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COMMENTARY

Developing an emergency nursing short course in Tanzania

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ABSTRACT

Nurses are the largest group of healthcare workers in Africa. By adequately equipping nurses to identify, intervene and care for emergency conditions, emergency healthcare systems can be strengthened. To address this need, a nursing working group was formed within the African Federation for Emergency Medicine (AFEM). The aim of this international emergency nursing group was to develop a guiding document to help improve emergency nursing skills within Africa. Using this guiding document, a group of Tanzanian clinical nurse trainers was selected to develop a context specific short course. They used this guiding document as a foundation to improve skill development. The pilot course was well received and has since expanded to training in five regions within the United Republic of Tanzania. The clinical nurse trainers leading the course, are supported by a mentorship programme with competent educators within a global emergency nursing infrastructure. This course, a combination of local knowledge, formal mentorship programs, and international nursing support, demonstrates that investing in the improvement of emergency nursing skills can have high impact results with low-cost. This will ultimately improve emergency care on the continent.
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African relevance

- This course aims to improve emergency nursing skills in Tanzania using a cost effective, high-impact method
- It is important that nurse training be adjusted in order to be context specific
- This commentary highlights the importance of mentors and international collaborations

The state of emergency care in Africa

Emergency care remains one of the least developed aspects in low and middle income countries [1]. Many of these low and middle income countries lack emergency care systems, often with no coordinated prehospital emergency response capacities, triage, or appropriate resources. Dedicated in-facility areas for emergency care are severely limited. In addition, catchment areas for facilities are large, especially in rural areas, leading to isolated healthcare providers with little to no access to prehospital transportation to more definitive care. As a result, patients may remain at facilities longer, leading to more strain on nurses, who are heavily responsible for the care of these ill patients.

Nurses make up the largest group of healthcare workers and form the backbone of healthcare delivery in Africa. In all tiers of healthcare systems across the continent, nurses are required to be able to identify and manage emergency conditions. This includes both the lowest of the tier, usually small primary healthcare facilities, and the highest of the tier, which are fewer but more specialised facilities. In lower tier facilities, nurses are the first point of contact and determine referral to advanced services. In higher tiers, nurses receive patients and prioritise and coordinate their care. In addition, the shortage of doctors on the continent, especially in rural areas, has resulted in task shifting toward nurses [2]. This means that nurses are now responsible for many functions traditionally performed by doctors. However, many of these nurses are not properly trained for these additional tasks, making nursing skill development in emergency care delivery and referral so crucial [2].

Nurses are the gatekeepers into the healthcare system so, a cost-effective way of strengthening this system is through ensuring core nursing competency in basic emergency care skills at

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the nursing level. It is a low cost, high impact method that can be implemented with limited resources. If nurses are able to provide quality basic emergency care, there will be sustainable improvement impacting the mortality and morbidity rates across the continent.

Emergency nursing can be described as a specialty in which the nurse cares for patients in the acute phase of their illness or injury [3]. Emergency conditions are defined by AFEM as those conditions requiring rapid intervention to avert death or disability, and those for which treatment delays make interventions less effective [4]. Emergency nurses play an important role in the early identification of life-threatening conditions, time-critical interventions, and the continued care of the patient.

The core competencies of emergency nurses include the identification of life-threatening problems, prioritization and coordination of patients, and participating in resuscitation. In addition to following initial stabilization, emergency nurses also play a vital role in monitoring for the early detection of deterioration of the critically ill patient.

Currently in Africa, many nursing curriculums only include limited exposure to basic emergency care skills; emergency nursing as a specialty field is not yet recognised in many African countries [3]. Furthermore, nurses have few opportunities for professional development once qualified, forcing nurses to travel abroad to advance their career. When they return home, their new qualifications may not even be recognised by their country's governing bodies.

The state of healthcare in the United Republic of Tanzania

The United Republic of Tanzania is located in East Africa. It is considered a low-income country with an estimated population size of 49.253 million [5]. More than 80% of the population lives in rural areas. Within mainland Tanzania, there are 21 regions and 223 hospitals [1].

In Tanzania, communicable, maternal, perinatal, and nutritional conditions account for approximately 58% of all deaths [5]. Non-communicable diseases have also been steadily rising [5]. Access to quality healthcare remains low, especially in rural areas, constrained by various factors including long distances to healthcare facilities and poor road infrastructure. In addition, the healthcare workforce is unevenly distributed, favouring large urban centres where there is high patient burden, low healthcare worker wages, healthcare worker shortages, and limited opportunity for professional development [6].

The national healthcare system in Tanzania is complex and financially dependent on donor contributions. It has a central-district government structure [7]. Within this system the delivery is structured in tiers [1]. Patients often remain in lower level facilities due to issues with transportation and lack of prehospital care services [7].

The lowest tier facilities, village health services, manage the bulk of patients but are the least able to deal with emergencies. At these facilities are local, unregistered health workers who receive only a short training course and deliver basic preventative services [6].

Facilities in the next tier are called "dispensaries", where nurses provide healthcare. Dispensaries serve an approximate population of 6–10,000 and include preventative, curative, and basic antenatal and maternal care that may include normal deliveries [6]. There are a total of 4679 dispensaries in Tanzania [7].

Healthcare centres form the third tier and have the capacity to perform basic laboratory and radiology services. Their focus is mostly curative; these facilities have the capabilities for inpatient, outpatient, antenatal, and maternal care. The healthcare staff at these centres include medical, nursing, and laboratory technicians, as well as a mix of other healthcare workers. Each 25-bed healthcare centre serves the population of one administrative division, which includes approximately 50,000 people [6].

The next tier is hospitals, made up of three types: district, regional, and consultant/referral hospitals. Each district hospital oversees a group of four to eight healthcare centres, serving approximately 250,000 people. Most of these district hospitals have limited emergency care and surgical capacities [6].

Each regional hospital manages four to eight district hospitals, however, patients can directly access regional hospitals without referral from the lower tiers. Regional hospitals have specialists and services not available in lower levels [6].

The top tier is consultant or referral level hospitals. These offer the highest level of care. There are four referral hospitals in Tanzania: Muhimbili National Hospital (MNH), Kilimanjaro Christian Medical Centre, Buganda Hospital, and Mbeya Hospital [6]. Patients require a referral to access these hospitals.

MNH is the designated National Hospital of Tanzania and receives referrals from all regional hospitals and other referral hospitals. The emergency centre (EC) serves as the command centre for major incidents across the country. The hospital has a capacity of 3000 beds, and the EC sees approximately 130 patients per day [6,8]. MNH is affiliated with the Muhimbili University of Health and Allied Sciences (MUHAS), the only Tanzanian public university that offers a bachelor's degree in nursing.

The state of nursing in the United Republic of Tanzania

Nurses represent more than 50% of the healthcare providers in Tanzania [9]. Regulations for and education of nurses have changed throughout history. After World War I, Tanzania became a British colony and regulations for nurses and midwives were set by the Colonial government. 'Modern' nursing as is practiced today, was introduced into Tanzania mostly by missionary societies and was based on Florence Nightingale principles. These principles include the premises that nursing is an art and a science, that teaching is an important aspect of nursing, and that prevention is better than cure.

In 1961 with the end of British rule, there was an outflow of local nurses to other countries, resulting in a shortage of nurses, especially in specialty fields like emergency nursing, critical care nursing, midwifery, and nursing education and management. The government continues to make a concerted effort to fill this void [10]. In 1984, it developed a nursing degree programme, in 1997, it set minimum standards for nursing, and in 2002, it established a professional code of ethics for nurses [9].

In the current system, there are two main categories of nurses: enrolled and registered nurses [11]. Unlike enrolled nurses, registered nurses have a diploma, either an undergraduate nursing degree or a post graduate nursing degree. However, all nurses are registered under the Nursing and Midwifery Act of 2010. Even with government and institutional investment in nursing, a nursing shortage remains, especially in specialised fields such as emergency nursing.

Massive strides have been made in recent years to improve emergency care for all healthcare workers across Tanzania. MNH has become the leader for emergency care initiatives in Tanzania. In 2010, MNH opened Tanzania's first dedicated public emergency via a public-private partnership between Tanzania's Ministry of Health, Community Development, Gender, Elderly and Children, and the Abbott Fund Tanzania [6,12]. Emergency physician residency training started shortly thereafter, supported

by visiting international faculty [12]. In 2011, the Emergency Medicine Association of Tanzania was formed at MNH with the goal of developing emergency care practice and training for both doctors and nurses across Tanzania [12]. The close ties between MUHAS and MNH created an ideal environment to further develop Tanzanian emergency nursing through education and clinical practice.

The EC at MNH started with 50 nurses; only ten of these nurses had previous experiences in emergency nursing and none had specific formal clinical training. The nurse manager of the EC held a master's degree in Critical Care and Trauma nursing from South Africa.

Emergency nursing skills is a core component needed to strengthen and create capacity within the healthcare system. In order to facilitate this, an international AFEM Emergency Nurses Group, made up of various nurse practitioners, academics, and researchers from Africa and internationally, was established in November 2011. This group developed the African Emergency Nursing Curriculum [3,13]. The aims of the curriculum were two-fold: to promote emergency nursing within Africa and to create a guiding document for emergency nursing training specifically for practicing in Africa [13].

Developing the emergency nursing short course

Prior to the development of the short course, the EC nurse manager at MNH developed on-the-job training materials to train the nursing staff within the EC. Topics for training included conducting the primary and secondary surveys, obtaining vital signs, and the placement of ECG leads. This changed in 2011 with the beginning of the emergency nursing short course for training. This was made possible with international support and visiting emergency nurses from South Africa to assist.

A core group of seven nurses was selected from the EC of MNH to train into the role of Clinical Nurse Trainers (CNTs). The context-specific short course was created by combining the input of two South African nursing experts, two international nursing experts volunteering in the MNH EC, local knowledge, and the AFEM Nurses Curriculum as a guiding document.

The focus of this short course was for improving emergency nursing skills for nurses in outlying areas. These nurses, primarily working in rural areas, are more likely to benefit from this training because they are confronted with many emergency cases, practice alone, and are responsible for patient care for extended periods of time.

The goal of this short course is to shift cognitive processes to allow for improved clinical capability and understanding. The course was designed on andragogic principles and followed a participatory, active learning approach.

Andragogic teaching acknowledges the beliefs of the individual's mental models [14]. This teaching considers a person's past experiences when applying new information that may contradict current standard practices at facilities. If a person feels that their current expertise is not acknowledged or incorrect, it could impact level of engagement and openness to learn [15]. Therefore, with this short course, participants were encouraged to share their experience, challenges, and daily situations regarding the learning activities. This assisted the learning process so that participants could blend their past and new knowledge.

The setting was kept interactive with simulation and other types of active learning [13]. During class activities, the participants practiced different ways to deal with scenarios that they encounter frequently, using simulation [15]. This learning approach, with active participation, was problem-centred as opposed to content-orientated [14]. This allowed the trainer to address contextual challenges such as resource availability, practice variation, and different levels of expertise.

Description of the short course

The short course has two parts. Part one involved the seven CNTs, with assistance of the international experts, creating the short emergency training course for nurses working in ECs in Tanzania, including a learning guide for participants. Part two consisted of a "train-the-trainer" model, where the seven CNTs were taught the basic skills of effective clinical teaching.

Part one, which focused on clinical competencies, was guided by the sentinel conditions defined by the AFEM Handbook and by the AFEM Nurses Curriculum. The sentinel conditions covered in the short course were respiratory failure, shock, altered mental status, dangerous fever, severe pain, and trauma and burns. The short course also included major incident planning. The course addressed theoretical and clinical information for each sentinel condition, including a definition, medical history, physical exam, signs and symptoms, and therapeutics and management. The AFEM Nurses Curriculum identified the required clinical emergency nurse competencies and divided them into basic, intermediate and advanced management [3]. The CNTs were then tested on theoretical knowledge and practical competencies through formal presentations and small and large group discussions. This ensured that the participants acquired an understanding of the sentinel conditions and could competently apply the knowledge and safely performing the required skills.

All CNTs had to successfully complete the first part in order to proceed to the second part of the course, the trainer module. Although many of the CNTs were already involved with outreach programs and informal teaching, most had no previous formal teaching experience of clinical nursing skills. As a result, the focus of part two was rapid instruction to equip trainers with the basic principles of small group teaching, skills demonstrations, and curriculum adjustment. The participants were actively involved in these processes. CNTs were taught how to use generic power point slides and adapt them to suit local context and language. CNTs learned how to develop and modify generic learning handouts to include key points and the equipment required to supplement their teaching.

After successfully completing both parts of the course, the CNTs were then required to practice what they learned. The CNTs had to run two sessions of the short emergency training course for groups of nurses working in district hospitals. During these sessions the international experts assisted and observed the CNTs; each CNT was given individual feedback afterwards for improvement.

Outcome of the short course

The short emergency training course for EC nurses was very successful for the CNTs and the participants of the first two training sessions. Every year since the initial courses in 2011, the CNTs have travelled to various locations to engage district and regional hospital nurses in emergency skills training. Now there is training for these skills across five regions of Tanzania.

The number of CNTs have also grown from seven to twenty. Their responsibilities include teaching nurses within the EC at MNH, at outreach programs, and at district hospitals and regions. The CNT group has collaborated with the School of Nursing at MUHAS to implement the AFEM Emergency Nursing Curriculum in the programs for Bachelors and Masters nursing students. After further consultation with the university, the CNTs at MUHAS are now leading this education at the university, which does not otherwise have staff with this expertise.

Sixteen of these CNTs have presented at various African conferences on clinical emergency nursing skills topics. In addition, CNTs now have yearly opportunities for two positions in an international internship programme for one month.

These opportunities provide incentives for nurses to continue to learn and develop their skills. The Emergency Medicine Association of Tanzania also provides support for these nurses for advancing professional development through continuation of their own formal education and gaining additional nursing qualifications.

The success of this initiative was due to the support of emergency physicians, external faculty (international doctors and nurses), as well as the nursing unit manager.

Mentorship programme

The success of the short course has led to a global mentorship programme through another AFEM Nursing initiative [13]. This programme supports nurses and helps to advance their careers through continuous learning. Clinical nurses can grow from novice to expert, and also beyond clinical nursing into roles like teachers, educators, and managers.

Current situation

Currently, the CNTs are successfully collaborating with the MUHAS nursing department. This sets a new base standard for emergency nurses in the country.

With the continued support of the Emergency Medicine Association of Tanzania and the annual Tanzania Conference on Emergency Care, nurses are able to continue training in a supportive environment, with emergency physicians offering continuous guidance.

Despite commitment and international support, a major concern of the programme is difficulty in scaling up. Only five out of a potential 25 regions in Tanzania have been reached. In addition, there are no formal plans for refresher training sessions even with ad hoc updates of the CNT curriculum.

We propose solutions to forward training for the CNTs:

- To stay relevant and current, the curriculum needs to be reviewed annually.
- A plan must be developed for refresher training for those that already received training.
- The future includes training more CNTs by including the AFEM curriculum in emergency nursing at the School of Nursing at MUHAS.
- With the help of the mentorship programme, more nurses can present, publish papers, and build a clinical academic footprint.
- It is important to monitor continued professional growth of nurses and the impact of the short course on emergency care practice and education.

Recommendations

The lessons learned through developing the short course include

- Involve local nursing staff from the beginning with all aspects of structuring and planning of courses. This allows the training to remain context-specific and ensures buy-in of affected staff.
- Use the standard approach for patient care to present and tie all content together when teaching such a course.
- Seek support and input from other disciplines, especially because emergency care is a multi-disciplinary field including nurses, doctors, and other health care workers.

Conclusion

The emergency training course for nurses demonstrates how the AFEM Nurses Curriculum can be used as a guiding document to develop a context-specific course. Context-specific courses allow for local ownership and subsequent sustainability of education. In addition, applying the principles of participatory teaching in the AFEM Nurses Curriculum, more nurses felt empowered.

The hub of relatively young faculty at MNH provides continued support to the programme. This facilitating environment is a prerequisite to implementing sustainable programs.

The experience created various opportunities for the CNTs including presenting at conferences, travelling to train others within Tanzania, and collaborating with global mentorship initiatives. Short courses such as this, which combined local knowledge, formal mentorship programs, and international nursing support, can lead to major, cost-effective improvements in emergency nursing skills and care across the continent.

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Dissemination

The curriculum was adjusted during the train-the-trainer course, and all clinical trainers was involved in creating the course. Please contact the corresponding author for full details about the short course.

Author contribution

CC, PB and AS conceived the original idea of writing the training up. All three was involved in the clinical training. CC drafted the manuscript, AS contributed current situation and background. PB revised it. LW, BM, NL, HS contributed to current situation and context. CC, PB and AS approved the final version that was submitted and agreed to be accountable for all aspects of the work.

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