passed appetite test? <ul style="list-style-type: none"> • Yes – prescribe • No – inpatient 	<ul style="list-style-type: none"> • % of people needing RUTF who received it • % of HIV-positive moderately or severely malnourished clients receiving treatment • % of people receiving RUTF who need it
Follow-Up	All patients receiving RUTF receive follow-up (MUAC measured, weight taken, appetite test done, etc.)	Protocol, new OTC register	% of clients receiving RUTF or enrolled in OTC who are returning for scheduled follow-up visits
Community Links	Links are established between communities and facilities through referral and counter-referral of clients	Job aids	% of clients referred from the community to the facility enrolled into OTC care
Education	All HIV-infected patients receive education on good nutrition and hygiene regularly		% of HIV-positive clients who receive nutrition education each clinic day

Appendix 2

NuLife-Supported Sites

Site	Level	District	
Regional Referral Hospitals			
1	Gulu Regional Referral Hospital	Phase 1	Gulu
2	Kabale Regional Referral Hospital	Phase 1	Kabale
3	Hoima Regional Referral Hospital	Phase 1	Hoima
4	Mwanamugimu Nutrition Unit (Mulago)	Phase 1	Kampala
5	Mbale Regional Referral Hospital	Phase 1	Mbale
6	Baylor Children's Centre of Excellence (Mulago)	Phase 1	Kampala
7	Jinja Main Hospital	Phase 2	Jinja
8	Jinja Children's Hospital	Phase 2	Jinja
9	Mbarara Regional Referral Hospital	Phase 2	Mbarara
10	Arua Regional Referral Hospital	Phase 2	Arua
11	Masaka Regional Referral Hospital	Phase 2	Masaka
12	Fort Portal Regional Referral Hospital	Phase 2	Kabarole
13	Soroti Regional Referral Hospital	Phase 2	Soroti
District/General Hospitals			
14	Kisoro Hospital	Phase 1	Kisoro
15	Kitagata Hospital	Phase 1	Sheema
16	Kitgum Hospital	Phase 1	Kitgum
17	Iganga Hospital	Phase 1	Iganga
18	Bundibugyo Hospital	Phase 1	Bundibugyo
19	Masindi Hospital	Phase 1	Masindi
20	Kagadi Hospital	Phase 1	Kagadi
21	Nakaseke Hospital	Phase 1	Nakaseke
22	Gombe Hospital	Phase 1	Butambala
23	Kiboga Hospital	Phase 1	Kiboga
24	Bugiri Hospital	Phase 2	Bugiri
25	Pallisa Hospital	Phase 2	Pallisa
26	Itojo Hospital	Phase 2	Ntungamo
27	Yumbe Hospital	Phase 2	Yumbe
28	Moyo Hospital	Phase 2	Moyo
29	Kambuga Hospital	Phase 2	Kanungu
30	Kapchorwa Hospital	Phase 2	Kapchorwa
31	Tororo Hospital	Phase 2	Tororo

Site		Level	District
Private-Not-for-Profit			
32	Virika Hospital	Phase 1	Kabarole
33	Ngora Freda Carr Hospital	Phase 1	Ngora
34	Lwala Hospital	Phase 1	Kaberamaido
35	Kayunga Hospital	Phase 1	Kayunga
36	Kagando Hospital	Phase 1	Kasese
37	Rubaga Hospital	Phase 1	Kampala
38	Villa Maria Hospital	Phase 1	Bukomansimbi
39	Kamuli Mission Hospital	Phase 1	Kamuli
40	Maracha Hospital	Phase 2	Maracha
41	Nyapea Hospital	Phase 2	Zombo
42	Ishaka Adventist Hospital	Phase 2	Bushenyi
43	Nyakibaale Hospital	Phase 2	Rukungiri
44	Ibanda Hospital	Phase 2	Ibanda
Health Centre IV			
45	Kyegegwa HCIV	Phase 1	Kyegegwa
46	Kaberamaido HCIV	Phase 1	Kaberamaido
47	Buwambo HCIV	Phase 1	Wakiso
48	Luwero HCIV	Phase 1	Luwero
49	Katakwi HCIV	Phase 1	Katakwi
50	Orum HCIV	Phase 1	Aleptong
51	Nyahuka HCIV	Phase 1	Bundibugyo
52	Dokolo HCIV	Phase 1	Dokolo
53	Kalangala HCIV	Phase 1	Kalangala
54	Bukedea HCIV	Phase 2	Bukedea

Appendix 3

Clients' Suggestions for Improving Follow-Up

Suggestion	Percentage of clients who provided this response
Provide money or transport to and from hospital	28
Provide counseling and education	28
Home visits by CHWs	20
Schedule refills of RUTF monthly	11
Flexibility in pick- dates	9
Provide tea as we wait to see clinician	9
Community to bring RUTF to my home	7
Synchronize ART and RUTF refill dates	7
Phone calls to remind me to pick up RUTF	4
Peer-to- peer counseling	4
Allow someone else to pick up RUTF for me	4
Provide two monthly refills	4
Refer me to a nearer health centre	2
Take RUTF and ARV nearer to clients	2
Ensure enough stock of RUTF	2
Alter the taste of RUTF	2
Reduce the number of sachets prescribed	2
Involve local counsel authorities in follow up of clients	2

Appendix 4

Client Questionnaire

Site _____ Date _____

HIV Status _____ MAM/SAM _____

Questions

1. Did you keep your last appointment? Yes _____ (skip to 5) No _____

2. If no, why did you miss your last appointment?

3. What can we do for you to keep your next appointment?

4. If we do this, will you come back?

5. Do you know of anyone who dropped out of OTC? Yes _____ No _____ (skip to 7)

6. If yes, why did they drop out?

7. Why do other people miss appointments/drop out of care?

8. How can we help them?



Appendix 5

Republic of Uganda HIV Care/ART Card

A significant achievement of the NuLife project was to advocate for the inclusion of nutrition indicators on the ART/HIV Care Card. The new cards also enable the facilities to track data longitudinally. The following pages show the detail of the new cards.



HIV CARE/ART CARD

Unique # _____
 District _____ Health unit _____ Clinical team leader _____

Name: _____ Pt clinic # _____

Sex: M F DOB _____ Age _____ Marital status _____

Address District _____ Sub-County _____
 Parish _____ LC1 _____

Telephone (whose): _____

Care entry point: PMTCT TB Under 5 Outreach Other: Specify _____
 Medical out patient STI Inpatient Exposed infant.

Treatment supporter/med pick-up if ill: _____

Address District _____ Sub-County _____

Parish _____ LC1 _____

Telephone (whose): _____

Home-based care provided by: _____

Names of family members and partners	Age	HIV P/NU	HIV care Y/N	Unique no.	Exposed infant follow-up						
					Exposed infant (Name/ID)	DOB	Infant feeding practice at 3 mos	CTX starts if by 3 mos	HIV test Type/Result	Final status	(if confirms *) Unique ID

Prior ART	Yes <input type="checkbox"/>	None <input type="checkbox"/>
Y(n) Prior ART	Date	
PEP	Where	ARVs
PMTCT only	Where	ARVs
Earlier ARV not transfer	Where	ARVs

HIV care	Date
Confirmed HIV+ test	<input type="checkbox"/> Ab <input type="checkbox"/> PCR Where
HIV enrolled	<input type="checkbox"/> HIV care transfer in from
Eligible for ART	Clinical stage _____ CD4 _____
Eligible and ready	<input type="checkbox"/> Presumptive clinical HIV diagnosis of severe HIV infection in infant <input type="checkbox"/> PCR-infant

Drug allergies	Relevant medical conditions
ART Care COHORT: MM YYYY	
Date _____	
_____/_____/_____/ ART transfer in from _____ ARVs _____	
_____/_____/_____/ Start ART 1st-line initial regimen _____	
1st-line	At start ART: Wt _____ Cl. Stage _____ CD4 _____ Preg _____
	Substitute within 1st-line
_____/_____/_____/ New regimen _____ Why _____	
_____/_____/_____/ New regimen _____ Why _____	
2nd-line	Switch to 2nd-line (or substitute within 2nd-line)
	_____/_____/_____/ New regimen _____ Why _____
_____/_____/_____/ New regimen _____ Why _____	

ART treatment interruptions -- STOP or missed drug pick-up							
Stop or Lost (circle)	Stop Lost						
Date	____/____/____	____/____/____	____/____/____	____/____/____	____/____/____	____/____/____	____/____/____
Why							
Date if restart / re-activated	____/____/____	____/____/____	____/____/____	____/____/____	____/____/____	____/____/____	____/____/____

Status	Date	Where
Transfer out	____/____/____	
Lost to follow-up (drop)	____/____/____	
Dead	____/____/____	

Infant Feeding Practice on infant cards:
 Exclusive Breast Feeding,
 Replacement Feeding,
 Mixed Feeding
 HIV-exposed infant final status at 18 months:
 DEAD if died (write in date of death if known)
 P if positive N if negative and no longer breast feeding
 N/BF if negative and still breast feeding
 U if status unknown

- Why STOP codes:**
- Toxicity/side effects
 - Pregnancy
 - Treatment failure
 - Poor adherence
 - Illness, hospitalization
 - Drugs out of stock
 - Patient lacks finances
 - Other patient decision
 - Planned Rx interruption
 - Other (specify)
 - Excluded HIV infection in infant

- Why SUBSTITUTE or SWITCH codes:**
- Toxicity/side effects
 - Pregnancy
 - Risk of pregnancy
 - Due to new TB
 - New drug available
 - Drug out of stock
 - Other reason (specify)
 - Reasons for SWITCH to 2nd-line regimen only:
 - Clinical failure
 - Immunologic failure

Follow-up education, support and preparation for ARV therapy

	Date/comments	Date/comments	Date/comments
Educate on basics, prevention, disclosure	Basic HIV education, transmission		
	Prevention: abstinence, safer sex, condoms		
	Prevention: household precautions, what is safe		
	Post-test counselling: implications of results		
	Positive living		
	Testing partners		
	Disclosure, to whom disclosed (list)		
	Family/living situation		
	Shared confidentiality		
	Reproductive choices, prevention MTCT		
Pro- gession, Rx	Child's blood test		
	Progression of disease		
ART preparation, initiation, support, monitor, Rx	Malaria prevention, IPT, ITN		
	Available treatment/prophylaxis (CTX, INH)		
	Follow-up appointments, clinical team		
	ART -- educate on essentials (locally adapted)		
	Why complete adherence needed		
	Adherence preparation, indicate visits		
	Indicate when READY for ART: DATE/result Clinical team discussion		
	Explain dose, when to take		
	What can occur, how to manage side effects		
	What to do if one forgets dose		
Home-based care, support	What to do when traveling		
	Adherence plan (schedule, aids, explain diary)		
	Treatment supporter preparation		
	Which doses, why missed		
Home-based care, support	ARV support group		
	How to contact clinic		
	Symptom management/palliative care at home		
	Caregiver booklet		
Home-based care, support	Home-based care - specify		
	Support groups including community support group		

