SURE Rapid Response

Does introducing deliveries at Health Center II improve maternal outcomes?

March 2011

This rapid response was prepared by the Uganda country node of the Regional East African Community Health (REACH) Policy Initiative.

Key Messages

- For mothers and their families, moving services to lower level facilities
  - Improves access in terms of distance, finances, social and cultural compatibility
  - Helps mothers and their caretakers not to have to spend very long times away from their homes
- For the health system, moving services to lower levels helps decongest higher level facilities and therefore improves quality of services provided in these centers; it also increases equity in service delivery
- Introducing deliveries in lower level centers does not only require clearance for these centers to carry out given services but it also requires them being equipped to provide good quality comprehensive obstetric care

Who requested this rapid response?

This document was prepared in response to a specific question from a Senior Health policymaker in Uganda.

! This rapid response includes:

- Summary of research findings, based on one or more documents on this topic
- Relevance for low and middle income countries

X Not included:

- Recommendations
- Cost assessments
- Results from qualitative studies
- Examples or detailed descriptions of implementation

What is the SURE Rapid Response Service?

SURE Rapid Responses address the needs of policymakers and managers for research evidence that has been appraised and contextualised in a matter of hours or days, if it is going to be of value to them. The Responses address questions about arrangements for organising, financing and governing health systems, and strategies for implementing changes.

What is SURE?

SURE – Supporting the Use of Research Evidence (SURE) for policy in African health systems - is a collaborative project that builds on and supports the Evidence-Informed Policy Network (EVIPNet) in Africa and the Regional East African Community Health (REACH) Policy Initiative (see back page). SURE is funded by the European Commission's 7th Framework Programme.
www.evipnet.org/sure

Glossary

of terms used in this report:
www.evipnet.org/sure/rr/glossary

Background

How this Response was prepared

After clarifying the question being asked, we searched for systematic reviews, local or national evidence from Uganda, and other relevant research on the topic. The methods used by the SURE Rapid Response Service to find, select and assess research evidence are described here:

www.evipnet.org/sure/rr/methods

80% of maternal deaths, worldwide, are due to direct obstetric complications, most of which can be prevented or managed if the mother has access to a skilled attendant with the necessary back-up and support (1). These complications include sepsis, haemorrhage, ecclampsia, obstructed labour and unsafe abortion. 'Access to a skilled attendant' refers to several aspects; it could be physical, social, financial, language and so on. Physical access is still a big barrier for accessing health services in many parts of low and middle income countries, and Uganda too; in Uganda according to the National Household Survey 2002/03, for the rural population, the mean distance to a hospital is 13Km, while the mean distance to clinics, dispensaries and health centres are 4 km (2) and this has not changed much in the last decade for the rapidly growing population. The health centres are nearer to the average mother but are often not designated to provide some of the services being sought or are not comprehensive enough to deal with the patient's condition requiring referral to a more superior facility. In this case it is hoped that the referral system is functional to refer patients in an appropriate and timely manner. Getting to the facility referred to would require additional funds and time for travel, it may require for additional people for instance a carer, which may mean another adult or more leaving the home for several days, sometimes not able to predict their return. Many mothers weigh in on this option and may choose to take their chances delivering near or at home, sometimes with fatal consequences.

The average distance to a Health Centre III in Uganda where deliveries are designated to take place is 20km while the average distance to a health centre II which is not cleared to handle deliveries, is 5km. If mothers are able to access more comprehensive services relatively nearer their homes, maternal outcomes may be able to be improved. This has been tried out in different parts of the world and this paper will present the evidence about the effect of moving maternal delivery services to lower level health centres.

Summary of findings

Effects on patient: Increased access

Accessibility has been identified as an important determinant for the use of hospital-based obstetric care. With distances in many rural areas often being too large to be covered by just a few superior health facilities, problems of geographical and financial accessibility are well documented reasons for abstaining from or delaying both self and institutional obstetric referral (3). A review of the evidence for safe maternal interventions shows that one option to increase accessibility is to increase service outlets for obstetric care according to population size and distribution (3). In addition it is shown that strategically located existing structures, such as health centres, can be up-graded to meet this gap with limited input. Many successful Safe Motherhood Programs have included this intervention in their interventional programs for example programs in Sri Lanka and Nigeria (4-6).
Similar interventions on community level focusing on among other things reducing geographical and financial barriers have also been tried out in Uganda for example that by the UNFPA-supported RESCUER project (Rural Extended Services and Care for Ultimate Emergency Relief) (4). In this project, key interventions included upgrading of health units to obstetric referral centres, as part of an interventional package; following this, obstetric referrals to these units increased threefold.

An operations research study published in 2007, was done in Burkina Faso, Kenya and Tanzania, to test strategies to improve rates of skilled attendance in rural developing country settings, over five years (7). It implemented and tested interventions aimed at improving the availability (among other things) of maternal health services and encouraging women to use such care. It concluded that mid- and lower-level health facilities are critical in making skilled maternity care accessible to women. In all the three countries, almost all of the increased service utilization took place at mid-and-lower levels of the health system. Although the intervention focused on increasing quality and capacity at the hospital as well as at the health centre and dispensary/clinic level, rates of hospital delivery essentially did not shift, and any increases in institutional delivery took place at the lower levels (see table 1 below).

Table 1: Percentages of health centre/dispensary deliveries vs. hospital deliveries

	Baseline (%)	At follow up (%)
Burkina Faso	22.8 vs. 3.5	50.3 vs. 5.6
Kenya	5.5 vs. 14.4	7.8 vs. 14.5
Tanzania	40 vs. 10	45 vs. 10

In another study, a cross national regression for maternal mortality in forty nine (49) developing countries, to answer the question about which services reduce maternal mortality using indices of the adequacy of maternal health services derived from ratings by at least 10 experts per country, ratings of the level of access to care were found to have a strong relationship to maternal mortality regardless of the specific service rated (8). Interesting to note is that when distinctions were made, such as between services involving treatment of complications and their avoidance (particularly through provision of safe abortions), as opposed to services involving prevention or the identification of those at risk of the complications (like ante natal services), better access to treatment and avoidance services had a stronger relationship to lower maternal mortality than better access to prevention and risk-avoidance services. And so it is not enough to move more services to the lower facility but what kinds of services is important, what kinds are availed at the health centre IIs may determine a lot of the outcomes in maternal care.
In this same study, in all three countries, although women incurred out-of-pocket costs for services and related supplies and drugs, irrespective of national policies on free maternity care, hospital deliveries were considerably more expensive than those taking place at lower levels. Making services available at lower facilities may also reduce on the costs a mother has to meet for care.

Cultural and social access are other factors that are improved by the moving of services to lower facilities: a study from a large referral hospital in Karachi, India found that of the 118 mothers brought dead to the hospital maternity unit, all had been residing within a reasonable distance of the facility. However social and cultural factors had played the most significant role (9). Similarly, a maternal death enquiry from South Africa in 2000 related only 18% of avoidable deaths to problems of transport but 57% to problems of the in-service management of emergencies relating some of these to social and cultural barriers (10). In the same way findings reported from a longitudinal surveillance system in rural Gambia showed that community perspectives of motherhood, which are embedded in local customs and specific behavioural norms, were often neglected when strengthening safe motherhood programs and this still contributed to a lot of morbidity and mortality (11). Often, rural women in particular fear stigmatization and discrimination, and may be afraid of the unfamiliar environment, the lack of social and emotional

support, the loss of dignity, face and control over decisions, which are likely to happen at a higher level facility than a lower one, and as one moves further away from the more familiar geographical location. With maternal and delivery services moved nearer at the lower level health centres, chances of improving maternal outcomes from improved cultural and social access are higher.

Activating and linking the different levels of health care is one of the factors that makes up primary health care (PHC) with a referral system meant to complement the PHC principle of treating patients as close to their homes as possible at the lowest level of care with the needed expertise. This support function of referral is of particular importance in pregnancy and childbirth; if there is a break down in this referral system a range of potentially life threatening complications that require management and skills that are only available at higher levels of care become a major cause of mortality. Self-referral for delivery - often without specific medical reason – is the most common mode of referral, while institutional referral is less frequent and emergency referral is very rare. Observations from a rural district in Nepal and Burkina Faso showed population-based rates of emergency referrals of 0.4% and 0.7% respectively (12, 13). A teaching hospital in Ghana documented 82% self referrals and 2% emergency referrals among hospital deliveries while a high proportion of self referrals (80%) has also been observed in Kenya (14, 15). From a system and provider point of view, this skewed referral pattern results in an inappropriate use of referral level care by-passing first line services, but it has also been shown that the choice made is rational and is very dependent on access to services.

In a 2008-09 national survey in Eritrea on facilities that provided maternity services, including the national referral hospital*, zoba* hospitals and community hospitals, and health centres, patients were found to be making rational choices about where to seek care (16). Looking at the admission patterns, the majority of patients were self-referring directly to higher level centres or hospitals instead of going to lower level health centres. The choice was based on the fact that visiting a lower level centre first (although probably more accessible in terms of distance and socially or culturally) involved spending more time and additional money both of which were scarce and precious, but also because at the end of the day, treatment for serious complications was not available at these lower levels, meaning that patients would eventually still be referred to higher level centres. The survey revealed that if one attempted or introduced any demand generating incentives at the lower level health facilities, patient loads would be redistributed and the mothers' choices would not be restricted to superior levels of care alone.

Effects on the health system: Decongests and improves service in higher level facilities (? Congest lower levels), increases equity in service delivery

Any strategy likely to increase demand in the health centre IIs must be mindful of the existing levels of patient load. Health facility load could be exacerbated on the lower level by the new strategy much as it may also reduce on overcrowding in the higher level facility. In Uganda, a health centre III serves a population of about 20,000 with about 85 deliveries expected. If services are moved to a lower health centre II, some of these deliveries will be averted and there should be less crowding at the health centre III. A high burden on already overstretched facilities at health centre II can lead to overcrowding there, which can have an impact on the quality of care. In the Dominican Republic, overcrowding of referral facilities was found to be associated with over-medicalization of uncomplicated deliveries, degradation of quality of care, and compassion fatigue, which can affect the interpersonal care necessary to maintain the dignity and rights of all mothers (17). Furthermore overcrowding of maternity wards has also been associated with the spread of infections, such as puerperal sepsis, which may lead to further maternal mortality (18). Some evidence from India suggests that quality of care at public health facilities may have deteriorated because of a conditional cash transfer scheme intended to increase institutional deliveries which instead lead to an overload on the available capacity of facilities (19, 20). Authorities need to verify that facilities will not be overwhelmed (at the expense of others) by having more services introduced.

Equity: In the operations research study done in Burkina Faso, Kenya and Tanzania, it was in addition shown that interventions targeting mid- and lower-level health facilities can increase equity (3). In Burkina Faso, at baseline, only 10% of the poorest quintile of women received skilled care during delivery, while 40% of the richest quintile did; at follow-up, 55% of the poorest quintile and 60% of the richest quintile received skilled care showing important progress in increasing equitable health-care service delivery.

Note: The need to enhance facility capacity to meet new demand

Evidence suggests that quality is an important determinant of maternal health care utilization (16). Majority of the maternal deaths occur mostly in rural areas of developing countries, where women have little access to high quality health care. The availability of qualified staff, institutional arrangements, and capacity determine the quality of emergency obstetrical care, which tends to be an important predictor of the use of services by women (21). Moreover, patients prefer to bypass facilities that offer poor quali-

ty care in favour of facilities that provide high quality care, are staffed with more knowledgeable physicians, and are better stocked with supplies, even though this decision involves additional travel cost (22). So if lower level facilities are permitted to carry out deliveries and new programs are introduced to increase demand, authorities must ensure that the health system is equipped to meet the anticipated increase in demand satisfactorily, and that in so doing, will improve quality and not leave current quality and patient satisfaction in a worse state. Generating demand without due attention to quality does carry risks (23).

Aside from showing an increase in utilization evidence shows that introducing deliveries at lower level facilities is a strategy that would require upgrading the lower health centres for comprehensive obstetric care provision, filling human resource gaps, and providing good quality obstetric care; this then acts as an incentive to use the services (16). Clearing health centre IIs to carry out deliveries without equipping them with the necessary personnel and equipment is not enough. Furthermore evidence also shows increasing dependency on health workers with basic clinical qualifications, is also unlikely to be a viable solution for expanding provision of skilled attendance or emergency obstetric care at these lower levels (16).

Upgrading lower-level health facilities to function as emergency obstetric care facilities with functional referral to tertiary level care is essential; studies have shown that although other incentives e.g. financial, may improve utilization of health care, they may not impact health outcomes unless a minimum supply of effective health services is ensured (24). In settings where health systems are weak, strategies for demand creation are found to have the greatest impact on utilization of emergency obstetric care when accompanied by interventions to upgrade health facilities and improve quality of maternal health care (25).

In addition it has been shown that strategically located existing structures, such as health centres, can be up-graded with limited input (3). Utilization of obstetric care can be improved with less capital investment through a set of interventions making it more user-friendly and receptive to the social and medical needs of potential users. These interventions may include in addition to medically upgraded services, personnel and equipment, interventions such as preferential treatment for referred patients, 24-hours service, culturally appropriate attitudes, provision of privacy and allowing for an accompanying support person (3).

Conclusion

From the evidence, introducing deliveries at health center II level does improve maternal outcomes, by improving health system delivery arrangements and easing the geographical financial

and cultural access burdens on mothers. However care has to be taken to ensure that the lower level facilities have the capacity to deal with the new demand created.

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Conflicts of interest
None known.

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