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Case Study

"Maternity is us": Strengthening Teamwork and Communication in Maternity Wards in Sierra Leone

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Abstract

Sierra Leone has the third-highest maternal mortality rate in the world. Seed Global Health is partnering with the Ministry of Health to support efforts to decrease preventable maternal mortality through strengthening midwifery training and education. According to the needs assessment conducted by Seed Global Health in 2021, lack of teamwork and communication among health workers was a significant obstacle in obstetric care. To address this challenge, the maternity care team at two urban, regional hospitals in the Bombali and Bo districts in Sierra Leone initiated measures to strengthen teamwork and communication. Interventions were implemented focusing on training, tools, and organizational changes. Midwifery educators were deployed to high-mortality wards, facilitating simulations, utilizing communication tools, conducting morning huddles, and improving triage workflows. Semi-structured interviews with maternity staff revealed improved communication, conflict management, and teamwork skills. Staff noted the efficacy of interventions, particularly the impact of WhatsApp groups and morning huddles. Initiatives targeting a program approach to enhancing teamwork and communication in Sierra Leone's maternity wards have shown promise in reducing maternal deaths and could serve as examples for maternity care teams in their efforts strengthen teamwork and communication and ultimately to improve care.

Keywords: Teamwork; Communication; Maternal Health; Healthcare teams;

Introduction

Globally, an estimated 287,000 women die annually from a maternal cause, equivalent to almost 800 maternal deaths every day, and approximately one every two minutes [1]. The highest burden of mortality is found in Sub-Saharan Africa [1].

Addressing maternal mortality is complex. In settings like Sub-Saharan Africa, there is a high burden of direct causes such as hemorrhage, pre-eclampsia and infections. However, there are also a myriad of indirect causes which include delays in seeking care; poor quality of care; insufficient number of healthcare workers; shortages of essential medication or equipment; overwhelming social determinants such as poverty, lack of education; harmful gender norms or racial or ethnic biases [1-4].

Often forgotten in analyses of causes of maternal mortality and subsequent strategic recommendations is the critical component of strengthening the teams in which healthcare providers work [1, 5]. Equally forgotten is the importance of how these teams communicate to collectively achieve a mutual goal of high-quality maternal health care [1, 5].

Effective teamwork and communication have been found to be an essential component of delivering high quality care [6-9]. However, building and sustaining cohesive interprofessional teams that effectively communicate with each other can be challenging as it involves changing the culture and the ways in which individuals behave and interact.

As we strive to reach the Sustainable Development Goal 3 target of reducing global maternal mortality to less than 70 maternal deaths per 100 000 live births by 2030, attention must be paid to how healthcare providers are communicating and working in teams.

Case Presentation of Program & Background

Sierra Leone has done a remarkable job of reducing its maternal mortality by over fifty percent in the last twenty years, yet it still has the third highest maternal mortality in the world with 443 deaths per 100,000 live births [10, 11].

The commitment to maternal child health is a high priority for Sierra Leone's government. In 2019, the Office of the Vice President of Sierra Leone invited Seed Global Health (Seed) to partner with the Ministry of Health and Sanitation (MoHS) to support their efforts to decrease preventable maternal mortality through strengthening midwifery education and training.

A targeted needs assessment of midwifery clinical training was performed in 2021 to identify strengths and gaps in midwifery clinical training at health facilities in Sierra Leone from various stakeholders' perspectives [12]. One major challenge identified in the needs assessment and in other assessments looking at obstetric care in the country was teamwork, communication, attitudes, and decision-making among health workers [12, 13].

With this backdrop, we would like to share a program approach to strengthening teamwork and communication that occurred within maternity care teams at two urban, regional hospitals in the Bombali and Bo districts of Sierra Leone.

Interventions to improve team effectiveness

In a systematic review of articles published from 2008 to 2018 that looked at interventions to improve team effectiveness within health care, four main types of teamwork and communication interventions were identified [14]:

1. Training- education sessions based on predefined principles (i.e.Crew Resource Management (CRM) and TeamSTEPPS®), on a specific method (i.e. simulation), or on general team training in which a group of people work together to gain knowledge of a topic area.
2. Tools - which consists of development and implementation of tools that structure and facilitate communication.
3. Organizational redesign - which consists of designing structures to stimulate team processes and functioning.
4. Program - which is a combination of all the previous interventions.

The systematic analysis concluded that interventions mainly focused on predefined principles like TeamSTEPPS® and simulation-based training provided the greatest opportunities for improving team functioning [11]. However, they found growing evidence that a program approach combining training, tools, and organizational redesign may have greater efficacy in improving teamwork [14].

Program approach to improve teamwork and communication in Sierra Leone

In 2021, Seed placed three midwifery educators in the maternity ward of the largest regional hospital in the Bombali district in Sierra Leone. This hospital attends over 2,500 deliveries per year. [15]. Prior to Seed's arrival, the hospital was experiencing high rates of maternal death. There were 23 maternal deaths in 2020 giving it a case fatality rate of near 1% [15].

In 2022, Seed expanded their work to another regional hospital in the Bo district. They placed an additional two midwifery educators at this hospital. The Bo hospital attends over 3,400 deliveries per year and was experiencing some of the highest numbers of maternal death In the country. There were 61 maternal deaths in 2022 giving it a case fatality rate of near 2% [16]. Seed's partnership with these two hospitals was multifaceted but a large portion of the work was focused on interventions to improve teamwork and communication. Using a program approach which combined the three main types of teamwork interventions identified in Baljac-Samardzic et al systematic review above, we will outline the interventions that Seed in-country team members, Seed midwifery educators, midwifery faculty at local midwifery schools and maternity care staff members from the two identified hospitals implemented [14].

Training Interventions

Seed educators ran multiple, high-fidelity, low-technology simulation sessions focused on obstetric emergencies of the maternity care staff. Simulation is an educational approach that utilizes simulation aides to replicate "real-life" clinical scenarios. Paired with simulations are post-simulation sessions, called debriefings, which allow for participants to reflect on performance [17]. Medical simulations have been shown to improve competence and performance in a variety of domains, including clinical skills, teamwork, decision-making and patient outcomes [18-21]. After simulation sessions, Seed educators worked alongside staff in the clinical setting supporting them in the application of clinical, communication and teamwork skills learned in simulation.

Tool Interventions

Seed educators in collaboration with lead midwives at clinical sites, implemented two tools, the Situation, Background, Assessment and Recommendation (SBAR) tool and the Subjective, Objective, Assessment and Plan (SOAP) note, to help structure communication among maternity care staff.

The SBAR tool is widely used in healthcare. The tool guides clinicians to provide relevant patient information in an organized and logical manner that has proven to improve team communication, patient hand-offs, and patient outcomes [22, 23].

The SOAP note is a tool that provides clinicians with a cognitive framework in which to systematically identify essential

information about the health status of the patient [24]. It also guides how clinicians document information in patients' medical records and therefore communicate with other healthcare professionals caring for the same patient [24]. SOAP notes have been associated with increasing clinicians' communication ability and confidence [24].

All maternity care staff and midwifery students were trained on the SBAR and SOAP note tools. Following trainings, Seed educators and lead midwives provided bedside mentorship and support in the clinical setting to practice and implement these tools.

Another tool implemented was WhatsApp groups for team units on the maternity ward to create more effective and prompt communication. Hospital staff midwives created a WhatsApp group for midwives in charge of each maternity unit. A WhatsApp group for the maternity supervisory team was formed. This group consisted of experienced midwives to be on-call and available for nights and weekends in cases of inadequate staffing to support in emergencies. They also developed an all-maternity ward WhatsApp group that included doctors, nurses, midwives, surgical techs, anesthesia, pharmacists, blood bank techs and lab techs. This group includes over 60 staff members and allows the team to quickly communicate about where patients are coming from in terms of referrals, who is available to come for assistance and what emergencies are occurring. Additionally, there is a community referral WhatsApp group for maternity staff in more remote clinics throughout the two districts which is used to alert maternity staff at the regional hospitals of incoming cases so they can prepare staff and resources.

Organizational Redesign

Organizational redesign involves changing structures, processes, or people's roles in order to achieve desired outcomes, such as high-quality medical care [14]. The maternity care teams at Makeni and Bo hospitals, in conjunction with Seed Global Health, spearheaded multiple organizational redesigns in their respective hospital settings.

One organizational redesign was morning huddles. These huddles are multidisciplinary meetings that occur at 8am every weekday at both regional hospitals. The purpose is to review patients on the maternity ward, discuss important patient care issues and assess availability of resources. They allow everyone to have a shared mental model, an important component of the pre-defined principles of TeamSTEPPS® where everyone on a team is working with the same situational awareness which allows for mutual understanding and clearer communication [25]. Another purpose of these huddles is to identify any gaps in knowledge, resources, or systems and create follow-up "action points" to address gaps.

Representatives from every discipline involved in patient care on the maternity ward is expected to come. This generally includes: nurses, midwives, doctors, maternity- in-charges, matrons, surgical technicians, lab technicians, anesthesia, pharmacy, and sometimes the Medical Superintendent of the hospital. Although the huddles had existed intermittently at both hospitals in the past, they were not consistently embedded into the daily routine and according to staff, were not streamlined or well attended.

A second organizational redesign was restructuring the way patients were triaged on arrival to the maternity ward. In obstetrics, delays in appropriately triaging and caring for patients who arrive at a facility have been associated with high maternal morbidity and mortality [26-28]. Seed Global Health, Bo Government Hospital maternity staff and the School of Midwifery Bo faculty recognized significant gaps in the obstetric triage system at Bo Government Hospital (BGH). In response, they developed clear triage criteria, trained maternity staff on this criteria, appointed an in-charge midwife to supervise the triage area, and equipped the triage unit with necessary supplies and space to triage patients appropriately. Seed educators and lead clinical midwives provided supportive mentorship and supervision throughout the redesign process.

Results

To gauge the impact of these interventions, we conducted semi-structured interviews with eight members of the maternity care staff, which included two in-charge matrons in the maternity ward, one surgical technician in the maternity ward, and five clinical midwives. Interviews were conducted virtually in October of 2023 using a Zoom platform. They occurred approximately 2 years after Seed began partnership with the hospital in the Bombali district and approximately 1 year after they began partnership in the Bo district.

As mentioned above, Seed and partners used a program approach which combined the three main types of teamwork interventions identified in Baljac-Samardzic et al's systematic review.

Changes Resulting from Training Interventions

When looking at the impact of training interventions, staff expressed that the communication and teamwork skills they developed through interdisciplinary simulations and debriefings coupled with the practical application in the clinical setting helped to improve their communication and conflict management skills.

Staff reflected stating:

- "The skills that the Seed educators, through their trainings and mentorship, are helping us to build are teaching us how to communicate with colleagues, identify our needs and patients' needs."
- "In the training sessions- we are learning conflict management. It helps us identify issues and helps us to manage- less confrontation - now we can focus on what matters- the patient. It has helped us to advocate for what we need and what the patient needs."

Changes resulting from implementation of new tools

When reflecting on the impact of new tools, the staff focused on the importance of the WhatsApp groups. They gave many examples of how this tool impacted teamwork, communication, and patient care.

Referring to the all-maternity staff WhatsApp group, participants shared:

"One night there was no magnesium sulfate. A patient started to convulse. I posted on the WhatsApp group no magnesium sulfate … Everyone started to look around other units in the hospital and they found some and we were able to stabilize the patient."

Another case shared was:

"A critical patient was needing a (blood) transfusion. I went on the WhatsApp group. Kept giving continual updates on what we needed. People in the group started asking around to try and find someone with the right blood type to donate blood for the patient. We were able to find blood for her and saved her."

Changes resulting from Organizational Redesign

Focusing on organizational redesign interventions, all participants agreed morning huddles were one of the key components in strengthening teamwork and communication.

Participants shared that from these morning huddles, the team developed "action points" to address problems, lack of resources, and knowledge gaps. An example of an action point identified in the huddles was that most maternal deaths were occurring on nights and weekends. They used the WhatsApp tool and developed the supervisory team WhatsApp group which consisted of experienced midwives to be on-call for nights and weekends if there was inadequate staffing or if staff needed further clinical support in emergencies.

When reviewing patients at the morning huddles, the team identified that there were often multiple clinicians caring for one patient in a disjointed manner. For example, one midwife might assess a patient's labor progress with a cervical exam, another midwife would take the patient's vital signs, another midwife would attend the patient at delivery, and then another might suture the perineal laceration. Although this may at first appear like a team approach, they found it was not ideal for patient care. Clinical staff were not communicating their findings with each other and additionally, no clinician was taking responsibility for the holistic care and well-being of the patient. From this realization, an action point was to allocate a primary midwife for each patient so that one clinician is continuously responsible for and aware of each patient on the ward.

An interesting example of how the morning huddles have created a multidisciplinary team that extends beyond the maternity department is when a participant described the importance of the lab attendant in the blood bank. The participant stated:

"The lab attendant is part of the morning huddle team. It is important because now they know when the maternity staff runs to them for emergency blood to transfuse a mom having a postpartum hemorrhage- they know the urgency- they are part of the team. They understand what is happening because they have been incorporated into the team. Before, when we didn't have great teamwork, the blood bank would doubt us, they would question our need for blood, and this would delay care for the patient."

Maternity is us

When looking at the overall program approach, the biggest change in communication and teamwork was a shift from clinicians practicing in silos, independently of each other, to now socially mobilizing and leveraging the strengthen of many individuals. They are now calling on colleagues for help, relying on the expertise of each staff member, and collectively caring for a patient and sharing responsibility together. Staff stated:

"Before now, when we would have students or another staff member needing help to do something, people would say, 'Oh it is not my unit or not my department.' Therefore, when something was going wrong … it was someone else's problem. It was a blame game. Now, no one is isolated. Whatever is happening in one ward- everyone will run to that ward and help."

An example of this collective responsibility where each staff member plays a critical role in the care of the patient was described:

"Last week, we had 10 emergencies in one day but no mother or baby lost their lives! Within the span of 4 hours, we had a patient with a ruptured ectopic pregnancy, severe pre-eclampsia, a severe postpartum hemorrhage, post-abortion care patient who was actively bleeding, and a patient in obstructed labor. We were only able to handle this because of improved teamwork. The surgeons divided into two groups and anesthesia did the same. We only have two operating theaters so one surgeon was in one place and the other surgeon went to the other theater. One midwife was managing the postpartum hemorrhage, another midwife was managing the pre-eclamptic patient giving her magnesium sulfate- there was teamwork everywhere! Everyone was hands-on! People shouted for help and those on the ground came running. We used the WhatsApp group to message people and they came in. That day was overwhelming but it was really amazing how we handled it."

Another staff member described:

"The patient is for everyone, not a single person- everyone is caring for the patient. Maybe we have all realized that we are all working for the care of the patient. Maybe we realized that instead of individually we do it as a team. If we do it as a team- it will ease the burden."

In this shift to caring for patients as a team, staff members expressed they felt like they could give better care and also expressed greater pride in their work. Perhaps one staff member summed it up by stating:

"Maternity is us! All of us matter and it takes all of us to care for every patient together."

Discussion & Conclusion

When building human resources for health, it is critical to consider how humans learn to interact and communicate with each other to achieve high-quality care. There is limited research in this area in HRH in low resource countries [29-31]. More research is needed to address this gap.

These examples could serve as inspiration for maternity care teams seeking to enhance teamwork and communication amongst interdisciplinary staff.

Although maternal mortality in both of the hospitals mentioned has declined since the start of these initiatives one cannot infer causality or even correlation to these teamwork initiatives. However, given the sustained use of communication tools and organizational redesigns such as morning huddles and the powerful stories provided by clinicians on the ground, we think that it warrants further research as to the effectiveness of the program approach of combining training, tools, and organizational redesign in improving teamwork and communication and ultimately improving the quality of health care.

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Conflict of Interest: None

References

1. World Health Organization (2023) Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division. Geneva: WHO; 2023.
2. World Health Organization (2015) Strategies toward Ending Preventable Maternal Mortality. Geneva: WHO 2015.
3. Amjad S, MacDonald I, Chambers T, Osornio-Vargas A, Chandra S, et al. (2019) Social determinants of health and adverse maternal and birth outcomes in adolescent pregnancies: A systematic review and meta-analysis. Paediatr Perinat Epidemiol 33:88-99.
4. Hamal M, Dieleman M, De Brouwere V, de Cock Buning T (2020) Social determinants of maternal health: a scoping review of factors influencing maternal mortality and maternal health service use in India. Public Health Rev 41:13.
5. World Health Organization (2021) Ending preventable maternal mortality (EPMM): a renewed focus for improving maternal and newborn health and well-being.
6. Institute of Medicine (US) Committee on Quality of Health Care in America, Kohn LT, Corrigan JM, Donaldson MS, eds (2000) To Err is Human: Building a Safer Health System. Washington (DC): National Academies Press (US).
7. Leonard MW, Frankel AS (2011) Role of effective teamwork and communication in delivering safe, high-quality care. Mt Sinai J Med 78:820-826.
8. Salas E, DiazGranados D, Klein C, Burke CS, Stagl KC, et al. (2008) Does team training improve team performance? A meta-analysis. Hum Factors 50:903-933.
9. Schmutz J, Manser T (2013) Do team processes really have an effect on clinical performance? A systematic literature review. Br J Anaesth 110:529-544.
10. Carshon-Marsh R, Aimone A, Ansumana R, Swaray IB, Assalif A, et al. (2022) Child, maternal, and adult mortality in Sierra Leone: nationally representative mortality survey 2018-20. Lancet Glob Health 10:e114-e123.
11. World Health Organization (2000) UNICEF, UNFPA, World Bank Group and UNDESA/Population Division. Trends in Maternal Mortality 2000 to 2020.
12. Sonnie M, Kella F, Stern A, Mannino CA, Adelman S, et al. (2023) A Sierra Leone 2021 Midwifery Clinical Training Needs Assessment: A Call to Action to Augment Clinical Precepting. Ann Glob Health 89:10.
13. Proos R, Mathéron H, Vas Nunes J, Falama A, Sery Kamal P, et al. (2020) Perspectives of health workers on the referral of women with obstetric complications: a qualitative study in rural Sierra Leone. BMJ Open 10:e041746.
14. Buljac-Samardzic M, Doekhie KD, van Wijngaarden JDH (2020) Interventions to improve team effectiveness within health care: a systematic review of the past decade. Hum Resour Health 18:2.
15. Sesay B (2024) Maternal Mortality Statistics for Makeni Regional Hospital.
16. Sesay B (2024) Maternal Mortality Statistics for Bo General Hospital.
17. Ziv A, Ben-David S, Ziv M (2005) Simulation based medical education: an opportunity to learn from errors. Med Teach 27:193-199.
18. Okuda Y, Bryson EO, DeMaria S Jr, Jacobson L, Quinones J, et al. (2009) The utility of simulation in medical education: what is the evidence?. Mt Sinai J Med 76:330-343.
19. Sharara-Chami R, Lakissian Z, Farha R, Tamim H, Batley N (2020) In-situ simulation-based intervention for enhancing teamwork in the emergency department. BMJ Simul Technol Enhanc Learn 6:175-177.
20. Steinemann S, Berg B, Skinner A, DiTulio A, Anzelon K, et al. (2011) In situ, multidisciplinary, simulation-based teamwork training improves early trauma care. J Surg Educ 68:472-477.
21. Foster M, Gilbert M, Hanson D, Whitcomb K, Graham C (2019) Use of Simulation to Develop Teamwork Skills in Prelicensure Nursing

Students: An Integrative Review. Nurse Educ 44:E7-E11.

22. Müller M, Jürgens J, Redaèlli M, Klingberg K, Hautz WE, et al. (2018) Impact of the communication and patient hand-off tool SBAR on patient safety: a systematic review. BMJ Open 8:e022202.

23. Shahid S, Thomas S (2018) Situation, Background, Assessment, Recommendation (SBAR) Communication Tool for Handoff in Health Care-A Narrative Review. Saf. Health 4:7.

24. Weed LL (1968) Medical records that guide and teach. N Engl J Med 278.

25. Parker AL, Forsythe LL, Kohlmorgen IK (2019) TeamSTEPPS® : An evidence-based approach to reduce clinical errors threatening safety in outpatient settings: An integrative review. J Healthc Risk Manag 38:19-31.

26. Thaddeus S, Maine D (1994) Too far to walk: maternal mortality in context. Soc Sci Med 38:1091-1110.

27. Mohammed MM, El Gelany S, Eladwy AR, Ibrahium Ali E, Mohamed T, et al. (2020) A ten year analysis of maternal deaths in a tertiary hospital using the three delays model. BMC Pregnancy Childbirth 20:585.

28. Nassoro MM, Chetto P, Chiwanga E, Lilungulu A, Bintabara D, et al. (2020) Maternal Mortality in Dodoma Regional Referral Hospital, Tanzania. Int J Reprod Med :9082179.

29. Poku CA, Attafuah PYA, Anaba EA, Abor PA, Nketiah-Amponsah E, et al. (2023) Response to patient safety incidents in healthcare settings in Ghana: the role of teamwork, communication openness, and handoffs. BMC Health Serv Res 23:1072.

30. Abraham V, Meyer J, Godman B, Helberg E (2023) Patient safety culture at the unit level of a tertiary hospital in South Africa: a survey study. J Public Health Afr 14:2228.

31. Konlan KD, Shin J (2022) The status and the factors that influence patient safety in health care institutions in Africa: A systematic review. PLOS Glob Public Health 2:e0001085.