Integrating an approach to assess UHC access barriers into district health systems strengthening in Uganda, Ghana and Rwanda

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Maternal, Newborn and Child Health
Working Paper
UNICEF Health Section, Program Division

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Keywords: universal health coverage, district health systems strengthening, child health, maternal health, qualitative, mixed-methods, Uganda, Ghana, Rwanda, bottleneck analysis, Tanahashi

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Foreword: UNICEF UHC working paper series

Persisting health inequities are not only wrong in principle but also in practice as they continue to retard progress towards achieving health goals. Understanding the pathways by which the poor and most vulnerable continue to be left out is essential if we are to move equitably and in a rights-based approach towards universal health coverage (UHC).

In this research project, conducted by UNICEF and funded by the Rockefeller Foundation, the team has investigated how existing knowledge on equity can be captured, synthesised and operationalised as a central component of achieving UHC through an equity lens. This information will be of interest to policymakers in low- and middle-income countries, as well as researchers and stakeholders from civil society and international organisations. The outcomes of this research emphasise the need for an approach that systematically captures, analyses and acts upon equity-relevant information.

We hope this series stimulates debate on how to operationalise equity as a component of district health systems strengthening and serves as a call for increased collaboration to guide evidence-based strategies at sub-national levels. This set of research studies provides information on practical approaches to addressing inequities in health service utilisation. We believe that this will be an important and unique addition to discussions on how to operationalise the Sustainable Development Goals now being designed, as well as how to complete the unfinished agenda needed to achieve the Millennium Development Goals in the short-term. UNICEF hopes that this research will generate widespread discussion within countries and amongst global stakeholders on how to achieve more inclusive and equitable paths to universal health coverage.

Dr Mickey Chopra

Chief of Health and Associate Director of Programmes
UNICEF, New York
September 2014

Foreword: UHC mission reports

In this specific project, conducted by UNICEF and funded by the Rockefeller Foundation, we have investigated how existing knowledge on equity can be captured, synthesised and operationalised as a central component of achieving equitable UHC.

A primary aim is to embed this approach into national efforts to improve performance and equity of decentralised health systems, as a component of district health systems strengthening (DHSS). District health teams often work in decentralised systems and require a strong evidence base to guide delivery of appropriate, effective, cost-efficient interventions. Evidence, in a form useable to sub-national managers, is therefore needed to demonstrate the relationship between financial and non-financial barriers to service utilisation and their link to disparities across vulnerable sub-population groups. This is critical to achieve a pro-equity path to UHC and to enable district health teams to better allocate resources and use innovative means to overcome inequities.

The research builds on a phased methodology. Structured literature reviews on qualitative and quantitative approaches to non-financial access barriers for maternal and child health services in Ghana, Rwanda, Bangladesh and Vietnam were conducted, followed by a quantitative analysis of household survey data to identify determinants of the non-uptake of health services. Findings were synthesised to inform the design of a mixed-methods approach, which was then reviewed with government officials and researchers in Uganda, Ghana and Rwanda as part of the feasibility study described in this working paper.

The feasibility study explores how a mixed-methods approach could be used by local stakeholders to diagnose potential barriers to service uptake, with the aim of catalysing research to identify their root causes and design and implement evidence-based interventions. In an enabling country environment, local innovations demonstrate potential to remove barriers in the 'last mile' preventing the achievement of equitable UHC. Collaboration between stakeholders can support the development and implementation of evidence-based strategies to actively increase access to and utilisation of quality services. Examples of innovative solutions from Ghana will be the focus of another working paper in this series.

Table of Contents

Tables and Figures

Uganda

Ghana

Abbreviations

ANC	Antenatal Care
BMGF	Bill and Melinda Gates Foundation
CBHI	Community-based Health Insurance
CHPS	Community-based Health Planning and Services
CHW	Community Health Worker
DHIMS	District Health Information Management Systems (Ghana)
DHO	District Health Officer
DHS	Demographic and Health Surveys
DHSS	District Health Systems Strengthening
DHT	District Health Team
DMHIS	District Mutual Health Insurance Scheme (Ghana)
DPT3	Diphtheria, Pertussis and Tetanus (3 doses)
FGD	Focus Group Discussion
GFATM	Global Fund for AIDS, Tuberculosis and Malaria
GHS	Ghana Health Service
HC	Health Centre (e.g. HC-II, HC-III, HC-IV in Uganda)
HMIS	Health Management and Information Systems
MICS	Multiple Indicator Cluster Surveys
MNCH	Maternal, Newborn and Child Health
PBF	Performance-based Financing
SBA	Skilled Birth Attendance
UHC	Universal Health Coverage
VHT	Village Health Team (Uganda)
WHO	World Health Organization
UNICEF	United Nations Children's Fund

Introduction

Background

In recent years, there have been renewed global and national commitments to universal health coverage (UHC) to ensure that all people obtain the health services they need without suffering financial hardship [WHO 2010]. In 2012, the United Nations General Assembly adopted a resolution that urged governments to move towards providing all people with access to affordable, quality health services. The resolution further emphasised the need to reduce inequities in health outcomes as a necessary step of the UHC approach [United Nations 2012].

As countries work toward clarifying the concept of UHC and develop UHC interim goals [O'Connell et al. 2014], there is an urgent need to strengthen pro-equity approaches to delivering essential health services to populations [Reidpath et al. 2009; Waage et al. 2010]. Yet there is often limited evidence to guide the delivery of appropriate, high-impact and cost-effective interventions to underserved populations at the point of service delivery in districts and sub-districts. Furthermore, there is a generally weak understanding about the types of barriers to service utilisation for various at-risk populations, how health staff and communities may efficiently identify such barriers and then develop contextually appropriate solutions to remove them. Such evidence is critical in order to improve equitable access to essential maternal, newborn and child health (MNCH) services at the point of service delivery, which in turn will place the country on a pro-equity path toward achieving UHC goals in line with global and national commitments.

Aim

The overall aim of this project is to develop, pilot and evaluate an innovative analytical framework, robust enough to be used in a wide range of contexts, which integrates the use of qualitative and quantitative methods to identify and address the main causes of health system bottlenecks and barriers to MNCH service utilisation through the use of a few selected tracer interventions, and to monitor progress towards their resolution.

This paper reports on feasibility studies in three countries (Uganda, Ghana and Rwanda) to assess the potential for introducing this approach into routine performance monitoring of health service delivery at the district and sub-district levels. Note that each country used different methods to assess feasibility as described in respective report sections.

The common objectives of the feasibility studies are to:

- Explore the potential of using the proposed mixed-methods approach to assess barriers to equitable access to essential MNCH services at sub-national level in three countries
- If there is potential, to assess the technical and institutional capacity to implement this approach and its suitability for integration within routine district performance monitoring, notably DHSS activities
- If there is potential, to pilot test components of the approach to understand whether it generates actionable evidence helpful for decision-makers in order to identify, prioritise and then solve barriers to health service utilisation in districts

- Provide recommendations on the feasibility of integrating this approach into routine district performance monitoring in the three countries, as well as how to adapt the generic mixed-methods approach to the country or other contexts

Conceptual framework

In line with these objectives, UNICEF is interested in developing a feasible and contextually appropriate approach to assessing MNCH service utilisation barriers and enabling factors at sub-national levels, using a mix of qualitative and quantitative research methods. Indeed, to date, most analyses of barriers to health services uptake rely on quantitative analyses of datasets, such as the Demographic and Health Surveys (DHS) or Multiple Indicator Cluster Surveys (MICS), while qualitative methods are less frequently employed in such research. Qualitative methods, in particular, are critical to gain insights into barriers to health service use as perceived by key stakeholders and their proposed solutions to remove them.

The overall project, therefore, aims to develop a mixed-methods approach that is suitable for incorporation into routine and ongoing district health system strengthening (DHSS) activities. This core methodology takes inspiration from a framework proposed by Frenz and Vega (2010) for analysing health systems, and further employs a Tanahashi approach that integrates an assessment of social determinants of health [Tanahashi 1978]. Taken together, their analyses highlight the need to reorient health system strengthening activities to capture equity and quality of access dimensions.

Such a mixed-methods approach could potentially generate actionable evidence to identify both financial and non-financial barriers to utilisation of essential MNCH services for systematically underserved populations, help prioritise barriers in terms of their relative importance to service uptake, and then develop locally appropriate solutions to remove them. Moreover, as part of DHSS strategies, this method could be a powerful diagnostic to support district health management teams in assessing, monitoring and implementing equity-focused health service delivery for the most vulnerable children and families in order to achieve UHC and accelerate progress towards the MDGs.

The first step of a district performance assessment is to review the Health Management and Information Systems (HMIS) data continually generated by health facilities and aggregated to the sub-district and then district levels in most countries. The three countries in this study all use the same platform (DHIS2) to manage and regularly review HMIS data. These data include information on health facility visits for antenatal care, births, neonatal care, and immunisations among many other variables. Progress against key beneficial indicators is a significant component of district health officers' annual performance review, and indicators such as antenatal care visits, skilled birth attendance, neonatal and maternal mortality rates, and immunisation rates are typically well understood at the district level.

The next step of a district performance assessment in two of the countries evaluated here (Uganda and Ghana) starts with an analysis of health system bottlenecks at the district level that prevent universal coverage of lifesaving interventions. Though both countries are in the process of expanding the bottleneck analysis (BNA) nationwide, they are committed to its full adoption. The BNA is a systematic assessment of capacity of the health system to achieve effective coverage, as described in detail in another report in this series [O'Connell et al. 2013]. The analysis entails identifying the major 'systems bottlenecks' in the supply of and demand for high-

impact maternal, child and neonatal health (MNCH) and nutrition interventions [O'Connell and Sharkey 2013]. In addition, by using disaggregated data, patterns in bottlenecks can be compared for various at-risk populations. Experience from several countries shows that for many interventions, there are often large variances in bottleneck patterns across sub-national at-risk groups with household income (lower two wealth quintiles), location (rural) and geographic area (varies by country) often associated with consistently lower service provision and utilisation [Chopra et al. 2012].

District managers then carry out an analysis to identify root problems and develop contextually appropriate solutions to access barriers. Currently, the causal analysis is often limited to an assessment of service-provision issues (supply, demand and quality), although more recently it has increasingly included the assessment of financial barriers to access that lead to low service demand. UNICEF is also interested in assessing weaknesses in management skills and competencies that can contribute to bottlenecks and inefficient use of resources, such as poor supervisory practices, inadequate staff training, or insufficient knowledge of how to use data to monitor and improve performance.

Moreover, evidence from numerous sources [Thiede and Koltermann 2013a; Bedford et al. 2013], including a UNICEF study of national health insurance in Africa and Asia [UNICEF 2012], suggest that non-financial barriers to access are a significant constraint to achieving universal health coverage for essential MNCH services. Such issues include lack of citizenship, ethnicity, gender, political affiliation, and other socio-cultural factors. For example, lack of citizenship creates barriers for immigrants or refugees, while lack of birth registration can create life-long barriers to accessing needed services. These inequities are often driven by underlying issues of discrimination or systematic under-investment in rural or remote areas that disproportionately affect marginalized groups.

Below, we discuss how a comprehensive assessment of both financial and non-financial barriers to access is feasible if a mixed-methods approach, utilising both qualitative and quantitative diagnostics, is employed to help identify, analyse and then solve barriers to uptake of essential health services at district and sub-district levels. We shall show how mixed-methods approaches can more fully deconstruct barriers, and catalyse innovative approaches to overcome them. From a program perspective, it is also important to understand the relative importance of various bottlenecks preventing service uptake in order to help prioritise actions. Yet few studies have incorporated a method to rank barriers according to their perceived impact on service delivery. Such information would help managers and policymakers make decisions about prioritisation of interventions to address identified bottlenecks. Importantly, this approach needs to be designed with the specific intention of generating relevant and actionable data for district health managers, and to be suitable for integration into ongoing DHSS activities as part of routine monitoring of service provision at sub-national levels.

Scope

This paper is part of a multi-phased project that seeks to synthesise existing knowledge on how to operationalise equity-driven approaches to service delivery at the district level, and then to develop a practical method for district health teams to identify and address these barriers with locally appropriate solutions. The first part of the project focused on systematic literature reviews to synthesis findings on barriers to access and utilisation of MNCH services in select countries using both quantitative and qualitative [Thiede and Koltermann 2013a; Bedford et al. 2013]. These literature reviews were complemented by a separate quantitative analysis of

national survey data (DHS and MICS) to identify determinants of non-uptake of health services in the focal countries [Thiede and Koltermann 2013b].

The current paper reports on initial activities in three countries to determine the feasibility of integrating this mixed-methods approach for integration into routine district performance monitoring of MNCH service delivery.

Importantly, the feasibility studies use key stakeholder interviews and pilot data collection to explore the potential of using this mixed-methods approach as part of routine DHSS activities. Given the differing needs and contexts, different methods were used within each of the three countries to gauge feasibility and to sensitise key stakeholders to the proposed initiative.

Country selection and approach

The feasibility studies were conducted in Uganda, Ghana and Rwanda. They were selected for a number of reasons. First, UNICEF and its partners have identified each as a priority country [UNICEF 2013], and technical assistance is currently being provided to improve district-level health systems strengthening activities. Second, these countries were part of an earlier analysis to understand financial barriers to essential MNCH services utilisation in the context of examining the potential of national health insurance schemes to resolve financial barriers to access [UNICEF 2012]. The current study extends the work of this earlier project to understand the feasibility of integrating an approach to identify barriers to accessing health services into routine district performance monitoring in order to capture an equity dimension into district level planning and resource allocation.

In Ghana and Rwanda, both national and district stakeholders were interviewed for their views and feedback on the feasibility of a mixed-methods approach, to understand the technical and institutional capacity for its implementation, and to gauge perceptions about barriers to utilisation of essential MNCH services. In Uganda there was a unique opportunity to pilot test the qualitative component of a mixed-methods approach through a simple questionnaire, to examine if data collected through a simple questionnaire was sufficiently distinct from that typically collected through assessments of administrative data, and if it could yield useful and actionable information for making DHSS more equity-focused.

Taken together, evidence from the three countries provides an initial understanding about the feasibility of integrating a mixed-methods approach into routine district performance monitoring activities in these contexts. It provides preliminary findings about the utility of a mixed-methods diagnostic and how to potentially adapt it for future use.

'Tracer' interventions

At each level of service, there are several packages of interventions that can typically face similar health system constraints (bottlenecks) that hinder the ability to attain high levels of effective (quality) coverage. Each package of interventions is assigned a 'tracer' intervention. Each 'tracer' intervention functions as a proxy for analysing health system bottlenecks common to all the interventions in the package that the tracer represents [Carrera et al. 2012; Chopra et al. 2012; WHO 2001].

'Tracer' interventions initially proposed to evaluate their feasibility in the three countries were immunisation services, skilled birth attendance and antenatal care. For immunisation services, childhood vaccination is widely recognized as a key intervention to reduce child death and disability. The World Health Organization has defined full immunisation coverage as a child receiving the following vaccines during their first year of life: BCG, 3 doses of DPT, 3 doses of polio and 1 dose of measles vaccine. While many low-income countries, including Uganda, Ghana and Rwanda have made substantial progress to increase the proportion of fully immunized children, there are still inequities in vaccine uptake across regions and sub-national population groups in Uganda and Ghana. In Rwanda, reported immunisation rates across all districts were in excess of 90% in 2013 according to latest WHO/UNICEF estimates, and the other two tracers (SBA and antenatal care) were therefore a greater priority for Rwanda in assessing the feasibility of the approach.

For maternal health services, antenatal care and skill birth attendance are critical ways to improve maternal and neonatal health outcomes in low-income countries. The World Health Organization recommends that pregnant women visit a skilled attendant for antenatal care at least four times during normal pregnancies. These visits aim to enable health workers to monitor pregnancies and potential risks to the mother or newborn, including anaemia, malaria and other preventable or treatable infections. Similarly, childbirth should be facility-based or attended by skilled health personnel (doctors, nurses, midwives[1]) to reduce death and disability from complications. Facility-based deliveries also provide an important opportunity to assess and care for the newborn and ensure a healthy start to life. Previous studies have found that socio-cultural issues may disproportionately impact the use of maternal health services, and there is a need for qualitative approaches to better explore these potential barriers [Kyomuhendo et al. 2003; Ndyomugyenyi et al. 1998].

The following sections summarise work carried out in three countries (Uganda, Ghana, and Rwanda) to assess the feasibility of various approaches to identifying non-financial access barriers.

[1] Note: The role of traditional birth attendants remains controversial, given issues of a lack of consistency of their training and that part of the definition of skilled birth 'attendance' requires that the birth be provided in an adequately equipped facility that can manage complications arising from pregnancy. See http://www.who.int/bulletin/volumes/86/4/08-052928/en/

Uganda

Introduction

Uganda is a low-income country with an estimated population of 35 million in mid-2013 with nearly 9 in 10 (88%) people living in rural areas [Republic of Uganda, Bureau of Statistics 2013]. Like many other sub-Saharan African countries, Uganda has experienced substantial declines in child mortality since the mid-1990s, yet the child mortality rate remained at 90 deaths per 1,000 live births in 2011 (the year for which latest survey estimates were available) [Republic of Uganda, Bureau of Statistics 2013]. Moreover, a large proportion of these deaths occurred in the neonatal period (the first 28 days of life), which underscores the need for improved care for mothers and their children during this critical time.

Uganda has a number of challenges to health service utilisation that are typical of other low-income countries. Financial barriers, such as lack of health insurance, transportation costs and informal user fees, reduce access to essential health services despite the formal abolition of user fees for public health care in the country in 2001. These financial barriers have been well described in published research [Pariyo et al. 2009; Basaze et al. 2013] as well as in a previous UNICEF study that focused on the potential of social health insurance schemes to increase health service utilisation in Uganda [UNICEF 2011]. There are also non-financial barriers to health service utilisation, such as health worker attitudes, discrimination, poor understanding of service benefits (e.g. immunisation's impact on child health and mortality), and other socio-cultural beliefs that may influence care-seeking behaviours. These non-financial barriers to health service utilisation have previously been examined in the context of other countries through systematic literature reviews of both quantitative and qualitative research. Taken together, these financial and non-financial barriers to accessing essential MNCH services pose substantial challenges to achieving UHC targets in Uganda [Brearley et al 2013].

The Ugandan health system structure is described in detail elsewhere [Republic of Uganda, Ministry of Health 2010]. Briefly, Uganda has a six-tier health system, comprising health centres of different levels: health centres II, III, and IV, general hospitals and both regional and national referral hospitals. In addition, there are Village Health Teams (VHTs) consisting of four community health workers (CHWs). Each VHT is considered a health centre I level in terms of its functional role in delivering primary health care interventions.

'Tracer' interventions

The 'tracer' interventions included in the pilot data collection efforts in Uganda were immunisation services, antenatal care and skilled birth attendance. The following section provides a brief description of these services, how they are typically delivered in the Uganda context, and barriers to their use based on published evidence to date.

Immunisation services. In Uganda, there have been recorded improvements in the performance of immunisation services since the early 2000s, including a 95 per cent decline in reported measles cases between 2003 and 2009 [Republic of Uganda, Ministry of Health 2010]. Despite this improvement, immunisation uptake remains low and routine programs still face a number of challenges to achieving full immunisation coverage for every child. The Demographic and Health Survey in 2011 showed that only 51% of one-year-old children were fully immunized nationally with great sub-national variation across regions and income groups.

Antenatal care. Maternal mortality has declined substantially from a rate of 600 deaths per 100,000 live births in 1990 to 310 in 2010, although current levels remain elevated [Countdown 2013c]. The Demographic and Health Survey conducted in 2011 found that while nearly all women attended antenatal care with a skilled provider at least once during their last pregnancy, only 31% had antenatal care the recommended four or more times. Moreover, there was no clear understanding by district or national health managers about reasons for high default rates for antenatal care services after the first visit, or how these barriers may be mitigated to improve service utilisation.

Skilled birth attendance. As described above, Uganda has relatively high rates of maternal mortality, and efforts to improve maternal health outcomes must focus on ensuring the use of skilled personnel during childbirth (e.g. doctor, nurse or trained midwife). To this end, there has been a recorded increase in skilled birth attendance over the past decade. Yet despite this progress, only 59% of births were delivered by doctors/nurses/midwives in 2011.

Aim

The methods used in the feasibility study in Uganda were quite different to those used in Ghana and Rwanda (described below). The aim of the feasibility study in Uganda was to pilot and evaluate a qualitative component of the mixed-methods approach in select districts and health facilities. There was a unique opportunity to add questions into a concurrent study that interviewed district health teams and health facility superintendents. The feasibility study there provided insights on one possible approach to gathering qualitative information at the local level and assess whether such data could generate actionable information to identify, prioritize and solve barriers to MNCH service utilization in select districts. The findings from this initial study helped to inform the assessments in Ghana and Rwanda which focused on broader issues of feasibility.

Specific objectives

- To pilot test the qualitative component of the generic mixed-methods approach in select districts and health facilities to generate preliminary data to assess the utility of the questionnaire itself
- To assess the qualitative component's utility in gaining insights into local barriers, their perceived importance among respondents and proposed solutions to remove them
- To make recommendations on how the qualitative diagnostic approach can be improved, scaled up or adapted for other contexts, as well as its feasibility of integrating it into routine DHSS activities in Uganda

Methods

Participants and recruitment

Respondents were purposively selected to participate in the feasibility study. Medical superintendents of health facilities in 18 districts (two districts from each of the country's ten regions) were identified for interviews. In order to understand barriers to service provision, districts selected were disproportionately among the 'worse' performing districts in each region in terms of immunisation coverage.

Health facilities were selected with assistance from district health teams using convenience sampling techniques to include an HC-II and HC-IV facility that provided services for the three 'tracer' interventions in each district. If no HC-II facility in the district provided delivery care, it was replaced by a HC-III facility in that same district (Table 1). Prior to their involvement, all participants were given detailed information about the study's objectives and methods, and it was emphasised that all responses would be treated confidentially.

Table 1: Number and type of health facilities included in study

Facility type	Number included in study
HC-IV	16
HC-III	7
HC-II	13
Total	**36**

Main themes

A semi-structured interview guide was developed based on preliminary findings from the literature reviews and initial research carried out under the first stage of the larger project. In-depth individual interviews were conducted with health facility supervisors and explored a) perceptions of the key barriers faced by family caregivers to service utilisation for select 'tracer' interventions b) the relative importance of identified barriers, and c) proposed solutions to remove them.

The interviewer used an iterative process to encourage respondents to rank their responses from the most critical barrier preventing access to immunisation, ANC and SBA services, to the least critical barrier. For example, the respondent was asked about the most important barriers that prevented mothers from having their children fully immunized and then probed to understand health worker perceptions of this barrier to clarify the root cause. Follow-up questions were asked about how this barrier could be removed. Respondents were then asked if that barrier was removed, 'would there be any remaining barriers that could prevent a mother from accessing immunisation services for the child'? If they answered yes, the same iterative process of clarification, including asking for a solution, was employed until a maximum of three barriers were identified. Limiting responses to three barriers is consistent with the priority-setting approach employed in Uganda's DHSS efforts, which seeks to encourage managers to prioritise efforts to progressively solve the most important issues first.

Data collection

Prior to the fieldwork, the team developed a semi-structured interview guide for use in this feasibility study (Annex A). Questions were reviewed and refined after pilot testing in two initial facilities. The direction and content of each interview were determined by the interviewee, and focused on the issues they self-prioritised. A total of 36 interviews were conducted with medical superintendents in select health facilities. Two Ugandan non-clinician health economist researchers conducted interviews in English in a quiet space or office within the health facility. One researcher conducted the interview while the other observed and took field notes. The interviewers had received training on the questionnaires and methodological approach during a 1-day session that emphasised the study objectives, interview guide structure and main types of information sought. All interviews were audio recorded and complemented with field notes. Data collection was conducted during February 2014.

Data analysis

Data were first captured in the hard copies of the questionnaires/interview guides. Handwritten notes were taken to record the responses to qualitative questions in the ranked order, and then the information was typed into individual electronic documents for each health facility. Data were then entered into an electronic spreadsheet, maintaining the ranked order of responses. This was used to generate tables and graphs summarising key findings. Each investigator used thematic analysis to identify dominant ideas and phenomena and the analyses were discussed between the two researchers to resolve any discrepancies.

The material was organised for each 'tracer' intervention around three key questions:
1) What are the main perceived barriers to service utilisation in their facilities and districts?
2) What is the relative importance of these different barriers to service utilisation?
3) What are some proposed solutions to address these barriers?

Ethical considerations

Ethical clearance was obtained from the Uganda National Council of Science and Technology in Uganda as part of Gates funded immunisation study [Guthrie et al forthcoming]. In addition, the Ministry of Health granted specific permission to the research team to access records from sampled districts and health facilities. An official letter from the Ministry of Health was given to the research team, which was presented to all study participants prior to data collection. This letter described the purpose of the study and that the findings would be used to assist the ministry and its development partners to develop a rapid assessment approach. All respondents agreed to be interviewed and to provide any relevant facility records. The study employed thorough, transparent and inclusive participatory techniques at all stages.

Results

This section presents results from the qualitative interviews, and is divided into three main sections according to each of the 'tracer' interventions (immunisation services, antenatal care and skilled birth attendance). For each tracer intervention, perceived barriers, their relative importance and proposed solutions are presented.

Immunisation services

Table 2 lists all key barriers perceived by respondents as hindering access to immunisation services in their communities. Most respondents perceived the following barriers to be important: community members' ignorance about the benefits of immunisation; long distances between the community and facility; and prioritisation of other economic activities over immunisation of children, particularly agriculture work (e.g. planting and harvesting).

Other perceived barriers included long wait times at facilities for immunisation services; misconceptions about immunisation in the community (e.g. vaccines cause infections in children); lack of information about availability and schedule of immunisation delivery from poor community mobilisation; lack of male involvement in supporting mothers to take their children for immunisation; frequent stock outs of supplies, such as gas or vaccines; fathers stopping their wives from taking children to immunisation services; irregular scheduling of outreach activities; lack of funds for transport to facilities; lack of food incentives for mothers who bring their

children for vaccination; home deliveries and traditional birth attendants that prevent mothers from bringing their children for immunisation, particularly for polio or BCG, which are given at birth.

The respondents were asked to rank their perceived barriers in terms of having the most disruptive impact on service utilisation. Using this approach, long distance between the community and facility was ranked as the top priority (by 16 of 36 respondents). Other highly ranked barriers included ignorance about the benefits of immunisation and prioritisation of economic activities. For each of the identified barriers, possible solutions were then obtained from each of the respondents. Table 3 summarises proposed solutions for the top three listed barriers.

Table 2: Perceived barriers to immunisation service utilisation

Perceived barriers to immunisation service utilisation, ranked	Responses
Ignorance about the benefits of immunisation	26
Long distance between the community and the facility	25
Prioritisation of other economic activities over immunisation especially agriculture	17
Long waiting queues at the facility due to the shortage of human resources	9
There are misconceptions about Immunisation in the community (e.g. it is treated as a taboo and people in the community think that vaccines cause infections in their children)	6
Lack of information about the availability (and schedule of delivery) of immunisation services at this facility due to poor community mobilisation	6
Lack of male involvement in supporting mothers to take children for immunisation	5
Frequent stock outs of supplies like gas and vaccines at the facility	4
Irregular scheduling of both static and outreach immunisation activities	4
Fathers in the community stop their wives from taking their children for immunisation	2
Lack of funds for transport by the mothers	1
Lack of food incentives for mothers who bring their children for immunisation	1
Home deliveries and use of traditional birth attendants prevent mothers from bringing their children for immunisation (particularly for polio and BCG vaccines that are given at birth)	1
Total	**107**

Table 3: Proposed solutions to remove barriers to immunisation service utilisation

Barriers	Proposed solutions
Ignorance about the benefits of immunisation by the communities	Health education and community sensitisation should be carried out to educate mothers about the benefits of immunisation
	Provide incentives to support families to take their children for immunisation (e.g. food and transport refunds)
Long distance between the community and the facility	Outreaches should be extended to the distant areas where mothers are unable to come to the facility
Prioritisation of other economic activities over immunisation	Health education and community sensitisation should be carried out to educate mothers about the benefits of immunisation

Antenatal care

For antenatal care attendance, perceived barriers identified by respondents were divided into two categories: (1) barriers that prevented pregnant women from attending the first ANC visit; and (2) barriers that prevented pregnant women from attending the recommended four ANC visits (the minimum number the Uganda MoH considers acceptable to ensure safe ANC). Ugandan MoH officials noted that barriers to initial ANC use and barriers to completing all four recommended ANC visits tend to differ, and this is reflected in recent literature. Barriers to the first ANC visit reflect issues concerning the perceived acceptability or value of ANC overall, which can involve factors such as trust in traditional birth attendants, family influence to not attend ANC, and concerns over cost and distance [Simkhada et al 2010; Goland, et al. 2012]. Barriers to completing the four ANC visits are less a function of service acceptability and more often due to opportunity and other costs as well as perceived quality of initial ANC visits [Finlayson and Downe 2013]. Health facility staff in the initial 2 pilot districts commented that it would be more informative and better suited for guiding planning if the questionnaire assessed these barriers separately. Then, the information could be synthesized as needed and used to develop comprehensive solutions to improve overall ANC utilization rates.

First antenatal care visit. Out of seven main categories of barriers, the most commonly perceived ones that prevented attendance at the first antenatal care visit included: ignorance by some mothers about the importance of antenatal care; the fact that some women prefer to keep their pregnancy private in the early stages; lack of male spouse support and involvement; preference to come for later visits because some women found it too tiresome to undertake the multiple trips required for complete antenatal care; lack of information about the availability of the services; preference among members within the communities to use higher level facilities; and poor transport for communities in remote areas (Table 4).

Table 4: Perceived barriers to attending the first antenatal care visit

Perceived barriers to attending the first antenatal care visit. ranked	Frequency of barriers identified
Ignorance by some mothers about the importance of ANC	5
Some women do not come for the first ANC visit because they feel that it is too early for their pregnancy to be known	3
Lack of male spouse's support and involvement	2
Some women find it tiresome due to the several trips required for ANC	2
Lack of information about the availability of these services	1
Poor transport for communities in remote areas	1
Long distance between the community and the facility	1
Total	15

Attending four or more antenatal care visits. The most prominent perceived barriers to attending antenatal care four or more times as recommended included: lack of male involvement in supporting their spouses when pregnant; and long distances between the communities and facilities. Other notable suggestions were ignorance among the communities about the benefits of antenatal care, as well as long wait times at the facilities and preference for utilising higher-level facilities (Table 5).

The identified barriers were further prioritised according to relative importance as a hindrance to service utilisation. Top barriers based on this rank order included lack of male spousal support and involvement, along with long distances between communities and facilities. Another top-ranked barrier included long wait times at facilities for antenatal care services. The proposed solutions to these barriers are reported in Table 6.

The proposed solutions are listed in Table 6. To address the first two major barriers to utilising antenatal care services, lack of male spousal support and distance, suggested solutions included sensitization and health education. In terms of lack of male involvement/support as a perceived barrier, respondents suggested a need for health education targeting the spouses of pregnant women as a solution. To address the barrier of long distances, it was suggested that antenatal care outreach activities be developed and a voucher scheme introduced to cover transportation costs for the pregnant woman.

Table 5: Perceived barriers to attending four or more antenatal care visits

Perceived barriers to attending four or more antenatal care visits, ranked	Number of responses
Lack of male spouse's support and involvement	8
Long distance between the community and the facility	8
Ignorance by some mothers about the importance ANC	4
The queues/long waiting periods experienced by mothers coming to the facility for ANC services	4
Some women prefer to seek ANC services at higher levels of care like HC IVs and the hospital because of the extra services that are currently not provided at this health facility e.g. PMTCT and deliveries	4
Lack of information about the availability of these services	4
Some women do not like the medication given during ANC visits like anti-malarial drugs and TT vaccine	2
Poor attitude of the health workers	2
Cultural issues in some communities where women believe that if they attend ANC visits, their labour time will be much longer	1
Lack of food incentives at the health facility level (HC II)	1
Women who have had more than 5 children are discouraged to attend ANC for their new pregnancies because they expect questions on why they did not take family planning seriously	1
Poor transport for communities in remote areas	1
Lack of funds for transport by the mothers	1
Communities still have strong belief in traditional birth attendants and perform their deliveries at home	1
Ignorance/lack of knowledge about the benefits of ANC	1
Misconceptions by some women in the communities about ANC services	1
Some women do not come to the facilities because they fear that they are going to tested for HIV/AIDS	1
Prioritisation of other economic activities (especially agriculture) and tend to ignore their health needs	1
Total	**46**

Table 6: Proposed solutions to remove barriers to attending four or more antenatal care visits

Barrier	Proposed solution
Lack of male spouse's support and involvement	Men should be sensitised about the importance of ANC visits and their roles in ensuring their spouses receive ANC
Long distance between the community and the facility	The facility should be given funds to carry out home-based care visits and provide ANC to women too poor to come to the facility or unable to access the facility; Carry out ANC outreaches to reach mothers in far off communities (integrate these activities with immunisation outreach)
Queues/long waiting periods mothers experience when they come to the facility for ANC services	Capacity building through training to equip the other staff with ANC service and by hiring more staff to reduce the long waiting periods; The facility should offer ANC services more frequently so that it reduces long queues on the few days ANC is done now

Skilled birth attendance

Respondents from facilities that offered these services provided the following responses in terms of perceived barriers. The most commonly cited barrier was that women preferred to use the services of traditional birth attendants compared to skilled care by doctors, nurses or midwives. Other commonly perceived issues included poor attitudes of some health workers who are rude and harsh to patients seeking delivery care at the facility; long distance from the community to the facility; and lack of male spouse support and involvement with the pregnant woman (Table 7).

Table 7: Perceived barriers to using skilled birth attendance

Perceived barriers to using skilled birth attendance, ranked	Number of responses
Some women prefer to use traditional birth attendants over skilled delivery care	13
Poor attitudes of some health workers who are rude and harsh to patients seeking facility services	9
Long distance to the facility	8
Lack of male spouse's support and involvement	6
Lack of funds for transportation to the health facilities	4
Inadequate supplies at the facility such as delivery gloves and disinfectants	4
Ignorance of some women who don't know the importance of giving birth at the health facility	4
Inadequate means of transport within the district to transport the mothers to the facility	2
Cultural issues in some communities where women believe that if they get the services of a skilled birth attendant, their labour time will be much longer than if they opt for home deliveries	1
Poor women fear coming to the health facility because they usually lack basic supplies needed for deliveries, such as padding and beddings	1
Pregnant women think that if no problems are found during ANC visits then they do not need to deliver at facilities	1
Women who have had deliveries before (multigravidas) do not feel there is a need for a facility delivery	1
Long hours of waiting because the maternity ward is too small to accommodate all the mothers at once	1
State of the health facility (lack mattresses, small maternity ward, no privacy, no bathroom)	1
Total	**56**

Respondents were asked to rank these barriers in terms of relative importance to hindering service utilisation. Top barriers mentioned included preference for using traditional birth attendants compared to doctors, nurses or midwives, as well as long distance between the facility and community and poor attitudes of health workers who are perceived to be rude and harsh to patients seeking delivery care at facilities (Table 8).

Table 8: Prioritisation among identified barriers to using skilled birth attendance

Prioritisation among barriers as most important to using skilled birth attendance	Number of responses that ranked each barrier as most important
Some women prefer to use traditional birth attendants over skilled delivery care	5
Long distance to the facility	4
Poor attitudes of some health workers who are rude and harsh to patients seeking facility delivery	3
Ignorance of some women who don't know the importance of giving birth at the facility	3
Lack of funds for transportation to the facility	1
Inadequate supplies at the facility (e.g. delivery gloves and disinfectants)	1
Poor women fear coming to the facility because they usually lack basic supplied needed for deliveries, such as padding and beddings	1
Total	**18**

Respondents were also asked to propose solutions for identified barriers. Solutions proposed for the most commonly cited barrier (preference for traditional birth attendants) included sensitising mothers within the community about the importance of skilled birth attendant services and the dangers of using traditional birth attendants with emphasis on their lack of skills. Moreover, it was suggested that punitive measures against TBAs, such as laws banning their work, could also be considered, in addition to positive incentives such as registering TBAs so as to monitor, train, regulate and work with them to promote early referrals for complications. TBAs could also help health workers identify pregnant women within the community for referral to antenatal care and delivery services.

To address the problem of long distances, some respondents proposed solutions including providing emergency transport services at the facilities and ensuring that these health facilities are fully functional. This could be done through the provision of ambulances or motorbikes with funds for fuel to enable facilities to transport mothers from remote communities to the facility for delivery. Another suggestion was to put in place a linkage between the community and facility, such as through the Village Health Team, to communicate to facilities when a mother requires attention or needs to be picked up by an ambulance for delivery.

Discussion

This paper reports on the findings from key informant interviews with medical superintendents in 36 health facilities located in 18 districts in Uganda. Respondents were not only asked to identify key barriers to service utilisation, but to also prioritise them in terms of impact on service uptake and then propose solutions to remove them.

Barriers identified by respondents included those related to service availability (e.g. available supplies, such as vaccines, gloves and human resources); acceptability of services (e.g. preference for TBAs for delivery care due to perceived rudeness of facility staff); and affordability (e.g. transport costs or prioritisation of economic activities over antenatal care visits).

The results echo findings from similar studies conducted in Uganda and elsewhere. One dominant barrier common to all these 'tracer' interventions was distance from communities to facilities. This issue was also noted in a recent Ministry of Health report that indicated geographical access as a major barrier to health care service utilisation [Republic of Uganda, Ministry of Health 2012-13], despite a notable improvement in the average distance to facilities according to the Demographic and Health Survey in 2011 and Service Provision Assessment in 2008. A 2008 Service Provision Assessment (a national health facility survey of health system readiness to provide quality services) showed that 72% of the population lives within 5 km of a facility in Uganda. Pariyo et al. (2009) further found that while distance had been reduced as a barrier to access in rural areas overall, there was no significant reduction among the poorest populations. This may have been the reason why facility distance is still considered a major barrier to service utilisation by respondents in this study, given that many districts purposively included were considered to have poor immunisation performance.

Another phenomenon related to distance that has been reported is that mothers do not always use their closest facilities due to perceived lower quality services [Parkhurst and Ssengooba 2009]. Lower quality services are plausibly due to problems such as lack of supplies or long wait times, which were key barriers to service utilisation identified by respondents in this study.

Respondents also identified socio-cultural issues as important barriers to service use, particularly in terms of preference for TBA-assisted deliveries or misperceptions about vaccines and similar barriers have been identified in other studies [Kyomuhendo 2003; Ndyomugyeni et al. 1998]. Similarly, issues about lack of knowledge and misunderstandings about the benefits of antenatal care or immunisation services, plus the prioritisation of other activities, have all been documented by other studies [Tugumisirize et al. 2002].

Feasibility to incorporate into DHSS activities

The ultimate aim of this project is to develop a light, readily adaptable methodology that can be applied to most contexts with a reasonable level of support by UNICEF through its existing DHSS efforts. To this end, it is important to evaluate if the process and associated methods can lead to actionable information on barriers preventing essential MNCH service utilisation at the lowest administrative level, and help set plans and budgets for improved front-line service provision.

Based on discussions with stakeholders and in-country experts, there are several recommendations to improve the questionnaire and further adapt it for use in district health system strengthening exercises. First, the interviews focused on gaining the insights of health facility staff that provide MNCH services. These need to be complemented by community dialogues about the barriers to essential MNCH service utilisation as perceived by caregivers and other community members. Barriers identified by health facility staff and the community may conceivably be quite different. For example, studies in Uganda indicate that communities and clients perceive the presence of informal fees as a major access barrier [Nabyonga et al 2011]. Health facility staff interviewed in this study did not raise the issue of informal fees.

Second, the DHSS project, supported by UNICEF and BMGF, includes a quantitative component that reviews and analyses national (e.g. DHS and MICS) and sub-national (e.g. health facility records) data sources to identify health systems bottlenecks and to document patterns in service utilisation, including any population groups consistently underutilising services. This is coupled with a community dialogue component (qualitative data) to supplement the traditional bottleneck analysis using administrative and survey quantitative data. The qualitative component provides insights into the reasons or barriers for underutilisation, prioritisation of barriers according to perceived relative impact on service utilisation, and proposed solutions to remove them. Evidence generated from community dialogues, supplemented by a version of the questionnaire used in this study, could then be used by district health teams to inform decision-making about how to allocate limited resources to address different barriers to service use. Indeed, in Ugandan settings, efforts are ongoing to use data from the questionnaires and community dialogues to complete community scorecards on district performance to be shared with parliamentarians and the general public. This community empowerment approach could help ensure that solutions developed are locally appropriate and would help engage local communities in their implementation to further ensure that initiatives are successful.

Finally, the data should be easy to collect and interpret by both program managers and those involved in advocacy so that barriers identified can be acted upon in an appropriate and timely manner

Conclusion

An important added value of this work is that the approach does not only identify perceived barriers hindering access to health services, but also asks respondents to prioritise them and propose solutions to remove identified issues. Indeed, the approach used in this feasibility investigation was able to provide evidence (supported by previous research findings) of barriers to essential MNCH services as perceived by medical superintendents in local health facilities. Moreover, health workers were able to propose solutions to the barriers they perceived to be most important, which would provide the district health team with locally appropriate solutions to consider. When combined with data generated by community dialogues, which would include a version of the questionnaire used in Uganda, findings would provide a strong foundation for developing interventions based on input from local communities. Clearly, taking the necessary steps to identify and solve the most important barriers to MNCH service utilisation can only be done with full engagement and input from the service providers and users themselves.

Ghana

Introduction

Ghana is a low-income country with an estimated population of 25 million in mid-2012, and about half the population lives in rural areas [Countdown 2013a]. According to latest estimates, the country has experienced a significant reduction in child mortality between 1990 and 2012 – declining from 121 to 78 deaths per 1000 live births. Similarly maternal mortality has also declined from a rate of 580 per 100,000 live births in 1990 to 350 in 2012 [Countdown 2013a].

These improved maternal and child health outcomes follow major improvements in coverage with essential MNCH services. According to the 2012 Multiple Indicator Cluster Survey (MICS), skilled birth attendance (proportion of births attended by doctors, nurses or midwives) rose from 40% in 1988 to 68% in 2011. Similarly the proportion of pregnant women that attended antenatal care the recommended four or more times was 87% in 2012, which is significantly higher than the regional average for West and Central Africa. Moreover, approximately 90% one-year-olds received measles vaccine in 2012.

Despite these impressive achievements, national figures can hide significant geographic or socio-economic disparities in coverage. For example, the MICS showed that in 2012 skilled delivery coverage was as high as 90% in the Greater Accra region compared to only 37% in the Northern Region. Similarly 98% of women in the highest wealth quintile used skilled delivery care compared to 39% in the lowest quintile. For antenatal care, nearly all (99%) women in the highest wealth quintile visited antenatal care at least four times compared to 74% in the lowest wealth quintile.

The underutilisation of essential MNCH services by at-risk or marginalized populations may be due to financial and non-financial barriers that impede access, and are not often well understood. In terms of financial barriers, the Government of Ghana initiated the National Health Insurance Scheme (NHIS) in 2003, which was significantly expanded in 2009 to include 145 district mutual health insurance schemes (DMHIS) that enrolled over half of the population [Jehu-Appiah et al. 2011]. This national health insurance scheme is a strong mechanism to reduce financial barriers to accessing health services. However, studies indicate that poor and marginalized families have lower enrolment in the scheme, and so financial barriers for at-risk groups may still exist [Jehu-Appiah et al. 2011].

There are also a number of non-financial barriers that could impede access to essential health services among marginalized groups. These include health worker attitudes, socio-cultural beliefs, discrimination, and poor understanding of the health benefits of these services, among others. There is a growing body of evidence from Ghana on non-financial barriers, and the use of qualitative research methods are well suited to gain insights into these constraints

Aim

The purpose of this study was to explore the feasibility of incorporating a mixed-methods approach into DHSS activities in Ghana in order to capture equity dimensions to health service utilisation. The aim was to identify and then catalyse tangible and effective actions to resolve access barriers based on their relative significance.

Specific objectives

The specific objectives were to:

- Assess the potential and interest of key stakeholders for integrating a mixed-methods approach to assess equitable access to MNCH services at sub-national levels in Ghana
- If there is potential, assess the technical and institutional feasibility of integrating the appropriate mixed-methods approach into routine DHSS activities
- Develop an initial framework for a mixed-methods approach to inform policy at the district level and make recommendations about further operational research needed (both specific to the Ghana context and for adapting the approach to other contexts or countries)

Methods

An initial scoping study conducted in January 2014 established the list of potential interviewees and introduced the feasibility study to key collaborators at Ghana Health Services and the Ministry of Health. Through a series of unstructured conversations with government staff, faculty at the University of Ghana School of Public Health and UN agency personnel, key financial and non-financial barriers were highlighted and a research plan was laid out for the subsequent feasibility study. This scoping mission was important for sensitising government officials and partners to the research aims, and was instrumental in securing appointments with important stakeholders during the follow-up mission. Building on the scoping work, the feasibility study was conducted over a five-day period in February 2014 by an interdisciplinary study team consisting of a medical anthropologist (JB) a health economist (MT) and a public health researcher (CD)[2]. The project's principal investigator from UNICEF (TOC) joined this team on the final day of interviews. The feasibility study was conducted in four locations in Ghana: Accra; Shai Osudoku District (Greater Accra); Kassena-Nankana District (Upper East Region); and Tamale (Northern Region).

Participants and recruitment

Respondents were purposively selected to participate in the feasibility study. A number of national-level stakeholders had been identified and initial contact was made during the scoping study. Other respondents were contacted in advance by the study team (via email and telephone) and a number were identified and introduced to the team during the feasibility study (using both snowballing and convenience sampling techniques). Participants included district health teams, healthcare professionals (at regional, district and community levels), researchers and academics. Before their involvement, all participants were given detailed information about the study's objectives and methods, and it was emphasised that all responses would be treated confidentially.

Data collection

Prior to fieldwork, the team developed an interview framework to guide the discussions (Annex B). Interviews were informal and semi-structured. Questions were reviewed and refined during fieldwork in response to themes arising during the course of interviews conducted. The direction and content of each interview was

[2] Juliet Bedford (JB), Michael Thiede (MT), Chris Dickey (CD), Thomas O'Connell (TOC)

determined by the interviewee and focused on the issues they self-prioritised, although all components of the interview guide were covered to ensure thematic comparison. The same framework and approach was used as the basis for the focus group discussions (FGDs). All interviews and FGDs were conducted in English in the presence of the stakeholders and study team only, and lasted between one and three hours.

A total of 40 stakeholders participated in the feasibility study, presenting a dynamic range of perspectives and ideas. Twelve in-depth individual interviews and five FGDs were conducted during the four-day period. Interviews were held with representatives of the Ministry of Health (one participant); Ghana Health Service (GHS) (two participants); the University of Ghana (three participants); the Directors of Navrongo and Dodowa Health Research Centre (two participants); Research officers at Navrongo Health Research Centre (two participants); one district health manager and one district hospital medical superintendent. FGDs were undertaken with representatives from the Shai Osudoku District Health Office (three participants); Navrongo Health Research Centre (four participants); Navrongo District Health Office (three participants); and CHPS (three participants). The final focus group discussion was held as a breakaway session during the Northern Region's annual performance review in Tamale. This included 10 participants from multiple districts.

On the final day of the in-country work, the study team facilitated a roundtable workshop in Accra with 10 participants, including a representative from the UNICEF Country Office. Five of the participants had been interviewed earlier in the week. The workshop was a valuable opportunity to present and validate preliminary findings, to generate discussion and to elicit further feedback on the proposed mixed-methods approach.

Data analysis

Preliminary analyses of interview data were carried out in-country. The team took detailed notes during each data collection session and these were transcribed at the conclusion of the fieldwork visit. Thematic analysis was used to identify dominant ideas and phenomena by each investigator individually and these were cross-referenced within the study team. Themes and emerging ideas were discussed and any contradictions or discrepancies resolved. The material was organised according to the study's objectives and four key questions:

1) Is there potential for using a mixed-methods approach to assess barriers to equitable access for the three 'tracer' interventions at the sub-national level in Ghana?
2) If so, what was the technical and institutional capacity to implement such a mixed-methods approach?
3) In practice, what might this mixed-methods approach look like?
4) Would the proposed mixed-methods approach function in Ghana, and if so, how?

The interviews conducted therefore generated the following types of information: an overview of barriers (and the interrelationship of barriers) to accessing equitable skilled birth attendance and immunisation; an overview of the existing quantitative and qualitative data collection systems and variables used; and an understanding of the potential and feasibility of a mixed-methods approach in Ghana.

Ethical considerations

Prior to their involvement, all participants were given detailed information about the study's objectives and methods, their questions were answered as fully as possible by the study team, and verbal consent for participation was provided. Because of the informal nature of the feasibility study, no official ethical clearance was required, however, following good practice the study was undertaken in line with prevailing ethical guidelines to protect the welfare and confidentiality of participants. No biomedical intervention was conducted and there were no unusual health risks involved in any part of the study. The study employed thorough, transparent and inclusive participatory techniques at all stages.

Results

There seemed to be strong technical and institutional capacity to integrate a mixed-methods approach into routine DHSS activities. It was further suggested by a number of respondents that their resource-constrained operational environments would benefit from mixed-methods approaches to help prioritise different barriers that influence service utilisation and then identify solutions that would be most relevant, equitable, effective and efficient in the local context.

Importantly, a number of district-level initiatives were identified that already used both qualitative and quantitative methods to improve health service delivery, and these are highlighted in a companion working paper [UNICEF 2014]. It was further noted that local research and interventions are routinely presented at annual regional meetings as part of the GHS annual performance review process. However, there is no systematic methodology used by districts for identifying potential access barriers; designing and implementing strategies to address them; and evaluating the impact of strategies on service utilisation. This would potentially be an added value of the mixed-methods approach in the Ghana context, but sustained and adequate financing is needed to support this effort and integrate it into routine performance monitoring.

Technical and institutional capacity

There appeared to be a strong enabling environment at sub-national levels for mixed-methods approaches to improve health service delivery. There was already strong capacity to develop and implement innovative solutions to improve health service delivery in some districts and sub-districts [UNICEF 2014]

There also seemed to be good working relationships between various stakeholders (Ministry of Health, GHS, Research Centres and health facility staff) and thus great potential for collaboration. This was particularly apparent in Shai Osudoku District where the District Health Team and Dodowa Research Centre were mutually supportive and coordinated operational research and service delivery *("Our data comes from the facilities, the research centre's data comes from the communities, so we work together").*

It was also noted that the level of education among health professionals at both the national and district levels was high. Some stakeholders raised the issue of staff turnover as a constraint, but the level and rate of turnover was not fully discussed during the interviews. There appeared to be a positive flow of staff from Navrongo Research Centre to positions of leadership at the GHS and the School of Public Health (University of Ghana).

'Tracer' interventions

Among the three 'tracer' interventions, skilled birth attendance was an area prioritised by national, regional and district stakeholders. Immunisation levels and uptake of antenatal care services were relatively high and there was no evidence that innovative interventions were targeting these services at district levels. Therefore, though questions were asked about immunisation and ANC visits, the information captured focused on barriers to utilisation of SBAs.

Skilled delivery: District health teams had identified a high proportion of women attending antenatal and postnatal care services who did not have facility-based deliveries. This gap in service utilisation was an issue that many districts would like to better understand in order to improve access to skilled delivery care, particularly in poor or remote areas. Small-scale investigations with community members using interviews, FGDs and observations had been used to reveal a multitude of contributing factors. These factors are described elsewhere [UNICEF 2014].

Stakeholders reported a number of perceived barriers or constraints to utilisation of skilled birth attendance, as summarised in Table 9. These included both financial and non-financial barriers, despite the abolition of user fees for public health services since 2003. Financial barriers were not generally identified as the most important factors preventing women from accessing health facilities for childbirth. Still, financial issues remained including the indirect costs of using facilities (e.g. transportation, food/water, soap) and costs associated with the loss of economic activity during clinic attendance. In 2008 the government instituted a program to waive all fees associated with the costs of childbirth at facilities, which may help reduce financial barriers. Moreover, the NHIS covers about half of the population and reasons provided for the slow uptake of this insurance included its relative expense that it did not cover enough essential services, and it was difficult to join given the complexity of administrative processes.

Table 9: Perceived barriers to using skilled birth attendance in Ghana

Financial	- Lack of money to fund transport - Services are free but some are asked to provide additional materials (gloves, sanitary pads etc.)	
Accessibility	- Distance from home to clinic - Lack of available transport - Inability to ride bicycle when in labour - Dislike of travelling in donkey cart and fear of delivering in the cart in route - Poor quality roads, challenging terrain, particularly during the raining season - Women have to come to the hospital alone and with no family members, often because of the poor communication and lack of phone network	
Socio-cultural	- Perception that it was a sign of strength for a woman to deliver at home - Perception that a 'normal' delivery occurs at home - Influence of relatives, neighbors and TBAs advocating home births - Issues of security and trust, particularly regarding the baby's paternity - Preference for using herbs for quick home delivery - Advice from the soothsayer on care seeking (regarding ancestors) - Perception that a late due date is due to spiritual interference	
Knowledge / information	- Due date is not known, so women do not prepare for labour - Husbands/decision-makers (e.g. mothers-in-law) do not permit attendance	
Health facility deterrents	**Environment**	- Clinic environment not comfortable or conducive for childbirth - Intimidated by the medical machinery or procedures (e.g. catheter, C-section) - Lack of hot water to bathe after delivery (only cold water) - Long waiting times - Health facilities are closed at night/weekends
	Position	- Position of delivery, preference for squatting over lying on delivery couch
	Privacy and support	- Sense of 'being alone', lacking support as family not admitted to labour room - Crowding and lack of privacy
	Attitude of health staff	- Complaints about negative attitude of nurses and poor attention to patients - Nurses may be frustrated by labouring woman in pain - Physical and verbal abuse of patients by health staff - Perception that quality of care is sub-standard and that nurses are incompetent and lazy - Patients felt embarrassed if they did not have the NIH card

In terms of non-financial barriers to skilled birth attendance, there were a number of related issues that may contribute to underutilisation of services. First, geographic barriers were deemed to be important since communities were often far from facilities and had poor road networks and few transportation options. Motorbikes were the main form of transport, but were highly uncomfortable for women in labour. Donkey carts were another form of emergency transportation, but there was reported stigma attached to childbirth in a donkey cart. Finally, many deliveries occurred at night when travel was difficult and the midwife was likely to be unavailable.

Second, health facility environments were believed by many respondents to be harsh and unwelcoming to pregnant women: many facilities prevented family members being present during delivery and women were often perceived to be alone during childbirth; women were often required to give birth lying on their backs (as opposed to the preferred squatting position); and facilities were often seen as sterile environments. Also, at home, new mothers had warm water to wash themselves after childbirth and were usually given something to eat to help regain their strength, but these amenities were often unavailable at facilities.

Third, lack of information about the stages of pregnancy and timing of labour led to a lack of birth planning and preparedness. Some women had reported to facilities that it was too time-consuming or complicated to get there once labour had started. Moreover, women were still unaware of the risk to themselves or their babies if

they gave birth at home and developed complications. This was thought to be a particular issue for women who had successfully delivered at home in the past.

Fourth, lack of male support and decision-making barriers may also reduce the number of facility births. It was reported that a woman's mother-in-law and her husband made many of the childbirth decisions, and sometimes discouraged her presenting at a facility during labour. There appeared to be a sense of pride associated with giving birth at home and this was seen as a sign of strength for the woman and her family. Moreover, expectant mothers and their families often favoured traditional birth attendants. Yet a sharp decline in the use of traditional birth attendants was reported in many districts for two main reasons: TBAs were getting older and there was not a new generation to replace them; and many health facilities had started paying TBAs (usually with a bar of soap) to refer their clients and often accompany them to the facility. This seemed to be effective at increasing TBA referrals to facilities.

District-level data collection activities

There were a number of data collection activities at the district level, both qualitative and quantitative, that went beyond routine health facility recordkeeping. This section summarises the scope of these additional data collection activities and how these data were compiled and analysed to inform service delivery.

At the health facility level, stakeholders reported conducting small surveys about the reasons that people did (or did not) attend or seek services, and these findings were presented in annual reports. Some hospitals also conducted rapid assessments about patient satisfaction with services through exit interviews, but it was difficult for the GHS or Ministry of Health to capture these data from facilities. It also appeared that such data were used as a general management tool for the hospitals themselves. At the three research centres or through academic departments at universities, additional data were collected using quantitative or qualitative approaches for specific research projects.

The GHS suggested that at regional and district levels, health teams were more likely to analyse available quantitative data (rather than to conduct qualitative studies). Interviews with staff at research centres confirmed that '*the problems they want to look at are best looked at qualitatively, but we need to convince them of the worth and value to do this',* and concluded that '*when we give them training, it was clear that they didn't know about qualitative research, the methods, the practical side, where the value* was'. In general, it was external groups that largely conducted qualitative research (e.g. national or international research institutions).

It was also apparent that some districts did not collect any additional data beyond routine services data, and that if they did, it could be biased. Many stakeholders concluded that '*the skills are not there to make research results into operational policy'.* Similarly it was emphasised that '*if you disseminate the findings, the ones who listen are the ones who will use the results, but it is the others we need to get to.'*

The GHS offered training and support to district health management teams to conduct small-scale operational research as part of addressing identified bottlenecks [see UNICEF 2014]. Drawing on experience and capacity from the three research centres, teams received training in developing protocols and using qualitative methods to explore problems that were evident from the DHIMS data. The GHS Research Division and the three research centres remain available to support district teams in this work, but to date the support has been piecemeal.

Finally, all data collected at the district level were shared in regional presentations as part of the annual performance reviews conducted by the GHS. The GHS provided guidelines for these reviews so that there was some consistency across districts in the country. The peer review process in the form of regional reviews appeared to be a very important component both in terms of validating their work but also generating ideas that may be replicated across districts. Regional reviews are held in February each year, and the GHS senior management review is in Accra each April. This includes all regional managers in a higher-level national discussion [UNICEF 2014].

Mobile technologies in health service delivery

The GHS instituted a nationwide Early Warning System (EWS), using rapid SMS mHealth technologies, to identify medical commodities shortages, after successfully piloting various approaches in 2008 and 2011[3]. With EWS, community health workers can report inventories of key commodities and highlight potential or actual stock outs. These data were captured and managed at a central level, although specific mechanisms to ensure accountability for action on low supplies remain problematic. This means that stock out may persist despite notification of low levels through this system. Nonetheless, several partners, including USAID and UNICEF, are collaborating with the GHS to build upon early success and lessons learnt, as this mHealth approach offers the potential for improving perceptions of service reliability amongst clients of public health facilities.

Limitations

A limitation of the current feasibility study was the short timeframe for conducting interviews. However, the study period in Ghana was carefully planned in advance to maximise the time for in-country work. As with most interview-based studies, it is possible that participants expressed what they perceived to be appropriate or socially desirable responses. We do not believe this was a major limitation, however, as the interviews were informal, private and the semi-structured frameworks allowed questions to be asked in multiple ways and responses triangulated.

Discussion

The current feasibility study highlights the added value of systematically combining qualitative and quantitative data in strengthening equity-oriented services at the district level. Indeed, there is great potential – both technically and institutionally – to use a mixed-methods approach in assessing barriers to equitable access to skilled birth attendance at the sub-national level in Ghana. Implementation of this approach, however, would require suitable institutional mechanisms and some capacity building in the methods.

In terms of next steps, there are a number of initiatives at district- and sub-district levels already in place that use both qualitative and quantitative methods to improve health service delivery. It is important that these initiatives serve as a foundation for any further mixed-methods approaches such that they are built upon and extended to other districts or service areas.

[3] See, for example, http://solutionscentre.nethope.org/case_studies/view/supply-chain-early-warning-system-for-commodities-using-mobile-phone-techno and http://www.ewsghana.com/accounts/login/?next=/

Indeed, further evaluation of these current approaches to identify and solve barriers to health service utilisation is needed in order to gain better insight about their scope, potential for further scale-up, and cost-effectiveness. Such an evaluation would provide a stronger evidence-base for assessing the need for a mixed-methods approach in Ghana, and how it could best serve the GHS to improve health service delivery. For example, the DHIMS database is likely to be a valuable mechanism to compare antenatal, skilled delivery and post-neonatal care utilisation as well as immunisation coverage across districts and sub-districts. In addition, a large-scale qualitative analysis is possible based on the presentations by the District Health Teams during the annual regional review meetings. These presentations typically include results from the DHIMS analysis in addition to any innovations districts are implementing to increase access to and utilisation of services. It may also be possible to use these data to track the spread and effectiveness of innovations through peer-to-peer channels in order to understand whether or how quickly new innovations or strategies spread to other districts and throughout the country.

The study highlighted a number of logistical and technical challenges that would need to be addressed in order for the mixed-methods approach to be feasible in Ghana. First, the mechanisms for identifying needs, gathering and analysing data, and disseminating findings through the mixed-methods approach must be systematized within existing institutional and research structures. This would clearly need to build on current performance monitoring activities, such as the annual performance review process by the GHS, but would also require additional and sustained financing. In addition, increased capacity to understand and use mixed-methods data to design interventions and evidence-based policy guidance would be needed at district levels. This could include training, continual professional development and closer links with research centres.

In summary, District Health Officers produce and manage an enormous amount of qualitative and quantitative data each year. Each of the 216 District Health Officers is required to report on the past year's activity in a review meeting with their respective Regional Health Office to present updates on key indicators (malaria treatment, immunisation, antenatal care visits, etc.) and a narrative of activities undertaken in the district to improve health service delivery. The Ghana health system permits autonomous decision-making at the local level, so there are often several key innovations to improve access to health care in a given district and their presentation often generates positive feedback from stakeholders. As a platform for qualitative analysis, the presentations are enormously rich in data. Likewise, each health facility maintains extensive paper records of visits, diagnoses, treatments, and outcomes. The health facilities aggregate the data and send it to the District Health Office for entry into DHIMS. The data are then passed on from the district level to the regional and then to the national level. A review of the DHIMS data showed that the routine health information is largely complete for each of the districts over the past 4 years and the data appear to be generally reliable across all districts thanks to intensive capacity building by GHS and an innovative web-based data collection system that is available in a number of health facilities. Consequently, a mixed methods approach to understanding district health systems is not only feasible, but also advisable in Ghana.

Rwanda

Introduction

More than half of Rwanda's estimated 11 million people live below the national poverty line, with impoverished families concentrated in rural areas [UNICEF 2011]. Indeed, over two-thirds of the 8 million people living in rural areas are impoverished by this standard as opposed to 14% of the urban population [UNICEF 2011]. Yet, despite these low-income levels, Rwanda has succeeded in developing good governance practices and delivering essential services to its population since the 1994 genocide.

This has resulted in major reductions in child mortality between 1990 and 2012, declining from 151 to 55 deaths per 1000 live births (from a high of nearly 250 in 1995 around the time of the genocide). Similarly maternal mortality has also declined from a rate of 1,400 per 100,000 live births in 1990 to 320 in 2012 [Countdown profile 2013b].

Indeed, over the past two decades, an increasing share of the population is utilising essential health services that are known to reduce morbidity and mortality. For example, according to the 2010 Demographic and Health Survey, the proportion of births delivered by skilled health personnel (doctors, nurses or midwives) increased from 26% in 1992 to 69% in 2010. Similarly, nearly all (98%) pregnant women attended antenatal care with a skilled provider at least once, although only 35% attended the recommended four or more times in 2010. Immunisation coverage for most childhood vaccines remains at near universal coverage.

Despite these major gains in health system performance, there remains significant underutilisation of essential MNCH services by the Rwandan population, particularly among at-risk or marginalised groups. Moreover, national figures also hide significant disparities in coverage within the country. In Kigali, for example, skilled personnel assisted 83% of births in 2010 as opposed to 61% in the North of Rwanda. Reasons for this underutilisation remain not well understood and may be due to either financial or non-financial barriers or both.

To reduce financial barriers to health care, and protect families from financial hardship, the Rwandan government initiated the Mutuelles Health Insurance Policy in 2004. This initiative is described in detail elsewhere [UNICEF 2011]. Briefly, the insurance program was refined and expanded in 2010 as part of the Community-based Health Insurance (CBHI) plan with the aim of achieving universal and equitable access to quality health services. By 2010, the estimated coverage approached 95% of the Rwandan population. Under a series of reforms to reduce financial barriers, MNCH care is free in Rwanda and pregnant mothers are not charged for antenatal care, skilled birth attendance, neonatal care, or immunisations for their children, regardless of whether they are enrolled in the Mutuelles scheme. Yet, there remain notable challenges associated with the health insurance scheme including low accessibility to quality health care (particularly among the poorest groups), persistent insufficiency of human resources, inadequate funding of the sector and strong reliance on external contributions.

There are also a number of non-financial barriers that could impede access to essential health services among marginalized groups, particularly maternal and newborn care. Yet, as in other countries, there is limited evidence regarding these non-financial barriers, and there is great opportunity to use qualitative methods to

further elucidate some of the constraints manifested at the point of service delivery. The mixed-methods approach put forward in this project could therefore help the Ministry of Health and other key stakeholders in Rwanda better understand financial and non-financial constraints to extending equitable access to essential MNCH services.

Aim

As in Ghana, the purpose of the study was to explore the feasibility of incorporating a mixed-method approach into district health system strengthening activities in Rwanda

Specific objectives

The specific objectives were to:

- Assess the potential and interest of key stakeholders for integrating a mixed-methods approach to assess equitable access to MNCH services at sub-national levels in Rwanda
- If there is potential, to assess the technical and institutional feasibility of integrating the mixed-methods approach into routine DHSS activities
- Develop an initial framework for a mixed-methods approach to inform policy at the district level and make recommendations about further operational research needed (both specific to the Rwanda context and for adapting the approach to other contexts or countries)

Methods

The feasibility studies in Ghana and Rwanda employed similar methodologies (see Ghana methods section above). The Rwanda feasibility study was conducted over a five-day period in March 2014 in the capital city, Kigali. One member of the study team [CD] conducted interviews in English (with a French translator when necessary). Similar to Ghana, respondents were purposively selected to participate, based upon their familiarity with the Rwanda Health System, nationally, at the district level, and locally. The study team contacted respondents in advance and a number were identified and introduced to the team during the study itself. Interviews were conducted with key national-level stakeholders and included senior managers from the Ministry of Health, health care professionals at regional and district hospitals, UNICEF staff, and academic researchers. A total of thirteen stakeholders participated in the study.

Results

Overall, there was a positive response from the Ministry of Health regarding the proposed integration of a mixed-methods approach into routine DHSS activities. It was further suggested that a Rwandan co-principal investigator and doctoral student could help oversee and implement a more in-depth feasibility study.

Health system context

Among respondents, there was consensus that Rwanda has a dynamic, disciplined health system and its performance has improved dramatically over the past five years. Most respondents also agreed that improvements in health outcomes are the result of a combination of factors including: national health insurance; performance-based financing approaches; community health worker (CHW) network; and mobile

technologies for health (e.g. Rapid SMS). The successes of the Rwandan health system and these specific initiatives have been well documented in published literature in recent years [Binagwaho et al. 2014; UNICEF 2011;]. Yet performance gaps and health inequities persist in this country. In particular, the Ministry of Health is interested in increasing the number and quality of antenatal care visits and facility deliveries in order to reduce maternal and neonatal deaths.

National health insurance is near universal in Rwanda and covers 95% of the country's population, which greatly reduces financial barriers to health service utilisation. Despite this advance, informal payments may still pose a barrier to usage. For example, in terms of skilled birth attendance, insurance covers the cost of delivery and any complications but the patient is required to pay for transportation and any other indirect costs.

Performance-based financing (PBF) has had a major impact on increasing the delivery of health care in Rwanda, reducing both supply- and demand-side barriers while improving overall equity in and quality of services [Priedeman et al 2013]. The performance-based financing approach has been described in detail elsewhere [Binagwaho et al. 2014; UNICEF 2011], and extends beyond the health sector to education, infrastructure and water/sanitation as well. The Ministry of Health (supported by UNICEF, BMGF, WHO and the World Bank) sets aside money for performance-based financing that is distributed to communities and health facilities based on the achievement of a set of milestones. A quarterly plan is created with milestones and performance contracts with health staff. These plans, and achievements made against them, are reviewed on an annual basis with the superintendents of health facilities, district health team and government heads. Performance-based funds are released based on the results of these presentations, which are also made publicly available. If targets in the quarterly plans are met, agreed funds are then distributed with around 70% earmarked for staff compensation and 30% for reinvestment in supplies and infrastructure improvements. Importantly, performance-based financing provides health facilities with a degree of autonomy to make decisions about how to deliver services given the local context. Moreover, all government staff are held accountable for results – from the community health worker to the President of Rwanda – and even their contact information is made public.

Community health workers are widely used throughout Rwanda, totalling approximately 45,000 workers. It was one of the earliest interventions to increase health service utilisation that was sponsored by the Ministry of Health. Initially there was one CHW per village, but this has now increased to three per village. CHWs are generally unpaid, or their compensation is very low (1500-2000 RWF per month). CHW performance, therefore, is presumably motivated by non-financial factors, such as pride or desire to give back to the community.

RapidSMS has been very successful in Rwanda after its initial launch in 2009 with support from UNICEF. This initiative is now implemented in all 30 districts (15,000 communities) with three CHWs reporting from each community. The system is currently hosted outside the Ministry of Health but they plan to incorporate the hosting in the future. The technological capacity of the current system is becoming overwhelmed by its rapid growth in use, and to help solve this issue, UNICEF has recently hired a developer to expand its capacity. 45,000 CHWs send daily reports via RapidSMS about pregnancies, births, birth weight, complications, deaths, nutrition and a host of other indicators. The MoH reports that the system receives 15,000 SMS texts per day on these health indicators. One remaining gap is the need to provide better supply information, such as stock outs of essential medicines, but there are plans to improve this area of reporting in the near future.

'Tracer' interventions

Skilled birth attendance coverage has increased significantly in recent years with about two-thirds of births delivered by a doctor/nurse/midwife in 2010. Despite this high coverage, it is clear that there remains significant non-utilisation of skilled care for deliveries that may be due to either financial or non-financial reasons, or both.

In terms of financial barriers, issues persist despite near universal health insurance coverage. It is more likely, however, that reduced service utilisation is due in large part to non-financial barriers. Financial barriers include informal fees related to transportation costs or other indirect expenses that must be paid by the expectant mother and her family. To reduce these informal fees, the government is trying to expand transportation to health facilities, particularly in remote communities, and has increased the number of ambulances that will be free to the patient. Performance-based financing incentives (as described above) also reward health facilities and communities for healthy births and deliveries in facilities, which have resulted in a 'hammock' transportation system. This means that volunteers from the community carry the expectant mother in a stretcher on the road to where an ambulance can then meet them.

It is more likely, however, that reduced service utilisation is due in large part to non-financial barriers and there are a number of complex socio-cultural reasons for underutilisation. First, there is often an unwillingness of Rwandan women to complain about pain or ill health, which may lead to delayed care seeking for childbirth that results in a home delivery. Second, young girls often work in the city but go home to give birth because they do not want their immediate community to know about the pregnancy. Third, there is a general unwillingness to leave children for an extended time while women give birth in a health facility. Fourth, many communities are remote and at higher altitudes where there is poor access to road networks and transportation to bring women to facilities for delivery. Finally, there may be general dissatisfaction with health facilities outside Kigali in terms of cleanliness and staff attitudes that may reduce service utilisation. Performance-based financing could help reverse this barrier in the future.

Immunisation is a success story in Rwanda with more than 90% of 1-year old children fully immunised as of 2010 according to the most recent Demographic and Health Survey. The Ministry of Health says that the interventions needed to raise coverage to universal levels are well understood and additional studies are not needed on this issue. Immunisation coverage is an indicator in the performance-based financing scheme, and health facilities are eager to achieve increased targets every year. Instead, the Ministry has a great interest in ensuring access to the continuum of essential health interventions, moving beyond neonatal care through early childhood development.

Discussion

Overall, there was a positive response to the proposed integration of a mixed-methods approach into routine DHSS activities. There was also a stated desire to collaborate with Rwandan health system researchers to help oversee and implement the study going forward.

There was general consensus that the Rwandan health system is dynamic and has substantially improved health service delivery in recent years through performance-based financing mechanisms, national health insurance, community-based approaches and the deployment of mobile technologies. In Rwanda, health facility managers

are required to provide quarterly progress reports to the Ministry of Health as part of the country's performance-based rewards system. These progress reports are based on performance contracts that promise a level and quality of care to the public, and facilities are evaluated against those contracts. Facilities that achieve their targets receive an award to be divided among the staff and invested in new technology or infrastructure.

In terms of quantitative data, the Ministry of Health randomly audits these reports to ensure standard data quality across facilities. This activity has helped to improve data quality reported through the health management information systems, which is considered robust. This system contains basic data on demographics, diagnoses, treatments, and select health outcomes by facility and aggregated to higher administrative levels. Moreover, a SMS reporting system regularly collects data from 45,000 CHWs on immunisation, pregnancies, deliveries and antenatal visits and this community-based information is integrated into routine reporting systems as well.

In terms of qualitative data, the quarterly review reports contain qualitative information on the methods used by each facility to improve outcomes, along with associated costs and results. This information could be made available to a research team interested in using a mixed-methods approach to understand how to further improve health service delivery with a pro-equity lens.

Taken together, a standardised mixed-methods approach that combines routine analysis of both qualitative and quantitative data is quite feasible in Rwanda both in terms of technical and institutional capacity and data availability. Whilst there was limited interest in immunisation services as a 'tracer' intervention since there is already high coverage, and performance-based financing is continuously improving the reach of these services to underserved groups, the Ministry of Health appeared very interested with understanding how to increase utilisation of maternal and neonatal health services, and this engagement could be further informed by the mixed-methods approach.

Conclusion

Addressing inequities in the use of quality and effective health interventions, with protection from financial risk, must be a first priority in efforts to achieve universal health coverage (UHC). Despite widespread acknowledgement of this, discussions on developing and implementing UHC, and on health system strengthening (HSS) reforms that will be required for its attainment, have often focused too much on national diagnostics of equity. HSS discussions often assume that the existing health systems should simply be scaled up, rather than question whether the health systems themselves need to be revised, strengthened or reorganized to increase equity, resilience and effectiveness. Similarly, conversations on UHC are frequently too vague about the specifics of how to achieve UHC; providing little practical guidance to managers of decentralised health systems on how to identify and remove the causes of inequitable access to and use of services [O'Connell et al. 2013].

Throughout the papers in this UHC series, we have shown that obtaining information from the sub-national and service delivery levels can shed light on barriers to access and serve several purposes. Locally, such information can be used to assist district managers and administrators to more effectively and efficiently target scarce resources towards the most significant barriers preventing use of quality services. For example, if the qualitative component of a mixed assessment was extended to a representative sample of clients and community leaders, their ranked perceptions could be compared to those of service providers, to check if client needs were adequately understood as well as addressed.

At the national level, a more granular understanding of the barriers to access could be used to shape increasingly cohesive and effective social protection mechanisms. Social protection initiatives seeks to prevent, reduce and eliminate social and economic vulnerabilities, poverty and social exclusion, thus laying the foundation for a decent standard of living for all people. With regards to health, this means ensuring the use of essential health services when and where needed, supported by i) financial transfers necessary to address monetary barriers to care; and ii) social protection polices and systems to remove non-financial barriers.

The aim of this project is to identify factors signalling the presence of access barriers, which can be assessed at the sub-national level through a mixed-methods approach. The findings of the feasibility studies are being synthesized to help guide the next steps, and to focus the development of guidelines for implementing this approach onto those factors most likely to reduce inequities on the road to UHC. The next phase will seek to improve the feasibility and usefulness of the mixed-methods approach by building upon the evidence gathered to date, to provide a more structured framework and set of guidelines on how this approach can be incorporated into DHSS.

The focus of research now turns to defining criteria for scalability of this approach, so that it can practically contribute to reducing inequities on the road to UHC:

1. **Technical:** Is the approach valid, and does it generate reliable and accurate data? The aim is actionable data, so accuracy and reliability have to be 'good enough' that a manager can make more pro-equity choices based on the data generated by this approach.
2. **Generalizability:** Are there sufficient examples from different districts within a country, as well as experiences from other countries, to assess if the results from interviews and case studies are sufficient to

be broadly applied firstly for the country using a mixed-methods approach, and second for other countries and contexts?

3. **Feasibility:** Are the resource requirements needed to implement the mixed-methods approach manageable? Is there any human resource capacity building required to collect the data, use the results, and bring the approach to scale? Are there any acceptability issues, such as political sensitivities about identifying non-financial barriers, which must be addressed to permit scale-up?

Furthermore, additional research is needed to define benchmarks of what successful pro-equity DHSS would look like, if compared to current DHSS approaches. This would include specific criteria for monitoring if decisions made by district health managers were more equity-oriented. For example, one benchmark of pro-equity DHSS could be the regular use of data on access barriers to assess district management performance. Another could be changes in utilisation rates by various marginalised groups, as an indicator of the equity of implementation of annual district operational plans. Other benchmarks could be established that would assess trends in allocating resources and prioritising strategies in order to ensure they consistently optimise reductions in inequities as well as increase access to services by those currently excluded. While criteria and benchmarks would be standardised for the most part, some adjustments will be needed to systematically capture barriers specific to each at-risk group.

Moving forward

UHC represents an ideal, holding out a promise that every child, every person, will have the same opportunity to use essential health services when and where needed without severe financial risk. To make this ideal a reality requires finding ways to assess the complex interplay between various factors that create access barriers for at-risk groups. We have described country level investigations that strongly indicate it is indeed feasible to use district level data, both qualitative and quantitative, and by means of a systematic mixed-methods approach to generate actionable data on access barriers.

We have described feasibility studies from Uganda, Ghana and Rwanda that focused on the potential of this innovative approach to integrate an equity dimension into the sub-national measurement of universal health coverage for DHSS activities. The studies sought to determine whether a mixed-methods approach to assessing demand-side barriers would generate data that sub-national health managers could reasonably use to reduce inequities across various social, cultural and economic attributes correlating to low utilisation of essential health services, as well as inequities in the appropriateness or quality of those services. The collective studies demonstrate that such an approach is promising, and in fact has already been implemented albeit in a limited and localised fashion in in Ghana [UNICEF 2014]. Importantly, the approach is seen to be valuable and necessary by national leaders seeking to achieve equitable UHC.

Based on the feasibility studies conducted in Uganda, Ghana and Rwanda, we are convinced that a mixed-methods analysis could systematically add an equity-based and results-focused orientation to DHSS activities. The next step is to examine how this approach can be brought to scale in various contexts, taking into account resource needs, country capacities, and the acceptability of the information to decision makers.

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Annex

Annex A: Interview guide (Uganda)

UHC questionnaire for proof of concept testing of qualitative methods

Ranking: Health Centre IV

In order, what are the 3 or 4 most important reasons that prevents mothers from:

1) Getting children immunized?
    a) What do you think is the most important reason?
        i) How would you solve it?
    b) If that were solved, would there be anything else preventing mothers from having their child immunized?
        i) How would you solve that problem?
    c) If the first two problems were solved, would there be anything else preventing mothers from having their child immunized?
        i) How would you solve that problem?
2) Using SBAs?
    a) What do you think is the most important reason?
        i) How would you solve it?
    b) If that were solved, would there be anything else preventing mothers from having their child immunized?
        i) How would you solve that problem?
    c) If the first two problems were solved, would there be anything else preventing mothers from having their child immunized?
        i) How would you solve that problem?

Ranking: Health Centre II

In order, what are the 3 or 4 most important barriers facing mothers from:

1) Getting children immunized?
    a) What do you think is the most important reason?
        i) How would you solve it?
    b) If that were solved, would there be anything else preventing mothers from having their child immunized?
        i) How would you solve that problem?
    c) If the first two problems were solved, would there be anything else preventing mothers from having their child immunized?
        i) How would you solve that problem?
2) Going for the first, and also going for all 4 ANC visits (HC II has midwife, but only delivers in emergencies)?
    a) What do you think is the most important reason women do not come for the first ANC visit?
        i) How would you solve it?
    b) What do you think is the most important reason women do not come for ALL FOUR ANC visits?
        i) How would you solve it?
    c) If that were solved, would there be anything else preventing mothers from having their child immunized?
        i) How would you solve that problem?
    d) If the first two problems were solved, would there be anything else preventing mothers from having their child immunized?
        i) How would you solve that problem?

Annex B: Interview guide (Rwanda and Ghana)

A) Introductions and background

Role / duties and responsibilities / work environment and load / resources and challenges

B) General – identifying challenges / drivers to equitable access

What are the challenges people face in accessing health services?

For maternal healthcare (ANC, delivery, PNC)
For neonatal care
For vaccinations/immunisations

What are the root causes/underlying reasons for the challenges identified?
Of the challenges you identified (summarise) which are the greatest challenges and why?
How do you know this/what evidence is there for these challenges?

What are the most important factors that facilitate access / enable people to access services?
Of the factors you identified (summarise) which are the greatest drivers and why?
How do you know this/what evidence is there for these challenges?

How do these challenges / enablers / root causes relate to each other? [Probe for degree of fit]
Are these challenges stronger / weaker for different groups? If so why?

At the moment, how does a district manager (or other stakeholder) identify those groups who have the greatest challenges in accessing services?
How do they engage with these groups?
What focus is given to these groups?

If you want to collect information on these challenges / drivers from a health provider perspective (e.g. health facility, health professional etc.) how do you do it?
What data is collected / how is it collected / by whom / when?
How is that data analysed? By whom / when?
How is that data used? By whom / when?
Where / how is the data stored? Who has access to it?

If you want to collect information on these challenges / drivers from the perspective of the community / potential user of services, how do you do it?
What data is collected / how is it collected / by whom / when?
How is that data analysed? By whom / when?
How is that data used? By who / when?
Where / how is the data stored? Who has access to it?

What might the solution be to improve access in terms of each challenge identified?
[Given the responses to the above, refine the questions to quant / qual / mixed methods]
[Populate inventories of qual and quant systems/methods and variables routinely collected

C) Quantitative data collection and use

Is quantitative data useful in identifying challenges to access? How / why / when?

What disaggregated quantitative data is collected at national / regional / district levels?
How is it collected? What system? And by whom / when?
How is the data analysed? By whom / when?
How is the (analysed) data used?

Is data incorporated into the management cycle at national / regional / district levels? If so how?
What variables are most commonly used? Why these variables? How are they used?
What is the communication structure / network for sharing the data, the analysis, the results?
What is the decision-making structure (hierarchy) / network for using the data?
How is the data stored? Who has access to it?

Is data routinely shared? (national/international stakeholders? Government/agencies/research)

What is the current state of implementation of Ghana's District Health Information Management System (DHIMS-2), what data is collected and how is it used?

What other relevant data sources are there at the district level? (DiHPART?)

D) Qualitative data collection and use

Is qualitative data useful in identifying challenges to access? How / why / when?

What qualitative data is collected at national / regional / district levels?
How is it collected? What system? And by whom / when?
How is the data analysed? By whom / when?
How is the (analysed) data used?

Is data incorporated into the management cycle at national / regional / district levels? If so how?
What variables are most commonly used? Why these variables? How are they used?
What is the communication structure / network for sharing the data, the analysis, the results?
What is the decision-making structure (hierarchy) / network for using the data?
How is the data stored? Who has access to it?

Is data routinely shared? (national/international stakeholders? Government/agencies/research)

E) Mixed methods

Are the determinants you outlined above as challenges to / drivers for equitable access captured in the DHSS (and other sources)? [Collect examples / case studies] How do you currently supplement information from the DHSS (and other sources)?

Currently, are the qualitative and quantitative data (described above) used in combination?
If so, how / by whom / for what purpose? [Collect examples / case studies]

If not, why is the qualitative and quantitative data not used in combination? [Probe for issues of process, ownership of data, sharing data, communication, capacity, skills etc.]

Is the qualitative research undertaken (academic / institutional) shared with / used by the health system in any formal way? If so how? If not, would this be useful and why? Is there potential for collaboration? How might that work?

If mixed-methods were to be developed, what platform could be used? At national/regional/district levels?
What would work best? What would be easiest in terms of collecting, analysing, using data?
Who would collect the data / how / when?
Who would analyse the data / how / when?
How would the data be used?
How could the data be incorporated into the management cycle at the national / regional / district levels?
What variables would be the most informative? (Generally and specifically to interviewee)
What should the communication structure / network for sharing the data be?
How would the decision-making structure / network for using the data function?
Could the mixed-methods approach you have outlined by systematised? How?

F) Degree of fit

In terms of improving equitable access, what are the most important issues? [Probe for supply / demand side interventions and perception of degree of fit between health services and community/potential users]

You outlined a/b/c as the most important challenges – do they think these are the challenges that the community/potential user would identify? What would be different and why?

At the moment, how do you / health managers interact/engage with communities/intended users? [Relate to question in general section above and collect examples / case studies]

In terms of improving the relationship between the health services and the community (e.g. improving the degree of fit to contribute to more equitable access) what needs to happen? From the health provider / health system side and from the community side? What is the community role (e.g. to identify constraints, ways of addressing them etc.)

Would you be willing to engage with communities in trying to identify how to improve the degree of fit between the services and community? Would this add value? How / why? Why not?

Would this be feasible? How could it happen? [Probe for process, e.g. community action cycle etc.]

What would be the difficulties / problems with this [e.g. unwillingness on either side and why].

Annex C: Uganda additional results

1. Perceived barriers to immunisation service utilisation

Most important reasons that prevent mothers from getting children immunised	Rank 1	Rank 2	Rank 3
Ignorance about the benefits of immunisation	6	12	8
Long distance between the community and the facility	16	8	1
Lack of funds for transport by the mothers	0	0	1
Frequent stock outs of supplies at the facility (e.g. fuel)	2	1	1
Lack of food incentives for mothers who bring their children for immunisation	0	1	0
Prioritization of other economic activities over immunisation especially agriculture	5	2	10
Long waiting times at the facility due to shortages of human resources	2	5	2
Misconceptions about immunisation in the community (e.g. vaccines cause infections in children)	0	0	6
Lack of male involvement to support mothers to take children for immunisation	1	1	3
Irregular scheduling of both static and outreach immunisation activities	1	3	0
Fathers in the community stop their wives from taking children for immunisation	1	0	1
Home deliveries and use of traditional birth attendants prevent mothers from bringing their children for immunisation (particularly polio and BCG that are given at birth)	0	1	0
Lack of information about the availability (and schedule of delivery) of immunisation services at the facility due to poor community mobilisation	3	2	1
Total responses	**37**	**36**	**34**

2. Perceived barriers to attending four or more antenatal care visits

Most important reason women do not come for at least four ANC visits	Rank 1	Rank 2	Rank 3
Lack of male spouse's support and involvement	3	3	2
Incorrect belief that if they attend ANC visits, their labour time will be much longer	1	0	0
Lack of food incentives at the health facility level (HC II)	0	1	0
Lack of information about the availability of ANC services	0	1	1
Women who have had more than 5 children are discouraged to attend ANC for their new pregnancies because they expect questions on why they did not take family planning seriously	1	0	0
Poor transport for communities in remote areas	1	0	0
Long distance between the community and facility	3	3	2
Lack of funds for transport by the mothers	0	0	1
Ignorance by some mothers about the importance of ANC	1	1	2
Long waiting times at facilities for ANC services	2	1	1
Women do not like medication given during ANC (e.g. anti-malarial drugs and tetanus vaccine)	1	1	0
Preference to seek ANC services at higher levels of care because of their extra services (e.g. PMTCT and facility deliveries)	1	2	1
Community has strong belief in traditional birth attendants and perform their deliveries at home	0	1	0
Ignorance/lack of knowledge about the benefits of ANC	1	0	0
Misconceptions about ANC services	0	1	0
Poor attitude of health workers	0	0	2
Lack of information about the availability of ANC services	0	1	1
Fear testing for HIV/AIDS	0	0	1
Prioritization of other economic activities especially agriculture	0	0	1
Total	**15**	**16**	**15**

3. Barriers to utilisation of skilled birth attendance

Most important reason women do not use skilled birth attendance	Rank 1	Rank 2	Rank 3
Lack of funds for transportation to the health facilities	1	2	1
Lack of male spouse's support and involvement	0	5	1
Misperceptions that if they get the services of a skilled birth attendant, their labour time will be much longer than if they opt for home deliveries	0	0	1
Preference to use traditional birth attendants over the skilled birth attendants	5	4	4
Long distance to the facility	4	2	2
Poor attitudes of some health workers who are rude and harsh to patients	3	1	4
Inadequate supplies at the facility (e.g. delivery gloves and disinfectants)	1	1	1
Inadequate transport to bring the mothers to the facility	0	2	0
Ignorance about the importance of giving birth at the health facility	3	0	1
Facility lacks basic supplies for deliveries (e.g. padding and beddings)	1	0	0
Misperception that if no problem is found during ANC visits then they do not have to go the facility to deliver	0	1	0
Women who have had deliveries before do not feel there is a need to come to the facility to access services of skilled birth attendants	0	0	1
Long waiting time since the maternity ward is too small to accommodate all mothers at once	0	0	1
Poor state of health facility (e.g. no mattresses, small maternity ward, no privacy, no bathroom)	0	0	1
Total	**18**	**18**	**18**