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# Perspectives of stakeholders on emergency obstetric care training in Kenya: a qualitative study

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**Background:** This study explores stakeholders' perceptions of emergency obstetric care (EmOC) 'skills-and-drills'-type training including the outcomes, strengths, weaknesses, opportunities and threats of the intervention in Kenya.

**Methods:** Stakeholders who either benefited from or contributed to EmOC training were purposively sampled. Semi-structured topic guides were used for key informant interviews and focus group discussions. Following verbatim transcriptions of recordings, the thematic approach was used for data analysis.

**Results:** Sixty-nine trained healthcare providers (HCPs), 114 women who received EmOC and their relatives, 30 master trainers and training organizers, and six EmOC facility/Ministry of Health staff were recruited. Following training, deemed valuable for its 'hands-on' approach and content by HCPs, women reported that they experienced improvements in the quality of care provided. HCPs reported that training led to improved knowledge, skills and attitudes, with improved care outcomes. However, they also reported an increased workload. Implementing stakeholders stressed the need to explore strategies that help to maximize and sustain training outcomes.

**Conclusions:** The value of EmOC training in improving the capacity of HCPs and outcomes for mothers and newborns is not just ascribed but felt by beneficiaries. However, unintended outcomes such as increased workload may occur and need to be systematically addressed to maximize training gains.

**Keywords:** emergency obstetric care, low- and middle-income country, perspectives, qualitative study, stakeholder, training

## Introduction

Globally, an estimated 303 000 women still died due to pregnancy and childbirth in 2015, with 99% of deaths occurring in low- and middle-income countries (LMICs).<sup>1</sup> In Kenya, as in many LMICs, pregnancy-related complications constitute the principal causes of morbidity and mortality amongst women, translating to 362 maternal deaths per 100 000 live births.<sup>2</sup> Many of these deaths are preventable if women receive emergency obstetric care (EmOC). EmOC is a package of interventions, referred to as signal functions, including injectable antibiotics, injectable oxytocics, injectable anticonvulsants, manual removal of placenta, removal of retained products, assisted vaginal delivery, basic neonatal resuscitation, caesarean and blood transfusion, and

required to treat complications that can result in direct maternal and early newborn deaths.<sup>3</sup> Based on the number of signal functions provided, facilities are classified into basic or comprehensive EmOC facilities (Table 1).<sup>3</sup> Evidence shows that EmOC can reduce institutional maternal mortality and intrapartum stillbirths by 15–50% and 45–75%, respectively.<sup>4,5</sup>

Since the early 1990s, EmOC training for healthcare providers (HCPs) has been viewed as a critical strategy that can increase the knowledge and skills of HCPs, the availability and quality of EmOC they provide and, ultimately, improve maternal and newborn health outcomes.<sup>6</sup> As of 2010, none of the designated basic EmOC facilities in Kenya was assessed as having the capacity to provide the full complement of the seven basic signal functions.<sup>7,8</sup> Across all EmOC facilities, injection of parenteral

**Table 1.** EmOC signal functions

Signal functions	
Basic EmOC	Comprehensive EmOC
1) Injectable antibiotics	All Basic EmOC functions (1–7), plus:
2) Injectable oxytocics	8) Caesarean
3) Injectable anticonvulsants	9) Blood transfusion
4) Manual removal of placenta	
5) Removal of retained products	
6) Assisted vaginal delivery	
7) Basic neonatal resuscitation	

A BEmOC facility is one in which all functions 1–7 are performed.

A CEmOC facility is one in which all functions 1–9 are performed.

antibiotics (79%) and oxytocics (73%) were the most performed signal functions, while removal of retained products of conception (39%) and assisted vaginal delivery (15%) were the least performed signal functions.<sup>8</sup> A similar trend in signal function performance is observed in many other LMICs.<sup>8</sup> This suboptimal performance has mostly been associated with insufficient HCP skills, for which in-service training was deemed relevant, despite previous medical/midwifery education.<sup>7,9</sup> One such training implemented in Kenya was the emergency obstetric care and early newborn care (EOC&NC) training, which was funded by the Department for International Development (DFID), and delivered by UK-based and national in-country-based facilitators and adapted to predefined country needs.<sup>10</sup>

There have been studies published in the peer-reviewed literature that reported the ‘reaction’ of trained HCPs to EmOC training they just received,<sup>11,12</sup> based on the Kirkpatrick training evaluation framework.<sup>13</sup> However, these studies have used quantitative surveys. To the best of our knowledge, there have been no qualitative studies that fully explored the opinions of trained HCPs on EmOC training published in the peer-reviewed literature. With the impact and implications of EmOC training extending beyond the trained HCPs themselves to women and their newborns,<sup>14</sup> and implementation typically involving several key stakeholders,<sup>10</sup> it is important to understand and explore their perspectives on EmOC training. The objectives of this study were to explore the perception of stakeholders concerning EmOC training including the outcomes, strengths, weaknesses, opportunities and threats of the intervention.

## Materials and methods

### Intervention

A standardized EOC&NC ‘skills-and-drills’ training was designed to include the essential knowledge and skills required to

manage the major causes of maternal and early newborn deaths. The 5 d training used adult learning principles, simulation-based education techniques and hands-on training on obstetric and newborn care mannequins, and was implemented between 2012 and 2014.<sup>10</sup>

### Setting

Although the intervention was implemented nationally, the capital of Kenya, Nairobi, was selected as the district of focus in this study, as it is the most cosmopolitan county of the 47 in the country. In addition, Nairobi being the seat of government meant that all stakeholders could be assessed within the county. Basic and comprehensive EmOC facilities were selected if they had over 80% of HCPs trained in EmOC on the programme (an agreed training saturation benchmark). These facilities were spread across Nairobi and primarily served various populations with varying levels of economic means (see Supplementary Figure 1).

### Participants

Stakeholders who had a relationship with the training were purposively sampled. These stakeholders were either associated with specific facilities (HCPs, women and their relatives) or worked across several facilities (trainers, training organizers and Ministry of Health [MoH] staff). Specifically, for trained HCPs, efforts were made to ensure a good mix of selection across cadre (doctor vs nurse/midwife) and facility type (basic EmOC vs comprehensive EmOC), years of experience and batch of training, since the training took place at different times,<sup>10</sup> while maintaining homogeneity within groups to allow for comparison.

### Tools and data collection

Key informant interviews (KIIs), paired interviews (PIs) and focus group discussions (FGDs) were conducted between July and September 2015 by the first author (ABT), who was independent of the programme staff. A predesigned standard operating protocol was used to guide the process. FGDs and PIs lasted about 1 h and the KIIs about 30 min on average. Sessions were audio-recorded and reflective field notes taken to supplement the transcripts. Piloted topic guides, which had been tested with non-recruited respondents, were used to collect information from stakeholders regarding their understanding of their role in relation to EmOC training, conduct and outcomes, strengths, weaknesses, opportunities and threats of the intervention. The topic guides used comprised open questions to encourage the participants to tell their stories. Throughout data collection, emphasis was placed on the trustworthiness of the research.<sup>15</sup> All participants were made to feel comfortable enough to express themselves and behave naturally (credibility), by establishing rapport between the researcher and the researched. The researchers’ understanding of comments made by participants were repeated to them to verify that such understanding conveyed their intended meaning (confirmability). Data collection continued till thematic saturation was achieved (dependability/transferability).

## Data analysis

Following verbatim transcription of audio-recordings, we followed Braun and Clarke's six steps for thematic analysis: becoming familiar with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.<sup>16</sup> An inductive approach was taken in generating the codes, with care taken not to force data into the pre-defined categories. Although some codes were predefined before analysis, open coding was still conducted to ensure that no relevant information of the data was missed, in line with the exploratory approach taken for this analysis.<sup>17</sup> Analysis was performed with the aid of computer-assisted qualitative data analysis software, NVivo 10 (QSR International, Memphis, TN, USA). The text of the transcripts was analysed as a proxy for the experience of the respondents' knowledge of the subject matter, perceptions, feelings and behaviour, and interpreted while considering the interaction of the researcher with the research participants.<sup>18</sup> Based on guidelines from established qualitative literature,<sup>15,19,20</sup> themes were derived, emerging understanding tested, and alternative explanations sought. Illustrative quotes were selected from transcripts with the various stakeholder groups and integrated into a clear narrative to reflect the broad meaning of the key themes.

## Ethical approval

Ethical approval was received from the Research and Ethics Committee of the Liverpool School of Tropical Medicine (14.054) and Kenyatta National Hospital Ethics and Research Committee (P718/12/2014). Written informed consent was obtained from respondents and no financial incentives were offered.

## Results

Sixty-nine trained HCPs, 114 women who received EmOC and their relatives, 30 master trainers and training organizers, and six EmOC facility/MoH staff were purposively sampled and recruited into the study (Table 2). The key emerging themes with sub-themes are described under four headings below (Table 3).

## Training content and delivery approach

Many trained HCPs highlighted that the training provided a 'hands-on' experience of procedures that they could not perform at all or did not consider themselves competent in prior to the training. HCPs valued this approach, highlighting that trainers ensured that every trainee had a chance to practise these skills on mannequins (Box 1, FGD4-Midwife 2 [M2]). Trained HCPs, including those who found the training 'challenging' still valued the training approach, especially when compared with their previous education (Box 1, FGD5-M3). They opined that the practical approach increased their capacity to provide EmOC after training and allowed them to unlearn some outdated and/or non-evidence-based practices. The training allowed some HCPs to feel like they were now fully capable to practise (Box 1, FGD6-M1, PI1-Doctor 2 [D2]). Training facilitators added that this approach is 'based on science' and they saw improvements in trainees when this approach was used (Box 1, KII1-UK Trainer 1). Facility managers highlighted that they observed improvements in the practice of trained HCPs following the training (Box 1, KII3-Faculty Manager-in-charge 3 (FM3)).

## Perception of service received following training

Generally, women had positive opinions of the quality of care that they received from EmOC-trained HCPs (Box 2, FGD10-Mother 4 [Mot4]). Relatives of the women also appeared to be satisfied with the service provided, especially if the woman was in good health (Box 2, KII2-relative).

Some women who had heard negative experiences from other women who had used the facility previously (verified as the time before the training) appeared to have a different opinion regarding their own visit (after training). The negative opinions of women regarding care provided before training of HCPs were echoed by women who had delivered in the facility in years prior to the training and were back in the facility to deliver another baby (Box 2, FGD8-Mot6).

However, women expressed disappointment if they were 'turned away' from basic EmOC (BEmOC) facilities and/or referred to comprehensive EmOC facilities (Box 2, FGD9-Mot1, FGD8-Mot5). Facility managers recognized this but argued that prompt referral by HCPs showed that they had a thorough

**Table 2.** Participants in interviews and focus group discussions

Stakeholder group	Number of sessions			Number of participants
	FGD	PI	KII	
EmOC-trained HCPs	11	1	1	69 (54 nurses/midwives and 15 doctors)
Trainers and training organizers UK volunteers	3	2	6	30 (4 UK-based trainers, 12 Kenya-based trainers, 10 CMNH staff and 4 staff of other implementing organizations based in Kenya)
Women and relatives	14	-	5	114 (109 women who received care from trained HCPs and 5 relatives)
EmOC facility and MoH staff	-	-	6	4 healthcare facility managers and 2 senior staff of the MoH

**Table 3.** Themes and subthemes

Themes	Subthemes
Training content and delivery approach	<ul style="list-style-type: none"> <li>• Practical approach of training is valuable</li> <li>• Evidence-based content leads to improvements</li> </ul>
Perception of service received following training	<ul style="list-style-type: none"> <li>• Positive opinion of service post-training by women</li> <li>• Clarity about decision to refer women in need of higher level care</li> </ul>
Perceived outcomes of training	<ul style="list-style-type: none"> <li>• Increased knowledge and skills for all</li> <li>• Refresher for experienced HCPs</li> <li>• Knowledge sharing with yet to be trained colleagues</li> <li>• Improved attitude to patients while providing care</li> <li>• Increased workload for HCPs in BEmOC facilities perceived as negative outcome</li> <li>• Improved outcomes for mothers and their babies</li> </ul>
Training sustainability and maximizing outcomes	<ul style="list-style-type: none"> <li>• Agreement on the need for sustained training</li> <li>• Need to explore innovative approaches to sustain training implementation</li> <li>• Retain trained HCPs in relevant departments</li> </ul>

**Box 1:** Illustrative quotes: training content and delivery approach

'There was very little sitting and listening but there was so much practical work that by the time you end the five to six days you are already competent when going to attend a client. ...The trainers make sure everybody has a chance to really practice before you go back to do. I liked it [the training] because there is both practical and theory. Theory kidogo (little), practical more, it was a nice training.' **CEmOC midwife, 14 years' experience, trained August 2014 (FGD4-M2)**

'It was good but challenging because there were many things that we had not learnt before but at the end of the session, because of the way we were taught, we knew we had gained something worthwhile.' **CEmOC midwife, two years' experience, trained June 2014 (FGD5-M3)**

'The content [of the training] was essential and very informative because after the training we are able to do some things that we had even learnt when we were students but have not been able to do before in real life... It was also important to learn up-to-date procedures in the right fashion. Best part for me!' **BEmOC midwife, two years' experience, trained September 2014 (FGD6-M1)**

'Leaving medical school allowed me to be called 'doctor', going for the EmOC training allowed me to become a real 'doctor'.' **CEmOC doctor, six years' experience, trained September 2014 (PI1-D2)**

'Our use of this [practical] approach is based on science. And we see the improvement in the trainees even before they leave the workshops.' **UK-based trainer (KII1-UKT1)**

'There is a change! Immediately after they returned from the training, it was clear that there was a significant difference with the way my staff were working.' **Facility Manager-in-charge, BEmOC facility (KII3-FM3)**

understanding of the situation of the expectant mother and could recognize complications and refer earlier or provide care at their level if possible and appropriate (Box 2, KII3-FM3). HCPs argued that the only situation that warranted referral was when they knew they could not manage the patient, mostly because of lack of equipment or if the mother had a better chance of survival in a CEmOC facility (Box 2, FGD6-M4).

**Perceived outcomes of training**

Generally, HCPs viewed the knowledge they gained from the training as being significantly more than what they had gained while in midwifery/medical school. Some HCPs reported gaining new knowledge, especially in a dynamic field like obstetrics in which they believed new information is always generated, and as such the training helped them to remain current (Box 3,

FGD6-M1). More experienced HCPs viewed the training as a 'refresher', which aided recollection of previous knowledge (Box 3, FGD7-M2). HCPs from some facilities reported that they were able to share the new knowledge gained with colleagues yet to attend the training through official knowledge sharing sessions (Box 3, FGD6-M3).

The majority of HCPs said that the training helped them to improve their skills. Some HCPs reported not previously knowing exactly what to do when they had their patients or how to treat their patients in a systematic fashion. However, following the training, they could better manage pregnant mothers and their babies. It appeared that there were specific components of the training that the HCPs valued, particularly neonatal resuscitation and assisted vaginal delivery with ventouse (Box 3, FGD1-D2, FGD2-D1). HCPs, particularly midwives from BEmOC facilities, opined that the improved skills had made them feel more

**Box 2:** Illustrative quotes: perception of service received following training

'I was so impressed by the quality of the care because I did not expect a public hospital have such good service. Since I came here in the morning, I have seen the patients are attended to very well and professionally too. You cannot differentiate a nurse from a doctor. I have nothing negative to say.' **Mother in BEmOC facility, PNC, 27 years, housewife, para 2 (FGD10-Mot4)**

'I gave birth to my first born here [in the facility], and I used to hear people say this is not a good hospital. I agreed with them then. But then I was referred here for this baby [points to baby], I was initially reluctant, but when I came here, they checked me, admitted, monitored me regularly. Honestly, there has been a lot of change here! They made sure I had no problems! The nurses are courteous and even educate you on what preparation you need to make before delivery.' **Mother in BEmOC facility, PNC, 22 years, housewife, para 2 (FGD8-Mot6)**

'I was expecting a quick service, but they took too much time. I think they sometimes forget..., but they should realize that everyone is important! We are all emergencies! So, they need more hands.' **Mother in BEmOC facility, 39 years, housewife, para 5 (FGD9-Mot1)**

'Some expectant women do not get care from the health workers; instead they are being tossed about. You know first pregnancy usually present with many challenges. My younger sister came here while in labour and was turned away to go and look for a hospital with better health facilities.' **Mother in BEmOC facility, 27 years, housewife, para 2 (FGD8-Mot5)**

'If she is ok, then I am ok. Our son is also ok! All I want is that my wife should be fine. So far, the doctor and the nurses have been handling my wife well.' **Husband of mother in CEmOC facility, 25 years, handyman (KII2-relative)**

'In terms of referral, when there is a problem. You see when you are able to refer the mother early, after doing your initial assessment, you know from what you were taught at training that you cannot help, then you refer. That way you are contributing to reducing the chances of maternal mortality and neonatal mortality, too. So, when we detect a problem early, you can refer to a higher level. We only refer those that we cannot help. It's about best chance for mother and child.' **Manager-in-charge, BEmOC facility (KII3-FM3)**

'In this BEmOC facility, with the skills we now have, we are able to manage more clients. Some things we used to panic before, but it's different now. For example, before if somebody had delayed the second stage, we would refer before attempting something like vacuum delivery, but now we can do that. When we refer now, it is because we are very sure we cannot manage the situation, mostly because we don't have plenty equipment.' **BEmOC midwife, 10 years' experience, trained September 2014 (FGD6-M4)**

**Box 3:** Illustrative quotes: perceived outcomes of training

'I gained a lot from the training, particularly my knowledge. It was better than school. I felt like I was learning new information and my knowledge was increased.' **BEmOC midwife, two years' experience, trained September 2014 (FGD6-M1)**

'Before it [the training], we did not have a lot of knowledge, particularly the recent things. You know knowledge keeps changing and getting updated. Where we thought that we knew, the training showed there were many changes to, for example, management of the emergencies, which we needed to learn. For me, it was like a refresher.' **BEmOC midwife, 19 years' experience, trained June 2014 (FGD7-M2)**

'After going for training, you give feedback to colleagues who did not go. You tell them what you have learnt. For example, I taught them to vacuum when I returned.' **BEmOC midwife, four years' experience, trained September 2014 (FGD6-M3)**

'I am the only doctor in this facility who is confident enough to use the vacuum, and everyone knows that. I learnt how to use it from the training.' **CEmOC doctor, three years' experience, trained September 2014 (FGD1-D2)**

'It has so much impact on my side the approached management has really changed because now I am able to approach every patient in a systematic way.' **CEmOC doctor, four years' experience, trained April 2013 (FGD2-D1)**

'There was a special module that we were taught—communication skills. This helped to improve my attitude to women.' **CEmOC doctor, five years' experience, trained April 2014 (KII1-D1)**

'... because now we know how to do things it is like we are happy about doing everything, so even your attitude is reflected to the patients, and the patients will go out there to spread the message. So, from the time we started EmOC training, even the numbers [of deliveries] have begun going up. It is something negative! Because our workload has increased.' **BEmOC midwife, 29 years' experience, trained September 2014 (FGD 7-M4)**

'I think we are able to manage all that [complications], and this makes a difference in the turnout of the mothers and their babies.' **BEmOC midwife, six years' experience, trained November 2013 (FGD6-M4)**

confident in dealing with the cases that they managed. They reported that they believed the training had translated to improved outcomes of their patients (pregnant mothers and their babies), including reduced morbidity and mortality (Box 3, FGD6-M4).

HCPs described an improvement in their attitude to patients while providing care. They explained that the communication module included in the EmOC training helped in improving their attitude towards their patients. Another explanation they provided for the improved attitude was that it may be due to the other outcomes that they gained from the training—improved knowledge and skills (Box 3, KII1-D1). HCPs reported that this attitude may also have contributed to the increased number of women choosing to deliver in health facilities. Some HCPs had received positive feedback from patients. In addition, HCPs observed that some patients had been referred to them because of the positive feedback that the patients had received from previous patients (Box 3, FGD7-M4).

Trained HCPs in BEmOC facilities reported that they felt the number of patients that were attending for care had increased since the training, describing this as a ‘negative’ outcome (Box 3, FGD7-M4). HCPs highlighted that they had not been used to such numbers previously and that there were no additional HCPs posted to help in managing this increment, but since they had been trained, there was an expectation that they should be able to manage all these patients appropriately (Box 3, FGD7-M4). Some facility managers reported increments of ‘over 100%’ (Box 3, KII2-FM2).

### Training sustainability and maximizing outcomes

The government, implementing organizations and facility managers justified the need to continue EmOC training (Box 4). They

highlighted that for them EmOC training guaranteed value for money; however, there was a need to focus on maximizing outcomes of training and exploring new approaches to sustain training implementation (Box 4, KII1-Ministry of Health representative 1 [MoH1]). Stakeholders suggested that there was a need to consider facility-based training or refresher on-the-job training (OJT) of HCPs to ensure sustainability of the training outcomes. They highlighted that the OJT model worked in more advanced settings and should be applicable in Kenya, too. To further maximize training outcomes, stakeholders suggested the need to focus on maintaining a database of trained HCPs while retaining trained HCPs in relevant departments (Box 4, KII1-MoH1, KII2-FM1, KII2-organization implementing EmOC [pOIE] training 1).

Facility managers believed there was a case for continued EmOC training, especially because of its apparent influence on improving patient outcomes (Box 4, KII2-FM2). The government took it as their responsibility to provide quality care for pregnant women who require emergency care. This includes ensuring HCPs are adequately trained to deliver the care required. The training was viewed as part of their broader strategy to reduce maternal and neonatal mortality in Kenya, and so it was seen as important to sustain the training of HCPs (Box 4, KII1-MoH1).

## Discussion

### Main findings

Our findings show that HCPs value a ‘hands-on’ approach to EmOC training that delivers current and evidence-based content. These training programmes are perceived to improve HCP knowledge, skills and attitudes as well as care delivery and outcomes for women and their newborns by all stakeholders. In

#### Box 4: Illustrative quotes: training sustainability and maximizing outcomes

‘The training is quite expensive, but it is value-for-money. So, it is for us to sustain it. The biggest cost is the mannequin. But we have trained over 2000 health workers in the last three quarters. If we can get those numbers up, we will get to saturation... But the training has to continue because it adds value. It is actually part of our strategic plan for tackling maternal mortality. There is political will. The first lady started the ‘Beyond Zero’ campaign, focused on reducing maternal mortality. So, demand is coming in, and with demand, you need facilities with trained health workers to manage them.’ **Representative, Ministry of Health (KII1-MoH1)**

‘We should be looking at how we can repackaging the training in a different way that makes it more sustainable.’ **Representative, Ministry of Health (KII2-FMoH1)**

‘There has been a reduction in maternal deaths in the past seven years. The only significantly different thing we have done is intensive training in EmOC.’ **Manager-in-charge, CEmOC facility (KII2-FM2)**

‘Sustainability is definitely a key consideration. Some regular on-the-job fire drill can be conducted in the facilities. It makes you even remember more... In the UK, you have to have a re-certification done following refreshers every six months, and I think this is what needs to happen here [in Kenya].’ **Manager-in-charge, BEmOC facility (KII2-FM1)**

‘I have been here for a couple of years now and based on our results and all I have heard from training participants; the training is really making a difference. It is needed in countries like ours.’ **Staff, organisation implementing EmOC training (KII1-OIE1)**

‘The training is very important and should continue... We found that sometimes some HCPs are trained, return to their facilities, and then they are moved to other departments. This is a waste! We found that 25% of those trained have been moved to departments that have nothing to do with maternity issues. We have to work with the Ministry to ensure that those trained are retained in relevant departments.’ **Country Director, a different organization implementing EmOC training (KII2-OIE1)**

BEmOC facilities, the intended increment in EmOC availability by implementers following training may be perceived or experienced as increased workload by some HCPs. However, service planners argue that if the OJT approach is considered, the positive effects of these training programmes make a compelling case for its sustainability.

## Interpretation

Existing evidence shows that EmOC training improves the knowledge and skills of HCPs.<sup>8</sup> This study shows that this is not just an ascribed outcome of the intervention, but a ‘felt’ outcome. It appeared that regardless of whether new knowledge and skills were gained, or the training served as a ‘refresher’ as reported by many of the more experienced personnel, HCPs found it better than previous education or practical training workshops. This was primarily attributed to the approach and teaching delivery used for undergraduate medical/midwifery education in Kenya, which is mostly based on formal lectures, laboratory work and bedside-teaching during clinical rotations (3–4 months in obstetrics and gynaecology rotation for medical students).<sup>9,21</sup> Short, 5 to 6 d training workshops on EmOC on the other hand used a ‘skills-and-drills’ approach,<sup>10</sup> which combines simulation-based medical education (SBME) with deliberate practice (DP). This SBME and DP approach is more effective than the traditional medical education approach in improving the skills acquisition of HCPs.<sup>22</sup> HCPs regarded the practical approach of the training highly, especially as HCPs perceived that this approach increased their capacity to deliver EmOC afterwards. This supports the case for investments in such practical approaches for training nurses, midwives and doctors in Kenya.

Improved knowledge, skills and attitudes to care delivery were intended outcomes at inception.<sup>23</sup> While improved knowledge and skills have been reported in the literature, ‘improved attitude’ has only been previously reported in training programmes conducted in high-income countries and not in any LMIC.<sup>14</sup> The rationale for attitude as a training outcome as described by trained HCPs in our study was that the outcome occurred because they ‘...are happy about doing everything’ because they knew what they were doing. One critical point of note is that women in LMICs place importance on attitudes of HCPs while providing care to them; HCP attitude has considerable influence on their acceptance and utilization of services.<sup>24</sup> Their acceptance and utilization would only increase the likelihood of HCPs being able to provide the critical care that women may need during pregnancy and childbirth.<sup>25</sup>

Trained HCPs in BEmOC facilities reported that an increased workload was associated with more women visiting the facilities and increased need to carry out EmOC signal functions. Evidence shows that facilities had noted an increased number of deliveries and performance of signal functions post-training.<sup>11,26</sup> In these studies, the authors reported this outcome as a ‘positive’ one, associating it with the improved skill capacity of trained HCPs. Based on the qualitative nature of our study, it is not possible to objectively determine the effect of staff strength and the number of women visiting the facilities on HCP workload. However, it is important to interpret the ‘increased workload’ outcome reported by some HCPs in the context of the health system, as its

occurrence or otherwise following training could be multifactorial. In Kenya, the free maternity service scheme introduced in 2013<sup>27</sup> has been associated with an increase in the number of deliveries.<sup>28</sup> Another explanation for the perceived ‘increased workload’ may be that in fact the available work has increased, and the available workforce is not sufficient to meet the care demands. This was highlighted by one of the midwives in our study and the women who reported that the HCPs have ‘too many women to deal with’. Having ‘too few staff’ and ‘too many patients’ potentially undermines the performance of HCPs,<sup>29</sup> which the training aims to improve.

All stakeholders saw the good in EmOC training. For the government, there is a case to continue training, especially with evidence of its effectiveness<sup>14</sup> and cost-effectiveness.<sup>30</sup> However, as is the case with the training programme evaluated here, many such programmes are funded by donor agencies.<sup>30</sup> Stakeholders in our study posited that there is a need to explore OJT to improve sustainability of the training. Similar recommendations have been made in a systematic review that looked at the cost-effectiveness of EmOC training globally.<sup>30</sup>

## Strengths and limitations

This is the first study that takes a multi-stakeholder perspective in evaluating EmOC training, thereby providing a holistic view of the intervention. Within each stakeholder group, there was also a good mix. For example, there were nurses/midwives and medical doctors with varying years of experience as well as women with a varied number of previous childbirths (nulliparous to multiparous). This design allowed for the capture of varying views within stakeholder groups. In addition, the combination of KIIs, PIs and FGDs provided a breadth of data collection methods that allowed recruitment of all relevant stakeholders.

A limitation is that the study was conducted in Nairobi alone. However, the number and diversity of KII/PI/FGD participants, combined with the thematic saturation being reached, suggests that the findings would not necessarily be different in a larger community. In addition, the study design included methods to guarantee trustworthiness such as using a standard protocol to guide conduct of the interviews and discussions, ensuring that participants were at ease to express themselves and verifying the intended meaning of the statements that they made.

## Conclusion

The value of EmOC trainings in improving the capacity of HCPs and outcomes for mothers and newborns is not just ascribed, as has been shown in the vast amount of quantitative studies published on the effectiveness of EmOC training,<sup>6</sup> but is also felt by the stakeholders of the intervention. In addition to exploring ways to maximize training outcomes, addressing unintended consequences such as increased workload would help ensure that the gains of training are fully realized.

## Supplementary data

Supplementary data are available at *International Health* online (<http://inthehealth.oxfordjournals.org>).



**Authors' contributions:** ABT, BM and NvdB conceived the study as part of ABT's doctoral research. ABT, BM and NvdB were involved in the design of the study protocol. ABT and JM planned the study. ABT conducted the interviews and discussions. All authors were involved in the analysis and interpretation of the data as well as in writing the manuscript. All authors read and approved the final version.

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**Competing interests:** None declared.

**Ethical approval:** Ethical approval was received from the Research and Ethics Committee of the Liverpool School of Tropical Medicine (14.054) and Kenyatta National Hospital Ethics and Research Committee (P718/12/2014).

## References

- WHO, UNICEF, UNFPA, et al. Trends in Maternal Mortality: 1990 to 2015. Geneva: World Health Organization, 2015.
- KNBS, Ministry of Health Kenya, National AIDS Control Council, et al. *Kenya Demographic and Health Survey 2014*. Nairobi, 2015.
- WHO, UNFPA, UNICEF, et al. *Monitoring Emergency Obstetric Care: A Handbook*. Geneva, Switzerland: WHO Press, 2009.
- Ni Bhuiinneain G, McCarthy F. A systematic review of essential obstetric and newborn care capacity building in rural sub-Saharan Africa. *BJOG*. 2015;122:174–82.
- Yakoob MY, Ali MA, Ali MU, et al. The effect of providing skilled birth attendance and emergency obstetric care in preventing stillbirths. *BMC Public Health*. 2011;11:S7.
- van Lonkhuijzen L, Dijkman A, van Roosmalen J, et al. A systematic review of the effectiveness of training in emergency obstetric care in low-resource environments. *BJOG*. 2010;117:777–87.
- NCAPD, MOMS, MOPHS, et al. *Kenya Service Provision Assessment Survey 2010*. Nairobi, Kenya, 2011.
- Ameh C, Msuya S, Hofman J, et al. Status of emergency obstetric care in six developing countries five years before the MDG targets for maternal and newborn health. *PLoS One*. 2012;7:e49938.
- Ameh CA, van den Broek N. Making It Happen: training health-care providers in emergency obstetric and newborn care. *Best Pract Res Clin Obstet Gynaecol*. 2015;29:1077–91.
- Ndeti DM, Mathai M, Khasakhala LI, et al. University medical education in Kenya: the challenges. *Med Teach*. 2010;32:812–5.
- Ameh C, Adegoke A, Hofman J, et al. The impact of emergency obstetric care training in Somaliland, Somalia. *Int J Gynecol Obstet*. 2012;117:283–7.
- Mirkuzie AH, Sisay MM, Bedane MM. Standard basic emergency obstetric and neonatal care training in Addis Ababa; trainees reaction and knowledge acquisition. *BMC Med Educ*. 2014;14:201.
- Kirkpatrick D. Techniques for evaluating training programs. *Train Dev J* 1979;33:78–92.
- Bergh A-M, Baloyi S, Pattinson RC. What is the impact of multi-professional emergency obstetric and neonatal care training? *Best Pract Res Clin Obstet Gynaecol*. 2015;29:1028–43.
- Marshall C, Rossman GB. *Designing Qualitative Research*, 3rd ed. Thousand Oaks, CA: SAGE Publications, 1999.
- Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol*. 2006;3:77–101.
- Guest G, MacQueen KM, Namey EE. *Applied Thematic Analysis*. Thousand Oaks, CA: SAGE Publications Inc., 2012.
- Tesch R. *Qualitative Research: Analysis Types and Software Tools*. New York: Falmer Press, 1990.
- Bradley EH, Curry LA, Devers KJ. *Qualitative data analysis for health services research: developing taxonomy, themes, and theory*. *Health Serv Res*. 2007;42:1758–72.
- Ryan GW, Bernard HR. Techniques to identify themes. *Field Methods*. 2003;15:85–109.
- Kibore MW, Daniels JA, Child MJ, et al. Kenyan medical student and consultant experiences in a pilot decentralized training program at the University of Nairobi. *Educ Health*. 2014;27:170–6.
- Nyn WC, Issenberg SB, Cohen ER, et al. Does simulation-based medical education with deliberate practice yield better results than traditional clinical education? A meta-analytic comparative review of the evidence. *Acad Med*. 2011;86:706–11.
- DFID. *Business Case and Intervention Summary: Maternal and Neonatal Health Human Resource Capacity Building*. London, 2012.
- Bohren MA, Vogel JP, Hunter EC, et al. The mistreatment of women during childbirth in health facilities globally: a mixed-methods systematic review. *PLoS Med*. 2015;12:e1001847.
- Wright K, Banke-Thomas A, Sonoiki O, et al. Opinion of women on provision of emergency obstetric care in public facilities in Lagos, Nigeria: a qualitative study. *Health Care Women Int*. 2016;38:527–43.
- Makuwani AM, Massawe SN, Mpembeni R, et al. Setting an emergency obstetric care unit local initiatives, availability of resources and good will are the main ingredients of success: a lesson from Mkuranga District Hospital, Tanzania. *East Afr J Public Health*. 2010;7:109–13.
- The Presidency. Speech by H.E. Hon. Uhuru Kenyatta, C.G.H., President and Commander-in-Chief of the Defence Forces of the Republic of Kenya during the Madaraka Day Celebrations (Nyayo National Stadium, June 1, 2013). *Projects* 2013.
- Wamalwa EW. Implementation challenges of free maternity services policy in Kenya: the health workers' perspective. *Pan Afr Med J*. 2015;22:375.
- Bradley S, Kamwendo F, Chipeta E, et al. Too few staff, too many patients: a qualitative study of the impact on obstetric care providers and on quality of care in Malawi. *BMC Pregnancy Childbirth*. 2015;15:65.
- Banke-Thomas A, Wilson-Jones M, Madaj B, et al. Economic evaluation of emergency obstetric care training: a systematic review. *BMC Pregnancy Childbirth*. 2017;17:403.