

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI, GHANA**

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Preparedness of the Medical Corps of the Ghana Police Service toward Emergency
Management and Care: An Assessment of the Emergency Unit of the Ghana Police
Hospital, Accra

By

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DECLARATION

I hereby declare that this submission is my own work towards the MSc/Mph and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the university, except where due acknowledgement has been made in the text.

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DEDICATION

This work is dedicated to my wife, Princess Patience Parimah Japiong (PPPJ) and all my lovely children who urged me on, even when times got tougher through-out my course of study and this research work. Love you all.

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ABSTRACT

Ghana needs realistic national hospitals and medical emergency response programmes designed on the principle of equitable distribution of appropriate equipment, supplies and well trained emergency medical personnel. The Ghana Police Hospital was established in 1976 with the core aim of providing health care services for police personnel and their dependants (-spouses and children/wards below 18 years), especially within the national capital and its environs. It however provides health care services for members of the general public.

The accident and emergency unit of the Police Hospital like other units within the Accra metropolis operates 24/7. Coupled with frequent referral of cases to other hospitals from the unit of which some were minor, personnel of the unit easily became overwhelmed during surge situations as was observed. Concerns generated amongst the public included whether or not the medical corps of the Ghana Police Service was prepared towards management and care of emergency cases. This research assessed preparedness of the medical corps of the Ghana Police Service toward emergency services; -an assessment of the emergency unit of the Ghana Police Hospital, Accra.

A cross-sectional study design was used with quantitative methods employed to describe the research variables. Multi-stage sampling techniques used included simple random sampling without replacement and purposive sampling, at various stages to select eighty (80) respondents from the target population of One hundred (100) emergency health personnel at the A&E unit of the Ghana Police Hospital, Accra. Self-administered questionnaires, interfaced with unstructured interviews were used to collect data from the respondents between October and December, 2013. SPSS software was used for the data analysis.

Out of the seventy-seven (77) received responses, nurses were the majority (38.9%), followed by medical officers (16.9%). The most occurring age group was between 30years and 39years (58.4%). All respondents had attained some level of education with tertiary education the majority (64.9%). There existed some form of emergency systems and/or protocols at the police hospital, but were not in accordance with the Ministry of Health, Ghana policy document and guidelines on emergency medicine. Majority (74%) of the respondents had no training on emergency management and care and no refresher trainings on emergency medicine or related courses were ever organised for personnel working at the emergency unit of the hospital (81.8%). Referrals of all kind were received at the emergency unit of the hospital, however some of these referred cases were turned away due to non-availability of space (beds) and shortage of skilled personnel (94.4%).

There was non-adherence to a standard form of triage at the emergency unit (90.7%). Triage of cases were done by both doctors and nurses, even though majority had no basic knowledge on triaging hence could not appropriately triage cases (90.7%).

On the over-all, it was observed that, the medical corps of the Ghana Police Services was ill-prepared toward emergency services with specific reference to skilled health personnel, equipment, infrastructure and medical supplies.

It was recommended that, more standard ambulances were added to the fleet in the Ghana Police Hospital through the assistance of Ministry of Health, Ghana. The police administration through the Government (Interior Ministry) allocated funds for the establishment of an ultramodern emergency unit, which should encompass the training of personnel on emergency medicine, the provision of needed medical equipment and improvement in the infrastructure to ensure a conducive environment for effective work.

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DEFINITION OF TERMS:

Admission into Hospital: Patient is admitted to the reporting facility in the capacity of an in-patient, critical care patient or directly to surgery or another unit directly from the ED.

Advanced Life Support: A generic term for resuscitation efforts that extend beyond basic Cardio-Pulmonary resuscitation (CPR)

Ambulance: Vehicle or craft intended to be crewed by a minimum of two appropriately trained staff for the provision of care and transport of at least one stretchered patient.

Basic Life Support: The constellation of emergency procedures needed to ensure a person's immediate survival, including Cardio-Pulmonary Resuscitation (CPR), control of bleeding, treatment of shock and poisoning, stabilization of injuries and/or wounds or basic first aid.

Bed Occupancy Time: The time a patient spends on an emergency bed from admission till the time the patient is finally discharged, transferred to the ward, sent to theatre, dead or transferred out to another health facility for further management and care.

Crisis Preparedness Plan: The Crisis Preparedness Plan also called the Emergency Preparedness Plan is the written document or map for medical crisis management generated by any appropriate authority or private organization that clearly details what needs to be done, how, when and by whom;- before and after the time an anticipated disastrous event occurs. It aims at providing a policy for preparedness and response to both internal and external disaster situations that may affect staff, patients, visitors and the community.

Crisis: A crisis is any critical situation that causes a disruption in the equilibrium between the demand and supply of medical services.

Crisis Response: A sum of decisions and actions taken during and after disaster, including immediate relief, rehabilitation and reconstruction.

Emergency medical services (EMS System): The arrangement of personnel, facilities and equipment for the effective and coordinated delivery of urgent medical services as required in the prevention and management of incidents which occur either as a result of a medical emergency or of an accident, natural disaster or similar situation. EMS systems refer to the broad range of emergency care from the pre-hospital first responder to the intensive care unit setting.

Emergency Management: This is also called crisis management/disaster management; it involves a range of measures to manage risks to communities and the environment and also the organization and management of resources for dealing with all aspects of emergencies. Emergency management involves the plans, structures and arrangements which are established to bring together the normal endeavours of government, voluntary and private agencies in a comprehensive and coordinated way to deal with the wide spectrum of emergency needs including prevention, response and recovery.

Emergency Patient: Patient who through sickness, injury or other circumstances is in immediate or imminent danger to life unless immediate treatment and/or monitoring and suitable transport to diagnostic facilities or medical treatment are provided.

Left Without Being Seen (LWBS): Patient is registered and/or triaged, but left prior to being seen by health care provider(s).

Left Against Medical Advice: Patient is triaged, registered and assessed by health care provider(s), but leaves without treatment and/or before initiated treatment is complete, without prior notice or permission from the health care provider(s).

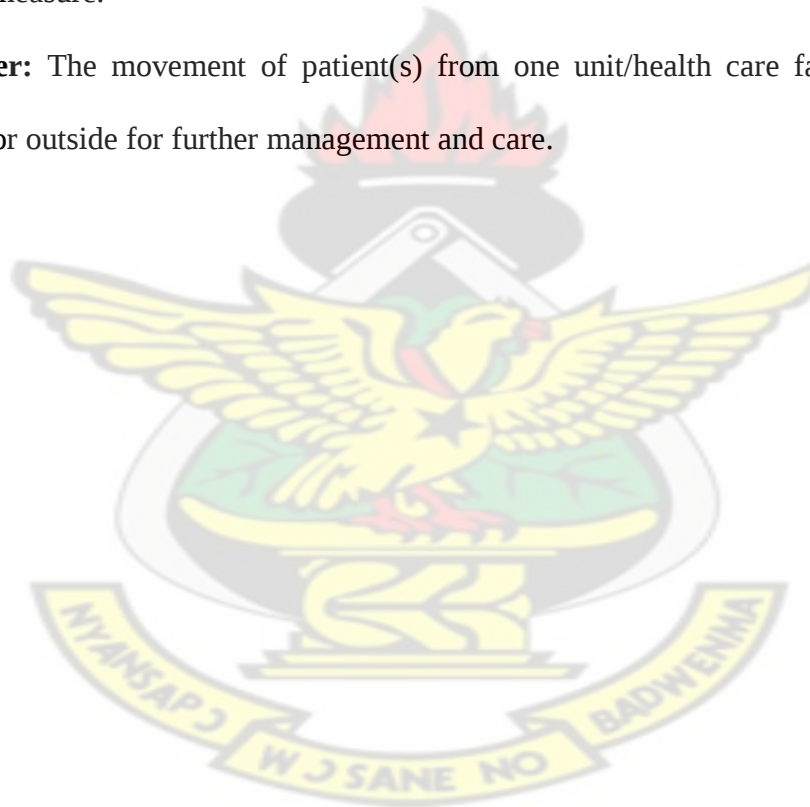
Paramedic: A health professional certified to perform advanced life support procedure (e.g. intubation, defibrillation and administration of drugs under a physician's direction).

Paramedics provide urgent care from an emergency vehicle or air service.

Reliability: Also termed reproducibility or repeatability, is the stability or the consistency of information. That is, the extent to which similar information is supplied or obtained when a measure is performed more than once (Test-retest).

Validity: Refers to the ability of a test or study to measure what the investigator will like to measure.

Transfer: The movement of patient(s) from one unit/health care facility to another, within or outside for further management and care.



ACRONYMS/ABBREVIATIONS



A&E Unit:	Accident and Emergency Unit
ATS:	Australasian Triage Score
AVPU:	Alert Verbal Pain Unresponsive
BLS:	Basic Life Support
CDC:	Centre for Disease Control and Prevention
CEPS:	Customs, Excise and Preventive Services
CHRPE:	Committee for Human Research, Publications and Ethics
CPR:	Cardio-pulmonary resuscitation
CTG:	Cape Triage Group
CTS:	Cape Triage Score
CTAS:	Canadian Triage Assessment Score
DALYs:	Disability-adjusted life years
ED:	Emergency Department
EDLOS:	Emergency Department Length of Stay
EMS:	Emergency Medical Services
EMT:	Emergency Medical Technician
ESI:	Emergency Severity Index
GCS:	Glasgow Coma Scale
GHS:	Ghana Health Service
GNRSC:	Ghana National Road Safety Commission
GRA:	Ghana Revenue Authority
KATH:	Komfo-Anokye Teaching Hospital
KNUST:	Kwame Nkrumah University of Science and Technology

LWBS:	Leave without being seen
MEWS:	Medical Early Warning Signs
MOH:	Ministry of Health
MTS:	Manchester Triage Score
NADMO:	National Disaster Management Organization
NHAMCS:	National Health Ambulant
PIA:	Physician Initial Assessment
RTAs:	Road Traffic Accidents
SATS:	South African Triage Score
TEWS:	Trauma Early Warning Signs
TT:	Triage Time
UNICEF:	United Nations Children's Fund
WHO:	World Health Organization



CHAPTER ONE

1.0 INTRODUCTION

1.1 The Background Information

Ghana needs a realistic national hospital and medical emergency response programme designed on the principle of equitable distribution of appropriate equipment, supplies and well trained emergency medical personnel (Norman, et al., 2012). The health care system in Ghana is organised under four main categories: public, private-for-profit, private-not-for profit and traditional systems. Public health services delivered by the agencies of the Ministry of Health include: the Ghana Health Service, the Teaching Hospitals (Korle Bu, Komfo-Anokye, Tamale and Cape Coast) and quasi-government hospitals (Ghana Police Hospital, 37- Military Hospital, etc). The system operates as a three-tier referral system with primary, secondary and tertiary levels. The Teaching Hospitals provide the highest level of care followed by the regional hospitals, district hospitals, clinics, health centres and Community-based Health Planning and Service (CHPS) compounds, in that order (Osei-Ampofo, et al., 2012). In Ghana however, as in many developing countries, little consideration has traditionally been given to optimising the training of medical and nursing staff for the care of acutely ill or injured patients. Existing emergency care systems are rudimentary in comparison to those in developed countries; the lack of timely access to care means that many medical needs present as emergencies (Osei-Ampofo, et al, 2012). Notwithstanding this, Ghana suffers from high accident rates due to poor conditions of transport and road infrastructure. Figures from the National Road Safety Commission (Ghana) indicate that an average of 1900 fatalities result from road traffic accidents every year (GNRSC, 2012). Road Traffic Accidents (RTAs) have maintained their presence in the top ten (10) aetiologies

of mortality for the last five (5) years in Ghana (Ackaah, 2011). It was estimated that, about eighty-one percent (81%) of road traffic accident deaths occurred in the field or in the pre-hospital setting (London J. et al, 2002) and a further 5% of trauma deaths occurred in the emergency room or within 4 hours of arrival in hospital (Kortbeek, 2008).

The evolution of emergency medical services in Ghana has brought to the fore challenges which other countries, with well-developed emergency services, are faced with. These challenges included overcrowding in the emergency department, increased utilization of resources as a result of the challenge in treating non-urgent cases as well as emergent cases. There was also an internal challenge of increased workload for a small staff resulting in missed or delayed diagnosis which Campbell et al described as the “perfect storm” (Campbell, et al., 2007). Additionally, there seems to be increasing dissatisfaction experienced by patients as a result of long waiting times and the increased in numbers of patients leaving the emergency unit without being seen. One major question, a curious mind may ask: what factors elicit or contribute to these rising challenges in the area of emergency medical services in Ghana? An answer to this question could easily be derived from the preparedness nature of the Ghanaian health system toward emergency medicine and/or services. This phenomenon unfortunately permeates all health institutions and/or facilities in the country.

The situation therefore calls for adequate preparedness towards management and care of emergencies, which would obviate the occurrences of challenges in the process. Hospital preparedness is said to be a means for it to test and evaluate its capabilities and/or recovering from an event that puts a significant strain on patient care and the operating systems. The critical areas of hospital emergency preparedness includes: pre-hospital

emergency preparedness, in-house emergency response plans, human capacity, adequate equipment/gadgets (including pharmaceutical products) and the assessment of existing infrastructure in emergency (Norman, et al., 2012).

The World Health Organization (WHO, 2007) Field manual, for capacity assessment of health facilities in response to emergencies, used in the evaluation of South African hospitals found skills gap in the nation's health care systems. National authorities have also conducted similar review of the Ghana healthcare system. They found many gaps in the efficiencies of both equipment and supplies of the nation's health care system especially in the area of emergency medical services (Norman, et al., 2012).

There should be both in-hospital and out-hospital triage regimes in place for use by all hospitals. Triage is the sorting out of work protocols at impact site and standardization of front-office emergency room, in-hospital admission and treatment procedures based on medical emergency acuity, availability of trained staff, appropriate medical facility, supplies and proper patient distribution in an emergency (Soloff, 2006).

The system designed by the Ghana Health Services and Ministry of Health, Ghana does not take into consideration the enforcement of the essential areas of emergency services. As a result, many health facilities and/or institutions flout the very provisions of the components of emergency services, leading to poor attendance to clients. Some research work have been conducted into the area of emergency medicine in Ghana, none-the-less, there still exist some institutional gaps. Based on these observed gaps in some of the health facilities/institutions, the research assessed the prepared nature of the medical corps of the Ghana Police Service toward management and care of emergencies; -an assessment of the emergency unit of the Ghana Police Hospital, Accra.

1.2 Problem Statement

The Ghana Police Hospital was established in 1976 with the core aim of taking care of the health needs of the service personnel and their dependants (-spouses and children/wards below 18 years), especially within the national capital and its environs. However, as its social security roles and functions, it provides health care for suspects in police and prison custodies, injured victims of violent crimes & road traffic accidents and as well as vagrants. The hospital also provides health care services to members of the community within which it is located as a corporate role. It equally provides health care services to personnel of sister security services such as the Ghana Fire Service, Ghana Prisons Service, Ghana Immigration Service, the CEPS division of the GRA and the Ghana Armed Forces. Indeed, the Ghana Police Hospital is one (1) of two (2) security health institutions located within the national capital and happens to be at the center of all heads of the security services. By rule, members of the security services do not withdraw their services or embark on strikes what-so-ever, so is with members of their essential services' units, hence staff of the Police Hospital do not embark on strike. By the Ministry of Health, Ghana categorisation of levels of health care institutions, the Police Hospital is a regional hospital, hence a referral center to all the clinics within its catchment area and to its periphery clinics found in some regional capitals and the police training schools. Apart from road traffic accidents, additional burden is created by domestic accidents, natural disasters, medical, surgical and obstetric emergencies. The pressure on the health system is immense and the Government of Ghana is keen to invest in emergency systems which are cost effective and can reduce mortality and morbidity (Mock, et al., 2008). The Government of Ghana recognises that a preventive approach is a key component to reducing road traffic injuries (GNRSC, 2012). The country is also

keen to implement speedy and cost-effective ways to strengthen the care of injured persons and thereby rapidly reduce the toll of death from road traffic accidents. The Accident & Emergency Centre at Komfo-Anokye Teaching Hospital in Kumasi was established in 2009 to lead the way in the provision of prompt emergency care and the local training of emergency health care personnel who will form the backbone of a structured emergency system. Formal emergency care systems are known to improve survival in severely ill or injured patients (Mock, et al., 1998 and Holliman, et al., 2011). These systems provide a chain of survival linking pre-hospital care to definitive in-hospital care. Emergency Centres (ECs) with trained staff can play an important role by providing acute resuscitation and stabilisation for patients with life-threatening illnesses or injuries. The need to improve emergency services has long been recognised but action to improve services has lagged behind; however, in recent years firm steps have been taken to improve emergency service delivery in Ghana.

On 9th May, 2001, 126 people died in a stadium disaster during a football match between two local clubs (Asante Kotoko and Accra Hearts of Oak) in Ghana. Several spectators were trampled to death and many more who sustained injuries later died due to lack of prompt medical attention, all blamed on the absence of well-established or formal emergency response and care systems in the country. Although a lot of research and pilot training programmes in Ghana had recommended the need to establish formal emergency care systems, it would appear that, this incident in particular focused political minds to take necessary action. Over the past few years, a keen observation has been made with regards to, the frequent nature with which cases at the emergency unit of the Police Hospital were referred out to another hospitals especially Road Traffic Accident

and Trauma related cases, some of which involved minor injuries or cases which should usually be managed at that level as a referral center.

Aside the frequent referral of cases, the emergency unit of the hospital easily became overwhelmed during surge situations. A case in perspective was, the infamous “may 9 stadium-disaster” as has been referred to, in the year 2001. Many of the cases (casualties) which were brought to the police hospital died. It was then attributed to inadequate medical facilities (equipment, gadgets and structure) and shortage of trained/skilled medical personnel. Following this revelation, one expected a change in status-quo as fulfilment of learnt lessons, but it never was, as again was revealed on the 7th November, 2012 by the Achimota mall disaster. Injured victims were redirected to other hospitals within the metropolis. Several questions raised within the public circle remain unanswered. These questions included whether or not the medical corps of the Ghana Police Service was prepared or not towards management and care of emergencies, especially the pre-hospital interventions and in-hospital management and care of injured victims & acute emergency cases.

The research assessed the preparedness of the medical corps of Ghana Police Service; specifically, the Police Hospital’s preparedness toward management and care of trauma and related emergencies. This was achieved, through an assessment of the emergency unit of the Ghana Police Hospital, Accra.

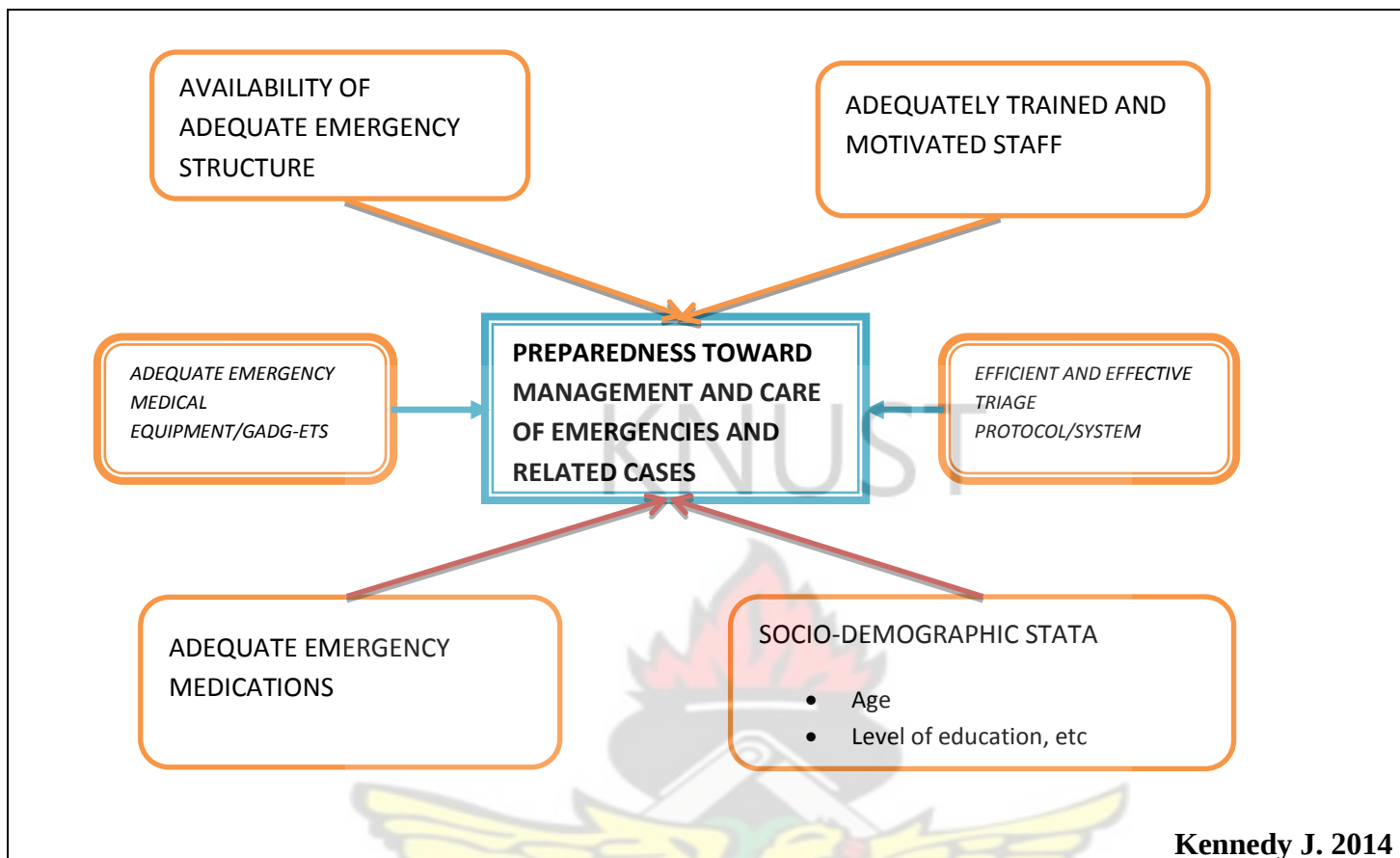


Figure 1.1 Conceptual Frame Work Source; Author's construct

1.3 Explanation of the Conceptual Frame

The World Health Organization (WHO) recommends periodic assessment of the capacity of health facilities' response to emergencies, which defines their preparedness toward management and care of such emergencies (WHO, 2007). It was my conception that, the age and level of education of an individual impacts on their performance at work. So is with their experience. The provision of adequate logistics, regular training schedules and performance standards or guidelines by management of institutions for their personnel would equally impact on their performance at work. All these variables put together constitutes preparedness at both the individual's and the institution's levels. As demonstrated above, the socio-demographic stata of the staff, together with adequate

provision of emergency medication, equipment/gadgets, structural space and as well as the constitution of trained and motivated staff, not compromising on the provision of performance standards or protocols, thus defines the preparedness of a health facility toward management and care of emergencies in its varied forms.

1.4 Significance of the Research

1. Findings from the research would assist management of the police hospital to institute the required and appropriate measures and/or plans to ensure effective and efficient management of trauma and other emergencies both in-hospital and during surge situations.

2. Finding from the research would expand the limited corpus of knowledge and literature in the area of emergency medicine or services in Ghana.

3. Findings from the research could also stimulate other curious minds to further replicate the research in other health facilities or perhaps as an expanded national project/research incorporating contemporary issues on national emergencies and disaster management.

1.5.0 Research Questions

1.5.1 Main question;

How prepared is the emergency unit of the Police Hospital toward management and care of trauma and related emergencies?

1.5.2 Sub questions;

- i.** Are there existing systems and guidelines for the management and care of emergencies in the Police Hospital?
- ii.** Does the emergency department of the Police Hospital conform to the ministry of health, Ghana's policy document and guidelines for the management and care of emergencies with regards to performance and functional capacity?
- iii.** How does the triage system in the Police Hospital work?
- iv.** What is the awareness and use of the triage system by doctors, nurses and other health personnel at the Police Hospital?

1.6.0 Objectives:

1.6.1 General Objective;

- i.** Assess the preparedness of the Ghana Police Hospital towards management and care of trauma and related emergencies.

1.6.2 Specific Objectives;

- i.** Ascertain whether or not, there exist any emergency management and care systems& guidelines in the Police Hospital.
- ii.** Identify and assess the performance and functional capacity of the emergency unit/department of the Police Hospital as per the ministry of health, Ghana's policy document and guidelines on emergency management and care.
- iii.** Describe the general triage system at the Police Hospital.
- iv.** Identify and assess the awareness and use of the triage system by personnel of the emergency unit of the Police Hospital.

CHAPTER TWO

2.0 LITERATURE REVIEW

Introduction

This chapter presents relevant literature on emergency management and care assessment in the context of medical audit and/or assessment. The chapter first gives a general overview of the issues in line with the study objectives and then follows up with an in depth review of relevant literature on each of the specific objectives. It would conclude by pointing out the knowledge gaps which informed the conceptualization of the study.

2.1 Overview

Accident and emergencies medicine does not only provide immediate life-saving medical intervention to patients who have unexpected illness or injury but it also includes responsibilities in the administration and management of the emergency service system. This includes planning, development and implementation of an effective and efficient healthcare delivery system, emergency planning and management (including mass casualties and epidemics), preventive medicine and public health, training of health personnel and research-health care services (clinical and basic research), (Ministry of Health, Ghana, 2011).

Emergency medical care contributes greatly to the health needs of every population. As important as emergency medicine was to improve upon preventive health, a major driver for national growth, emergency medical care serves as a major contributor to the fundamental health of people (Razzak, et al., 2002). Its usefulness is seen in the numerous lives saved from conditions that contribute to the burden of diseases. The challenge as Anthony describes is whether in developing countries, the limited resources

for health care will give room for establishing emergency medical services. It is interesting and important how he finds out that integrating emergency medical services into the primary health care structure in developing countries will not only be ideal but also be cost effective (Anthony, 2011).

Emergency care for patients has evolved all around the world. In very established and well sophisticated settings there are still challenges of waiting times and overcrowding. There are however, researches which have been done at various institutions with the aim of improving quality of care and service delivery. Improvement in indicators of care such as reduction in patients' waiting times, reduction in overcrowding and adequate supply of emergency resources may all play a role in improving the outcome of care of the emergency patient. Care for the emergency patient in the emergency room can be improved when quality improvement indicators are introduced to ensure that the very best of care is provided.

Waiting times, preventable death reviews and medical audit of processes of care in the emergency room are some of the important key indicators that may improve the provision of top-notch care for the emergency patient (WHO, 2009).

Given that effective and efficient emergency care is needed in all functional health systems across the world, the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) place particular emphasis on strengthening triage and emergency care in the management of childhood illnesses (Razzak, et al., 2002).

The integrative function of the emergency unit facilitates prompt patient management and more favorable outcome in the care system. A study conducted by Simpson in Sheffield looked at the effect of centralization of the accident and emergency unit in a large urban setting. The research identified how centralization improved provision of

care and outcomes, but also pointed out delays in the time it took for patients to see the clinician(Simpson, 2000).

In most developed countries around the world, there are well developed emergency medical systems which cover pre-hospital care, in hospital care and rehabilitation services (Kobusingye, et al., 2005). However, in less developed countries the pace of developing pre-hospital care seems to be acceptable though it could have been better. In Nepal, a study conducted revealed that, the people resorted to their primary health care centres for care of acute medical and surgical emergencies than for preventive health purposes (Razzak, et al., 2002). This was an indication of the lack in the provision of well-resourced emergency medicine/services outlets for the populace.

Emergency medical services have three components: pre-hospital care (care in the community and care during transportation to the hospital) and care in the hospital (Razzak, et al., 2002 and Kobusingye, et al., 2005). These are the main areas which need attention in order to provide effective emergency medical services. In Malaysia, a study carried out to assess the value of risk-coding system in pregnant women revealed that better communication, a more effective transport system and better hospital care were needed to reduce maternal mortality (Razzak, et al., 2002). Emergency medical services need to be improved globally to serve the purpose of reducing the spate of avoidable deaths.

Cost of emergency medical services has been thought to be the hindrance to developing standard services especially in the low and middle income countries. The perceived misconception that emergency medical services are very expensive is that which has crippled the interest of many countries in investing in emergency medical services. The

truth however, is that interventions from a well resourced emergency centre has been found to reduce avoidable deaths (Razzak, et al., 2002).

Emergency medical services in Africa have faced challenges which all emergency services in low-income and middle-income countries in other continents have. There are about 300 to 500 million acute episodes of malaria globally which result in about 1 million deaths each year most of which occur in Sub-Saharan Africa due to lack of well-established emergency medical services (Kobusingye, et al., 2005). These deaths could be prevented by well-established EMS. The same could be said for maternal mortality that continues to raid Africa of women each year.

The challenge for Africa is that all the components of EMS are undeveloped and where there were services present, these services were inequitably spread. There are challenges with pre-hospital care, qualified personnel, transportation of the emergency patient and well-resourced hospitals (Kobusingye, et al., 2005). In the midst of these obvious challenges, governments of some African countries have made emergency medical services a priority. In Zimbabwe for example, the government has made emergency care one of the four main priorities of health whiles in Sierra Leone many health facilities are being upgraded with medical and surgical facilities to offer emergency care (Razzak, et al., 2002). In Ghana, a pilot project to offer commercial taxi drivers with basic first aid skills to offer to emergency patients seems to be the step in the right direction in a country where there were a few skilled health personnel and very limited emergency transportation services (Kobusingye, et al., 2005).

It is very worrying that emergency medical services remains a part of the 10/90 gap of health research where only 10% of global research investments are devoted to problems affecting 90% of the world's populations. The situation is even worse in the area of

research into EMS originating from Africa- there was little evidence describing the epidemiology of emergency cases in Africa(Kobusingye, et al., 2005).

It is however, inarguable that EMS has become an important component in health care delivery worldwide. Indeed, it goes without saying that there have been some important landmark achievements in service delivery and health outcomes (Kobusingye, et al., 2005).Africa and for that matter Sub-Saharan is following the bandwagon to improve her health outcome and quality of life and one way to achieve the feat was to embrace the development of well-resourced hand compact health system that readily envelopes emergency medical services.

Assessment of Medical Services is one important tool that has been found to improve quality of care in many health institutions and very useful in changing health personnel behavior especially when it was linked to individualized feedback (Piterman, et al., 1997). Medical assessment\audit has had a myriad of definitions over the years to depict the emphasis at the time of the definitions. The Altman Committee in the United Kingdom defined medical audit\assessment as, “sharing by a group of peers of information gained from personal experience and/or medical records in order to assess the care provided to improve their learning and contribute to their medical knowledge” (Piterman, et al., 1997).

In the 1990s Marinker introduced some new elements in the definition of medical assessment/audit. The definition of medical audit propounded by Marinker was “the attempt to improve the quality of medical care by measuring the performance of those providing that care, by considering the performance in relation to desired standards and by improving on this performance” (Piterman, et al., 1997).

Medical audit system is often seen as a cycle in which quality assurance was achieved within the health facility only when the cycle was completed. The cycle begins with choosing a topic for review within the unit of department or the hospital. Then the team will set criteria or standards upon which their review would be based. When this was done, data could be collected as an observation of the practice that was to be reviewed, then follows the fourth step which involves evaluation of the data which have been gathered using the set criteria or standards as guidelines. There is then the formulation and implementation of changes to address the lapses identified. The final step is repeating the cycle to serve as a review of the changes implemented or put to practices (Piterman, et al., 1997). The medical audit cycle is a mechanism that could be used to assess new interventions introduced in the area of emergency medicine (management and care) in the country. The audit cycle below depicts the processes a team goes through when undertaking a medical audit.

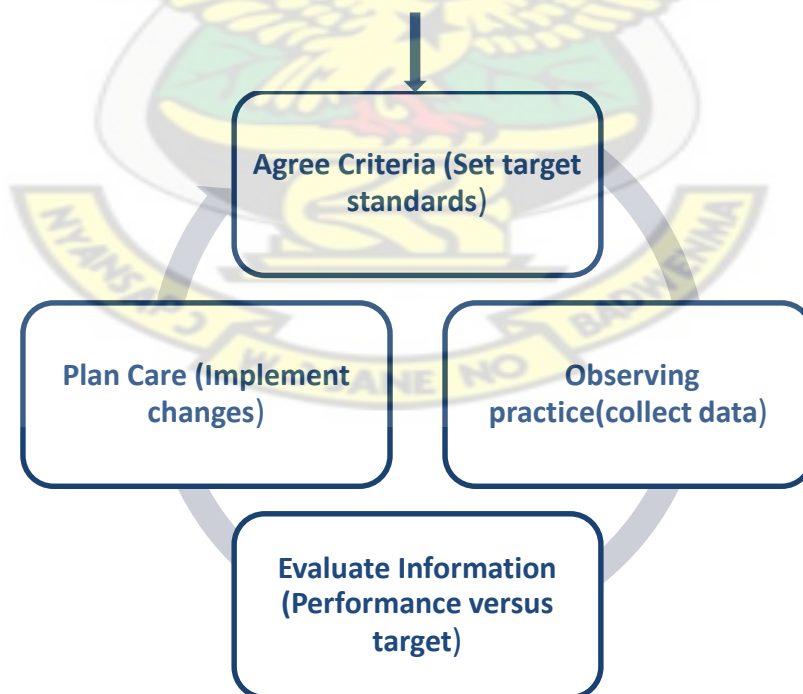


Figure 2 .1: Medical Audit Cycle Source; Piterman, et al., 1997

In the context of medical audit cycle, the study focuses on the following key variables; Thus, the Processes of emergency management and care (including referral system at the A&E unit, attitude and practices of emergency health staff toward emergency cases), performance and functional capacity of the emergency unit as per standard policy and guidelines (Including availability of resources and skills collaboration) and the general triage system of the emergency unit (including knowledge/awareness and usage/adherence to policy & guidelines by health staff on triaging system/protocol) as elaborated in the specific objectives.

2.2 Emergency care in Ghana

Emergency medicine in Ghana was still in its infant stages and for that matter very poorly resourced (Kobusingye, et al., 2005).

Accident and Emergency medicine is one of the least known and hitherto, least recognized medical specialty in Ghana. It has thus, received minimal status in medical practice in the country. Very few health facilities in Ghana have a clearly recognized emergency department or unit, yet emergency medical practice makes a great difference to the lives of the many patients who are brought in or present themselves 24 hours a day, to our health facilities. Fortunately things are changing and emergency medicine is beginning to receive its due importance in medical practice in Ghana (Ministry of Health, Ghana, 2011).

There is the National Ambulance Authority which serves as the main hub for the management of emergency medical services in Ghana. There is a training programme by the National Ambulance Service, that train emergency medical technicians (EMTs) who are sent to the various regions in Ghana. There are a handful of government owned

ambulances which are distributed to regional and district hospitals to serve them. Privately run ambulance services are virtually non-existent and the few that are available are not well resourced to provide optimum care. Unlike in the United States where there are grades of EMTs who are trained to provide advanced cardiac life support and advanced airway management, the EMT in Ghana are not able to provide such services. Their inability to provide such services also stems from the fact that, the ambulances used in Ghana are not equipped with such equipment. In situations of major disaster, government has set up the National Disaster Management Organization (NADMO) which is resourced to provide relief services to victims of disaster. Their work is complemented by EMTs from the National Ambulance Authority, Ghana National Fire Service, Ghana Police Service and the Ghana Armed Forces.

The Directorate of Accident and Emergency Unit of the Komfo-Anokye Teaching Hospital (A&E Unit, KATH) was setup from the Directorate of Surgery due to the increased need for better emergency care and training of emergency medical personnel. The National Accident and Emergency Unit, KATH, started its operations on the 4th of May 2009 and is currently the largest state- of-the-art accident and emergency centre in the West African sub-region; comprising of operating theatres, accident units, consulting rooms, X-ray units, a pharmacy, recovery wards, as well as a helipad, where helicopters can take off and land.

The A&E Unit, KATH, which supplement the services of other health facilities, including some twenty [20] government hospitals in the region, handles a broad spectrum of emergency cases, including accidents & trauma, surgical emergencies

(including appendicitis) and medical emergencies (including heart attacks) around the clock (Freiku, 2009).

When the Accident and Emergency unit was being put up, a collaborative agreement between the University of Michigan and the Ghana College of Physicians and Surgeons was signed to train specialists in Emergency Medicine at the Accident and Emergency center, KATH.

The mission of the collaboration was to support the health sector in Ghana develop Emergency Medicine as a medical specialty and to improve the overall delivery of acute accident and emergency care in Ghana (Michigan, 2009).

There are policies which have been outlined to triage patients who present at the unit to decide whether they are emergencies or not and be subsequently referred to the appropriate point for care. The triage system based on a modified South African triage scoring system and a makeshift mode of informing the various specialties to come to attend to patients for further management serves as the basic mode of operation of the unit and model for replication in other health facilities in the country.

2.3 Processes of emergency management and care

Emergency medical services is defined as the arrangement of personnel, facilities and equipment for effective and coordinated delivery of adequate health services required in the prevention and management of incidents which may be medical emergencies, accident or natural disaster (World Health Organization, 2008). The appropriate management of emergency cases was required in the health system of every country. In developing countries the challenge was even greater to have a well-organized emergency department that was very efficient as the challenge was that the setting up of emergency

medical services in the developing countries was financially burden-some (Kobusingye, et al., 2005).

Emergency medical services (management and care) process begins with its preparedness. This was done to avoid sudden confrontation with emergency challenges, which if health institutions/facilities had prepared, would not occur. Preparedness therefore means a process which involves planning and mapping out toward medical crisis management, generated by any appropriate authority or private organization, which clearly details what needs to be done, how, when and by whom- before and after an anticipated emergency or disastrous event occurs. It aims at providing a response strategy to both internal and external emergency and disaster situations that may affect staff, patients, visitors and the community (Norman, et al., 2012).

A hospital's preparedness is a means for it to test and evaluate its capabilities and/or recovering from an event that puts a significant strain on its patient care and operating systems. The critical areas of hospital emergency preparedness includes: pre-hospital emergency preparedness, in-house (in-hospital) emergency response plans, human capacity and the assessment of existing infrastructure in emergency (Norman, et al., 2012).

In a study by Norman, et al, assessing the emergency preparedness programme of health facilities for all-risks, focusing on Road Traffic Accidents (RTAs) resulting in surge demand, it was observed that; (1) many of the nation's hospitals were not prepared for large RTAs resulting in surge demands and did not possess general emergency programmes. (2) The hospitals' respective abilities to handle large scale RTAs were compromised by the lack of competent medical & allied health personnel and adequate medical supplies. This was done using the World Health Organisation (WHO) checklist

covering hospital preparedness, equipment, manpower and surge capacity planning as best practices for the mitigation of public health emergencies (Norman, et al, 2012).

The World Health Organization (WHO) recommends periodic assessment of the capacity of health facilities' response to emergencies. For example, the evaluation of South African hospitals' response to emergencies, using the World Health Organization, (2007) Field Manual for Capacity Assessment of Health Facilities found skills gap in the practices of the health personnel in that nation's healthcare system (Pillay, 2010). National authorities have also conducted similar review of the Ghana healthcare system. They found many gaps in the efficiencies of both equipment and supplies of the nation's healthcare system (Akazili, et al 2008). Evaluation of the trauma response capabilities of U. S. hospitals that were involved in major incidents such as the 9/11 terrorist attacks in 2001 and Hurricane Katrina in 2005, found existing gaps in both the skills of personnel and medical supplies, after spending large sums of money on emergency preparedness (Soloff, 2006).

A study conducted in an emergency department in Cincinnati showed that about 40% of patients who reported to the emergency department were mainly patients who could have been managed in the normal health facilities whiles Patel et al found that 75.5% of patients were appropriately referred to the emergency department by family physicians (Patel, et al., 2002). There was a growing concern of the referrals that are sent to the emergency department as increasingly minor injuries which could be appropriately managed by general practitioners or what may be described as smaller clinics in Ghana were referred to the emergency department and these resulted in increased utilization of resources and time (Rinderknecht, et al., 2010).

The emergency care process is started at the scene of the incident where the pre hospital care was given to the patient. Pre-hospital care which is a component of emergency medical services includes paramedics' triaging of patients at the scene, some extent of treatment and then transportation of the patient to the hospital (WHO, 2008). The transportation of patients is also an important part of the emergency care process. There are the type A ambulance, which is mainly a patient transport ambulance designed for the transportation of patients who do not have emergency condition, there is also the type B ambulance, which are the emergency ambulance and the type C ambulances are the mobile intensive care units which requires skilled personnel to monitor the emergency patient on board (WHO, 2008). Pre-hospital care in Ghana is in a developing phase, and currently there is the training of emergency medical technicians. Also the ministry of health is resourcing the health sector with required infrastructure to develop this part of emergency medical services in the country.

When patients are brought to an emergency department, they are triaged to an appropriate triage zone based on the severity of their presentation. There are a number of triage scoring systems that are used in various countries. There are some triage scoring systems which have gained popularity having been validated in a number of populations. The Australasian triage score (ATS), the Canadian Triage Assessment Score (CTAS), the Manchester Triage Score (MTS) and the Emergency Severity Index (ESI) are some of the very popular triage systems (Weyrich et al., 2012). In Africa, the South Africa Triage Score (SATS) or what used to be called the Cape Triage Score is mostly used, it is a five level triage score that has also been validated and has been found to be useful (EMSSA, 2009).

The time interval from when the patient enters the emergency department till they are discharged is called the emergency department length of stay (EDLOS) and the time it takes the patient to be initially seen by a physician is called the physician initial assessment (PIA). The PIA depends on the severity of the patient's condition, the number of patients to be cared for and the time of day (Canadian Institute for Health information, 2005). A research done in Saudi Arabia by Elkum et al, assessed the median time for a physician to see a patient as being 35minutes and stated that the age of the patient, the triage category, day of arrival and time of arrival as being the factors that affected waiting times (Elkum, et al., 2009). Similarly, the NHAMCS published by the CDC reported a median waiting time to be treated of 35 minutes and a median length of stay time of 154minutes in Emergency Departments in the United States in 2008. The average length of stay in a meta-analysis by Zun et al found length of stay in the ED in a number of settings as being between 31 minutes and 445 minutes which probably covers a wider spectrum than what is described in the NHAMCS.

There are increased numbers of patients who leave the ED without being seen as a result of overcrowding and prolonged waiting times in the ED. About 3% of patients left the ED in Canada without being seen (Canadian Institute for Health information, 2005). A review by Kennedy et al showed that most of the patients who left without being seen were mostly patients who presented with non-urgent conditions and were likely young males who left due to concerns of prolonged waiting times (Kennedy, et al., 2008). However, patients mostly believed they were justified in seeking care at the ED, valued effective communication of their conditions and required short waiting time at the ED (Cooke, et al., 2006).

2.4 Performance and functional capacity of health personnel toward emergencies

The attitude of health personnel toward emergencies that come to their health facilities may influence the frequency of referrals and outcomes of cases that are brought to the A&E unit of that hospital. In a study by Patel et al, 75.5% of cases that were referred to the ED were regarded as appropriate referrals (Patel, et al., 2002). The level of training or expertise of the health personnel that gave the primary care and then referred has been found to correlate with the severity of the illness (Rinderknecht, et al., 2010). The hurried attitude or otherwise with which referring facilities employed when cases that would be referred to the ED influences largely on the outcomes of these emergencies.

The interventions made or not for the emergency patient before they are referred to an ED may also influence the outcome of such emergency cases. The initial triage and treatment interventions which were made for the patient at the health facility of first call constitute the weakest link in the emergency medical service in middle-income and low-income countries (Razzak, et al., 2002). In Ghana, this assertion may most likely be no different because the A&E unit of the police hospital, small as it is, has now become a hub for receiving referrals of patients within the Accra metropolis and many other regions in Ghana. Patients, who reported to health facilities for dire emergency care, are likely referred to the A&E unit of the police hospital without triaging and/or no initial treatment in some instances.

The core component of emergency medical services according to the World Health Organization (WHO); are the pre-hospital care, transportation and in-hospital care (World Health Organization, 2008). The transportation system which comes in the form of ambulance service is instituted, to transport patients to referral facilities. There is empirical evidence that use of ambulance services increased the chances of survival of

emergency cases. In Sierra Leone, it was estimated that a 50% reduction occurred in case fatalities among pregnant women coupled with an increased utilization of emergency obstetric care when investment were made in vehicle and emergency communication systems (Razzak, et al., 2002). The use of ambulances for the transportation of the emergency patient may improve the chances of survival. The various types of ambulance services provided some level of paramedic health support for the patient whiles they were transported to the ED improves emergency patients' survival (World Health Organization, 2008). In Canada, 12% of patients who visited the emergency department were transported in ambulances out of which 7.8% presented with severest conditions. Improved outcome may be seen when these emergency patients were accompanied by health staff from the referring health facilities. 30-40% of patients, who reported to ED, presented with non-urgent conditions and these were found to increase overcrowding in the ED (Hugli, et al., 2006). 75.5% of patients who were referred by family physicians to the ED were found to be appropriate referrals (Patel, et al., 2002). This same study showed that 24.5% of the patients who presented to the ED may not be classified as emergencies. The challenge however, was whether or not such patients should be returned to seek care from a primary health care point. This is an area that should be looked at seriously in Ghana, as the situation may not be different.

A review by Sanders showed that there was reluctance to offer care to patients who present to the ED with minor injuries by ED staff. Care for these patients was considered time-consuming and unrewarding. It also increased overcrowding, increased waiting times and increased utilization of resources in the ED. It is even more difficult when these patients were referred by primary care providers. The challenge was whether

patients who have been referred from primary care points must be refused access to urgent care when they were triaged and have been found to have non-urgent condition (Sanders, 2000). With all these constraints, it was imperative that, there was increased desire for feedback from the ED to the referring health facilities, so as to improve the level of networking, thereby improving health service delivery (World Health Organization, 2008).

2.5 Adherence to triage system by triage nurses in the A& E unit.

Triage, a word of French origin (*trier*) which means, ‘to sort’, became an important asset during the First World War when injured soldiers were separated and attention given to those who would survive or otherwise to those with severe injuries who could not survive. Triage has become an important tool in emergency medicine and currently there are plans to introduce triaging in public health (Anderson, et al., 2006). The triage process is a dynamic decision-making process in which nurses (who mostly run the triage unit) are required to combine knowledge and timeliness to decide where a patient should be sent based on the severity of the patient’s condition and chance of survival. The challenges for the triage nurse are how to prioritize cases in to an area for management, how to rank non-urgent patients and the decision as to whether they should be given care or not. The triage nurse is therefore expected to have some intellectual and intuitive competencies that would enable them to properly triage patients. This is important because it is increasingly being found that the ED has become an area where patients prefer to seek care, even primary care (Canadian Institute for Health information, 2005). Handysides described three proficiencies of an effective emergency nurse as being:

- The capacity to estimate conditions from a short clinical history taking, clinical measurements and a quick problem-orientated physical examination.
- Comprehensive knowledge of serious injuries and a broad knowledge of pathological presentations.
- Intuition developed through long-time experiences, which helps decide the patient's actual condition (Handysides, 1996).

The triage system adopted in A&E units of most health facilities in Ghana was the Cape Triage System (CTS) which is a South African triage system that was developed in 2004. The CTS was developed by a group called the Cape Triage Group (CTG). The basis for their work was to develop an effective triage tool that could maximize efficient uses of resources and minimize the risk to the patients' life. Hitherto, there were various triage tools used by different hospitals which were generally found to be cumbersome and challenging for health staff of different levels (Gottschalk, et al., 2006).

The CTS was developed considering the following parameters:

- The physiological derangement
- Discriminator
 - Mechanism of injury
 - Symptoms complexes
 - Discriminators
 - Senior health-care personnel's opinion
- Nomenclature

The triage system employed sought to use physiological state of the patient to decide where the patient should receive care or not. The physiological derangement was

adopted from The Revised Triage Score which is based on the Glasgow Coma Score (GCS), systolic blood pressure and respiratory rate. The physiological derangement model included the above and heart rate, temperature and AVPU level of consciousness. The above physiological parameters constituted the Medical Early Warning Score (MEWS) which was found to be excellent in triaging medical patients. However this left out trauma patients who were otherwise well but for their injury. The CTG therefore, developed the Triage Early Warning Score which incorporated a mobility parameter and a trauma factor to the MEWS (Gottschalk, et al., 2006). This appropriately catered for patients with various degrees of injury.

The discriminators that are listed mainly are to help categorize the patient based on the severity of the condition. Mechanism of injury is helpful to identify casualties with severe trauma. The presentation of a patient is a paramount benchmark for their care. Pain is an important part of the assessment of patient in the ED. Senior health-care personnel's opinion was found to improve the triage process (Subash, et al., 2004).

The nomenclature used was the various colour codes used by the CTG to assign where the triage patients should go. These are the very colour codes used at the A&E unit of KATH and other health facilities in Ghana. The triage categories chosen to signify the particular colour codes are:

- Red- resuscitation/physiologic unstable patients
- Orange- serious cases with physiologic or potentially life/limb pathology
- Yellow- 'physiologically stable' cases with reasonably serious medical or trauma problems
- Green- minor injuries/illness

- Blue- those who are clearly dead

The challenge with the implementation of the Cape triage system is the difficulty for it to be maintained during peak admission periods when there is shortage of nurses (Augustyn, et al., 2009). The same can be said as being the challenges with the triage system at the A&E units of most health facilities in Ghana.

Other factors which included the competencies and experience of the nurses who are involved in triaging may affect the quality of triaging to the appropriate severity zones. An important factor to emergency patients' outcome was the accuracy of triaging these patients to the appropriate areas for interventions to be made (Considine, et al., 2007). Though professional and working experience have been intimated to be beneficial in triaging patients, studies have shown that professional and working experience of triage nurses may not influence the accuracy of triaging but rather factual knowledge was shown to be associated with accuracy of triaging (Considine, et al., 2007). It was difficult to define what experience was but in that study professional experience was chosen as proxy definition for how long a triage nurse had worked since graduation from medical school while working experience was the length of time spent as a triage nurse within the A&E unit. In the same study by Considine et al, it was intimated that factual knowledge may have linkage with experience as the knowledge gained on the job. Factual knowledge was defined by Considine as the knowledge of a set of facts. In that study, nurses in the triage unit received periodic training which was approximated as factual knowledge.

The triage unit can be the busiest and distracting part of the ED with large patient waiting to be seen and evaluated by the triage nurses. The triage process therefore, may be easily interrupted and this coupled with overcrowding and poor staff strength could

affect the ability of the nurses to adhere fully to the triage protocol (Dong, et al., 2007). Dong's study also pointed out that, triage nurses in most health facilities mainly relied on memory to triage and score patients. The use of memory cards and posters in the triage unit could help in adhering to the triage protocol.

The ability of nurses to adhere fully to a triage system in the A&E unit and the consistency with which they triaged emergency patients to the area of care were challenged. Predicting accurately whether or not a patient may be admitted could be a little unrealistic because these patients would require a thorough clinical work up (Beardshell, et al., 2010). Dong et al. noted that, the prediction of patients' triage category may be influenced by training of the nurse. It is a useful tool in assessing the knowledge and adherence of triage nurses to determine the level of agreement among triage nurses. In their study, Dong, et al. showed that, the inter-rater agreement among twenty four(24) triage nurses improved with training, using a web based triage tool from moderate to good (Dong, et al., 2007).

2.6 Knowledge gaps and innovations

The evolution of emergency medicine in Ghana has brought to the fore challenges which other countries, with well-developed emergency services, were faced with. These challenges include overcrowding in the emergency departments, increased utilization of resources as a result of the challenge in treating both non-urgent and emergent cases at the emergency departments. There is also the internal challenge of increased workload for a small staff resulting in missed or delayed diagnosis which Campbell et al described as the "perfect storm" (Campbell, et al., 2007). Additionally, there is increased

dissatisfaction experienced by patients as a result of long waiting times and the increased in numbers of patients leaving the emergency unit without being seen.

Reason for the poor state of most emergency medical units in both low-income and middle-income countries was the perceived cost in establishing them. This challenge results in needless deaths in most of the health facilities and institutions in these countries (Razzak, et al., 2002).

One major question, a curious mind may ask: what factors elicit or contribute to the rising challenges in the area of emergency medical services in Ghana? Could an answer to this question be the unprepared nature of the Ghanaian health system toward emergency medicine or services? The phenomenon unfortunately permeates all health institutions or facilities in the country, which result in needless deaths in most of these health facilities and institutions, as experienced in other low income and middle income countries, as observed by Razzak, et al.

In order to establish the authenticity of various factors contributing to the poor state of emergency medicine in the country, for that matter the Ghana police hospital, there was the need for a scientific medical audit or assessment of the emergency unit of the setting (The Police Hospital).

Medical audit/assessment is one important tool that has been found to improve quality of care in many health institutions and very useful in changing health personnel's behavior, especially when it was linked to individualized feedback (Piterman, et al., 1997).

In the mid-1990s, Marinker introduced some new elements in the definition of medical audit/assessment. The definition of medical audit as propounded by Marinker was “the attempt to improve the quality of medical care by measuring the performance of those

providing that care, by considering the performance in relation to desired standards and by improving on this performance” (Piterman, et al., 1997).

Indeed as emphasised by Marinker in the definition, the main crux of medical audit/assessment is to measure the performance of selected variables within a defined setting of a health facility/institution as per the best practices/standards provided in a policy documenter guidelines for performance. The essence of this is to improve performance in the selected area for evaluation and/or assessment.

A number of research work and studies have been done in different settings on emergency medicine/services and various interventions prescribed and/or instituted, aimed at solving the challenges as mentioned above. However, these studies and research work were done in health facilities/institutions unrelated to or not associated with security health facilities (Quasi health institutions; -as it is the arrangement in Ghana). The innovations there in this study/research, is the fact that, for the first time a research is being conducted to assess a major security health facility in the area of its emergency medicine/services. Major boost in this effort is the fact that, implementation of recommendations from the research would place the police institution in a better position to manage injured victims of disaster and emergency situations. It should also be noted that, personnel of the Ghana Police Hospital as members of the security service do not resort to strikes or industrial actions for settlement of grievances or disputes, hence their services are available 24/7 and uninterrupted all through.

As conceptualized, the socio-demographic stata of the staff, together with adequate provision of emergency medication, equipment/gadgets, structural space and as well as the composition of trained and motivated staff and not compromising on the provision of performance protocol; thus defines the preparedness of a health facility toward

management and care of emergencies in its varied forms. The research assessed these variables mentioned above, as they constitute a health facility's preparedness toward management and care of emergencies.

KNUST



CHAPTER THREE

3.0 RESEARCH METHODOLOGY

Introduction

This chapter covers various methods and techniques employed in undertaking the study. It focuses on the study design, brief profile of the study area and how respondents for the study were sampled. It also looks at the variables studied and how the data were collected and analysed.

3.1 Study Method and Design

A cross-sectional study design was used with quantitative methods employed to describe the research variables. Details are explained in the data collection techniques used.

3.2 Profile of the Study Setting

The study was conducted at the Police Hospital, located in the central business area of the national capital-Accra. The Police Hospital is bounded to the east by the national headquarters & barracks of the Ghana prisons' service, the west by the national headquarters of the Ghana fire service, the north by the cantonment police station & barracks and the south by the Danquah round-about & Koala shopping mall. The Ghana Police Hospital was established in 1976 with the core aim of providing the health needs of personnel of the Ghana Police Service and their dependants (-spouses and children/wards below 18 years), especially within the national capital and its environs. The mission of the Ghana Police Hospital is to provide every police officer (man and woman) with access to at least free primary health care (Police Hospital Annual Report, 2012). This is directed towards achieving its vision of maximizing healthy life of every

police personnel, to ensure that, they are medically fit for police duties. However, as its facilities got expanded and more resourced, medical care and services were extended to the sister security services as the Ghana Prisons' Service, Ghana Fire Service, Customs division of the Ghana Revenue Authority and the Ghana Immigration Services upon request and has since remained the major health services provider for these sister security services/institutions. The Police Hospital also provide health care for suspects in both police and prison custodies, injured victims of violent crimes and road traffic accidents, vagrants and as well as members of the communities within its catchment area as part of its social or corporate responsibility.

The Police Hospital by the Ministry of health and Ghana Health Service classification and recognition is a regional hospital, but also doubles as a referral center for its satellite clinics in the regions as in Bolgatanga, Sunyani, Kumasi, Koforidua, Cape Coast, Sekondi/Takoradi, Service Workshop and others (Ghana Police Hospital, 2012).

The operations of these clinics are enshrined in the objectives of the hospital, of which the paramount is to provide various quality health care services to both police service personnel and the civilian population (general public), as mentioned early on.

The hospital currently has staff strength of six hundred and thirty six (636) made up of three hundred and fifty-nine (359) various health professionals and two hundred and seventy- seven (277) support/auxiliary staff (Ghana Police Hospital, 2012). About fifty-one thousand, six hundred and eleven (51,611) patients of varied disease conditions are averagely seen annually at the out-patient department of the hospital (Ghana Police Hospital, 2012).

3.3 The Target Population.

The target population included all staff members of the Police Hospital whose duties were directly linked to the accident and emergency unit. That was both health professionals and the auxiliary/support staff. This was also made up of both police and non-police personnel.

3.4 The Study Population

The study had a population of Seventy-Seven (77), of the estimated Eighty (80) health personnel which included twenty five (25) of thirty (30) nurses, twelve (12) of fifteen (15) medical doctors, twelve (12) of fifteen (15) ward assistants, eight (8) of thirteen (13) ward orderlies, ten (10) of fifteen (15) core administrative & finance staff (thus, the general administrative staff, finance staff and audit staff), all eight (8) of the mobile medical team and all five (5) of the ambulance drivers.

3.5 Sample Size Estimation

A sample size of Eighty (80) was estimated with a known population of one hundred (100) emergency health personnel.

This was calculated with the formulae below;

$$n = \frac{X^2 N p (1 - p)}{[d^2 (N - 1)] + [X^2 p (1 - p)]}$$

Where, the Chi-square distribution coefficient of 95% CI, $X = 1.96$

Assuming unknown proportion, $p = 0.5$

Known population size, $N = 100$

Degree of acceptance, $d = 5\% (0.05)$

Substituting the values, calculated sample size; $n = 96.04/1.2079$

$n = 79.5$

By approximation

$n = 80$

3.6 Sampling Technique

Multi-stage sampling techniques used included simple random sampling without replacement and purposive sampling. These were used at different stages to select Eighty (80) respondents from the target population of one hundred (100) emergency health personnel. Personnel were grouped according to their professions, from which selection was made. The various professional groups constituted a list totalling one hundred (100) staff members whose duties contributed directly to the running of the emergency unit/department of the police hospital. This list served, but a fragmented sample frame for the study.

The selection included twenty five (25) of thirty (30) nurses, twelve (12) of fifteen (15) medical doctors, twelve (12) of fifteen (15) ward assistants, eight (8) of thirteen (13) ward orderlies, which was by simple random sampling technique (-first names of personnel from the sample frame were written on pieces of paper and folded into a container, from which they were picked randomly without replacement, for the categories of the personnel at the emergency unit). The selection of ten (10) of fifteen (15) core administrative & finance staff (-thus, the general administrative staff, finance staff and audit staff), all eight (8) members of the mobile medical team and all five (5) of the ambulance drivers was through purposive sampling technique.

3.7 Inclusion Criteria

The study population included all staff members of the Ghana Police Hospital whose duties were directly linked to the accident and emergency unit and the core administrative personnel, irrespective of being a trained police or not. Both the core health professionals and the auxiliary/support staff at the emergency unit and personnel

of the mobile medical team were included. Participation in the study was also by virtue of the sampling techniques used, but above all by consent.

3.8 Exclusion Criteria

Members of staff of the Police Hospital who were neither administrative staff nor work directly at the emergency and/or out-patient unit were excluded from the study. Also in the exclusion list were staff members not selected by virtue of the sampling techniques used. Participation was also by consent therefore, personnel who refused participation were excluded from the study.

3.9 Data Collection Techniques

Designed questionnaires were used to collect information from the participants through fill-in and the interview of some selected personnel. Self-administered questionnaires were used to collect pieces of information from the Nurses, Doctors, the administrative staff and staff of the mobile ambulance team. The questionnaires for these categories of staff contained both opened-ended and closed questions. Using designed questionnaires as a guide, unstructured interviews were conducted for the ward assistants, orderlies and the ambulance drivers on separate sessions. This was done because some of the participants (-ward assistants, orderlies and the ambulance drivers) could neither read nor write; so the questions had to be interpreted into the native dialects (Twi and Ga) to their understanding and for their responses. Questionnaires for the medical officers and nurses were labelled as questionnaire for the core personnel of the emergency unit/department, which were different from those for the administrative personnel labelled as questionnaire for the administrative personnel. Questionnaires for personnel of the police hospital mobile medical team were labelled as questionnaire on the

performance of the ambulance team, which labelling was different from questionnaires for the ward assistants and orderlies of the emergency unit, labelled as questionnaire on the performance of the non-core staff of the emergency unit. Questions for the various groups were however structured to elicit responses from all participants on the existence of & adherence to emergency management & care systems, the performance & functional capacity of the emergency unit as per standard policy & guidelines and the general triage system of the emergency unit (-knowledge/awareness and usage/adherence to policy & guidelines) of the Ghana Police Hospital, Accra.

Direct observation technique was also used in some instances, since the study involved inspection of the emergency unit for space, the availability of emergency medication and medical equipment there-in, using a check list by the Ministry of Health, Ghana.

3.10 Data Handling and Analysis

Confidentiality and good data preservative practices were of importance to the researcher and participants hence returned questionnaires and pieces of information from the interviews & discussions were coded and entered into computer by the researcher. The sampled data base was checked for double entry and SPSS software was used to analyse the data.

Descriptive statistics such as frequency counts, cross tabulations, percentages, mean and standard deviation were used for the quantitative variables. The measure of quality of emergency preparedness and triaging systems was through an observation/inspection of the emergency unit, which were measured on a Likert-scale of 1 to 5, where 5 was the highest and 1 the least, using the standard check list by Ministry of Health, Ghana.

3.11 Pretesting

The essence of pretesting is to measure or determine the other wise of the reliability and validity of the data collection or gathering tools, equipment and techniques.

The questionnaires for this study were first administered in the form of pre-test to Forty (40) health professionals by purposive selection method from the population of emergency health professionals at the emergency unit of the 37- Military Hospital. Corrections were made there-in, with regards those questions which were ambiguous, before the final print of questionnaires was done for use in the research.

3.12 Ethical Considerations

As a requirement for human subjects' research, all the data collection or gathering tools were constructed and designed in a manner devoid of subjecting or exposing the research participants to any form of emotional, psychological and/or physical abuse. Secondly, participants who consented to be part of the study were those actually involved in the research. This was, after the rationale and other processes involved in the research were explained to their understanding. This was achieved through the use of designed consent forms.

Confidentiality of participants was assured by anonymity and the pieces of information gathered were used for the purposes of the study.

Clearance was sought from the Committee on Human Research Publication and Ethics (CHRPE) of the Kwame Nkrumah University of Science and Technology (Institutional Review Board) and the Department of Community Health before embarking on the actual research work. Approval was also obtained from authority/management of the Ghana Police Hospital before conducting the research.

3.13 Study Variables

A variable is a quantity describing a feature of an individual or object, which may vary between individuals. A variable is considered an attribute of a subject and the measurements performed on them.

There are two (2) types of variable, namely: Outcome and Explanatory.

An outcome variable is a characteristic which is believed to be affected by the values taken by other variables. It is also called a response or dependent variable.

3.13.1 The outcome/dependent variables in the study included;

Specific objective I

- i. Existence of emergency management and care systems

Specific objective II

- i. Conformity in the performance and functional capacity of the emergency unit/department

Specific objective III

- i. Existence of general triage system

Specific objective IV

- i. Awareness and use of triage system by personnel

An explanatory variable is a factor that may influence the outcome of a phenomenon. Such a variable partly explains the variability of the outcome. It is also called an independent or predictor variable.

3.13.2 The explanatory/independent variables in the study included;

Specific objective I

- i.** Presence of trained front desk personnel 24/7
- ii.** Process of receiving emergency cases by front desk personnel
- iii.** Process of acquiring emergency treatment card/folder for cases
- iv.** Adequate provision of emergency equipment
- v.** Adequate provision of emergency medication
- vi.** Provision of conducive environment

Specific objective II

- i.** Admission of emergency cases
- ii.** Adequate provision of emergency equipment
- iii.** Adequate provision of emergency medication
- iv.** Provision of conducive environment
- v.** Frequent replacement of used medications/drugs
- vi.** Adequate Trained personnel
- vii.** Ability to operate basic life-saving and emergency equipment
- viii.** Provision of transport for referred emergency cases to other health facilities
- ix.** Personnel accompanying emergency cases to referred health facilities

Specific objective III

- i.** Appropriate triaging of patients to the right zone for medical attention
- ii.** Appropriate scoring of the TEWS and use of discriminators

- iii. Consistency in the triaging of patients to the zone for attention by triage personnel

Specific objective IV

- i. Existence of general triage system
- ii. Demonstration of knowledge on triaging
- iii. Level of adherence to current triaging system
- iv. Appropriate triaging of patients to the right zone for medical attention
- v. Appropriate scoring of the TEWS and use of discriminators
- vi. Consistency in the triaging of patients to the right zone for attention by triage personnel

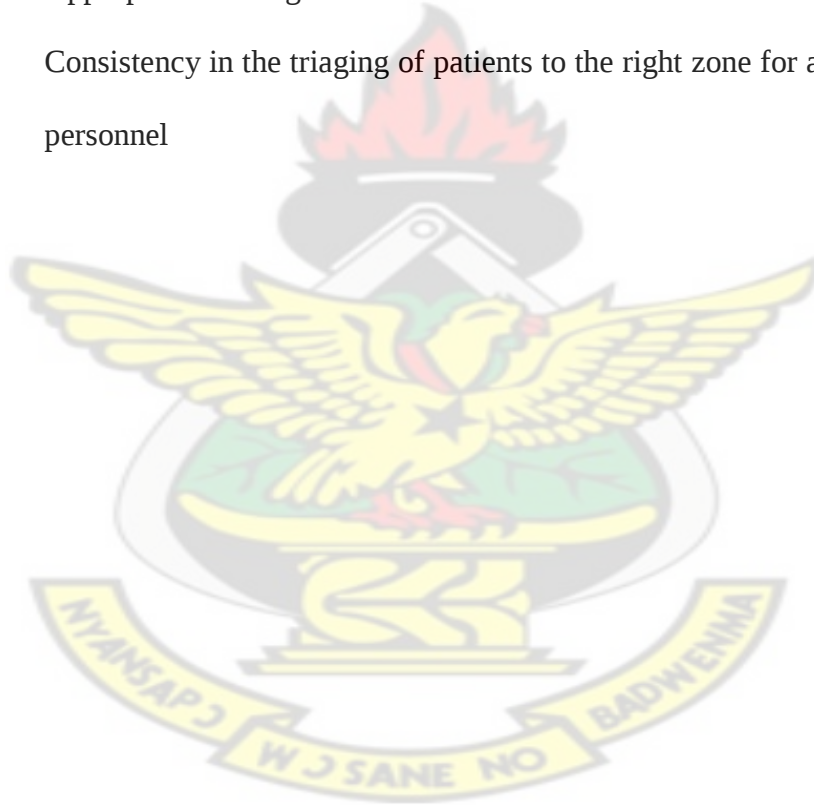


Table 3.1: Table for the study variable

S. no	Specific Objective	Questions to be answered	Dependent Variable	Independent Variable	Operational Definition	Indicators	Data collection Method
1.	To ascertain whether or not, there exist any emergency management and care systems in the police hospital.	Are there existing guidelines for the management and care of emergencies in the police hospital?	Existence of emergency management and care systems	1. Presence of trained front desk personnel 24/7 2. Process of receiving emergency cases by front desk personnel	Existence of emergency management and care systems, refers to the presence of trained front desk personnel on emergency, availability of emergency equipment and medication and laid down emergency processes	Proportions, percentages, mean, standard deviation, range, etc.	Questionnaires, key informant interviews and focus group discussions
2.	To identify and assess the performance and functional capacity of the emergency unit/department of the hospital as per the ministry of health, Ghana's policy document and guidelines on emergency management and care.	Does the emergency department of the police hospital conform to the ministry of health, Ghana's policy document and guidelines for the management and care of emergencies with regards	Conformity in the performance and functional capacity of the emergency unit/department	1. Admission of emergency cases 2. Adequate provision of emergency equipment 3. Provision of transport for referred emergency cases to other health facilities	Performance and functional capacity as per the Ministry of Health, Ghana policy document and guidelines on management and care of emergencies, refers to the emergency department's conformity to the policy document and guidelines of the Ministry of Health, Ghana in its operations on emergency and related cases.	Mean, standard deviation, standard error, proportions, percentage, etc.	Questionnaires, key informant interviews and focus group discussions

		to performance and functional capacity?					
3.	To describe the general triage system at the police hospital.	How does the triage system in the police hospital work?	Existence of general triage system	1.Appropriate triaging of patients to the right zone for medical attention 2.Appropriate scoring of the TEWS and use of discriminators	General triage system refers to a system by which trained health personnel are able to sort out emergency cases or patients through categorisation for treatment	Mean, standard deviation, standard error, proportions, percentage, etc.	Questionnaires and focus group discussions
4.	To identify and assess the awareness and use of the triage system by personnel of the emergency unit of the police hospital.	What is the awareness and use of the triage system by doctors, nurses and other health personnel at the police hospital?	Awareness and use of triage system by personnel	1. Existence of general triage system 2.Demonstration of knowledge on triaging 3. Level of adherence to current triaging system 4. Appropriate triaging of patients to the right zone for medical attention	Awareness and use of triage system by personnel refers to the demonstration of knowledge on triaging and the level of adherence to triaging system by the health personnel at the emergency unit	Mean, standard deviation, standard error, proportions, percentage, etc.	Questionnaires and focus group discussions

3.14 Limitations

Findings from the research are limited to the research setting due to the type of study method and design used. The foreseen limitation for the study was the unwillingness of participants to be interviewed and/or subsequent return of filled questionnaires, as the participants were members of the security service (Police Service) and could adopt a lip-tight attitude. This actually occurred as a limitation, as three (3) of the administered questionnaires were not returned. In effect, Seventy-Seven (77) of the Eighty (80) administered questionnaires were returned. Participants who were earmarked for key informants' interviews and focus groups' discussions refused the ideas, hence had to be abandoned. Questionnaires which were originally prepared as guide for the key informants' interviews had to be administered for the participants to fill-in their responses, as none was prepared to be interviewed and/or recorded. These actually affected the original method and design for the study hence, quality of work in terms of details in findings was compromised. None-the-less, findings from the research are the truth reflections of the study method and design used.

Time was also of essence as one was expected to submit their work on scheduled. There was not enough time to have interrogated or done a thorough work on the study subjects. Cost of the study was equally a limiting factor, as the type of study design used and the number of study participants were chosen and selected with cost consideration, which indeed have had impact on the quality of the research work done. However as stated earlier, findings from the research are the truth reflections of the study method and design used.

3.15 Assumptions

It was assumed that, the various health professionals who participated in the research were similar in their respective professional areas, had basic professional knowledge and provided accurate and unadulterated responses or pieces of information to the best of their knowledge.

3.16 Dissemination of Findings Plan

Copies of the final write up of the study are made available to the school of graduate studies, Department of Community Health, Kwame Nkrumah University of Science and Technology, Management/Authority of the Ghana Police Service & Ghana Police Hospital, the Greater Accra Metropolitan Health Directorate and a summary of the work done for publication in scientific journals.



CHAPTER FOUR

4.0 RESULTS

Introduction

This section covers analysis of responses from seventy-seven (77) respondents selected from Core health personnel, Non-core/Support personnel, Ambulance team and Administrative personnel of the Ghana Police Hospital in Accra who formed the study population. The section also analysed the quality of emergency preparedness and triaging systems based on observation/inspection of the emergency unit, which were measured on a Likert-scale of 1 to 5 using standard check list by the Ministry of Health, Ghana. The analysis was done on the background of the respondents, processes of emergency management and care which assessed the existence and adherence to emergency management and care systems, performance and functional capacity of the emergency unit per standard policy & guidelines and general triage system of the emergency unit. The responses are presented in tables, charts and graphs.

4.1 Background of the Respondents

Table 4.1 below shows details of the background characteristics of the respondents relative to their profession, age, practice years of profession, educational level, departments, working years at current unit/department and level of training at present unit of work. Out of the seventy-seven (77) respondents, nurses were the majority with 38.9%, medical officers 16.9% and other professionals put together 40.3% (See Figure 4.1). The most occurring age group was those aged between 30years and 39years, forming 58.4% whiles 13.0% of the respondents were less than 30 years. All the personnel had at least attained some level of education with tertiary education being the

majority (64.9%) followed by Senior and Junior High School Education (SHS/JSS) which constituted 18.2%. Greater percentage (70.1%) of the respondents worked directly at the emergency unit of the Police Hospital and 29.9% of the personnel were from other units but linked to the emergency unit by virtue of their duties (See Figure 4.2). 64.9% of the respondents had not had any form of training at their present unit.



Table 4.1: Background of respondents

Variable	Category	Frequency and percentage N=77
		n (%)
Profession of Respondent	Nurse	30 (38.9)
	Medical Officer	13 (16.9)
	Specialist nurse	3 (3.9)
	Physician/Surgeon	0 (0.0)
	Other	31 (40.3)
Age group of respondents	<30	10 (13.0)
	30-39	45 (58.4)
	40-49	14 (18.2)
	≥50	8 (10.4)
Practice years of profession	<6	22 (28.6)
	6-10	29 (37.6)
	11-15	16 (20.8)
	16-20	5 (6.5)
	>20	5 (6.5)
Education level of respondents	Middle school	13 (16.9)
	SHS	14 (18.2)
	Tertiary	50 (64.9)
Department of Respondents	Emergency Unit	54 (70.1)
	Other	23 (29.9)
Working years at current unit/department	<6	61 (79.2)
	6-10	12 (15.6)
	11-20	2 (2.6)
	>20	2 (2.6)
Level of training of respondents	Orientation course	15 (19.5)
	Refresher course	11 (14.3)
	Residency program	1 (1.3)
	No training	50 (64.9)

Source: Author's field data

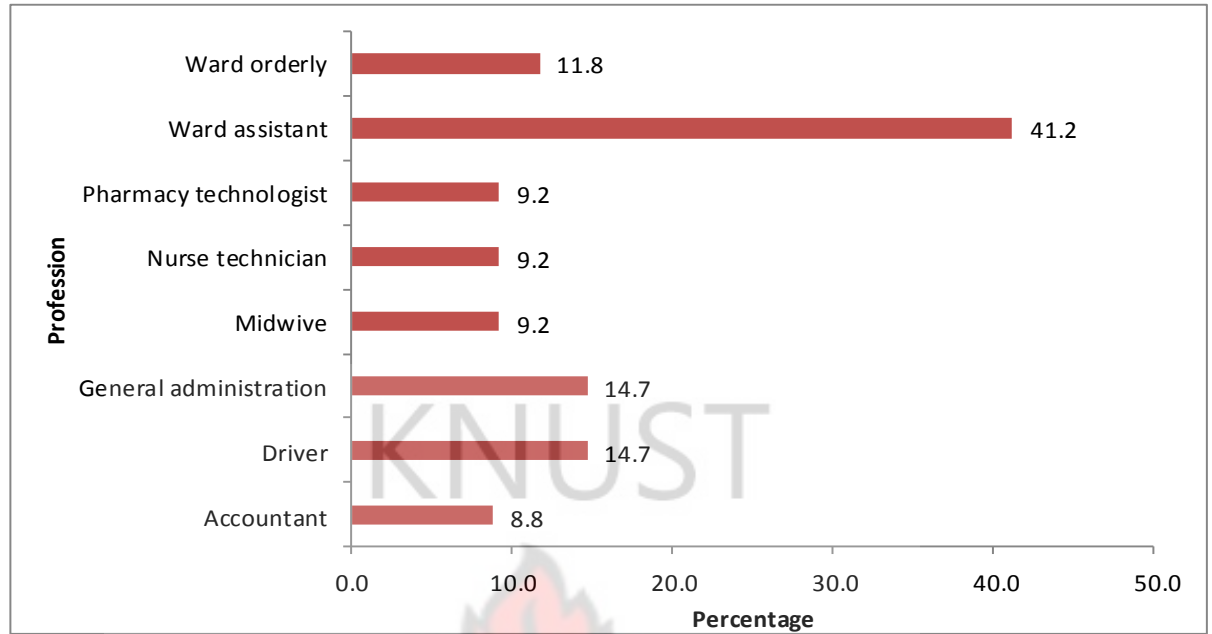


Figure 4.1: Distribution on other professions of respondents Source: Author's field data

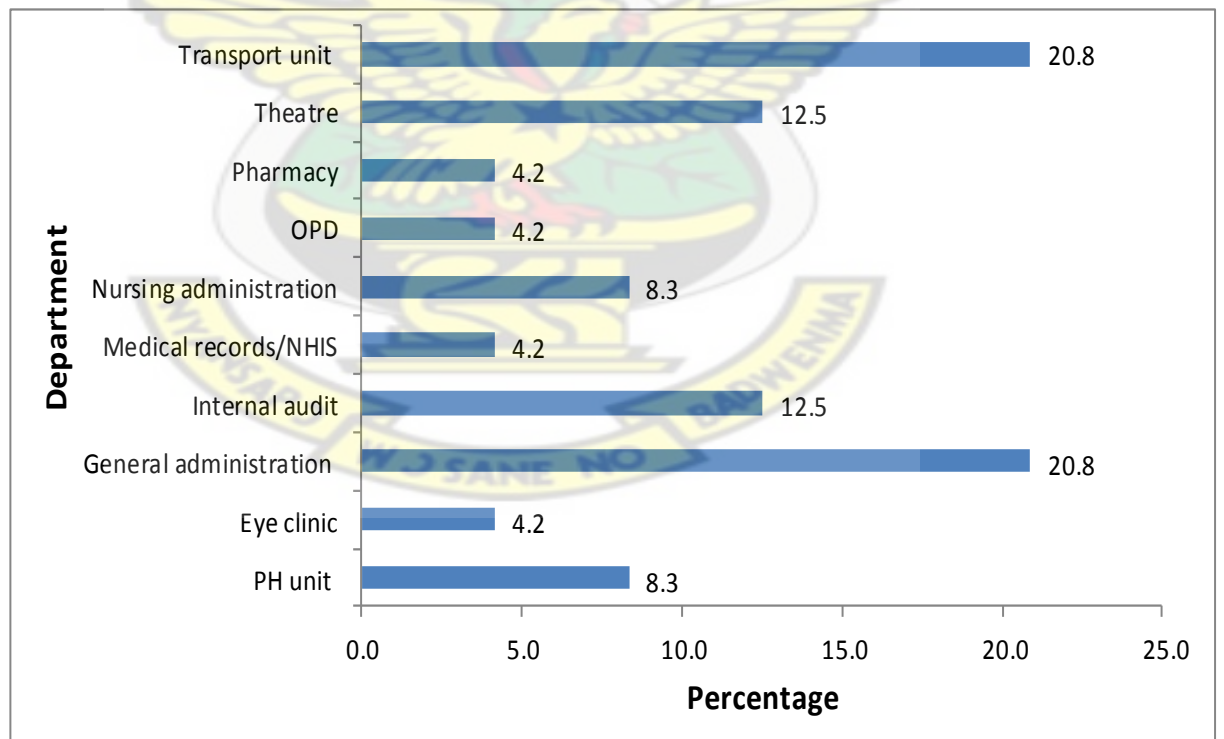


Figure 4.2: Distribution of other departments of respondents Source: Author's field data

4.2.0 The existence and adherence to emergency management and care

Table 4.2 below explains the knowledge of personnel on emergency management and care. Out of the seventy-seven (77) responses, majority (54.5%) of the respondents understood emergency medicine as a situation that poses risk to health and requires immediate medical intervention while 7.8% of the personnel had no idea what emergency medicine or service was about. Also majority of the respondents (74%) claimed they had no specific training on emergency medicine. Amongst the training areas of emergency services known by personnel included resuscitation, first aid/life support treatment and injection & fluid calculation with 24.7%, 14.3% and 1.3% responses respectively. 81.8% of the respondents said no refresher trainings were organized on emergency services for personnel working at the emergency unit of the hospital.



Table 4.2: Knowledge on emergency management and care

Variable	Frequency and Percentage N=77	
	N (%)	
Understanding on emergency management and care as lifesaving process which integrated efforts of all professionals		
First aid to alleviate medical problems	6	(7.8)
Safe a threatening health need	23	(29.9)
Situation that poses risk and require immediate intervention	42	(54.5)
No idea	6	(7.8)
Training in emergency management		
Yes	20	(26.0)
No	57	(74.0)
Area of Emergency management and care training received		
Resuscitation	19	(24.7)
First aid and life support	11	(14.3)
Injection and fluids calculation	1	(2.6)
No training	45	(58.4)
Receive any refresher training on emergency management and care		
Yes	14	(18.2)
No	63	(81.8)

Source: Author's field data

Figure 4.3 depicts the determination of emergency cases by the personnel and the state of emergency cases received at the emergency unit of the hospital. On the determination of an emergency case, 50% of the respondents agreed using vital signs through examination and other respondents determined that by considering the severity of damage to the patient, constituting 22.2% of the responses. Respondents also indicated that most of the emergency cases received, were in their “Severe” and “Very-Severe” state respectively (44.4% and 41.7%).

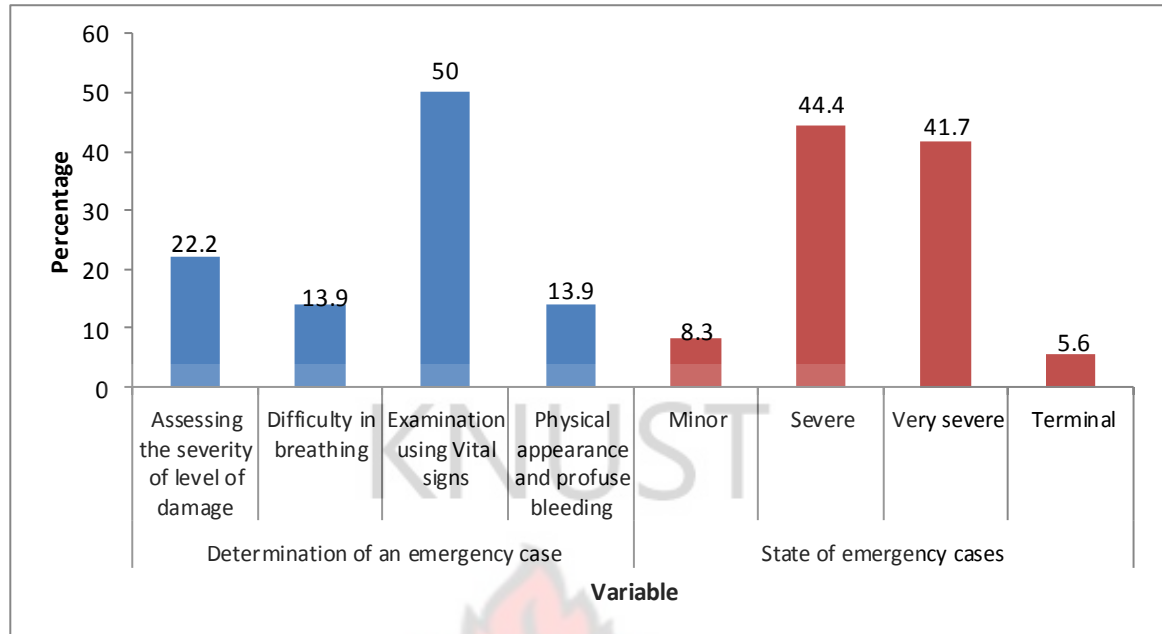


Figure 4.3: Determination and state of emergency cases received at the emergency unit

Source: Author's field data

4.2.1 Referral System of the Hospital

Table 4.3 below presents the referral system in and out of the emergency unit. The entire respondents (100%) agreed that the emergency unit of the hospital received emergency cases as referral. However, 94.4% of the responses claimed some emergency cases were turned away from the unit due to non-availability of space (beds) and shortage of skilled health personnel (63.9%). Doctors were most likely to issue commands on referral of cases out of the emergency unit (94.4%) and most (69.4%) of these referral cases were transported in ambulances.

Table 4.3: Referral system in and out of the emergency unit

Variable	Frequency and Percentage N=36	
	N (%)	
Receiving emergency case as referral		
	Yes	36 (100%)
	No	0 (0.0%)
Emergency patients ever been turn away from the unit		
	Yes	34 (94.4)
	No	2 (5.6)
Factor which accounted for turning away of emergency patient		
	Shortage of personnel	6 (16.6)
	Shortage of working materials	2 (5.6)
	Lack of space (bed)	23 (63.9)
	Work overload	5 (13.9)
The person who gives referral command		
	Doctors	34 (94.4%)
	Medical assistant	2 (5.6%)
Transportation of referral patients out of the police emergency unit		
	In private transport	10 (27.8%)
	In commercial transport	1 (2.8%)
	In an ambulance	25 (69.4)

Source: Author's field data

There was an equal response of 72.7% on the hospital not well resourced to manage and care for emergencies and the existence of emergency systems or protocols for allocation of resources to the emergency unit. As shown in figure 4.4 below, 54.5% agreed that allocation of resources to the emergency unit of the hospital was done through the medical director of the hospital. The emergency unit of the hospital was described

(57.1%) as being inadequate based on the nature of resources (personnel, equipment, vehicle and logistics) available to manage and care for emergencies.

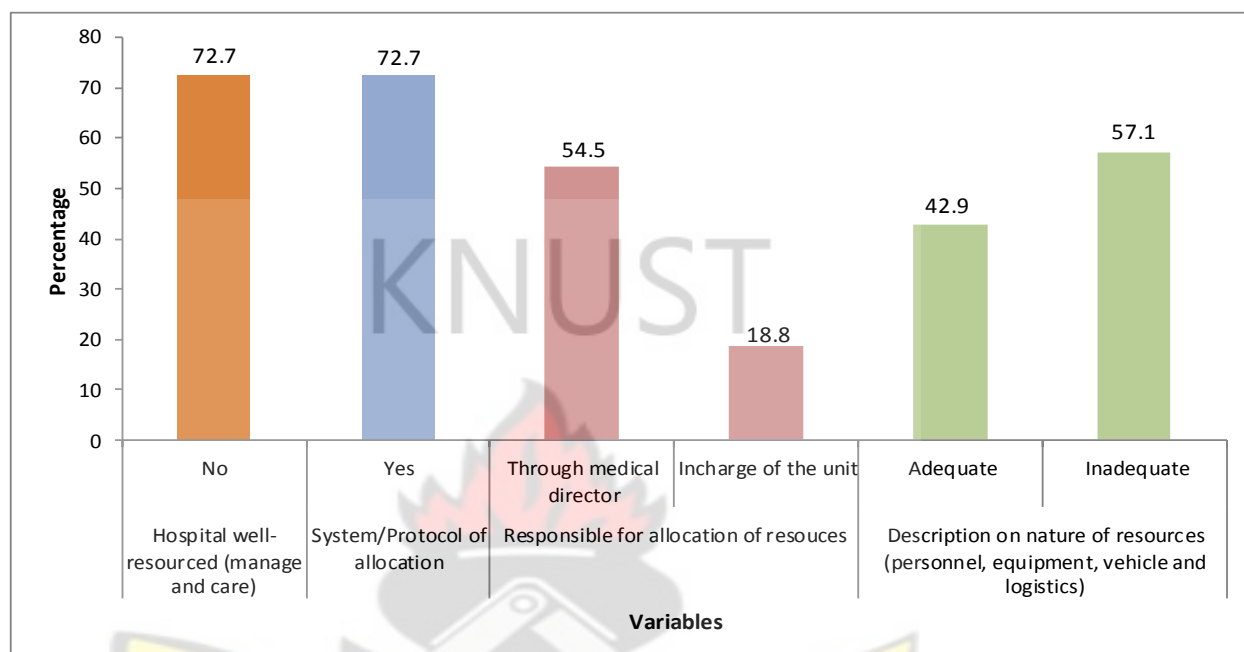


Figure 4.4: Responses on the allocation of resources to the emergency unit. Source: Author's field data

4.3.0 Performance and functional capacity as per standard policy of emergency Care

The existence and implementation of policy document and guidelines on emergency services at the emergency unit is detailed in Table 4.4 below. Responses from the personnel of administration and the core health personnel of the emergency unit, indicated 63.8% of respondents had not heard of any emergency policy document and 83.0% had never seen the policy document even, if it existed at the emergency unit. Ninty-one (91.5%) percent said the policy document was not implemented at the emergency unit of the hospital, which was accordingly due to lack of trained health personnel, lack of equipment & gadgets and lack of space as indicated (61.7%). The

presence of these challenges mentioned made the emergency unit not requisite in terms of competences and numbers of personnel for emergency services as indicated by 80.8%.

Table 4.4: Existence and implementation of policy document on emergency management

Variable	Frequency and Percentage N=47 N (%)
Heard about emergency policy document in Ghana	
Yes	17 (36.2)
No	30 (63.8)
Have seen the policy document	
Yes	8 (17.0)
No	39 (83.0)
Implementation of this policy document at the emergency unit	
Yes	4 (8.5)
No	43 (91.5)
Challenges to the implementation of the policy document at the emergency unit of the hospital	
Lack of trained personnel	5 (10.6)
Lack of equipment/gadgets	2 (4.3)
Lack of space	2 (4.3)
All the above	20 (42.6)
No document	18 (38.3)
Emergency unit of the hospital having requisite personnel (competence and numbers) for management and care of emergency cases	
Yes	9 (19.2)
No	38 (80.8)

Source: Author's field data

Table 4.5 below indicates, majority (86.1%) of the personnel said the emergency unit was not adequately stocked with medication, but were replaced “as and when” necessary (47.2%). Other respondents (44.4%) said they didn’t really know when used medications were replaced at the unit. Majority of respondents (66.6%) suggested measures such as

creating an adequately stocked emergency medication dispensing unit operational 24/7, creating an adequately stocked emergency medication cupboard well supervised but accessible to all staff working at the emergency unit and constant replacement of dispensed medication must be ensured at all time to solve the challenge of inadequate medications at the emergency unit.

Table 4 5: Availability of emergency medication at the emergency unit of the hospital (N=36)

Variable	Total
Emergency unit adequately stocked with emergency medication	
Yes	5 (13.9)
No	31 (86.1)
How often emergency medications are replaced at the unit	
As and when necessary	17 (47.2%)
Daily	1 (2.8%)
Monthly	2 (5.6)
Don't know	16 (44.4%)
Suggestion on the challenges of inadequate medication at the emergency unit	
Create adequately stocked emergency medication dispensing unit operational unit 24/7	5 (13.9%)
Create an adequately stocked emergency medication cupboard, well supervised but accessible by staff	5 (13.9%)
Constant replacement of dispensed medication	2 (5.6)
Ensure that all the above are put into place	22 (66.6%)

Source: Author's field data

Figure 4.5 below indicates the major role of the non-core health personnel in emergency management and care as the checking of vital signs of cases (47.8%). They also transported emergency patients to and from the reception (ambulance bay) and the

emergency unit (treatment area) (39.1%). Non-the-less, 4.4% of the non-core health personnel claimed they had no specific role in the management and care of emergencies at the unit.

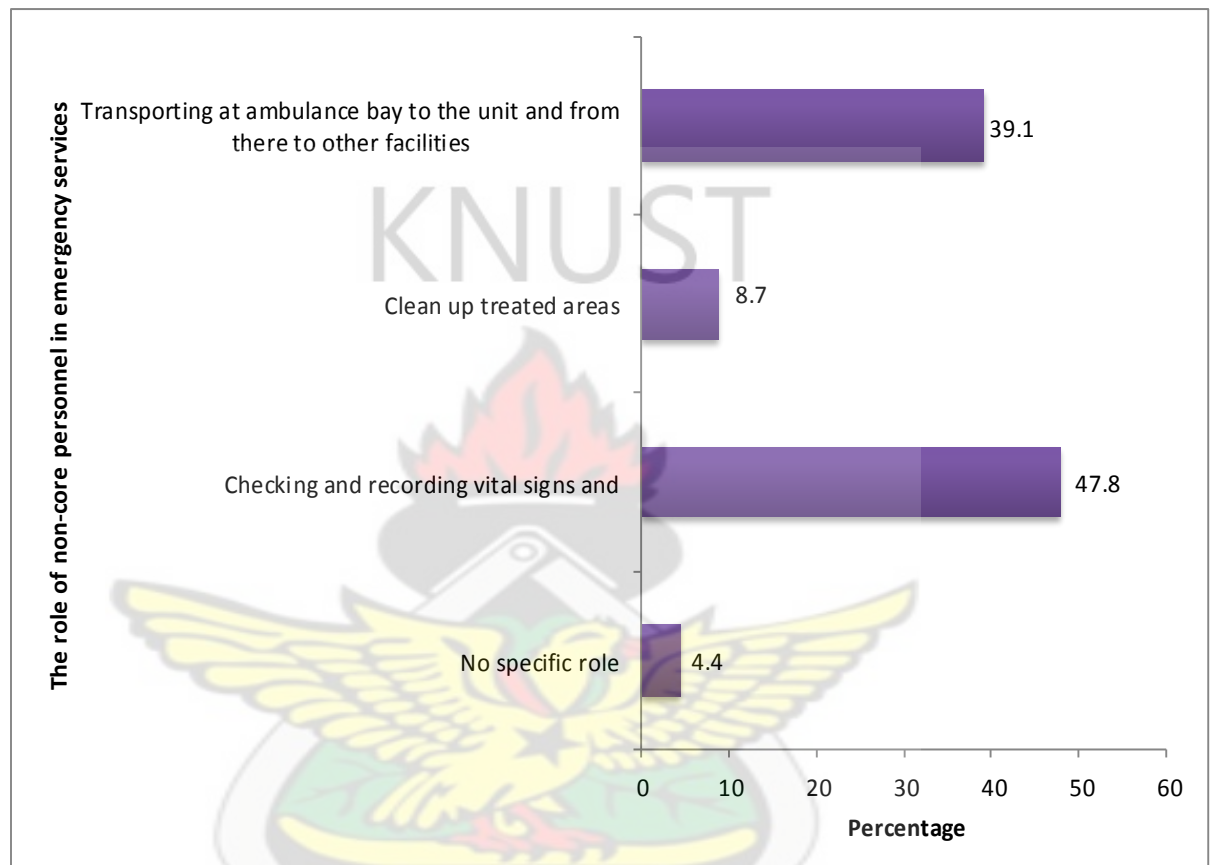


Figure 4.5: Distribution on the role of non-core personnel in emergency services

Source: Author's field data

In figure 4.6 below, 85.7% of the respondents said there was a direct linkage between the emergency unit of the Police Hospital and the ambulance team. 71.4% said the ambulance team went out to accident scenes to transport emergency cases to the emergency unit of the hospital for treatment. First aid services and stabilization of life threatening cases were treatment rendered by the ambulance team before and during the transportation of patients to the emergency unit as indicated by 42.9% equal responses.

According to 57.1% of the respondents, there existed coordination between the officer in-charge of the emergency unit and ambulance team.

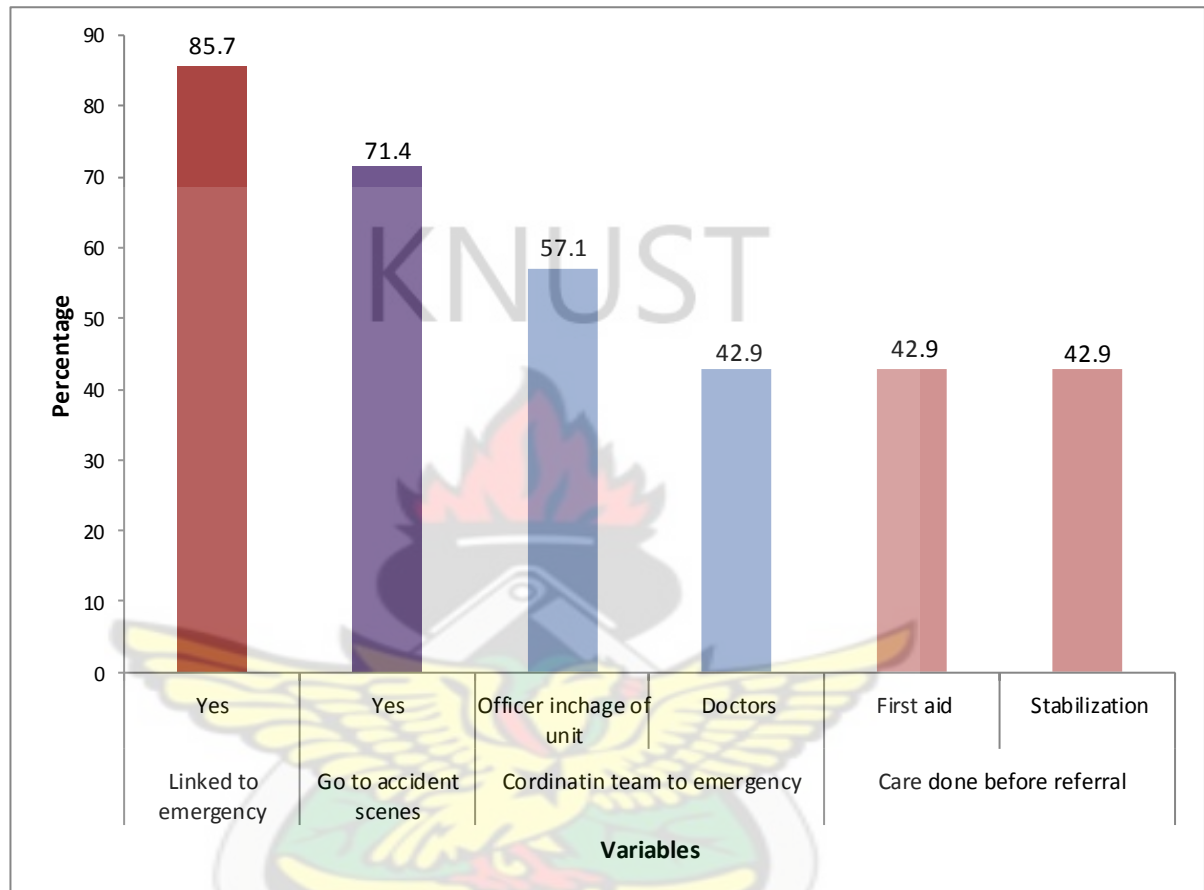


Figure 4 6: Distribution on the activities of ambulance team on emergency management and care. Source: Author's field data

4.3.1 Attitude of health personnel toward emergencies

Figure 4.7 below describes staff attitude towards emergency cases at the emergency unit of the Ghana Police Hospital. Most, (54.5%) of the personnel lacked knowledge and skills on emergency medicine. They were equally frustrated due to lack of requisite operational space, equipment/gadgets and medication for emergency services (27.3%).

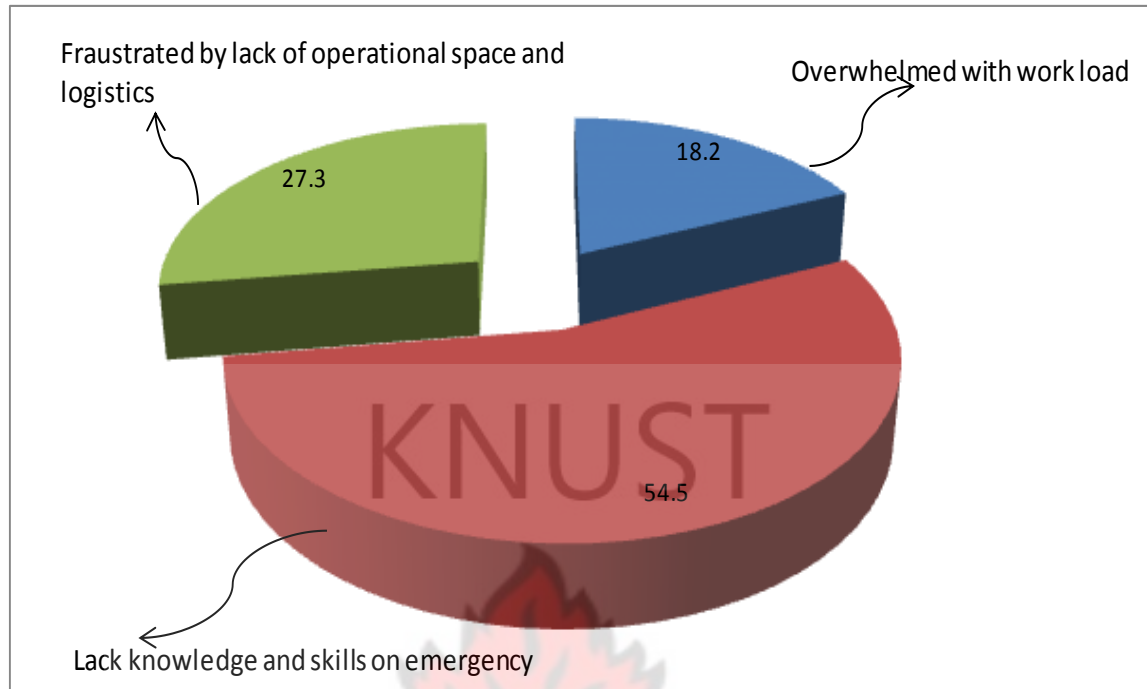


Figure 4.7: Description of staff attitude toward emergency cases (N=11) Source: Author's field data

4.4.0 Knowledge and adherence to general triage system in the A & E unit of the Police Hospital.

Table 4.6 depicts extent of agreement by respondents on their knowledge and adherence to policy and guidelines on general triaging system at the emergency unit of the Police Hospital. Out of the forty-three (43) respondents made of the core health personnel and members of the ambulance team, 55.8% acknowledged the existence of triage system and protocols in Ghana. 34.9% of the respondents understood triaging as the process of sorting cases based on severity and health condition. 44.2% of the respondents had no idea on triaging and 90.7% of the respondents said the emergency unit of the police hospital had no standard triaging document in place. Amongst the descriptions on how triage system operates, an equal response of 7.0% used colours (Red, Orange, Yellow and Blue) and ABC in resuscitation (A-airway B-breathing C-circulation). However,

58.1% of the respondents said there was no triaging system at the emergency unit. 44.2% of the respondents suggested training of personnel and the provision of needed equipment in dealing with the grey areas in triaging.

Comparing the knowledge and awareness of personnel on the general triage system based on the department in which respondents worked, 62.9% of respondents as staff at the emergency unit had knowledge on the existence of triaging system or protocols in Ghana while 75.0% from the other units put together had no such knowledge. There was a significant difference (chi-square =3.784; $p=0.05$) between the departments of respondents and the category of personnel they were on the presence of triaging system and protocols at the emergency unit of the hospital. In respect to their knowledge on triaging, 62.8% personnel from the emergency department had a better understanding on triaging while 75.0% personnel from other departments put together had no knowledge on triaging hence there was a significant difference (chi-square =10.753; $p=0.029$) between the departments of the personnel and their understanding on the processes of triaging emergency cases. The differences in determining the existence of standard triaging document at the emergency unit and the awareness on the existence of standard triaging document at the emergency unit was not significant (chi-square =1.008; $p=0.315$). Despite 17.2% of personnel from the emergency unit able to briefly describe triaging and its operations and all (100%) personnel from other units put together not able to describe triaging, there was no significant difference (chi-square =6.306; $p=0.098$) between the units of personnel and their description of triaging and its operations. The differences as to either working at the emergency unit or the other units to the suggestion on dealing with the grey areas in triaging was statistically significant (chi-square =11.372; $p=0.010$).

Table 4.6: The general triage system and protocols of the emergency unit

Variable	Department of Respondents		F-test	Total
	EM Unit	Other	(p-value)	(%)
Knowledge about triage system or protocol				
Yes	22 (62.9%)	2 (25.0%)	3.784 (0.050)	24 (55.8%)
No	13 (37.1%)	6 (75.0%)		19 (44.2%)
Understanding triaging system;				
Classifying cases on severity and use of available resources	4 (11.4%)	1 (12.5%)	10.753 (0.029)	5 (11.6%)
Sorting cases based on severity	14 (40.0%)	1 (12.5%)		15 (34.9)
Protocol to assess patients to give more attention	4 (11.4%)	0 (0.0%)		4 (9.3%)
No idea	13 (37.1%)	6 (75.0%)		19 (44.2%)
Emergency unit having standard triaging document				
Yes	4 (11.4%)	0 (0.0%)	1.008 (0.315)	4 (9.3%)
No	31 (88.6%)	8 (100%)		39 (90.7%)
Describe how triage system operate at the unit;				
Use of colures	3 (8.6%)	0 (0.0%)	6.306 (0.098)	3 (7.0)
Use ABC in resuscitation	3 (8.6%)	0 (0.0%)		3 (7.0)
No system	22 (62.9%)	3 (37.5%)		25 (58.1%)
No idea	7 (20.0%)	5 (62.5%)		12 (29.9%)
Dealing with grey areas in triaging in the unit;				
Training on triaging and provision of adequate equipment and medication	10 (28.6)	2 (25.0%)	11.372 (0.010)	12 (27.9%)
Training of staff and provision of needed equipment	17 (48.6%)	2 (25.0)		19 (44.2)
Training of nurses on triaging	2 (5.7%)	4 (50.0%)		6 (13.9)
No idea	6 (17.1%)	0 (0.0%)		6 (13.9%)

*fisher exact test used to estimate difference

4.4.1 Knowledge and waiting times of emergency patients in triaging

As shown in figure 4.8 below, 91.7% of the respondents claimed personnel working at the emergency unit had no specific training on triaging of emergency patients and 47.2 % indicated that qualified personnel like doctors, nurses and medical assistants are responsible for triaging emergency patients. 69.4% of the respondents said triaging of emergency cases at the unit was prolonged than average time due to their lack of training on triaging.

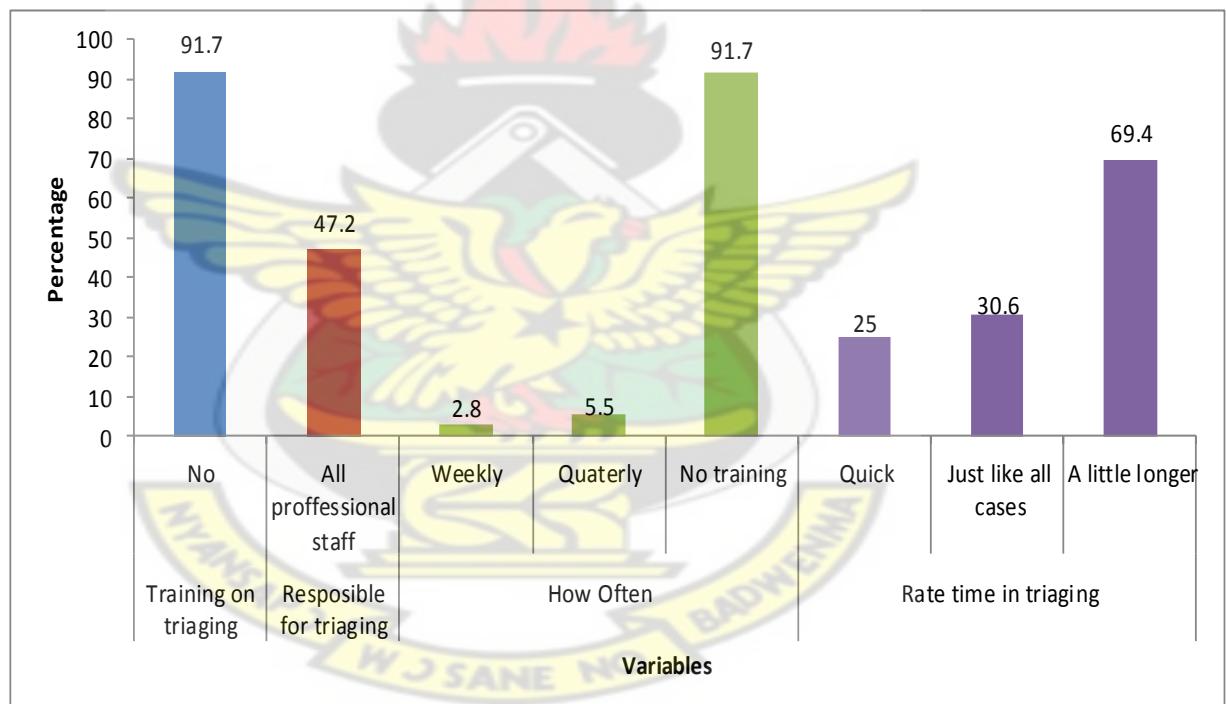


Figure 4 8: Knowledge and waiting times in triaging at the emergency unit. Source: Author's field's data

4.5 The quality of emergency care per the Ministry of Health, Ghana check list for emergency departments/units

The quality of emergency services at the emergency unit of the Police Hospital was analysed using the standard check list on emergency drugs, medical devices and equipment by the Ministry of Health, Ghana. Appendix 'A' describes the availability of emergency drugs, medical devices and equipment per the standard check list of the Ministry of Health, Ghana. The emergency unit of the Police Hospital was rated on the likert-scale based on the availability of the minimum requirement on the check list. The likert-scale scored the availability of medications, medical devices and equipment at the emergency unit over the total number on the Ministry of Health, Ghana check list to a range from 1 to 5. On the likert-scale a score of 1, 2, 3, 4, and 5 were rated poor, average, good, very good and excellent respectively. From Appendix A, out of the thirty-four (34) airways/breathing and circulation/hemodynamic supplies list, twelve (12) were available at the unit, indicating a score of 1.8 on the likert-scale hence the emergency unit of Police Hospital was rated "Average" on the availability of airways/breathing and circulation/hemodynamic equipment. Out of the fifty (50) splints, monitoring, diagnostics devices, and other accident and emergency equipment, thirty-two (32) items were available at the unit, scoring 3.2 out of 5 on the likert-scale hence was rated "Good". The emergency unit scored 3.9 on the likert-scale on the availability of non-drug consumables hence was rated "Very Good". In terms of emergency drugs, out of a forty-two (42) drugs check list, twenty (20) were available at the unit, which represented a score of 2.3 out 5 on the likert-scale therefore was rated "Average". On the over-all rating, thus all put together, the emergency unit scored 2.8 out of 5 on the likert-

scale, therefore the unit's quality of emergency management and care as per the Ministry of Health, Ghana standard check list was rated "Good".

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CHAPTER FIVE

5.0 DISCUSSION

Introduction

This section looks at the key findings from the study vis-à-vis findings from similar research works on emergency medicine or services and its implications on the administration of institutional emergency services toward the achievement of national goals on emergency medicine.

5.1 Background characteristics of the respondents

Out of the seventy-seven (77) respondents, nurses were the majority (38.9%) and followed by medical officers (16.9%). The most occurring age group was between 30 and 39 years (58.4%). All respondents in the study had attained some level of education with tertiary education the majority (64.9%). A greater percentage (70.1%) of the respondents worked directly at the emergency unit of the Police Hospital and majority (37.6%) of the respondents' years in professional practice ranged between six (6) and ten (10) years. It was observed that, the emergency unit of the police hospital had a youthful group of personnel who were still in their prime years of professional practice, full of energy and exuberance. Similar to the findings of Considine, et al., that professional and working experience of triage nurses may not influence the accuracy of triaging but rather factual knowledge was shown to be associated with accuracy of triaging (Considine, et al., 2007). Factual knowledge was defined by Considine as the knowledge of a set of facts and intimated that factual knowledge may have linkage with experience as the knowledge gained on the job. The emergency unit of the police

hospital had a blend of the two postulations as the results showed, hence could together work positively toward management and care for emergencies.

5.2 The existence and adherence to emergency management and care systems

Emergency management and care systems refers to the arrangement of personnel, facilities and equipment for the effective and coordinated delivery of urgent medical services as required in the prevention and management of incidents which occur either as a result of a medical emergency or of an accident, natural disaster or similar situation. EMS systems refer to the broad range of emergency care from the pre-hospital first responder to the intensive care unit setting.

The Ministry of Health, Ghana A&E Services Policy document and Guidelines provides that personnel of the emergency unit were re-certified every three (3) years by accredited training teams & institutions and were provided with periodic refresher courses (Ministry of Health, Ghana, 2011). Out of the seventy-seven (77) respondents, majority (54.5%) understood emergency medicine as a situation that poses risk to health and requires immediate medical intervention while 7.8% of the personnel had no idea what emergency medicine or management was. Also majority of the respondents, 74% claimed they had no specific training on emergency management and care. Amongst the training areas of emergency management and care known by personnel included resuscitation, first aid/life support treatment and injection & fluid calculation. 81.8% of the respondents said no refresher trainings were organized on emergency management and care for personnel working at the emergency unit of the hospital. Affirming the findings of Holliman, et al., that Emergency Centres (ECs) with trained staff can play an important role by providing acute resuscitation and stabilisation for patients with life-

threatening illnesses or injuries (Holliman, et al., 2011), surely the effective delivery of emergency services at the emergency unit of the Police Hospital was compromised, hence problematic.

According to Mock, et al., formal emergency care systems are known to improve survival in severely ill or injured patients (Mock, et al., 1998). The Emergency unit of the police hospital had some form of emergency management systems which included; Patients' registration system, ambulance bay & a standby ambulance, a referral system and treatment area for emergency cases. However these systems at the unit were relatively undeveloped to standard hence, compromised significantly on the delivery of emergency services. Similar to this was the study by Kobusingye, et al., who found that, the challenge for Africa was that, all the components of EMS were undeveloped and where there were services present, these services were inequitably spread. There were challenges with pre-hospital care, qualified personnel, transportation of the emergency patient and well-resourced hospitals amongst their findings (Kobusingye, et al., 2005).

5.3 Referral system of the Police Hospital

It was found that, the emergency unit of the Police Hospital received emergency cases of all kind as referrals (100%). However, some of these emergency cases were turned away from the unit due to non-availability of space (beds) and shortage of skilled personnel (94.4%). That was a case of limited access to emergency service outlets in the Accra metropolis, a situation which existed in all regions of the country. This buttresses the findings by Kobusingye, et al., that, Emergency medicine in Ghana was still in its infant stages and for that matter very poorly resourced (Kobusingye, et al., 2005). Supportive to this, was the study on emergency preparedness programme of health facilities for all-

risks, focusing on Road Traffic Accidents (RTAs) resulting in surge demand by Norman, et al. It was observed that; (1) many of the nation's hospitals were not prepared for large RTAs resulting in surge demands and did not possess general emergency programmes. (2) The hospitals' respective abilities to handle large scale RTAs were compromised by the lack of competent medical & allied health personnel and adequate medical supplies (Norman, et al, 2012).

Respondents indicated that most of the emergency cases received were in their "Severe" and "Very severe" state respectively (44.4% and 41.7%). It was also observed that most of these referrals were appropriate, except that they were unduly kept at the primary care facilities, coupled with the initial interventions and/or treatment given resulting in such "Severe" and "very-Severe" state of the cases received. Similar to this was the findings by Razzak, et al., that the hurried attitude or otherwise with which referring facilities employed when cases that would be referred to the ED influences largely on the outcomes of these emergencies. The interventions made or not for the emergency patient before they were referred to an ED may also influence the outcome of such emergency cases. The initial triage and treatment interventions which were made for the patient at the health facility of first call constituted the weakest link in the emergency medical service in middle-income and low-income countries (Razzak, et al., 2002). Doctors were most likely to have issued commands on referral of cases out of the emergency unit of the police hospital and most of these referred cases were transported in ambulances to the referred health facilities which resulted in positive outcome of those cases. The use of ambulance services was proven to influence the outcome and/or increased the chances of survival of referred emergency cases. Complementing this statement was the study conducted by Razzak, et al., in Sierra Leone and in their findings, it was estimated that a

50% reduction occurred in case fatalities among pregnant women coupled with an increased utilization of emergency obstetric care when investment was made in vehicle and emergency communication systems (Razzak, et al., 2002). Their study in Malaysia, to assess the value of risk-coding system in pregnant women also revealed that better communication, a more effective transport system and better hospital care were needed to reduce maternal mortality (Razzak, et al., 2002).

5.4 Performance and functional capacity as per standard policy of emergency care

Performance and functional capacity of an emergency unit thus refers to the quality of management and care of emergency cases in regards to the competencies & numbers of trained health personnel, adequate & appropriate equipment, required infrastructure and adequate medical supplies/logistics, as per standard requirement for establishing an emergency department or unit by the Ministry of Health, Ghana.

The emergency unit of the police hospital was observed to be inadequate on performance and functional capacity in terms of personnel, equipment, infrastructure and medical supplies (86.1%). It was also observed that, the Police Hospital had no policy document on managing emergencies (83.0%). Those personnel who had heard of the Ministry of Health, Ghana's policy document and guidelines on Accident & Emergency services, felt such could not be implemented at the emergency unit of the police hospital due to lack of required trained health personnel, lack of equipment & gadgets and inadequate infrastructure (space) (91.5%). Similar to the findings were those from Akazili, et al who reviewed the Ghana healthcare system in response to emergencies and found many gaps in the efficiencies of both equipment and supplies of the nation's healthcare system (Akazili, et al 2008) and Pillay, who evaluated South

African hospitals' response to emergencies, using the World Health Organization, (2007) Field Manual for Capacity Assessment of Health Facilities and found skills gap in the practices of the health personnel in that nation's healthcare system (Pillay, 2010). Also, in a study conducted by Norman, et al, assessing the emergency preparedness programme of health facilities for all-risks in Ghana, focusing on Road Traffic Accidents (RTAs) resulting in surge demand, it was observed that hospitals' respective abilities to handle large scale RTAs were compromised by the lack of competent medical & allied health personnel and adequate medical supplies and/or logistics (Norman, et al, 2012). Additionally, an evaluation of the trauma response capabilities of U. S. hospitals that were involved in major incidents such as the 9/11 terrorist attacks in 2001 and Hurricane Katrina in 2005, found existing gaps in both the skills of personnel and medical supplies, after spending large sums of money on emergency preparedness (Soloff, 2006). It is seemingly obvious that, the issue of performance and functional capacity of health facilities on emergency services is a global challenge, but most worrying was that of Africa.

It was however observed that, the emergency unit of the police hospital was well organized in the area of coordinating emergency activities with other departments or units within the hospital. This was evidenced by the fact that, there was a direct link in activities between the emergency unit and the ambulance unit of the hospital, which facilitated the pre-hospital care of emergency cases (85.7%). Even though, the non-core personnel of the emergency unit had no specific training on emergency medicine or services (100%), they assisted in various ways in the management and care of emergency cases (86.8%). By virtue of collaborative efforts, the emergency unit of the hospital was able to manage and care for some emergency cases, corroborating

Simpson's findings that, an integrative function by personnel of the emergency unit facilitates prompt patient management and more favorable outcome in the care system (Simpson, 2000).

5.5 Level of knowledge and adherence to general triage system by personnel in the A & E unit of the Police Hospital

Triage has become an important tool in emergency medicine and has even been introduced in public health (Anderson, et al., 2006). The triage process is a dynamic decision-making process in which nurses (who mostly run the triage unit) are required to combine knowledge and timeliness to decide where a patient should be sent based on the severity of the patient's condition and chance of survival (Anderson, et al., 2006).

The study assessed respondents' level of knowledge and adherence to policy and guidelines on general triaging system at the emergency unit of the Police Hospital. Out of the forty-three (43) respondents made of the core health personnel and members of the ambulance team, 55.8% acknowledged the existence of triage system and protocols in Ghana. 34.9% of the respondents understood triaging as the process of sorting cases based on severity and health condition. 44.2% of the respondents had no idea on triaging and 90.7% of them admitted that, the emergency unit of the police hospital had no standard triaging document hence a triage system in place. All the respondents who understood the triaging process acquired such knowledge else-where other than training by the hospital's authority. Amongst the descriptions on how triage system operated, an equal response of 7.0% used colours (Red, Orange, Yellow and Blue) and ABC in resuscitation (A-airway B-breathing C-circulation). Gottschalk, et al., observed that, the triage system adopted in A&E units of most health facilities in Ghana was the Cape

Triage System (CTS) which is a South African triage system that was developed in 2004. The CTS was developed by a group called the Cape Triage Group (CTG). The basis for their work was to develop an effective triage tool that could maximize efficient uses of resources and minimize the risk to the patients' life. Hitherto, there were various triage tools used by different hospitals which were generally found to be cumbersome and challenging for health staff of different levels (Gottschalk, et al., 2006).

It was evidenced from the findings that, the emergency unit of the Police Hospital had no triage system in place therefore did not adhere to the provisions in the policy document and guidelines on Accident & Emergency by the Ministry of Health, Ghana which is a subsidiary of the World Health Organisation (WHO) provisions on Emergency medicine.

The average professional practice years of respondents were seventeen (17) years, yet none of them ever had training or refresher course on emergency medicine at the hospital. Dong et al., in their study showed that training influences the ability to triage patients to the appropriate zones. Handysides also described other proficiencies of an effective triage nurse to be the ability to estimate a patients severity and care needs from short clinical history and examination and secondly knowledge of disease processes. These two could be developed through regular training. Personnel who had had more than one chance of training generally were able to determine the triage zones of the virtual patients more frequently than personnel who had had no training or just one opportunity for training. Both Dong and Handysides therefore spelt out training and working experience as useful in being an effective triage nurse.

Be it as they were not trained or had refresher courses on emergency medicine, personnel at the emergency unit of the hospital were able to manage and care for emergency cases to some extent despite the in-efficiencies corroborating Handysides, et al., description of the proficiencies of an effective triage nurse as an intuition developed through long-time experiences, which helps decide the patient's actual condition (Handysides, 1996). None-the-less the study also revealed that, the blend of both competencies and experience of the nurses who were involved in triaging may affect the quality of triaging to the appropriate severity zones similar to the findings by Considine, et al.

In respect to the personnel's knowledge on triaging, 62.8% of personnel from the emergency department had a better understanding on triaging while 75.0% personnel from other departments put together had no knowledge on triaging hence there was a significant difference (chi-square =10.753; $p=0.029$) between the departments of the personnel and their understanding on the processes of triaging emergency cases. The differences in determining the existence of standard triaging document at the emergency unit and the awareness on the existence of standard triaging document at the emergency unit was not significant (chi-square =1.008; $p=0.315$). Despite 17.2% of personnel from the emergency unit able to briefly describe triaging and its operations and all (100%) personnel from other units put together not able to describe triaging, there was no significant difference (chi-square =6.306; $p=0.098$) between the units of personnel and their description of triaging and its operations.

5.6 The quality of emergency care per the Ministry of Health, Ghana check list for emergency units/departments

The challenge in Africa as Anthony described was whether in developing countries, the limited resources for health care will give room for establishing emergency medical services (Anthony, 2011).

The quality of emergency services at the police hospital's emergency unit was analysed using the standard check list by the Ministry of Health, Ghana. As described in appendix A, the availability of emergency drugs, medical devices and equipment per the standard check list of the Ministry of Health, Ghana was the yardstick. The emergency unit of the police hospital was rated on likert-scale based on the availability of the minimum requirement on the check list. The likert-scale scored the availability of drugs, medical devices and equipment at the emergency unit over the total number on the Ministry of Health, Ghana check list to a range from 1 to 5. On the likert-scale a score of 1, 2, 3, 4, and 5 were interpreted as poor, average, good, very good and excellent respectively.

As was asserted by Norman, et al. and accentuated by Soloff, the critical areas of hospital emergency preparedness amongst others included adequate and appropriate medical equipment/gadgets, medications and non-drug consumables.

The emergency unit of the Police hospital was rated "Average" on the availability of Airways/Breathing and Circulation/Hemodynamic equipment, "Good" on Splints, monitoring and Diagnostics Devices and "Very Good" on the availability of Non-drug consumables. In terms of Emergency Drugs, the emergency unit was rated "Average". On the whole rating, thus all put together, the emergency unit scored 2.8 out of 5 on the likert-scale, therefore the unit's quality of emergency management and care as per the Ministry of Health, Ghana standard check list was rated "Good". As the study findings

had shown, the emergency unit of the Police Hospital's quality of emergency services was just a little above average, an indication of compromises on the standard of emergency care, a challenge indeed in that direction. Akazil, et al., conducted a similar study, but a review of the Ghana healthcare system on emergency medicine and their findings showed many gaps in the efficiencies of both medical equipment and supplies of the nation's healthcare system (Akazili, et al. 2008). Soloff's evaluation of the trauma response capabilities of U.S hospitals which were involved in major incidents such as the 9/11 terrorist attacks in 2001 and Hurricane Katrina in 2005, found existing gaps in both the skills of personnel and medical supplies, after spending large sums of money on emergency preparedness (Soloff, 2006), which justifies the fact that, challenges with emergency medicine is indeed a global one which surely deserves collaborative efforts.



CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter provides conclusions, based on the findings from the study and recommendations which would help in the improvement of quality of healthcare delivery in the country, especially in the area of emergency medicine.

6.1 Conclusions

6.1.1 Background characteristics of the respondents

Out of the seventy-seven (77) respondents in the study, Nurses formed the majority, which was deliberate because, they were most likely to receive and triage emergency cases at the unit. This was followed by medical officers who played significant roles in both triaging and treatment of emergency cases. The most occurring age group was those aged between 30years and 39years, forming the bulk of respondents, with just a few of them less than and/or more than 30years& 39years respectively. This was suggestive of the youthful nature of personnel at the emergency unit of the police hospital, who were full of energy, zeal and ready for any forms of trainings, hence could have lifted the shoulders of the unit up higher if the required competences and logistics were available. It was also observed that, all respondents in the study had at least attained some level of education with tertiary education being the majority and Senior/Junior High School education (SHS/JHS) the least. Greater percentage of the respondents worked directly at the emergency unit of the Police Hospital with a few from other units which though were linked in other ways to the emergency unit by virtue of their activities and duties. It was therefore concluded that, the emergency unit of the

police hospital had personnel who were still young, full of energy, zeal and interested in their career advancement. Therefore, the personnel stood a better opportunity of benefiting from both formal class room and practical (clinical) trainings with fewer difficulties.

6.1.2 The existence and adherence to emergency management and care systems

Hospital preparedness is a means for a hospital to test and evaluate its capabilities and/or recovery from an event that puts a significant strain on its patient care and operating systems. The critical areas of hospital emergency preparedness includes: pre-hospital emergency preparedness, in-house emergency response plans, human capacity, adequate equipment/gadgets (including pharmaceutical products) and the assessment of existing infrastructure in emergency (Norman, et al., 2012). The Ministry of Health, Ghana A&E Services Policy and Guidelines provides that personnel of the emergency unit were re-certified every three (3) years by accredited training teams & institutions and were provided with periodic refresher courses (Ministry of Health, Ghana, 2011). Out of the seventy-seven (77) respondents of whom majority worked directly at the emergency unit, understood emergency medicine as a situation that poses risk to health and requires immediate medical intervention, though they had no specific training on emergency services. However, a few of them who were not directly from the emergency unit had no idea what emergency medicine or management was. Amongst the training areas of emergency services known to a few of the personnel included resuscitation, first aid/life support treatment and injection & fluid calculation. Accordingly, no refresher trainings or courses were organized on emergency medicine for personnel at the emergency unit of the hospital. Based on the analysis of the study, it was concluded that, the Emergency

unit of the Police Hospital had some form of emergency management systems which included; Patients' registration system, ambulance bay & a standby ambulance, a referral system and treatment area for emergency cases. However adherence to these systems and other emergency provisions as expected in the policy document and guidelines on emergency services was problematic at the emergency unit hence, compromised significantly on the delivery of emergency services.

6.1.3 Referral system of the Police Hospital

Referral system, a term which is synonymous and/or used interchangeably with transfer system in medicine could be explained as a system for the movement of patient(s) from one unit or health care facility to another, within or outside for further management and care.

It was found out from the analysis that, the emergency unit of the police hospital received emergency cases of all kind as referrals. However, some of these emergency cases were turned away from the unit due to non-availability of space (beds) and shortage of skilled health personnel. This was occasioned due to limited access to emergency outlets in the Accra metropolis, a situation that permeates health care facilities in all regions of the country. Respondents also indicated that most of the emergency cases received at the unit were in their "Severe" and "Very Severe" state respectively. It was observed that most of these referrals were appropriate, except that they were unduly kept at the primary care facilities, coupled with the initial interventions and/or treatment given resulting in such states as they were brought into the unit. It was equally observed from the analysis that, medical officers were those most likely to issue commands on referral of cases out of the emergency unit and most of the referred cases

were transported in ambulances to the referral health facilities which resulted in positive outcome of the cases. The use of ambulance services was proven to influence the outcome and/or increased the chances of survival of referred emergency cases, as were the findings of some studies referred to earlier. On the basis of these observations, it was concluded that, despite the limited resources in terms of skilled health personnel and infrastructure, the emergency unit of the Police Hospital had a referral system which operation was synonymous with that required by the Ministry of Health, Ghana on emergency medicine or services.

6.1.4 Performance and functional capacity as per standard policy of emergency care

Performance and functional capacity of an emergency unit thus refers to the quality of management and care of emergency cases in regards to the competencies and numbers of trained health personnel, adequate & appropriate equipment, required infrastructure (space & bed capacity) and adequate medical supplies/logistics, as per standard requirement for establishing an emergency department or unit by the Ministry of Health, Ghana.

From the analyses, majority of the study participants intimated that, the emergency unit of the police hospital was inadequate on performance and functional capacity in terms of personnel, equipment, infrastructure and medical supplies. It was observed that, the police hospital had no policy document on managing emergencies. Those personnel who had heard of the Ministry of Health, Ghana's policy document and guidelines on Accident & Emergency services, felt such could not have been implemented at the emergency unit of the Police Hospital due to lack of required trained/skilled health personnel, lack of equipment & gadgets and inadequate infrastructure (space). It was

seemingly obvious that, the issue of performance and functional capacity of health facilities on emergency services was indeed a global challenge, but most worrying was that of Africa as existing emergency care systems are rudimentary in comparison to those in developed countries.

None-the-less, it was further observed from the analyses that, the emergency unit of the police hospital was well organized in the area of coordinating emergency activities with other departments or units within the hospital. This was evidenced by the direct link in activities between the emergency unit and the ambulance unit of the hospital, which facilitated the pre-hospital care of emergency cases. Though, the non-core personnel of the emergency unit had no specific training on emergency medicine or services, they assisted in various ways in the management and care of emergency cases. By virtue of the collaborative efforts, the emergency unit of the hospital was able to manage and care for some emergency cases. From the analyses, it was concluded on a whole that, the emergency unit of the Police Hospital was inadequate on performance and functional capacity in terms of trained/skilled health personnel, appropriate equipment, infrastructure and medical supplies.

6.1.5 Level of knowledge and adherence to general triage system by personnel in the A & E unit of the Police Hospital

The triage process is a dynamic decision-making process in which nurses (who mostly run the triage unit) are required to combine knowledge and timeliness to decide where or not a patient should be sent based on the severity of the patient's condition and chance of survival (Anderson, et al., 2006). The triage system adopted in A&E units of most

health facilities in Ghana was the Cape Triage System (CTS) which is a South African triage system that was developed in 2004.

The study assessed respondents' level of knowledge and adherence to policy and guidelines on general triaging system at the emergency unit of the Police Hospital. Majority of the respondents who were made of the core health personnel and members of the ambulance team, acknowledged the existence of triage system and protocols in Ghana, but admitted that, the emergency unit of the Police Hospital had no standard triaging document hence no triage system in place. A fewer of the respondents understood triaging as the process of sorting cases based on severity and health condition, whilst majority had no idea on the triage system. It was however observed that, all the respondents who understood the "triaging process" acquired such knowledge else-where other than trained by authorities of the Police Hospital. Amongst the descriptions on how the triage system operated, respondents used colours (Red, Orange, Yellow and Blue) and ABC in resuscitation (A-airway B-breathing C-circulation), a demonstration and/or an exposure of their knowledge deficit on the general triage system. The average professional practice years of respondents were seventeen (17) years, yet none of them ever had training or refresher course on emergency medicine at the hospital. Be it as they were neither trained nor had refresher courses on emergency medicine, personnel at the emergency unit of the hospital were able to manage and care for emergency cases to some extends despite the in-efficiencies. A conclusion was reached based on evidences from the analysis that, the emergency unit of the Police Hospital had no triage system in place and therefore did not adhere to the provisions in the policy document and guidelines on Accident & Emergency by the Ministry of

Health, Ghana which is a subsidiary of the World Health Organisation (WHO) provisions on Emergency medicine.

6.1.6 The quality of emergency care per the Ministry of Health, Ghana check list for emergency units/departments

The quality of emergency management and care at the emergency unit of the police hospital was analysed using the standard check list by the Ministry of Health, Ghana. It was described on the availability of emergency drugs, medical devices and equipment per the standard check list of the Ministry of Health, Ghana as the yardstick. The emergency unit was rated on likert-scale based on the availability of minimum requirement on the check list. The likert-scale scored the availability of drugs, medical devices and equipment at the emergency unit over the total number on the Ministry of Health, Ghana check list to a range from 1 to 5. On the likert-scale a score of 1, 2, 3, 4, and 5 were interpreted as poor, average, good, very good and excellent respectively.

The emergency unit was rated “Average” on the availability of Airways/Breathing and Circulation/Hemodynamic equipment, “Good” on Splints, Monitoring and Diagnostics devices and “Very Good” on the availability of Non-drug consumables. On Emergency Drugs, the emergency unit was rated “Average”. On the over-all rating, the emergency unit scored 2.8 out of 5 on the likert-scale, therefore was rated “Good” on the quality of emergency management and care as per the Ministry of Health, Ghana standard check list. As the findings showed, it was concluded that, the quality of emergency services at the emergency unit of the Police Hospital’s was just a little above average, an indication of compromises on the standard of emergency care, a challenge indeed in that direction.

6.2 Limitations

The major limitation to this study was the change in the data collection techniques as questionnaires which were originally prepared as a guide for the key informants' interviews had to be administered for the participants to fill-in their responses. This was occasioned as none was prepared to be interviewed and/or recorded. The original number of participants was however increased. This was same with the focus groups' discussions originally planned, but had to be restructured as interviews of the participants. The situation affected the original methods for this study, hence the quality of work in terms details in findings were compromised. None the less, findings from the research were the truth reflections of the methods used, hence limited to the research setting.

6.3 Recommendations

Emergency medical services contribute greatly to the health needs of every population. As important as emergency medicine is to improve upon preventive health, a major driver for national growth, emergency medical care serves as a major contributor to the fundamental health of people. Its usefulness is seen in the numerous lives saved from conditions that contribute to the burden of diseases of a country. The quest for improved standard of emergency care should be the aim of the government of Ghana, the metropolitan, municipal, district assemblies, agencies, communities and for that matter every citizen.

6.3.1 Government/Ministry Of Health/Ghana Health Service

The government of Ghana has played very important role so far in the establishment of emergency medical centers in selected regions of the country. However, it is recommended that government allocated specific resources to assist the Ghana police administration in establishing an ultramodern emergency medical center at the Police Hospital, for reasons being; the strategic nature of the Police Hospital's location, the fact that personnel of the Police Service do not embark on industrial actions and the craving need for such a facility as evidenced by the research findings.

The activities of the National Ambulance Authority has been a major boost in the area of emergency medicine but limited to the “traditional” government hospitals, leaving out facilities such as the Ghana Police Hospital which contributes immensely in the provision of the health needs of people in the Accra metropolis. If Pre-hospital care in Ghana has to be developed to provide adequate care for the emergency patient before they were brought to the emergency department for further management, there was the need to add to the fleet of ambulances at the police hospital with well-equipped ambulances to succeed in such drive.

The Ministry of Health should ensure that, there was a greater focus on the health policy on emergency medicine. There was the need to adopt a common triage system which could be used by all health institutions for prioritizing emergency cases. This could improve the quality in initial management of emergency cases and also fashion out responsible referral systems.

6.3.2 Metropolitan/Municipal/District Assemblies

There was the need for the Accra Metropolitan Assembly and adjoining local government agencies to take the provision of emergency medicine as a key component for development in the health sector of their jurisdiction. They should show the way by making moves to develop infrastructure of the ambulance services and the emergency departments of the main hospitals in the metropolis.

6.3.3 The Ghana Police Service/Police Hospital

The authority of the Police Hospital through the Ghana Police Service administration recruited skilled health personnel and ensured that periodic training courses were organized on emergency medicine modules for all existing personnel at the emergency unit and members of the ambulance team. Resourcing the emergency unit of the police hospital with adequate and appropriate lifesaving equipment and needed medications was equally important. The Police Hospital authority should also ensure adherence to the policy document and guidelines on emergency medicine by the Ministry of Health, Ghana after ensuring that, the necessary resources were made available. There was also the need to set up quality assurance processes such as medical audits and mortality meetings to help improve and sustain the standard of emergency care at the emergency unit of the Police Hospital.

6.3.4 Health Personnel/Police Hospital

The process of triaging, emergency preparedness and management are areas which required training and regular but continuous education to enable health personnel update and enhance their performance in triaging and emergency care delivery, hence personnel at emergency unit and members of the ambulance team be self-motivated, encouraged

and challenged in that drive. Regular triage training sessions have been proven to improve the accuracy of triaging and therefore improved patient outcomes. The training modules for personnel should emphasize the identification and synthesis of patients' vital signs, location of injuries and estimation of resources to be used.

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APPENDICES

APPENDIX A

The quality of emergency management and care per the Ministry of Health, Ghana check list for emergency units/departments

Airways/Breathing	Availability	Circulation/Hemodynamics 12 lead ECG machine	Availability
	Yes/No		Yes/No
Bag valve mask:	Yes	Blood and fluid warmer	No
Chest tube / underwater seal drainage	No	Central venous catheters	No
Combitube	No	Cut-down set1 (phased out)*	No
Elastic gum bougies	No	Defibrillator/ Automated External Defibrillator (AED)	No
Endotracheal tubeTT	No	Foleys catheter	Yes
Laryngeal Mask Airway	No	High capacity catheters	Yes
Laryngoscope, various sizes of blades	No	Infusion pumps	No
McGill forceps	Yes	Intravenous Needles	Yes
Nasal prongs	No	IV cannulae 14, 16 18 20 and 22	Yes
Nasopharyngeal airways	No	Syringe pumps	No
Nebulizers	Yes	12 lead ECG machine	No
Bag valve mask:	Yes	Blood and fluid warmer	No
Oropharyngeal airways	No	Central venous catheters	No
Oxygen cylinder with a flow metre	Yes		
Suction machines and tubes	Yes		
Thoracotomy set	No		
Tongue depressor	Yes		
Transport Ventilators	No		
Ventilator (ICU)	No		
Ventury airway mask/poly mask	Yes		
Yankeur suction	No		
Total (airway/breath and circulations) available			12
Likert-scale			1.8

Splints		Other Accident & Emergency Equipment	
Bandages	Yes	Brad low tape measure (for children)	Yes
Cervical collar –soft/hard collar	Yes	Weighing scale	Yes
POP	Yes	Telephone and directory	No
Spine board	No	Pedal operated colour-coded waste bins	No
Splints	Yes	Safety box for sharps	Yes
Trace 3 traction kit	Yes	Blood fridge	No
		Cabinets	Yes
		Computer and accessories and appropriate software	No
Monitoring Devices		Consumable cabinet	Yes
Pulseoximeter	Yes	Drug cabinet	Yes
Patient Monitors (invasive and non-invasive)	No	Examination couch	Yes
Glucometer	Yes	Examination lamps	No
Blood gas electrolyte analyser	No	Hoist	No
Spirometer/ peak flow meter	No	Instrument trays	Yes
Thermometer	Yes	Office furniture	Yes
Diagnosis set	Yes	Refrigerator	Yes
Stethoscope	Yes	Resuscitation trolley/tray	No
Sphygmomanometer (Digital & Aneroid)	Yes	Rollers	Yes
Diagnostics		Stretchers	Yes
		Suction machine	Yes
		Telephones	Yes
Blood gas/electrolyte analyzer	No	Trolleys	Yes
Mobile X-ray machine	No	Wheel chairs	Yes
Diagnostic set	Yes		
Diagnostic Peritoneal Lavage set	No		
Glucometer	Yes		
Laboratory sample set	Yes		
Lumber puncture set	No		
Minor surgical set.	Yes		

Foetal heart monitor	Yes
Hand held Doppler machine	No
Supra pubic catheter sets	No
Ultrasound machine	No
Total (device and equipment) available	32
Likert-scale (device and equipment)	3.2

Non Drug Consumables		Drugs	
Gauze rolls	Yes	50% Dextrose	Yes
Urine bag	Yes	Adrenaline	Yes
Suture materials	Yes	Nor-adrenaline	Yes
Scalp vein needles	Yes	Anti-snake venom serum	No
Disposable gloves	Yes	Aspirin	Yes
Splints	Yes	Atropine	No
Nasogastric tubes	Yes	Anti-Tetanus Serum	No
IV cannulae	Yes	Dextran/voluven	No
Syringes and needles	Yes	Diazepam	Yes
Bandage, elastic adhesive	Yes	Dobutamine	No
CVP lines	No	Etomidate	No
Dressing towel	Yes	Fresh Frozen Plasma	No
Plaster of Paris	Yes	Gelofusin	No
Disposable face masks	Yes	Group O neg whole blood	No
IV Fluid giving set	Yes	Heparin	Yes
Endotracheal tubes	No	Hydralazine	Yes
Urometers	No	Hydrocortisone	Yes
Urethral catheters	Yes	IM Glucagon	No
Adhesive Plaster	No	Insulin	Yes
Blood giving set	Yes	IV calcium Gluconate	Yes

Urine testing kit	No	IV Dopamine	No
Gauze bandages	Yes	IV Fluid - all type	Yes
Surgical blades	Yes	IV Frusemide	Yes
Total (non-drugs) available	18	IV KCl	Yes
Likert-scale (non-drugs)	3.9	IV Vit K	Yes
		Labetalol	No
		Lignocaine	Yes
		10% xylocaine spray	No
		Magnesium Sulphate	No
		Mannitol	No
		Midazolam	No
		Morphine	Yes
		Naloxone	No
		Nitroglycerine	No
		Oral Rehydration Salt (ORS)	Yes
		Oxygen supply	Yes
		Pethidine	Yes
		Phenylephrine	No
		Propofol	No
		Salbutamol	Yes
		Sodium bicarbonate	No
		Suxamethonium	No
		Total (emergency drugs) available	20
		Likert-scale (emergency drugs)	2.3

Source: Ministry of Health, Ghana Accident & Emergency Services, 2011

APPENDIX B

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

ASSESSMENT OF EMERGENCY MANAGEMENT AND CARE AT THE

ACCIDENT AND EMERGENCY UNIT OF THE POLICE HOSPITAL

QUESTIONNAIRE FOR CORE PERSONNEL OF THE EMERGENCY

UNIT/DEPARTMENT

Dear respondent,

I am a student of Kwame Nkrumah University of Science and Technology pursuing Master of Science in Public Health degree in Health Education and Promotion. I am conducting a study to assess emergency management and care at the Accident and Emergency unit of the Police hospital. The study will enable administration and management to make interventions which would improve the operations of the emergency unit. Could you please complete the questionnaire below to assist in this project? Your consent is required in the filling of this questionnaire and you are allowed to dissent for reasons which you are not under any compulsion to disclose. Your confidentiality is assured. No responses would be linked to you in person. THANK YOU.

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. What is your profession?
 - a. Nurse
 - b. Medical Officer
 - c. Specialist nurse
 - d. Specialist Physician/Surgeon
 - e. Other (specify)
2. How long have you been in practice as a professional?
3. What is your age please?
4. What is your level of education? (Be specific please).....
5. What department/unit do you work?
 - a. Emergency unit
 - b. Other department/unit (Specify)
6. How long have you worked in your current unit/department?

7. What level of training have you received in your current unit of work?
- a. Orientation course
 - b. Regular refresher courses
 - c. Residency program including weekly lectures
 - d. No training
 - e. Other (Specify).....

**SECTION B: EXISTENCE AND ADHERENCE TO EMERGENCY
MANAGEMENT AND CARE SYSTEMS**

8. Do you receive emergency cases as referrals to this unit?
- a. Yes
 - b. No
9. What is your understanding about emergency? (Briefly explain).....
10. How can you determine that, a case is an emergency? (Briefly explain).....
11. Do these referred emergency cases come in to the unit with referral notes?
- a. Yes
 - b. No
 - c. Not all the cases
12. Does the unit accept non-referral emergency cases?
- a. Yes
 - b. No
13. In what state are most of these emergency cases brought in?
- a. Minor
 - b. Severe
 - c. Very severe
 - d. Terminal
 - e. Other (specify).....
14. Do any personnel accompany these emergency patients to this unit?
- a. Yes
 - b. No
 - c. Not all the cases
15. How are these patients who are referred to the emergency unit of the police hospital transported?
- a. In private transport
 - b. In commercial transport

- c. In an ambulance
 - d. Other (specify).....
16. Are there any specific trained personnel who receive emergency cases at the point of entry to this unit?
- a. Yes
 - b. No
17. Has an emergency patient ever been turned away from the emergency unit of the police hospital?
- a. Yes
 - b. No
18. What accounted for the turning away of any emergency patients at the unit?(More than one answer can be given)
- a. Shortage of personnel
 - b. Shortage of working materials
 - c. Shortage of medication
 - d. Lack of space (Bed)
 - e. Work overload
 - f. Other (Specify).....
19. Who gives referral for patients out of this unit? (More than one answer can be given)
- a. Doctors
 - b. Medical Assistants
 - c. Nurses
 - d. Health care assistants
 - e. Other (Specify).....
20. What is done for an emergency patient before referral to other health facilities at the emergency unit? (Briefly explain).....
21. How are referred emergency patients transported to the various referral centres?
- a. In private transport
 - b. In commercial transport
 - c. In an ambulance
 - d. Other (specify).....
22. Do any emergency personnel accompany the emergency patients to referral centres?
- a. Yes
 - b. No
 - c. Other (specify)

SECTION C: PERFORMANCE AND FUNCTIONAL CAPACITY OF THE EMERGENCY UNIT AS PER STANDARD POLICY AND GUIDELINES

23. Have you heard about any emergency policy document in Ghana?
- Yes
 - No
24. Have you seen this policy document?
- Yes
 - No
25. Do you use this policy document at this unit?
- Yes
 - No
26. What are some of the challenges with the use of this policy document on emergency in this unit?
- Lack of trained personnel
 - Shortage of trained personnel
 - Lack of equipment/gadgets
 - Lack of space
 - All the above
 - Other (Specify).....
27. What level of staff do you have at your emergency unit?(More than one answer can be given)
- Doctors
 - Medical Assistants
 - Nurses
 - Health care assistants
 - Other (Specify).....
28. Has the emergency unit of the police hospital, the requisite personnel (Competence and numbers) for management and care of emergency cases?
- Yes
 - No
29. What is your recommendation on the staff situation (Competence and numbers) at the emergency unit?
- Maintain the existing staff as they are
 - Train the existing staff on emergency management and care
 - Recruit more, but experienced staff on emergency services
 - Other (Specify)
30. Is the emergency unit adequately stocked with emergency medication?
- Yes
 - No
 - Other (specify)

31. How often, are emergency medications replaced at the emergency unit?
- a. As and when necessary
 - b. Daily
 - c. Weekly
 - d. Bi-weekly
 - e. Monthly
 - f. Other (Specify).....
32. What is your suggestion on the challenge of inadequate medication at the emergency unit?
- a. Create an adequately stocked emergency medication dispensing unit operational 24/7
 - b. Create an adequately stocked emergency medication cupboard, well supervised but accessible by staff
 - c. Ensure constant replacement of dispensed medication
 - d. Ensure that, all the above are put into place
 - e. Other (Specify).....

SECTION D: THE GENERAL TRIAGE SYSTEM OF THE EMERGENCY UNIT (KNOWLEDGE/AWARENESS AND USAGE/ADHERENCE TO POLICY & GUIDELINES)

33. Do you have any ideas/knowledge about triage system or protocol?
- a. Yes
 - b. No
34. In a sentence, but very brief what is triaging?.....
35. Does your unit have standard triaging operation document?
- a. Yes
 - b. No
36. Do you use it in your unit?
- a. Yes
 - b. No
 - c. Other (specify)
37. Are there any differences between your triaging system and that mentioned in the policy document?
- a. Yes
 - b. No
 - c. Other (specify)
38. Who are responsible for triaging of emergency cases in this unit?

- a. Nurses
- b. Medical Assistants
- c. Doctors
- d. All professionals staff
- e. Others (specify).....

39. Can you briefly describe how the triage system operates at this emergency unit, if any? (Eg use of colour-codes).....

40. In triaging, how do you determine emergency cases?.....

41. Do you receive training on triaging of emergency patients?

- a. Yes
- b. No

42. How often?

- a. Weekly
- b. Bi weekly
- c. Monthly
- d. Quarterly
- e. Every six months
- f. Other (Specify).....

43. How would you rate the time with which you spend in triaging a referred emergency patient?

- a. Quickly because they are most likely very bad emergencies that need immediate attention.
- b. Just like all other cases because they mostly are like the non-referred cases.
- c. A little longer because I need to be sure patients are really emergencies.
- d. No time at all! Most referred patients are chronic cases.

44. How can the grey areas in triaging at the emergency unit of the police hospital be dealt with? (Briefly explain).....

Thank you very much for your co-operation

APPENDIX C

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

ASSESSMENT OF EMERGENCY MANAGEMENT AND CARE AT THE ACCIDENT AND EMERGENCY UNIT OF THE POLICE HOSPITAL

QUESTIONNAIRE FOR PERSONNEL OF THE HOSPITAL ADMINISTRATION

Dear respondent,

I am a student of Kwame Nkrumah University of Science and Technology pursuing Master of Science in Public Health degree in Health Education and Promotion. I am conducting a study to assess emergency management and care at the Accident and Emergency unit of the Police hospital. The study will enable administration and management to make interventions which would improve the operations of the emergency unit. Could you please complete the questionnaire below to assist in this project? Your consent is required in the filling of this questionnaire and you are allowed to dissent for reasons which you are not under any compulsion to disclose. Your confidentiality is assured. No responses would be linked to you in person. THANK YOU.

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. What is your profession?
 - a. Nurse
 - b. Medical Officer
 - c. Specialist Nurse
 - d. Specialist Physician/Surgeon
 - e. Other (specify).....
2. How long have you been in practice as a professional?
3. What is your age please?
4. What is your level of education? (Be specific please).....
5. What department/unit do you work?
 - a. Emergency unit
 - b. Other department/unit (Specify)
6. How long have you worked in your current unit/department?.....

7. What level of training have you received in your current unit of work?
- Orientation course
 - Regular refresher courses
 - Residency program including weekly lectures
 - No training
 - Other (Specify).....

**SECTION B: EXISTENCE AND ADHERENCE TO EMERGENCY
MANAGEMENT AND CARE SYSTEMS**

8. Does the hospital authority organise periodic training on emergency medicine or services for its core staff?
- Yes
 - No
 - Other (Specify).....
9. Mention one area of emergency medicine/services on which training has ever been organized for the core staff? (Brief state/explain).....
10. In a brief sentence, what is your understanding about emergency medicine or services?.....
11. What do you know, goes into emergency preparedness, management and care? (Briefly explain).....
12. Is the emergency unit/department of the police hospital well-resourced to manage and care for the cases, which are brought there?
- Yes
 - No
 - Other (specify).....
13. Is there a system/protocol of resources allocation for the management and care of emergencies and related cases in the police hospital?
- Yes
 - No
 - Other (Specify).....
14. How is the allocation of resources to the emergency unit of the hospital done? (Briefly explain).....

15. Who is/are responsible for the allocation of resources to the emergency unit of the hospital? (Briefly explain).....
16. What will be your description of the nature of resources (personnel, equipment and medication) allocated to the emergency unit of the hospital, by rating?
- a. Inadequate
 - b. Adequate
 - c. Very adequate
 - d. Other (Specify).....

SECTION C: PERFORMANCE AND FUNCTIONAL CAPACITY OF THE EMERGENCY UNIT AS PER STANDARD POLICY AND GUIDELINES

17. The Ministry of Health, Ghana has a policy document and guidelines on the management and care of emergencies. Do you know about this?

- a. Yes
- b. No
- c. Other (Specify).....

18. Have the police hospital policy document and/or guidelines on emergency management and care?

- a. Yes
- b. No
- c. Other (Specify).....

29. Can you briefly comment on the nature of this emergency policy document/guidelines?.....

.....

30. Is the police hospital's policy document and guidelines on the management and care of emergencies the same as that of the Ministry of Health, Ghana?

- a. Yes
- b. No
- c. Other (Specify).....

31. Is the policy document on emergency management and care implemented as required?

- a. Yes
- b. No
- c. Other (Specify).....

33. If not implemented as required, why? (Briefly explain).....

34. How can you describe the emergency unit of the hospital in terms of efficient and effective delivery of services?(Briefly explain).....

35. How would you describe staff attitude towards emergency cases at the emergency unit?

- a. Overwhelmed with work load
- b. Lack requisite knowledge and skills on emergency medicine
- c. Frustrated by lack of requisite operational space, equipment and gadgets
- d. Other (Specify).....

36. Can the emergency unit/department of the police hospital be described as fulfilling the objectives of an emergency unit?

- a. Yes
- b. No
- c. Other (Specify).....

37. What are the plans for managing mass disaster at the emergency unit of the hospital (Emergency Preparedness Plan)?(Briefly explain).....

38. What are some of your observed or reported challenges of the emergency unit/department of the hospital, which hinders its performance?(Briefly explain).....

Thank you!!!!



APPENDIX D
KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
ASSESSMENT OF EMERGENCY MANAGEMENT AND CARE AT THE
ACCIDENT AND EMERGENCY UNIT OF THE POLICE HOSPITAL
QUESTIONNAIRE ON THE PERFORMANCE OF THE AMBULANCE TEAM

Dear respondent,

I am a student of Kwame Nkrumah University of Science and Technology pursuing Master of Science in Public Health degree in Health Education and Promotion. I am conducting a study to assess emergency management and care at the Accident and Emergency unit of the Police hospital. The study will enable administration and management to make interventions which would improve the operations of the emergency unit. Could you please complete the questionnaire below to assist in this project? Your consent is required in the filling of this questionnaire and you are allowed to dissent for reasons which you are not under any compulsion to disclose. Your confidentiality is assured. No responses would be linked to you in person. THANK YOU.

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. What is your profession?
 - a. Nurse
 - b. Medical Officer
 - c. Specialist nurse
 - d. Specialist Physician/Surgeon
 - e. Other (specify)
2. How long have you been in practice as a professional?
3. What is your age please?.....
4. What is your level of education? (Be specific please).....
5. What department/unit do you work?
 - a. Emergency unit
 - b. Other department/unit (Specify)
6. How long have you worked in your current unit/department?
7. What level of training have you received in the current unit of your work?
 - a. Orientation course
 - b. Regular refresher courses
 - c. Residency program including weekly lectures
 - d. No training
 - e. Other (Specify).....

**SECTION B:EXISTENCE AND ADHERENCE TO EMERGENCY
MANAGEMENT AND CARE SYSTEMS**

8. Under what mandate was the ambulance unit of the police hospital established?(Be brief).....
9. Are members of the ambulance team\unit trained on any aspects of emergency services?
- a. Yes
 - b. No
 - c. Other (Specify).....
10. Which aspects of emergency medicine have you had training on? (Briefly explain).....
11. Are there refresher training for members of the ambulance team\unit?
- a. Yes
 - b. No
 - c. Other (Specify).....
12. How often are these refresher trainings?
- a. Weekly
 - b. Bi weekly
 - c. Monthly
 - d. Quarterly
 - e. Every six months
 - f. Other (Specify).....
13. What is your understanding about emergency? (Briefly explain).....
14. How can you determine that, a case is an emergency? (Briefly explain).....

**SECTION C:PERFORMANCE AND FUNCTIONAL CAPACITY OF THE
EMERGENCY UNIT AS PER STANDARD POLICY AND GUIDELINES**

15. Are operations of the Ambulance team or unit linked to the emergency unit\department of the police hospital?
- a. Yes
 - b. No
 - c. Other (Specify).....
16. Does the ambulance team go to accident scenes?
- a. Yes
 - b. No
 - c. Other (Specify).....

17. How do you rate resources of the ambulance unit in terms adequacy with respect to personnel, equipment, vehicles and other logistics?
- Adequately resource
 - Not adequately resourced
 - Not resourced
18. How equipped is the ambulance team that goes out for emergencies?
- Very well equipped
 - Equipped
 - Not equipped
19. Are referrals of patients from the emergency unit to other health facilities has involvement of the ambulance unit?
- Yes
 - No
 - Other (Specify).....
20. How involved is the ambulance unit in the activities of the emergency unit of the hospital, in terms of patients' referral to other hospitals\health facilities?(Briefly explain).....
21. Who coordinate activities between the ambulance and emergency units?.....
22. What is done for an emergency patient before transporting to any health facilities? (Briefly explain).....

SECTION D: THE GENERAL TRIAGE SYSTEM OF THE EMERGENCY UNIT (KNOWLEDGE AND ADHERENCE TO POLICY & GUIDELINES)

23. Does your unit have standard triaging operation document?
- Yes
 - No
24. Do you use it in your unit?
- Yes
 - No
25. Do you have any ideas/knowledge about triage system or protocol?
- Yes
 - No
26. In a sentence, but very brief what is triaging?.....

27. In triaging, how do you determine emergency cases?.....

28. How do you deal with the grey areas in triaging?.....

29. In your opinion, what is it that, can be done to improve the services of the ambulance team?(Brief explanation only).....

Thank you very much!!!!



APPENDIX E

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

ASSESSMENT OF EMERGENCY MANAGEMENT AND CARE AT THE

ACCIDENT AND EMERGENCY UNIT OF THE POLICE HOSPITAL

QUESTIONNAIRE ON THE PERFORMANCE OF THE NON-CORE STAFF OF

THE EMERGENCY UNIT

Dear respondent,

I am a student of Kwame Nkrumah University of Science and Technology pursuing Master of Science in Public Health degree in Health Education and Promotion. I am conducting a study to assess emergency management and care at the Accident and Emergency unit of the Police hospital. The study will enable administration and management to make interventions which would improve the operations of the emergency unit. Could you please complete the questionnaire below to assist in this project? Your consent is required in the filling of this questionnaire and you are allowed to dissent for reasons which you are not under any compulsion to disclose. Your confidentiality is assured. No responses would be linked to you in person. THANK YOU.

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. What is your profession?
 - a. Nurse
 - b. Medical Officer
 - c. Specialist nurse
 - d. Specialist Physician/Surgeon
 - e. Other (specify)
2. How long have you been in practice as a professional?.....
3. What is your age please?
4. What is your level of education? (Be specific please).....
5. What department/unit do you work?
 - a. Emergency unit
 - b. Other department/unit (Specify)

6. How long have you worked in your current unit/department?.....
7. What level of training have you received in the current unit of your work?
- a. Orientation course
 - b. Regular refresher courses
 - c. Residency program including weekly lectures
 - d. No training
 - e. Other (Specify).....

SECTION B: EXISTENCE AND ADHERENCE TO EMERGENCY MANAGEMENT AND CARE SYSTEMS

8. Emergency medicine is a life-saving process which involves integrated efforts of all professionals within the hospital.
- a. True
 - b. False
 - c. Other (Specify).....
9. Have you any idea about management and care of emergency cases?
- a. Yes
 - b. No
 - c. Other (Specify).....
10. What aspects of emergency medicine do you know? Briefly comment.....
11. Have you had training in any area of emergency management and care?
- a. Yes
 - b. No
 - c. Other (Specify)
12. Which area of emergency management and care training did you receive?(Brief explanation only).....

SECTION C: PERFORMANCE AND FUNCTIONAL CAPACITY OF THE EMERGENCY UNIT AS PER STANDARD POLICY AND GUIDELINES

13. What role do you play in the care of emergency patients? (Explain briefly).....
14. Were you trained on how to perform this role in your current unit?
- a. Yes
 - b. No
15. If No, how did you acquire the knowledge/skills? (Explain briefly).....
-

16. Do you receive any refresher training on emergency management and care?
- a. Yes
 - b. No
17. If yes, how often do you receive this refresher training?
- a. Weekly
 - b. Monthly
 - c. Quarterly
 - d. Semi annually
 - e. Yearly
 - f. Other (specify).....
18. Do you have any challenges in the area of your work, in relation to emergency management and care?
- b. Yes
 - c. No
19. What is the nature of these challenges? (Explain briefly).....
20. Do you feel involved in the care for emergency patients?
- a. Yes
 - b. No
21. In your candid opinion, what are some of the measures that when taken will lead to the efficient and effective operations of the emergency unit at the level of your knowledge/duties? (Explain briefly).....
.....

THANK YOU VERY MUCH!!!!!!



**KWAME NKURUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF HEALTH SCIENCES**



**SCHOOL OF MEDICAL SCIENCES / KOMFO ANOKYE TEACHING HOSPITAL
COMMITTEE ON HUMAN RESEARCH, PUBLICATION AND ETHICS**

Our Ref: CHRPE/AP/407/13

31st October, 2013.

Mr. Kennedy Biyab Japiong
Ghana Police Service
Post Office Box CT 104
CANTONMENT-ACCRA.

Dear Sir,

LETTER OF APPROVAL

Protocol Title "Preparedness of the Medical Corps of the Ghana Police Service toward Emergency

Management and Care: An Audit of the Emergency Unit of the Ghana Police Hospital, Accra"

Proposed Site: Ghana Police Hospital-Accra, the Emergency Department.

Sponsor: Principal Investigator.

Your submission to the Committee on Human Research, Publications and Ethics on the above named protocol refers.

The Committee reviewed the following documents:

- A notification letter of 20th September, 2013 from the Ghana Police Hospital, Accra (study site) indicating approval for the conduct of the study in the Hospital.
- A completed CHRPE Application Form.
- Participant Information Leaflet and Consent Form.
- Research Proposal.
- Questionnaire.

The Committee has considered the ethical merit of your submission and approved the protocol. The approval is for a fixed period of one year, renewable annually thereafter. The Committee may however, suspend or withdraw ethical approval at anytime if your study is found to contravene the approved protocol.

Data gathered for the study should be used for the approved purposes only. Permission should be sought from the Committee if any amendment to the protocol or use, other than submitted, is made of your research data.

The Committee should be notified of the actual start date of the project and would expect a report on your study, annually or at close of the project, whichever one comes first. It should also be informed of any publication arising from the study.

Thank you Sir, for your application.

Yours faithfully,

Osomfuor Prof. Sir J. W. Acheampong MD, FWACP
Chairman