NUHEALTH
Improving Access to Healthcare for the Poor in Northern Uganda

Results Based Financing with non-state providers

Insights from a controlled trial in Northern Uganda

Contents

1. Introduction

There is increasing interest in understanding how RBF (Results Based Financing) can improve efficiency, effectiveness and accountability in programming towards Universal Health Coverage and improved health outcomes at scale. With the Sustainable Development Goals, the UN Secretary General's revised Global Business Plan for Maternal and Child Health, and the World Bank-hosted Global Financing Facility, there is a renewed imperative to achieve better results from health investment, including improved transparency and accountability.

While there is a growing body of experience in a range of RBF-related programmes, there remain key gaps in the evidence generated by these. These evidence gaps include how cost-effective programme approaches can be adapted to circumstances of fragility, poor governance and weak systems, where unmet need in reproductive, maternal, newborn and child health is often greatest.

The NU Health (Northern Uganda Health) programme (2011-2015) was funded with UK aid from the UK government as part of a package of post-conflict aid aimed at strengthening governance and accountability and reconstructing social systems in Northern Uganda. NU Health was a controlled implementation study to determine the impact, costs and benefits of RBF relative to more conventional Input-Based Financing (IBF).

Drawn from the NU Health experience, this report aims to provide an overview of insights generated over the course of the programme, with the aim of informing programme efforts by other health service providers, government agencies or cooperating agency partners.

The report begins with background information to the NU Health programme (sections 2-4), moves to insights from the programme design (sections 5-7), and ends with implications and conclusions drawn (sections 8-9). More specifically, an overview of RBF is given in section 2, and a summary of recent RBF health interventions in the Ugandan context in section 3, while section 4 gives an overview of the NU Health programme.

Key Messages

1) Clinical audits showed RBF led to improvements in **quality of care** for major childhood killers such as malaria, diarrhoea and pneumonia.

2) RBF can significantly improve **data management and reporting,** and lead to better decision making for resource allocation.

3) When **designing an RBF programme**, practitioners should consider factors such as the balance between IBF and RBF and the supply and demand side of RBF, the level of autonomy over fund use, and the means for maintaining effective results verification at scale as well as the requisite financial management.

Section 5 reviews the design of the performance incentive, section 6 examines approaches to results verification and section 7 explores the impact of the RBF approach on quality of care. Section 8 looks at the implications for sustainable programming and taking RBF to scale, drawing lessons for the potential application of RBF as part of a national health strategy, and section 9 summarises results and conclusions.

2. Results based financing

Efforts to improve health in low-, middle, and high-income countries have long employed incentive systems to align provider and consumer behaviour and system performance with policy aims. In recent years this area of endeavour has come to focus on improving health service and system performance through results based financing (RBF).

While conventional 'input based financing' focused on getting key inputs in place, it did not address the issue of the 'production process,' and how inputs came together to create outputs and outcomes. RBF incentivises health service providers to focus on health outputs and outcomes. While initial interest focused on the intuitively attractive prospect of linking incentives on to improved performance[1], interest has also grown in considering how these schemes help with improving sectoral accountability and stewardship[2]. More recently, Meessen and colleagues have argued that RBF can be a vital catalyst for larger health system strengthening[3].

The diagram opposite illustrates the RBF model with respect to improving health service performance.

RBF models are driven by the principle that if financial incentives are clearly and quantitatively linked to pre-determined service goals, service providers will find the most effective and efficient way of delivering those services. It allows for a shift in the way in which individuals, communities or government entities are able to make best use of the strengths and resources within the system in which they operate. It aims to provide flexibility for actors to draw on the potential of these systems, deliver innovative results, and ultimately drive improved quality of services while increasing accountability with specific emphasis on results and the cost of achieving those results. This is a radical move away from a prescriptive input based model which provides little or no variation in financial inputs, regardless of impact. In essence, RBF moves from a model in which actors are 'assumed' to deliver given the right inputs (as perceived by the financing agent), to one where incentives and accountability enable them to 'drive' delivery for themselves.

The concept of RBF has been refined over the last decade as actors have designed, tested and improved various models. It falls within a broader set of RBF models which capture approaches such as 'output based financing', 'cash on delivery' and 'conditional cash transfers'. In its wider conception, RBF includes both supply and demand side models. For instance, a demand side RBF programme might provide communities with vouchers for emergency transport for assisted delivery or mosquito nets, with facilities receiving a fee for each voucher redeemed. The NU Health model tested a narrower approach, focused on the quality and quantity of key Maternal, Newborn, Child Health (MNCH) and common outpatient services provided in RBF facilities, in relation to comparable IBF facilities, with the aim of targeting services improvements for these particularly vulnerable groups with a high burden of disease.

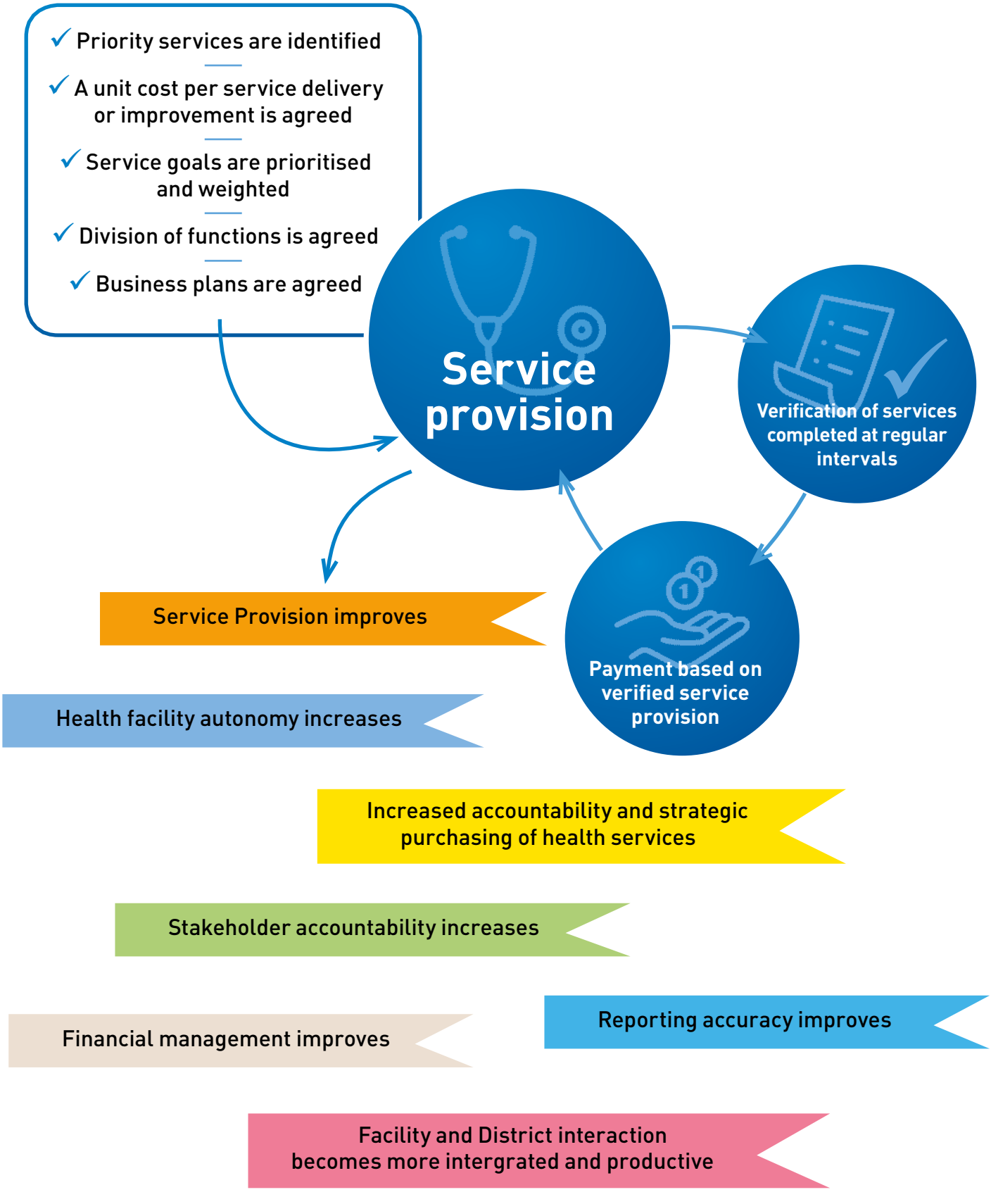
Given the diversity of approaches within RBF, it is important that learning and operational insights are harnessed from a range of delivery models, to help drive more informed and effective implementation and policy. The key characteristics and learning from the NU Health experience are expanded in later sections of this report.

1. Ann Canavan Jurriën Toonen Riku Elovainio Performance Based Financing An international review of the literature. KIT Development Policy & Practice. 2008

2. Robert Fryatt, Anne Mills, Anders Nordstrom Financing of health systems to achieve the health Millennium Development Goals in low-income countries. The Lancet, Volume 375, Issue 9712, Pages 419-426

3. Bruno Meessen, Agnès Soucat & Claude Sekabaraga. Performance-based financing: just a donor fad or a catalyst towards comprehensive health-care reform? Bulletin of the World Health Organization 2011;89:153-156.

THE RBF MODEL FOR IMPROVING HEALTH SERVICE PERFORMANCE



3. RBF for health in Uganda

The broader RBF approach has been used effectively in a number of sectors, including agriculture, nutrition, education, livelihoods, and health. Over recent years Uganda has tried a range of RBF pilots and interventions, and there has been increasing drive from the Ministry of Health and broader stakeholders to consolidate the lessons learnt, and potentially move towards a national health insurance scheme and, ultimately, universal health coverage.

RBF INTERVENTIONS IN UGANDA[4]

	World Bank (2003 - 2005)	Makerere University School of Public Health (2009 - 2011)	Marie Stopes (2006 - 2011)	NU Health (2011 - 2015)
Coverage	118 facilities (68 PNFPs) from five pilot districts available to all residents	22 health facilities in two districts in Eastern Uganda targeting pregnant women, transport providers, health workers	20 districts in South Western Uganda targeting women for STI and Safe motherhood	31 health centres in 12 districts in Northern Uganda available to all residents.
Service package	Targeted outpatient visits, malaria, and immunisation. Antenatal visits, attended births and family planning	Service and transport vouchers for maternal health. Systems strengthening to deliver obstetric care services	Subsidised vouchers (US $1.40) to access services, STI treatment	Complete supply side services – Maternal, New-born, and Child Health focus
Design	Quasi-experimental design, two intervention groups (bonus and autonomy) and a control	Quasi-experiment study	Intervention study	Semi-Randomized Control Trial (RBF and IBF intervention groups)

It should be noted that the demand side voucher models have been in existence for years, while examples of the more refined supply side RBF model tend to be more recent and relatively limited. As such, insights from programmes such as NU Health, which focus on supply side RBF, remain particularly pertinent for broader policy discussions. Some recent RBF health interventions in Uganda are outlined in the table above. A comprehensive review of RBF Health studies[5] noted that a broad range of design and contextual variables affected the performance of any RBF programme, and called for greater operational research to help policy makers and health service providers identify the characteristics that most enhance the success of the RBF approach. While RBF is a variant of health financing approaches which have been used for years in OECD countries, NU Health aimed to examine the replicability and operational nuances required in a lower income setting. In particular, it aimed to assess the specific impact on the quality of service provision from a supply side focused implementation, as opposed to the health seeking behaviour approaches more commonly seen in demand side RBF pilots. The following sections of this report look at the design of the NU Health programme and aim to provide just such insights.

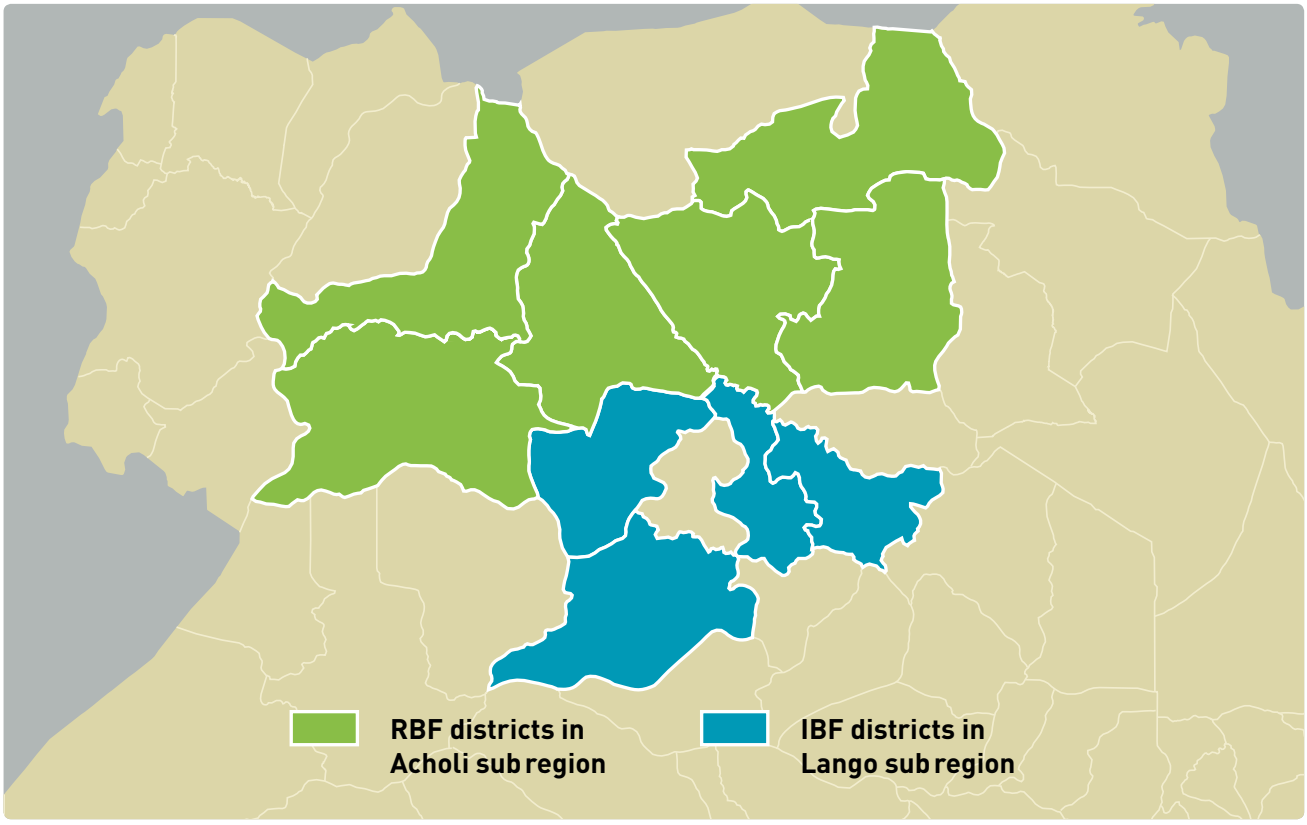
4. Ssennyonjo (2015): 'Different Approaches to Results-Based Financing –A Presentation to the National Orientation Workshop in Uganda', Makerere Dept. Health Policy, Planning and Management (adapted)

5. Witter S, et al (2012); 'Paying for performance to improve the delivery of health interventions in low- and middle-income countries' Cochrane Database of Systematic Reviews Issue 2. Art. No.: CD007899

4. Northern Uganda Health Programme

The NU Health programme was a controlled implementation study to determine the impact, costs and benefits of RBF relative to more conventional input based financing (IBF). The programme provided comparable levels of support to RBF and IBF facilities, aiming to isolate the main effect of the financing modality in terms of quality and quantity of health service provision. Payments to RBF facilities were directly linked to volume and quality of services provided, while IBF facilities received a comparable monthly allowance, independent of service delivery.

RBF and IBF Districts in Northern Uganda



NU Health has focused on generating evidence on RBF and the extent to which it is an efficient and effective financing mechanism for improving health outcomes and accountability from non-state providers. To this end, NU Health supported an RBF intervention group of 21 eligible Private-Not-For-Profit facilities (PNFPs) in the Acholi sub-region of Northern Uganda. A comparison group of 10 PNFPs in the neighbouring sub-region of Lango received comparable support through more conventional IBF. Capacity building was undertaken with both PNFPs, as providers, and District Health Teams, as regulators/ verifiers. Furthermore, intensive data management was undertaken by the programme with external assessment providing further independent verification.

The RBF and IBF groups of facilities had similar characteristics, aside from the financing modality, in order to ensure comparability. In both groups, the programme supported a credit line with the Ugandan Joint Medical Store to ensure that all participating facilities maintained access to a steady supply of EMHS.

The programme had five core components or inputs as outlined in the box on the next page.

THE THEORY OF CHANGE

behind the study design is summarised as follows:

5 Inputs

1 Credit Line
2 Financial Support
3 DHT Strengthening
4 Advocacy
5 Verification

4 Outputs

1 Quality of Care
2 Quantity of Care
3 Accountability
4 Systems

Outcome

Increased access to quality health care services by the poor in Northern Uganda

Impact

An increase in the economic, social and political opportunities for people affected by conflict in N. Uganda

NU HEALTH CORE INPUTS

1 Credit Line

Improve availability of EMHS (essential medicines and health supplies) through the provision of a funded credit line for for all participating PNFP facilities through the Joint Medical Stores

2 Financial Support

Support improvements in service delivery and quality at PNFP facilities through the implementation of a RBF model in the Acholi sub-region and for comparison an IBF model in Lango

3 DHT Strengthening

Strengthen the capacity of the DHTs (District Health Teams) to monitor and provide supportive supervision to PNFP facilities

4 Advocacy

Generate stakeholder engagement on the programme, the evidence it generates, and the concept of Results Based Financing at local and national levels

5 Verification

Ensure the verification role within the RBF scheme is effectively fulfilled by the DHTs with support from the NU Health team

5. Designing Performance Incentives

The overall objective of any RBF model is to improve the efficiency, cost effectiveness, transparency and impact of investment. For health, the aim in supply side RBF is to motivate individuals or teams to develop improved quality or quantity of services through more accountable management of resources and innovation. Creating incentives will stimulate improved performance within the health system, while accountability is ensured by making the 'payment for performance' link visible to stakeholders.

Improvements in the quality of care, as well as increases in the number of people able to access services, can lead to better health outcomes. The specific design of the incentives often target priority health outcomes such as reduced maternal and child deaths, or improved delivery outcomes. Understanding both the degree to which this can be achieved, and the 'real life' dynamics of incentivisation, are imperative for effective programme design.

There are many inter-related factors which contribute to health worker or health facility performance. The aim of the RBF incentive structure is to facilitate an improvement in those factors most likely to lead to improved performance.

KEY PERFORMANCE DRIVERS

Organizational Environment

- ✓ Clear organisational structure
- ✓ Clear and productive division of roles between facility governing bodies and operational leads (eg between facility owner and facility officer-in-charge)
- ✓ Appropriate supervision levels from District Health Teams
- ✓ Clear business plan, developed with, or at least clearly communicated to, staff
- ✓ Organisational culture for service delivery (ie the extent to which quality service provision is valued and appreciated)

Availability of Resources

- ✓ Appropriate infrastructure in place for designated services
- ✓ Role allocation reflective of staff skills
- ✓ Capacity for staff development
- ✓ Financial resources appropriate to planned service provision
- ✓ Sufficient, appropriate, timely and manageable drug and equipment levels

Staff Motivation

- ✓ Staff salaries paid, on time and reflective of level of effort
- ✓ Clear roles, responsibilities and personal performance expectations
- ✓ Recognition of results
- ✓ Communication (both within the facility, and across the broader health system)
- ✓ Positive comparison of personal and professional circumstances to peers in other roles, facilities etc
- ✓ Room for professional development/capacity building within role
- ✓ Balance of personal autonomy and supervisory support appropriate for role

A core variable across RBF designs is the **extent to which support is directed**, whether it is financial, skills based or in-kind. For example:

- Initial investments can be provided in addition to the RBF support to ensure participating facilities reach a certain minimum standard (of infrastructure, staffing numbers, staffing capacity, equipment or drug supply);
- Proportions of RBF funds can be allocated to specific broad areas. For example, 20% can be directed for use only for salary payments, 20% for provision of drugs and equipment, 10% on renovation and the remaining 50% at the facility managers' discretion;
- Whether the RBF incentive flows to the legal owner or the in-charge (in the case of PNFPs for instance), is likely to impact on the way in which decisions are made and which performance factors are addressed.

In addition to these direct influencing variables, the way in which health services are costed and prioritised can also affect the degree to which the incentive affects service provision. In cases where patient volume is the key factor in the payment calculation for instance, services and personnel which are linked to quick and relatively easy services (such as ANC checks, out-patient health checks or vaccination days) are relatively easily achieved than more complex or outcome level services (such as the provision of emergency obstetric care or appropriately monitored deliveries). It is therefore imperative that the overall RBF calculation is balanced and context appropriate, and contains proper controls to manage manipulation or inadvertent distortion of services priority.

There is an underlying assumption within RBF that if quality of care can be improved, not only will health outcomes improve, but there should also be a resulting shift in client expectations, increased demand for quality services, increased uptake of services and a self-reinforcing pressure on the facility to sustain the improvements over time. This is explored more in section five.

It is important to note that there is an inherent level of financial risk associated with any health financing approach, but that this is increased in RBF. The 'black box' approach assumes that if the right financial stimulus is provided, the facility will be in a position to convert these first to inputs (staff salaries, drugs, equipment, training etc) to create results and effectively drive change. The flexibility opens the potential for local actors to make more effective decisions around the needs of the facility and the community within its catchment area. The degree of 'vision' for the investment resides with the management of the facility. In the NU Health context, the experience and motivation of the key decision makers at facility level often determined the extent to which long- (vs short-) term investment decisions were made.

The applicability and relevance of this approach requires consideration at the start of any similar programme or health system review. However, there may also be a place for a transitional RBF model, which assumes that a greater level of facility-level autonomy will be achieved over time, with an initial investment in financial management and business planning. The assumption is that the need for intensive supervision, capacity strengthening and guidance diminishes as the system becomes accountable in delivering quality health outcomes.

The NU Health Experience

For NU Health, the key characteristics of the design which relate to the incentive model include:

i) Balanced support to facilities

ii) Support to the District Health Teams

iii) Incentive payment formulation

iv) A 'hands-off' approach to RBF management

i) Balanced support to facilities

NU Health was an implementation pilot which compared performance results achieved with a RBF approach to those achieved with an IBF approach. As such, it was necessary to establish certain levels of comparability across facilities to ensure that the effect observed related as much as possible to the difference between IBF and RBF, rather than to wider context variables. To ensure balanced support:

- Provision was made across the programme for initial targeted support to bring facilities up to a similar capacity level. This considered staffing norms, functionality of equipment and infrastructure, legal status and initial degree of MNCH services in line with the Health Sector Strategic and Investment Plan.

- Both IBF and RBF facilities received a dedicated credit line for drugs through the Joint Medical Stores. This was to ensure that regardless of the investment decision of the facilities, service provision would not be adversely affected by a lack of essential medicines.
- Business planning support was provided to all, and included a degree of district level supervisory follow up.

ii) Support to District Health Teams (DHTs)

With their vital role in verification and supportive supervision, both the systems and personnel of the DHTs required significant strengthening. NU Health's support to the DHTs was extensive but distinctly tailored, with an emphasis on strengthening analytics and data management as opposed to more general management and management systems. Support included the following:

- DHTs were provided with secondees to support their capacity to provide improved supervision, and to ensure the verification demands of the programme did not detract from existing DHT activities.
- Supervision support was provided through Data/ Quarterly Quality Assessments (DQA/QQA) and the resulting post review discussion with facility staff which was put in place for all facilities.
- Regular financial support was provided to all facilities – on a fixed basis for IBF facilities, and based on retrospective performance for RBF facilities.

iii) Incentive payment formulation

The design of NU Health included extensive stakeholder engagement in the identification of priority health services, agreement around unit cost for services/service improvements with service providers, and results verification.

The formula below was used to calculate the RBF incentive payment.

RBF INCENTIVE PAYMENT FORMULA

$$P = S\,(x + (yz))\,n$$

- **P** RBF Payment to a PNFP for the quarter
- **S** Standard Subsidy for a particular indicator
- **x** Base Incentive per level of care
- **y** Quality Incentive per level of care
- **z** Quality Multiplier determined by PNFP quality score
- **n** Patients seen by PNFP for that particular indicator

To ensure the quality of service verification could be completed objectively, a range of proxy indicators were agreed. This selection factored in a degree of strategic purchasing to achieve health outcomes relating mainly to MNCH, and included:

- **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 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;
- **Cross-cutting issues** – for example, privacy, hygiene, safety and record-keeping.

iv) A 'Hands-off' approach to RBF management

In order to isolate the main effect of the funding mechanism, a key characteristic of NU Health was a 'hands-off' approach with the RBF facilities use of funding. This aimed to ensure that facilities could have maximum independence in deciding how to use the finances allocated to them. In practice this meant that while facilities were supported to design an initial business plan, and were provided with essential medicines and quarterly supervision through DQA/QQA, NU Health teams neither influenced nor reviewed the investment decisions made by the RBF facilities. This was in contrast to the IBF facilities who budgeted their own business plans but were subject to rigorous procurement and financial reporting requirements.

The 'hands off' doctrine served the purpose of study design, but it also meant that facility investment decisions may have run counter to improving services. If another programme similar to NU Health were taken forward, one would expect that guidance would be provided to facilities on fund use, which we suspect they would appreciate. Another issue that arose was in cases where the legal owner and facility officer-in-charge were not working together effectively, there was a structural disconnect between the quality of services provided, and the amount of money which trickled down to the facility and staff. The governance of RBF models remains a key theme across nearly every area of programme learning. Finally, in hindsight a light review of how RBF facilities deployed financing might have generated interesting insights without compromising the study.

Designing Performance Incentives – Key Lessons:

The motivational benefits of performance based incentives are dynamic and varied. Incentives were seen to have the most positive results in facilities which had more transparent communications between management and clinical staff. Positive examples included staff provided with accommodation, meals or salary increments based on a team achievement to improve service delivery. However, where a staff incentive was anticipated but not provided, staff demotivation, and in some cases boycotts, were observed. The addition of non-financial incentives such as staff recognition awards or professional development opportunities, could help balance expectations. Some facility staff under NU Health noted a number of such non-financial changes which helped to improve their work experience and provide a greater sense of job satisfaction and job security. These included basic Human Resources (HR) improvements, such as receiving their appointment letters on time and being praised publically by the management team, as well as contextual improvements, such as having the equipment and resources they needed to provide quality services and being able to take lunch and tea breaks.

Facilities need time to adjust to an RBF model. Despite the fact that RBF facilities had the potential to earn more than IBF facilities, the predictability of the IBF funding coupled with the risk of losing unused funds, appears to have promoted greater long term infrastructure and equipment investment in the IBF group. A move to wider RBF programming should therefore anticipate a transition phase which would include support to the facility planning, beyond the initial annual business plan. As RBF funding is inherently less predictable than IBF, subsequent interventions should consider a balanced IBF-RBF model if capital expenditure is a priority for longer term facility development and sustained service improvements.

Facility level governance remains the lynch pin of effective service delivery. Both facilities and DHTs repeatedly suggested the need for governance directives associated with the RBF funds. Recommendations from stakeholders involved in the programme (DHT, facility staff etc) varied from the request for full financial verification exercises or audits, to a prescriptive allocation of a proportion of funds for HR, assets etc. The latter could be easier to achieve in a public sector RBF system in which core costs such as salaries, drugs, equipment and operational running were guaranteed in full, providing the facility instead with a smaller incentive purely to cover the innovative drive of core RBF. However, it should be noted that public sector facility governance tends to be weaker than the PNFPs, which raises questions about fiduciary risk management. Finally, in the interest of accountability and managing improvement, it is important that all relevant stakeholders, including putative beneficiaries, are included in verification debriefing and reporting.

6. Results verification

A fundamental aspect of RBF is the need for clear and efficient results verification. It provides the direct link between payment and the quality and/or quantity of service provision. It is also key to improving transparency, and to building teams' trust in RBF and promoting their ability to plan and communicate effectively.

NU Health has generated a range of insights into appropriate approaches to results verification. Key decision points during verification design include:

- **Quantitative vs qualitative results verification.** While a purely quantitative analysis can be a faster process and produce comparable results across a range of facilities, the qualitative elements tend to necessitate greater technical engagement. In reality a combined approach should to be used, as was the case for NU Health.

- **Pre vs post payment verification models.** All RBF models require a degree of pre-payment verification as this is the guarantee that services have been provided as reported (via the District Health Information System for instance). However, in some cases a follow up assessment is made which checks not only that the facility records confirm the service provision, but also that individual patients can confirm the same. For NU Health, this was provided through phone based client verification surveys. Other models include household or community surveys, although these tend to be more resource and time intensive, and so are less feasible when operationalised at scale.

- **Risk mitigation.** There are a number of techniques aimed at reducing the chance that either results could be falsified, or that facilities focus only on 'quick wins' from the incentive criteria, at the cost of broader service delivery. Key mitigation strategies employed by the NU Health programme included: maintaining segregation of responsibility between regulators and providers to prevent collusion; carefully monitoring patterns of change in service provision and periodically 'tweaking' the RBF incentives; and implementing financial penalties based on the discrepancy rate between reported and observed service provision.

NU Health's clear segregation of roles and responsibilities within the model aimed not only to provide clarity to the actors involved, but also to promote transparency and accountability across the board. In the case of NU Health, these roles were applicable across both IBF and RBF components and were delineated as in the diagram overleaf.

In the NU Health design the core agents were as below:

- **Funder** – UK government, who transferred funds to NU Health.

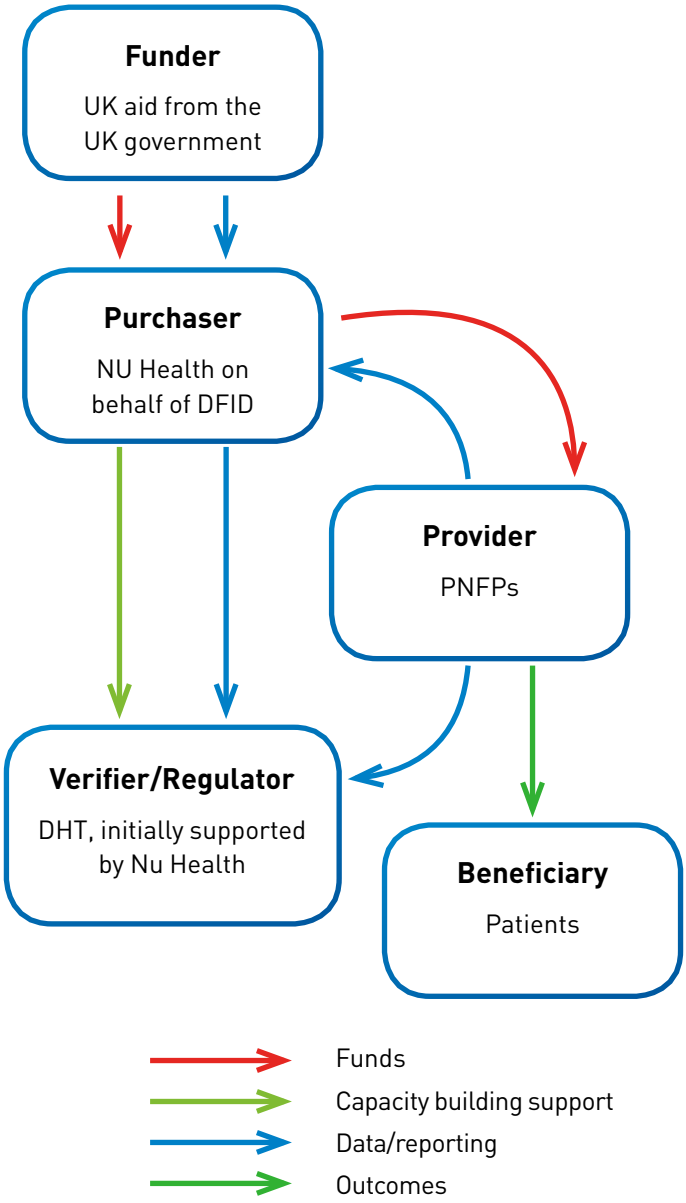
- **Purchaser** – NU Health on behalf of DFID. NU Health oversaw the transparency of the RBF system, and controlled the checks and balances. Operational oversight rested with the NU Health offices in Gulu and Lira, with additional oversight from the NU Health team based in Kampala.

- **Providers** – The PNFPs providing health services. They each had a contract with the purchaser which stipulated the remuneration/incentive payments.

- **Regulator/Verifier** – The DHT in each district, which had the primary responsibility of providing guidance and oversight to the PNFPs in implementation of RBF and general troubleshooting. They did this largely through feedback on the Health Management Information System reporting and planned supervisions.

It is worth reiterating that NU Health gave all the participating providers support in planning and reporting. It also provided secondees to all participating DHTs where key personnel, such as statisticians, were not

DIVISION OF FUNCTIONS WITHIN NU HEALTH



in post, and strengthened their capacity to fulfil their role in results verification and supportive supervision. The programme design aimed to see DHT secondees becoming absorbed within, and financed by, the DHT teams which was largely achieved. For maximum benefit, a mentoring role would be provided by either a peer DHT, a continuation of the donor programme, or the national MoH. Without sustained support, it is likely that some of the skills developed by the DHTs will diminish. However, the absorption of the secondees presents a highly positive sustainability factor, which should help maintain some of the verification and facility supervision practices developed over the course of the programme.

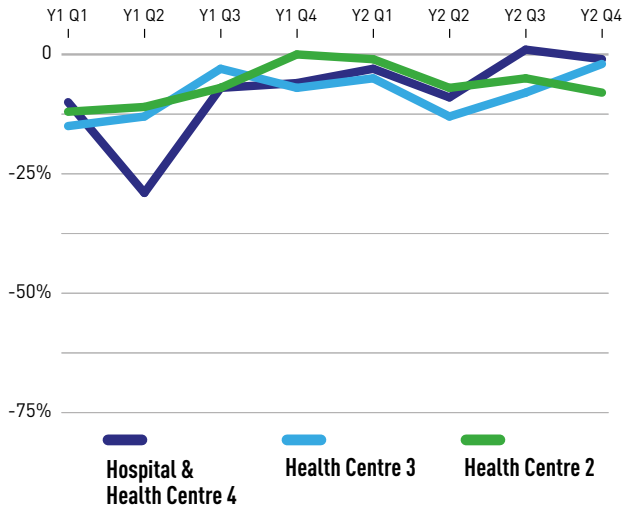
All facilities, whether in the RBF or IBF regions, received a quarterly verification visit from the DHT and NU Health. The teams carried out a Data Quality Assessment and a Quarterly Quality Assessment (DQA / QQA). They used a fully participatory approach, which included the facility teams, and culminated in a debriefing session with all staff to discuss the scoring and reasons for improvement or deterioration of services. The primary objective of the DQA was to triangulate data from the DHIS and multiple facility registers. The QQA had a broader focus on quality indicators and ultimately resulted in an overall quality score for the facility. While the DQA used a checklist and the physical facility records, the QQA also employed patient exit interviews, health worker interviews and clinical observations. These were expanded on an annual basis to provide the programme with a more in-depth Quality of Care audit which will be discussed in section seven.

The discrepancy rate, as referred to in the graphs on the following page, shows the degree to which reported results tallied with source data registers at the facility. These rates were found to be far lower in the RBF facilities than in the IBF facilities, indicating better performance in terms of reporting accuracy. This pattern was anticipated as the accuracy of the RBF reporting rate was directly related to the level of the financial incentive. However, in both groups an improvement in reporting accuracy was observed over time, suggesting that the DQA / QQA exercise could in itself have had an impact on the accuracy of reporting.

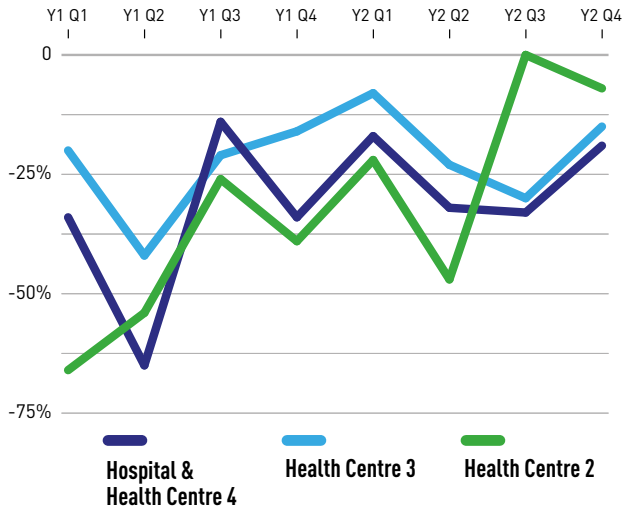
It should also be noted that in IBF facilities, a robust and rigorous financial verification process was carried out before payment was made. Any purchases which deviated from the agreed procurement process, had incomplete or questionable supporting documentation, or which were not included in the facility's business plan, were disallowed. Facilities reported considerable gains in their financial management capacity during the course of the programme as all financial verification was conducted as a one-to-one audit and mentoring session between the facilities' and NU Health's accountants.

Relative Discrepancy Rates Over Time (indicating standards of data management and reporting)

RBF Facilities



IBF Facilities



Source: NU Health Lessons Learned Report 2, March 2015, http://resources.healthpartners-int.co.uk/resource/nu-health-lessons-learned-report-ii-2015/

Y1 = Oct 2012 to Sept 2013; Y2 = Oct 2013 to Sept 2014

Results Verification – Key Lessons:

Reporting accuracy can be significantly improved if incentivised and monitored. As outlined above, the direct link between the discrepancy rate and the financial incentive in the RBF model led to rapid and sustained reporting improvements. It was encouraging to also see moderate improvements in the reporting accuracy in the IBF facilities, and the implication that the DQA / QQA exercise in itself was beneficial suggests that sustained DHT supervision of facilities could remain a cost effective way of improving reporting. This is supported by reports from DHTs who chose to use the DQA / QQA tool in other facilities as a means of structuring their supportive supervision.

Identifying drivers of reporting discrepancies can lead to improved service integration. Notable drivers of reporting inaccuracies often appeared to stem from a disconnect between the provision of different services in the facility. In some cases, outreach activities, such as immunization days, were included in some facility reports, but not in the HMIS reporting. This may be driven by mixed messaging across health actors on the appropriate reporting systems in place, particularly when non-government actors are supporting the facility and require bespoke reporting. Another example of service disconnect arises when facility departments are not well integrated. In some cases, patients may be registered for a malaria test for instance, but not reach the department to have the test. The laboratory register would therefore not corroborate the out-patient register, which would then be seen as a discrepancy. Health facility staff can be supported to address system weaknesses and can be encouraged to improve client management to ensure a more adequate and comprehensive service is provided.

Client verification (CV) exercises can provide a useful and low cost driver of improved accountability. Whether the exercise is completed as a phone based sampling or a house to house survey, CV can help provide greater confidence in the achievements reported by facilities. It can also help mitigate against the risk of manipulation, as health workers know the results are being checked, and it can provide some indication of client satisfaction. While the phone based approach offers a low cost option, the NU Health experience noted limitations which may change with increasing mobile phone penetration. Clients often did not provide the correct telephone number, had no network, or provided incomplete or inaccurate details. The ability or willingness of clients to engage in detailed discussion over the phone about their experiences was often limited to very broad terms (e.g. 'services were good') which provides limited diagnostic evidence for improving services. A small sample

of key informant interviews could have yielded a more elaborate response, but this approach would need to be considered carefully if the overall RBF intervention is to be delivered at scale. More effective perhaps were the patient exit interviews, which could be followed by a small sample of more in-depth discussions by phone, once the patient was away from the facility. However, relying on such an approach would risk missing phantom clients.

Verification must strike a balance between impact and cost. The NU Health programme was designed as a study which necessitated a more robust verification model than would be required for a direct implementation approach. Another option would be for the full DQA / QQA to be led by the facility officer-in-charge or owner as a pre verification exercise, with a random sample of the indicators cross referenced during the DHT visit, with penalties in place for DQA / QQA inaccuracies. Although this is contrary to the principle of separation of roles, it would reduce the time burden on the DHT, quickly identify facilities which required particular supervision, and empower those that were completing the exercise accurately. Another option is to select random indicators for verification rather than check every one, which would significantly reduce the time required to undertake the verification process.

7. Improved quality of care

The overarching goal of the NU Health programme was to increase access to quality health care services by the poor in Northern Uganda. This aligned with the Government of Uganda's commitment to deliver equitable health care in line with the Minimum Health Care Package and to continue to endorse the principle of 'health care as a right'[6].

With its focus on isolating the main effect of the RBF funding mechanism in improving health service delivery, NU Health offered the flexibility for facilities to deliver innovative solutions to the specific issues affecting their delivery of cost-effective quality of care improvements.

The range of areas that can lead to improved quality of care are vast and varied. An analysis of gaps and weaknesses should form the basis for any health policy reform and include particular attention to whether the following criteria are being fully met:

- Staff have the right skills, tools and direction to perform services
- Sufficient staff, drugs and equipment are available
- Effective supervision and feedback mechanisms are in place (at a facility and a district level)
- There is transparency in service provision, costs and timing of services
- Staff are clear on their roles and responsibilities, and performance management strategies are in place.

The NU Health Experience

Within the scope of the NU Health study, the goal was to determine the degree to which the financing model had an impact on the quality of care provided. Furthermore, it was noted which characteristics of the model facilitated improvements, and which acted as barriers; which quality indicators were particularly affected; and whether broader policy direction could be drawn from these findings.

As a proxy for quality of care, an expansive range of indicators was assessed on a quarterly basis, which included the following:

- Prevention of Mother-to-Child Transmission of HIV (PMTCT) package compliance with national guidelines
- Caesarean Section infection rate
- Availability of Basic Emergency Obstetric Care (EMoC) functions
- Proportion of Out Patient Department (OPD) consultations treated with antibiotics
- Patient satisfaction with OPD service and staff attitudes
- Availability of sufficient and well maintained latrines/ toilets for both staff and patients
- Availability of tracer medicines
- Degree of confidentiality in inpatient wards
- HMIS reports filled, updated and transmitted to the District Biostatistician on schedule
- Availability of data on the DHIS 2

At the end of year two, it was found that some health practices were lagging, and so the weighting of certain quality indicators was adapted to promote improvement in these practices. These related, for example, to early and regular ANC visits, insecticide-treated nets distribution, caesarean sections, measles vaccinations, and vitamin A supplementation. While it is important to avoid a constant fluctuation of expectations and objectives, an agreed level of responsive programming can be important to ensure that facilities continue to improve the quality of care, and to provide an avenue for facility growth and development. Systems and rationale to achieve this would need to be clearly communicated to avoid a demotivating effect when results have been achieved.

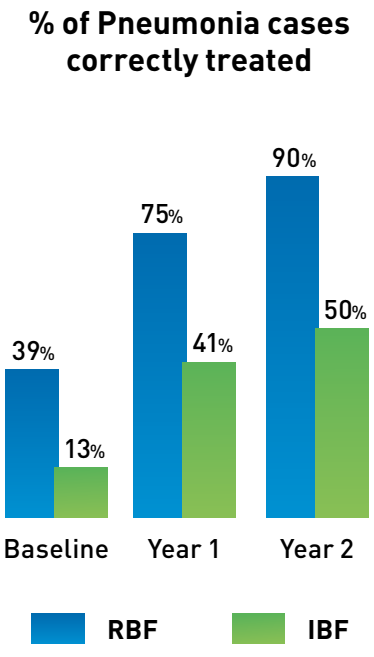
6. World Health Organisation (2008). 'Closing the Gap in a Generation. Health equity through action on the social determinants of health.' Commission on Social Determinants of Health. Final report.

Quality of Care – Key Lessons:

Quality scores were higher in the RBF facilities. QQA scores, which were incentivised under RBF, increased from 62% to 81% from 2013-2014 in the RBF region, and from 48% to 67% in the IBF region, with the highest increases occurring at Health Centre 3 level.

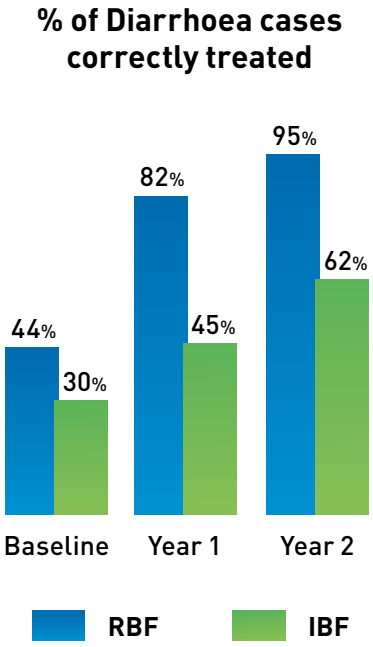
Diagnosis and treatment for many conditions were stronger under RBF[7]**.** While NU Health was not the only health intervention potentially influencing health outcomes in the two regions, a clinical audit showed that after two years of programme implementation and after adjusting for confounding factors, a child in the RBF region was three times more likely to be treated correctly for malaria than a child in the IBF region; almost seven times more likely to be treated correctly for pneumonia; and over eight times more likely to be treated correctly for diarrhoea. It should be noted, however, that there was also a time lag in the comparative improvement in RBF facilities, which would reiterate the fact that RBF can take a year or two to show results, but then show a marked advantage as compared to IBF.

In contrast, there were no statistically significant differences of improvement in quality of care for more complex procedures, such as the use of a partograph in either simple or complicated deliveries. The basis for this is not apparent, though may be related to considerations including the duration of the programme or the level of incentive. Additional insight may come with an independent assessment due to be undertaken by Liverpool School of Tropical Medicine.



Source: NU Health Lessons Learned Report 2, March 2015, http://resources.healthpartners-int.co.uk/resource/nu-health-lessons-learned-report-ii-2015/

Year 1 = oct 2012 to Sept 2013; Year 2 = Oct 2013



It was important to ensure the availability of essential medicines and appropriately skilled staff in both the IBF and RBF facilities, in order to better assess the impact of the different financing models. While these are already an integral part of the Ugandan Health Policy, it should be noted that the NU Health model relied on the provision of essential medicines as an additional layer of support across the study. If these were not available, the comparative advantage of either RBF or IBF would be difficult to assess, as overall service delivery would be expected to decline rapidly.

Staff retention remains a key barrier to maximising results. Despite the improvement in the number of appropriately skilled staff in place, the loss of staff was a repeated challenge across the programme. Existing staff often complained that the workload in the PNFPs was considerably higher than at public facilities, while salaries were lower – this was reflected in a transition of staff from private to public sector positions. As a result, gains in quality of care which had been achieved, were often lost. Harmonization of staffing packages and standards with the public sector could provide a degree of stability to mitigate this effect.

7. Multivariate analysis looked at the effect of age and sex of the child, and level of health facility: only the latter was a confounding factor. After adjusting for this effect, the odds of a child being correctly treated for malaria showed an increasing trend from baseline (Odds Ration [OR] 1.71; Confidence Interval [CI] 1.21-2.40) through to year one (OR 1.80; CI 1.33-2.44) and year two (OR 3.15; CI 2.13-4.65) in the RBF as compared to the IBF region. The odds of a child being correctly treated for pneumonia were higher in the RBF region when compared to IBF at baseline (OR 22.14 CI 7.75-63.24), year one (OR 4.16 CI 2.80-6.17) and year two (OR 6.63 CI 3.34-13.17). The odds of a child being correctly treated for diarrhoea were higher in the RBF compared to the IBF region at baseline (OR 2.41; CI 1.71-3.39), in the first year of implementation (OR 5.34 CI 3.84-7.42) and in the second year (OR 8.34 CI 4.95-14.08).These differences were statistically significant.

8. A sustainable approach

Results based financing has received increasing attention over recent years as part of the growing discourse on delivering sustainable and effective aid financing for health. However, the results of RBF approaches have varied quite considerably[8] as programmes falling under the 'RBF umbrella' present a broad spectrum of initiatives with markedly different scope, scale, and design options. Some have been effective, others have not. The table at the end of this section outlines some of the core insights from the NU Health programme which point to the threats and facilitators of a sustainable RBF approach being taken to scale.

Policy Implications: Design aspects to consider in RBF Programming

Given the range of RBF designs for health service delivery, and relatively recent implementation in low- to middle income countries, the availability of evidence on the impact of RBF is relatively poor. NU Health aims to contribute to the discourse, particularly in the context of an externally controlled, private sector based intervention.

While the evidence generated through NU Health does not support a particular design for taking RBF to scale, it does support inference related to key decisions about how to take RBF to scale, particularly in fragile or post-conflict settings.

In particular it highlights a number of operational challenges that need to be considered during design. The resources and systems responsiveness required to make an RBF programme, such as NU Health, effective are not insubstantial. In a fragile or weak health system which is unable to provide the same level of verification or ensure the same predictable and timely release of funds, there would likely be a need to work with a third party agent, or for the government to provide a lighter touch and guided verification process. Throughout the design, the level of acceptable financial risk needs to be balanced against the potential benefits of responsive and innovative implementation at facility level.

Key decision points for policy makers contemplating a move to an RBF approach include review of the following design issues:

Issue 1: ***The balance between RBF and IBF***

Insight/Recommendations: Provision of a reliable supply of essential medical supplies was associated with increased provision of services in both the IBF and RBF facilities.
Careful consideration is needed to define which aspects of core financing are provided on an input basis versus those which are linked to results and incentivised performance.

Issue 2: ***The balance between supply and demand side RBF***

Insight/Recommendations: NU Health focused on generating evidence about how provider payment influenced service provision. However, there is also growing evidence on how the inclusion of demand side RBF, such as emergency health transport vouchers, can further increase service use by overcoming financial barriers and incentivising patient/guardian behaviour.

8. Grittner (2013); 'Results-based Financing: Evidence from performance-based financing in the health sector' - German Development Institute

Issue 3: ***The means and resources for maintaining effective results verification at scale***

Insight/Recommendations: NU Health entailed particularly intense results verification processes. However, in any RBF programme verification does need a larger investment of resources than what is often allocated to routine health service oversight. DHTs in this context need capacity strengthening as well as an allocated budget to undertake facility verification and supportive supervision.

Issue 4: ***The resources available to ensure minimum capacity and systems***

Insight/Recommendations: While RBF may allow for more responsive health investment at the facility, it requires a degree of start-up investment. Returns are notably improved when staff have a minimum capacity in routine business planning and financial management practices. All this requires a systematic capability to guide and ensure responsive support to the facilities.

Issue 5: ***The level of autonomy over fund use with RBF***

Insight/Recommendations: Although NU Health had a 'hands off' policy on how facilities used RBF financing, one would expect some guidance on fund use with RBF introduction at scale. Maintaining a level of autonomy over fund use is critical to RBF.

Issue 6: ***The reliability of medical supplies and financial flows***

Insight/Recommendations: Stakeholders were clear that with NU Health, the reliability of medical supplies and financial flows was important in building confidence—among providers as well as consumers. Finding ways to ensure this reliability with programmes in the public sector and at scale will likely require significant strengthening of institutions, systems and individuals.

Issue 7: ***Ensuring the requisite financial management***

Insight/Recommendations: Beyond the NU Health 'hands-off' approach to RBF, it is imperative that stronger public financial management is in place both to manage risk and ensure accountability.

RBF SUSTAINABILITY FACTORS

	NU Health Standard	Sustainability threat	Sustainability facilitator
Scalability	The NU Health programme operated in two regions and 10 districts working with PNFPs. The programme was designed to examine the comparative impact of an RBF and an IBF approach.	Conflicting time pressures were reported by DHTs, from their own departments and other external health programmes, despite having additional staff.	The DHTs reported that they would often use the tools and processes from NU Health to support their supervision of public facilities.
Harmonization	The programme promoted the use of Ministry of Health guidelines, standards and tools. All results verification is linked to the HMIS and standard MoH registers.	By focusing on PNFPs, NU Health's RBF approach was not offered at public facilities. As such the DHTs were carrying out a support function only for a discrete set of the facilities under their remit.	Within NU Health all the tools fitted within the core Ugandan health system, and thus the programme reinforced national practices and reporting standards.
Incentive design	The incentive model balanced the quality and quantity of key service indicators. The incentive was financial but linked to guaranteed components of essential medicine supply and HR support.	The disconnect between the known value of the financial incentive 'earned' by the facility, and the financial benefits felt by the facility staff, led to boycotts in some facilities.	The quality of care, reporting rates and client satisfaction improved overall. Demand may reflect this change in service quality, and support the investment needed to maintain the improvements.
Verification	NU Health supported DHTs to develop the systems and skills needed for verification, which entails interpretation of both financial and clinical results.	Shortages of key personnel, competing claims on limited time and budgetary constraints were challenges in all the districts.	There is growing experience of more efficient verification systems, for example, assessing results for a period based on a sub-set of indicators or limiting verification to 'results' per se.
Capacity	The focus on quality of care and inclusion of all staff in the results verification process, provided ongoing supportive capacity development.	Staff retention was a concern throughout as staff salaries were lower in the PNFPs than at public facilities, and the workload was higher.	Feedback from the facility staff indicated that non-financial incentives had a positive impact on staff members' willingness to stay in post.
Resourcing	While public facilities offer free healthcare, PNFPs charge fees. These were left in place during the programme. This constituted a change in design from the initial assumption that the services would be free to increase access.	As facilities continued to charge in addition to receiving drugs, their revenue is expected to fall at the programme end. If this leads to weaker service delivery, patients will have to find other facilities, accept poorer services, or be charged more to compensate.	**Some key mitigation factors included:** Investment in equipment and services. Some facilities saved a proportion of funding for later use. Business planning was used as a tool for attracting investors.

9. Conclusion

This report and an accompanying technical annex aim to contribute to the growing body of evidence related to RBF, the determinants of its effectiveness, and how stakeholders – both providers and putative beneficiaries – have come to receive it. In addition, an independent impact evaluation articulates the detailed effects on service delivery and, certain health outcomes, and an associated qualitative review examines the impact of different financing methods on incentives and behaviour of facility managers.

The drivers of success at facility level revolved around clarity of roles and responsibilities, the predictability of support, and the reliability of service delivery, from both the financing and verification partners. Facilities required support in planning and data management, as well as regularity in both provision of medical supplies and financing in order to demonstrate to communities that quality services would be available. DHTs required support in both clinical and financial assessment, as well as the means to provide regular verification.

Facility-level governance Management was a major driver in increased quality of service delivery, with the dynamics of decision making between the facility owner and the staff often impacting significantly on the effectiveness of the investment. While this could not directly be attributed to the size of the facility, higher level facilities tended to have stronger governance boards and clearer distinctions between governance and management. In lower level facilities this distinction, and its resultant control function, was often compromised. Higher level PNFPs often had a broader funding base or more established income generation mechanisms, which provided additional scope to invest in service improvements.

Data management and reporting improved significantly in the RBF facilities relative to the IBF facilities, during the life of the programme. The emphasis on data and monitoring, which effectively incentivised better reporting, benefitted both the facility and district. Moreover, through improved data quality, it also demonstrated significant potential for improved Health Management Information System integrity and better decision-making for resource allocation.

Quality of care for many conditions improved more in the RBF facilities compared to the IBF facilities. Quality scores were higher in absolute terms in the RBF facilities. Clinical audits demonstrated significant improvement in quality of care for major childhood killers such as malaria, diarrhoea and pneumonia requiring relatively straightforward clinical management. Those requiring more complex management saw less improvement.

The reliable availability of essential medicines in both RBF and IBF facilities was associated with increased care and service utilisation overall, but with a more pronounced increase in the RBF facilities.

NU Health has generated evidence on the main effects of RBF in terms of improved quality of care and better reporting relative to IBF, contributing to the discourse on how to improve efficiency, effectiveness and accountability in health, particularly when working with non-state providers. NU Health also shed light on the range of systems strengthening needs in settings marked by post-conflict fragility, poorly-regulated health markets, and underdeveloped sectoral governance and systems.

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Acronym List

ANC – Antenatal Care

CV – Client Verification

DFID – Department for International Development

DHIS – District Health Information System

DHT – District Health Team

DQA – Data Quarterly Assessment

EMHS – Essential Medicines and Health Supplies

EMoC – Emergency Obstetric Care

HC – Health Centre

HMIS – Health Management Information System

IBF – Input Based Financing

JMS – Joint Medical Store

MNCH – Maternal Newborn and Child Health

NU Health – Northern Uganda Health programme

OPD – Outpatient Department

PMTCT – Prevention of Mother-to-Child transmission

PNFP – Private not-for-profit

QQA – Quarterly Quality Assessment

RBF – Results Based Financing

STI – Sexually transmitted infection

UN – United Nations

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