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## CONTEMPORARY ISSUES

## African emergency nursing curriculum: Development of a curriculum model

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## 1. Introduction

The African Emergency Nursing Curriculum (AENC) provides a consensus document to guide the development of harmonised standards of emergency nursing theory and practice across Africa for the benefit of the emergency patient population. The need to strengthen emergency care systems to address the global burden of disease is increasingly recognised (Wolf et al., 2012). Most low-income countries lack organised emergency care systems and therefore suffer the highest rates of injury, from primary health burdens such as maternal death due to complications of pregnancy, and acute medical complications of communicable diseases involving tuberculosis, malaria and human immunodeficiency virus (HIV) (Reynolds et al., 2014). Conditions requiring surgical intervention inevitably add to this growing challenge to emergency care systems. Annually, worldwide injuries contribute to a leading public health concern. One hundred million people sustain injuries; 5 million people die from violence and injury; and 90% of the global burden of violence and injury mortality occurs in low-middle income countries (World Health Organization, 2007). It is predicted that by 2030 road accidents will be the fifth leading cause of death in the developing world, with violent crime and conflict contributing significantly to this public health emergency

(Institute for Health Metrics and Evaluation, 2010). This critically important prediction requires pre-hospital, emergency/trauma and rehabilitation services to be implemented and/or strengthened as soon as possible.

This paper outlines the development of the AENC as part of a strategic action plan of the African Federation of Emergency Medicine (AFEM) Consensus Meeting held in Cape Town in November 2013 (Reynolds et al., 2014) to address the increasing African emergency care burden and other disease burdens addressed in the World Health Organization Millennium Development Goals (World Health Organization, 2015). Dialogue to standardise emergency nursing practice across Africa emerged over the past five years, largely driven by African emergency nursing educators and practitioners (Brysiewicz, 2012). Obstacles to standardisation led to the development of a strategic framework for emergency nursing comprise e.g. limited country specific resources, and deficiencies in educational strategy and health systems.

## 2. Curriculum development process

The curriculum provides a template which sets out guidelines for appropriate and high quality education to prepare future generations of emergency nurses for their role in all regions of Africa. Concurrently, curricula are also being written for emergency medicine and pre-hospital care. This is an important step forward with regard to the strengthening of emergency care services for African populations and demonstrates the commitment of emergency nurses and educators within the African emergency care system to continue to work together with other emergency care practitioners to respond to increasing and complex trauma and emergency care demands. The development of these curricula in some way begins to address the problem that no consensus exists for a standardised approach to emergency nursing education across Africa, although examples exist which inform the development process e.g. the development of an emergency nursing specialization programme to address the curricular gap experienced by newly qualified nurses in Ghana (Bell, 2014).

The African Federation for Emergency Medicine (AFEM) is a professional organisation comprising African and global membership to champion the development of emergency care in Africa, including emergency medicine, emergency nursing and pre-hospital care.

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Please refer to the following website for an explanation of AFEM: <http://www.afem.info/>

There are significant challenges faced by emergency nurses in Africa which broadly encompass difficulties in practice, education/training and professionalism. An emergency nursing framework for Africa was initially developed by a group of emergency nurses (Wolf et al., 2012) and this formed the starting point for the AENC. The AFEM Nurses Group comprises emergency nurses, academics and researchers from Africa and the rest of the world working together to shape the development of the AENC. The process was coordinated by two individuals with curriculum and policy development expertise who ensured inclusion of and collaboration with the rest of the AFEM Nurses Group. Conducting such work in Africa was extremely challenging and required a great deal of time and effort and this process was facilitated by two face-to-face group meetings. Additional evidence was used to develop the curriculum, namely examples of collaborating organisations' educational programmes in Africa.

In March 2015 the draft curriculum underwent a global consultation phase which sought written comments from stakeholders (both individuals and professional societies) within emergency nursing regarding the nature and content of the curriculum. Additionally, emergency medicine, pre-hospital and trauma care stakeholder individuals and societies were approached. Valuable feedback focused on the global interpretation of 'proficiency' of emergency nurses and the distinction between performance levels as well as advice regarding learning outcome descriptors and content. Subsequently, the curriculum was amended and in September 2015 was submitted to the AFEM Scientific Committee for review and endorsement. It is envisaged that the curriculum will be endorsed by AFEM for an initial five-year period.

### 3. The African emergency nursing curriculum

The curriculum provides a guiding statement which promotes the theoretical and clinical competence of emergency nurses. The curriculum suggests that emergency nurses successfully complete three distinct stages of learning, namely Basic, Intermediate and Advanced. This distinction between the levels is a reflection of the mapping exercise of available emergency facilities across Africa which was recently carried out by AFEM (Calvello et al., 2015) as well as the emergency nursing framework for Africa (Wolf et al., 2012). It is recognised that the range of emergency nursing practice varies widely depending upon practitioner expertise, resources, patient complexity and practice location. Throughout Africa, emergency nursing is delivered at various facilities possessing a range of resources and functional levels. Therefore, the emergency nursing curriculum aims to be responsive to the following premise (Calvello et al., 2015):

- The basic level facility offers emergency first response and stabilisation and the nurse may be the only healthcare professional available.
- The intermediate facility offers sufficient resources to attain intravenous access and establish a definitive airway.
- The advanced facility offers definitive care and comprehensive emergency services.

A combination of theory and practice-based teaching and assessment in emergency nursing is harnessed across three distinct learning modules delivered within the clinical context. Shared learning is encouraged in conjunction with emergency medicine and pre-hospital care at various points in the programme and to reflect the multidisciplinary context of emergency care.

Educational institutions in Africa providing EN programmes are encouraged to foster the development of a team of competent and experienced educators. Patricia Benner's (1984) taxonomy was selected as the framework for learning and teaching reflecting practitioner progression from novice to expert. To align with Benner's ideology and to adhere to sound educational principles, educators in the different countries of Africa are encouraged to teach at the appropriate level prior to assessment of emergency nurses at that level so that verification is sought prior to adding new learning.

### 4. Teaching and learning strategy

The curriculum emphasises the multi-disciplinary clinical context and cross-fertilisation of emergency care practice standards. An extensive geographical and resource context for teaching and assessment exists within Africa and this requires a flexible approach to teaching delivery to be implemented appropriate to the geographical variations. Students are encouraged to reflect on their learning and to assimilate the value of the learning experience and its application to practice as an emergency nurse.

The AENC Flowchart (Fig. 1) demonstrates the emergency nursing theory and practice competence learning pathway. As emergency nurses progress they will need to consider how their learning will develop within a continuous professional development framework specific to the respective country. Each emergency nurse should be allocated an individual clinical competence document to be completed and signed by their approved assessor, to evidence competence at the level to which they are assessed.

### 5. Curriculum content

The AENC combines three content areas: sentinel physiological conditions (Calvello et al., 2015), the unique circumstances of emergency nursing and, essential elements of emergency nursing. Educators are encouraged to deliver an appropriate level of knowledge related to the altered anatomy and physiology required to understand the emergency nurse interventions for each sentinel condition identified by the AFEM group (Table 1) comprising: respiratory distress, shock, altered mental status, dangerous fever, severe pain and, trauma. Consideration has been given to mapping the unique circumstances impacting upon individuals within emergency care e.g. pregnant woman, older person, and mental health/learning disabilities. Finally, the essential elements of emergency nursing have been incorporated to emphasise patient and staff safety, leadership and teamwork, teaching and assessing and, continuing professional development. An outline of theory and practice based competences is available at <http://www.afem.info/>

### 6. Assessment strategy

To align with sound educational principles and to provide informed holistic care, it is suggested that EN teaching programmes assess both theoretical and practice competence. Assessment of theory ensures that the emergency nurse has acquired an understanding of the principles of emergency nursing practice at basic, intermediate or advanced level and concerning a) the sentinel physiological conditions, b) the unique circumstances of emergency nursing and, c) the essential elements of emergency nursing. Assessment of competence ensures that the emergency nurse develops safe and effective practice at basic, intermediate and advanced level again across the three dimensions above. It is suggested that programme delivery should initially focus on basic level teaching provision to ensure that a minimum standard of emergency nursing skills is achieved prior to additional levels of skill development.

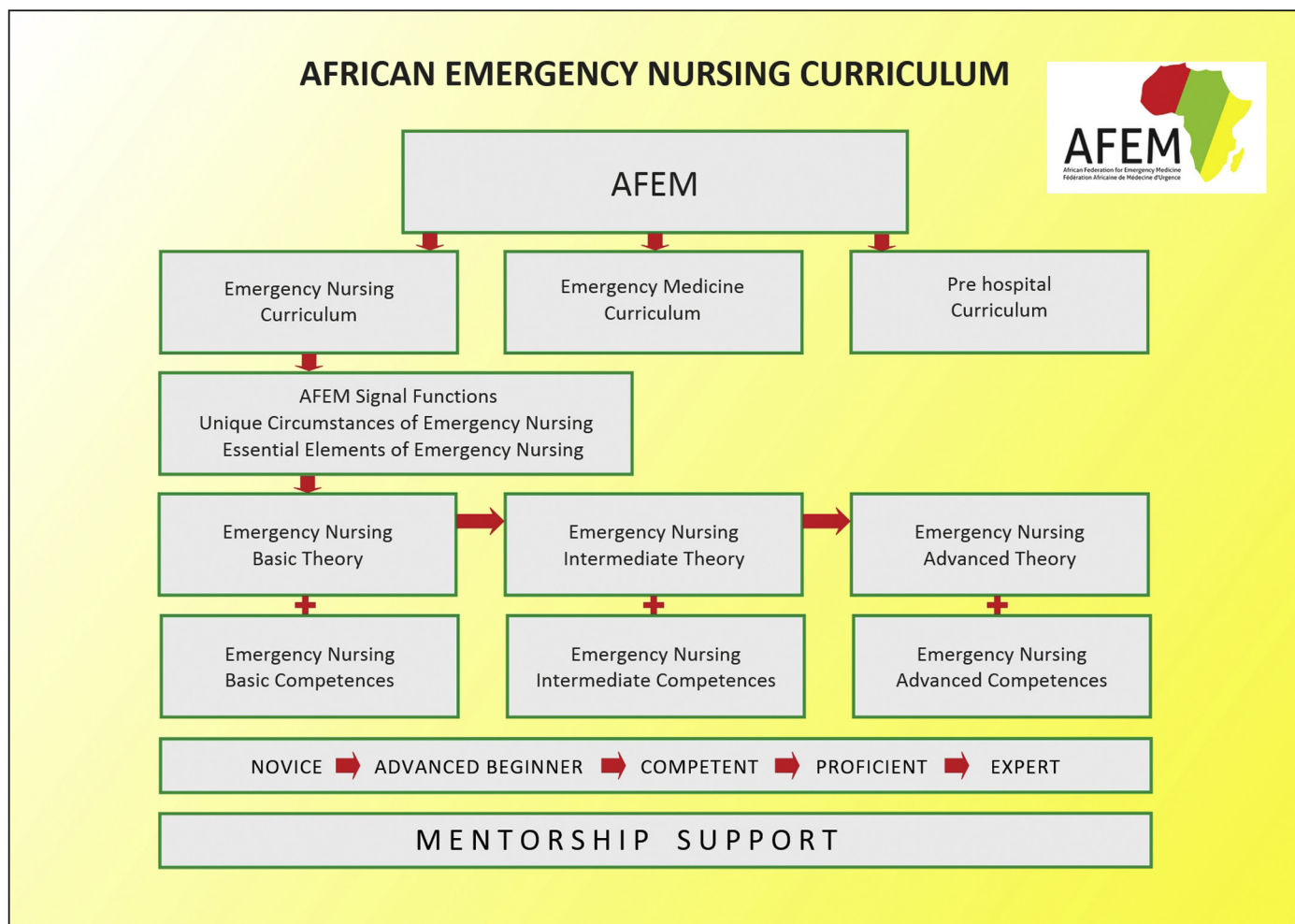


Fig. 1. AENC flowchart.

## 7. Programme evaluation process

To enhance future programmes, on completion, the student should be invited to evaluate the quality of the teaching delivery and its impact upon their learning. Students should be invited to complete a brief questionnaire to establish key points for educators to identify the strengths of the programme and aspects to develop. Additionally, educators should be encouraged to evaluate the teaching, assessment and mentorship process. The AFEM will review the structure and content of the programme within the validation period and in collaboration with individuals and health organisations in each African country.

## 8. Global mentorship

During the development of the AENC, it became apparent that it needed to be supported by a global mentorship arrangement. Practice mentorship is a professional relationship in which an experienced person (the mentor) assists another (the mentee) to develop specific skills and knowledge to enhance the personal and professional growth of the less-experienced emergency nurse (Karcher et al., 2006). This process is used widely to support teaching and learning across a range of health professions. Global practice mentorship arrangements, vital to the development of emergency nursing, are currently being piloted through a central facility to support emergency nurses throughout their learning. Such

mentorship arrangements depend upon the goodwill and contribution of emergency care experts within Africa and beyond including: doctors, nurses and pre-hospital professionals, to mentor emergency nurses within Africa. Mentors should possess current registration as an emergency practitioner in the mentor's own country: recent clinical, education, management and/or leadership experience in the emergency care field, exposure to learners in the emergency setting, a developing interest in emergency systems in Africa and, fluency in the language of the African mentee.

## 9. Conclusion

Increasing demand on emergency healthcare systems throughout Africa means that this initiative has huge potential to establish, further develop and harmonise standards of emergency care for the benefit of African populations. This curriculum, while being very sensitive to the unique needs of each country, provides a suggestion of a way to begin to address the very Afrocentric emergency nursing problem. It provides a clear, user friendly framework for consideration by emergency nursing educators throughout Africa. It was written in an attempt to be relatively easy for non-English speakers, although plans are in place to translate the document into French and Portuguese.

One major challenge when preparing the AENC was the need to develop a curriculum for use in many different educational scenarios unique to the African context. These educational experiences

**Table 1**  
Sentinel conditions with clinical examples.

Sentinel Conditions	Type of Problem	Examples of Associated Diagnoses
Respiratory distress	Upper airway obstruction	Foreign body ingestion, upper airway infections, angioedema, tumors
	Lower airway obstruction	Asthma, chronic obstructive pulmonary disease
	Lung tissue disease	Lower respiratory tract infections, pulmonary oedema (due to ischemic heart disease or hypertensive heart disease), interstitial lung disease, pulmonary aspiration
Shock	Hypovolemic/haemorrhagic	Diarrhoeal diseases, maternal haemorrhage, gastrointestinal bleeding, trauma
	Distributive	Allergic reaction, septic shock, neurogenic shock
	Cardiogenic	Cardiomyopathy, arrhythmias, iron-deficiency anaemia,
	Obstructive	Pulmonary embolism, pericardial tamponade, tension pneumothorax
Altered mental status	Seizure	Epilepsy, encephalitis
	Hypoglycaemia/ hyperglycaemia	Malnutrition, diabetes
	Electrolyte disorders	Chronic kidney disease
	Liver failure	Cirrhosis of the liver secondary to hepatitis B, hepatitis C or alcohol use
	Cerebrovascular disease	Haemorrhagic stroke, ischaemic stroke
Dangerous fever <sup>a</sup>	Ingestion	Opioid use disorders, cocaine use disorders, poisonings, alcohol use disorders
	Mental disorders	Schizophrenia
	Severe sepsis/septic shock	Malaria, maternal sepsis and other maternal infections, skin and soft tissue infections, ebola virus disease, tetanus
Severe pain	Fever in the immunocompromised host	HIV/AIDS, diabetes, hematologic malignancies, chemotherapeutic treatment of cancer, neonatal sepsis
	Hyperthermia (non-infectious)	Thyroid disorder, environmental exposure, drug-associated
	Headache	Brain cancer, poisoning, cerebrovascular disease, meningitis, cerebral malaria, maternal hypertensive disorders
Trauma	Chest Pain	Acute coronary syndrome (ischaemic heart disease), aortic dissection, pericarditis, cardiomyopathy and myocarditis, rheumatic heart disease
	Abdominal pain	Aortic aneurysm, perforated viscous, appendicitis, pancreatitis, inguinal and femoral hernia, gall bladder and biliary diseases, urolithiasis, intestinal infectious disorders
	Flail chest, pneumothorax, solid organ injury, bowel perforation, pelvic fracture, circumferential burn	

Table previously published in *Operationalising emergency care delivery in sub-Saharan Africa: consensus-based recommendations for healthcare facilities*. Calvillo EJB, et al. *Emerg Med J* 2015;0:1–8. doi:10.1136/emermed-2015-204994. Reproduced with kind permission from the author.

<sup>a</sup> Fever from a life threatening cause due to multiple aetiologies including those infectious, environmental, endocrinologic or toxin mediated.

are likely to range from basic to advanced and may use a wide range of simple to complex teaching and learning strategies. This situation includes both learners and teachers though it is envisaged that as a critical mass of emergency nurse educators are created, the gap may widen.

It is important to consider how the curriculum interfaces with the requirements of various African regulatory bodies and professional societies particularly in the multidisciplinary healthcare context. Overall, the potential impact on the development of the emergency nursing profession in Africa is encouraging if health systems embrace this challenge.

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