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Original Article

Challenges in implementing emergency obstetric care (EmOC) policies: perspectives and behaviours of frontline health workers in Uganda

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Abstract

Uganda is among the sub-Saharan African Countries which continue to experience high preventable maternal mortality due to obstetric emergencies. Several Emergency Obstetric Care (EmOC) policies rolled out have never achieved their intended targets to date. To explore why upstream policy expectations were not achieved at the frontline during the MDG period, we examined the implementation of EmOC policies in Uganda by; exploring the barriers frontline implementers of EmOC policies faced, their coping behaviours and the consequences for maternal health. We conducted a retrospective exploratory qualitative study between March and June 2019 in Luwero, Iganga and Masindi districts selected based on differences in maternal mortality. Data were collected using 8 in-depth interviews with doctors and 17 midwives who provided EmOC services in Uganda's public health facilities during the MDG period. We reviewed two national maternal health policy documents and interviewed two Ministry of Health Officials on referral by participants. Data analysis was guided by the theory of Street-Level Bureaucracy (SLB). Implementation of EmOC was affected by the incompatibility of policies with implementation systems. Street-level bureaucrats were expected to offer to their continuously increasing clients, sometimes presenting late, ideal EmOC services using an incomplete and unreliable package of inputs, supplies, inadequate workforce size and skills mix. To continue performing their duties and prevent services from total collapse, frontline implementers' coping behaviours oftentimes involved improvization leading to delivery of incomplete and inconsistent EmOC service packages. This resulted in unresponsive EmOC services with mothers receiving inadequate interventions sometimes after major delays across different levels of care. We suggest that SLB theory can be enriched by reflecting on the consequences of the coping behaviours of street-level bureaucrats. Future reforms should align policies to implementation contexts and resources for optimal results.

Keywords: Emergency Obstetric Care, MDG 5, implementation, street-level bureaucrats, Uganda

Introduction

From as far back as Alma Ata in 1978, global actors have undertaken several policy reforms as an endeavour to reduce high maternal mortality albeit with suboptimal success. Such reforms included: the Safe Motherhood Initiative (SMI) of 1987 which targeted to halve the Maternal Mortality Ratio (MMR) by 2000, the

KEY MESSAGES

1. Upstream Emergency Obstetric Care policymakers expected frontline implementers to deliver timely, reliable and a complete package of lifesaving maternal interventions with unresponsive delivery systems characterized by unreliable supplies, lack of equipment, inadequate staffing and poor referral. Their improvization could only prevent services from collapsing but were not reliable enough to respond to all the obstetric emergencies which caused maternal death.
2. Although health systems strengthening at the district level has been recommended, the splitting of districts dismantled and affected the stability and maturation of already vulnerable health systems.
3. Vertical programs, projects and pilots perpetuate both fragmentation and inequalities since they are patchy in coverage and short-lived. They also create artificial health systems efficiencies since they are heavily invested, leaving health systems weaker than they found them.
4. Future policy reforms should fully take into consideration the context of implementation, integrate all plans and optimally resource systems of implementation.

International Conference on Population and Development (ICPD) programme of action of 1994 which aimed to further halve the MMR by 2015, the Millennium Development Goals (MDGs) with a target of reducing MMR by three quarters by 2015 and currently, the Sustainable Development Goals (SDGs) whose target is to achieve an MMR of <70 deaths per 100 000 live births by 2030. All the previous policies did not achieve their expected targets by the time they expired (AbouZahr, 2003; Alkema *et al.*, 2016). Even for the SGDs, a recent global analysis has already indicated that the target for maternal health (SDG 3.1) is unlikely to be achieved given the persistence of high maternal mortality and slow progress than expected (WHO, 2019).Uganda consistently adopted all these global strategies and equally missed all their targets. For example, in 1999, Uganda adopted Emergency Obstetric Care (EmOC) from the SMI into its basic maternal care package. It also adopted MDG 5 concerning maternal health from the MDGs in 2000, this was followed by the comprehensive maternal package in 2007, and later on the universal scale-up of EmOC and high impact lifesaving packages in 2010 and 2013 (MoH, 1999, 2007, 2010, 2013a). User fees had already been abolished in 2001 opting for public funding of basic health services including maternal health (Nabyonga Orem *et al.*, 2011). Despite these reforms, maternal mortality persisted at high rates registering slow progress. For instance, between 1995 and 2000, MMR declined by about 1% (from 529 to 524 deaths per 100 000 live births) instead of the 50% reduction target. Between 2000 and 2015, MMR declined by about 30% (from 524 to 368 deaths per 100 000 live births) compared to the 75% reduction expected (UBOS, 2017). The World Health Organisation (WHO) categorizes high maternal mortality as the MMR ranging between 300 and 499 maternal deaths per 100 000 live births (WHO, 2015).

The persistence of high maternal mortality in low- and middle-income countries (LMICs) and Sub-Saharan Africa (SSA) including Uganda has been attributed to obstetric emergencies (pregnancy and childbirth complications) (Say *et al.*, 2014; WHO, 2015) such as hypertensive disorders, bleeding and sepsis (Khan *et al.*, 2006; MoH, 2014; Say *et al.*, 2014; Chou *et al.*, 2015). Significant research has focused on the barriers to access and utilization of EmOC taking client and health systems perspectives (Pearson and Shoo, 2005; Kyei-Nimakoh *et al.*, 2017; Geleto *et al.*, 2018). There is also substantial research on human resources, task shifting, skilled birth attendance, epidemiology (maternal mortality and morbidity) and quality of care (Travis *et al.*, 2004; Knight *et al.*, 2013; Schneeberger and Mathai, 2015; Munabi-Babigumira *et al.*, 2019). However, policy implementation especially from the implementers' perspective has received limited attention. Policy implementation is used to refer to the actions by public or private individuals (or groups) that are directed at the achievement of objectives set forth in prior policy decisions (Meter *et al.*, 1975). This study examined the implementation of EmOC policies by frontline health workers in Uganda by; (1) exploring the barriers frontline implementers of EmOC policies (Midwives and Doctors) faced during the MDG period, and the coping behaviours they adopted to continue providing EmOC and (2) assessing the consequences of the barriers and actions of frontline implementers on maternal health.

This article contributes to the literature on implementation analysis to advance the understanding of why upstream policy expectations are sometimes not achieved at the frontline (Berman, 1978). We derive important lessons for reforming policy and implementation to improve the effectiveness of current maternal health policies to mitigate the already anticipated failure to achieve SGD 3.1. The reason we focus on the implementation of EmOC is because it has been recommended as an effective way of accelerating the reduction of maternal mortality (AbouZahr, 2003; Benagiano and Thomas, 2003; Lalondea *et al.*, 2003; Mbonye *et al.*, 2007; Mbonye and Asimwe, 2010; Bhandari and Dangal, 2014; Abbott *et al.*, 2017). In this study, EmOC is defined as a package of life-saving interventions/signal functions targeting obstetric emergencies (Echoka *et al.*, 2013). It is subdivided into Basic EmOC (BEmOC) implemented at health facilities without an operating theatre and Comprehensive EmOC (CEmOC) implemented by health facilities that offer surgical procedures (MoH, 2007). Six signal functions constitute BEmOC: parental administration of antibiotics, oxytocic drugs and anticonvulsants, manual removal of placenta, removal of retained products through manual vacuum aspiration and assisted vaginal delivery. Caesarean section and blood transfusion are added onto the six BEmOC signal functions to comprise CEmOC.

Theoretical underpinnings

From a conceptual standpoint, policy implementation is viewed as a relationship between a policy decision and its actual realization. This is realized through (1) Command and control (top-down) relying on enforcement in a bureaucratic structure to realize a decision, (2) Interaction (bottom-up) considering the context of implementation, resources, implementers, their values and behaviours and adaptation of the policy goals to the implementation reality and (3) Cognitive approach emphasizing ideas and actions which determine implementation (Lima and D'Ascenzi, 2017). Policy implementation takes place at macro (where central government officials develop programmes) and micro (where frontline actors respond to the

central policy, devise and implement actions) levels (Matland, 1995a). Both bottom-up and top-down theorists generally concur that implementation is a sine qua non for translating policy expectations into actual results (Meter *et al.*, 1975; Bullock and Lavis, 2019). This article adopts a bottom-up stance focusing on micro-level implementation using the theory of SLB. The micro-level is where most of the policy implementation takes place dominated by street-level bureaucrats. Street-level bureaucrats are frontline service workers who interact directly with citizens in the course of their jobs and have substantial discretion in the execution of their work (Lipsky, 1980). In this study, street-level bureaucrats were frontline health workers, such as nurses/midwives and doctors who provide maternal health services in public health facilities. According to SLB, frontline health workers have some degree of autonomy to determine how to implement government policies with limited indirect influence from the centre over their routine decisions. Our aim in this study was to gain insights into the gap between policy expectations and actual results by approaching policy implementation from the perspective of the street-level bureaucrats (Jensen *et al.*, 2018).

The theory of SLB posits that policy implementation is complex, non-linear and that the process of translating policy expectations by street-level bureaucrats into actual results sometimes leads to failure (Berman, 1978). This derives from earlier analyses which reported that policy implementation differs invariably from the ideal policy prescriptions because the implementation setting is characterized by imperfections and multiple bottlenecks (Lipsky, 1980; Pressman and Wildavsky, 1973). These bottlenecks include unclear goals, high demand (expectations) from citizens that exceed the services available and limited resources. Empirical studies broadly highlight shortages of human resources, unreliable drug supplies and equipment, policies that are detached from implementation realities and lack of skills for health care workers as the barriers to the implementation of maternal health interventions (Vogel *et al.*, 2016; Dantas *et al.*, 2020). From the above theoretical and empirical literature, we derive three broad categories of barriers to interrogate: (1) Policy design factors, (2) Frontline delivery systems and (3) Community-level barriers. While most studies separately study barriers and coping behaviours, our study links them through a concurrent exploration.

Given the complexity and challenging nature of their work, street-level bureaucrats adopt coping behaviours to simplify and gain more control over their work, secure clients' cooperation and reduce stress. They do this at their discretion which happens whenever the effective limits to the public officers' power leave them free to make a choice among possible courses of action and inaction (Welborn, 1969). According to the theory of SLB, street-level bureaucrats adopt two classic coping strategies. First, case processing to structure their work by preserving resources to be used when need arises, accepting the decisions or advice of other professionals without further investigations and, screening clients to prioritize emergencies or sort clients according to condition. However, this can sometimes be based on biases and stereotypes about certain clients (Harrits, 2019). The second strategy involves rationing by paying attention to a selected number of clients, interventions or clients likely to have positive recovery (Lipsky, 1980). Rationing has also been observed in choices of simple over complex cases or focusing on quantities of clients treated rather than the outcomes (Vedung, 2015; Baviskar and Winter, 2017). Such actions sometimes radically reshape policy expectations leading to failure (Hudson *et al.*, 2019).

Variations in coping behaviours according to differing job expectations, professions and levels in the structure have been reported among street-level bureaucrats in health and education sectors (Walker and Gilson, 2004; Vedung, 2015). Some empirical studies have also associated the coping behaviours of street-level bureaucrats with subversion of government policy (Kiwanuka *et al.*, 2008). Others have reported it as resistance to changes in their work flows and incentive systems (Munro *et al.*, 2019), while some say policies are just set aside because they conflict with existing demands on health workers, their daily routines and professional obligations (Lehn *et al.*, 2018). The theory of SLB on the other hand posits that the actions of street-level bureaucrats are not out of selfish interests, but rather, they are a selfless response to their 'tragic' work environment (Lipsky, 2010). This stance has also received empirical support (Walker and Gilson, 2004). Street-level bureaucrats' actions have also been attributed to their attitudes towards clients, their work and perceptions of their organization's capacity (Baviskar and Winter, 2017).

This study operationalized street-level bureaucrats as EmOC providers directly providing maternal services, their operation environment as maternal health facilities at a sub-national level while taking an open analytical approach to observe the barriers, classic and emergent coping behaviours of street-level bureaucrats and any differences if at all among the different cadre.

Overview of Uganda's policy process and EmOC delivery system

Uganda's policy process is centralized guided by the 1997 local government act (Government of Uganda, 1997). The health system in Uganda is also decentralized operating at national and sub-national levels. Over the years, political decentralization has continued on a rolling basis while health system decentralization has remained static. Through internal and external stakeholder consultations, the Ministry of Health (MoH) initiates policy processes following the 2009 Government of Uganda (GoU) policy-making guidelines and MoH governance guidelines (Government of Uganda, 2009; MoH. Guidelines for governance and management structures, 2013b). Policies are drafted by MoH, cleared by cabinet and approved by parliament. Upon approval, policies are loaded into the health system, which runs from the national to local levels for implementation. Oftentimes, the MoH provides written guidance through circulars or service guidelines and standards to aid implementation. However, in some cases policies are verbally and vaguely communicated as was the case with Traditional Birth Attendants (TBAs) (Rudrum, 2016).

The EmOC services are broadly delivered in a two-tier system: the centralized and decentralized government administrative structures (Table 1). The first tier includes health facilities at sub-national level where most of EmOC and other health services are delivered (Government of Uganda, 1997). It includes District Hospitals (DH) providing CEmOC and some level of specialized Obstetrics and Gynaecology (Obs/Gyn) services, Health Centre IV (HC IV) providing CEmOC and Health Centre III (HC III) for BEmOC. Although Health Centre IIs (HC II) by mandate are supposed to provide Antenatal Care (ANC) and promotive services for maternal health, some of them provide delivery services. Given that some deliveries take place at home, guidelines and supplies aimed at availing basic tools for clean delivery were put in place including giving expectant women delivery kits to take home. Traditional Birth Attendants (TBAs) were trained initially and equipped to support clean normal home deliveries but their roles were later on adjusted to focus only on community mobilization and referral of mothers to health facilities (MoH, 1999, 2007, 2010, 2013a).

The second tier is comprised of National Referral Hospitals (NRH) and Regional Referral Hospitals (RRH) which are semi-

Table 1: Health system structures for delivery of EmOC and related services in Uganda

Administrative level	Level of care	Catchment population (people)	Type of staff	EmOC package	Infrastructure and equipment
Central government	NRH	28 200 000	Super specialists General doctors Midwives	CEmOC National referral for specialized Obs/Gyn services	Specialized theatre and equipment with high dependency units
	RRH	2 000 000	Specialists General doctors Midwives	CEmOC Regional referral for specialized (Obs/Gyn) services	Maternity ward, general theatre and about seven operating beds and kits, ambulance
District local government	DH	500 000	Specialists General Doctors	CEmOC District referral for EmoC services	Maternity work, general theatre, ambulance
	HC IV	100 000	General Doctors Midwives	CEmOC Referral for EmOC	Basic operating theatre, maternity ward, ambulance
	HC III	30 000	Midwives	BEmOC	Delivery room, maternity ward
	HC II	5000	Midwives	Antenatal care	Delivery room, some have maternity wards others do not have
	VHT	1000	Community health workers	Mama kit, TBA training Mobilisation and referral	Information kit

Source: MoH 2007, Roadmap for accelerating reduction in maternal and neonatal mortality and morbidity in Uganda, 2007–2015.

autonomous institutions answerable to the central government. These offer CEmOC and specialized Obs/Gyn services. They also receive referrals for complications that require specialized care.

Primary provision of EmOC is expected to begin at HC III and become more specialized upstream. In practice however, some HC IIs also conduct maternal deliveries. This study presents perspectives of doctors and midwives who operate at HCII, III, IV and District Hospital levels.

Methods

This was an exploratory retrospective qualitative study involving frontline implementers who were involved in the delivery of EmOC services at HC II, III, IV and Hospital levels during the MDG period (2000–15). Retrospective policy analysis is useful in generating lessons from past successes and failures to inform meaningful future reforms (Agyepong *et al.*, 2012). The theory of SLB informed the study design, research questions, selection of respondents and analysis.

The study was conducted in three districts namely: Luwero (high burden) in central with EmOC facilities up to HC IV, Iganga (medium burden) in eastern and Masindi (lowest burden) in mid-western Uganda, respectively. They were selected from the MoH grouping of districts according to the burden of maternal morbidity; highest burden (districts contributing 60% of the total annual maternal deaths), medium burden (contributing 30%) and lowest burden (contributing 10%) (MoH, 2016). A list of districts per category was generated from the MoH electronic data on annual maternal deaths for the period 2012–15; reliable national electronic health data became available in 2012. The following criteria guided the selection of a study district per category: (1) districts that were in existence by the start of the MDGs and (2) Proximity to Kampala and assurance by the health officer of the identified district of accessibility to eligible respondents including retired frontline health workers. While proximity to Kampala may appear to limit understanding of issues related to the second delay (physical access to EmOC), each facility selected had to have some of its catchment population outside the 5 km radius used by government of Uganda to determine physical access. Selection was also done considering time and cost.

Table 2: Health facilities visited by level of care per district

Facility level	Masindi	Luwero	Iganga	Total
Hospital	1	0	1	2
HC IV	1	1	1	3
HC III	2	2	2	6
HC II	1	2	2	5
Total	5	5	6	16

Table 3: Participants by cadre per district

Cadre	Masindi	Luwero	Iganga	National
Doctors	3	3	2	2
Midwives	7	4	6	0

Guided by the district Maternal and Child Health focal persons, sixteen ($n=16$) public health facilities that were in existence by 2000 when the MDGs started, providing EmOC services and for which we could trace health workers for the entire MDG period were selected (Table 2).

Twenty seven ($n=27$) participants were identified and interviewed using purposive and snowball sampling strategies (Table 3). Only those who were directly involved in providing EmOC services at sub-national level within the public health facility levels from HC II to district hospital during the MDG period were interviewed. They included doctors ($n=8$) and mid-wives ($n=17$). Two ($n=2$) national programme level Key Informants who were referred to by several frontline study participants were interviewed for confirmation purposes only.

Data were collected between March and June 2019 through in-depth interviews and the review of two key maternal health documents commonly referred to by participants during the interviews. The interview guide used was structured along three themes: barriers to implementation of EmOC, coping behaviours of frontline health workers and consequences for maternal health (Box 1). Data were triangulated by interviewing participants across levels of care, cadre and districts with varying maternal mortality burdens. This was

Box 1 Interview guide

To reduce high maternal deaths, provision of EmOC services is recommended. EmOC has six BEmOC signal functions namely: parental administration of antibiotics, oxytocic drugs and anticonvulsants, manual removal of placenta, removal of retained products through manual vacuum aspiration and assisted vaginal delivery. While CEmOC includes all the six BEmOC signal functions plus caesarean section and blood transfusion.

1. Having been involved in provision of EmOC services at health facility level during the period 2000–15, what are your reflections and experiences concerning ending preventable maternal deaths?
   a. If there were changes in the EmOC policies during the period 2000–15, that you know about, could you please point them out?
2. What were the main challenges which you faced during the provision of EmOC services?
   a. Which actions did you take to overcome these while providing EmOC services to meet the needs of the clients you served?
   b. Probe: For each of the actions, ask the participant to provide a justification for it.
      a. How did the challenges you faced and the actions you took in response, influence provision of EmOC services and maternal health outcomes?
   c. Going forward, what are your recommendations for improving provision of EmOC services in health facilities in your district?

done to compare, contrast and confirm participant perspectives. Rigour and respondent variability was achieved by interviewing more participants within a district at the same level of care and cadre (Saunders *et al.*, 2018).

All interviews were audio-recorded, transcribed verbatim, uploaded and coded in Nvivo.12. The three main deductive themes derived from the study questions, namely: barriers, coping behaviours and consequences served as the overarching framework for coding. Using open coding, the various barriers, coping behaviours and consequences were inductively identified from the interviews. We then drew on SLB theoretical and empirical literature (elaborated in the theoretical underpinnings) to generate descriptive subthemes under each theme. For example, barriers included policy design gaps, unclear policy expectations, bottlenecks in frontline EmOC delivery systems and community-level challenges. Coping behaviours of frontline health workers were categorized into provide, modify, eliminate and refer. Consequences were grouped into weakened EmOC delivery systems, staff shortage and absenteeism, unresponsive EmOC services, out of pocket expenditure and deterioration of client conditions and death. Each subtheme was triangulated across codes using the following procedures: (1) Comparing and contrasting codes for health facilities at the same level (horizontal analysis) and across different health facility levels (vertical analysis) in each district. (2) Comparing and contrasting codes under each subtheme across health facility levels and districts. Having found no differences, results were merged and presented under the main themes and their sub-themes.

Results

Implementation of EmOC at different levels of care in the districts faced similar barriers according to their service mandates. They included: policy design gaps, unclear policy expectations, bottlenecks in frontline EmOC delivery systems and community-level challenges. This led to modifications in the EmOC package and the mechanisms of its delivery. Service modifications made the EmOC services offered unresponsive to obstetric emergencies that cause maternal death.

Barriers to implementation of EmOC

The barriers to implementation of EmOC were multilevel. They ranged from policy design gaps, unclear policy expectations, inefficiencies in the frontline delivery systems to community level weaknesses. These are summarized in Table 4 and subsequently elaborated in detail.

Policy design gaps

Participants at all health care levels reported that some EmOC signal functions were put at levels of care which could not implement them. For example, assisted vaginal delivery was incorporated in BEmOC offered at HC III level yet according to respondents, this is a complicated procedure that requires doctor-level skills with the back-up of a functional theatre. These are at higher levels of care. Midwives observed that even during their training, assisted vaginal delivery was '*theoretical*' with no practical experiences because they were told it was supposed to be performed by doctors.

. . .assisted virginal delivery was theoretical, not practical. Even up to now most of us have not used it. We know it theoretically but we have never used it practically. They (trainers) could tell us that procedure (assisted vaginal delivery) is for doctors not for midwives and most midwives have not practiced it. (Midwife_HC IV).

When interviewed, a technocrat who participated in the framing of EmOC policy at national level confirmed that the placement of assisted virginal delivery at levels of care which had no theatre back-up was an oversight. Respondents at all levels of health care said that some of the EmOC signal functions only targeted danger signs excluding their underlying causes. For example, they observed that in the management of raised blood pressure (pre-eclampsia and eclampsia); EmOC only provides for controlling convulsions using anticonvulsants excluding antihypertensive drugs to control raised blood pressure.

Unclear policy expectations

Participants from the different healthcare levels had varying information on the issue of conducting deliveries at HC II. Some said that it was allowed ($n = 5$), others knew that it had been stopped ($n = 2$) while others said it was allowed if there was a maternity ward ($n = 3$). Some participants ($n = 15$) also said that they were only allowed to conduct emergency deliveries among women who presented in second stage labour and able to deliver normally as assessed by the midwife. When this was verified with the MoH officials ($n = 2$), they said that HC IIs were informally allowed to conduct deliveries since they were the nearest health facilities to the community. This was allowed in order to discourage deliveries at home and by TBAs.

Traditional birth attendants were instructed to monitor patients and refer to the nearest health facility. That is when it became a policy

Table 4: Multilevel illustration of barriers to implementation of EmOC as reported by participants

	Barriers	Hospital	HC IV	HC III	HC II
Policy design	Policy design (missing or misplaced signal functions at levels without capacity [skills or theatre] to perform it)	√	√	√	√
	Unclear policy expectations (vague information regarding delivery at HC II)	√	√	√	√
Frontline systems of delivery	Bottlenecks in the frontline EmOC service delivery systems				
	Shortages of staff, supplies and equipment, poor referral systems	√	√	√	√
	Disruptive district creation and vertical programmes	√	√		
	Misuse of death reviews for political witch-hunt	√	√		
Community	Community level bottlenecks (low income, apathy, late care seeking, weak demand for accountability, refusal of referral)	√	√	√	√

allowing mothers to deliver at HC II. Not all policies are written, [. . .] Even HC II delivery [. . .], others are implied. You cannot look around and find a document about that but it is around by word of mouth that these things are happening. . . .the word that we always assigned is a skilled attendant. (MoH Official)

Besides varied information, some participants ($n = 17$) said that not all polices were disseminated to the frontline implementers. In most cases policy information ended at the district administration level without reaching the frontline providers of EmOC:

Uganda had many policies but they did not trickle down. Throughout my 30 years of service as a midwife at regional and national referral hospitals, I had not seen all these policies that I saw when I joined the Ministry of Health headquarters [. . .] (Retired midwife)

Bottlenecks in frontline EmOC delivery systems

Participants across all districts and levels of care said there was never a time throughout the MDG period to-date when the systems were fully functional for EmOC. Some described it as 'a system in constant crisis' with unreliable EmOC services and 'depressing to the providers'. The imperfections they highlighted included: poor staffing (numbers and mix of carder), poor referral systems, periodic stock-outs of supplies and medicines and inadequacies of equipment (or delayed repair in case of breakdown), lack of blood for transfusion and oxygen. Lack of critical staff like anaesthetists, and inadequate funding (Box 2) were prominent too. These bottlenecks are also documented in the policy documents.

Many Health Centres are appalling, with maternities lacking water and lighting, hence inappropriate for maternal and newborn health care. In most HC IVs, the theatres are either non-existent or non-functional due to lack of equipment, staff and/or staff housing, hence intended basic surgery e.g. caesarean sections are not carried [. . .]. Women have to trek long distances looking for these services. (Extract from the road map for accelerating reduction of maternal and neonatal mortality and morbidity in Uganda 2007-2015. P.11)

Doctors ($n = 5$) also reported 'continued dismantling and reconstruction of district-level health service delivery systems' as disruptive to systems for EmOC services. They attributed this to the ongoing splitting and creation of new districts. This kept them engaged in remobilizing, reorganizing and reconstituting frontline delivery systems to restore EmOC services—especially in districts that ended up losing administrative 'ownership' of a hospital.

Many participants ($n = 18$) expressed strong views about the disruption of EmOC delivery systems by vertical programmes and projects supported by donors. While recognizing that donor projects and grants contributed to a quick reduction in maternal mortality, they observed that projects were patchy (selective of signal functions and implementing sites), resource intense and pilot in nature with short-term results. Participants said that such projects created artificial efficiencies by replacing some components while sending existing systems in abeyance. For example, they hired health workers for government health facilities and paid them three or four times higher than their counterparts on the government payroll. They issued transport vouchers to women, provided delivery kits, paid community health workers and deployed fulltime ambulances well equipped and fuelled to pick women with or without obstetric emergencies from anywhere in the operation areas. On the other hand, district systems were non-incentivized for both women and community health workers, ambulances were partially functional requiring clients to fuel them. Participants said vertical programmes did not offer long-term solutions to such challenges; they instead 'looped' into the system, met their targets and withdrew leaving the districts with 'semi-collapsed' systems that required resuscitation. This was said to lead to a resurgence of maternal deaths after project closeout. In one of the policy documents, it was stated thus:

The innovative Rural Extended Services for Care and Ultimate Emergency Relief (RESCUER) programme, which provided an effective and efficient referral system, in which women with obstetric complications were quickly transferred from a lower to a higher health facility greatly contributed to reduction of maternal deaths in Iganga and other districts. Similarly, the Making Pregnancy Safer initiative reduced maternal deaths in Soroti District. However, for both innovations, the capacity of districts to sustain such a system remains inadequate. (Extract from the road map for accelerating reduction of maternal and neonatal mortality and morbidity in Uganda 2007-2015 P.11-12)

Participants ($n = 8$) held that the Maternal and Perinatal Deaths Review (MPDR) strategy—a quality improvement strategy for reducing preventable maternal deaths was 'misused' by politicians to 'witch-hunt' health workers using negligence as a cover-up. Participants' narratives indicated that role bearers were not taking action on the system bottlenecks affecting EmOC implantation; instead, they were blaming health workers as a soft target. Some interviews indicated that this led to negative actions such as the hiding of maternal death files and rewriting of clinical notes to clean out any possible incriminating information to the hospital staff. Ultimately, the MPDR failed to identify health system gaps.

Box 2 Illustrative Quotes on bottlenecks for frontline EmOC delivery

'HC IVs are supposed to be the lowest level for CEmOC, but most of them were dormant due to lack of human resource, equipment or electricity so they could not serve their intended purpose. They didn't have proper ambulances, when the ambulances were there, they lacked fuel, when patients who needed emergency surgery were referred they couldn't go, if they went we couldn't escort them, care was discontinued until they reached the referral facility'. (Doctor)

'We operated mothers and they became infected because they could not get enough doses of the drugs (antibiotics). People are poor and we didn't have money to buy for them so they would go on and become septic and sometimes they die. Blood was scarce because it is not only for mothers. The hospital couldn't have reliable availability of blood, people lost lives'. (Doctor)

'Throughout that period, (cases of) caesarean sections would be referred to hospitals due to lack of the services. The buildings, theatre, doctors, nurses and anaesthetists were there but without equipment. The theatre started functioning fully in 2016'. (Midwife HC IV)

'...oxytocic drugs have been there, then antibiotics are rare whenever a mother could not swallow drugs and needed intravenous administration, it would not be done because we didn't have enough and reliable drugs and supplies. But for the administering of anticonvulsants we left it out. Then staff were also not enough and up to now there is no change we are two midwives and they expect us to work every day one on night duty another on day without resting'. (Midwife HC III)

'I was there actually conducting deliveries but according to structures, there were certain drugs that were not supplied at HCII. Drugs like oxytocin, some IV fluids, some antibiotics, they used not to supply and yet you find some of those mothers would need those drugs, you tell them to go and buy, they fail. Like oxytocic drugs were actually a challenge. I could not stand seeing a mother bleed and die because I had no means of transport to rush her to the next level. When it came to IV fluids, I couldn't even put an IV line. There was no cannula. It's like a punishment to see a mother dying when you know what to do but you lack what to use.' (Retired midwife HC II)

'Then we also had an ultra sound machine without anybody to operate it, it is there lying redundant. If we got a raptured ectopic case that needed to be confirmed by ultra sound scan, then we could not do it. You would miss it out or delay assessing in some cases you lose a mother'. (Doctor)

Community-level challenges

Most respondents ($n = 25$) expressed concern with citizen apathy and displacement of the blame for poor EmOC services. They observed that oftentimes, whenever a maternal death occurred, the bereaved would either carry their body and go away or blame health workers for being negligent. Frontline implementers expressed strong displeasure about the failure of community members to demand accountability from the political leaders who allocate resources for service delivery. According to participants, political leaders were not taking women's lives seriously. They were not truthful about the status of service delivery, creating confrontations between health workers and the community.

We had a challenge of supplies, there would be stock-outs but the politicians tell communities that there were enough drugs. So you would find clashes between the community and health workers, then politicians and the nurses. For instance, you would tell the mother to buy the gloves and they would say "but they told us the supplies are all at the Health facility". (Midwife_HC III)

Participants also reported that other demand-related bottlenecks they faced included the high but delayed demand for services with advanced complications, inability to buy medicines in the event of stock-outs, and the refusal of referral because of lack of transport and social support away from their communities.

We had this eclampsia. I remember that time some women died because of eclampsia and it was because of delays in the village then they come here when it was late. (Doctor)

Coping behaviours of frontline health workers

Frontline health workers adopted four main coping behaviours in response to the barriers and pressures as they implemented EmOC policies. These were categorized into provide, modify, eliminate or refer (Figure 1). These practices constituted the toolkit of routines they applied with discretion to structure their work while meeting the EmOC service expectations of their clients. These are described in detail below.

Provide services according to availability

Mid-wives and doctors determined which EmOC services to offer based on the available supplies rather than the conditions of the mothers. Professional consultation was reliably available relative to other EmOC services at health facility levels. Some doctors said they would first check with the pharmacists every morning before going to the maternity wards in order to gauge available stocks and make prescriptions for the day based on what was available. Most participants observed that the availability of EmOC supplies in health facilities was oftentimes unpredictable. Whenever mothers were able to pay for the missing diagnostics and supplies from the private outlets, frontline workers would offer the care services expected of them.

'*...antibiotics, oxytocic drugs those one we could give if there were there, if they are not, then the mother buys'. (Midwife HC IV).*

Mid-wives advised mothers during antenatal care on the items to buy and come with for delivery if they were to receive a complete EmOC package. This was done during birth preparedness and planning at antenatal visits.

We always advised them to buy some drugs for emergencies and keep, then come with them during delivery. During antenatal care, we would educate mothers about preparing themselves by buying ergometrine because they can come to the facility when the drug is out of stock so most mothers used to come with ergometrine. (Midwife HC II)

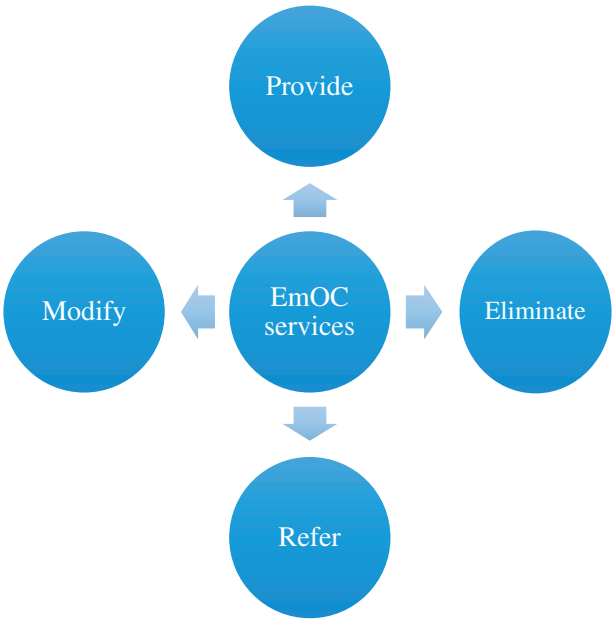

Figure 1: Routines of street-level bureaucrats in response to barriers to EmOC implementation

Modify EmOC services

Both doctors and midwives sometimes modified EmOC interventions by giving broad-spectrum antibiotics, initiating treatment doses and leaving clients to buy the remainder of the doses, assisting women to deliver and discharging them after six instead of the 24 h recommended by WHO. This was especially so at HC IIs, which did not have maternity wards. Other modifications included delaying interventions until a point considered critical or only attending to those deemed to be in critical condition—'when the bleeding is much that is when I would inject that drug' (Midwife HC II).

I used to conduct deliveries and most of the mothers come when they know they are in true labour and you only keep her for a short time especially those who have ever given birth and after giving birth, they are discharged. (Midwife HC II)

Referral/'pushing mothers forward' to the next level

Participants said the referral was their action of last resort whenever they ran out of options. This was regardless of service availability at the next level. They called it 'pushing mothers forward' without a mid-wife to accompany them and discontinuing care until the next referral health facility. According to the participants, this was because mothers most of the time had to use public transport since the ambulatory system was unreliable and ill-equipped. Participants said that, in their experiences, 'pushing mothers forward' was a common practice among EmOC providers across all levels of care because most health facilities from the lowest to national referral hospitals were facing similar bottlenecks. 'Pushing mothers forward' was also practiced to avoid blame since lack of supplies would not be accepted in case of maternal death.

Mothers used all kinds of things; boda-boda (motorcycle transport), taxis and it was terrible for some patients because they were bleeding, part of the baby is out. In that case, do you expect a health worker to escort such a mother? How do you ensure continuity of care between referring facility and the receiving facility – this is the third delay. We would refer mothers from here who needed blood, we didn't know whether there was blood at the next level, they would find no blood after wasting another one hour then they would be referred (to the next level) – more delays. So, in the documents, it was Emergency obstetric care but at implementation, it was Obstetric Care – business as usual (Doctor Hospital).

Eliminate signal functions

Many participants reported omitting some signal functions whenever they lacked the supplies, equipment, personnel, infrastructure or skills to provide it. Assisted vaginal delivery was oftentimes not performed due to lack of skills. Most mid-wives and some doctors expressed a lack of confidence to perform it; even those who had the skills were hesitant to do it without theatre back up. Some health workers at HC IVs would not perform caesarean section because of lack of equipment, blood or anaesthetists.

Most of the HC IIIs up to now are unable to remove retained placenta and they refer the patients. And for assisted vaginal delivery, they cannot do it, it is in books but they can't do it. You find that even in hospitals doctors cannot do it. (Doctor, Hospital)

Other signal functions that were eliminated included, administering magnesium sulphate mostly at HC II and III because it was considered difficult to mix and administer. With task shifting and integrated services, more responsibilities were offloaded to midwives in addition to delivery. This increased the burden on mid-wives. They adopted selective service provision to cope with increased pressures. For example, unless a mother presented with a complaint, they would not undertake some examinations like blood pressure check-ups. Emergency caesarean section was given in some cases without supplies like oxygen and blood. One doctor said:

We conducted emergency caesarean sections without antibiotics and transfusion as long as in our assessment, they (mothers) were stable and we could save them. Rather than leave the mother to die we would take the risk and hope for the best. If the worst came to the worst, we let go. We lost some mothers in such circumstances, a mother would bleed you need blood there is no blood you cannot take the patient out of the theatre, so you just look on. (Doctor, Hospital)

The consequences of barriers and coping behaviours of street-level bureaucrats on EmOC provision

The barriers to EmOC and response by street-level bureaucrats led to weakening of the EmOC delivery systems, staff absenteeism, unresponsive EmOC services, out of pocket expenditure and deterioration of client conditions sometimes resulting in death. All these resulted in the delivery of 'Obstetric Care' without an 'Emergency' aspect, which could not effectively address the causes of maternal death. Below we discuss these consequences in detail.

Weakened EmOC delivery systems

Participants said that vertical programmes distorted implementation systems by creating parallel structures like project units, selective interventions and sites. This made EmOC coverage patchy, rendering heavy but unsustainable investments that disabled existing district and facility systems. Examples given were the DISH project in Luwero and Masindi districts and RESCUER project in Eastern Uganda. Participants also partly attributed poor implementation of MPDR to its being promoted as a stand-alone project yet it is an integral part of the EmOC package. Doctors also expressed concern that the continuous splitting of districts affected the stability and

maturation of EmOC delivery systems. They also contended that, it reconfigured referral networks for hospital care and redistributed the health workers across new and old district administrations, which were in dispute about the decision to split.

Staff shortage and absenteeism

While inadequate staffing was already a major bottleneck, the rationing of staff time exacerbated this crisis by institutionalizing absenteeism. Participants across all health facilities flexed their duty rosters to create spare time for their private obligations. Since midwives were few in numbers yet they were required to be on duty all the time, they innovated by alternating extended working hours for each in order to create free days for themselves. While this did not reduce workload, they said it was a creative way to achieve work–life balance. Doctors and anaesthetists on the other hand, would be on call and only came to the facility when needed. In some cases, this left one staff at a time to attend to women. Cases considered not emergency would endure long waiting hours and postponements of appointments.

The staff were not enough [. . .], up to now you find two midwives [on duty] on the same day. They expect you to work every day without resting. What we do we make our private arrangements; you come for a week and another week somebody also comes because you also need to rest and home people need you. (Midwife HC IV)

Unresponsive EmOC services

Participants said the multiple bottlenecks in the implementation systems rendered EmOC services unresponsive to obstetric emergencies, which were the leading causes of maternal mortality. They said, EmOC implementation systems operated in a 'business as usual' mode incapable of responding to obstetric emergencies with the right interventions on time. Most participants concurred that 'there was no real emergency obstetric care offered in government health facilities'. They said circumstances beyond their control made their working conditions continuously stressful. To reduce work stress they would offer EmOC services as and when it was possible.

We expect this facility to provide EmOC, a mother would come on time, the doctor who is supposed to be on duty is on a project somewhere the time he reaches the facility there are no sutures, he tells the mother to go buy. This is not responsive. Or you find there are no midwives one is on leave, the other worked at night so there is no one to attend to the mother. (Doctor, hospital)

Out of pocket expenditure (return to 'cost-sharing')

Some mid-wives reported that on several occasions, out of compassion they would buy medicines for mothers especially when the danger of death was imminent. This was in 2001 when cost-sharing had just been abolished. They could not look on as women were dying when they knew what to do. Others said they used to pay for their clients when they had just joined public service. However, over time, they stopped when it became financially burdensome and unsustainable. Several participants said they would advise mothers to buy supplies and diagnostics, which were out of stock from private pharmacies. Those who could not buy the required supplies would be referred to the next level, but sometimes, they still had to fuel ambulances and pay drivers.

We used to improvise because there were times when there would be no drugs completely now like ergometrine but because you don't want a maternal death to happen in your facility, I would get my money and buy that drug and keep it with me for emergency. During antenatal, we tell them that some drugs you have to buy and come with them for delivery. (Midwife_HC III)

Deterioration of client conditions and death

Participants reported instances where the conditions of some women deteriorated and some died as they waited to access theatre. This happened as frontline providers, at HC IVs and Hospitals, triaged among cases that required caesarean sections given the high caseload, inadequate equipment, space and other support systems. According to respondents' narratives, more severe cases would be taken to theatre and a waiting list created for the rest. In situations where caesarean section kits were insufficient, emergencies had to wait as kits were being sterilized for reuse on the next case.

Discussion

This article deepens our understanding of the relationship between policy and implementation including why implementation sometimes deviates from the original policy design leading to policy failure. The study findings show that the ideal upstream expectations of maternal health policies were incompatible with the implementation settings. The policies were idealistic in proposing a full EmOC package to be implemented by a system that did not have the capacity to operationalize the proposals. The multiple and multilevel barriers starting from policy design, ineffective implementation systems to high community demand coming late presented complex situations for street-level bureaucrats. They were expected to work with incomplete provisions to offer a timely and full EmOC package to meet high and late demand for their services. In response, street-level bureaucrats devised actions intended to minimize work stress and save EmOC services from collapsing. This rendered EmOC services slow and sometimes nonresponsive to obstetric emergencies that cause maternal death. Our findings suggest that without looking at the consequences of the coping behaviours adopted by street-level bureaucrats, the theory of SLB is incomplete.

This study shows that top-down policies and their flawed assumption of central command and control tend to fail at implementation. Top-down policies come with high short-term and sometimes unclear expectations while inadequately paying attention to the frontline needs for successful implementation (Hudson *et al.*, 2019). Additionally, upstream policies tend to stretch provider capacities and frontline systems causing inequalities and poor quality of services (Lipsky, 2010; Erasmus, 2014). We suggest that the micro-level of implementation plays a central role in policy success or failure (Matland, 1995b). It is where most of the policy implementation takes place yet, it is usually characterized by multiple and pervasive bottlenecks making it imperfect and incompatible with upstream policy expectations (Freedman *et al.*, 2007; Penn-Kekana *et al.*, 2007). Barriers such as shortage of human resources, unreliable drug supplies and equipment, policies that are detached from implementation realities and lack of skills among health care workers have been reported to affect the implementation of maternal health interventions in other empirical studies (Vogel *et al.*, 2016; Dantas *et al.*, 2020). The decision to provide delivery services at level II health centres was poorly communicated to frontline implementers as had been reported elsewhere (Rudrum, 2016). The high service expectations from policymakers and citizens depicted in the SLB theory were also observed in this study. However, this study

showed that high demand becomes more difficult to deal with when most of the women arrive late with advanced complications.

This study also highlights an important but often underemphasized component in SLB concerning planning for successful implementation. It brings out the planning paradigm for EmOC delivery as one of the bottlenecks and advances the need for a unified planning approach to reinforce implementation. Whereas decentralisation intended to increase access to quality health services (Government of Uganda, 1997), our study finds that continuous and unpredictable creation of new local government units hinders the delivery of EmOC services—mostly disrupting referral systems. A study on decentralisation also concluded that the splitting of districts (continuous decentralization) cripples service delivery systems for both the parent and new districts and takes time and financial resources to reconstitute (Mutebi *et* al., 2019). Districts are increasingly dependent on the central government and ineffective in delivering public goods except for ensuring systems of political patronage (Green, 2015). This is underpinned by recentralization of power to maintain command and control over resources to curtail the discretionary powers of frontline implementers of government policies (Lewis, 2014). Although vertical programming can lead to rapid reduction in maternal mortality (Serbanescu *et al.*, 2019), it perpetuates disparities in service coverage, weak health systems and short-term results particularly for EmOC (Freedman *et al.*, 2007). This is because the structures and approaches of vertical programming are in most cases incompatible with routine public delivery systems on which EmOC depends. Approaches like selective concentration of resources on specific components increase inefficiencies in frontline delivery systems where they are already weak (Travis *et al.*, 2004). This can be rectified by integrating such initiatives within the mainstream implementation systems to improve sustainability, equitable results and reduce maternal mortality (Mbonye *et al.*, 2007; Straus *et al.*, 2013).

This study further unpacks the black box of what happens between policy and implementation through a detailed account of the coping behaviours adopted by street-level bureaucrats to navigate their complex working environments as they translate EmOC policies into services. The broad coping strategies envisaged in SLB are observable in this study. Both case processing and rationing of services were prevalent. Although studies show variations in the coping behaviours adopted by different street-level bureaucrats in different sectors (Baviskar and Winter, 2017), our study suggests that if faced with similar bottlenecks, the coping actions could be similar within a sector. Other debates on SLB suggest that street-level bureaucrats ration information to their clients and prioritize clients likely to achieve positive prognoses and interventions (Vedung, 2015). In this study, however, they prioritized critical cases whose outcome was unpredictable. The interventions were provided on the basis of availability rather than cherry picking and information was availed to clients. In the Ugandan context, studies on the prevalence of payment for maternal services by clients in public health facilities tend to classify street-level bureaucrats' actions as subversive behaviour (Kiwanuka *et al.*, 2008). This derives from the top-down theories which look at street-level bureaucrats as obstinate, subversive and out to frustrate government policy—therefore should be controlled (Sabatier, 1986). Studies in other contexts report resistance to any policies which change work flows and incentive systems of street-level bureaucrats (Munro *et al.*, 2019), and ignoring of policies which conflict with existing demands on health workers, their daily routines and professional obligations (Lehn *et al.*, 2018). Others report on the stereotyping of clients during case processing (Harrits, 2019). Our findings however reaffirm the original SLB stance that the actions of street-level bureaucrats are selfless responses to their 'tragic' work environment (Lipsky, 2010; Evans, 2016). We report instances where some of the health workers paid medical bills for their clients while others expressed frustration with an unresponsive health system.

The barriers for policy implementation and coping behaviours of street-level bureaucrats have varying consequences on policy performance, which are not envisaged in the theory of SLB. Upstream policies when inadequately resourced, drive inefficiencies in frontline systems of EmOC delivery (Chi *et al.*, 2015). Some women seeking maternal care have previously reported stereotyping by health workers as a hindrance to use of services (Dantas *et al.*, 2020). Women living with obstetric fistula in Uganda reported that they had been made to wait for a long time during labour as health workers selected women who appeared to be having money over them (Ruder *et al.*, 2018). Other studies have also attributed adverse outcomes for mothers and babies to absenteeism of doctors (Ackers *et al.*, 2016). Payments for health services also continue to drive out of pocket expenditure and inequalities which benefit more the rich quintile than the poor (Kwesiga *et al.*, 2015).

This article derives from perspectives of purposively selected frontline implementers from few district facilities to draw conclusions about the implementation of EmOC in Uganda. This paper does not discuss the enablers of implementation since our focus was on explaining policy failure as opposed to policy performance which would consider both barriers and enablers. Participants were drawn from all levels of public health facilities in the selected districts with the varying burden of maternal mortality. Their perspectives provide detailed contextual experiences of frontline implementation of EmOC policies throughout the MDG period with respect to repeated failure to meet policy targets. Rigour was achieved through triangulation of data across levels of care and districts.

Conclusion

The frontline implementation context for EmOC was in contrast with upstream policy expectations. Policies for EmOC were presumptuous that existing frontline systems would support the implementation of new policies loaded within the existing resources. Irrespective of the level of care and mortality burden, the systems of EmOC delivery persistently experienced widespread bottlenecks, which were beyond the control of frontline implementers. System capacities were further stretched and weakened by vertical programming and decentralisation. This resulted from superficial efficiencies created by heavily invested projects with short implementation periods and patchy overage rendering EmOC implementation systems largely unresponsive to obstetric emergencies that caused maternal death. Since frontline implementers were working with incomplete provisions most of the time, the actions they devised were mainly to manage work pressure and stress while performing their duties rather than responding to the causes of maternal mortality. Notwithstanding the shifts in EmOC policies and levels of health care facility, their actions were relatively the same. The reflection on the impact of the barriers to implementation and coping behaviours of street-level bureaucrats on policy performance enhanced the utility of the theory of SLB in this study. Future research applying SLB should measure the impact of barriers to implementation and coping behaviours of frontline implementers on policy performance. Effective implementation of EmOC policy requires alignment of policies to implementation challenges and adequately resourcing them

to deliver the service expectations. It also requires reverting to integrated planning for harmonized action and optimal resource use.

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