NUHEALTH

Improving Access to Healthcare for the Poor in Northern Uganda

Lessons Learned Report

March 2014

NU Health Programme
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ACRONYMS

ANC	Antenatal Care
BP	Business Plan
CI	Confidence Interval
CS	Caesarean Section
CSDH	Commission on Social Determinants of Health
DDP	District Development Plan
DFID	Department for International Development
DHIS2	District Health Information System
DHO	District Health Officer
DHT	District Health Team
DQA	Data Quality Assessment
DR	Discrepancy Rate
DSC	District Service Commission
EMHS	Essential Medicines and Health Supplies
GIS	Geographic Information System
HC	Health Centre
HF	Health Facility
HMIS	Health Management Information System
HR	Human Resource
IBF	Input Based Financing
IMCI	Integrated Management of Childhood Illnesses
ITN	Insecticide Treated Net
JMS	Joint Medical Stores
MCH	Maternal and Child Health
MDGs	Millennium Development Goals
MHCP	Minimum Health Care Package
MoH	Ministry of Health
NACME	National Committee on Medicines and Equipment
NHS	National Health Strategy
NU Health	Northern Uganda Health Programme
NUHITES	Northern Uganda Health Integration for Enhanced Services
OPD	Out-Patient-Department
OR	Odds Ratio
PCDP	Post-Conflict Development Programme
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission (of HIV)
PNFP	Private-not-for-Profit
QQA	Quarterly Quality Assessment
RBF	Results Based Financing
RDT	Rapid Diagnostic Test
SOMREC	School of Medicine Research and Ethics Committee

SUO	Standard Unit of Output
UCMB	Uganda Catholic Medical Bureau
UGX	Ugandan Shilling
UKaid	United Kingdom Aid
USAID	United States Agency for International Development
VEN	Vital, Essential, Necessary
VfM	Value for Money

1 EXECUTIVE SUMMARY

This report summarises lessons learned in the implementation of the Department for International Development (DFID) funded Northern Uganda Health Programme (NU Health). It covers a number of topics identified as areas of substantive interest relevant to DFID as well as the larger Results Based Financing (RBF) Community. Drawing on a range of methodologies, these lessons learned build on data collected specifically for this report, as well as alternative analysis of existing programme-generated data. Each section of this report is largely self-standing to enable the discerning reader to review specific topics consistent with his or her own particular interest.

The report is structured to capture lessons learned along the programme's value chain, from inputs through processes, to outputs and outcomes, with an overall reflection summarised under the rubric of Value for Money, as follows:

- Business Planning
- District Health Teams (DHTs)
- Quality of data / Health Management Information System (HMIS)
- Quality of care
- Health Outcomes
- Value for Money (VfM)

Since the completion of its inception period, NU Health has undergone significant revision for better alignment in the generation of evidence and insight into how RBF can contribute to improving health outcomes for the poor. In the current debate on achieving universal health coverage through better accountability and improved health sector performance, NU Health has relevant contributions to make. This report does not aim to provide the final word on what works and at what price, rather it aspires to share relatively unvarnished, practical insights into what seems to work, as well as lessons learned that others active in this area may benefit from adapting or avoiding in their work.

2 BACKGROUND

The Northern Uganda Health programme (NU Health 2011-2015) is part of the UKaid-supported Post-Conflict Development Programme (PCDP) which aims to strengthen local and national mechanisms for governance and accountability to improve access to health care, particularly for the most vulnerable populations in the Acholi sub-region. NU Health focuses on generating evidence on results based financing (RBF) and the extent to which this is an efficient and effective financing mechanism for improving accountability and access to quality health care with faith-based, private-not-for-profit health providers (PNFPs). The programme contract runs from 10 October 2011 to 9 March 2015.

After the programme's inception period, major changes were made to the programme design and implementation approach in consultation with DFID, and the programme was modified to reflect an experiment on the effectiveness of RBF, by introducing an input-based financing (IBF) comparison or control arm in addition to the RBF intervention arm. Rather than running the programme in "implementation mode" to maximise prospects for positive outcomes associated with RBF, NU Health would adopt a "hands off" approach to influencing how RBF facilities would use any financing they received for attaining targeted results. Other programme variables aside from the financing mechanism, such as the provision of a funded credit line and supportive supervision would be kept the same for both RBF and IBF regions to preserve the validity of results.

Following an assessment to identify PNFPs that met standards of functional service delivery, 21 facilities were enrolled in Acholi sub-region and these facilities were then matched with ten control PNFPs in neighbouring Lango sub-region. The Lango region was chosen as it is also post-conflict and shares a similar socio-cultural and economic setting to Acholi. The range of levels of health facilities within the RBF and IBF regions are represented in **Table 1** below:

Table 1: Range of PNFPs in RBF and IBF regions

Level	Acholi/RBF region	Lango/IBF region
Hospital/HV4	3	2
HC3	3	6
HC2	15	2

The 21 Acholi facilities receive a variable payment each quarter based upon their performance over the preceding three months. The ten control PNFPs in Lango each prepare a work plan to address core areas of service improvement and receive input-based funding to support implementation of these plans. The amount of funding allocated per level of facility roughly matches the amount anticipated for the RBF PNFPs at the same level over the course of the programme.

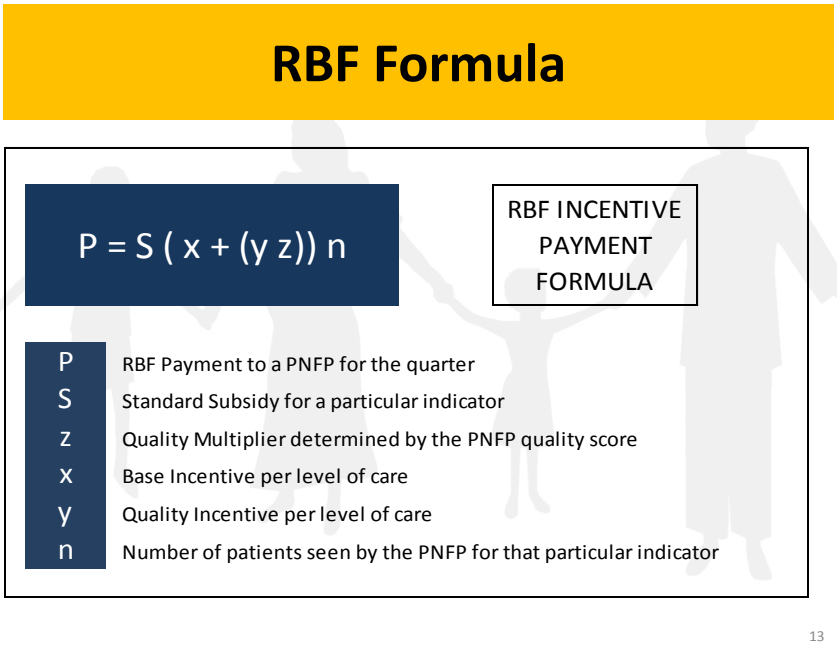
A key feature of an RBF design is the separation of the roles of Funder, Purchaser, Provider and Regulator/Verifier. In NU Health these roles are defined as follows:

- The **Funding Agency** is DFID, who transfers funds to NU Health.
- The **Purchaser** is NU Health on behalf of DFID. NU Health oversees the transparency of the RBF system, and controls the checks and balances. Total system oversight rests physically at the NU Health Gulu office, with oversight from the NU Health team based in Kampala.
- The **Providers** are the PNFPs providing health services. They each hold a contract with the purchaser which is contractually binding in terms of remuneration/incentive payments.
- The **Regulator/Verifier** is the DHT in each district, which has the primary responsibility of providing guidance and oversight to the PNFPs in implementation of RBF and general troubleshooting, largely through feedback on HMIS reporting and planned supervisions. Initially NU Health supported the DHT in this role, whilst gradually building their capacity to fulfil their supervision/verification role independently.

A key aspect of routine NU Health activities is an intensive and rigorous verification process to validate the service delivery data provided by PNFPs. This is a fundamental component of the NUH Health model as it is verified performance data on which the value of RBF payments is calculated. Data quality assessment (DQA) is undertaken by DHTs in collaboration with NU Health staff and is complemented by a quarterly quality assessment (QQA) in each health facility. The indicators selected to assess PNFP performance include the following:

- Antenatal care with defined quality parameters – starting before 16 weeks, 4+ visits, including provision of tetanus vaccination and malaria prevention, with appropriate measures for the prevention of mother-to-child transmission (PMTCT) of HIV.
- Delivery in the health facility – using a Partograph, with emergency obstetric care provided as needed, early breastfeeding, appropriate postnatal care.
- Child care – full vaccination, appropriate diagnosis and treatment of common illnesses.
- Adult care – appropriate diagnosis and treatment of common illnesses.

Based on the results of the DQA and QQA, RBF PNFPs receive payment according to the formula below:



Details of all indicators assessed and the associated calculations for payments are provided in Annex 1.

3 INTRODUCTION TO LESSONS LEARNED DOCUMENT

This Lessons Learned report originated from discussions between DFID and NU Health on key themes for a series of Technical and Policy Briefs to be produced by the programme, exploring specific areas of interest and programme findings in greater detail. Following further discussion, it was agreed that two longer Lessons Learned documents would be produced covering a number of topics identified as areas of substantive interest relevant to DFID as well as the larger RBF Community. These are as follows:

Inputs	1. Business planning 2. Capacity of District Health Teams (recruitment) 3. Quality of care a. Essential equipment, medicines and health supplies b. Skilled human resources c. Staff motivation
Processes	d. Prescription habits e. Clinician competencies (labour monitoring and Integrated Management of Childhood Illnesses - IMCI) 4. Capacity of District Health Teams (supportive supervision and data management) 5. Health Management Information System (HMIS)/quality of Data
Outputs	6. Quantity of care/ disease burden/ profile of clients

	7. Quality of care (prescription habits; clinician competencies) 8. Client satisfaction
Outcomes	9. Perinatal care
Value for Money	10. Inputs versus health outputs 11. User fees

The limitations of the document include the reliance on data from the broader HMIS for comparison between NU Health-supported facilities and others in the ten districts, as well as the focus on qualitative methodologies for some sections, which does not necessarily provide findings that can be generalised to a wider extent. In addition, some sample sizes are smaller than originally intended, largely due to difficulty in retrieving appropriate records. The findings, therefore, should be interpreted with some caution and within their specific context. Details of specific limitations are provided in each section.

The objective of this report is to examine the role of RBF or IBF in affecting changes through individual and collective behaviours at facility and district levels.

To maximise clarity, the above topics are structured according to the following sections:

1. Business Planning
2. District Health Teams
3. Quality of data / Health Management Information System
4. Quality of care
5. Health Outcomes
6. Value for Money

4 LESSONS LEARNED: FINDINGS AND ANALYSIS

4.1 BUSINESS PLANNING

4.1.1 Introduction

In this section NU Health examines the business planning process at facility level; including who participates in planning improvements in service delivery and quality; and the quality of the documents produced by PNFP in both RBF and IBF regions.

4.1.2 Key Findings

- Business plans (BPs) and planning processes are intended to provide critical assessment and a basis for facilities to plan improvements in service delivery and quality: they largely fulfilled this purpose in NU Health.

- Including all key stakeholders in development of BPs creates greater commitment to implementation.
- The support process for developing BPs was similar in the RBF and IBF regions and no significant differences in their approaches were observed.

4.1.3 Background

The Challenge
For health facilities to receive funding from NU Health, they had to develop individual plans to outline their spending priorities. These business plans are an essential part of the RBF process as they help providers assess where they are and plan realistic targets, and they help purchasers understand which resources the facility will invest in and which strategies they will apply. This enables all stakeholders to monitor facility performance and correct any deviations faster. Some higher level facilities, like hospitals, already had an established annual planning process; however, lower level facilities often did not and required substantial assistance. However, the "hands off" approach meant that there were limits to the support that could be given to the facilities, which ultimately had to be responsible for producing the document themselves.

The Response
NU Health supported all participating PNFPs to develop business plans, by providing written planning guidelines and working directly with key staff where needed. The purpose of the business plan was to help staff analyse the benefits and risks, investment and likely returns associated with the additional funding provided by NU Health.

4.1.4 Assessment Methodology

For Year 1, in addition to reviewing the facility business plans themselves, the NU Health technical team conducted focus group discussions with health facility staff, and key informant interviews with management, to review the business planning process and assess how the implementation of plans had contributed to the attainment of set targets in year one (2012/13). The team also undertook a desk review of business plans for year two (2013/14), supplemented with telephone inquiry where further information was required.

4.1.5 Findings

Process of Participation
A business plan was considered participatory when there was a clear process of engaging both staff and management. NU Health assessed the level of participation by asking staff and management separately whether they knew about and had been involved in the development of the business plans. The business planning process was deemed participatory, at least to some extent, in all RBF (21/21) and IBF (10/10) facilities in the second year; however, there was

considerable variation in the degree of participation and it was observed that the process had improved significantly over time. Consultation was sought through various means, including a general assembly where contributions and suggestions were encouraged.

Who was involved?

In the Acholi region, the highest involvement was observed at lower level facilities where all clinical staff along with the records personnel and facility management participated in each facility except two (St. Janani HC2 and St. Monica HC2) where staff had been excluded. At HC3s and hospitals in Acholi, management was involved and clinical staff members were represented through their department heads. One health facility also consulted the non-clinical staff. In the Lango region all the facilities had similar levels of participation. The Health Unit Management Committee, In-charge and Department heads took part in the business planning in eight out of ten facilities. The exceptions were Iceme HC3 where all the clinical staff along with management were involved and Aduku HC2 where it was reported that all the clinical staff apart from the In-charge were excluded from drafting the business plan. In eight of the RBF facilities and six of the IBF facilities, staff directly consulted the District Health Teams about what to include. In three of the RBF facilities reference was made to both the District Development Plan (DDP) and the National Health Strategy (NHS) while one additional RBF facility made reference to the DDP only. Only one IBF facility made reference to both the DDP and the NHS, three facilities referred to the DDP and one referred to the NHS.

Quality of the Plans

Quality of the plans was assessed on the basis of whether and how past performance was considered in deciding current strategies and targets and on the feasibility of the plans. All RBF and IBF facilities without exception made reference to the past performance in 2011/12. In some cases, relevant, but often over-ambitious, strategies were proposed to attain the set targets: for example, some RBF HC2 facilities developed plans for constructing new maternity units. In both the RBF and IBF facilities the most unrealistic target setting was for new indicators such as 4^+ antenatal care (ANC) visits with the first one before four months (16 weeks) pregnancy, or where there had previously been little emphasis such as the number of insecticide treated nets (ITNs) distributed to pregnant women attending ANC. Two health facilities in the IBF region (Boro Boro HC3 and Amuca Seventh Day Adventist [SDA] HC3) did not outline clear strategies for attaining proposed goals and another (PAG HCIV) did not set specific targets to be achieved.

At this stage of the programme there is no obvious difference in the way that PNFPs in the RBF region conduct the business plan development and review process compared to the IBF region. However, there are some significant differences in performance as reported in later sections of this document.

4.1.6 Policy Implications

RBF requires some form of business planning at health facility level as a basis for overall performance management (*e.g.* annual reviews). If the NU Health RBF experiment is effective

and the government wishes to scale up successful elements of this financing mechanism, participating health facilities will need the competency to develop and manage plans. Lessons learned from NU Health experience suggests that more inclusive processes result in stronger buy-in and subsequent implementation by all staff. Having a strong review process in place at the facility level also supports the development of more realistic plans. Finally, developing facility level plans in collaboration with the DHTs promotes a stronger connection between the health facility plan and overall district priorities. These findings are equally valid for the health facilities in both the RBF and IBF regions.

4.2 DISTRICT HEALTH TEAMS

4.2.1 Introduction

This section examines the role of District Health Teams (DHT) in the NU Health programme, including their capacity to undertake their support supervision role and the sustainability of the DHT's independent verification role beyond the programme's contractual life.

4.2.2 Key Findings

- In their role as custodians of the health system, it is preferable and rational to include district health teams as key players in the verification and quality assurance processes in RBF approaches with health facilities.
- Strengthening their capacity to perform these tasks may require substantial investment.
- The impact of this investment extends beyond RBF specific tasks to improve overall DHT functioning and performance.

4.2.3 Background

The Challenge

The DHTs and Health Sub-District authorities are the most decentralised levels of regulation within the Uganda Ministry of Health (MoH). Their primary task is guidance and supervision of health facilities located within their area of responsibility, data collection and analysis, the planning of health service delivery, and the coordination of stakeholders at district level (across both public and private sectors). DHT performance is related to adequate staffing to cover these core functions, appropriate skills levels among those staff, and the availability of key support measures, for example, funding for activities and equipment such as vehicles, computers, power supply, etc.

The capacity assessment of DHTs conducted by NU Health during the inception phase identified critical human resources (HR) gaps that impeded full functionality of the DHT. Some of the reasons for HR gaps included: i) a cap or ceiling on the national public sector wage bill; ii) staff attrition or relocation often caused by the splitting of districts to create new ones; and iii)

inability to attract qualified candidates due to remoteness of some districts. In particular, districts lacked appropriate staff to support data analysis, environmental health, and maternal and child health (MCH), in addition to their larger stewardship function. Although oversight of PNFPs formally falls under the overall responsibility of the DHT, they often do not receive the same level of attention as public facilities, in part due to the perception that they are better managed. Resource constraints within DHTs exacerbate the situation.

The Response

NU Health is supporting ten DHTs to strengthen their capacity in key functional areas related to implementing the RBF scheme in PNFPs. Six of the DHTs are located in the intervention area in Acholi sub region and four are located in the control area in Lango sub region. The capacity strengthening support focuses on:

1) Human resources strengthening – ensuring a minimum acceptable level of staffing and skills availability.
2) Improved supportive supervision to health facilities in the form of quarterly quality assessments (QQAs).
3) Improved data collection, analysis and utilisation.

Though not all participating DHT members are involved in the RBF scheme implementation, DHTs in both RBF and IBF regions receive similar types of capacity strengthening support related to their core functional areas. The development of essential skills around data collation and verification and the utilisation of data for informed management decision making also supports the DHTs to better fulfil their larger stewardship function amongst both participating NU Health PNFP and other facilities within their jurisdiction. Support provided by NU Health related to data management is reported on in the next section on data quality.

Human Resources for Health

NU Health supported recruitment to address key staffing gaps within the DHT as part of HR capacity strengthening. Each respective District Service Commission (DSC) took the lead in the recruitment process to ensure adherence to standard Public and Health Service protocols. Recruitment entailed advertisement of the identified positions, short listing of applicants, interviewing of short listed candidates, confirmation and appointment of successful candidates. In total, 11 staff members were successfully recruited on secondment and are currently remunerated through the programme. These include five Assistant District Health Officers (DHOs) for MCH, two Assistant DHOs for Environmental Health, three Biostatisticians and one Principal Health Inspector. The programme shortly expects to complete the process of recruiting an Assistant DHO-MCH for Nwoya District after the candidate selected during the first recruitment round transferred services to another district.

Supportive Supervision Capacity

One of the aims of NU Health support to the DHT is to catalyse a stronger supportive supervisory relationship between the DHT and the PNFPs. The Quarterly Quality Assessment (QQA) and Data Quality Assessment (DQA) visits provide an opportunity for mutual learning

between PNFPs and the DHT. NU Health has invested substantial time and resources in supporting the DHT to take an active role in supervising the PNFPs through these activities.

4.2.4 Assessment Methodology

To carry out the assessment, focus group discussions and key informant interviews were conducted with DHT personnel who had recently conducted DQA/QQA, in order to capture their views on the pre and post QQA activities. Additional information was extracted from the reports presented by the DHT after each assessment. To corroborate the information presented by the DHT, key informant interviews were also conducted with the NU Health staff verifiers on the DHT supportive supervision capacity.

4.2.5 Findings

Human Resources
DHT supervision teams are expected to have the appropriate skills and numbers to handle the assessment workload and mentor the facility staff including adequate follow-up on emerging issues. For example, a hospital is supposed to be supervised by four persons and this should include a person with skills in data management, MCH, environmental health and cold chain management. Overall, most DHT have the right number of personnel (four members at hospitals/HCIV; three at HC3; two at HC2). However, appropriate skills are not always present as DHT members with data management and MCH knowledge are in high demand from other programmes and these positions are often filled by anyone who might be available. Another challenge is that the same members tend to participate all the time and whilst this has built their expertise to conduct DQA/QQA it has hampered the building of capacity among the rest of the DHT.

Supportive Supervision Capacity
Most of the DHT are addressing identified challenges by: i) training more persons on the process of conducting DQA/QQA, especially from the Health Sub-Districts, to build a critical mass of individuals who can conduct DQA/QQA and minimise distractions in case of competing activities; and ii) Continuous improvements in the planning for the DQA/QQA and other supportive supervision visits.

Logistics
Lack of timely and appropriate transport is an on-going problem and often delays the start of the assessment. Lack of vehicles has been attributed to: i) limited number of vehicles and motorcycles at district level; ii) vehicles being switched to another activity at the last minute; iii) bureaucratic financial procedures (such as the Integrated Financial Management System) that hamper the DHT from accessing fuel money in time; iv) late booking of vehicles and submission of financial requests for fuel; v) break-down of vehicles.

Sustainability of the DHTs' Independent Verification Role

At the outset, the standardisation of DHT capacity in the RBF and IBF study arms was ensured by recruiting to fill HR gaps. All DHT members were given similar training, hands-on orientation and mentoring with the NU Health QQA and DQA tools. The NU Health field teams have been available to provide technical assistance to all DHTs to ensure uniformity of monitoring and scoring with the DQA/QQA tools in both RBF and IBF districts.

Although NU Health believes that the verification process has achieved and sustained an acceptable level of rigour, the potential for DHTs to fully and independently support the process is far from being attained for a number of reasons. The field team perceives different levels of DHT commitment to data verification in both the intervention and control sub-regions. Although most DHTs verbally express enthusiasm in the RBF concepts and verification processes, many of them maintain an observer status during the verification processes, especially in the maternal and neonatal care areas which are also the core components of the programme. This is due to the following factors:

- Inadequate involvement of key DHT personnel, such as MCH focal persons, biostatisticians, and health inspectors, including those seconded by NU Health, due to other commitments at the district health office
- Rapid turnover of DHT staff, with trained staff moving on and untrained staff often deployed to participate in the RBF verification process
- Weak motivation and low sense of ownership among some DHTs, with many of them relying on the NU Health Capacity Building Officer to physically transport them for routine RBF verification schedules.

At the same time, there are DHT members in both the RBF and IBF regions who show real interest and technical ability to initiate RBF verification and produce replicable results. DHT personnel have demonstrated the ability to apply the concepts and tools in public health facilities with relative independence form NU Health staff. Beyond the scope of NU Health's remit, current data do not provide a basis for understanding of specific districts and individuals determinants of motivation or apathy.

Conducting Supportive Supervision in Non-NU Health Supported Facilities

All of the ten districts have conducted supportive supervision in non-NU Health supported facilities using elements of the QQA tool. The supervision usually occurs on a quarterly basis and is funded mainly from other development partners or through the district budget. The major initiative of supportive supervision in public facilities is the USAID funded Northern Uganda Health Integration for Enhanced Services (NU-HITES) project, whose form of supportive supervision takes a mentorship approach. In most cases the tool used for supportive supervision is determined by the partner funding the process or if the funding is from the district, the MoH supportive supervision tool. However, the DHTs are increasingly rolling out the NU Health DQA/QQA tool to public facilities because of their appreciation of its utility. It is worth noting that the appreciation of the DQA/QQA tools and processes appears to be higher in the RBF region compared to the IBF region, according to NU Health programme staff.

4.2.6 Policy Implications

Investment in DHT capacity strengthening has the potential to positively influence overall DHT functioning and performance. RBF requires substantial involvement of the DHTs, and building up their capacity to undertake the necessary verification and quality assurance processes may require significant investment. In the context of future scaling up, this would have implications for government and funding partner inputs.

4.3 QUALITY OF DATA / HEALTH MANAGEMENT INFORMATION SYSTEM

4.3.1 Introduction

In this section NU Health examines several aspects centred on quality of data and HMIS, principally discrepancy rates for NU Health supported PNFP and the completeness and timeliness of reporting by facilities in the Acholi and Lango sub-regions.

4.3.2 Key Findings

- Demand for, and skill in, managing evidence based decision making is nascent despite the general recognition that quality data is vital for health system management and accountability.
- Reduction in discrepancy rates between reported and verified data have occurred in the RBF region compared to the IBF region although there has been little improvement to date in terms of completeness and timeliness of data submission.

4.3.3 Background

The Challenge
Demand for and skill in managing evidence based decision making is nascent in both intervention and control areas. This has contributed to an environment where the quality of HMIS data is inadequate for either management or accountability purposes. Other challenges include limitations in human resources and requisite capacity, an absence of supportive supervision culture and resource constraints.

The Response
In addition to prompting an increased demand for data though results reporting and subsequent payment, NU Health supports PNFPs and DHTs to improve data quality in two main areas: by verification of data at facility level and helping facility staff to reduce discrepancies between reported and verified data, and by improving the timeliness of data entry from the health registers (HMIS) into the District Health Information System (DHIS2). The DHIS2 is a web-based health management information system that enables data entered at facility level to be rapidly aggregated and analysed at the district level. NU Health supported DHIS2 training for

DHT Biostatisticians and HMIS Focal Persons in six out of the ten districts. Biostatisticians recruited subsequently have been supported through mentoring and on the job learning.

The **Discrepancy Rate (DR)** measures the difference between reported data and verified data as a proportion of reported data and, thus, reflects the quality of the data collected at the facility level. If there is a high discrepancy between the reported and verified data, it means the quality of the data is poor. RBF initiatives in most countries use a DR of +/-5% as a standard range of acceptable data quality.

$$DR = \frac{\text{Verified cases} - \text{Reported cases}}{\text{Reported cases}}$$

NU Health works with the DHTs to assist PNFPs to reduce their DRs to an acceptable level by physically cross-checking all reported data with the entries in facility registers, highlighting inconsistencies and errors, and supporting timely data entry at district level. In order to improve the quality of HMIS data collated from the facility registers and provided by PNFPs to the DHTs for entry into the DHIS2, data quality is now a component of the NU Health QQA for implementation Year 2. DR thus has an impact on determining the RBF payments to Acholi PNFPs.

4.3.4 Assessment Methodology

For the assessment, the NU Health technical team extracted the discrepancy rates from the on-going DQA verification database managed by NU Health. NU Health monitors the DRs and timeliness of data entry across all PNFPs on a quarterly basis. Key informant interviews were conducted with the District Bio-statisticians to get their perspective on discrepancy rates and corrective action being taken. Timeliness ratios were extracted from the DHIS2 website for each HF (which displays the dates when reports were submitted).

4.3.5 Findings

The analysis below shows the DRs across PNFPs in the RBF region compared to the IBF region and a comparison between the number of actual reports submitted versus the expected reports, as well as the number of reports that were submitted on time by the facility.

Discrepancy Rates for NU Health Supported Facilities

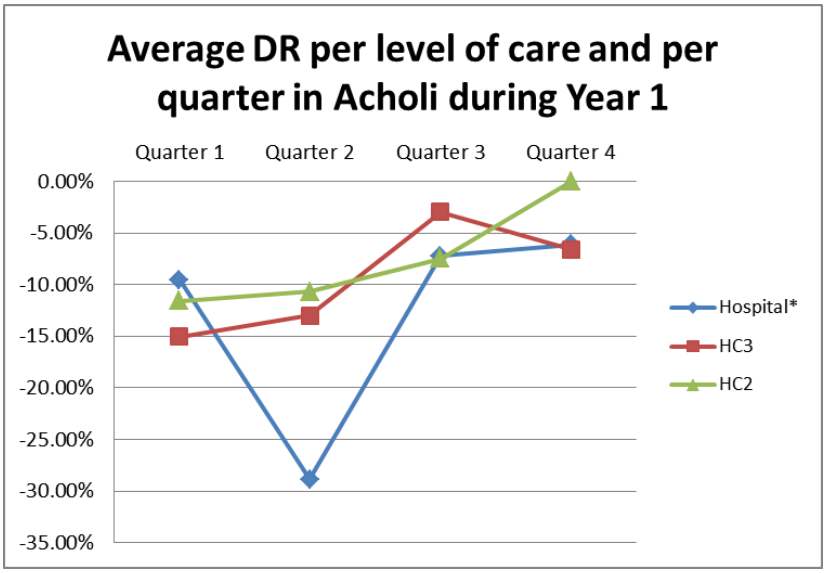
Table 2 and Figures 1 and 2 summarise the average discrepancy rates between respective DHIS2 entries and verified figures from primary registers at NU Health supported facilities in both RBF and IBF regions.

Table 2: Average Discrepancy Rates (DR) between DHIS2 and Verified Data

Average Discrepancy Rate per level of care and per quarter in Acholi (RBF) during Year 1				
Level of care	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
Hospital	-9.55%	-28.86%	-7.21%	-6.10%
HC3	-15.05%	-13.02%	-2.95%	-6.62%
HC2	-11.57%	-10.67%	-7.47%	-0.01%
Average Discrepancy Rate per level of care and per quarter in Lango (IBF) during Year 1				
Level of care	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**
Hospital & HC4	-34.24%	-65.37%	-14.48%	-33.51%
HC3	-20.25%	-41.75%	-21.33%	-16.03%
HC2	-65.74%	-53.80%	-25.67%	-39.21%

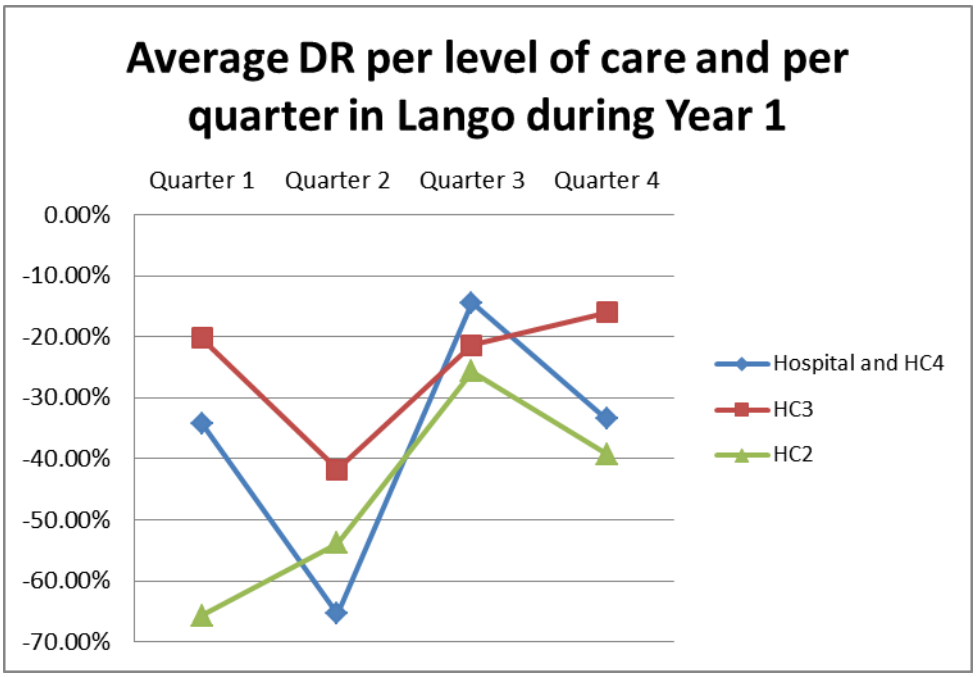
Note: DRs outside the target of +/- 5% are highlighted in red; those within the target range are marked in green

Figure 1: DR trends in Acholi (RBF) Region



The graph shows that the average DRs for the three levels of care of the Acholi PNFPs have all improved relative to the baseline; however, only the HC2 level DR is within the acceptable threshold of +/-5%.

Figure 2: DR trends in Lango (IBF) Region



The above graph shows that the average DRs of all three levels of care in the Lango region remain below the Acholi ones with no clear improvement after four quarters, except the DR of HC2 which started from a very poor baseline value. All DRs lie well below the acceptable threshold.

Since all other factors are broadly comparable in RBF and IBF regions, the association between relative DR trends and funding mechanism is notable. In the Acholi RBF region, a higher DR translates into lost income.

More broadly, DHT biostatisticians suggest that high discrepancy rates are attributed to: i) lack of standard registers; ii) high staff attrition that results in staff mentored in filling the registers leaving the facility, and iii) laxity due to poor motivation and carelessness. The biostatisticians have addressed these data quality gaps by: i) continuous mentoring of the staff on how to fill the registers during support supervision visits; ii) reallocation of the NU-HITES public facility registers to the PNFP facilities in in Agago, Gulu, Nwoya and Alebtong; and iii) encouraging PNFP facilities to use some of the funds they receive through NU Health to print the standard registers.

Completeness and Timeliness

The DHIS2 data show that on average each Acholi District is only receiving 15% of the expected reports from all their health facilities (both public and private ones) while in Lango it is slightly better with 26% of the expected reports received. Timeliness is very low in Acholi with only 9% of all the reports being submitted by both public and private facilities on time against 17% in Lango (Table 3 below).

Table 3: Average Completeness and Timeliness of Reporting per Region

Average completeness and timeliness of reporting per region						
Level of care	**Sub-region**	**Actual Reports received**	**Expected Reports**	**Percent received**	**Reports On Time**	**Percent On Time**
Average per District (all public and private HF)	**ACHOLI**	452	3078	**15%**	287	**9%**
	LANGO	671	2600	**26%**	446	**17%**

In contrast with overall district level reporting, the following table shows the same submission and timeliness rates for the intervention arm PNFP (Lacor Hospital excluded) in Acholi and the control arm in Lango, disaggregated per level of care.

Table 4: Average Completeness and Timeliness of Reporting per Level of Care

Average completeness and timeliness of reporting per level of care						
Level of care	**Sub-region**	**Actual Reports received**	**Expected Reports**	**Percent received**	**Reports On Time**	**Percent On Time**
AVERAGE HOSPITAL/HC4	**ACHOLI**	109	182	**60%**	73	**40%**
	LANGO	113	182	**62%**	76.5	**42%**
AVERAGE HC3	**ACHOLI**	106	178	**59%**	64	**36%**
	LANGO	102	180	**56%**	64	**36%**
AVERAGE HC2	**ACHOLI**	61	126	**49%**	46	**37%**
	LANGO	96	146	**65%**	74	**51%**
AVERAGE PNFP (all level)	**ACHOLI**	73	139	**52%**	52	**37%**
	LANGO	103	174	**59%**	69	**40%**

Overall, when comparing all PNPF across the two groups, the Lango/IBF perform better than Acholi/RBF, with 59% of reports received against 52%, and 40% submitted on time as compared to 37%. When checking these results per level of care, there is no major difference at hospital/HC4 and HC3 levels between the two groups. The major difference is at HC2 level where the Lango HC2 have a better average completion rate of 65% compared to the Acholi HC2 at 49%, as well as better timeliness (51% against 37%). Further improvement in these ratios is expected in the Acholi PNFPs in Year 2 as poor data quality will directly impact on their financial income.

4.3.6 Policy Implications

In the experience of NU Health, providing incentives to health facilities to improve their data quality is associated with reducing the discrepancy rates between reported and verified data in

the RBF arm of the study. It does not however seem to be associated with the completeness and timeliness of data submission. Improving the data quality could have a substantial impact on decision-making processes at district level with improved prioritisation and subsequent resource allocation. In the absence of increased demand for and capacity to use evidence for decision making, this will continue to be a challenge.

4.4 QUALITY OF CARE

4.4.1 Introduction

In this section NU Health examines four aspects of quality of care, namely: availability of essential equipment and supplies; availability of skilled human resources; motivation of health facility staff; and prescription habits in health service delivery.

4.4.2 Key Findings

- Provision of quality health services is the result of a complex interaction of many factors, including staffing, supplies, management and the broader institutional context.
- While ensuring a smooth and adequate supply of essential medicines, equipment and other necessary commodities is relatively straightforward, retaining appropriately skilled staff is much more challenging, even at hospital level in both RBF and IBF regions.
- It appears that the RBF mechanism is having a positive influence on treatment practices although there is a concomitant improvement in some areas in the IBF region which suggests that other factors also play a significant role.
- The findings confirm that improving health service delivery is highly complex and, thus, isolating the specific effect of the funding mechanism is challenging.

4.4.3 Background

The Challenge

Quality of care provided by health service providers is dependent on a number of critical inputs including adequate number, skills and motivation of staff, and the availability of essential commodities that are necessary to provide basic, routine health services and emergency treatment. The baseline survey conducted by NU Health confirmed that many health facilities lacked essential drugs and equipment, as well as the requisite number of appropriately skilled personnel for the particular level of service delivery according to minimum government standards. The QQA undertaken by NU Health staff with DHT members also identified on-going problems with adherence to appropriate clinical practices and MoH standard protocols.

The Response

Availability of Essential Supplies and Equipment

Availability of basic equipment was one of the criteria used to select health facilities for participation in the NU Health programme. Availability was assessed on the basis of a standard list that the National Committee on Medicines and Equipment (NACME) of the MoH considers necessary in the provision of the minimum basic health care package, maternal child health and Emergency Obstetric Care for each health facility level. A seed grant in kind was provided at the start of year 1 to ensure that all participating health facilities met the minimum NACME standards, for example, sterilizers were provided to all the lower level facilities. A survey was conducted at the end of Year one to assess whether or not health facilities still had the basic equipment and supplies. Availability was assessed on the basis of whether particular equipment was available on the day of the survey. The actual functionality was also checked, given the fact that the equipment is often poorly maintained.

The NU Health programme provides an Essential Medicines and Health Supplies (EMHS) credit line at the Joint Medical Stores (JMS) for 20 items (Annex 3, Appendix A) that are deemed essential in the provision of the minimum basic package and maternal and child health services at a health facility. This credit line complements existing procurement efforts of health facilities. In addition, technical support is provided quarterly to ensure that medicines are procured according to the VEN (Vital, Essential, Necessary) principle. These twenty items are inclusive of the six tracer medicines that the MoH has identified should be available at all times (Annex 3, Appendix B). Within the NU Health programme, technical and in-kind support has been equally provided to RBF and IBF health facilities to ensure availability of these 20 items. In addition, RBF facilities are monetarily incentivised to ensure availability of all the 20 items. Availability was assessed on the basis of whether a minimum quantity of the item was available in the pharmacy store on the day of the survey.

Skilled Human Resources

Having the requisite number of staff according to MoH norms was one of the criteria used to include health facilities in NU Health programme support. All health facilities that met these criteria were categorised as 1 and were phased in at the start of the programme. Category 2 facilities were required to recruit staff to meet the norms before they could come on board. The review at the end of the first year of implementation was an opportunity to assess how the staffing levels have been maintained.

Staff Motivation

NU Health examined the mechanisms by which staff were given additional monetary and non-monetary incentives to motivate an increase in the volume and quality of health services, and discovered that after one year of implementation, five out of the 21 RBF facilities (24%) have been incentivised both in terms of monetary and material benefits, compared to eight out of the ten (80%) IBF facilities. The motivation provided among most of the RBF facilities has been in kind with the exception of St. Luke HC2 where a 33% salary increase was given to staff. The in-kind motivation included provision of breakfast and new uniforms. Other incentives reported

were the waiving of treatment costs at Light Ray HC2, the encouragement to form societal income generation groups among support staff at St. Joseph's hospital and provision of gifts during the Christmas season to staff at St. Mauritz. Motivational innovations in the IBF facilities have included salary increments ranging up to 100% in Amuca SDA HC3 and for nursing assistants in Minakulu HC3. Other incentives include the provision of breakfast and lunch, prompt payment of salaries and the provision of transport allowances.

Prescription Practices

Prescription practices for common childhood illnesses (malaria, pneumonia and diarrhoea) are regularly monitored during the DQA/QQA process. In addition, they were compared between the RBF and IBF health facilities during the baseline year (2011/12) and after one year of implementation (2012/13) through the conducting of a clinical audit. This audit also assessed the competence of the most senior clinician to manage sick children by observing them during up to ten consultations per health facility and scoring them according to the Integrated Management of Childhood Illnesses (IMCI) parameters of good care. A detailed methodology of the entire clinical audit study is provided in Annex 4.

4.4.4 Assessment Methodology

The methods used for these assessments are summarised as follows:

Area of assessment	Methodology	Sample size / scope	Period covered
Essential equipment/ supplies	Survey	- Assessment of the availability and functionality of selected equipment: i) delivery beds; ii) sterilisation equipment; iii) Rapid Diagnostic Tests (RDTs); iv) ORT Corner; v) microscope; vi) oxygen cylinder; vii) oxygen delivery equipment/oxygen concentrator -Availability of 20 Essential Medicines and Health Supplies -31 health facilities (21 Acholi/RBF & 10 Lango/IBF)	2012/13
Skilled human resources	Survey	- 31 health facilities (21 Acholi/RBF & 10 Lango/IBF) - Staff availability according to MoH norms for each level of care (see Annex 2)	2012/13
Motivation	Focus group discussions Key informant interviews	- 31 health facilities (21 Acholi/RBF & 10 Lango/IBF) - In each health facility conducted focus group discussions with 3-5 staff and Key Informant Interviews with 1-2 management staff	2012/13
Prescription habits	DQA/QQA Clinical audit	31 health facilities (21 Acholi/RBF & 10 Lango/IBF). Quarterly verification of data and quality scored against comprehensive set of indicators (see Annexes 5 and 6 for NU Health's DQA and QQA tools) Review of clinical practices after one year of implementation using matched case-controls for labour monitoring during delivery (n=952) and three cross	2012/13 2011/12 &

Area of assessment	Methodology	Sample size / scope	Period covered
		sectional studies (n=4752) for malaria, pneumonia and diarrhoea case management from Health Management Information System data in the 31 PNFPs.	2012/13

4.4.5 Results

Availability of Essential Equipment and Supplies

Availability of equipment was highest in hospitals and decreased by level of care. Hospitals and HCIV had the highest availability (100%) of the seven selected items assessed, followed by HC3s and lastly HC2s. The average availability of equipment was 78% with a slightly higher availability recorded in the intervention RBF facilities (81%) compared to the control IBF facilities (78%). Availability of sterilisers, RDTs for malaria, and microscopes was over 90% for all the facilities surveyed. Sterilisers were provided as part of the seed grant and RDTs are provided by JMS to all facilities. This explains the high availability of these two commodities.

The average availability of EMHS items was 93% with a higher availability recorded in the intervention RBF facilities (95%) compared to the control IBF facilities (91%) which is higher than the average availability in RBF facilities of 76% and in IBF facilities of 68% registered at the baseline in 2012. More RBF facilities (81%) compared to IBF (70%) had over 90% of the basket of EMHS available on the day of the survey. The availability of Artesunate 60mg injection, Insecticide treated mosquito nets and vitamin A was lower in the IBF facilities compared to the RBF facilities. This is probably a direct reflection of the impact of monetary incentives which are provided to facilities that score 100% in availability of the priority EMHS in the RBF health facilities during the QQA. Therefore, reliance is not only placed on the credit line EMHS offered by NU-Health but on ensuring availability of the tracer medicines in case of any stock outs before the credit line supply is due. While this could be a result of holding back a single packet of relevant drugs for the day of assessment, there was no evidence to support this. Availability was better at hospitals compared to the lower level facilities; this is probably because hospitals are more likely to have the required skill set of pharmacists, dispensers and trained pharmacy staff to manage drug supplies.

Skilled Human Resources

A follow-up assessment of the situation regarding availability of skilled human resources was conducted after one year of implementation. The Lango (IBF) region now demonstrates a higher percentage of facilities with a sufficient skills mix, 70% (7/10), compared to those in the Acholi (RBF) region, 52% (11/21). In the Lango region, the facilities with a sufficient skills mix include: Aduku HC2, Alanyi HC3, Amuca SDA HC3, Iceme HC3, Ngetta HC3, Boro Boro HC3 and Minakulu HC3. St. Francis HC2 is well staffed with the exception of the position of an Enrolled Midwife that is not filled. PAG HCIV has an insufficient skills mix as well as insufficient staff relative to staffing norms. Aber hospital also has an insufficient skills mix and numbers for minimum level of services at the hospital level at 123/185 (66%) of the total required numbers.

In the Acholi (RBF) region, 52% of the facilities have a sufficient skills mix. These include: St. Josephs Minakulu HC2, Comboni Samaritans HC2, St. Monica HC2, St.Philips HC2, Light Ray HC2, Archdeaconry HC2, All Saints HC2, Lacor Amuru HC3, Lacor Pabbo HC3, Lacor Opit HC3, and Lacor hospital. St. Joseph's hospital has an insufficient skills mix and numbers at 136/185 (74%) of the total required numbers. Kalongo hospital also falls short of sufficient skills mix and numbers at 172/185 (93%) of the total required numbers.

Across the system, all the HC3s (100%) have a sufficient skills mix, 8/15 (53%) of HC2s have sufficient skills mix and one quarter (25%) of the hospitals have a sufficient skills mix. When comparing the RBF region to the IBF region, there is no association between funding mechanism and adequate numbers of appropriately skilled staff. Annex 7 provides a more detailed description of the Human Resources assessment.

Staff Motivation

Among the RBF facilities those in which the staff had been incentivised reported that they enjoyed their work more, are more motivated and have a good working relationship with their colleagues. They also reported that they were subsequently determined to achieve the targets set out in their business plans. The management at these facilities reported an improved attitude towards work among the staff. In the facilities where incentives were not provided to the staff, there were reports of dissatisfaction with their current pay coupled with laxity towards work among the staff which contributed to a high staff attrition rate. However, despite the lack of incentives, the staff in eight out of these 16 RBF facilities reported that they were dedicated to their work and maintained a good working relationship with their colleagues. Some staff were unaware of how the funds attained through the NU Health programme were being spent and there was one reported incident of staff deliberately sabotaging DQA/QQA results to demonstrate their dissatisfaction that a proportion of RBF funds were not being passed down to facility staff.

In eight out of the ten IBF facilities providing staff incentives (seven of which received an increment in salary), there was a reported perception among staff that the quality of care provided had improved, especially in terms of increased and proper usage of partographs to monitor deliveries and adherence to proper prescription practices. They also felt that there was a better working relationship among colleagues, as well as an improved attitude towards their work as evidenced by a reduction in staff turnover. Nonetheless, staff in four IBF facilities reported that there was still a need to ensure that salaries were paid promptly and increased to match that of scales in the public sector. In the two IBF facilities where no incentives were offered, some facility staff members were reportedly dissatisfied and had a poor attitude towards their work. Specifically staff members at one of the lower facilities were unhappy with the absence of a salary top-up whilst the institution was perceived to have increased income from NU Health. Anecdotal evidence from observations during the regular QQA and DQA assessments suggests that the high staff turnover and late reporting for work in some of the facilities could be attributed to the lack of incentives. However, there is no firm evidence that this

is directly caused by the RBF mechanism. There were also reports of staff being dismissed as a result of poor performance in the DQA/QQA.

When asked to provide suggestions for improving motivation, staff at a majority of both the RBF and IBF facilities (14 in RBF and 7 in IBF) recommended that they receive a monetary incentive in the form of salary increments to match the government scale, bonuses, and where possible, loans. Other recommendations included sponsorship for further studies, provision of transport facilitation for outreach clinics, payment of staff salaries on time; and the need for separate staff and management feedback after the quarterly assessments.

Prescription Habits

The findings of the clinical audit found some significant differences between the RBF and IBF regions regarding appropriate treatment for a number of common conditions. The full results of the clinical audit are available in a separate report (NU Health, 2014).

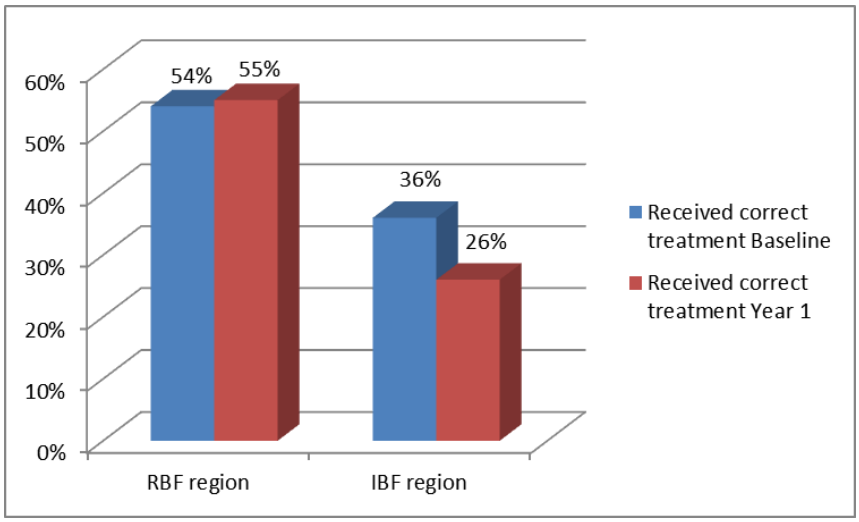
Malaria

A malaria prescription was considered correct when each definitive diagnosis was supported by either positive microscopy or Rapid Diagnostic Test (RDT) and the choice of medication matched the illness classification. The first line of treatment for uncomplicated malaria is a combination of Artemether and Lumefantrine (Ministry of Health Uganda, 2010). Until recently, the first line for complicated malaria was oral or injectable quinine but artesunate is now recommended as a safer and more efficacious option (Dondorp et al., 2010).

The audit showed that the proportion of children who were treated without confirmatory laboratory tests was comparable in the baseline year (52%) and first year of implementation (49%), which is consistent with observations during the routine quarterly assessments. In the baseline year, 40% of all children sampled across both RBF and IBF regions (n=744) received the correct treatment for malaria. In the first year of implementation, the percentage of those who received correct treatment was slightly higher at 47% (n=858).

When comparing the RBF and IBF regions, although correct malaria treatment was more likely to be provided in the RBF region both at baseline and after one year, there was no statistically significant difference in the changes in the two regions between the baseline and first year of implementation (Figure 3 below) once the Odds Ratio (OR) was adjusted for the confounding variables of facility level, sex and age of the child (OR 1.33 Confidence Interval [CI] 0.59-1.32).

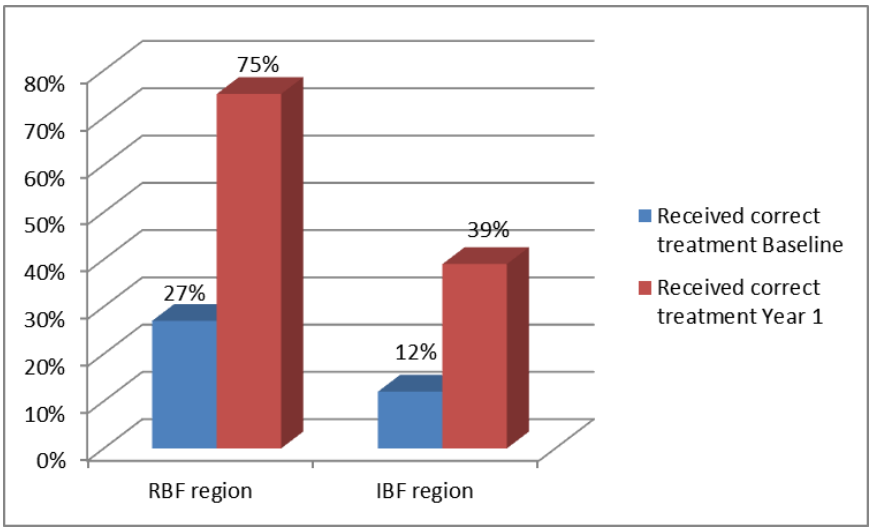
Figure 3: Percentage of Malaria Cases Treated Correctly in RBF vs IBF Regions



Pneumonia

The national clinical guidelines recommend that each child with a diagnosis of pneumonia should receive an antibiotic and Vitamin A supplementation (Ministry of Health Uganda, 2010). In the baseline year, 20% of children sampled across both RBF and IBF regions (n=446) received the correct treatment. In the first year of implementation, the percentage of those who received correct treatment was higher at 61% (n=682). When comparing the RBF and IBF regions, as shown in Figure 4 below, children were much more likely to be correctly treated in RBF facilities both at baseline and after one year of implementation, although there was also a significant improvement in IBF facilities between baseline and year one.

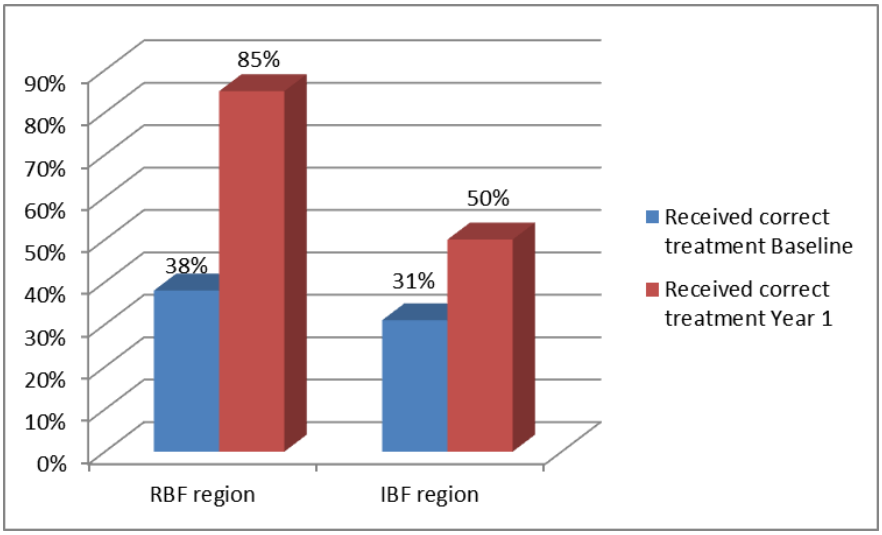
Figure 4: Percentage of Pneumonia Cases Treated Correctly in RBF vs IBF Regions



Diarrhoea

The national clinical guidelines recommend that each child with diarrhoea should receive rehydration therapy and Zinc supplementation (Ministry of Health Uganda, 2010). In the baseline year, 33% of children sampled across both RBF and IBF regions (n=391) received the correct treatment. In the first year of implementation, the percentage of those who received correct treatment was higher at 73.5% (n=601). As for the pneumonia prescription practices, much of the improvement was registered at RBF facilities. In the baseline year, there was no significant difference in the use of correct diarrhoea treatment between health facilities in the RBF and IBF regions (see **Figure 5** below).

Figure 5: Percentage of Diarrhoea Cases Treated Correctly in RBF vs IBF Regions



IMCI-related clinical practice

Table 5 shows the summary of scores for the first round of assessment for eleven health facilities in four districts in the RBF region. The average scores for senior clinician competence against IMCI parameters range from 13-80% with an average of 39%. Among the different levels of health facilities HC3 had the highest average scores followed by hospitals and HC2. The high average in HC3 is attributed to a very high score in one of the Lacor facilities. In the second round of assessment, available results show that there was a 12% improvement at Dr Ambrosoli hospital. Health facilities in the IBF region will be assessed in subsequent rounds.

Table 5: Summary of overall scores in clinical management of sick children in OPD using IMCI checklist

Health Facility Name	District	Type of Health Facility	Number of cases examined	Date Scored	Score (%)
1st Round of Assessment					
Comboni Samaritans, Gulu	Gulu	HC 2	5	8th January, 2014	36.7
Light Ray	Gulu	HC 2	3	18th January, 2014	23.3
Karin	Gulu	HC 2	5	17th February, 2014	33.3
St. Janani	Agago	HC 2	5	13th February, 2014	30.0
St. Philips	Gulu	HC 2	5	19th February, 2014	40.0
		Sub-Total		***HC 2 Average***	***32.7***
Lacor Pabbo	Gulu	HC 3	8	14th January, 2014	42.7
Lacor Amurru	Amurru	HC 3	5	21st January, 2014	36.7
Lacor Opit	Gulu	HC 3	5	20th February, 2014	80.0
		Sub-Total		***HC 3 Average***	***53.1***
St. Joseph's	Kitgum	Hospital	1	11th December, 2013	12.5
St. Mary's Lacor	Gulu	Hospital	5	14th January, 2014	48.3
Dr. Ambrosoli	Agago	Hospital	5	11th February, 2014	41.7
		Sub-Total		***Hospital Average***	***34.2***
		Total		**Overall average**	**38.6**
2nd Round of Assessment					
Dr. Ambrosoli	Agago	Hospital	5	10th March, 2014	53.3

4.4.6 Policy implications

The widespread improved availability of essential equipment, drugs and other supplies is associated with positive changes in prescription practices and adherence to national protocols, particularly in the RBF area. The apparent improvement in pneumonia and diarrhoea treatment practices suggests that RBF may contribute to some aspects of improved clinical behaviour. The absence of difference between the RBF and IBF regions in the use of standard malaria protocols after one year of implementation suggests that institutional incentives in the Acholi region have not influenced clinician behaviour.

Anecdotal evidence suggests that compliance to the malaria prescription protocol is likely to be heavily influenced by each clinician's training and the absence of skills and specialised equipment to make an alternative diagnosis. Consistent with this intuition is the observation that in clinical competence screening there were widely varying adherence levels to the basic examination protocols for children at the different levels of care and by different clinicians. It is notable that there was a lower availability of Artesunate, mosquito nets and vitamin A in the IBF region and there is a concomitant lower level of improvement in related clinical practices in this region. However, at odds with this association is the relatively better situation regarding skilled human resources in the IBF region.

The effect of incentives on staff behaviour is also unclear in terms of a direct impact on clinical practice. This suggests that improving health service delivery is much more complex and likely

to be the result of an interaction of many different factors, thus, isolating the specific effect of the funding mechanism is challenging.

4.5 HEALTH OUTCOMES

4.5.1 Introduction

In this section NU Health examines four aspects of health outcomes, namely: disease presentation patterns for clients attending health facilities in the RBF and IBF regions; the client profile by age and sex; client satisfaction levels; and perinatal outcomes from a clinical audit.

4.5.2 Key Findings

- The stability in the disease ranking for children under five provides assurance to the NU Health programme that the service areas selected for incentivisation are still relevant after one year of implementation.
- RBF programmes that would like to target adult populations would need to take into consideration the relatively high burden of non-communicable diseases, as well as the existing communicable ones.
- Although it is difficult to isolate the effect of the support provided by the NU Health programme, the general trend showing an increase in the volume of services supports the hypothesis that improvements in quality are associated with increased use.
- The relatively higher and sustained gains in the levels of client satisfaction in the RBF as compared to the IBF region may reflect choice in investment, where the former focused on factors that were more readily apparent to users.
- The clinical audit showed some improvement in the use of the partograph to monitor progress in labour after a year of implementation, although overall use remained low and was associated with perinatal deaths.

4.5.3 Background

The Challenge

Uganda is faced with a high burden of preventable communicable diseases in the vulnerable population of children aged less than five years. Amongst many other factors, quality of care is an important supply side barrier that influences the use of services by the general population (Uganda Ministry of Health & Macro International, 2007). There is a known association between improved monitoring during labour and better perinatal outcomes (Tayade & Jadhao, 2012); yet use of the partograph – a key tool in monitoring the progress of labour – is extremely low in Northern Uganda.

The Response

The NU Health programme targets the most commonly occurring illnesses and the greatest weaknesses in the health system by providing inputs to essential medicines and commodities and supportive supervision to promote adherence to the best clinical practices. This is enhanced by additional financing coupled with facility autonomy that is bound in an agreement to ensure the maintenance of basic health system inputs for participating providers.

4.5.4 Assessment Methodology

The electronic DHIS2 that captures data at the district health office from all facility based providers was used as a source document to evaluate disease ranking patterns and changes in numbers of clients attending services at NU Health supported centres from baseline (2011/12) to the first year of implementation (2012/13). Information on levels of client satisfaction was extracted from the routine QQA forms where a sample of ambulatory clients at each health facility is routinely interviewed. Additional information in the RBF region on client satisfaction is being obtained from the client verification process. The practice of labour monitoring and associated perinatal outcomes was assessed in a clinical audit which examined records from the previous two years in all NU Health-supported PNFPs. Cases constituted a sample of mothers in each year with perinatal death (neonatal death, fresh still birth, macerated still birth) as an outcome. The cases were matched with controls with live births of similar maternal age and parity.

4.5.5 Findings

Disease Presentation Patterns

Clients attending health facilities in both the Acholi (RBF) and Lango (IBF) regions were ranked by age and gender category for the top ten most prevalent illness conditions in the baseline year 2011/12, and the first year of implementation 2012/2013.

Among children aged less than five years, the top ten conditions were similar for both boys and girls and in the two regions (Tables 4 and 5). In the Acholi region, the ranking for the top five conditions was consistent between 2011/12 and 2012/13 for both boys and girls. There was a slight variation in the ranking among the next five most prevalent conditions reported in the OPD (Out Patient Department). The ranking for the top five conditions was similar in the Lango region except that anaemia featured more prominently, being ranked as either the 2nd or 3rd for both baseline and implementation years among boys and girls. Injuries were among the top ten conditions for girls in the Acholi region but only during the baseline year.

Malaria, pneumonia and diarrhoea—the major causes of neonatal, infant and child mortality—are priority areas of emphasis in the NU Health programme. These conditions were among the top five in both regions during both the baseline and implementation years but did not change significantly in ranking apart from acute diarrhoea becoming less prevalent over time in Lango for boys.

Table 6: Top 10 Ranking for U5 Boys for 2011/12 and 2012/13

Disease	Acholi		Lango	
	2011/12	**2012/13**	**2011/12**	**2012/13**
Cough or cold	1	1	4	3
Malaria	2	2	2	1
Pneumonia	3	3	5	5
Acute Diarrhoea	4	4	1	4
Skin diseases	5	5	6	7
Ear, Nose, Throat (ENT) conditions	6	10	10	6
Intestinal Worms	7	6	9	8
Urinary Tract Infections	8	9	8	10
Other eye conditions	9	8		9
Anaemia	10		3	2
Gastrointestinal disorders (non-infective)		7	7	

Table 7: Top 10 Ranking for U5 Girls for 2011/12 and 2012/13

Disease	Acholi		Lango	
	2011/12	**2012/13**	**2011/12**	**2012/13**
Cough or cold	1	1	3	3
Malaria	2	2	1	1
Pneumonia	3	3	5	5
Acute Diarrhoea	4	4	4	4
Skin diseases	5	5	6	7
Ear, Nose, Throat (ENT) conditions	6	10	8	6
Intestinal Worms	7	6	9	9
Urinary Tract Infections		9	10	10
Other eye conditions	9	8		
Anaemia	10		2	2
Gastrointestinal disorders (non-infective)		7	7	8
Injuries	8			

There was similarity among the top ten conditions, but not the ranking reported for clients aged more than five years when compared to those aged less than five years with regard to communicable illnesses (Tables 8 and 9). Among male and female clients aged more than five years, non-communicable conditions including hypertension, diabetes and cardiovascular disease featured prominently in both regions during the baseline and implementation years. Injuries ranked higher in the Acholi among male clients than in the Lango region. Reproductive health problems (Pelvic Inflammatory Disease) were an additional non-communicable condition reported among older female clients in both regions during the baseline and implementation years. This pattern of illness conditions is consistent with the emerging national profile of a double burden of both communicable and non-communicable illnesses.

Table 8: Top 10 Ranking for Male Clients >U5 for 2011/12 and 2012/13

Disease	**Acholi**		**Lango**	
	2011/12	**2012/13**	**2011/12**	**2012/13**
Cough or cold	1	1	3	2
Malaria	2	2	1	1
Pneumonia	4	8		
Acute Diarrhoea	10			
Skin diseases	7	7	9	9
Ear, Nose, Throat (ENT) conditions				
Intestinal Worms	5	5	8	10
Urinary Tract Infections	6	6	6	6
Other eye conditions				
Anaemia			2	3
Gastrointestinal disorders (non-infective)		4	7	7
Injuries	3	3	10	8
Cardiovascular diseases	8	10		
Hypertension	9	9	4	4
Diabetes Mellitus			5	5

Table 9: Top 10 Ranking for Female Clients >U5 for 2011/12 and 2012/13

Disease	**Acholi**		**Lango**	
	2011/12	**2012/13**	**2011/12**	**2012/13**
Cough or cold	1	1	4	3
Malaria	2	2	1	1
Pneumonia	5	10		
Acute Diarrhoea	10			
Skin diseases	6	7	9	9
Ear, Nose, Throat (ENT) conditions				
Intestinal Worms	3	6	10	10
Urinary Tract Infections	5	5	6	6
Other eye conditions				
Anaemia			2	2
Gastrointestinal disorders (non-infective)		3	3	5
Injuries	4	9		8
Cardiovascular diseases	8			
Hypertension	9	8	5	4
Diabetes Mellitus			7	5
Pelvic Inflammatory Disease (PID)	7	4	8	8
Malaria in Pregnancy				7

These data reflect service statistics from all health facilities in the two regions, not just the NU Health-supported PNFPs, which provide approximately 17% of overall services delivered in Acholi and just under 10% in the Lango sub-region (see **Table 10**). Therefore, it is not surprising that there is no clear correlation between these and changes in service delivery in PNFPs since the start of the NU Health programme. This may change over time if the volume of services provided by PNFPs continues to increase significantly. If large numbers of clients receive earlier and correct diagnosis and treatment of common conditions, NU Health would expect to see an impact on the health burden in the districts over time. However, there are many other health programmes and initiatives in public health facilities currently underway which may also have significant effects on the health of the local population. Thus it may be difficult to isolate the contributions of different approaches to improving population health in order to establish attribution.

Table 10: Contribution of OPD Consultations by NU Health Supported Health Facilities in Acholi and Lango

21 PNFP contribution to each Acholi District OPD for FY12-13 (data from DHIS2)			
Acholi Districts	**0-4 Years**	**5 and Over**	**Total**
Agago	9.77%	12.01%	11.32%
Gulu	29.28%	25.14%	26.24%
Kitgum	12.73%	18.08%	16.75%
Nwoya	4.79%	2.80%	3.32%
Pader	0.62%	0.65%	0.64%
Amuru	32.80%	8.66%	16.33%
Total	**18.38%**	**15.74%**	**16.49%**

10 PNFP contribution to each Lango District OPD for FY12-13 (data from DHIS2)			
Lango Districts	**0-4 Years**	**5 and Over**	**Total**
Alebtong	11.59%	9.53%	10.14%
Lira	15.41%	10.44%	11.72%
Oyam	9.73%	18.15%	16.07%
Apac	1.29%	0.91%	1.01%
Total	**10.16%**	**9.60%**	**9.75%**

Client Profile

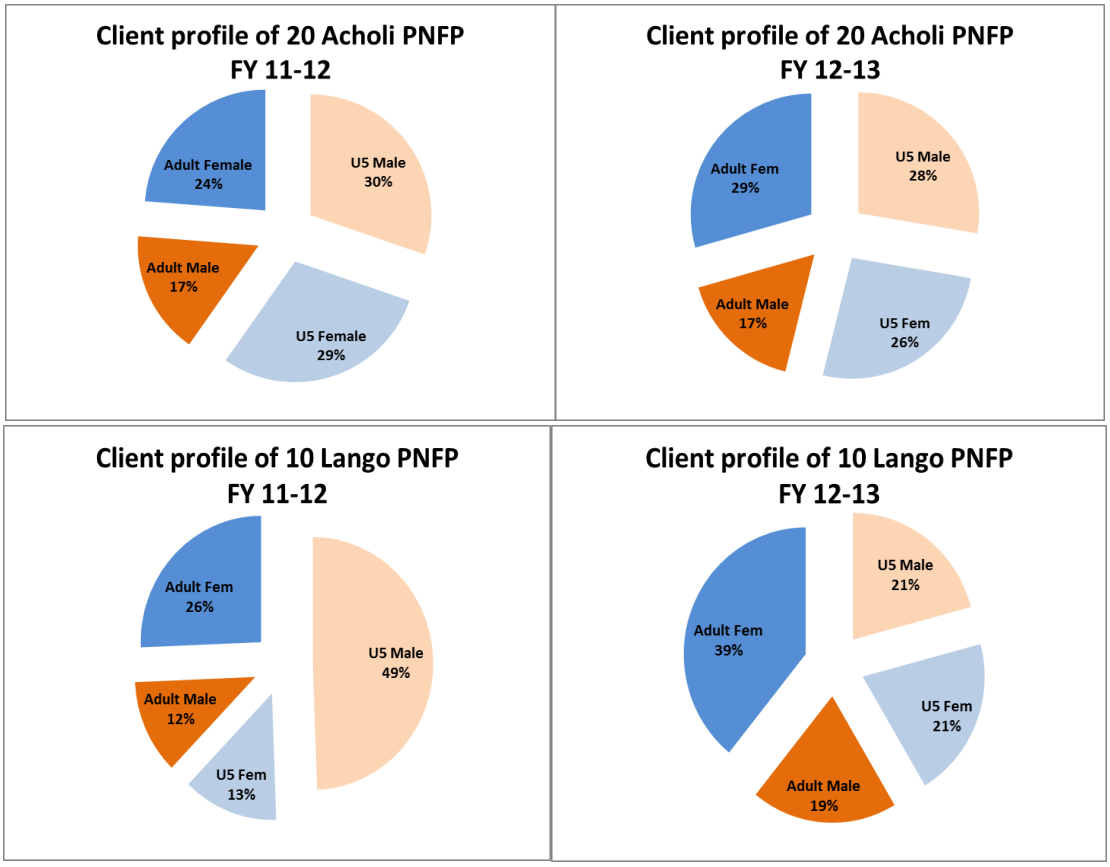
The number of clients attending health facilities participating in the NU Health programme in both the Acholi (RBF) and Lango (IBF) regions were compared by age and sex for the top fifteen most prevalent health conditions across the whole district in the baseline year 2011/12 and the first year of implementation 2012/2013.

There was an increase in the volume of clients reported at the end of the first year of implementation compared to the baseline. In the RBF region there was an overall increase from 107,022 to 141,307. In the IBF region, the volume of patients reported almost doubled from 33,406 at baseline to 63,094 after one year. One possible factor in this relative increase could be the much higher proportion of higher level health facilities in the IBF region compared to the RBF region where numbers can be increased more easily than at HC2 level. It is also likely that the IBF facilities were not operating anywhere close to full capacity at baseline and with the substantial investments in staffing and provision of EMHS, they have been able to scale up their volume of services quickly.

In both regions, older males (>5 years) formed the lowest proportion of attendance (**Figure 6**). The relative contribution of each of the sex and age categories remained similar from baseline to end of year one in the Acholi region, apart from a slight decrease in the younger (<5 years) male and a slight increase in the adult female categories. However, in the IBF region there was a sharp drop in the proportion of younger (<5 years) males reported to have attended health

care services from baseline (49%) to end of year one (21%). There was also a sharp increase in the proportion of older (>5 years) females reported to have attended health care services from baseline (26%) to the end of year one (39%). These changes seem independent of the funding mechanism.

Figure 6: Client Profile by Region, Age and Sex Category



Client Satisfaction

Client satisfaction is an important factor in pay-for-performance metrics and perceived quality of health care services, since it drives patient health seeking behaviour and influences health outcomes [Morris et al, 2013]. Client satisfaction is a complex phenomenon that is context-specific and driven by different parameters such as expectations of care and attitudes as well as a patient's state of physical and psychosocial well-being [Aldana et al, 2001; Morris et al, 2013]. In the Northern Uganda context, our baseline assessment showed a number of significant factors affecting patient choice including distance from home, proximity of other available facilities (public and private), availability of sufficiently qualified staff at the facility and user fees. In many cases however, patients are making choices in an absence of complete information on what level and quality of services are available.

Client satisfaction was assessed by NU Health by asking patients exiting from an OPD service point the question "Are you satisfied with the services that you received today at this health facility?" In addition, NU Health conducted telephone interviews with randomly selected patients

who had received services incentivised by the NU Health programme. The OPD exit interviews contribute to an overall health facility quality assessment score whilst the telephone interviews are part of the client verification process for the RBF region. Client verification is an integral part of performance-based funding intended to validate data from routine health records [Cordaid, 2010].

OPD Exit Interviews

At baseline, the average score for client satisfaction for health facilities in the RBF (Acholi) region was 66% and steadily improved over each quarter of 2012/13 up to 87%. The trend in the IBF (Lango) region declined from a baseline value of 90% and stabilized at 77% at the end of the first year one of implementation. The steady improvement in the Acholi region could be a reflection of the improvement in health care quality aspects that are relevant to patients' expectations. Anecdotal evidence suggests that the apparent reduction in satisfaction in Lango could be related to investments in health systems improvements that are not directly appreciated by facility clientele. However, as the actual numbers are much smaller in Lango because of less attention paid to this part of the QQA in the IBF region, it is difficult to draw any firm conclusions from these findings.

Table 11: Average Scores for Client Satisfaction in Health Facilities

Region	Baseline (2011)	Quarter 1 (2012/13)	Quarter 2 (2012/13)	Quarter 3 (2012/13)	Quarter 4 (2012/13)
Acholi	0.66 (n=29)	0.78 (n=65)	0.83 (n=104)	0.85 (n=116)	0.87 (n=110)
Lango	0.90 (n=not recorded)	0.77 (n=not recorded)	0.73 (n=27+)	0.89 (n=39+)	0.77 (n=27)

Client Satisfaction Verification

In the client verification process, NU Health asks whether or not patients actually obtained the service as recorded in the health facility register, and if they were satisfied with the services that they received. This procedure is only conducted in the RBF region as it is part of the data validity checking process to confirm that records provide a true reflection of services provided and have not been fabricated. To capture meaningful discrepancy, a random sample of 1,575 telephone verification calls will be conducted between February and December 2014.

A challenge faced in collecting information is that health facilities are not yet recording full client details for all cases, meaning the field team is not able to collect telephone information for all randomly selected clients. The team has thus resorted to collecting any available information. This means that the sample of information collected is limited and to date has excluded some facilities and types of services. In addition, phone numbers that were provided are not always contactable for several reasons, potentially including a weak service network, incorrect/altered contact information, and lack of power to charge phones. So far, out of 182 calls made in February 2014 only 20 successful contacts were made. Among these, the majority (17/20) were relatives or friends of the person who had attended the service. Since these data are by proxy, they are of limited value.

Table 12 shows the distribution of the clients by service and any reason for lack of satisfaction. The majority (75%) of clients were satisfied. The reasons given for lack of satisfaction include a long waiting time and lack of a particular service item.

Table 12: Distribution of Clients Satisfied and not Satisfied with Services by Level of Care and District

Service delivery area	Number of Clients satisfied by facility type	Number of Clients not satisfied by facility type	Reasons for lack of satisfaction
Mothers delivered by skilled personnel	2 (HC 2, Gulu) 1 (HC 2, Pader)	1 (HC 2, Pader)	Lack of insecticide treated mosquito nets to prevent malaria in mother and new born baby
2nd dose SP& TT	1 (HC 2, Pader) 3 (Hospital, Agago)	1 (HC2, Gulu)	The proxy respondent named a hospital in Gulu other than the facility reflected on records (this could be an error from the respondent)
STD diagnosed and treated	1 (Hospital, Agago)	-	-
TT, IPT &ITN	1 (HC2, Gulu)	-	-
PMTCT	6 (Hospital, Agago)	2 (Hospital, Agago) 1 (HC 2, Gulu)	Not completely satisfied, reason not provided

Perinatal Outcomes

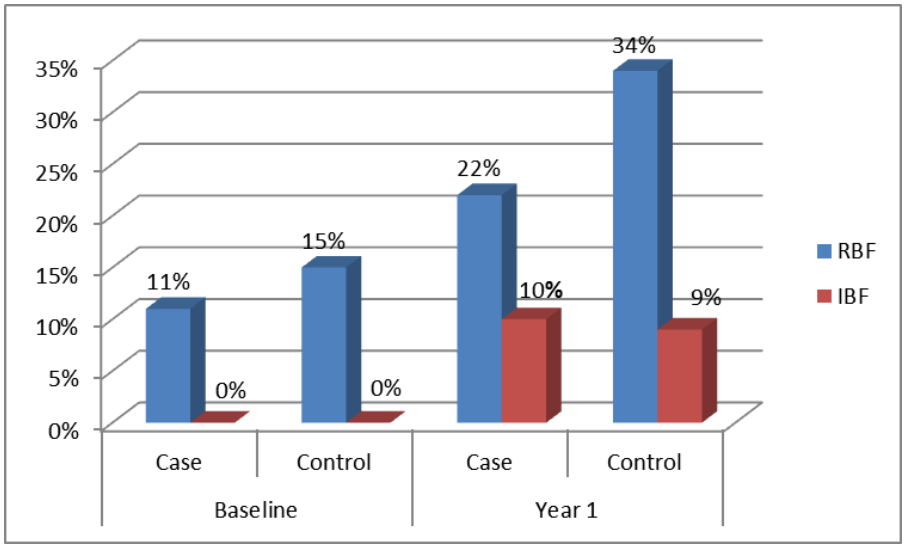
Neonatal mortality, defined as death of an infant during the first 28 days of life, is a major contributor towards infant mortality, accounting for approximately two-thirds of deaths in children under the age of one year (WHO, 1994). Most of these deaths occur in low income countries (WHO, 1996) and the total annual burden of nearly 5 million neonatal deaths has remained relatively stable particularly in low income countries in the past decades in contrast to under five and infant mortality rates that have progressively declined (Stoll, 1997).

The bulk of neonatal deaths occur during labour or in the first week of life, with half of these occurring within the first 24 hours after birth. About 70% of these deaths could be prevented if emergency and obstetric care interventions were made available and used by 90% of mothers and babies (Lawn and Kerber, 2006). Instituting and maintaining the correct use of partographs has been associated with up to 50% improvement in both maternal and perinatal outcomes (WHO, 2012).

The clinical audit undertaken in NU Health assessed the use of the partograph during labour and its association with perinatal outcomes and delivery by emergency Caesarean Section. When comparing the RBF region to the IBF region, there were some differences in performance as shown in **Figure 7** below. In the baseline year there was no partograph monitoring in the IBF

region for either cases (perinatal deaths) or controls (live births). Although there was some improvement after one year, there was no significant association between perinatal deaths and complete (OR 2.0 CI 0.18-22.1)[1] or partial (OR 1.5 CI 0.25-8.97) monitoring in the IBF region. In the RBF region, there was a slightly better chance overall of mothers being monitored compared to the IBF group, particularly in mothers with live births. In the first year of implementation, although monitoring had improved in mothers with perinatal deaths, such cases were still much less likely to have been monitored, partially (OR 0.20 CI 0.05-0.71) or completely (OR 0.28 CI 0.08-0.89), compared to those with live births.

Figure 7: Percentage of Labour Cases (Perinatal Deaths) and Controls (Live Births) that Received Any Monitoring (Partial or Complete) with a Partograph



In summary, the odds of a mother in the RBF region with a perinatal death not having been monitored were almost four times as high as that of a mother with a live birth [OR 3.5 CI 1.1-11.2]. There was no association between perinatal deaths and complete or partial monitoring in the IBF region after one year. Although the differences in performance between the RBF and IBF regions appear large, the actual numbers of those monitored are very small and make the estimate rather imprecise, which warrants caution in any deductions made. Nevertheless, the findings suggest that monitoring is improving more rapidly in the RBF region and this may have an impact on future perinatal outcomes. The full report on the clinical audit is available in a separate document (NU Health, 2014).

4.5.6 Policy implications

There is a considerable burden of non-communicable diseases, as well as the existing communicable ones and RBF programmes targeting adult populations would need to take this into account. The general trend emerging in NU Health-supported PNFPs shows an increase in the volume of services which supports the hypothesis that improvements in quality are

[1] OR = Odds Ratio; CI = 95% Confidence Interval

associated with increased use. This may also be linked to increasing client satisfaction in some places. The general slow progress in improving the use of the partograph should be of serious concern to health managers and facility staff as this is denying mothers good quality obstetric care and endangering the lives of both mothers and babies.

4.6 VALUE FOR MONEY

4.6.1 Introduction

In this section NU Health examines three aspects of Value for Money, namely: total expenditure incurred by PNFP compared with health output; NU Heath's average contribution per level of care and region compared with the average health output; and user fees.

4.6.2 Key Findings

- Assessing Value for Money is critical to understanding the value proposition of RBF vis-à-vis IBF.
- In the NU Health programme, early results suggest that the alignment of incentives and outcomes in RBF may contribute to improving health service cost effectiveness and, particularly, quality of care.
- Similarly, the data suggest that there may be an association between RBF and reduced user fees relative to the IBF facilities.

4.6.3 Background

The Challenge
Obtaining value for money is becoming increasingly important as the world strives towards achieving universal health coverage. In addition to increasing absolute expenditure levels, countries like Uganda need to ensure that the existing expenditure is well utilised and leads to the desired outcomes in terms of addressing people's health needs in an affordable and sustainable way.

The Response
RBF initiatives are seen as a means of achieving better value for money by stimulating improved performance within the health system. In order to demonstrate what is being achieved at what cost, NU Health monitors financial inputs provided to both RBF and IBF facilities, and the associated health outputs.

4.6.4 Assessment Methodology

For the assessment, the NU Health technical team used a Standard Unit of Output (SUO) formula created by Cordaid and partners in Uganda to reflect the health output of facilities

supported by its Performance Based Financing scheme in Jinja and Kamuli Districts (described in further detail in Annex 8). HMIS data was extracted from the DHIS2 website for each facility in order to obtain the number of cases for each of the six indicators included in the SUO formula. The NU Health team also requested the Annual Reports from each PNFP and extracted the annual income and expenditure data that analysed in the VfM section. When annual reports could not be provided by the PNFP, the budget forecast provided in the business plan has been used. The quality of financial data from the RBF region is not all reliable as four PNFPs failed to present a valid financial report. Expressing the total health output of different levels of care in a comparable way has some limitations as explained in the **Annex 8** on the method used.

4.6.5 Findings

Input versus Health Output

The average expenditures (total input) incurred by the PNFPs were compared with the average SUO per level of care and per region as follows:

Table 13: Inputs (expenditure) versus health output in RBF and IBF regions

Average Value for Money in Acholi PNFP				Average Value for Money in Lango PNFP			
	Average expenditures (UGX)	Average calculated SUO	Av. amount spent per SUO FY12-13 (UGX)		Average expenditures (UGX)	Average calculated SUO	Av. amount spent per SUO FY12-13 (UGX)
Per Hospital	3,768,754,684	225,455	16,752	Per Hosp./ HC4	2,019,631,486	144,051	13,841
Per HC3	449,439,827	56,412	10,360	Per HC3	159,990,603	16,875	11,302
Per HC2	59,577,269	4,201	17,541	Per HC2	65,875,793	9,043	7,576

As shown in the table above, the average amount spent by HC3 PNFP for each SUO is similar in both regions (Uganda Shilling [UGX]] 10,360 against UGX 11,302), while slightly higher for higher level units (UGX 16,752 in Acholi hospitals against UGX 13,841 in Lango) which is mainly due to a lower cost per SUO in PAG HCIV (UGX 10,174/=) in the IBF region. The major difference is at HC2 level where the Acholi facilities have a cost per SUO that is 250% higher than the facilities in Lango (UGX 17,541 against UGX 7,576) showing a much lower efficiency in these units.

NU Health Contribution versus Health Output

Table 14 below shows the average NU Health contribution per level of care and per region compared with the average health output:

Table 14: NU Health inputs (expenditure) versus health output in RBF and IBF regions

Average RBF VfM in Acholi PNFP				Average IBF VfM in Lango PNFP			
	Av. RBF Payments FY12-13	Av. SUO	Av. RBF value per SUO		Av. IBF Grants FY 12-13	Av. SUO	Av. IBF value per SUO
Per Hospital	313,435,000	225,455	1,398	Per Hosp./ HC4	245,496,304	144,051	1,678
Per HC3	201,589,583	56,412	4,169	Per HC3	100,585,706	16,875	8,101
Per HC2	9,146,583	4,201	1,967	Per HC2	15,321,534	9,043	1,819

On average, the efficiency of RBF payments provided to Acholi PNFP is slightly higher than the IBF grants given to Lango PNFP at hospital/HC4 level (UGX 1,398/= of RBF payment were invested per SUO provided against UGX 1,678/= of IBF grant invested per Lango SUO). The efficiency difference of the NU Health contribution is substantially higher at HC3 level where UGX 4,169 of RBF money was invested per SUO against UGX 8,101 of IBF money invested per SUO. The efficiency is slightly better in the IBF region at HC2 level, with a marginal difference of value invested per SUO (UGX 1,969 of RBF money per Acholi SUO against UGX 1,819 of IBF money per Lango SUO).

User Fees

The detailed user fee method is described in Annex 8. From the results and analysis carried out by NU Health, it appears that Lango PNFP charge their patients almost twice as much as the Acholi PNFPs (overall and at HC3 and HC2 levels) while charging almost equally at Hospital/HC4 level.

Despite the recognition that user fees can prove a barrier to access for the poor, in Northern Uganda – as in many places – they often end up providing a significant level of necessary health facility revenue. Although this has a regressive implication with the poor paying proportionally more than the better-off, the revenue associated with user fees provides a level of health service sustainability. Based on the study, it appears that there is a correlation between the fees paid and the sustainability ratios when considering all the PNFP, the HC3 and the HC2 levels. At Hospital /HCIV level, however, user fees cover a lower proportion of operating expenses. Lango Hospitals cover more of their operating expenses than Acholi Hospitals while charging the same level of fees.

4.6.6 Policy Implications

Preliminary data suggest an association between RBF and improved health service cost effectiveness. Across a range of clinical conditions, there seems to be an association between RBF and improved health practice and outcomes. Similarly, early data suggest that there may be an association between RBF and reduced user fees. Should subsequent data lead to significant results, this could provide evidence that RBF can contribute to improved care while creating a social transfer which may contribute to overcoming barriers to access and improving effective coverage for the poor.

5 DISCUSSION

NU Health focuses on generating and testing evidence on the extent to which RBF is an efficient and effective financing mechanism, compared with more traditional input-based financing, for improving accountability and access to quality health care in the PNFPs. These early experiences after a year of preparation, collection of baseline data, and a full year of implementation indicate that some changes are occurring.

There are various models of health systems strengthening: the World Health Organisation (WHO) promotes a framework with six building blocks – i) service delivery; ii) health workforce; iii) health information systems; iv) medical products, vaccines, and technologies; v) financing; and vi) leadership and governance (WHO, 2010). The health system 20/20 identifies eight strategies that are critical in strengthening the health system. These are: financial risk protection; resource tracking; performance-based incentives; health governance; costing and sustainability planning; human resources for health; capacity building; and measuring and monitoring health systems performance (Health Systems 20/20 Project, 2012).

NU Health specifically tries to address the most important aspects of a strong health system that are lacking in the Northern Uganda context and has focused on:

- Essential inputs, including:
  - Governance – through development of business plans and, thus, more transparent planning of resources at facility level, and strengthening leadership of the DHT;
  - Human resources – through recruitment, skills training, and performance monitoring both at DHT and facility level;
  - Medical supplies – through regular provisions of essential commodities.
- Essential processes, including:
  - Service delivery – with a focus on both increasing volume and quality;
  - Data quality – to contribute to better prioritisation and resource allocation;
  - Capacity building of health care providers and managers.

The key question in this exercise is: what are the costs and benefits of RBF relative to traditional IBF? To date, our analysis provides some hints on the differences associated with RBF. Some clinical practices have improved significantly more in the RBF region; however, after a second year of full implementation and monitoring, NU Health may have evidence on whether or not these apparent trends are significant. Aside from the specific financing mechanism, other aspects of health systems strengthening have been provided equally to each arm of the study, for example, the level of support in business plan development, ensuring regular supplies of essential commodities and health supplies, and capacity building of DHTs has been similar in both regions, and these seem to be contributing to positive changes in many areas across the board.

At the same time, there are some equivocal findings where the situation has improved more in the IBF region compared to the RBF region, for example, around the retention of skilled human resources. In remote areas of rural Uganda, adequate financing is necessary but in itself insufficient to maintain appropriate numbers of appropriately skilled staff. The differences between the levels in the two arms of the study could be that: 1) strong management teams with better HR procedures may attract staff to HC3 compared to HC2 – e.g. better job security, appraisal and support, and the IBF region has relatively more HC3 in its group; and 2) professional preferences – mid-level professionals may prefer the work atmosphere at HC3 where there is enough clinical work with collegial support, and they are able to be in charge without the overload of hospitals and the need to continuously check with medical superiors.

In the global literature a number of important principles and actions have been identified that will contribute to the likelihood of success in any RBF scheme. These include:

1. *Full involvement of all key stakeholders from the start of the process* – failure to engage key stakeholders on the proposed approach, the identification of desired results, and the design of incentives, runs the risk of developing a system which is perceived as being irrelevant and unacceptable, thus generating resistance to change and limited support. NU Health has worked hard to achieve this engagement at both national and district levels, as well as in all HF levels.

2. *Understand the design of the scheme in the context of the overall pattern of incentives* – in most cases the RBF scheme is one of a number of sources of finance, each of which provides different incentives for service providers, health system managers and other health system stakeholders. It is useful to map the overall pattern of incentives in the short and longer-term, assess the likely response of different actors and take action to reduce the risk of possible unintended outcomes. The strong technical support established by NU Health has helped to place the RBF element within the context of the overall health system within which districts are operating.

3. *Clear separation and definition of the functions of regulation, fund disbursement, provision of health services, and strengthening of consumer voice* – the MoH at national, provincial or district level usually plays the role of regulator in any RBF system, but may also be a service provider or a fund disburser. Ideally fund disbursement should be made through an independent fund holder agency which will distribute funds on behalf of the government or a donor. Service providers may be public or private but should have some degree of autonomy. Local NGOs can play an important role in raising consumer awareness and establishing feedback systems to communities. Likewise, involvement of communities in steering committees or management boards can enhance true participation and engagement. NU Health has tried to ensure clear roles and responsibilities among the different partners and support each partner to play their part in the overall process in a way that is complementary and appropriate.

4. *Development of explicit contracts and agreements so that everyone knows what is expected* – these should specify targets, how they will be measured, and how payment will be linked to their attainment. In some cases there may be conditions set on how the rewards can be used. NU Health has provided clear guidance to all partners to support this process.

5. *Identification of specific and measurable goals and indicators* – it is essential to be very clear about the targets to be achieved and to ensure that these are feasible, verifiable and precise. The fewer the number of indicators, the easier to manage and monitor. In some cases it may be more important to measure the rate of change of an indicator rather than the absolute level. NU Health has worked with DHTs to define an acceptable number of indicators that provide feedback on a sufficiently broad range of health services that indicate comprehensive health service delivery.

6. *Establishment of strong monitoring systems* – the system should be closely monitored to ascertain the effect of the mechanism and the validity of the data. Independent validation of achievement of indicators linked to performance-based contracts is necessary to mitigate gaming and perverse incentives to over-report results. NU Health established an in-depth and systematic monitoring and verification system to avoid these pitfalls.

7. *Ensuring flexibility in the set-up to allow for changes if needed and to give freedom to managers to implement* – the monitoring system should provide quick feedback so that any unintended effects can be addressed rapidly and the implementers have the possibility to adapt the mechanism as needed. The NU Health system of visiting all health facilities with the DHTs on a quarterly basis has enabled such a timely and responsive approach.

8. *Using a focused and gradual approach* – it is important to start slowly and methodically so as to allow for sufficient time to build capacity, test ideas, and develop the required accompanying systems needed to administer the programme. In the NU Health programme, the team spent a considerable amount of time in supporting the DHTs and PNFPs to prepare the ground for the initiative and ensure a firm basis for implementation.

6 CONCLUSION

The aim of NU Health is to generate evidence on the costs and benefits of RBF versus IBF in strengthening mechanisms for governance and accountability to improve access to health care, particularly for the most vulnerable populations in the Acholi sub-region. This Lessons Learned Report documents early experiences and insight from the NU Health programme. The findings to date suggest that some positive changes have taken place and that some of these are likely to be related to the RBF mechanism of payment.

In terms of specific areas of assistance provided by NU Health, the process of supporting PNFPs to develop and review business plans has provided opportunities for more inclusive mechanisms to be put in place in health facilities. This is creating shared ownership of plans and strengthening management practices. The envisaged impact of DHT capacity strengthening in relation to implementing an RBF approach is improving oversight and management of health facilities, in this case the PNFPs. In addition, DHTs have improved their ability to collate data from facilities, and verify the reliability and accuracy of the data. After another year of implementation, NU Health would collect data and perhaps generate evidence that DHTs are improving their analysis of the data using DHIS-2 for better planning and delivery. DHTs have also improved their ability to undertake supportive supervision as a result of the QQA process where they learn to spend more time with health facility staff, undertake a thorough review of critical services delivered, analyse bottlenecks to improving quality, and discuss in a constructive way with HF staff how to address problems found.

After one year of full implementation, the clinical audit has demonstrated that there was discernible improvement for some, but not all, parameters assessed and that these changes occurred mainly in the RBF region health facilities. The most remarkable improvements were noted for management protocols for children under five presenting with pneumonia and diarrhoea. These findings suggest that the implementation of RBF has yielded some early improvements in adherence to clinical guidelines by health care providers. Closer scrutiny by data verifiers and incentivisation of specific practices are most likely contributing to this; however, this effect has yet to show meaningful results in improving labour monitoring.

When combined with the VFM analysis, these findings provide some evidence that there is an association between RBF and improved health service cost effectiveness. The potential link between RBF and reduced user fees also implies that RBF can contribute to increased effective coverage for the poor and, thus, support the notion of universal health coverage.

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ANNEXES

ANNEX 1: DETAILED METHODOLOGY OF RESULTS BASED FINANCING PAYMENTS

NU Health RBF Formula

P = [S (x + y z) n]

NU HEALTH RBF FORMULA

where:

P	Payment (made quarterly)
S	Standard subsidy for each care service
x	Base incentive variable by level of care
y	Quality incentive variable by level of care
z	Multiplier determined by the quality score
n	Number of verified patients during the quarter

1

S = Standard Subsidy

- S = an amount of financial subsidy for a particular indicator
- S is not intended to cover 100% of the real cost
- S of each indicator has been agreed at the Regional Consultative Group (RCG) meeting
- S is a public health tool as it can provide more incentive on some specific health services

➔ *ex: S = UGX 50,000/= for 1 institutional delivery*

2

S for each of the 16 RBF indicators

as agreed at last RCG meeting in Sept13 for Year 2 (Dec13 - Nov14)

	16 quantitative Indicators	Standard Subsidy UGX
1	First ANC visit before 4 months pregnancy and completed 4 +visits	UGX 25,000
2	Pregnant woman receiving second dose of SP	UGX 7,500
3	Pregnant woman receiving 2 or more tetanus vaccinations	UGX 3,000
4	eMTCT: HIV+mother and child treated according to protocol	UGX 75,000
5	ITN distributed to pregnant woman attending ANC	UGX 25,000
6	Delivery at facility assisted by skilled staff	UGX 50,000
7	CS	UGX 125,000
8	PNC- seen within 7 days	UGX 10,000
9	New users of modern FP methods	UGX 25,000
10	Completely vaccinated Child <1 yrs (proxy measles vacc)	UGX 25,000
11	New outpatient consultation (under-five years)	UGX 7,500
12	Children 6-59months receiving Vit A	UGX 5,000
13	New outpatient consultation	UGX 2,500
14	TB patient diagnosed	UGX 87,500
15	TB patient completed treatment & cured	UGX 150,000
16	STD treated	UGX 50,000

3

Z = Quality of care multiplier

QQA Score	Z
0-49%	0
50-59.99%	1
60-69.99%	2
70-79.99%	3
80-89.99%	4
90+%	5

- Z is determined by the QQA score of the HF based on this table
- There is one aggregated QQA score and one Z per quarter and per HF (not for each indicator)

➔ When quality improves, Z increases and more RBF funds are received

4

X and Y

- X = the % of S that is paid to PNFP unrelated to the quality of care
- Y = the % of S that is paid to PNFP for the quality of care

Values of X and Y *as decided at last RCG meeting in Sept13 for Year 2 (Dec13 – Nov14)*				
		HOSPITAL	HC3	HC2
Base Incentive	= X	120%	120%	150%
Quality Incentive	= Y	50%	50%	100%

1

➔ (x + y z)

Quality incentive to the standard subsidy = (x + y z)						
IF Z =	**0**	**1**	**2**	**3**	**4**	**5**
HOSPITAL	120%	170%	220%	270%	320%	370%
HC3	120%	170%	220%	270%	320%	370%
HC2	150%	250%	350%	450%	550%	650%

6

RBF Formula ➔ Focus on quality

P = S (x + y z) n

Example with 100 deliveries at S = UGX 50,000 in a HC3

A. When quality score = 45% ➔ Z=0

➔ **(x + y z) = 0%**

Payment = 50,000 * 100 deliv. = **UGX 5m**

B. When quality score = 65% ➔ Z = 2

➔ **(x + y z) = 200%**

Payment = 50,000 * 100 deliv. ***220%** = **UGX 11m**

7

Example of RBF payment calculation

	16 quantitative Indicators	Standard Subsidy (=S) UGX	Verified numbers (n) for the Quarter	Total Subsidy for the Quarter
1	ANC	UGX 25,000	100	UGX 2,500,000
2	SP	UGX 7,500	80	UGX 600,000
3	TT	UGX 3,000	70	UGX 210,000
4	PMTCT	UGX 75,000	120	UGX 9,000,000
5	ITN	UGX 25,000	75	UGX 1,875,000
6	Deliveries	UGX 50,000	60	UGX 3,000,000
7	CS	UGX 125,000	20	UGX 2,500,000
8	PNC	UGX 10,000	50	UGX 500,000
9	FP	UGX 25,000	100	UGX 2,500,000
10	Measles	UGX 25,000	125	UGX 3,125,000
11	OPD U5	UGX 7,500	200	UGX 1,500,000
12	Vit A	UGX 5,000	80	UGX 400,000
13	OPD	UGX 2,500	500	UGX 1,250,000
14	TB Diag	UGX 87,500	30	UGX 2,625,000
15	TB treated	UGX 150,000	25	UGX 3,750,000
16	STD	UGX 50,000	55	UGX 2,750,000
			Total Basic Subsidy =	**UGX 38,085,000**
			(x + y z) =	**200%**
			PFB Payment P =	**UGX 76,170,000**

8

ANNEX 2: MINISTRY OF HEALTH FACILITY STAFFING NORMS

HC2 MEDICAL STAFFING NORMS

CADRE	Comprehensive Enrolled Nurse (CEN) OR Enrolled Nurse (EN) + Enrolled Midwife (EMW)		Nursing Assistants (NA)
NORMS	2 CEN	1 EN + 1EMW	2 NA's

HC3 MEDICAL STAFFING NORMS

CADRE	Clinical Officer	Registered Comprehensive Nurse	Enrolled Comprehensive Nurse	Lab Tech	Lab Assistant	Health Information Assistant	Health Assistant	Nursing Assistant
NORMS	2	1	3	1	1	1	1	3

HOSPITAL MEDICAL STAFFING NORMS

	GE	Norms
	Medical Officers	
1	Principal Medical Officer	1
2	Medical Officers Special Grade (Community)	1
3	Senior Medical Officer	1
4	Medical Officer	4
	Sub-Total	7
	Dental	
1	Dental Surgeon	1
2	Public Health Dental Officer	2
3	Dental Assistant	1
	Sub-Total	4
	Pharmacy	
1	Pharmacist	1
2	Dispenser	2
	Sub-Total	3
	Nursing	
1	Principal Nursing Officer	1
2	Senior Nursing Officer	5
3	Nursing Officer/ Nursing	17
4	Nursing Officer/ Midwifery	3

5	Nursing Officer/ Psychiatry	1
6	Public Health Nurse	1
7	Enrolled Psychiatric Nurse	2
8	Enrolled Nurse	46
9	Enrolled Midwife	25
10	Nursing Assistant	15
	Sub-Total	116
	Allied Health Professionals	
1	Senior Clinical Officer	1
2	Health Educator	1
3	Senior Laboratory Technologist	1
4	Psychiatric Clinical Officer	1
5	Ophthalmic Clinical Officer	1
6	Clinical Officer	5
7	Health Inspector	1
8	Assistant Entomological Officer (Medical)	1
9	Radiographer	2
10	Physiotherapist	1
11	Occupation Therapist	1
12	Orthopaedic Officer	2
13	Assistant Health Educator	1
14	Anaesthetic Officer	3
15	Laboratory Technologist	1
16	Laboratory Technician	2
17	Laboratory Assistant	1
18	Anaesthetic Attendant	2
	Sub-Total	28
	Administrative and Other Staff	
1	Senior Hospital Administrator	1
2	Hospital Administrator	1
3	Personnel Officer	1
4	Medical Social Worker	1
5	Nutritionist	1
6	Supplies Officer	1
7	Senior Accounts Assistant	1
8	Stenographer Secretary	1
9	Stores Assistant	2
10	Records Assistant	2

11	**Accounts Assistant**	**2**
12	**Office Typist**	**1**
	Sub-Total	**15**
	Support Staff	
1	**Darkroom Attendant**	**1**
2	**Mortuary Attendant**	**1**
3	**Driver**	**2**
4	**Cook**	**3**
5	**Askari**	**2**
6	**Artisans' Mate**	**3**
	Sub-Total	**12**
	TOTAL	**185**

ANNEX 3: AVAILABILITY OF A BASKET OF EMHS ON THE SURVEY DATE

Introduction

The NU Health programme regularly monitors availability of 20 items (Appendix A) that are deemed essential in the provision of the minimum basic package and maternal and child health services at a health facility. These twenty items are inclusive of the six tracer medicines that Ministry of Health has identified should be available at all times (Appendix B). Within the NU Health programme, technical and in-kind support has been equally provided to RBF and IBF health facilities to ensure availability of these 20 items. In addition, RBF facilities are monetarily incentivised to ensure availability of all the 20 items.

Availability was assessed on the basis of whether a minimum quantity of the item was available in the pharmacy store on the day of the survey. Appendix A also summarises the average availability of items across each of the two regions, relevant to each level of care. The table below shows availability of the 20 EMHS by level of care. You will note that the hospitals had 100% availability followed by HC III and lastly HCII. This is because hospitals have a very robust pharmaceutical management system and the pharmacy staffing is skilled and fairly adequate.

Availability of EMHS

The average availability of EMHS items was 92.92% with a higher availability recorded in the intervention RBF facilities (94.84%) compared to the control IBF facilities (91%) which is higher than 72% registered at the baseline in 2012.

More (81%) RBF facilities compared to IBF (70%) had over 90% of the basket of EMHS available on the day of the survey. The availability of Artesunate 60mg injection, Insecticide treated mosquito nets and vitamin A was lowest in the IBF facilities compared to the RBF facilities. This is probably a direct reflection of the impact of monetary incentives which are provided to facilities that score 100% in availability of the priority EMHS in the RBF health facilities during the QQA. Therefore, reliance is not only put on the credit line EMHS offered by NU-Health but on ensuring availability of the tracer medicines in case of a stock out before the credit line supply is due. Availability was better at hospitals compared to the lower level facilities; this is because hospitals have the required skill set of pharmacists, dispensers and trained pharmacy staff who man the running of activities. Hospitals also have much bigger budgets than lower health facilities. Prioritisation is therefore put on good pharmaceutical practices.

Appendix A below breaks down the average availability of the priority medicines by IBF and RBF facilities.

Appendix B lists the MoH tracer medicines which are part of the priority medicines.

Appendix A: Basket of Essential Medicines Assessed During the Survey

No.	Essential Medicine & Health supply	Percentage availability								
		RBF				IBF				
		Average	HCII	HCIII	Hosp	Average	HCII	HCIII	HCIV	Hosp
1	Artemther- Lumefantrine 20/120mg	100	100	100	100	83	50	83	100	100
2	Amoxycilline 250mg	98	93	100	100	100	100	100	100	100
3	Measles vaccine	96	87	100	100	96	100	83	100	100
4	Oral rehydration salts (ORS)	100	100	100	100	88	50	100	100	100
5	Sulphadoxine- pyrimethamine 625mg	89	100	67	100	100	100	100	100	100
6	Malaria Rapid Diagnostic kits	98	93	100	100	100	100	100	100	100
7	Surgical gloves	100	100	100	100	100	100	100	100	100
8	Insecticide treated mosquito nets	98	93	100	100	67	-	67	100	100
9	Magnesium sulphate injection	93	78	100	100	88	50	100	100	100
10	Oxytocin	100	100	100	100	100	100	100	100	100
11	Gentamicin 40mg IV	100	100	100	100	100	100	100	100	100
12	Cotrimoxazole 480mg	100	100	100	100	100	100	100	100	100
13	Metronidazole 200mg	100	100	100	100	100	100	100	100	100
14	Ketoconazole 200mg	98	93	100	100	100	100	100	100	100
15	Vitamin A 200,000 IU	100	100	100	100	54	50	67	-	100
16	Artesunate 60mg IV	98	93	100	100	50	50	50	-	100
17	Zinc sulphate tabs (Zinkid)	87	60	100	100	100	100	100	100	100
18	Chloramphenicol 250mg	100	100	100	100	100	100	100	100	100
19	Diclofenac 25mg	89	67	100	100	100	100	100	100	100
20	Dextrose 5%	100	100	100	100	100	100	100	100	100

Appendix B: List of the 6 MoH Tracer Medicines

No	Tracer medicine
1	Artemether-Lumefantrine 20/120mg
2	Measles Vaccine
3	ORS
4	Sulphadoxine -pyrimethamine 625mg
5	Cotrimoxazole 480mg
6	Depo Provera

ANNEX 4: DETAILED METHODOLOGY OF CLINICAL AUDIT STUDY

Quality of Care Study

For each of the study objectives outlined below, data from 21 participating RBF facilities and 10 IBF facilities were manually extracted by field based staff from standard Health Management Information System (HMIS) registers for the baseline period (September 2011 to August 2012) and the first year of implementation (September 2012 to August 2013) on the principle of 'Probability Proportional to Size', whereby a higher sample is selected from health facilities with a larger volume of services.

Study Objectives

To compare differences in the use of partographs between the RBF and IBF health facilities and assess whether these are associated with perinatal outcomes.

1. To compare differences in the use of partographs between the RBF and IBF health facilities and assess whether these are associated with occurrence of emergency Caesarean Sections
2. To compare differences in prescription practices between the RBF and IBF health facilities for common childhood illnesses (malaria, pneumonia and diarrhoea) and assess the overall management of sick children.

Study Design and Participants

The respective sample sizes for objectives one and two were calculated using the following formula and assumptions:

$$n > \frac{\{u\sqrt{[\pi_0 (1- \pi_0) + \pi_1(1- \pi_1]}+v\sqrt{[2\ \pi_{av} (1- \pi_{av}]}\}^2}{(\pi_0- \pi_1)^2}$$

Where $\pi_{av} = \frac{\pi_0 + \pi_1}{2}$

π_0 = 80% (based on field observations, we will assume that the proportion of controls that have correctly filled partographs is 80%)

$\pi_1 =$ π_1 OR /1+ π_1 (OR-1)

OR = 0.5 (We would like to detect a difference if the use of partographs was associated with a two-fold decrease in perinatal death rates (Tayade S, Jadhao P)

The study would be powered at 90% and achieving a significance of 5% i.e.

u= 1.28

v= 1.96

The formula gives us a sample size of 119 cases and 119 controls. Using a design effect of 2.0 to take account of the clustering effect (samples selected from 11 health facilities in the RBF intervention site and 9 in the IBF control site that do conduct deliveries) inflates the sample size to 238 in each site. The total sample size will be 476 for each year.

For objective one, cases constituted a sample of mothers in each year with perinatal death (neonatal death, fresh still birth, macerated still birth) as an outcome. The cases were matched with controls with live births of similar maternal age and parity. The exposure of interest was partial or complete monitoring during labour using a partograph. For each case and matched control, monitoring was considered to be complete when all parameters of a mother's partograph were completely filled. We assessed whether mothers who had had a perinatal death were less likely to have received

monitoring during labour in either the RBF or IBF regions. Additionally, we assessed whether the monitoring during labour had been complete (completely filled partograph) or partial (incompletely filled partograph).

For objective two, cases constituted a sample of mothers in each year for whom the mode of delivery had been an Emergency CS (EMCS). Cases were matched with controls of similar maternal age and parity that did not have an EMCS. The exposure of interest was partial or complete monitoring during labour using a partograph. For each case and matched control, monitoring was considered to be complete when all parameters of a mother's partograph were completely filled. We assessed whether mothers who had had an emergency Caesarean Section (CS) were less likely to have had monitoring during labour in either the RBF or IBF regions. In addition, we assessed whether the monitoring had been complete (completely filled partograph) or partial (incompletely filled partograph).

The sample size for each of the three disease groups in objective 3 was calculated on the assumption of obtaining a 10% difference in the quality of care score between RBF and IBF health facilities using the formula below:

$$n > \frac{\{u\sqrt{[\pi_0 (1- \pi_0) + \pi_1(1- \pi_1]}+v\sqrt{[2 \pi_{av} (1- \pi_{av}]}\}^2}{(\pi_0- \pi_1)^2}$$

Where $\pi_{av} = \frac{\pi_0 +\pi_1}{2}$

π_0 = 80% (based on field observations, the highest level for quality of care observed at RBF facilities)

π_1 = 70% (Based on field observations, the highest level for quality of care at IBF health facilities)

The study would be powered at 90% and achieving a significance of 5% i.e.

u= 1.28

v= 1.96

The formula gives us a sample size of 198 children in each group (RBF and IBF) for each of the disease groups = 396.

Using a design effect of 2.0 to take account of the clustering effect (samples selected from 21 health facilities in the RBF intervention site and 10 in the IBF control site) inflates the sample size to 396 for each year.

Statistical Analysis

Conditional logistic regression for matched data was used to estimate the Odds Ratio (OR) of partograph use between cases and controls using the statistical software STATA version 8 for objectives 1 and 2. Cases and controls were matched on maternal parity and age category. In objective 3, univariate, bivariate and multivariate logistic regression analyses were conducted to establish associations between correct treatment compliance with region (RBF/IBF), level of health facility (HC2, HC3, HC4/Hospital), and child age and sex categories respectively.

Ethical Considerations

This study was granted ethical approval by the School of Medicine Research and Ethics Committee (SOMREC) as well as the Uganda National Council of Science and Technology (reference: SS 3310).

Integrated Management of Childhood Illness

The competence of the most senior clinician to manage sick children is assessed by observing a sample of up to ten children per health facility in both the RBF and IBF regions. Senior clinicians are

observed during a consultation session and scored according to IMCI parameters of good care. This report includes information from five health facilities in the RBF region. A future report will make comparisons of average scores for each level of care between 21 RBF and 10 IBF health facilities.

ANNEX 5: NU HEALTH DATA QUALITY ASSESSMENT COLLECTION TOOL

#	INDICATOR	Reported Data source	Primary data sources (used to verify reported data)	Verification Procedures
1	**Number of pregnant women who have had 4+ ANC visit with the first one before 4 months pregnancy**	NU Health 4th vist ANC Tally Sheet/Pregnancy Tracker	ANC register	1. This indicator is not captured by the format of the primary data source 2. Request to see the NU Health 4th visit ANC tally sheet (this has been provided to all participating HF) 3. If the NU Health tally sheet is not in use, any reported figures will not be verifiable - in which case record '0' 4. If the tally sheet is in use, count the number of clients who fit the indicator description 5. Look for these clients in the ANC register to confirm that there is no double counting - this number will represent the verified number
2	*Number of Pregnant woman receiving second dose of SP*	HMIS 105 Summary	ANC register, Tally Sheet	1. The ANC register guidelines for recording first Dose and second dose respectively.
3	*Number of Pregnant woman receiving 2 or more tetanus vaccinations*	HMIS 105 Summary	ANC register	1. The ANC register guidelines for recording vaccination should be followed i.e. only count those written as '2nd', 3rd, 4th or 5th. Exclude those where only a tick is indicated. The triangulation is to sample 10 pregnant mothers who have come for ANC if they have TT cards, and also confirm if the facility incharge understand how the register is supposed to be filled. Adjust the # in %age of those who have the exact records.This muct be corrobrated with the Tally sheet following pregnant wome who have been vaccinated, and we shall exclude pregnant women who have been vaccinated from elsewhere but recorded in the registers to have recieved the services. The verifier also should be able to confirm the exact TTs provided for at the facility while excluding transfer in's thus the difference between the tally sheet and the ANC register should be able to provide the exact numbers of pregnant women who have recieved TT as required.
4	*Number of PMTCT: HIV+ mother and child treated according to protocol*	HMIS 105 Summary	i) ANC register ii) PMTCT dispensing log iii) IQCare database IV) Delievery Register	1. Both the mother and child should be searched for in the primary data sources 2. A correctly treated 'mother & baby pair' constitutes a unit count and should not be double-counted. The PMTCT dispensing log is the main register to trace whoever has recieved prophylaxis, and the corresponding register to confirm the identities of the pregnant mother and a mother is ANC register and the Maternity register respectively. The usage of the PMTCT appointment register is used to corroborate if the client truely adhered to her appointment, and also recieved the services as it is supposed to be. The verifier also needs to check the ARV stock cards for PMTCT to confirm truely the quantities of drugs dispensed and requested. Without the stock card, it confirms that there was no service provision at the Unit.
5	*Number of ITN distributed to pregnant woman attending ANC*	HMIS 105 Summary	i) ITN Stock cards ii) ANC register iii) Delivery Reciept	1. Only count those cases that are consistent with the ANC register recording guidelines for 'ITN' given to mother. 2. Do not include those cases where a mother reported that she already had an ITN and was using it. The other source is to confirm the sourece of the ITNs, thus a reciept or delivery note as well as the stock cards from the pharmacy should confirm the quanties procured and given out. 3.The usage of the registers where the mothers have signed or finger printed to have recieved shall be corroborated with stock card level.

6	**Number of deliveries at facility assisted by skilled staff**	HMIS 105 Summary	Delivery register	1) Make sure to exclude those cases that were delivered by Caesarian Section , and this can be traced from the Delievery book/maternity register. We exclude BBA's
7	*Number of Caesarean Section*	HMIS 105 Summary	i) Individual operation notes ii) Delivery register iii) Operation Theatre register	1) Exclude all those cases where the indication for CS is not written down, and the verification source is the Theater register and the maternity register respectively to corraborate/Triangulation
8	*Number of PNC within 7 days*	HMIS 105 Summary	i) Individual 24 hour Post-Partum forms ii)Post-Natal Register	1) Include cases of mothers who have had a 24 hour post-partum check at the health facility. For a case to be counted, the form needs to have been fully filled in 2) The cases to be counted are those that take place up to the 6th day. This information is also recorded on pages 14-15 of the Mother's Passport. The triangulation mechanism is to confirm for the last delieveries if the mothers have recieved the services and can talk about what exactly happened 3 hours after delivery, and should assess the what has been filled in postpartum care form however interation with the staff on how they provide these services should be corraborated by the mothers who have delivered at the facility with the last 24 hours. This indicator is not in the main stream reporting system. The verifier should only count the mothers who have appeared within 6-7 days to meet the national requirement
9	*Newusers of modern FP methods*	HMIS 105 Summary	Family Planning Register	1) This count excludes methods such as 'moon beads' that are only an aide for natural family planning methods, and mass distribution of condoms. Currently we verify using the Marie stop blue register. The national register is a pre-requiste at the moment since the Marie stop register is not to the standard. Visitors are excluded and only NEW Users are the only ones counted and verified.
10	**Number of Completely vaccinated child <1 yrs (proxy measles vacc)**	HMIS 105 Summary	Child Health Register; Measles tally sheet	1) As per UNEPI guidelines and in order to avoid double counting, a case will be included only if the centre is registered at the district level and has a unique EPI code. Child Health register must be used. Vaccine tracker can be used for triangulation and the Tally sheet respectively. The child must have recieved all the vaccines within the scheduled time. A cohort point is very important to confirm the system is streamlined in the service provision of EPI
11	**New outpatient consultation (under-five years)**	HMIS 105 Summary	OPD register for under five years	1) In the OPD register, count only those in the column for 'new attendances' and the OPD guidelibe must be followed for filling in the register is a requirement
12	*Children 6-59 months receiving Vitamin A*	HMIS 105 Summary	i) OPD register for under five years iii) Child Health Register ii) UNEPI tally sheets	Trace through the child health register for those who have received Vit A, and also count children who have received Vit A in the OPD register. This must be on schedule for it to be verified.
13	**Number of New outpatient consultation (Adults)**	HMIS 105 Summary	OPD register for over five years	1) In the OPD register, count only those in the column for 'new attendances' and the OPD guidelibe must be followed for filling in the register is a requirement

14	*TB patient diagnosed*	HMIS 105 Summary	i) Laboratory Register ii) X-Ray Register	1) This only applies to health facilities with laboratories that are equipped to make a diagnosis of TB 2) Trained Radiologist is requirement for X-Ray
15	*Number of TB patient completed treatment & cured*	Quarterly TB Report	1) TB Register	1) The number of TB patients who have completed treatment and are cured are not routinely reported on. The count from the TB register will serve as the verified number
16	*Number of STD treated (The STIs to be included are: i) Gonorrhea ii) Syphillis iii) Genital warts iv) Trichomonas vaginalis v) Chlamydia) vi) Genital Herpes*	HMIS 105 Summary	i) OPD register for five years and older cases ii) ANC Register, lll) HIV/AIDS care and Teatment Register iv) Laboratory register	1) First count all the reported STD/STI cases in the OPD register - note that the STI in question refers to 'sexually transmitted infection' and not 'soft tissue injury'. 2) Cross-check with the laboratory register whether all cases of STI/STD in the OPD register had a laboratory diagnosis 3) Cross-check in the OPD register whether those diagnosed with STI/STD were subsequently treated 4) Include only those records where there is consistency between the OPD register and the laboratory diagnoses - **Note that genital warts and genital herpes can be diagnosed by professional clinical observation**
17	*Numbers of U5 with fever tested and treated for Malaria*	HMIS 105 Summary	i) Lab Register ii) OPD Register	Review all the Tested U5 who have tested for Malaria and have positive results from the lab register including RDT and got treated against it from the OPD register on a monthly basis

ANNEX 6: NU HEALTH'S QUARTERLY QUALITY ASSESSMENT TOOL

Quarterly Quality Assessment (QQA)
Service Delivery Quality Assessment Form
for HOSPITAL and HC4

NUHEALTH
Improving Access to Healthcare for the Poor in Northern Uganda

Hospital/HC4 Name: _____ Date: _____

Health Sub-District: _____ District: _____

Quarter/Period Assessed: _____ NU Health Cycle: _____

DHT Verification Team Names	Expertise/Designation/Position	Signature

NU Health Team Names	Position	Signature

Area	Definition / Explanation	Scores	Data source	Remark
1. Qualitative aspects of ANC	1.1 PMTCT package given complies with national guidelines *(see notes)*	...../3pts	ANC register	
2. Qualitative aspects of facility deliveries	2.1 Partogram used *(see notes)*	...../10pts	Delivery register	
	2.2 Delivery room is clean and comfortable *(by observation, see notes)*	...../1pts	Labour suite	
	2.3 Breastfeeding initiated within 1 hour of delivery *(see notes)*	...../1pt	Post-natal ward	
	2.4 Basic EMoC functions in place *(see notes)*	...../3pts	Labour suite	
	2.5 Postnatal check performed on mother and baby before departure and recorded (*see notes)*	...../2pts	Delivery discharge	
	2.6 Caesarean section performed when needed *(Indication for CS documented, time between decision for CS and time of delivery does not exceed 1 hour) (see notes)*	...../2pts	Delivery register and individual patient notes	
	2.7 Caesarean Section infection rate (should be less than 10%), all cases within one month of the quarter should be reviewed	...../1pt	Patient's admission charts	
3. Qualitative aspects of young child visits	3.1 Children are weighed on each visit and growth plotted on chart *(see notes)*	...../1pt	Exit interview at OPD	

	3.2 For children with fever, malaria is excluded or treated *(see notes)*	...../1pt	Exit interview at OPD	
	3.3 For children with diarrhoea, ORS and Zinc supplementation are provided *(see notes)*	...../1pt	OPD register	
	3.4 For children with diagnosis of pneumonia, cotrimoxazole or amoxycillin & Vit A are provided *(see notes)*	...../1pt	OPD register	
	TOTAL PAGE 1	**...../28pts**		

Area	Definition / Explanation	Scores	Data source	Remark
4. Qualitative aspects of immunisation	4.1 Cold Chain is assured *(see notes)*	...../1pt	Immunisation store	
	4.2 BCG, DPT-HepB + Hib schedule completed *(see notes)*	...../2pts	Exit interview MCH Clinic	
	4.3 Children are weighed on each visit and growth plotted on chart	...../2pt	Exit interview MCH Clinic	
5. Qualitative aspects of OPD services	5.1 All the consultations are done by skilled staff *(Observation – Medical/Clinical Officer; Nurse/Midwife only)*	...../1pt	OPD clinic	
	5.2 Malaria is treated correctly *Uncomplicated malaria – Artemesine-Lumefantrine; complicated/severe – Quinine (see notes)*	...../2pts	OPD register	
	5.3 Proportion of OPD consultations treated with antibiotics <50 % *(sample of 20 cases in the last quarter recorded in the OPD register)*	...../2pts	OPD register	
	5.4 Overall satisfaction of patients on OPD service and staff attitudes *(see notes)*	...../1pts	Exit interview	

6. OPD: Quality of OPD facilities	6.1 Consultancy room and waiting space separated assuring confidentiality	...../1pt	OPD	
	6.2 Padded examination couch or bed with mattress available	...../1pt	OPD	
	6.3 Tariffs clearly displayed	...../1pt	OPD/other	
	6.4 Existence of waiting card system with numbers/ triage system in place *(see notes)*	...../1pt	OPD	
	TOTAL PAGE 2	**...../15pts**		

Area	Definition / Explanation	Scores	Data source	Remark
7. Hygiene: Good hygiene and infection prevention measures in place	7.1 Presence of sufficient and well maintained latrines/toilets for both staff and patients *(see notes)*	...../2pts	Observation	
	7.2 Incinerator and placenta pit within fence/secure area and locked	.....1pt		
	7.3 Waste pit available for non-contaminated objects	...../1pt	Observation	
	7.4 Instruments sterilised according to standards (*minimum basic is a steam autoclave) (see notes)*	...../1pt	Observation	
	7.5 Hygienic conditions assured in wound dressing and injection room *Bins for infected objects with lid and foot pedal – safety box for needles well positioned and used*	...../1pt	Observation	
	7.6 General cleanness of the facility *(see notes)*	...../1pt	Compounds/ fence	
8. Laboratory: Lab adheres to quality standards	8.1 Results recorded correctly in laboratory register and match with results in inpatient sheets or OPD examination card	...../1pt	Laboratory register	

	8.2 Availability of parasites demonstrations	...../1pt	Observation	
	8.3 Laboratory is functional **every day** of the week	...../1pt	Laboratory register	
	8.4 External quality assurance mechanism in place *(see notes)*	...../1pt	Laboratory in charge	
	TOTAL PAGE 3	**...../11pts**		

Area	Definition / Explanation	Scores	Data source	Remark
9. Pharmaceutical	10.1 Stock management *(see notes)*	……/1pt	Stock cards at the facility store	
	10.2 Availability of tracer medicines *(see notes)*	……/2pts	Stock card at the facility store	
10. Inpatient wards	11.1 Good hygienic conditions in IPD ward *(see notes)*	...../2pts	Observation	
	11.2 Confidentiality assured *Women separated from men (0.5pts) – wards not visible from outside (0.5pts)*	...../1pt	Observation	
	11.3 ALOS does not exceed seven days *Review records for 20-100 cases in the quarter being assessed*	...../1pt	IPD records	
11. HMIS/DHIS 2 Quality assurance	9.1 HMIS reports are filled, updated and transmitted to the District Biostatistician on schedule; and Data available on the DHIS 2 *(see notes)*	...../1pt	Records and files	
	9.2 Data discrepancy of 16 indicators: within+/- 5% (+ 2 pts) more than 5% (MINUS 2pts) *(see notes)*	...../2pts (-2pts)	Verified data/reported	

	TOTAL PAGE 4	**...../10pts**		

Total QQA score = **_____/ 64 points** **QQA Percentage =** **_____ %**

Facility In-Charge Name: _____ Sign & Stamp: _____ Date: _____

DHO Name: _____ Sign & Stamp: _____ Date: _____

Explanatory notes

1.1 National guidelines for PMTCT:

i) Each mother attending ANC – unless with known status – is routinely tested for HIV. In each case the result is recorded in the ANC register (1 pt)

ii) Initiation of ARVs (Option B Plus) from 14 weeks of gestation, and up-to-date refills on subsequence follow up visits.

Option B *plus,*	
CD4 < 350 Lifelong ART	**If CD4> 350** HAART from 14 weeks of pregnancy until one week after breast feeding has stopped

The calculation for this score is based on the % of women in the past quarter with known HIV status or found positive on a routine HIV test that receive PMTCT ART, with appropriate up-date record of refills on subsequent visits, is multiplied with the indicator value (2pts)

2.1 Partograph use

Review 10 partogram selected randomly, check that the following parameters have been assessed and properly recorded:

1. contractions
2. BP
3. urine output
4. fluid intake
5. head descent

6. foetal heart rate monitored throughout labour
7. Appropriate decision to deliver taken on reaching action line

The calculation for this score is based on proportion of women out of ten who have been comprehensively monitored (=all areas above have been recorded) multiplied by the indicator value (10pt). For example, if 3 women out of ten have had all areas monitored and recorded, the score would 0.3 x 10 = 3.

2.2 Delivery room is clean and comfortable

1. Sufficient water with soap in delivery room = a functional water point or at least 20 liters available.
2. Light in delivery room 24h/day: Electricity, solar light or rechargeable battery.
3. A bin with lid and safe needle disposal container - specific to the maternity room.
4. A curtain between delivery bed and door, and curtains at the window. The door is functional.
5. Durable walls, painted; paving in cement without fissures; ceiling undamaged; windows with curtains and functional doors.
6. Paragraphs, at least 10 unfilled copies should be available.
7. Scale (to measure height an infant weighing scales), and obstetrical stethoscope and an aspirator (plunged into a non-irritating antiseptic) or a functional manual/electrical aspirator.
8. Bucket or basin for dirty linens available.

2.3 Breast feeding within one hour

From a sample of maximum ten mothers who have delivered in the past 24 hours, find out the time of birth and the approximate time that breast feeding was initiated. The calculation for this score is based on: proportion of women out of ten who have initiated breast feeding within one hour multiplied by the indicator value (1pt).

2.40 Basic EMCOR functions in place

Interview a midwife and observe the labour room to establish if the following are in place:

i. Administer parenteral antibiotics (0.5pt)
ii. Administer parenteral oxytocin (1 pt)
iii. Administer parenteral anticonvulsants (0.5 pt)
iv. Perform manual removal of placenta (1 pt)

NOTE: These medicines should be available on the EMCOR tray and not expired.

2.5 PNC: Use a sample of ten mothers who delivered in the reviewed quarter using MoH postpartum care form. Note: all sections should have been completely filled in for a case to count as part of the final score. The calculation for this score is based on proportion of women out of ten who have been comprehensively monitored during the PNC form i.e. (all areas above have been recorded) multiplied by the indicator value (2pt). For example, if 3 women out of ten have had all areas monitored and recorded, the score would 0.3 x 2 = 0.6.

2.6 CS: This section is filled reviewing the individual notes of the 10 mothers selected randomly from the delivery register who had a Caesarean Section. Calculate the time the doctor saw the patient and made decision for CS and the time the child was delivered by CS – this should not exceed one hour. If the time exceeds one hour, that case will not count towards the final score. Time of delivery of the child is recorded on the operation notes.

3.1 U5 Weight: In a sample of 10 children at an exit interview – the proportion of those whose weight has been taken and growth monitoring done, as well as appropriate decision taken, is multiplied with the indicator value (1pts) to obtain this score. Please make sure to record the actual number of children who have been sampled.

3.2 U5 Fever: In a sample of 10 children aged between 3 months to 5years, at an exit interview – the proportion of those with fever where malaria is excluded or treated is multiplied with the indicator value (1pts) to obtain this score. Please make sure to record the actual number of children who have been sampled.

3.3 U5 Diarrhea: Proportion of children out of 20 with diarrhoea who receive both ORS and Zinc supplement is multiplied with the indicator value (1pts).
3.4 U5 Pneumonia: Proportion of children out of 20 with pneumonia who receive both a first line antibiotic (Cotrimoxazole or Amoxicillin) and Vitamin A supplement is multiplied with the indicator value (1pts

4.1 Cold chain: Backup system for power/gas supply in place (Yes=0.5pt, no=0pt); twice daily recording of vaccine refrigerator temperature does not exceed +2 to +8^{o}C (Yes=0.5pt, no=0pt)).

4.2 Vaccination: In a sample of 10 children at an exit interview – the proportion of those who have completed all relevant immunizations for their age is multiplied with the indicator value (2pts) to obtain this score. Note: If there are fewer children than ten, then assess as many as possible. Actual immunization cards will be used to make this assessment.

5.2 Malaria is treated correctly: proportion of severe and non-complicated cases in the past quarter that are treated correctly multiplied by the indicator value (2pts). Use sample of 20 cases in the previous quarter recorded in the OPD register.

5.4 Satisfaction: In a sample of every other OPD client (10) at an exit interview – the proportion of those who respond 'yes' to the question 'Are you in general satisfied with the overall services and staff attitudes that you have experienced at the OPD today?' is multiplied with the indicator value (2pt) to obtain the facility score.
6.4 OPD waiting: Establish with OPD nurse – first come first serve unless deemed an emergency e.g. cough, difficulty in breathing, convulsions, bleeding)

7.1 Latrines/Toilets: If flush – adequate water provided for; no waste visible on observation; hand washing facility with soap.

7.4 Sterilization: Sterilization may be centralized or at different points, double check if sterilization tapes in used and sterile packs available.

7.6 General cleanliness: The health unit should be within fence, wall fence or chain-linked, grass routinely trimmed, and good waste disposal.

8.4 Lab EQA should be present for at least all three of these procedures at hospital level: i) TB ii) Malaria iii) $CD_{4.}$ At HC3, EQA should be available for at least two and HC II at least one of these laboratory test. EQA should have been performed by an external body of technical repute such as the Uganda Public Health laboratories or similar

international bodies and results received within the quarter. Cross-checking by a senior laboratory technician from an external institution is also acceptable. The documented results of the EQA should be available for review.

9.1 HMIS Reports: Evidence of monthly (105), quarterly (106a) and annual report are available and can be retrieved at the time of the support supervision visit. The deadline for a monthly report to be complete and available is the 7th of the next month. E.g. the monthly report for September 2013 should have been available by the 7th of October, 2013.

9.2 Discrepancy Rate for the quarter = (total number of verified cases for the 16 indicators over the 3 months – total number of reported cases for the 16 indicators over same period) / total number of reported cases for 16 indicators over the same period.

10.1 Stock Mgt: In the main store, assess the stock management system for 20 EMHS: record the balance of these 20 items shown on the stock card on the day of the visit. Then physically count the number of drugs in stock. If stock card balance and physical count match for all 20 EMHS, score is 1. If not, score is 0.

10.2 Availability: In the main store, check the availability of the 20 priority EMHS listed in the table, if available write '1', if not 0

11.1 IDP Hygiene:

i. Regular cleaning (0.5pt)
ii. Access to drinking water (A functional potable water point with at least 20 liters available) (0.5pt
iii. Enough space between beds (at least one meter apart to allow two persons to stand between the beds without cross infection (0.5pt)
iv. Good ventilation without bad smells (0.5pt)

Table for exit interviews

Please tick for yes and put a cross for No

No	Patients satisfaction	Growth monitoring In YCC	Growth monitoring in Immunisation	Imm. schedules completed per age	Children with Hx fever and BS done
1					
2					

3					
4					
5					
6					
7					
8					
9					
10					
Total					

Coments……

……

……

……

……

……

……

……

ANNEX 7: ASSESSMENT OF SKILLED HUMAN RESOURCE IN RBF & IBF PNFP

Health Facility Name	Remarks	
Lacor Hospital	In 2010/11, all cadres in place apart from 3 Medical Specialists and Consultants, 9 Medical Officers and Dental Surgeons, 1 Orthopedic Officer, 3 Lab Assistants, 2 Registered Nurses and Midwives, 19 Enrolled Nurses and Midwives, 4 Nursing Aides and 2 Administrative staff and Pharmaceutical Assistants	In 2013/14 all cadres except for psychiatry, ophthalmology and occupational therapy were present.
St. Joseph's Hospital Kitgum	In 2010/11, all cadres in place apart from 2 Medical Officers, All (4) Dental Officers, 1 Pharmacist, a shortage in the nursing department i.e. a Principle Nursing Officer; 5 Senior Nursing Officer; Nursing officer/ Nursing; Nursing officer/ Midwifery; Nursing officer/ Psychiatry; there was a shortage of Enrolled and Psychiatric Nurses by 32 and a shortage of Enrolled Midwives by 15 with an excess of Nursing Assistants by 33, a Psychiatric Clinical Officer, an Ophthalmic Clinical Officer, a Health Inspector, an Assistant Entomological Officer(Medical), a Physiotherapist, an occupation therapist, a shortage of 4 Anaesthetic assistants/officers and 2 Laboratory Technicians/Technologists	In 2013/14, there were many positions that were not filled within the different departments. These include: a Principle Medical Officer; a Medical Officer Special Grade; all officers in the dental department; a pharmacist; a principle nursing officer; a nursing officer/ psychiatry; a public health nurse; a health educator; a senior laboratory technician; a psychiatric clinical officer; an ophthalmic clinical officer; a health inspector; an assistant entomological officer (medical); radiographer; physiotherapist; occupation therapist; laboratory technologist; anaesthetic attendant; senior hospital administrator; medical social worker; supplies officer; stenographer secretary; and an office typist.
Dr. Ambrosoli Hospital Kalongo	In 2010/11, all cadres in place apart from 1 Radiologist/Radiographer, 1 Laboratory Technician, 1 Physiotherapist, 1 Public health officer, 1 Procurement officer, 1 Personnel officer, 1 Pharmacist, 1 Dental surgeon, 1 Paediatrician, 1 Physician, 1 General surgeon and 1 Gynaecologist	In 2013/14, there were many positions that were not filled within the different departments. These included: a Principle Medical Officer; Medical Officers Special Grade; all officers in the dental department; a principle nursing officer; a public health nurse; an enrolled psychiatric nurse; senior clinical officer; a senior laboratory technician; a psychiatric clinical officer; an ophthalmic clinical officer; a health inspector; an assistant entomological officer (medical); physiotherapist; occupation therapist; hospital administrator; medical social worker; nutritionist; supplies officer; and an office typist.
Aber Hospital	In 2010/11, level of staffing not indicated in the annual report. However, the baseline assessment revealed an insufficient	In 2013/14, there were many positions that were not filled within the different departments. These included; Medical Officers

	staffing.	Special Grade; a senior medical officer; all officers in the dental department; a pharmacist; a principle nursing officer; a nursing officer/ psychiatry; a public health nurse; an enrolled psychiatric nurse; a senior clinical officer; a health educator; a psychiatric clinical officer; an ophthalmic clinical officer; a health inspector; an assistant entomological officer (medical); radiographer; physiotherapist; occupation therapist; an assistant health educator; an anaesthetic attendant; anaesthetic attendant; a hospital administrator; medical social worker; a nutritionist; a supplies officer; an office typist; a mortuary attendant and a cook.
PAG HCIV	In 2012 the facility was well staffed with sufficient skills mix	In 2013/14, there were many positions that were not filled within the different departments. These included: a Senior Medical Officer; a public health nurse; a nursing officer (psychiatry); an enrolled psychiatric nurse; an ophthalmic clinical officer; a health inspector; a public health dental officer; an assistant entomological officer (medical); an assistant health educator; an anaesthetic officer; a theatre assistant; a public health dental officer; a cold chain assistant; a health assistant; a dispenser; an office typist and a driver.
Lacor Amuru HC3	In 2011/12, all cadres in place apart from 1 Clinical Officer, 2 Enrolled Comprehensive Nurses, a Lab Technician, a Health Information Assistant and a Health Assistant	In 2013/14, all cadres in place apart from Lab technician; shortage of 2 Enrolled Comprehensive Nurses and 1 Clinical Officer
Lacor Opit HC3	In 2011/12, all cadres in place apart from a lab technician	In 2013/14, all cadres in place apart from Lab technician; shortage of 1 Enrolled Comprehensive Nurses and 1 Clinical Officer
Lacor Pabbo HC3	In 2011/12, all cadres in place apart from a lab technician and 3 Enrolled Comprehensive Nurses	In 2013/14, all cadres in place apart from Lab technician; shortage of 1 Registered Comprehensive Nurse and 1 Clinical Officer
Iceme HC3	In 2012, all cadres in place apart from a lab technician, a clinical officer, a registered comprehensive nurse, 2 Enrolled Comprehensive Nurses, a health information assistant and a health assistant	In 2013/14, all cadres in place apart from a Lab technician; shortage of 1 Registered Comprehensive Nurse and 1 Clinical Officer
Boro Boro HC3	In 2012, all cadres in place apart from a clinical officer, a Lab	In 2013/14, all cadres in place apart from Lab technician;

	Technician, a Registered Comprehensive Nurse, 2 Enrolled Comprehensive Nurses and a Health Assistant	shortage of 1 Registered Comprehensive Nurse, 1 Clinical Officer, a health assistant and a health information assistant
Amuca SDA HC3	In 2012, all cadres in place apart from a Clinical officer, a Lab Technician, a Registered Comprehensive Nurse, 2 Enrolled Comprehensive Nurses and a Health Assistant	In 2013/14, all cadres in place apart from a Lab technician despite the presence of 2 Lab assistants and shortage of 1 CO
Alanyi HC3	In 2012, all cadres in place apart from a Lab Technician, 3 Enrolled Comprehensive Nurses, a Health Information Assistant and a Health Assistant	In 2013/14, all cadres in place apart from a Lab technician; 3 Enrolled Comprehensive Nurses; a health information assistant; a health assistant and 1 Clinical Officer
Minakulu HC3	In 2012, all cadres in place apart from a Clinical Officer, a Registered Comprehensive Nurse, an Enrolled Comprehensive Nurse, a Health Information Assistant and a Health Assistant	In 2013/14, all cadres in place apart from a Lab technician; shortage of 1 RCN and a health assistant
Ngetta HC3	In 2012, all cadres in place apart from 1 Enrolled Comprehensive Nurse and a Lab Technician	In 2013/14, all cadres in place apart from a Lab technician; a Registered Comprehensive Nurse; a health assistant and a health information assistant
St. Mauritz HC2	In 2011/12 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses, 1 Enrolled Nurse and 1 Enrolled Midwife	In 2013/14 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses and 1 Enrolled Nurse
SOS HC2	In 2011/12 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Midwife and 1 Nursing Assistant	In 2013/14 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses, 1 Enrolled Midwife and 1 Nursing Assistant
St. Monica HC2	In 2011/12 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses, 1 Enrolled Nurse, 1 Enrolled Midwife and 1 Nursing Assistant	In 2013/14 all the staff were in place with the exception of the shortage of 1 Comprehensive Enrolled Nurse and 2 Nursing Assistants
Karin HC2	In 2011/12 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses, 1 Enrolled Nurse and 1 Enrolled Midwife	In 2013/14, based on the norms, the only position filled was 1 Comprehensive Enrolled Nurse. Those not filled were: 1 Comprehensive Enrolled Nurse, 1 Enrolled Nurse, 1 Enrolled Midwife and 2 Nursing Assistants. Other positions present included: 1 Clinical Officer, 1 Lab Assistant, 1 Administrator, 2 Vaccinators, 1 weekly visiting midwife and 1 support staff
Light Ray HC2	In 2011/12 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses, 1 Enrolled Nurse, 1 Enrolled Midwife and 1 Nursing Assistant	In 2013/14 all the staff are in place with the exception of 1 Enrolled Nurse and 1 Nursing Assistant

New Life HC2	In 2011/12 all the staff were in place with the exception of 1 Enrolled Nurse and 2 Nursing Assistants	In 2013/14 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses and 2 Nursing Assistants
Archdeaconry HC2	In 2011/12 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses and 1 Enrolled Midwife	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse and 1 Nursing Assistant
St. Josephs Minakulu HC2	In 2011/12 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse and 1 Enrolled Nurse	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse and 1 Enrolled Nurse
Comboni Samaritans HC2	In 2011/12 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Nurse, 1 Enrolled Midwife and a Nursing Assistant	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Nurse, 1 Enrolled Midwife and 1 Nursing Assistant.
St. Philips HC2	In 2011/12 all the staff were in place with the exception of 2 Comprehensive Enrolled Nurses, 1 Enrolled Nurse and 1 Enrolled Midwife	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Nurse and 1 Enrolled Midwife
St. Luke HC2	In 2011/12 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Nurse, 1 Enrolled Midwife and 1 Nursing Assistant	In 2013/14 all the staff were in place with the exception of 1 Enrolled Nurse, 1 Enrolled Midwife and 1 Nursing Assistant
St. Peters Awere HC2	In 2011/12 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Nurse, 1 Enrolled Midwife and 1 Nursing Assistant	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse,1 Enrolled Nurse and 1 Enrolled Midwife
Wi Anaka HC2	In 2011/12 all the staff are in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Nurse and 1 Midwife	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Nurse and 1 Enrolled Midwife
Al Saints HC2	In 2011/12 all the staff are in place with the exception of 2 Comprehensive Enrolled Nurses, 1 Enrolled Nurse and 1 Enrolled Midwife	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse and 1 Enrolled Nurse
St. Janani HC2	In 2011/12 all the staff are in place with the exception of 2 Comprehensive Enrolled Nurses, 1 Enrolled Nurse, and 1 Nursing Assistant	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse, 1 Enrolled Midwife and 2 Nursing Assistants
Aduku HC2	In 2012, all cadres in place apart from 2 Enrolled Comprehensive Nurses	In 2013/14 all the staff were in place with the exception of 1 Comprehensive Enrolled Nurse and 1 Enrolled Midwife
St. Francis HC2	In 2012, all cadres in place apart from 1 Enrolled Comprehensive Nurse and 1 Enrolled Midwife	In 2014/13 all the staff were in place with the exception of 1 Enrolled Midwife

ANNEX 8: VALUE FOR MONEY: DETAILED METHODOLOGY AND RESULTS

Value for Money contains the two following components: the overall financial and non-financial inputs at facility level and the total health output produced by the same facilities.

1. The overall financial and non-financial inputs

This section presents the overall financial and non-financial inputs or income that health facilities have received, collected or earned over the last financial year as well as the expenditures and investments carried out with theses inputs in order for them to deliver the expected health care services to their catchment population.

The data about the health facility income and expenditure is relying on what the facilities were able or willing to provide to NU Health. NU Health used the following sources of information for this data collection:

- The HF annual report for the FY12-13 for those that produce one
- Or estimations based on the PNFP Business Plans submitted in October 2012 for the RBF and IBF implementation year of Dec12 till Nov13.

Out of 31 PNFP HF supported by NU Health which are reported on here, only four facilities did not present their annual report and thus their income and expenditures were extracted from their BP. These were St Peter, SOS, Kitgum Archdeaconry and All Saint HC2.

The financial records are reported for each PNFP in the sections beneath the following summary table, which is the standard template used by the Medical Bureaus.

INCOME	UGX	EXPENDITURES	UGX
User fees		Employment costs	
Primary Health Care (PHC)/Government of Uganda grant		Training and workshop costs	
NU Health funding		Administrative costs	
Donations in cash		Property costs	
Donations of services		Transport and plant costs	
Other income		Medical goods and services	
Donations of HIV, Tuberculosis, Malaria		PHC	
Donations through Credit Line, Lab reagents		Capital development	

In this financial presentation, the non-financial income collected by PNFP are monetised (or valued) by the PNFP based on the following methods:

- Donations in kind are monetised based on either the invoice or delivery note value or based on the current market value;
- Services in kind are monetised using current professional rates.

2. Total health outputs provided by the PNFP over the Financial Year 12-13

As the range of health care services provided by the PNFP is very broad and varies substantially across the different levels of health care, from HC2 to hospital, it was suggested by NU Health that the feedback on this component be limited to a certain number of indicators, for which cases will be collected from DHIS2 for each PNFP.

To make the data meaningful, it is presented under the form of Standard Unit of Outputs (SUO) which is a method used by the UCMB (Uganda Catholic Medical Bureau)[2] , by hospitals in their annual reports and by Cordaid to reflect the health output of facilitates supported by its Performance Based Financing scheme in Jinja and Kamuli Districts.

As described in the UCMB documents, this method is a composite index calculated with a combination of the six following parameters which are then converted and expressed into their outpatient equivalents to determine the health output of a HF:

- In-patients episodes (IP);
- Out-patient contacts (OP);
- Deliveries carried out (DEL);
- Immunisation doses administered (IMM);
- Antenatal contact (ANC); and
- Family Planning contacts (FP).

The composite indicator of activity, called Standard Unit of Output (SUO), is calculated by attributing to each output a relative weight according to the level of care. The weighting attributed to each of the 6 parameters, based on relevant literature described in the UCMB report, is equivalent in terms of costs for managing one outpatient, when you manage for example one inpatient from admission to discharge. Because the costs for managing patients vary with the level of care, two different weighting scales have been designed by UCMB to reflect this difference, as shown in the table below:

Equivalent weighting of each parameter of the SUO formula		
	Hospital and HC4	**LLU (HC2 and HC3)**
IP	*15	*5
DEL	*5	*2
OP	*1	*1
ANC	*0.5	*0.3
IMM	*0.2	*0.2
FP	*0.2	*0.2

[2] PUBLIC PRIVATE PARTNERSHIP IN HEALTH. WHAT IS ITS EFFECT ON THE PERFORMANCE OF THE HEALTH SECTOR?
Daniele Giusti, MD DTM&H MPH, Peter Lochoro, MB ChB MHSM, Andrea Mandelli, BA Economics
http://www.ucmb.co.ug/data%20on%20ucmb/Reports/ARTICLES/Article%20Effect%20of%20PPP%20on%20Health%20System.pdf

In other words, SUO provides a general idea of the volume of the main services produced by a health unit by using the following two formulas:

- SUO for a hospital and HC4 = [15*IP+5*DEL+1*OP+0.5*ANC+0.2*IMM+0.2*FP]
- SUO for a LLU = [5*IP+2*DEL+1*OP+0.3*ANC+0.2*IMM+0.2*FP]

Using this formula and based on data extracted from DHIS2 on these 6 indicators for each PNFP for the FY 2012-13, NU Health has calculated the Total Health Output for each HF, and been able to compare the two groups of PNFP. The two PNFP groups of Lango and Acholi sub-regions are sufficiently homogenous to ensure that the SUO method for comparison of Total Health Output is adequate and useful.

Limitations of this method

One of the limitations of this method is the quality of the data presented by DHIS2. As per NU Health experience, the reported figures are not totally accurate due to miscalculation or misclassification by PNFP in the way their data are submitted to the DHT. A second limitation is due to the SUO formula which, as any indicator, is limited to certain factors while excluding others. Finally, it also does not differentiate weighting between HC3 and HC2 and between hospitals and HC4, while in reality the higher the level of care, the higher the cost of delivering the same health care services.

It should also be noted here that Lacor Hospital is excluded from this study as there is no comparable institution in the Lango region offering a similarly large range of services. See page 18 of NU Health's inception report for more detailed background on this statement.

3. Value for Money (VfM): Output versus Input

The last section presents a VfM comparison between the two PFNP groups whereby average input by level of care (in this case the expenditures occurred during the FY by PNFP), is divided by the average health output of each level of care (expressed in SUO).

ANNEX 8.2 - VfM Results

1. The overall financial and non-financial inputs

The table below shows the total income and expenditures of each facility over the FY 12-13, their balance, the RBF payments provided by NU Health over the same period and the contribution it represents of the income of each facility.

Table 1 – Financial results of Acholi PNPF FY 12-13 (in UGX)

HF	Level	Income	Expenditures	Balance	RBF payments FY12-13	%NU Health contribution to income
St Joseph	Hospital	4,110,799,182	4,202,002,564	-91,203,382	409,732,500	9.97%
Lacor Pabbo	HC3	325,888,317	375,915,419	-50,027,102	220,102,500	67.54%
New Life	HC2	300,454,687	233,718,175	66,736,512	28,252,500	9.40%
St Luke	HC2	18,747,000	4,246,170	14,500,830	13,652,500	72.82%
St Peter	HC2	12,291,500	11,910,000	381,500	7,342,500	59.74%
SOS	HC2	69,103,750	120,826,054	-51,722,304	3,118,750	4.51%
Kitgum Arch	HC2	26,372,500	24,988,000	1,384,500	92,500	0.35%
Lacor	Hospital	--	--	--	--	--
Lacor Amuru	HC3	362,352,234	405,800,795	-43,448,561	236,642,500	65.31%
St Mauritz	HC2	68,799,102	68,677,139	121,963	27,672,500	40.22%
St Monica	HC2	44,451,632	44,402,300	49,332	9,116,250	20.51%
Comboni	HC2	26,174,865	21,104,028	5,070,837	2,262,500	8.64%
St Jos. M	HC2	46,940,183	46,191,692	748,491	6,940,000	14.78%
Wi Anaka	HC2	31,372,234	23,705,534	7,666,700	14,066,250	44.84%
Ambrosoli	Hospital	3,366,033,172	3,335,506,804	30,526,368	217,137,500	6.45%
Lacor Opit	HC3	481,804,410	566,603,266	-84,798,856	148,023,750	30.72%
Karin	HC2	38,814,477	40,660,559	-1,846,082	12,750,000	32.85%
St Philip	HC2	31,874,217	39,964,000	-8,089,783	5,135,000	16.11%
Lightray	HC2	168,032,850	179,264,404	-11,231,554	3,015,000	1.79%
All Saints	HC2	16,474,187	23,767,000	-7,292,813	2,925,000	17.76%
St Janani	HC2	11,336,285	10,233,985	1,102,300	857,500	7.56%
	TOTAL	**9,558,116,784**	**9,779,487,887**	**-221,371,104**	**1,368,837,500**	**14.32%**

Out of the 31 PNFP, four Acholi facilities were unable to provide an annual report covering their finances over the last financial year despite repeated and numerous attempt by NU Health numerous, which included offers of assistance. These are St Peter, SOS, Archdeaconry and All Saints HC2. For these facilities, the figures shown above are extracted from their Business Plan. In addition, the figures from Lightray HC2 have been adapted to fit the Ugandan FY (Jul-Jun) as this facility provided figures for the calendar year (Jan-Dec).

The Lango figures are as follows:

Table 2 – Financial results of Lango PNPF FY 12-13						
HF	**Level**	**Income**	**Expenditures**	**Balance**	**IBF grants FY 12-13**	**%NU Health contribution to income**
Aber	Hospital	2,526,874,389	2,645,364,605	-118,490,216	335,553,486	13.28%
Ngetta	HC3	332,911,630	273,915,489	58,996,141	152,728,423	45.88%
Aduku	HC2	67,248,087	67,713,629	-465,542	18,441,552	27.42%
PAG HC4	Hospital	1,476,034,850	1,393,898,367	82,136,483	155,439,123	10.53%
Alanyi	HC3	175,672,445	161,063,586	14,608,859	100,936,889	57.46%
St Francis	HC2	66,646,377	64,037,956	2,608,421	12,201,515	18.31%
Iceme	HC3	160,634,570	164,705,067	-4,070,497	99,647,975	62.03%
Minakulu	HC3	107,101,486	106,910,672	190,814	50,905,000	47.53%
Boroboro	HC3	159,125,323	148,690,320	10,435,003	99,647,975	62.62%
Amuca	HC3	120,427,252	104,658,486	15,768,766	99,647,975	82.75%
	TOTAL	**5,192,676,409**	**5,130,958,177**	**61,718,232**	**1,125,149,913**	**21.67%**

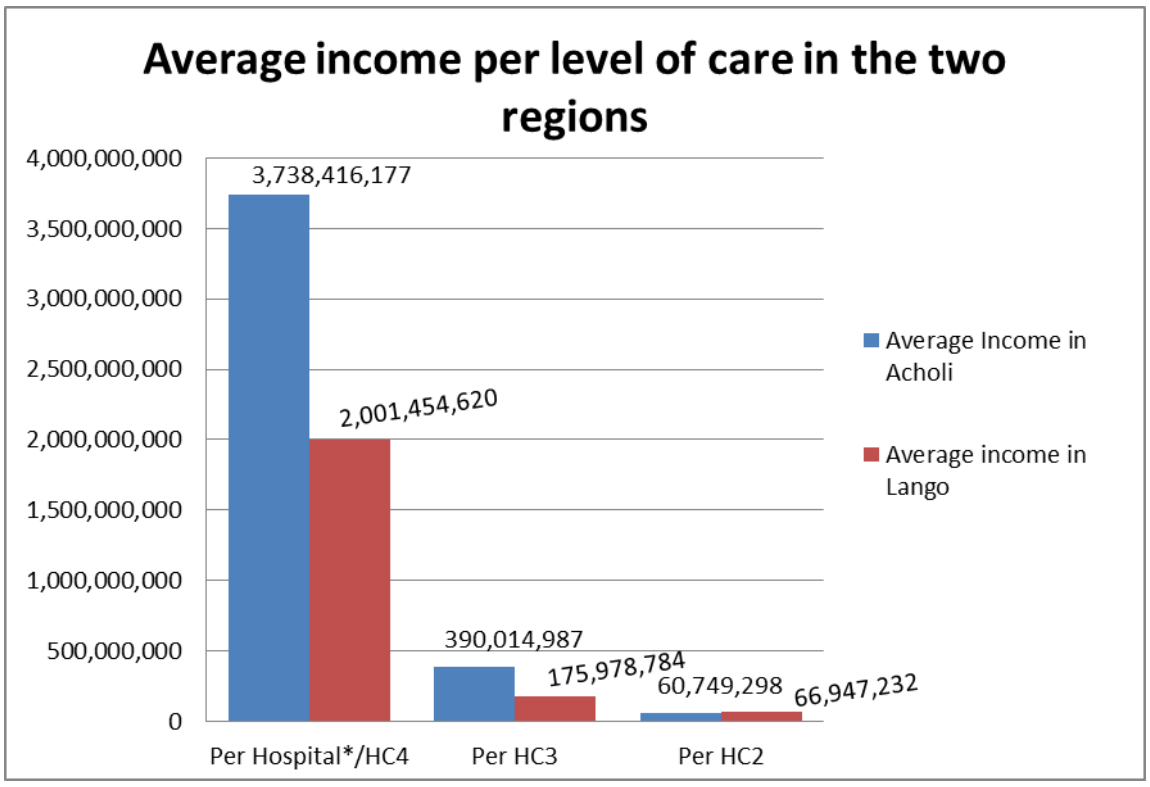
Average income per level of care

These financial results have been grouped by level of care to allow some comparison.

Table 3 – Average financial results of Acholi PNPF FY 12-13 per level of care					
Level of care	**Income**	**Expenditures**	**Balance**	**RBF payments FY 12-13**	**%NU Health contribution to income**
Average per Hospital*	3,738,416,177	3,768,754,684	-30,338,507	313,435,000	8.38%
Average per HC3	390,014,987	449,439,827	-59,424,840	201,589,583	51.69%
Average per HC2	60,749,298	59,577,269	1,172,029	9,146,583	15.06%
*excluding Lacor Hospital					

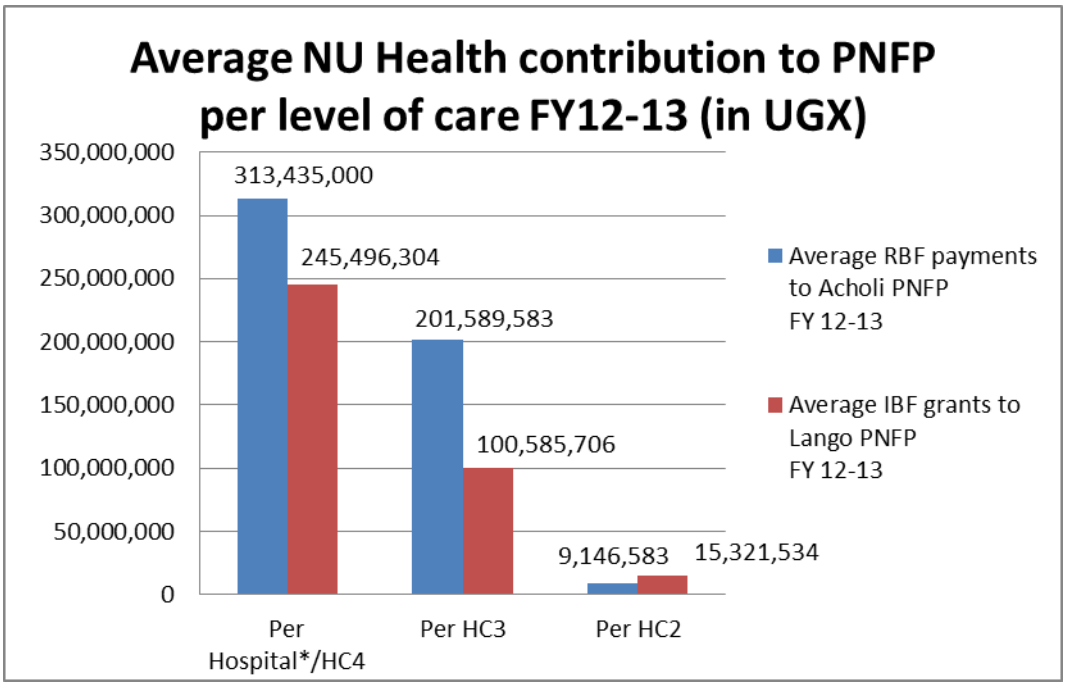
Table 4 – Average financial results of Lango PNPF FY 12-13 per level of care					
Level of care	**Income**	**Expenditures**	**Balance**	**IBF grants FY 12-13**	**%NU Health contribution to income**
Average per Hosp/HC4	2,001,454,620	2,019,631,486	-18,176,867	245,496,304	12.27%
Average per HC3	175,978,784	159,990,603	15,988,181	100,585,706	57.16%
Average per HC2	66,947,232	65,875,793	1,071,440	15,321,534	22.89%

As shown above, the average input (income) per level of care is much higher in Acholi PNFP than in Lango PNFP, except for the HC2 level where it is slightly lower. Graphically the differences between the two groups are reflected as follows:



NU Health contribution

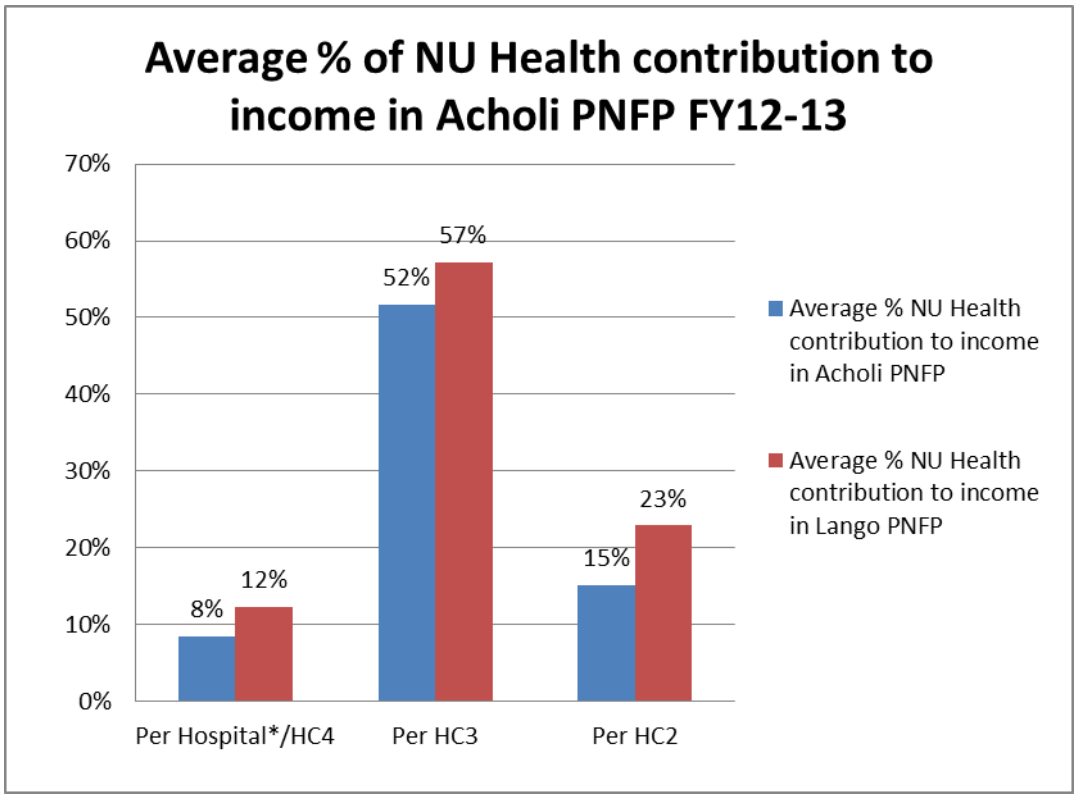
Also extracted from the two tables above, the average NU Health contribution (with either RBF payments to Acholi PNFP or IBF grants to Lango PNFP) to each group of facilities per level of care is shown as follows:



The average NU Health contribution is higher in the Acholi PNFP for Hospital/HC4 (UGX 313m against UGX 245m) and very substantially so for HC3 (more than double than the

contribution in Lango HC3 – UGX 200m against UGX 100m) while at HC2 level the average NU Health contribution is higher in Lango (UGX 15m against UGX 9m).

In terms of the proportion of NU Health's contribution towards the average income per level of care, it appears in the graph below that the contribution is very substantial for HC3 with more than 50% of their income in both regions dependent on NU Health, followed by HC2 with 23% in Lango and 15% in Acholi respectively and finally by large units with 12 and 8% respectively.



2. Total health outputs provided by the PNFP over the Financial Year 12-13

The two tables below show the detailed SUO value for each of the 6 parameters of the SUO formula for the financial year 2012-2013 (1st July 2012 till 30th June 2013) for the 20 Acholi PNFP facilities (instead of 21 as Lacor Hospital is not included) and 10 Lango PNFP facilities as extracted from DHIS2.

Calculated SUO from number of cases extracted from DHIS2 for the FY 2012-2013 for the 20 Acholi PNFP**									
HF	Level	OPD	ANC	DEL	FP	IMM	IPD	TOTAL SUO	% of total SUO
St Joseph	Hospital	38,046	4,718	2,121	0	27,668	11,015	221,769	32%
Lacor Pabbo	HC3	16,287	4,512	564	23	12,573	3,770	40,140	6%
New Life	HC2	4,849	1,116	0	77	184	0	5,244	1%
St Luke	HC2	3,101	27	0	879	1,157	0	3,604	1%
St Peter	HC2	2,704	179	0	391	1,509	0	3,177	0%
SOS	HC2	3,045	0	0	339	3,530	0	3,853	1%
Kitgum Arch	HC2	435	100	0	32	1,011	0	677	0%
Lacor	Hospital								
Lacor Amuru	HC3	15,457	4,720	1,065	0	20,197	14,743	96,757	14%
St Mauritz	HC2	4,781	107	0	54	6,552	0	6,140	1%
St Monica	HC2	4,947	36	0	0	1,225	87	5,638	1%
Comboni	HC2	3,798	5	0	0	0	0	3,800	1%
St Jos. M	HC2	2,384	1,229	213	130	5,791	0	4,376	1%
Wi Anaka	HC2	5,680	718	100	311	2,507	0	6,690	1%
Ambrosoli	Hospital	30,305	5,312	2,727	942	22,750	11,835	229,142	34%
Lacor Opit	HC3	14,566	2,190	553	27	10,802	2,768	32,338	5%
Karin	HC2	3,377	142	0	757	3,066	0	4,260	1%
St Philip	HC2	4,748	301	0	997	11,497	0	7,437	1%
Lightray	HC2	2,090	213	36	59	402	0	2,324	0%
All Saints	HC2	1,460	987	122	4	0	0	2,001	0%
St Janani*	HC2	2,492	0	0	436	5,885	0	3,800	1%
* data from St Janani HC2 are extracted from the facility annual report							TOTAL	683,165	100%
** excluding Lacro Hospital									

Calculated SUO from number of cases extracted from DHIS2 for the FY 2012-2013 for the 10 Lango PNFP									
HF	Level	OPD	ANC	DEL	FP	IMM	IPD	TOTAL SUO	% of total SUO
Aber	Hospital	29451	7749	1824	26	59488	6449	151,091	37%
Ngetta	HC3	9572	2334	170	5	18794	3192	30,333	7%
Aduku	HC2	2839	346	84	0	3897	699	7,385	2%
PAG	HC4	32449	2530	455	236	17090	6499	137,010	34%
Alanyi	HC3	12211	2533	325	0	14879	937	21,282	5%
St Francis	HC2	5198	466	5	0	26769	0	10,702	3%
Iceme	HC3	5523	1935	219	131	20606	1010	15,752	4%
Minakulu	HC3	3172	2949	641	131	7951	1694	15,438	4%
Boroboro	HC3	5130	1658	443	3706	12802	748	13,926	3%
Amuca	HC3	1849	828	121	15	5828	202	4,520	1%
							TOTAL	407,437	100%

Intra-regional comparison

Overall, the total SUO provided by the 10 Lango PNFP is on average higher than the 20 Acholi PNFP: if the figure of 407,437 SUO provided by 10 Lango PNFP was doubled to show what on average 20 PNFP would have produced, that would be 814,000 SUO which is higher than the 683,165 SUO provided by the 20 Acholi PNFP. This can be explained by the fact that there are more HC3 in Lango than in Acholi which have a higher SUO than HC2s.

Within each region it is worth noticing the importance of some of the PNFP in the total health output provided by PNFP. In Acholi, as shown in the pie graph below, the two hospitals cover 66% of the total health output provided by the 20 facilities, the 3 HC3 cover 25%, while the 15 HC2s cover less than 10% of the services expressed in SUO. In Lango, the two large units cover 70% of the coverage expressed in SUO, the 6 HC3 only 25% while the 2 HC2 cover less than 5% of the SUOs.

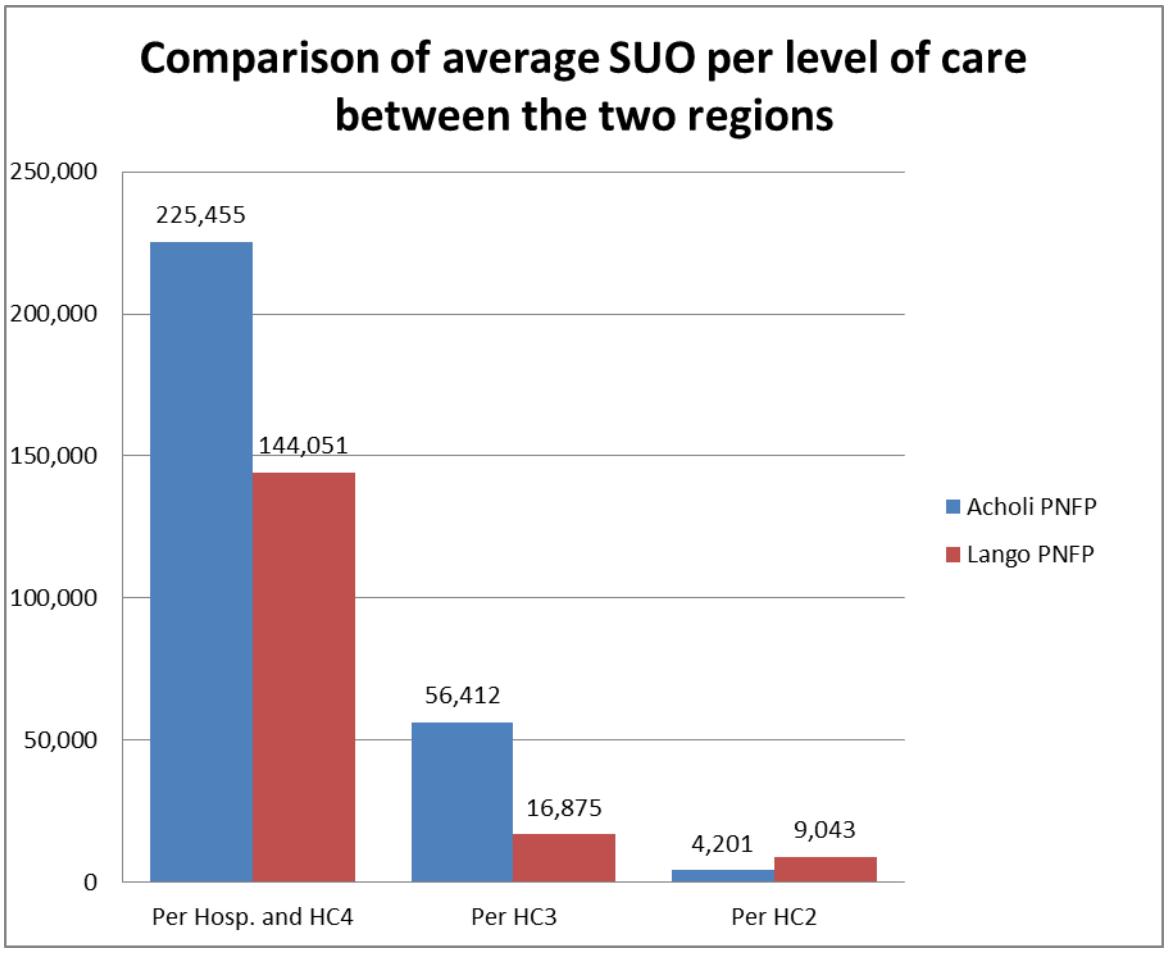
Inter-regional comparison

To allow some comparison, the average SUOs per level of care have been calculated for each region as follows:

Table 5 - Average SUO in Acholi PNFP		Share of total SUO
Per Hospital	225,455	33%
Per HC3	56,412	8%
Per HC2	4,201	0.61%

Table 6 - Average SUO in Lango PNFP		Share of total SUO
Per Hosp. and HC4	144,051	35%
Per HC3	16,875	4%
Per HC2	9,043	2.22%

These figures inserted into the graph below show that Acholi large PNFP (Hospital and HC4) have a bigger average SUO than in Lango (50% higher - 225,455 against 144,041) but that they represent a similar SUO coverage around 33% to 35% of the output provided by all the PNFP in each region. HC3 in Acholi have an average SUO that is triple the Lango one (56,412 against 16,875) while they cover double the output provided by all the PNFP in the region (8% against 4%). HC2 however have the opposite ratio with Lango HC2 providing more than double the output of the Acholi HC2 (9,043 against 4,201) and with a 2% coverage in Lango against a poor 0.6% in Acholi.



3. Value for Money

When comparing the expenditures (the total input) occurred by PNFP against the calculated SUO, it provides an estimated value for money of the input invested to provide the services.

Table 7 - Value for Money: Input versus SUO in Acholi PNFP				
HF	**Level**	**Expenditures**	**SUO**	**Amount spent per SUO**
St Joseph	Hospital	4,202,002,564	221,769	18,948
Lacor Pabbo	HC3	375,915,419	40,140	9,365
New Life	HC2	233,718,175	5,244	44,571
St Luke	HC2	4,246,170	3,604	1,178
St Peter	HC2	11,910,000	3,177	3,749
SOS	HC2	120,826,054	3,853	31,361
Kitgum Arch	HC2	24,988,000	677	36,921
Lacor	Hospital	--	--	--
Lacor Amuru	HC3	405,800,795	96,757	4,194
St Mauritz	HC2	68,677,139	6,140	11,186
St Monica	HC2	44,402,300	5,638	7,876
Comboni	HC2	21,104,028	3,800	5,554
St Jos. M	HC2	46,191,692	4,376	10,556
Wi Anaka	HC2	23,705,534	6,690	3,543
Ambrosoli	Hospital	3,335,506,804	229,142	14,557
Lacor Opit	HC3	566,603,266	32,338	17,522
Karin	HC2	40,660,559	4,260	9,545
St Philip	HC2	39,964,000	7,437	5,374
Lightray	HC2	179,264,404	2,324	77,136
All Saints	HC2	23,767,000	2,001	11,876
St Janani	HC2	10,233,985	3,800	2,693
	TOTAL	**4,805,881,505**	**404,702**	**11,875**

Table 8 - Value for Money: Input versus SUO in Lango PNFP				
HF	**Level**	**Expenditures**	**SUO**	**Amount spent per SUO**
Aber	Hospital	2,645,364,605	151,091	17,508
Ngetta	HC3	273,915,489	30,333	9,030
Aduku	HC2	67,713,629	7,385	9,169
PAG HC4	Hospital	1,393,898,367	137,010	10,174
Alanyi	HC3	161,063,586	21,282	7,568
St Francis	HC2	64,037,956	10,702	5,984
Iceme	HC3	164,705,067	15,752	10,456
Minakulu	HC3	106,910,672	15,438	6,925
Boroboro	HC3	148,690,320	13,926	10,677
Amuca	HC3	104,658,486	4,520	23,157
	TOTAL	**5,130,958,177**	**407,437**	**12,593**

Efficiency of the total input

These figures have been amalgamated per level of care to provide some averages for each region.

Table 9 - Average Value for Money in Acholi PNFP			
	Average expenditures (UGX)	Average calculated SUO	Av. amount spent per SUO FY12-13 (UGX)
Per Hospital	3,768,754,684	225,455	16,752
Per HC3	449,439,827	56,412	10,360
Per HC2	59,577,269	4,201	17,541

Table 10 - Average Value for Money in Lango PNFP			
	Average expenditures (UGX)	Average calculated SUO	Av. amount spent per SUO FY12-13 (UGX)
Per Hosp./ HC4	2,019,631,486	144,051	13,841
Per HC3	159,990,603	16,875	11,302
Per HC2	65,875,793	9,043	7,576

As shown in the tables above, the average amount spent by HC3 PNFP for each SUO are similar in both regions (UGX 10,360 against UGX 11,302), while slightly higher for high level units (UGX 16,752 in Acholi hospitals against UGX 13,841 in Lango) which is mainly due to a lower cost per SUO in PAG HC4 (UGX 10,174/=). The major difference is at HC2 level where the Acholi HC2 have a cost per SUO that is 250% higher than the ones in Lango (UGX 17,541 against UGX 7,576) showing a much lower efficiency in these units.

NU Health contribution per SUO

Table 11 - Value for Money: RBF payments versus SUO in Acholi PNFP				
HF	**Level**	**RBF Payments FY12-13**	**SUO**	**RBF value per SUO**
St Joseph	Hospital	409,732,500	221,769	1,848
Lacor Pabbo	HC3	220,102,500	40,140	5,483
New Life	HC2	28,252,500	5,244	5,388
St Luke	HC2	13,652,500	3,604	3,788
St Peter	HC2	7,342,500	3,177	2,311
SOS	HC2	3,118,750	3,853	809
Kitgum Arch	HC2	92,500	677	137
Lacor	Hospital	--	--	--
Lacor Amuru	HC3	236,642,500	96,757	2,446
St Mauritz	HC2	27,672,500	6,140	4,507
St Monica	HC2	9,116,250	5,638	1,617
Comboni	HC2	2,262,500	3,800	595
St Jos. M	HC2	6,940,000	4,376	1,586
Wi Anaka	HC2	14,066,250	6,690	2,103
Ambrosoli	Hospital	217,137,500	229,142	948
Lacor Opit	HC3	148,023,750	32,338	4,577
Karin	HC2	12,750,000	4,260	2,993
St Philip	HC2	5,135,000	7,437	690
Lightray	HC2	3,015,000	2,324	1,297
All Saints	HC2	2,925,000	2,001	1,462
St Janani	HC2	857,500	3,800	226
	TOTAL	**686,543,750**	**404,702**	**1,696**

Table 12 - Value for Money: IBF grants versus SUO in Lango PNFP				
HF	**Level**	**IBF Grants FY 12-13**	**SUO**	**IBF value per SUO**
Aber	Hospital	335,553,486	151,091	2,221
Ngetta	HC3	152,728,423	30,333	5,035
Aduku	HC2	18,441,552	7,385	2,497
PAG HC4	Hospital	155,439,123	137,010	1,135
Alanyi	HC3	100,936,889	21,282	4,743
St Francis	HC2	12,201,515	10,702	1,140
Iceme	HC3	99,647,975	15,752	6,326
Minakulu	HC3	50,905,000	15,438	3,297
Boroboro	HC3	99,647,975	13,926	7,156
Amuca	HC3	99,647,975	4,520	22,048
	TOTAL	**1,125,149,913**	**407,437**	**2,762**

Efficiency of the NU Health contribution

When putting these figures per average, it provides the following figures:

Table 13 - Average RBF VfM in Acholi PNFP			
	Av. RBF Payments FY12-13	**Av. SUO**	**Av. RBF value per SUO**
Per Hospital	313,435,000	225,455	1,398
Per HC3	201,589,583	56,412	4,169
Per HC2	9,146,583	4,201	1,967

Table 14 - Average IBF VfM in Lango PNFP			
	Av. IBF Grants FY 12-13	**Av. SUO**	**Av. IBF value per SUO**
Per Hosp./ HC4	245,496,304	144,051	1,678
Per HC3	100,585,706	16,875	8,101
Per HC2	15,321,534	9,043	1,819

The tables above show that on average, the efficiency of RBF payments to Acholi PNFP is slightly higher than the IBF grants to Lango PNFP for large units (UGX 1,398/= of RBF payment were invested per SUO provided against UGX 1,678/= of IBF grant invested per Lango SUO). The efficiency difference of the NU Health contribution is significantly higher at HC3 level where UGX 4,169 of RBF money was invested per SUO against UGX 8,101 of IBF money invested per SUO. The efficiency is slightly better in Lango HC2, with a marginal difference of value invested per SUO (UGX 1,969 RBF money per Acholi SUO against UGX 1,819 IBF money per Lango SUO).

ANNEX 8.3 – User Fee Method

The user fee analysis is based on the user fee policies that PFNP officially apply to their patients when attending health care services. As there are as many policies as there are PNFP, the fee rates have been collected in a standard way for the following four services (grey cells) and the following 3 age groups (brown cells).

Patient Health				
Fees / Age group	OPD Consultation Fee	Investigation Fee	Treatment Fee	IPD Admission Fee
Children under 5 years				
Children between 5 and 11y				
Adults				

In addition, the fees related to maternal health care have also been investigated for the following three activities:

Maternal Health		
1st ANC Visit Fee	Normal Delivery Fee	PNC Visits Fee

Whilst these 15 data entries are useful to provide a true picture of the user fee rates applied by PNFP, they are bulky and make comparison between the two regional groups of PNFP difficult. Therefore, this study will be based on the financial contribution that a family of four would have to pay to benefit from health care services in each of the facilities: one male adult, one pregnant female adult, one child under five years old and one who is between 6 and 11 years old. To make full use of the user fee range, it is excepted that each child and one adult goes once to the facility for an OPD visit and once for an IPD stay, while the pregnant woman goes to one ANC visit, delivers her baby at the facility and attends one PNC visit.

The total health visits of that family unit can thus be summarised as follows:

Family composition	Visits per year to HF
Adult male	1 OPD + 1 IPD
Pregnant adult female	1 ANC + 1 Delivery + 1 PNC
Child U5	1 OPD + 1 IPD
Child 6-11y	1 OPD + 1 IPD

In order to undertake some comparison, the average amount that this family would have to pay for attending this package of different health services will be the proxy used to analyse the user fee rates at the different levels of care and by region. When facilities charge a range of fees, it is the average amount of the range that is being used: for example, for the fee range between UGX 2,500/= and UGX 5,000/=, the average fee rate is UGX 3,750. In

addition, when facilities apply a payment rate per test and/or per treatment, the average range of these fees is being applied: for example, if the treatment fee is per drug with a maximum of UGX 5,000/=, the average fee considered in the analysis is UGX 2,500.

Modifications

Finally, the PNFP were asked whether their user fee policies and rates have been modified since the commencement of NU Health programme funding, and if so, how. In most HC2 facilities, this has not been a very informative line of enquiry due to personnel rotation and lack of institutional knowledge.

ANNEX 8.4 – Results of User Fee Analysis

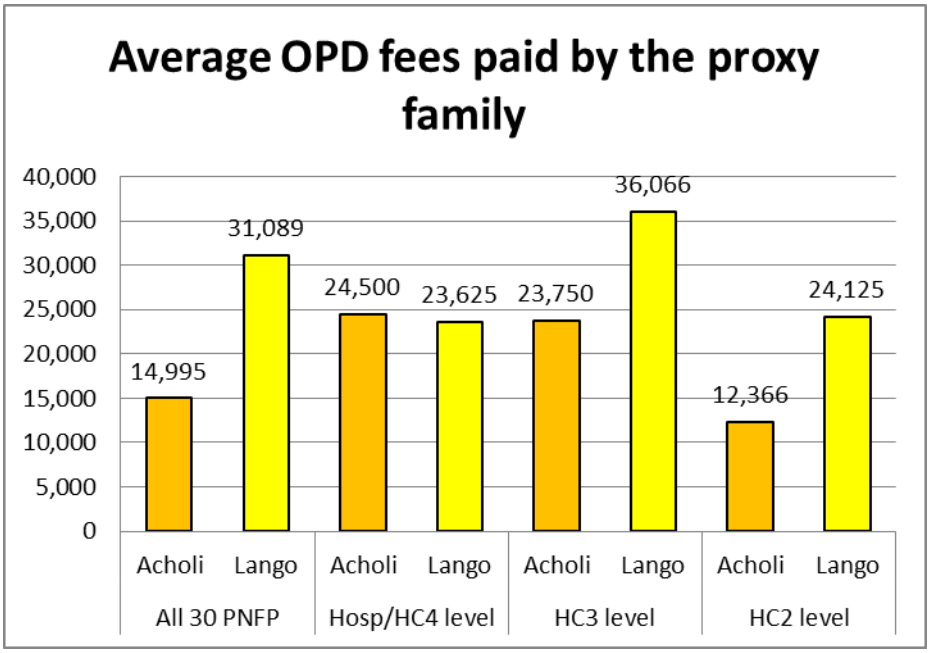
The detailed tables showing the user fee rates of all 31 PNFP, as well as the analysis and comparison tables of the user fee per level of care and per region, are available in **Annex 8.5.**

OPD user fees

The table and graph below summarise which user fees the proxy family would pay for attending one OPD visit by each age group, that is one child under 5 years, another one of below 11 years and one adult.

Table 15 - OPD fees paid by the proxy family on average at the different levels of care in each group

Total paid by one family for	All 30 PNFP		Hosp/HC4 level		HC3 level		HC2 level	
	Acholi	Lango	Acholi	Lango	Acholi	Lango	Acholi	Lango
U5 - 1 OPD visit	2,140	9,305	3,000	9,375	1,250	10,508	2,224	6,125
Kid (6-11y) - 1 OPD visit	5,893	10,679	9,875	7,125	11,250	12,758	4,705	8,000
Adult - 1 OPD visit	6,962	11,105	11,625	7,125	11,250	12,800	5,437	10,000
TOTAL FOR OPD	**14,995**	**31,089**	**24,500**	**23,625**	**23,750**	**36,066**	**12,366**	**24,125**

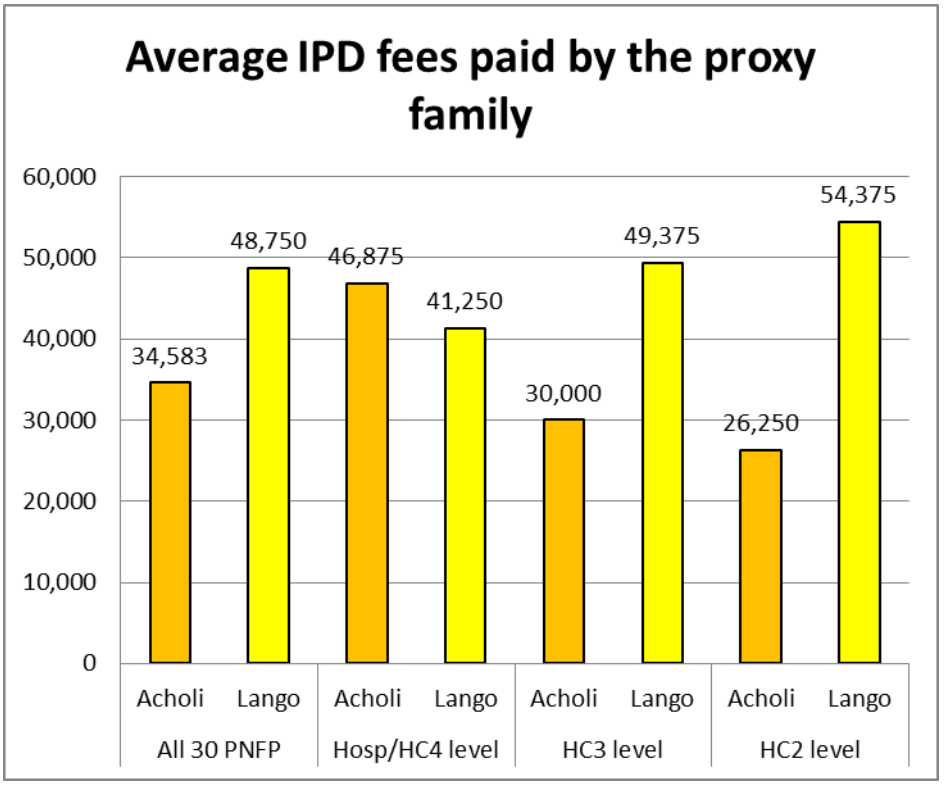


The above figures demonstrate that the Lango facilities apply higher user fee rates than the Acholi facilities, except at Hospital level where fees are quite similar across both groups. Overall, when considering all PNFP combined, the fees paid by the proxy family in Lango are twice those that would be paid in Acholi PNFP (UGX 31,000 against UGX 15,000), as it is the case at HC2 level (UGX 24,000 against UGX 12,000).

IPD user fees

The table and graph below summarise what user fees the proxy family would pay for attending one IPD stay by each age group, that is one child under 5 years, another one of below 11 years and one adult.

Table 16 - IPD fees paid by the proxy family on average at the different levels of care in each group								
Total paid by family for	All 30 PNFP		Hosp/HC4 level		HC3 level		HC2 level	
	Acholi	Lango	Acholi	Lango	Acholi	Lango	Acholi	Lango
U5 IPD	3,750	10,500	9,375	3,750	0	13,125	3,750	9,375
Kid 6-11 IPD	15,000	15,375	15,000	15,000	15,000	15,625	15,000	15,000
Adult IPD	15,833	22,875	22,500	22,500	15,000	20,625	7,500	30,000
TOTAL FOR IPD	**34,583**	**48,750**	**46,875**	**41,250**	**30,000**	**49,375**	**26,250**	**54,375**

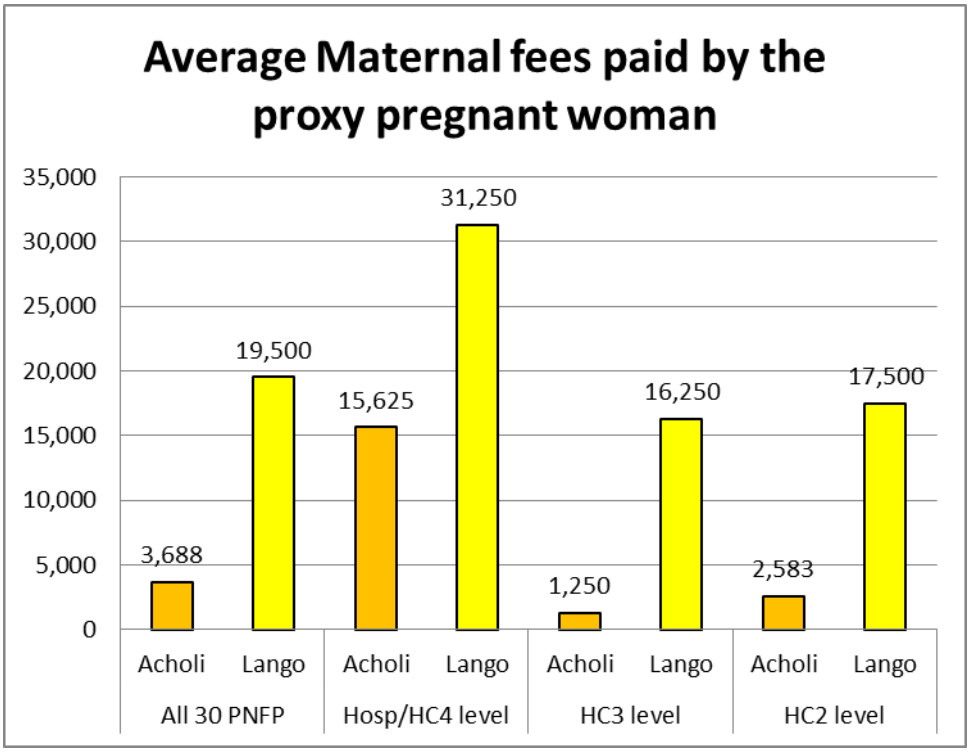


When it comes to IPD services, the differences between the two groups are similar to those at OPD, the Lango fees being higher overall (first two columns) as well as at HC3 and HC2 levels, while slightly lower at Hospital/HC4 level.

Maternal fees

When considering similar tables for the maternal fees paid by a pregnant woman for one ANC visit followed by one delivery and one PNC visit, the different fees per level of care and per region are summarised in the table and graph below.

Table 17 - Maternal fees paid by the proxy pregnant women on average at the different levels of care in each group								
Total paid by pregnant woman for	All 30 PNFP		Hosp/HC4 level		HC3 level		HC2 level	
	Acholi	Lango	Acholi	Lango	Acholi	Lango	Acholi	Lango
1 ANC + 1 delivery + 1 PNC	3,688	19,500	15,625	31,250	1,250	16,250	2,583	17,500
TOTAL FOR MATERNAL	**3,688**	**19,500**	**15,625**	**31,250**	**1,250**	**16,250**	**2,583**	**17,500**

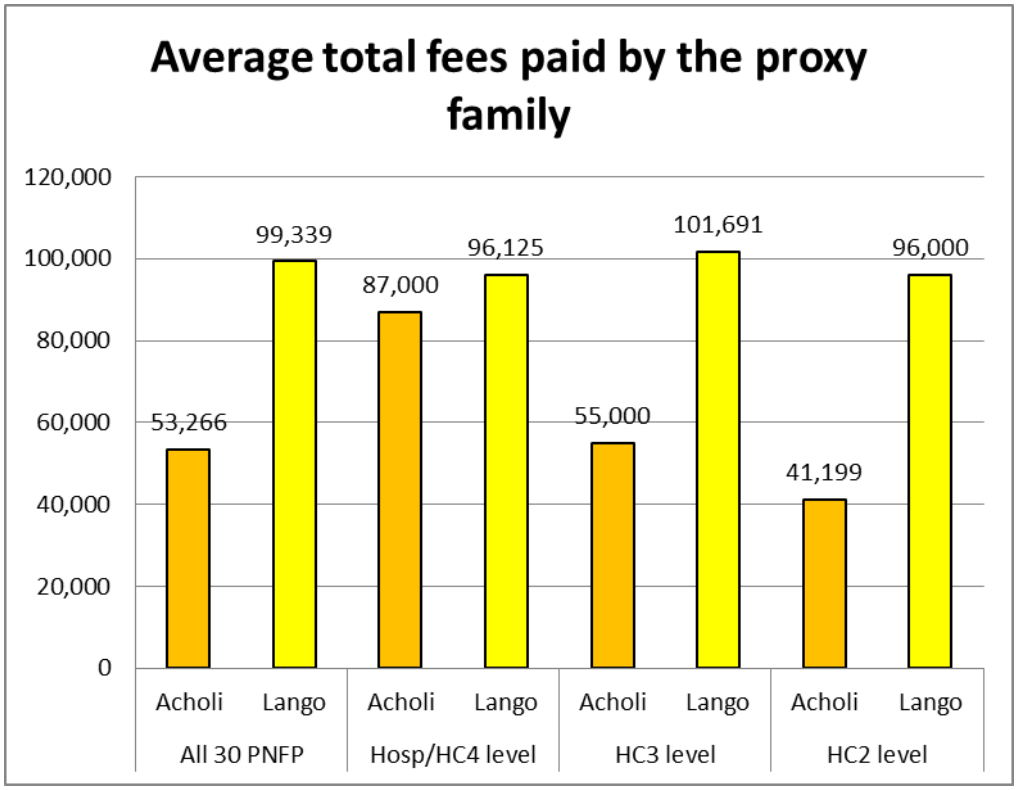


The Lango PNFP apply much higher user fee rates for maternal health than the Acholi ones (five times higher across all PNFP), as well as at every level of care: twice as high at Hospital level (UGX 31,000 against UGX 15,000), thirteen times higher at HC3 level and six times higher at HC2 level.

All fees combined

The table and graph below show what the proxy family would pay when adding all the above user fees for the OPD, ANC, delivery, PNC and IPD visits to the different levels of care and regions.

Table 18 - All fees paid by the proxy family on average at the different levels of care in each group								
Total paid by one family for	All 30 PNFP		Hosp/HC4 level		HC3 level		HC2 level	
	Acholi	Lango	Acholi	Lango	Acholi	Lango	Acholi	Lango
U5 - 1 OPD visit	2,140	9,305	3,000	9,375	1,250	10,508	2,224	6,125
Kid (6-11y) - 1 OPD visit	5,893	10,679	9,875	7,125	11,250	12,758	4,705	8,000
Adult - 1 OPD visit	6,962	11,105	11,625	7,125	11,250	12,800	5,437	10,000
1 ANC + 1 delivery + 1 PNC	3,688	19,500	15,625	31,250	1,250	16,250	2,583	17,500
U5 - 1 IPD episode	3,750	10,500	9,375	3,750	0	13,125	3,750	9,375
Kid 6-11 - 1 IPD episode	15,000	15,375	15,000	15,000	15,000	15,625	15,000	15,000
Adult - 1 IPD episode	15,833	22,875	22,500	22,500	15,000	20,625	7,500	30,000
TOTAL ALL SERVICES	**53,266**	**99,339**	**87,000**	**96,125**	**55,000**	**101,691**	**41,199**	**96,000**



When adding all health costs paid by the proxy family, it appears that Lango PNFP overall charge almost twice as much as the Acholi ones (UGX 99,000 against UGX 53,000) with the same ratio at HC3 and HC2 levels, while charging almost equally at Hospital/HC4 level (UGX 96,000 against UGX 87,000).

Sustainability ratio

These overall higher user fees in Lango PNFP have to be compared with the sustainability ratio of these facilities as shown below. The sustainability ratio is calculated by dividing the annual income of the HF by the user fees collected (income and user fees are extracted from the annual report of the facilities, except for 4 HC2 where annual reports were not available and for which figures are extracted from their business plans). The data of user fee rates applied by each PNFP for the Financial Year 2012-2013 are available at Annex 8.5.

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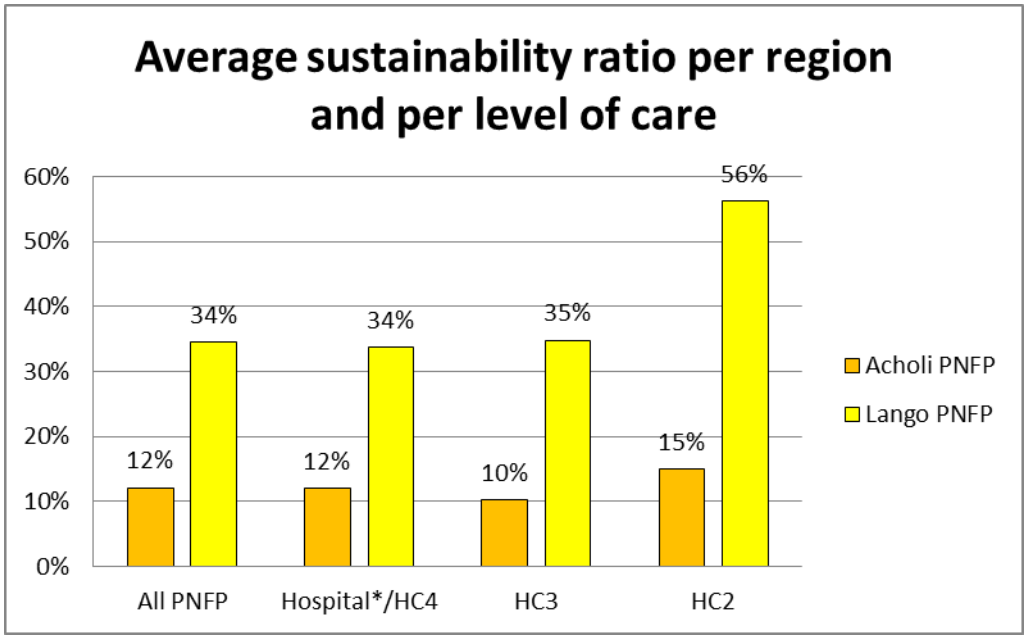
Table 19 – Average sustainability ratio of PNPF per region and per level of care (FY 12-13)

20 Acholi PNFP*			
Level of care	**PNFP Total Income**	**User fees collected**	**Sustainability (% of user fee vs income)**
Average per PNFP	477,905,839	57,698,731	**12%**
Average per Hosp/HC4	3,738,416,177	449,282,513	**12%**
Average per HC3	390,014,987	39,743,967	**10%**
Average per HC2	82,839,952	12,379,791	**15%**
*excluding Lacor H			

10 Lango PNFP			
Level of care	**PNFP Total Income**	**User fees collected**	**Sustainability (% of user fee vs income)**
Average per PNFP	519,267,641	178,977,997	**34%**
Average per Hosp/HC4	2,001,454,620	673,524,425	**34%**
Average per HC3	175,978,784	61,248,262	**35%**
Average per HC2	66,947,232	37,620,775	**56%**



As shown above, the average sustainability ratio of the Lango PNFP is around three times higher than in the Acholi PNFP (34% against 12%). The same is recorded at Hospital/HC4 level and almost similar figures at HC3 level (35% against 10%). At HC2 level the difference between the two ratios is even greater with 56% of the income of Lango HC2 being generated from their user fees against 15% only in the Acholi HC2.

Sustainability versus user fees

Finally, in the table below, the different sustainability ratios are compared with the total user fees paid by the proxy family for the services at the different level of care. The fees have been divided by 2,750 in order to match the scale of the sustainability ratios so that they can both be represented in the graph further below.

Table 20 – Average sustainability ratio of PNPF per region and per level of care (FY 12-13)

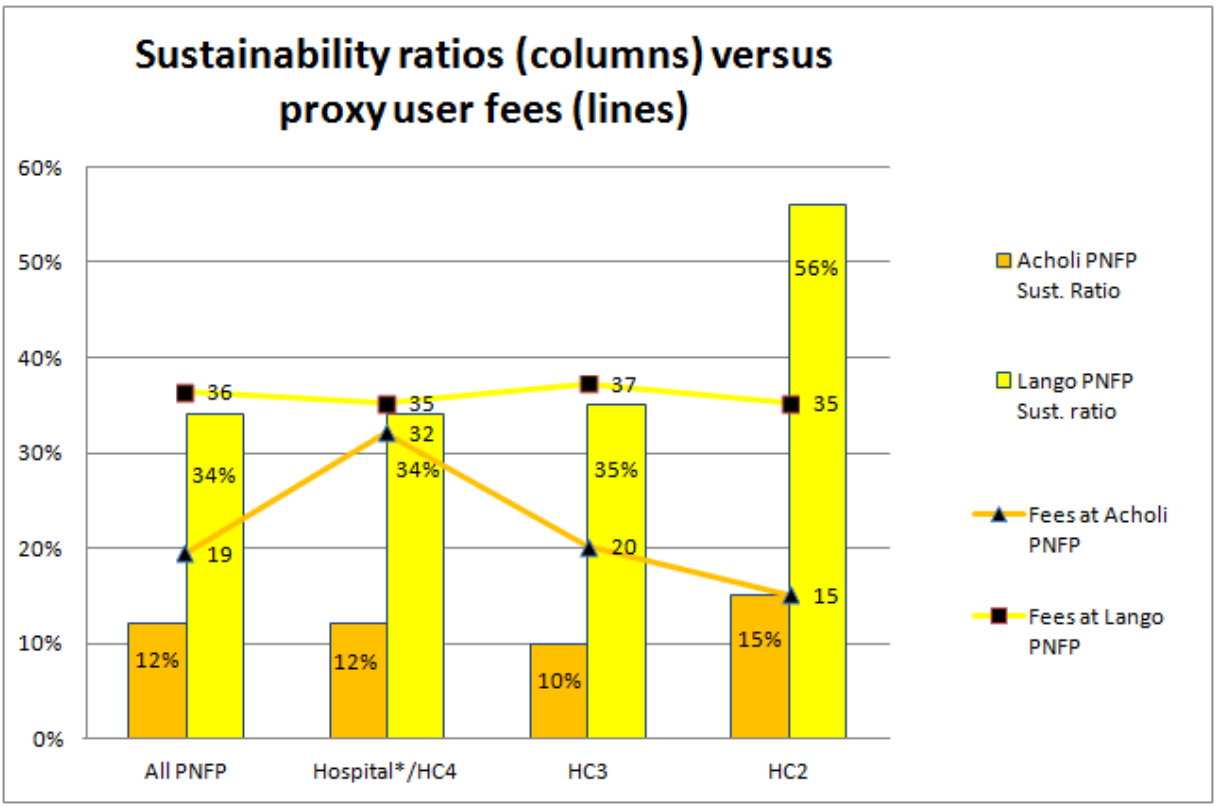
Level of care	Acholi	Lango
All PNFP	12%	34%
Hospital*/HC4	12%	34%
HC3	10%	35%
HC2	15%	56%

Table 21 - Average fees paid by the proxy family at the different levels of care in each group

Level of care	Acholi	Lango	Divided by	Acholi	Lango
All PNFP	53,266	99,339	/2,750*	19	36
Hospital*/HC4	87,000	96,125		32	35
HC3	55,000	101,691		20	37
HC2	41,199	96,000		15	35

* fees paid are divided by 2,750 to match the scale of the sustainability ratio

The graph below juxtaposes (i) the sustainability ratios of the table above (left two columns with %), which are represented by the columns in the graph with (ii) the reduced average fees paid by the proxy family (last two columns in table above) which are represented by the lines in the graph.



It appears that there is a good correlation between the fees paid and the sustainability ratios when considering all the PNFP, the HC3 and the HC2 levels: where the column is high, so is the line and vice versa. At Hospital/HC4 level however, the sustainability of Acholi Hospitals (orange column) is low, even though the user fees paid by the proxy family are high (marker ▲), and almost similar to the ones paid in Lango Hospitals, while the sustainability ratio of the Acholi units is three times lower (12% against 34%)

Changes in user fee policy since NU Health support started

It is worth noting here that the situation in Northern Uganda in 2011 was post-conflict, with resulting dysfunctional health care services. The HC2 and HC3 facilities that were operational attended to a sizable semi-urban and displaced population that was largely dependent on food aid and other emergency services. This may explain why most LLU in Acholi until 2011, offered free access to all age groups. Very few HC2 had functional laboratories at the beginning of the programme. Nowadays, with less emergency funding available, most LLU have opted for a lump-sum consultation fee of less than UGX 2,500/= but which includes the investigation and treatment costs. In Lango, which was less affected by the civil war, most LLU have been asking for consultation fees and only one HC2 (St Francis) reduced its consultation fee as well as the delivery fees since NU Health support began.

HC3 in Acholi have also moved from an-all free access for U5 to charging a small lump-sum amount, while investigation and treatment remain free of charge. The costs of maternal care have also changed from being free to a small lump-sum contribution to the 1st ANC visit of less than UGX 2,500/= while deliveries remain free. HC3 increased their IPD fees from a

small UGX 2,500/= to UGX 15,000/=. In Lango, there has been no change in HC3 fees, except at Alanyi HC3 which reduced its investigation fees for all age groups.

The same trend has been noticed among hospitals in Acholi with the removal of free access for U5 to a small lump-sum that includes treatment. Both hospitals increased their IPD rates for U5 and adults as well as the delivery fees. In Lango, Aber Hospital introduced a flat user fee rate for children under five and pregnant mothers.

ANNEX 8.5 - Detailed User Fees of PNFP

User fee rates applied by Acholi PNFP as of January 2014 (for OPD, IPD and Maternal health care dissagregated by age group)																		
21 Acholi PNFP			Under five				Kids 5-11yrs (or 12)				Adults				Maternal Health			
#	Name	Level	OPD Consultation Fee	Investigation Fee	OPD Treatment Fee	IPD Admission Fee	OPD Consultation Fee	Investigation Fee	OPD Treatment Fee	IPD Admission Fee	OPD Consultation Fee	Investigation Fee	OPD Treatment Fee	IPD Admission Fee	1st ANC Visit Fee	Normal Delivery Fee	PNC Visits Fee	
1	St Janino	HC II	500	R= 1,000 and 1,500	Free	N/A	Free	Between 1,000 and 1,500	Pay per drug	N/A	Free	Between 1,000 and 1,500	Pay per drug	N/A	Free	N/A	?	
2	St. Philip	HC II	1,000	Included	Included	N/A	1,500	Included	Included	N/A	2,000	Included	Included	N/A	?	N/A	?	
3	SOS	HC II	5,000	Between 1,000 and 5,000	Pay per drug	N/A	12,000	Between 1,000 and 5,000	Pay per drug	N/A	12,000	Between 1,000 and 5,000	Pay per drug	N/A	?	N/A	?	
4	St Joseph Minak.	HC II	Free	Per test between 500 and 10,000	Between 1,000 and 2,000	Between 4,000 and 5,000	Free	Per test between 500 and 10,000	Between 2,000 and 3,000	Between 5,000 and 10,000	Free	Between 2,000 and 3,000	Between 2,000 and 3,000	Between 5,000 and 10,000	1,000	10,000	Free	
5	St Mauritz	HC II	500	Per test between 500 and 1,500	Per treament between 2,000 and 3,000	N/A	1,000	Per test between 500 and 2,000	Per treament between 2,000 and 6,000	N/A	1,000	Per test between 500 and 5,000	Per treament between 2,000 and 10,000	N/A	Free	N/A	?	
6	Comboni Samaritans	HC II	1,000	Included	Included	N/A	2,000	Included	Included	N/A	2,000	Included	Included	N/A	Free	N/A	Free	
7	St Monica	HC II	2,000	2,000	Included except drip is 5,000	N/A	5,000	2,000	Included except drip is 10,000	N/A	5,000	2,000	Included except drip is 10,000	N/A	Free	N/A	Free	
8	St. Luke	HC II	1,000	Included	Included	N/A	1,500	Included	Included	N/A	2,000	Included	Included	N/A	1,000	5,000	Free	
9	St. Peter	HC II	1,000	Included	Included	N/A	1,500	Included	Included	N/A	2,000	Included	Included	N/A	Free	Free	Free	
10	Karin Medical Center	HC II	1,000	malaria free, other tests btw 3,000 and 4,000	Included	N/A	1,000	From 1,000 to 4,000	Between 1,000 and 5,000	N/A	1,000	Between 1,000 and 5,000	Between 2,000 and 10,000	N/A	Free	N/A	Free	
11	Lightray	HC II	2,000	Included	Included	N/A	5,000	Included	Included	N/A	Free	2000 except typhoid 5,000	Pay per drug	N/A	Free consult, free test, free treatment	Free	Free	
12	Kitgum Archdeaconry	HC II	Free	between free and 1,500	Included	N/A	1,000	Between 1,000 and 4,000	Between 1,500 and 10,000	N/A	1,000	Between 1,000 and 4,000	Between 1,500 and 10,000	N/A	Free	7,500	Free	
13	New Life Kitgum	HC II	2,000	Included	Included	N/A	Free	Pay per test	Pay per drug	N/A	Free	Pay per test	Pay per drug	N/A	Free	N/A	Free	
14	Wi Anaka	HC II	1,000	Included	Included	N/A	1,500	Included	Included	N/A	2,000	Included	Included	N/A	1,000	2,000	?	
15	All Saints	HC II	Free	Included	Included	N/A	Free	Included	Included	N/A	1,000	Included	Included	N/A	Free	Free	Free	
16	Lacor HC3 Amuru	HC III	1,000	Included	Included	Free	2,000	2000 per test. Max 10,000	Pay per drug	10,000	2,000	2000 per test. Max 10,000	Pay per drug	15,000	2,000	Free	?	
17	Lacor HC3 Pabbo	HC III	1,000	Included	Included	Free	2,000	2000 per test. Max 10,000	Pay per drug	10,000	2,000	2000 per test. Max 10,000	Pay per drug	15,000	2,000	Free	?	
18	Lacor HC3 Opit	HC III	1,000	Included	Included	Free	2,000	2000 per test. Max 10,000	Pay per drug	10,000	2,000	2000 per test. Max 10,000	Pay per drug	15,000	2,000	Free	?	
19	Dr Ambrosoli	Hospital	1,500	2,000	Pay per drug. Max 2,000	4,000	2,000	2,000	Included	6,000	2,000	2,000	Pay per drug. Max 7,000	12,000	1st ANC 1,000. others are free	10,000	Free	
20	Lacor	Hospital	2,000	Included	Included	5,000	2,000	Between 1,000 and 60,000	Pay per drug	15,000	2,000	Between 1,000 and 60,000	Pay per drug	30,000	5,000	10,000	?	
21	St. Joseph Kitgum	Hospital	2,000	Between 1,000 and 2,000	Included	15,000	2,000	Between 1,000 and 2,000	Between 8,000 and 12,000	15,000	2,000	Between 2,000 and 20,000	Between 8,000 and 12,000	35,000	Free	10,000	Free	

User fee rates applied by Lango PNFP as of January 2014 (for OPD, IPD and Maternal health care dissagregated by age group)																
10 Langо PNFP			Under five				Kids 5-11yrs (or 12)				Adults				Maternal Health		
#	Name	Level	OPD Consultation Fee	Investigation Fee	Treatment Fee	IPD Admission Fee	OPD Consultation Fee	Investigation Fee	Treatment Fee	IPD Admission Fee	OPD Consultation Fee	Investigation Fee	Treatment Fee	IPD Admission Fee	1st ANC Visit Fee	Normal Delivery Fee	PNC Visits Fee
1	Aduku Mission	HCII	500	1,000	R=3,000-7,000	5,000	500	R=1,000-3,000	R=3,000-7,000	10,000	500	R=1,000-3,000	R=6,000-15,000	30,000 (inc. Treatment)	1st visit-8,000/- subsquent- Free	5,000	Free
2	St. Francis Akia	HCII	200	1,000	R=4,500-7,500	20,000	500	R=1,000-5,000	R=8,500-12,000	R=18,000-27,000 (including treatment)	500	R=1,000-5,000	R=8,500-12,000	31,000 (incl. Treatment)	1st visit-1,500/- subsquent- 500	10,000	Free
3	Alanyi	HCIII	Free	500	R=5,000-10,000	Free- Included in the treatment fee	Free	500	10,000	Free- Included in the treatment fee	Free	500	15,000-25,000	Free- Included in the treatment fee	1st visit-1,000/- subsquent- 500	15,000-10,000	Free
4	Boroboro	HCIII	Free	R=2,000-3,000	6,000	18,000-20,000	Free	2,000-3,000	8,500	22,000-25,000	Free	2,000-3,000	8,500	25,000-30,000	1st visit-1,000/- subsquent- 500	8,000-without a mama kit, 13,000-inc. Mama kit	Free
5	Amuca SDA	HCIII	2,000	R=1,000-5,000	R=500-40,000	5,000 only for day 1-the rest is free	2,000	R=1,000-5,000	R=500-40,000	5,000 only for day 1-the rest is free	2,000	R=1,000-5,000	R=500-40,000	5,000 only for day 1-the rest is free	1,000 for each visit	15,000	Free
6	Ngetta	HCIII	1,000	1,000	4,500-5,600	25,000-30,000 (incl. Treatment)	1,000	1,000	4,500-5,600	25,000-30,000 (incl. Treatment)	1,000	1,000-5,000	4,500-5,600	25,000-30,000 (incl. Treatment)	1st visit-1,000/- subsquent- 500	10,000	Free
7	Iceme	HCIII	1,000	1,000	3,000	15,000 (inc. Treatment)	1,000	1,000	5,000	25,000-30,000 (incl. Treatment)	1,000	1,000	5,000	25,000-30,000 (incl. Treatment)	1,000 for each visit	R=7,000-10,000	Free
8	Minakulu	HCIII	1,000	1,000	R=3,000-5,000	12000(inc. Treatment)	1,000	1,000	R=8,000-12,000	15,000-20,000 (including treatment)	1,000	1,000	R=12,000-15,000	30,000 (incl. Treatment)	1st visit-1,500/- subsquent- 500	20,000	Free
9	PAG	HCIV	Free	R=800-1,000	uncomplicated mal-free, the rest 3,000-5,000	5,000	1,500	R=800-1,000	uncomplicated mal-free, the rest 3,000-5,000	7,500	1,500	800-1,000	uncomplicated mal-free, the rest 3,000-5,000	7,500	1st visit-2,000/- subsquent- 1,000	30,000(incld. A free mama kit)	Free
10	Aber	Hospital	Free	included in treatment	6,000	4000(excl. Of treatment)	1,000	R=3,000-6,000	R=400-10,000	R=14,000-19,000	1,000	3,000-6,000	400-10,000	900-45,000	1st visit-1,000/- subsquent- Free	30,000	Free