

**LEGON CENTRE FOR INTERNATIONAL AFFAIRS AND
DIPLOMACY (LECIAD)**

UNIVERSITY OF GHANA



**AN ASSESSMENT OF GHANA'S PREPAREDNESS
TOWARDS ACHIEVING SUSTAINABLE DEVELOPMENT
GOAL 3.6: THE ROLE OF THE MINISTRY OF HEALTH
AND RELEVANT STAKEHOLDERS**

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**THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY
OF GHANA, LEGON, IN PARTIAL FULFILLMENT OF
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DECLARATION

I hereby declare that this dissertation is the product of an original research that I undertook under the supervision of Dr. Boni Yao Gebe. This work has never been submitted partially or wholly elsewhere for any award, that all sources used have been duly acknowledged.

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DATE

DEDICATION

I wholeheartedly dedicate this work to my dad and mom. To my dad, may you rest in perfect peace. Unfortunately, you were not able to see me finish it but to you, my immense gratitude.

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My biggest thanks goes to the Lord Almighty, for endowing me with absolute health, life and strength to come to the end of the tunnel in this phase of my education.

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God bless you all

To God be the Glory

LIST OF ABBREVIATIONS

A&E	Accident and Emergency
ABFA	Annual Budget Funding Amount
ACLS	Advance Cardiac Life support
AED	Automated External Defibrillator
AIDS	Acquired Immunodeficiency Syndrome
ATLS	Advance Trauma Life Support
AU	African Union
BLS	Basic Life Support
CAN	Cup of African Nations
CD	Communicable Disease
CDC	Center for Disease Control
CEO	Chief Executive Officer
CEPS	Customs Exercise and Preventive Service
CHAG	Christian Health Association of Ghana
CHPS	Community-Based Health Planning and Services
CPD	Continuous Professional Development
CPD	Continuous Professional Development
CSO	Civil Society Organizations
CT scan	Computed Tomography Scan
DANIDA	Danish International Development Agency
DFID	Department for International Development
DFR	Department of Feeder Roads
DH	District Hospital
DHIMS	District Health Management Information Systems
DUR	Department of Urban Roads
DVLA	Driver and Vehicle Licensing Authority
ECTIB	Economic Trade and Investment Bureau
EMS	Emergency Medical Service

EMT	Emergency Medical Technicians
FDA	Food and Drugs Authority
GAVI	Global Alliance for Vaccines and Immunization
GDP	Gross Domestic Products
GHA	Ghana Highways Authority
GHS	Ghana Health Service
GNFS	Ghana National Fire Service,
GOG	Government of Ghana
GSA	Ghana Standards Authority
GSB	Ghana Standards Board
H1N1	Influenza A Virus
HASS	Health Administration and Support Services
HC	Health Centre
HeFRA	Health Facility and Regulatory Agency
HIV	Human Immunodeficiency Virus
HR	Human Resource
HSMTDP	Health Sector Medium Term Development Plan
ICD	Institutional Care Division
ICT	Information and Communications Technology
IGF	Internally Generated Funds
IGOs	Intergovernmental Organization
IHR	International Health Regulation
IRTAD	International Traffic Safety Data and Analysis Group
KATH	Komfo Anokye Teaching Hospital
LDC	Least Developed Country
MDA	Ministries, Departments and Agencies
MDGs	Millennium Development Goals
MERS	Middle East Respiratory Syndrome
MMDCE	Metropolitan, Municipal and District Chief Executives
MNC	Multinational Corporations
MOH	Ministry of Health

MRI	Magnetic Resonance Imaging
MTEP	Medium Term Expenditure Framework
MTTD	Motor Transport and Traffic Department
NADMO	National Disaster Management Organization
NAS	National Ambulance Service
NBTS	National Blood Transfusion Service
NGO	Non-governmental Organization
NHIF	National Health Insurance Fund
NHIL	National Health Insurance Levy
NHIS	National Health Insurance Scheme
NMTDPF	National Medium Term Development Policy Framework
NRSC	National Road Safety Commission
NTCC	National Technical Coordinating Committee
NTD	Neglected Tropical Diseases
OOP	Out of Pocket
PA	Physician Assistance
PALS	Pediatric Advance Life Support
PPME	Policy, Planning Monitoring and Evaluation
RH	Regional Hospital
ROPAL	Representation of the People Amendment Law
RTA	Road Traffic Accident
RTI	Road Traffic Injuries
SADA	Savannah Accelerated Development Authority
SARS	Severe Acute Respiratory Syndrome
SDGs	Sustainable Development Goals
SSNIT	Social Security and National Insurance Trust
TB	Tuberculosis
UHC	Universal Health coverage
UN	United Nations
UNDP	United Nations Development Programme
USA	United States of America

USAID	United States Agency for International Development
VAT	Value Added Tax
VIP	A very important person
WARA	West African Rescue Association
WHO	World Health Organization

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ABSTRACT

Ghana carries a heavy burden of medical emergencies, trauma and injuries that have long become of public health concern. Overall, there is a huge injury burden not in an isolated occurrence but occurs daily or weekly resulting in severe disability and preventable deaths. Ghana through its National Development Planning Commission adopted the Sustainable Development Goals as part of its national policies. The Ministry of Health have inculcated some of the indicators of the SDGs especially Goal 3. This study seeks to examine the implementation of Goal 3.6 and its relevance to Road Traffic Accidents (RTA) in Ghana, its causes and the Ministry of Health (MoH) and other relevant stakeholders in preventing RTA.

The study adopts a descriptive approach to explore the efforts towards the implementation and achievement of Goal 3.6. The research employed qualitative methods using semi-structured interviews and conversations with institutional representatives guided by a questionnaire to enable achieve the study objectives. Key respondents were purposively selected to provide in-depth information and access to institutional data. We relied on both primary sources of data with the secondary data consisting of meetings reports, health summit conference presentations, institutional reports, policies and guidelines on the subject. The data was analyzed using thematic analysis for reporting. Although the study did not anticipate any harm to respondents, we observed ethical procedures by ensuring confidentiality, anonymity and informed consent for respondents.

The key findings from the study showed that Goal 3.6 is relevant to tackling RTA and the Ministry of Health has a major role in implementing it with the aid of its agencies and those from other sectors such as the Ministry of Interior through its Motor Transport and Traffic Department; Ministry of Transport' Drivers and Vehicle Licensing Authority and National Road Safety Authority to enforce road traffic regulations and promote road safety; the Ministry of Roads and Highways to improve on road constructions and maintenance; the Ministry of Information's National Media Commission to engage in active health promotion and preventive activities among others. This demonstrates the complexities of implementing and achieving Goal 3.6 with multi-sectoral coordination, poor resources and inadequate infrastructures. Preventing RTA require preventive actions and appropriate investment in institutions responsible for pre-hospital care.

The study concludes that the country might not achieve the target at the establish time due to the above challenges. Therefore, to make any gains there is the need to create a permanent or temporary working multi-sector committee to coordinate and implement activities relating to road traffic accidents. Also, law enforcement of road traffic rules and regulations must be strengthened, community engagement improved, skills of first responders built and improved, and media/press participant and advocacy increased to reduce the incident of RTA. This coupled with the policies guiding prevention of RTA and emergency services will impact on the implementation of Goal 3.6.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The United Nations General Assembly (UNGA) met in 2015 to take a decision on how to address key challenges facing the world in its General Assembly Resolution 70/1 on the 25 September 2015, entitled “Transforming our world: the 2030 Agenda for Sustainable Development” (UNGA, 2015). The UNGA agreed on the Sustainable Development Goals (SDGs) which consist of 17 SDGs and 169 targets for member states to work towards achieving them by 2030. The United Nations Development Programme (UNDP) is the lead campaigner to promote the SDGs in member states (UNGA, 2015; UNDP, 2019).

Prior to the SDGs were the Millennium Development Goals (MDGs) that culminated in 2015 giving birth to the SDGs in the same year, and providing a continuation to improve and expand the goals to other areas. There are remarkable differences between the SDGs and MDGs. For instance, the mode of implementing the SDGs are based on internal national resource mobilization contrary to the MDGs that had an envelope of international aid for implementation. Also, unlike the SDGs, the MDGs excluded areas like injuries and deaths from road traffic accidents, mental health and wellbeing, disabilities and non-communicable diseases in general.

This study seeks to examine the Sustainable Development Goal 3.6 and its relevance to Road Traffic Accidents (RTA) in Ghana and its causes. We also intend to explore the role of the Ministry of Health (MoH), their preparedness in pre-hospital and hospital emergency services towards the management of casualties without excluding the roles of other relevant stakeholders in its prevention.

SDG 3.6 states that it seeks to ‘halve the number of global deaths and injuries from road traffic accidents by 2020’ (UN, 2019). There has been an increase in global deaths and injuries in the last few years, 2015, 2016 and 2017. In 2015, the number of road deaths increased in 21 countries compared to 2014. In 2016, the number of fatalities increased in 14 countries (IRTAD, 2017). Ghana carries a very heavy burden of medical emergencies, trauma and injuries that have long become of public health concern. Overall, there is a huge injury burden that occurs daily or weekly resulting in severe disability and preventable deaths.

The causes of the high rate of RTA in Ghana are multi-sectoral in nature with different actors and stakeholders. These actors and stakeholders include but not limited to Ministry of Interior-Motor Traffic and Transport Department (MTTD), Ministry of Roads and Highways, Ministry of Transport- Driver and Vehicle Licensing Authority (DVLA), Ghana Highways Authority, Ghana Police Service, National Ambulance Service (NAS), Ghana Red Cross Society (GRCS), National Disaster Management organization (NADMO), Ministry of Railway Development, The Media and Press, Ghana Standards Authority (GSA), Ministry of Aviation, Customs Exercise and Preventive Service (CEPS) St. John Ambulance, Local Government Service, Ghana Private Road. Transport Union (GPRTU), Ghana National Fire Service, National Road Safety Commission (**NRSC**), Ministry of Health (MoH) and the Government in general for road contracts.

The SDG 3.6 is therefore composed of multiple country specific stakeholders who are charged to address the needs identified in target 3.6. The achievement of this goal is dependent on internal mobilization of funds by the stakeholders charged to implement it coupled with high level political commitment.

1.2 Statement of the Research Problem

Ghana has an increased number of road traffic accidents which is of public health magnitude. There has been a gradual increase in casualties in Ghana in the past few years with many deaths. Statistics available records total vehicles involved in accidents in 2018 at 22,025, persons injured 13,677 total accidents cases reported 13,645, persons killed 2,341 (male 1,796, female 545) commercial vehicles 8,431, private vehicles 9,691, motor cycles 3,903 (NRSA, 2018). These figures of 2018 are the reported cases, however, there could be many unreported cases which would have made the figures even higher (Harry, 2007; Afukaar, 2006). Statistics available at the Ghana Police Service –MTTD, has the following regional breakdown of road traffic accident deaths: Upper West 57deaths as the least, while Greater Accra recorded the higher number of deaths at 460. The rest are Upper East 65, Northern 184, Western 137, Volta 172, Central 221, Brong Ahafo 241, Ashanti 399 and Eastern 405. With 2018 recording a total of 2,098 injured accident cases against a total of 1607 in 2017, signifies 30% increase. Equally, in 2016, the Ministry of Road and Highways has recorded deaths by age distribution to be below 18 years 10,622, age 18 to 35 years, 69,851 age 35 to 45 years, 33,558, age45 to 60 years,22,174, age 60 years above 8,814 and age not known 5,766 (NRSC, 2016; NRSC, 2017).

Unquantifiable is the burden and financial cost to a family with an accident patient. These include adjustment of work cycle to accommodate hospital visits, adjustment and restructuring of house space if disable, the enormous psychological effect for both patients and family, loss of work and productivity, if the bread winner for the family, then even catastrophic. Road traffic injuries (RTIs) keep people away from work and school and impoverish individuals, households, communities, and nations. The Ministry of Health has developed policies and guidelines for the referral and

management of accident victims. Also, it's implementing agencies, especially, the National Ambulance Service, Health Institutions and National Health Insurance Authority, among others, through donor support are developing the necessary strategies towards pre-hospital emergency care, hospital emergency services and financing of emergency service.

The research problem is, therefore, to explore the causes of the high rate of injuries and deaths from road traffic accidents in Ghana and specifically, the role of the Ministry of Health, its Agencies and Donor Partners towards achieving the target. Also to briefly explore the roles of other relevant stakeholders towards achieving SDG 3.6.

1.3 Research Objectives

- To examine SDG 3.6 and its relevance to RTA in Ghana
- To explore the causes of RTA in Ghana
- To examine the role of Ministry of Health
- To understand the roles of other stakeholders

1.4 Research Questions

- What is the framework of SDG 3.6 in relation to RTA in Ghana?
- What are the causes of road traffic accidents in Ghana?
- What is the role of the Ministry of Health in combating these accidents?
- What are the roles and responsibilities of other relevant stakeholders in preventing RTA?

1.5 Scope of the Study

This study is mainly about the role of the Ministry of Health and other key stakeholders in reducing the negative effects of road traffic accidents on victims. The role of these multiple actors such as the MoH and its implementing agencies in the private sector and donor partners in health are assessed. It also explores how the SDG Goal 3.6 is adopted but focuses on the MoH preparedness towards the achievement of Goal 3.6. For the purposes of this study, activities considered are between 1st January, 2015 to 29th June, 2018 as the timeline for the adoption of the SDGs in Ghana.

1.6 Significance of the Study

The Sustainable Development Goal is a widely adopted global agenda. One of the major health focus for the SDGs can be found under Goal 3 which is related to health service delivery and seeks to ensure healthy lives and promote well-being for all at all ages (WHO, 2016). However in Ghana, road traffic accidents are on the rise leading to high morbidity and mortality, especially among the youth and middle aged with a negative impact on economic development. National road safety has reported a total of 241,999 crashes involving 378,015 vehicles from 1991 to 2014. A total of 329,535 injuries with 47% of deaths. In 2015, 36% of OPD attendance was due to casualties (RTA) with fatality of 2199, seriously injured: 6,663 a fatality rate: 17% having an economic impact of 1.6% GDP. (Afukaar, 2016; GHS, 2017). This does not include domestic and Industrial Injuries.

SDG 3.6, seeks to ‘halve the number of global deaths and injuries from road traffic accidents by 2020, but as we approach the year 2020 and barely year away, this review is relevant to evaluate if Ghana could achieve the target despite alarming figures of RTAs. Assessing the activities of the

Ministry of Health and other key stakeholders will help to understand severity of the situation. Traditionally, most health interventions are geared towards communicable disease especial, Tuberculosis, Malaria, HIV and AIDS at the expense of non-communicable disease and road traffic accidents. Currently these later diseases are of public health concern and silent killers especially with increase in life expectancy.

Although, the root causes of such RTA may not be directly linked to the Health Ministry, treatment of the effects has a direct burden on the Health Ministry. Therefore, the ministry ought to play an active role in prevention, promotion, curative, rehabilitation, palliative and handling of the death from RTA. This study is to analyse the plans and activities being put in place by the MoH to mitigate the negative effects of RTAs which is in line with Goal 3.6 that seeks to halve the number of deaths and injuries by 2020. Another important factor is the role of other relevant ministries, departments, agencies, the private sector, civil society organization, non-governmental organizations and intersectoral collaboration in the prevention of RTA. It is for this reason that this study will influence theory and policies around RTA and generate argument for further studies. It will also contribute to developing interventions and strategies to curtail RTA, contribute to existing knowledge and innovation which is beneficial to society and national development.

1.7 Rationale of the Study

This study seeks to examine the implementation of SDG 3.6 and its relevance to Road Traffic Accidents (RTA), prevention and management in Ghana. The SDG 3.6 seeks to ‘halve the number of global deaths and injuries from road traffic accidents by 2020’ (UN, 2019). Many lives are lost through road traffic accidents and others severely injured with disabilities and other complications.

While most of the targets of the SDGs are to be achieved by 2030, this particular SDG 3.6 has been limited to 2020 due to the urgency to reduce the effects of the RTAs. The rationale for this study is to evaluate the relevance of SDG 3.6 to Ghana, the role of the ministry of health and other relevant stakeholder, gains achieved so far, the reality of achieving it, the challenges and how to address those challenges. This study also intends to contribute to existing literature and policy direction on road traffic accident prevention and management.

1.8 The Conceptual Framework

The conceptual framework guiding this study is human security. The United Nations Development Programme's (UNDP) 1994 *Human Development Report* defined human security as “safety from such chronic threats as hunger, disease and repression” and the “protection from sudden and hurtful disruptions in the patterns of daily life,” (UNDP, 1994). This has extended the concept of human security from the state and national security to the individual's daily needs with respect to the following components: economic, food, health, environmental, personal, community and political securities (Gómez, 2013; DesGaspar, 2005). The UNDP's 1994 *Human Development Report* refers focuses on the individual which distinguishes its emphasis on human security from the state-centred concept of security. The focus on the individual is believed to promote their well-being with positive implications for good state security.

Human security theorists base their argument on the diverse sources of insecurity among human populations. Considering the basic needs of human and all that make people secured or at least meet their common aspirations like shelter, good health, education, food, portable water, protection from any aggression and general freedom without any fear of retribution.

Basically, the human security theory covers all the aspects of human lives that can potentially be endangered in its survival, daily life, and human dignity (Johns, 2014). These concerns are usually the determinants of the state that ultimately defines the security of the nation. This framework gives primacy to human needs and safety and their complex social and economic interactions (Gregoratti, 2020), as well as ways of dealing with threats such as poverty, disease and for the purposes of this study RTA. The human security framework is adopted for this study because of its centrality to understanding deprivations, threats or anything that can undermine peace and stability of communities (Gregoratti, 2020). RTA provides threat, deprivation and undermines peace to humans in terms of the multi-sectoral impact on human life and safety. This framework is relevant to the study as it includes the challenge of providing medical aid and humanitarian intervention for accident victims, their protection against complications and threats. The state remains a central provider of security and state resources are meant to address the needs for human welfare (Gregoratti, 2020). Hence, the multi-sectoral approach to addressing RTA.

It is worth noting that human security framework have been critiqued for its conceptual ambiguity and lack of a precise definition (Paris, 2001), analytically weakness, (Newman, 2010) and its ability to augment hegemonic interest of states that adopt it (Black, 2006; Elizabeth, 2006). Newman (2010) argued that human security can be likened to other equally vague concepts like “sustainable development” – “everyone is for it, but few people have a clear idea of what it means.” Similarly, Newman (2010: 82) refers to it as normatively attractive but analytically weak. Despite these criticisms, human security approach provide a security framework broad enough to encompass anything from environmental degradation and pollution to homelessness and

unemployment, Khong (2001: 232) and road accident and its ability to address the multi-sectoral action makes it even more appropriate for this study.

1.9 Literature Review

The study reviews literature encompassing the areas of human security and emergency medicine and management of road traffic accidents. It reviews how the literature is applicable in addressing RTA in Ghana specifically. Ghana has over the years committed to the Alma –Ata, Declaration of Primary Health Care 1978. This seeks the need for “*urgent action by all governments, all health and development workers, and the world community to protect and promote the health of all people*” (WHO, 1978). The country also signed on to the just concluded MDGs and now unto the SDGs with the aim of achieving Universal Health Coverage (UHC) and other health related indicators of the SDGs. The National Health Insurance was established as a social intervention to aid access to service without financial burden. Equally, the National Ambulance Service and the construction of CHPS compounds in remote areas were instituted to mainly provide public health services and some minor clinical services.

However, a comprehensive assessment of the health sector by Karima (2013) illustrate that although progress have been made over the years, sustainability is a major concern. In her comparison of Ghana to her neighboring countries and other countries of similar income, her study indicates that Ghana has better health indicators relating to maternal and under 5 mortality. (Karima, 2013). The strength of her contribution in requesting for review of the health insurance policy to promote sustainability is seen to be in the right direction. The limitation of her work is precisely in road traffic accident and emergency medicine probably due to the fact that at the

time of her study, such services were not yet introduced and could not be quantified as a prominent health indicator. Investing in emergency services will definitely trigger the health expenditure at the expense of the Government of Ghana. Development Partners (DPs) are focused on communicable diseases and other public health concerns such as HIV, TB and Malaria and vaccines rather than road traffic accidents and their impact.

Managing emergency services to support RTA accidents require the health system to particularly address hospital needs and identify new gaps in intra-hospital service delivery include coordinating emergency medical preparedness and management, data security, patient generated violence, patient safety and privacy. The role of hospital design to receive and manage emergencies, create adequate space for patient triaging and subsequent intra-hospital connectivity creates facilities to support optimal and quick transfer of patient for further intervention during medical emergencies (York, 2015).

Unfortunately, in Ghana most old health facilities lack the appropriate spaces at the facilities to encourage effective triaging and emergency service. The current facilities tend to have separate blocks destined for different specialties with a considerable distance between them which do not support emergency services. This is time consuming for the transfer of patient from emergency to radiology department and to the theater or the Intensive Care Unit for instance. Another area that requires improvement to support emergency services is diagnostics equipment such as laboratory chemical analysers, modern coloured ultrasound machines, CT Scans and MRI in the field of Imaging. This is required for rapid detection of disease and diagnosis during emergencies and

RTA. Also, investment in health promotion and prevention activities could drastically reduce the incidence of RTA.

- **Human Security and National Security**

National Security needs clearer definition as to Human Security and Hometown security. In all aspects are the roles and responsibilities of security agents. National security broadly intends on addressing state-centric related matters while hometown security could be associated to human security by providing protection and welfare to a community. Comiskey (2017) analyse these concepts in a small town in the US comparing them to the national context and concludes that homeland security is much concern of hometown security even when federal government tackles national and international security issues in protection of the Nation. He emphasises on the need for National Strategy for homeland security different from that of National Security (Comiskey, 2017).

Chen and Narasimhan, (2013) analysed the history and reason for emergence using concept of human security and examine its links to global health security, particularly, related to conflicts and violence, poverty, inequality, infectious disease amongst other. They found a directed link between migration, conflicts and poverty which intends aid the emerging and re-emergence and spread of infectious disease including sexual transmitted disease (Chen, 2003). This study helped in policy-making to address human security as a major means of contributing to address National Security. For instance, migrants and refugees may constitute threats to human security in many forms. Poor living conditions, lack of jobs opportunities discrimination among others push migrants to commit crimes for survival. Xenophobic attacks on migrants is a threat to human security and endangers

relationships between governments and National security threat. Similarly as identified by Chenoy, Luke and Peou among others recognize that human security deals with interactions of social change. In a globalizing world, in which threats become trans-national and states lose power, security can no longer be studied in a one-dimensional fashion (Chenoy, 2007; Johns, 2014; Newman, 2010; Peou, 2014; Chandler, 2008).

In the African context, the continent is dotted with states with several years of conflicts, civil wars, decades of coup d'états, natural and manmade disasters, insecurity, constant intra and extra continental youth migration through unconventional routes, helplessly plunged with infectious diseases (Ebola, HIV/AIDS, Malaria, TB, etc), hunger and malnutrition, poverty, drug and human trafficking among many other impoverished conditions, it is right to advocate for human security or people-centric security as to state security. The unmet aspiration of citizens coupled with poor governance and leadership create situations of desperation and emergence of terrorism, kidnapping, arm smuggling and corruption. Tatah (2014) advocates the need to shift from military strategic and state centric security to human security that embraces citizen empowerment and participation (Tatah, 2014). There are millions of internally displaced Africans, proliferation of piracy and small arms might be under analysed but constitute threats to both human and national securities. Abass (2010) stress on the need for interdisciplinary approach to issues of securities is a laudable idea in Africa (Abass, 2010). Ranging from portable water crisis to floods, desertification and deforestation to uncontrolled mining and agricultural activities resulting in to a vicious cycle of water bodies pollution are all identified human security threats with consequences on national securities. The destruction of terrestrial ecosystems, indiscriminate animal hunting, over fishing and drilling of oil with pollution of the sea and destruction of the sea fauna are also

issues that comprise the livelihood of citizens and loss of job leading to migration and conflicts as well as the persistent increase of RTA.

It is based on the complex strategies required to deal with the challenges on the continent that the current African Union Agenda 2063 has shift from state-centric security to human security. The movement of people and goods will also increase the need for better roads, railways, sea and air transport. In any event, emergency medical service must be developed parallel as the increase in movement will trigger more road traffic accidents especially if the current trend of disregards for road signs and poor traffic rules enforcement continuous.

- **Development of Emergency Services in Ghana**

Emergency service is part of a medical practice recognised as a specialty since 1970 in the United States of America. A year after its recognition, an Emergency Medicine Department was established at the University of California Medical School (Sakr, 2000). Although, there has been a gradual rise in disasters, road traffic accidents and climate change events that requires the service of emergency medical providers, developing countries, especially, Africa has not been able to focus and develop this field of medicine. Much is invested into communicable disease as a priority (HIV/AIDS, TB and Malaria) to the detriment of other areas such as emergency services.

Ghana has over the years suffered from many disasters both natural and man-made. Memorable amongst them is the Accra sports stadium disaster of 2001 where 127 lives were lost. This shaped the situation of emergency medicine in Ghana and the event led to the establishment of the National

Ambulance Service (NAS) in 2004 and subsequent the development of policies and guidelines for Accidents and Emergency and also MoH Referral Policy.

These policies provided the way forward to address triaging areas, creation of appropriate casualty areas and training of medical staff in common management of emergency patients. It also led to the provision of some medical emergency equipment to selected facilities especially Regional and Teaching Hospitals. Massive infrastructure development was priorities at the two major teaching hospitals in the country leading to the building of the Accidents and Emergency Center at the Komfo Anokye Teaching Hospital (KATH) and an Accidents and Emergency Block in Korle Bu Teaching Hospital. This also shows how important it is to collaborate towards achieving these priorities. Nevertheless, formal training of emergency nurses and doctors started in 2009 at KATH through a collaboration between the College in KATH and University of Michigan (Forson, 2019).

This formal residency training for doctors and nurses was also complemented with the establishment of the Paramedics Training School at Nkenkesu by the National Ambulance Service (NAS, 2017). These events constitute the first of their kind in the sub-region. After a decade in existence, about 40 Emergency specialist have been successfully trained, more than 250 emergency nurses and over one thousand emergency medical technicians distributed in various ambulance stations nationwide and hospital and regions especially, Tamale teaching Hospital, Ridge Regional Hospital, Cape coast Teaching Hospital, Korle Bu Teaching Hospital and KATH with ongoing training to expand service to other regions (Forson, 2017).

The program has also train some foreign students specifically from Nigeria and expecting to expand training to neighboring countries. They have been very supportive and participatory in major disasters in the country e.g. the “Melcom Disaster” in Accra and the Gas explosion. Short training programs in Basic Life Support and advance Trauma Life support are also being provided to doctors and nurses as continuous professional development (Forson, 2017).

Razak et al, (2002) in the analysis of emergency medical service in Africa, recognizes and advocate the need for Africa countries to priorities this specialty and establish training facilities to this effect. However, they also recognise the capital investment needed towards infrastructure, human resource training and sustainability of provision of services which are usually time and resources consuming. The need for community engagement, patient transfer and referral to definite point of care has also been recommended. The culture of poor maintenance and appropriate rewarding systems for overtime staff are factors for consideration. Emergency service are also viewed from the global context of building resilient health systems especially toward prevention and containment of communicable diseases. Sarah Davis and Kamradt-Scott on “Disease Diplomacy” and “managing global health security” advocate for global systems of disease surveillance and control strengthening, considering the speed of air travel and globalized trade which can easily introduce diseases into countries within few hours. The recent surge of Ebola, MERS, H1N1 and SARS are examples of such easy and fast spread.

To this effect in 2005, Member states of WHO adopted the revision of the International Health Regulation (IHR) requiring all countries to build, develop and strengthen their capacity to contain outbreaks (WHO, 2005). The Center for Disease Control (CDC) in Atlanta is a typical example of

the strength of disease surveillance and control in the USA. Nevertheless, many African countries and for that matter sub-Saharan Africa, lack the required resource to build resilient health systems. Health systems in these countries are determined by donor support which goes into direct vertical programmatic disease intervention creating challenges in other disease areas. The need therefore for rethinking and redirecting funding into health systems strengthening is necessary to achieve this advocacy. The use of modern technology in disease surveillance is critical factor, however, the cost implication is a deterring factor to many developing countries. WHO and other international health related organizations will have to intervene to support most countries financially and technical assistance.

1.10 Clarification of Key Concepts

The study will provide clarification for the following concepts, among others:

- Global Health Security
- National security
- Human Security

- **Global Health Security (Health security as a public health concept)**

The 2007 annual World Health Report (WHR), titled A Safer Future: Global Public Health Security in the 21st Century, (WHO, 2007), defines ‘global public health security’, as ‘the activities required to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographic regions and international boundaries’. Global health is a humanitarian endeavour that seeks to improve the world's health including the most vulnerable peoples, while national security works to protect the interests of people within a

given state. The human security and health security are concepts supported by collective security. Collective security can be understood as a security arrangement, political, regional, or global, in which each state in the system accepts that the security of one is the concern of all, and therefore commits to a collective response to threats to, and breaches to peace (Heywood, 2017; Palgrave, 2017).

- **National security**

This refers to the security of a nation state, including its citizens, economy, and institutions, and is regarded as a duty of government. Although it creates the notion of protection against military attack, national security is now widely understood to include non-military dimensions, including economic security, energy security, environmental security, food security, cyber security etc. Similarly, national security risks include, in addition to the actions of other nation states, action by violent non-state actors, narcotic cartels, and multinational corporations, and also the effects of natural disasters (Morgenthau, 1948; Romm, 1993; Paleri, 2008; Brown, 1983; Maier, 1990).

- **Human security (Personal Security)**

The United Nations Development Programme's 1994 Human Development Report reflects human security as a people-centred and multi-disciplinary understanding of security involves a number of research fields, including development studies, international relations, strategic studies, and human rights. Most proponents challenge the traditional notion of national security by arguing that the proper referent for security should be the individual rather than the state.

1.11 Research Design and Methodology

The research design is predominantly descriptive with elements of exploratory study aimed to examine the process of adopting and implementing global policy such as Goal 3.6 while improving the understanding of the process of achieving it in their natural setting. This basically helps to describe how the SDG Goal 3.6 has been adopted by the key agencies mandated to do so and implemented in Ghana. The exploratory nature of this study can be found in the limited previous information available to enable examine the implementation of the SDG.

To achieve this, the study used various qualitative methods such as semi-structured in-depth interviews and semi-formal conversations with institutional representatives guided by a question guide. The qualitative methods used enable the researcher to carry out face to face interviews to capture the experiences of the respondents as well as probe in areas that require further clarity. The process enabled the researcher to develop a rapport with the respondents which also facilitated the opportunity to seek for supporting documents for some of the discussion held, therefore forming the basis of the secondary data. The advantage of using these qualitative methods is that they offered the opportunity to capture rich data and the complex process of handling the global policies. However, the challenge of this process is that it is time consuming and can only extend to selected respondents with rich experiences or knowledge.

1.12 Sources of Data

This study used both primary and secondary data sources. The primary sources of data consist of information derived from the interviews and conversation with key stakeholders purposively selected to participate in the research. The secondary data is solicited using books, reports,

journals, statistics and unreported data such as memos, meeting minutes, directives, program of work, etc. For instance, institutional data presented during the Ghana Health Service Health Summit, Annual Reports published on the websites of these institutions, policies and guidelines, etc.

Other sources of secondary data include an extensive online literature review using Google scholar search engine and other search engines. This include the search for key concepts and words such as road traffic accidents, injuries, national security, health security, global health security, etc. to enable solicit significant literature to support this study. This provides the necessary data for a scoping review to support this study. A documentary review of MoH 2015-2018 program of work, relevant internal supervisory policies, procedures, practices and annual performance reviews and meeting reports are also considered. A scoping review of literature on road traffic accidents and global implication to worker performance and GDP, helped to conceptualise its impact as a public health concern and human security framework.

1.13 Sampling Strategy

The sampling strategy adopted for this study is primarily purposive to enable selected respondents with specific expertise and knowledge relevant for the study. The sampling frame include all national level institutions contributing towards the prevention of RTA. Overall, 18 respondents were sampled from the institutions listed below. These respondents also referred to other key actors using a snowballing process to enable clarify and get an insight into some of the processes. The process of targeting respondents contributed extensively towards crystallising the understanding around how they engage with Goal 3.6 implicitly or explicitly as well as the challenges faces and

the multi-sectoral nature of their efforts. The researcher also participated in the health summit and annual health research symposium that also provided adequate data.

They key actors engaged in the study and contributed to the data are: the Ministry of Health, National Development Planning Commission, reports and publications Ministry of Interior –Motor Traffic and Transport Department (MTTD), Ministry of Roads and Highways, Ministry of Transport- Drivers and Vehicles Licensing Authority (DVLA), Ghana Highways Authority, Ghana Police Service, National Ambulance Service (NAS), Ghana Red Cross Society (GRCS), National Disaster Management organization (NADMO), Customs Exercise Prevention Service (CEPS), St. John Ambulance, Local Government Service, Food and Drugs Authority (FDA), Ghana Standards Authority (GSA), Ministry of Aviation, Ministry of Railways Development, Ghana Private Road Transport Union (GPRTU), Ghana National Fire Service, Ghana Education Service, National Road Safety Commission and Ministry of Education. Also, the review of international literature and relevant reports, books, journals articles online. Some interviews have also been conducted to relevant stakeholders for primary information to complement the secondary data.

1.14 Data Analysis and Ethical Consideration

The primary data is analysed using thematic analysis emerging from the study. For instance, issues around collaboration or working with other sectors, roles and functions of actors, policies guiding implementation, challenges associated with RTA, significance of RTA, etc. This enabled identify key issues, meaning and patterns of the processes of engaging with the Goal 3.6. It also helped with interpreting the patterns and complexities associated with the phenomenon and reporting the

key findings. The secondary data also used thematic analysis and extraction of data to support the findings reported in this study.

In terms of ethical consideration, approval was obtained from the Legon Centre for International Affairs for Diplomacy (LECIAD). During the study, the research sought informed consent verbally by introducing the purpose of the study and giving respondents the choice to opt in to be interviewed. They were assured of their confidentiality and anonymity at the start of the interviews and conversation and this was observed during the reporting of the findings.

1.15 Limitation of the Study

However, the challenge for this process is that, the findings cannot be statistically generalizable despite its conceptual contribution using human security framework. Other limitations of the study is that the period for the study is too short as the country is still in the planning stage towards adopting and implementing the SDGs. There is also a financial limitation to expand the study and conduct and in-depth evaluation of this interesting study. However, we are hopeful that this study will contribute in setting the ground for further studies into the SDG 3.6 and create awareness to influence national policy on road traffic accidents.

1.16 Organisation of the Study

The study comprises of Four Chapters. Chapter One is the Introduction. Chapter Two is an Overview of SDGs. Chapter Three focuses on the Implementations of SDG: 3.6 in Ghana. The final chapter presents the Summary of Findings, Conclusions and Recommendations.

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CHAPTER TWO

OVERVIEW OF THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

2.0 Introduction and Brief Background of the SDG

In 2012 at Rio de Janeiro in Brazil, the Sustainable Development Goals (SDGs) were initiated at the United Nations Conference on Sustainable Development as a continuum of the Millennium Development Goals (MDGs) which started in the year 2000. The objective of the MGD is to improve global development by focusing on specific goals and targets. The MDG was reported to have made progress in several areas such as: reducing poverty and child mortality, improving access to water and sanitation and maternal health (UNDP, 2011; UN, 2014). The MDG also led to the global movement for free primary education and innovative ways of combating HIV/AIDS and other treatable diseases such as malaria and tuberculosis. This led to key achievements in the area of primary education and health especially, HIV/AIDS among others (Clarke, 2011; Wagstaf, 2004).

Lessons learnt and experience gained from the MDGs created the ground for the SDGs to involve countries' own initiatives in resource mobilization for ownership and sustainability to be all inclusive leaving no one behind. However, some criticism is on how most developing countries may not be able to mobilize the required funds for their implementation. Increasing the goals from 8 in MDGs to 17goals and 169 targets is another source of criticism. Most implementers may not remember all the goals nor speak of all the targets which may lead to lack of focus of attention by the advocacy community (WEF, 2017; Neves, 2018). The SDGs in general are set to be achieved by 2030 and are intertwined. SDG 3.6, which seeks to 'halve the

number of global deaths and injuries from road traffic accidents by 2020 creating an emergency for its achievement/attainment.

- **Sustainable Development Goals (SDGs) in Ghana**

In this chapter, we intend to give a general overview of the SDGs. Equally, we shall elaborate on Ghana's preparedness towards the achievement of the SDGs, the coordinated programme of economic and social development, its implementation through the medium term policy matrix and the linkages and programmes alignments between Ghana's National Medium Term Development Policy Framework (NMTDPF) 2018-2022, the African Union Agenda 2063 and the SDGs Agenda 2030. The National Development Planning Commission (NDPC) is in-charge of planning and coordinating developmental programmes in Ghana and has outlined the coordinated action plan needed by all ministries, agencies and department to achieve the SDGs. The Ghana SDGs Indicator Baseline Report of June, 2018 clearly states the need for common commitment to build the future we want and advocates for a robust and accelerated actions by all segments of society anchored in strong partnership for good results (Govt-GH, 2018). In 2017, the President of the Republic of Ghana, His Excellency President Nana Addo Dankwa Akufo-Addo along with Prime Minister Erna Solberg of Norway, was appointment a co-Chair of the UN Secretary General's Eminent Group of Advocates on the SDGs (UN, 2017). He was reappointed in 2018 to continue as co-Chair for 2 additional years till 2020. Ghana therefore has the political commitment and moral obligation to synchronize all efforts towards the attainment of the SDGs. The SDGs therefore encourage a spirit of partnership between Governments, the private sector, researchers, academia and Civil Society Organisations (CSOs) with support of the UN. This partnership ensures that the right choices are made now to improve life, in a sustainable way, for future generations (UNGA, 2015).

2.1 Overview of the Sustainable Development Goals

There are 17 SDGs with 169 targets to be achieved. We intend to perform an overview of these SDGs and evaluate Ghana's preparedness in general towards their achievement through the Coordinated Programme of Economic and Social Development Policies (2017-2024) and alignment with other international agendas; Agenda 2063; The Africa we want. In a summary, the following are the 17 SDGs (UNGA, 2015; AUC, 2015; UN, 2015; UNDP, 2019).

- End poverty in all its forms everywhere.
- End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
- Ensure healthy lives and promote well-being for all at all ages.
- Ensure inclusive and equitable quality education and promote life-long learning opportunities for all.
- Achieve gender equality and empower all women and girls
- Ensure availability and sustainable management of water and sanitation for all. It calls for clean water and sanitation for all people.
- Ensure access to affordable, reliable, sustainable, and modern energy for all. One in five people still lacks access to modern electricity.
- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

- Reduce inequality within and among countries.
- Make cities and human settlements inclusive, safe, resilient and sustainable.
- Ensure sustainable consumption and production patterns.
- Take urgent action to combat climate change and its impacts (in line with the United Nations Framework Convention on Climate Change).
- Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
- Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Strengthening global solidarity is one of 17 Global Goals that make up the 2030 Agenda for Sustainable Development.

2.2 Ghana's Preparedness for SDGs

The SDGs were launched in Ghana in January 1, 2016. The aim is to foster economic growth, ensure social inclusion and protect the environment globally by the year 2030. The Sustainable Development Goals was launched as a result of the achievements of the Millennium Development Goals (MDGs). They are interrelated and serve a common purpose. Ghana is committed to implement and achieve Agenda 2030; the Sustainable Development Goals (SDGs) and has therefore aligned the SDGs to the Medium Term Development agenda (2018-2021) and that of Agenda 2063 of African Union (AU). The 1992 Constitution of Ghana states the prerogative of

the President of the Republic to ensure the welfare, security, freedom and happiness of every person in Ghana. The reason why every president has to put in places policies to guarantee economic growth and well-being of every Ghanaian is reflected in Article 36 of the 1992 Constitution of Ghana (The Constitution, 1992).

- Article 36 Clause 1: “The State shall take all necessary steps to ensure that the national economy is managed in such a manner as to maximise the rate of economic development and to secure the maximum welfare, freedom and happiness of every person in Ghana and to provide adequate means of livelihood and suitable employment and public assistance to the needy”.
- Article 36 Clause 5:” ...Within two years of assuming office, the President shall present to Parliament a coordinated programme of economic and social development policies, including agricultural and industrial programmes at all levels and in all regions of Ghana”.

2.3 The Coordinated Programme of Economic and Social Development Policies (2017-2024)

Per Article 36 Clause 5, President Akufo-Addo presented his Coordinated Programme of Economic and Social Development Policies to Parliament on 20th October 2017. The president outlined his Vision as to create “An optimistic, self-confident and prosperous nation, through the creative exploitation of our human and natural resources, and operating within democratic, open and fair society in which mutual trust and economic opportunities exist for all” (NDPC, 2017).

To achieve the vision and some strategic goals were defined as follows:

- Create opportunities for all Ghanaians;
- Safeguard the natural environment and ensure a resilient built environment;

Key strategic anchors to drive growth and development are:

- Restoring the economy;
- Transforming agriculture and industry;

In continuation are examples of some of the sector goals and objectives and the corresponding flagship developments.

2.3.1 Economic Development

Goal: To build a prosperous country. Key policy objectives:

- a. Strengthen monetary discipline and financial stability;
- b. Ensure improved fiscal performance and sustainability;
- c. Promote international trade and investment;

Flagship initiatives:

- a) “One District, One Factory” initiative;
- b) A paperless transaction processing system at all ports of entry and introduction of mandatory joint inspections at the ports;
- c) Establishment of an electronic payments system;
- d) Social Development

The overall goal of the government’s social development strategies, over the medium term, is to create equal opportunity for all. This entails:

- a. Expanding opportunities where large-scale job creation is possible;
- b. Expanding access to and improving the quality of education at all levels for all socio-economic groups;

Objectives include:

- a. Enhance inclusive and equitable access to and participation in quality of education at all levels;
- b. Strengthen the healthcare management system;
- c. Ensure food and nutrition security;

Flagship initiatives:

- Implement the policy of free education for all Ghanaian children up to senior high school;
- Redefine basic education to include secondary education;
- Restructure the National Health Insurance Scheme (NHIS).

2.3.2 Environment, Infrastructure and Human Settlements

Under this heading, the Goal is: to ensure a resilient built environment while safeguarding the natural environment. The Objectives include:

- a. Expand forest conservation areas;
- b. Ensure sustainable extraction of mineral resources;
- c. Promote sustainable water resource development and management;
- d. Improve quality of life in slums, Zongos and inner cities.

The Flagship Initiatives:

- Implement the Water-for-All programme to ensure every Ghanaian has access to potable water;
- Establish a digital addressing system;
- Establish a national database, using the National Identification System as the primary identifier, with linkages to the databases of institutions.

2.3.3 Ghana's Role in International Affairs

This is an area of great interest to Ghana to implement its politico-socio-economic growth agenda as the international community is vital in each process be it our neighbours, the Africa continent and its regional grouping or at extra-continental level.

The overall goal of medium-term is therefore to strengthen Ghana's role in international affairs.

Objectives:

- a. Promote a globally competitive foreign service;
- b. Enhance Ghana's international image and influence in international organizations
- c. Leverage Ghana's governance and security credentials to promote our political and economic interests abroad;

Flagship Initiatives:

- 1 Reposition the Economic Trade and Investment Bureau (ECTIB) to serve as the link between Ghana's Missions abroad and MDAs and other stakeholders at home;
- 2 Establish an Office of Inter-Ministerial Coordination (OIMC) on foreign affairs and related issues;
- 3 Facilitate linkages between Ambassadors and High Commissioners and MMDCEs with a view to maximising investment and trade opportunities for local authorities.

2.4 Implementation of the Coordinated Programme of Economic and Social Development Policies (2017-2024)

The following steps and process are involved in the implementation of the coordinated programme of economic and social development policies (2017-2024).

- Preparation of Medium-term Development Policy Framework (2018-2021) based on the Coordinated Programme;
- Preparation of Plans by Ministries, Departments and Agencies; and District Assemblies;
- Integration of district plans and MDA plans into a National Plan.

This process is however time consuming and requires 1 to 2 years and sometimes even beyond for completion. It is therefore easily affected by any political change.

2.4.1 Medium-Term Policy Matrix

Medium-term policy matrix if duly completed will provide the following:

- Goal
- Focus areas
- Issues
- Policy objectives

This will help in a more effective and efficient ways of using national resources avoiding wastages and duplications. It also sets a national agenda which can easily have a buy-in by donor partners and other international organizations. The below table serves as an example of how the linkages are being done.

Table 2. 1: Linking Agenda 2063, Agenda 2030 and National Medium-Term Development Plan Framework (NMTDPF) 2018-2021.

STRATEGIC GOAL	FOCUS AREA	POLICY OBJECTIVES	GLOBAL /REGIONAL LINKAGES
GOVERNANCE, CORRUPTION AND PUBLIC ACCOUNTABILITY Goal: Maintain a stable, united and safe society	CORRUPTION AND ECONOMIC CRIMES	Promote the fight against corruption and economic crimes	SDG 12, 16 AU 11,12, 13
	LAW AND ORDER CIVIL SOCIETY, AND CIVIC ENGAGEMENT	Promote access and efficiency in delivery of justice Improve participation of civil society (media, traditional authorities, religious bodies) in national development	SDG 16 AU 11,12, 13 SDG 1, 10, 16,17 AU 11, 12,13
	ATTITUDINAL CHANGE AND PATRIOTISM	Promote discipline in all aspects of life	SDG 4, 12, 16, 17 AU 2, 11,12
	DEVELOPMENT COMMUNICATION	Ensure responsive governance and citizen participation in the development dialogue	SDG 16, 17 AU 11,12
		Demystify the Presidency and bring the President closer to the people	SDG 16 AU 11,12
	CULTURE FOR NATIONAL DEVELOPMENT	Promote culture in the development process	SDG 4, 8, 12, 16, 17 AU 11, 12,16

Source: NDPC Indicator Baseline Report, 2018.

It is appreciable for example, under the strategic goal on governance, corruption and public accountability, the focus area is on corruption and economic crimes with the policy objective to fight against corruption and economic crimes which in the global level is captured under SDGs 12 and 16 and reflects in AU Agenda 2063 goals 11, 12, 13. Therefore the need to establish these linkages to avoid duplication of efforts and finances.

2.5 Conclusion

Ghana has a well-coordinated and integrated plan in situ to achieve the SDGs. However, mere plans are not enough but an implementation strategy that abides by the established timelines and with the required resources available, both human and logistics, are considered necessary to materialise the plans including achieving Goal 3.6. Although there is the highest political commitment, as the president has been appointed co-Chair since the year 2017 and reappointed till the year 2020 there is also the need for commitment and involvement of all sectors and all walks of life with a change of mind-set. This change of mind-set should be clear that the achievement of the SDGS are based on local domestic resources mobilization, there should be a sense of ownership and ultimately the understanding that they are meant to drive the country into a better future, the future it desires for generations to come.

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CHAPTER THREE

KEY FINDINGS ON SUSTAINABLE DEVELOPMENT GOAL 3.6 IN GHANA

3.0 Introduction

This chapter presents the key findings from the study in line with the objectives stated in Chapter One, to: examine the SDG 3.6 and its relevance to RTA in Ghana; explore the causes of RTA; the role of the Ministry of Health (MoH); and the roles of other key stakeholders. In presenting on these findings, the researcher examined the activities and efforts, policies and process of achieving SDG 3.6 and dealing with road traffic accidents in Ghana.

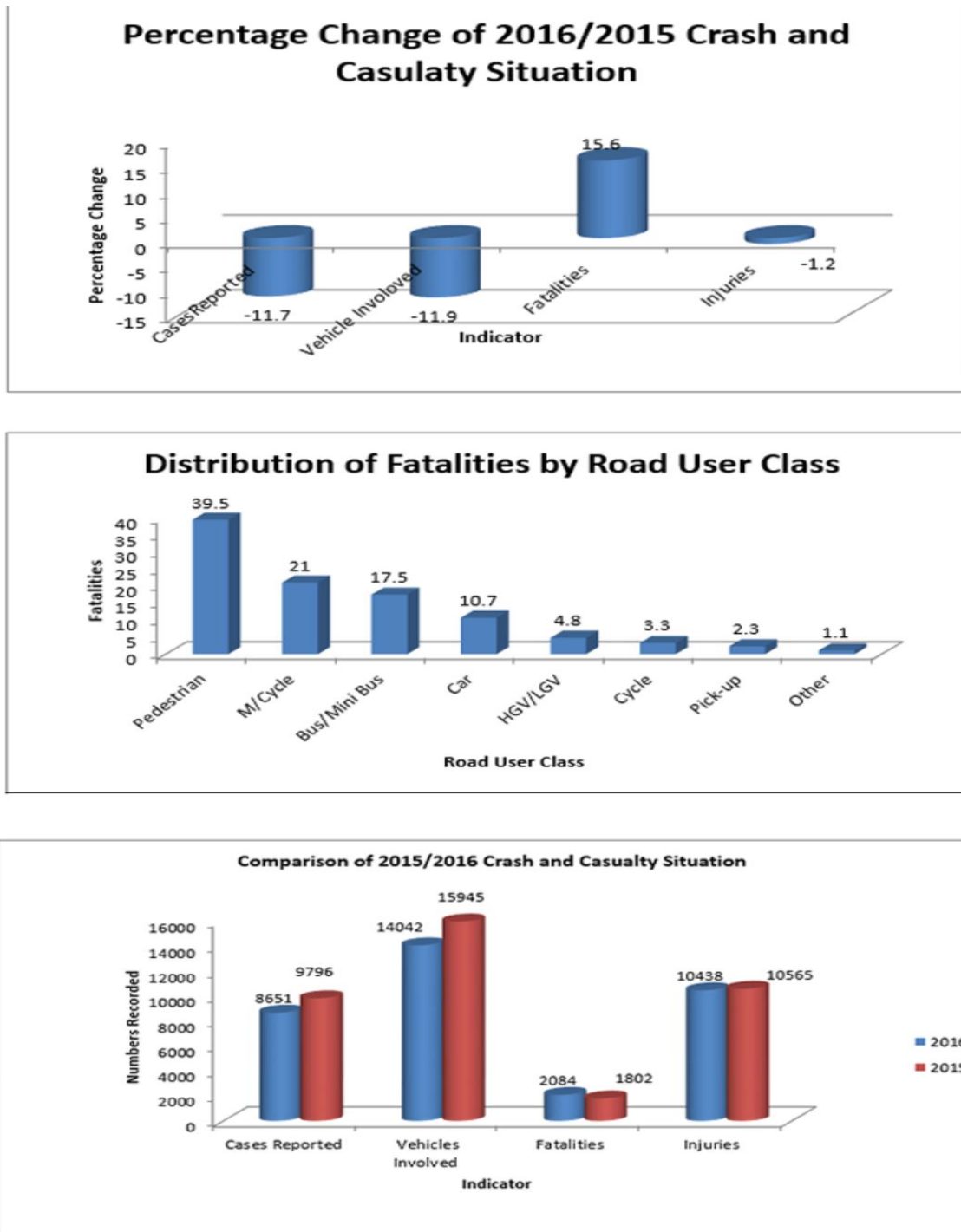
3.1 Sustainable Development Goal 3.6 and its Relevance to RTA in Ghana

The SDG 3 states to ensure healthy lives and promote well-being for all at all ages. SDG 3.6 seeks to ‘halve the number of global deaths and injuries from road traffic accidents by 2020’ (WHO, 2016; UN, 2019). The goal 3.6 is relevant to Ghana and valuable if adopted because of the persistent high rates of fatality resulting from RTA. According to the National Road Safety Authority’s (NRSA), 2016 Road Traffic Crash statistics, there is an increase of 15.6% in fatalities and 6.77% in serious injuries between 2015 and 2016, despite a significant reduction of 11.7% in reported crashes from 9,796 in 2015 to 8,651 of the total reported crashes in 2016. In 2015, the total number of vehicles involved in RTA was 15,945 as compared to 14,042 in 2016 (NRSA, 2015; NRSA, 2016; NRSC, 2017). This demonstrate a reduction in crashes since the adoption of the SDGs but there was no corresponding reduction in fatalities and injuries.

Similar reports were made from the region indicating with variations on gains made and points of concerns. The Greater Accra region made the highest gains between 2015 and 2016 by recording the highest decrease (-22.1%) in fatal crashes as compared to the Upper West Region (-2.5%). The remaining eight regions reported increase in fatal crashes indicating points of concern for RTA. There were percentage increase in fatal RTA in the Northern (34.9%), Volta (34.5%), Eastern (30.4%), Brong Ahafo (26.1%), Upper East (20.5%), Central (18.8%), Ashanti (11.3%) and Western (2.2%) between 2015 and 2016 (NSRA, 2018). The Ashanti Region is a major area of concern because it recorded “the highest number of fatalities, totalling 403 deaths which represented 19.3% of all fatalities in Ghana” in 2016, followed by “Greater Accra Region (367 deaths; 17.6%), Brong Ahafo (299 deaths; 14.3%), Eastern (293 deaths; 14.1%), and Central (213 deaths; 10.2%). Overall, the statistical evidence of recent RTA has led to increases in injuries and fatality despite some gains made in the total number of crashes (NRSA, 2018). It is for this reason that the adoption of the Goal 3.6 and the coordinated effort of key actors is required to reduce or prevent to incidence of RTA in Ghana. Figure 3.1 illustrates some comparative indicators on road traffic accidents in Ghana between 2015 and 2015 compiled by the National Road Safety Authority.

“The indicators are alarming. We have identified the hotspots and we shall mount some structures with some trained persons to help evacuate the victims and provide first aid. A lot needs to be done if we want to achieve the SDG Goal 3.6, In fact, I don’t think we can achieve it”. (NRSC Officer1, 2017).

Figure 3. 1: Road Traffic Crash Statistics 2015 According to NRSC



Source: NRSA, Road Traffic Crash Statistics 2015, 2016.

Figure 3.1 shows that although 2015 recorded higher number of vehicles involved in accidents (15,945) and higher number of cases reported (9,796) compared to 2016, (14,042 and 8,651 respectively), the total number of accidents in both years remain high above 8,600. Moreover 2016 recorded more deaths (2084) and both years with high number of injuries above 10,000 which constitutes a burden on health service delivery and the economy among others. In general, pedestrians recorded the highest fatality indicating how unsafe roads are for pedestrians, followed by motor cycles which has always been of concern as there is a general disregard for the use of helmets and violation of traffic lights. Mini buses and cars also contributed to the increase number of accidents. However, pick-up vehicles were found to be least involved.

In summary, reducing and preventing RTA, and managing emergencies that arise during RTA are the main reasons why SDG 3.6 is relevant in Ghana to enable ‘halve the number of deaths and injuries from road traffic accidents by 2020’. Despite what is being done towards reducing RTA by the National Road Safety Authority, it is evident that a lot more is required to achieve goal 3.6 and needs the participation of multiple key actors to prevent and manage RTA.

3.1.1 Implementing Goal 3.6 in relation to Policies and Advocacy on RTA

The National Road Safety Authority (NRSA) is the leading agency for the prevention of RTA in Ghana. The NRSA have developed various policy documents to support their function prior to the adoption of the SDGs in 2016. Some of these policies include: the National Road Safety Commission Act 1999 (Act 567) that establishes that the NRSA, its administrative functions and financial provisions. The National Road Safety Strategy (NRSS) is the framework for road safety management in Ghana. The NRSS presents a series of ten-yearly strategy plans towards road safety

in Ghana. The current National Road Safety Strategy III (NRSS III) represents the strategy between 2011- 2020. The primary objective is to “halt the unacceptable levels of road traffic fatalities and injuries by 2015, and thereafter, reduce it by 50% by end of 2020 as recommended in the United Nations (UN) Global Plan for the Decade of Action for Road Safety 2011-2020”, (NRSS III, 2011-2020).

In 2012, the NRSA also undertook a study on the impact of driving under the influence of alcohol which provided evidence for the guideline on driving under the influence (NRSA, 2012). The study found that drink driving is very prevalent in Ghana and commercial drivers are 41% more likelihood to drive under the influence of alcohol than private drivers. Also, 95% of respondents have no knowledge of the legal limit for alcohol consumption limit for driving. This study led to the development of the National Alcohol Management Programme for drivers with activities such as: (i) regular roadside breathalyzers for drivers, (ii) fines for drivers who exceed the legal limit, (iii) severe punishment for drunk-driving recidivism, and (iv) reformation programme for drivers who exceed the legal alcohol limit three times in a year (NRSA, 2012).

Besides these policies and research documents, there are other communiqué, press releases, guidelines and action plans. The press release on the National Easter Campaign on ‘Stop Road Accident Now’ is an initiative against road accidents during the Easter breaks; (NRSA, 2018), the installation of first aid post at strategic locations along national road networks in collaboration with the Ministry of Health and the World Bank. Another Press Release to celebrate the West African Road Safety Organization Day campaigned to promote safe road transport in the sub-region and raise awareness on safety (NRSA, 2018). These press releases are used for advocacy,

announcing RTAs, key policy changes and initiatives and action plans and joint efforts towards the prevention of RTA.

Interventions are informed by evidence, policies and actions points significant towards the prevention of RTAs. According to the NRSS III (2019), Ghana has made gains since the 2000 towards preventing road crashes, injuries and fatalities. However, there are areas such as road networks, enforcements of speed limits, effective licensing of drivers and vehicles, improved emergency services and the enforcement of road worthiness and behaviours that result in road crashes such as driving under the influence of alcohol and drugs, seatbelt usage and driver fatigue. The framework reports an average RTAs of 1,800 deaths and 14,500 injuries per annum leading to an estimated 1.6 percent of Ghana's Gross Domestic Product (GDP) (NRSS III, 2011-2020; Enu, 2014).

Key findings from these secondary sources of data shows that Ghana already has existing road safety regulation to prevent and manage RTA led my National Road Safety Authority. However, the NRSA is not the only agency working towards the prevention of RTA as there are various aspects that require Emergency Medical Services led by the Ministry or health, various enforcements led by the Ministry of Interior, Ministry of Transport and the Ministry of Roads and Highways. The study showed that Goal 3.6 is relevant to tackling RTA in Ghana as the country carries a very heavy burden of medical emergencies, trauma and injuries that have long become of public health concern. Overall, there is a huge injury burden that occurs daily or weekly resulting in severe disability and preventable deaths.

3.2 Causes of RTA in Ghana

There are multiple causes of RTA in Ghana that leads to avoidable accidents, injuries and deaths. Most of these causes can be classified into: human, mechanical and other environmental factors. With regards to the human factors in recent times, the most commonly reported causes of RTAs are the indiscipline on the roads and disrespect for road signs, speed limits, traffic lights, driving along the hard-shoulders and overtaking in traffics. Personality attitude, arrogance and overconfidence, negligence, poor risk perception, refusal to use seat belts, helmets and road rage or anger have all led to human errors couple with poor driving skills (Coleman, 2014; Enu, 2014). Also, the use of mobile phones and other mobile devices worldwide and including Ghana are increasing becoming the causes for human errors as much as communication while driving (Nyamuame, 2015; Afukaar, 2003; Violanti, 1997). Poor visibility at certain times of the year especially during harmattan season and at night, gate-tailing or driving too close to the vehicle ahead of the driver, disruption of the driver and the role of pedestrians are all parts of human causes of RTAs in Ghana (Amedorme, 2014). Pedestrians or road users experience the highest fatalities (824; 39.5%) followed by motorcycle users (437; 21%) and then bus occupants (364; 17.5%) (NRSA, 2018). For trucks and buses, the common cause of RTA is overloading and drunk driving. Over speeding and overloading of vehicles despite the existence of axel points and police barriers are all considered factors leading to the causes of RTA and avoidable deaths (Amedorme, 2014; Siaw, 2013). Drunk driving is also captured as a major finding especially during weekends when most people are returning from festivities including funerals celebrations (Damsere, 2014). Advertisement of alcoholic beverages, the different types of local alcoholic drinks and abuse by the youth was a major concern for the MTTD. Another notable concern is the link between RTA

and festivities and celebrations. Below are some of the comments made by respondents in support of the causes listed below:

“We are very worried of the carnage on our roads and that is why we the Police go all out on our roads but we cannot be everywhere. People over speed even when going to a funeral. Weekends are terrible” (Police-MTTD Officer, 2017)

“The lack of pedestrian walkways is contributing to accidents in Ghana. Elsewhere, they have lanes for bicycles and pedestrians. The commission is seriously advocating for pedestrian walkways as part of road contracts.” (NRSC Officer, 2017).

RTAs attributed to mechanical errors mostly include brake failures resulting from worn or faulty brake pads, An anti-lock braking system (ABS) malfunction and worn out brake lines and discs. Other causes include: burst tires, poor tire pressures, the use of threaded and expired tires, using second-hand, faulty and fake parts, wear and tear, poor vehicle maintenance and servicing, faulty or worn out wipers, among others (Coleman, 2014; Damsere, 2014). Various other defects relating to mechanical errors include steering wheels, engines, brakes, the front tires, or cracked windshields, inappropriate use of headlights and taillights. Also included is loss of control resulting from suspension and transmission problems among others (NRSA, 2018). It is for this reason, the authorities emphasize the road worthiness of vehicles on our roads to ensure they meet the mechanical standards required and safe to be on the roads. The comments below:

“Here, we ensure that all vehicles are road worthy, I can assure you that. It is for the car owners own safety. We have modern equipment to diagnose most of the faults. People leave

here and drive carelessly and that is why so many accidents on our roads” (Officer DVLA, 2017).

Environmental factors such as the worsening traffic situations in most cities in Ghana such as Accra, Kumasi, Cape Coast, Takoradi and Sunyani contribute to the increase in RTA. Factors such as poor road networks in both rural and urban areas, floods and raining seasons, potholes, works and poor road markings, etc. make up some of the identified environmental factors (Amedorme, 2014; NRCA, 2018).

In effect, these causes are not exclusive to each other but they may be interconnected depending on the diagnoses of the RTA. For instance, using the mobile phones while driving, instead of blue tooth devices in old vehicles with weak brakes is a recipe for RTA. Also, drivers who do not have warning signs such as triangle to warn other passengers of dangers ahead may cause RTAs. Equally, driving in a poor weather such as rain, harmattan, etc. with low visibility or poor vehicle tyres will reduce the contact with the road due to wet road is a common example of the factors considered to cause of RTA.

Not to underestimate animals crossing the road especially in rural areas, vehicle design defects, poor vehicle maintenance (tyres, windscreen, brakes, headlights, tailing lights, windshield wipers, or mechanical in general) are issues considered to influence the incidence of RTA. The sudden appearance of animals, bird droppings affecting visibility, and unexpectedly finding animals in the vehicle are all examples of how animals influence RTAs. What became evident from the study is that there are factors leading to the causes of these road accidents. See the discussion below:

3.2.1 Factors Leading to the Causes of Road Traffic Accident in Ghana

Key stakeholders with mandate to tackle RTA reported the factors leading to the causes of road accidents in Ghana. There is a general consensus over the lack of adequate resources (financial and human) to address the issue of RTA nationwide. This has led to the lack of enforcement of rules and regulations by the law enforcement agencies especially the MTTD in the control of drivers and motorists, CEPS in controlling the types of used or accident vehicles imported into the country and DVLA in terms of road safety clearance and the issuance of driving license.

However, explanation to most of the above mentioned issues were justified by lack of logistics or inadequate resources including deploying qualified human resources. Poor driving skills and indiscipline of motorist towards existing road traffic regulations and law enforcement agencies coupled with lack of pedestrian walkways and poor road infrastructure with potholes have all been identified as leading causes of RTA.

Bribery of government officials responsible for enforcement of the rules and regulation is reported to be one of the primary factors leading to poor enforcement, violation of the rules and increasing indiscipline on the roads. It was reported that most officers will take bribes instead of enforce the law or rules. However, it was recognized to be a bad behaviour that does not only lead to accidents but encourages poor behaviours of motorist as they know they can violate the rules and escape without any serious consequences. As such lack of severe punishment for drivers who violate the established regulations was recognized as a key factor in reinforcing poor behaviours and attitudes of motorists instead of deterring them from behaviours that leads to RTAs.

“We have several challenges with enforcement of the traffic regulations in the country. The lack of good roads and logistics for officers to patrol these roads are to be considered seriously.” (Police-MTTD Officer, 2017).

3.3 The Role of the Ministry of Health

The Ministry of Health is the government ministry that is responsible for health in Ghana. It is involved in providing public health services, managing Ghana's healthcare industry and building facilities and medical education system. Its main function is to give policy directive in the health sector. The MoH and its agencies have the responsibility to ensure a healthy population for a wealthy nation. In this regard, it is responsible for health promotion, prevention of infectious and non-communicable diseases, curative activities, rehabilitation of the injured and the sick, palliative care for terminal illnesses and appropriate handling of the death including those from road traffic accidents.

“The ministry has the role to formulate policy and make sure that government’s policies on health are implemented to the letter by the agencies. So we constantly set targets through the Medium Term Development Plan and Health Sector Objectives. We monitor and evaluate the implementation and reward best performing agencies”. (MoH Officer, 2017).

The MoH has 23 agencies with different specific mandates. Nevertheless, all the agencies collaborate and cooperate significantly to deliver quality health care. Among the agencies directly involved in the handling of RTA are the National Ambulances Service (NAS), the Ghana Health Service (GHS) and Teaching Hospital, Faith-based Organizations, the Food and Drugs Authority

(FDA), Health Facility and Regulatory Agency (HeFRA) and National Health Insurance Authority. The ministry also has a directorate to coordinate the private sector, quasi government hospitals, coalition of NGOs in Health and Civil Society Organizations (CSO).

The Ministry of Health and its agencies have a major role in implementing RTA with the aid of its agencies and those from other sectors such as the Ministry of Interior through its Motor Transport and Traffic Department; Ministry of Transport' Drivers and Vehicle Licensing Authority and National Road Safety Authority to enforce road traffic regulations and promote road safety; the Ministry of Roads and Highways to improve on road constructions and maintenance; the Ministry of Information's National Media Commission to engage in active health promotion and preventive activities among others. This demonstrates the multi-sectoral approach to implementing and achieving Goal 3.6 with complexities of coordination, poor resources and inadequate infrastructures. Safe road traffic promotion and preventive activities and lack of the appropriate investment in institutions responsible for pre-hospital care including the National Ambulance Service is another challenge.

“Our major challenge is financial resource to tackle all the issues outline in the sector wide objectives including RTAs. We frequently fall on donor partners like WHO, USAID, among others to assist. Much of our budget allocation is for salaries, over 75% leaving very little for other important projects. We are managing and doing our best to provide assistance to the agencies.” (MoH Officer, 2017)

We have many policy documents in the area of RTA, like the Referral Policy, the guidelines for emergencies, strategic location and construction of health facilities. But we have

funding gaps and many uncompleted projects due to the financial constraints but we are working on it” (MoH- PPME Officer, 2017).

The above comments demonstrate the linkage of the role of the MOH and its agencies to the reduction and management of RTA. Although, managing and reducing RTA activities is not their primary functions, it is integral enough for policies and structures to be developed towards addressing RTA and its effects on lives and wellbeing. Some of the policies are explained in the documents discussed.

3.3.1 The Hospital Strategy Document

The hospital strategy document is one of the bold initiatives by the health sector to reverse the negative trends and inefficiencies in the country’s hospitals in line with the Ministry’s objectives for the medium and long term plans. It primarily analyses the state of the public hospitals and recommends strategies to address some of the key issues affecting public hospital services, hospital management and capital development.

“This draft policy document for hospitals reforms in the health sector was developed many years ago, has not been really implemented and we are currently planning to review it. It is a good document for everything including emergency services” (MoH- PPME Officer, 2017)

The Hospital Strategy document outlines the 3 major areas to be developed within the health sector and implementation strategy as following:

- Hospital Services: Situational Analysis, Health Status, Utilisation of Hospitals and Recommended Strategies. hospice
- Capital Development Plan, Situational Analysis, Capital Development, Construction of health facilities and Recommended Strategies
- Hospital Management Situational Analysis, General Administration and Management, Management Systems, Financial Management, Human Resources Management, Recommended Strategies.
- Implementation Plans, Services, Capital Development, Hospital Management (MoH-I, 2012).

Health care delivery in the country is provided on three levels in a stepped-care approach. This is based on considerations of local epidemiology, resource allocation and technology so as to provide efficient health service which is accessible to all. Primary Health Care (PHC) services, the first level of health delivery, is provided at the community, sub-district and district levels. Secondary care is provided at the regional hospital whereas tertiary care, is provided at the teaching and specialist hospitals. Historically, hospitals were built at various sites in the country by the MoH and other health providers with the general idea of providing outpatient and inpatient care for the population. However, these were done without clearly defined roles and functions in the country's health care system. Recent developments such as the creation or conversion of some regional hospitals into teaching hospitals and medical schools are calls advocated for to expedient review and implementation of the document to ensure equitable distribution of health infrastructure in the country.

3.3.2 Capital investment

Capital investment in health infrastructure and facilities are important to support and minimise the effects of RTA in Ghana. The Ministry's Project Implementation Unit (PIU) is the unit responsible to coordinate the construction of public health facilities in Ghana. Available data at the PIU of the Ministry of Health confirmed through interview shows how the government through the MoH is investing a lot in turn-key capital projects. Apart from the existing health facilities, many more facilities are being constructed with the intent to include emergency services. Among these are the University of Ghana Medical Centre, the Greater Accra Regional Hospital, the Police hospital under construction, the Madina Hospital, Shai Osu-Doku hospital in Dodowa and the Maritime hospitals.

Also, an Accident and Emergency Centre, Stroke and Burns blocks all in Korle Bu Teaching Hospital. Other nationwide projects are renovation of the Upper East Regional Hospital, Bolgatanga, Military Hospital in Kumasi, 2 Regional Hospitals in WA and Kumasi, 6 District Hospitals for Salaga, Nsawkaw, Tepa, Konongo, Twifo-Praso and Madina, Accra. Completion of a 900-bed capacity maternity block in Komfo Anokye Teaching Hospital in Kumasi. District hospitals in Fomena, Abetifi, Sekondi, Garu, and Rehabilitation of Takoradi European Hospital. Construction of 20 Polyclinics distributed in Adenta, Ashaiman, Bortiano, Eduman, Sege, Bisease, Gomoa Dawurampong, Binpong Akunfude, Etsii Sunkwa, Asikuma Gyamena, Agona Duakwa, Biriwa, Ekumfi Naakwa, Twifo Atimokwa, Gomoa Potsin, Akontombra, Elubo, Nsuaem, Bogoso, Wassa Bunkwa and Mpohor.

“Despite these facilities being under construction, there are still some expected upcoming projects” (, MoH-PIU Officer, 2017).

Below are some of these upcoming projects:

3.3.3 Upcoming projects

- a) Six Public Public Health Facilities in the Western Region
- b) Refurbishment and retooling of 4 Selected facilities (Aburi, Atibie, Tetteh Quarshie, Mampong, Kibi)
- c) Completion and Equipping of Bekwai District Hospital
- d) Completion and Equipping of Bolga Hospital, Ph III
- e) Construction and Equipping of Eastern Regional Hospital, Koforidua
- f) Completion and equipping of Maternity and Children’s Block, KATH

As indicated by respondent, these projects if accomplished will significantly help improve care of accident patients and reduce the high rate of morbidity and mortality creating one of the basic pillars of access to health care which is availability of the facilities. These facilities will host units that include emergency units, rehabilitation, occupational therapy, prosthesis and orthotics, etc. to adequately address the needs of an accident patients. However, current health infrastructure in the country stands as illustrated in the below table.

Table 3. 1: Facility and Ownership

Region	CHAG	Other Faith-Based	Government	Private	Quasi-Government	Total
Ashanti	62	0	1269	256	8	1595
Brong Ahafo	37	0	796	113	8	954
Central	21	0	455	99	3	578
Eastern	22	0	906	89	3	1020
Greater Accra	9	1	599	450	28	1087

Northern	26	0	622	40	5	693
Upper East	19	0	323	27	1	370
Upper west	20	0	330	13	1	364
Western	20	0	658	53	1	732
Volta	27	0	725	146	13	911
Ghana	263	1	6683	1286	71	8304

Source: CHIM/PPME-GHNB: Data for Quasi Government, Islamic and Private Hospitals are incomplete. 2018.

The above table illustrates the existing health facilities by regions and ownership. It is evident that government is the main driver of health services with over 6683 followed by the private sector 1286 and CHAG 263 respectively. Most of these facilities support services related to RTA as will be demonstrated in the next subsection.

3.3.4 Service Delivery

There are existing service delivery policies and guidelines developed by the MoH to guide all agencies in the management of accidents and emergencies as indicated by officer of the MoH Policy Planning Monitoring and Evaluation (PPME) Office. These documents include the Policy and Guidelines for Hospital Accident and Emergency Services in Ghana and the Ministry of Health Referral Policy and Guidelines.

3.3.5 Policy and Guidelines for Hospital Accident and Emergency Services in Ghana

The goal of this policy is to establish efficient and effective Accidents and Emergency Department (A&E) services to reduce disability, morbidity and mortality in hospitals. The policy makes provision for an area in the health facility shall be designated as Accidents and Emergency

Department/Unit (A&E). The A&E department/unit shall operate a 24-hour service and provide initial treatment for a broad spectrum of illnesses and injuries, which may be life threatening and require immediate attention.

The policy most importantly stipulates that financial consideration should not be a barrier to the initial treatment of the patient (MoH-Gh, 2011). The policy and guideline documents also provide directives as to the creation of Emergency Unit in all levels of care, medicine requirements, standard equipment and supplies requirement depending on level of facility, continuous professional development of core staff working in such units. The document also further states that all the core staff working at the A&E unit should be re-certified every 3 years by accredited training teams and institutions.

The document establishes that Hospital Management should ensure that all those working in A&E have training in emergency care. Core Team members such as doctors, physician assistants and nurses should at least be trained in:

- Basic Life Support (BLS)
- Advance Cardiac Life support (ACLS)
- Advance Trauma Life Support (ATLS)
- Paediatric Advance Life Support (PALS)
- Triaging
- Recognition and Management of the critically ill. (MoH-Gh, 2011)

Non- Core Staff: Training of other staff (non-core) should include:

- Enrolled Nurses (Health Assistants): At least BLS, Automated External Defibrillator (AED).
- Health Care Assistance/Health Extension Officers: At least BLS and AED.
- Orderlies & Porters: BLS and Patient transport

Finally, the A & E policy document emphasis on monitoring and evaluation of emergency care in health facilities, Ethics of Emergency Unit and the medico-legal implications and procedures for deaths in the A & E and “Brought-in-Dead”. They also noted that although the policy has been in existence for the past 8 years, its full implementation has been a challenge. Also, most facilities constructed several years ago did not factor triaging areas as compared with modern facilities. This implies that hospital management has to invest their Internally Generated Funds (IGF) to restructure old facilities. Nevertheless, this is a policy that directly affects the management of road traffic accidents and its implementation is necessary for the achievement of target 3.6.

3.3.6 Ministry of Health Referral Policy and Guidelines

To complement the A&E policy document, the Referral Policy and Guideline was developed to give direction to national and international referral system. The policy addresses the types of referrals and general principle for referrals as well as the issue of medical evacuation and international referrals. The document explains the processes of national or internal referral; inter-facility referrals from lower level facilities to higher levels and vice versa and international referrals from Ghana to abroad or from other countries into Ghana (MoH-Gh, 2012). The policy also harmonises the referral system by defining roles and responsibilities of the referring and

receiving health facilities and by so allowing for better communication between health facilities in the country.

Its implementation is meant to improve efficiency of the National Health Insurance Scheme (NHIS) in secondary and tertiary hospitals as well as specialized facilities and to a great extent will help curtail the 'no bed' syndrome where emergencies that arrive in ambulances are turned away without any basic first aid or attempts to alleviate the suffering of patients. The policy clearly defines the referral process and the interfaces between the ambulance service and facilities, appropriate management of emergency patients on site, appropriate management of patients during transport, communication of patient care and transport, complementary between pre-hospital and hospital activities, medico-legal issues, monitoring and evaluation feedback.

Challenges to adhere to the gatekeeper system has been defined as the major concern to the ministry. This in part is due to lack of logistics and inappropriate adequate human resource at the lower levels or in least endowed regions especially regions within the Savannah Accelerated Development Authority (SADA) zone. The national referral system in general is facing lots of difficulties with adherence, most patients walk in directly to health facilities for care without adherence to the gatekeeper system. Nonetheless, this policy mandates the establishment of early response system for onsite response, evacuation, on transit care and appropriate care in the final destination where all the necessary human resource and logistic are available.

3.3.7 Human Resource for Health

The ministry has contracted a consultant service to conduct a human resource gap analysis to define the different levels of facilities and the human resource needs by category as gathered from interviewed officer of Human Resource Directorate (HRD). Emergency service personnel is definitely in high demand. The conclusion of the work will not only define the gap but also help in the redistribution of many health staff unevenly distributed with majority living in the cities especially Accra and Kumasi. The gap analysis will also help to inform the training institutions the type of cadres needed or the establishment of new training institutions. “It is estimated the consultant would conclude the entire gap analysis by end of 2019” (MoH-HRD Officer, 2017).

“The Ministry of Health and GHS recognises the challenges regarding human resource for health. This is not only in the context of staff who directly provide service to patients (Medical Doctors, Nurses, Pharmacist, and Allied health professional) but also those considered as auxiliary staff including Orderlies, hospitality services, among others” (MoH-HRD Officer, 2017).

There is a temporal and incomplete lack of specialist; orthopaedic surgeons, emergency physicians, neurosurgeons and emergency nurses among others with most specialist concentrated in Greater Accra and Ashanti Regions”. (MoH-HRD Officer, 2017)

The shortage and uneven distribution is a negative factor towards the attainment of the SDG 3.6. However, as indicated by the respondent, there are many efforts to bridge the gap. Among them is Government sponsoring fellowship training programs. There is also a partnership with some foundations and institutions for masters and advanced courses in trauma care, especially with

Arbeitsgemeinschaft für Osteosynthesefragen (AO) Spine which stands for Association for the Study of Internal Fixation. Establishment of a trauma and orthopaedic technician school in Duayaw Nkwanta in the Brong Ahafo region, supporting the launch of WHO trauma checklist and its role in our health facilities, training and establishment of 24 hours functional emergency teams in all district and regional hospitals, training and retraining (refresher course) in basic life support, advance trauma life support, paediatric trauma life support and organized more than 20 courses with an average of 30 participants including NGOs, CSO and private sector in emergency care.

3.4 The Use of Technology to Improve Emergency Care

Telemedicine can easily be defined as the use of telecommunication to support health care delivery (Klonoff D, 2009). This helps to improve access and specialist services that hitherto would have been inaccessible to many in the remote or less endowed cities.

“We have introduced Telemedicine, telepharmacy and Drones to help cater for patients at lower level facilities but can also be utilise for accident case in fact, blood delivery too hard to reach areas is a lifesaving procedure” (GHS-ICD Officer, 2017).

The principle is for lower level facilities to communicate with higher level facilities and establish diagnosis and treatment of patients by means of telecommunications technology. Telemedicine is considered an alternative to conventional acute, chronic and preventive care, and can improve clinical outcomes. It was also revealed by interviewee that in the industrialized world, telemedicine continues to move healthcare delivery from the hospital or clinic into the homes. However, in Ghana this project is still in pilot phase but promising. Drones have also been used in the developed world to deliver Automated External Defibrillator, (AEDs) for emergency

resuscitation in distant places. Nevertheless, the introduction of drones by the ministry is primarily to facilitate delivery of vaccines, blood and blood products. This helps in the acute phase of management of accident patients in distant facilities without blood banks or at the time, without the required blood group. The health sector is also maximising the availability of Mobile phone to improve group communications.

“We have created WhatsApp groups, the house officers easily inform us of any emergency patient by uploading images on the platform. We are able advice on the treatment before getting there, it is very good.” (Doctor A&E Dept Ridge Hospital, 2018).

Accordingly, this has improved patient care and reduced the number of referrals to other hospitals and constitutes one of the innovative means of improving emergency care.

3.4.1 The Annual Health Summits

Ministry of health holds an annual meeting known as Health Summit. The meeting actually begins with all agencies conducting their annual reviews which will later feed into the summit. In the case of Ghana Health Service, the meeting begins at the district and sub-district levels to regional and national levels. This then feeds into the summit at the ministerial level. One component of the summit is to evaluate the health sector goals which includes emergency services. A holistic assessment tool is applied to monitor and evaluate all regions and tertiary institutions after which a league table is developed to recognise the best performing regions and tertiary institutions.

The summit usually takes place between the months of April and early May, this also helps the country to prepare towards the World Health Assembly meeting which usually takes place in the

last week of May. The 2018 summit took place in April and one important subject for discussion was Ghana's preparedness towards the achievement of the SDGs and Universal Health coverage (UHC).

“The MOH, its agencies, development partners and key stakeholders meet to develop Ghana's health plan. Areas recognised are health promotion, prevention, curative, rehabilitation, palliative, mental health and emergency service” (MoH-PPME Officer, 2017).

Although most of the targets of the SDGs are meant to be achieved by 2030, Ghana is unfortunately losing out of time in respect to Target 3.6 which ends in 2020. The likelihood that Ghana can achieve this target is very slim and will require a lot of political commitment with the ministry investing in this area as a special initiative.

3.4.2 Health Financing and Emergency Care

The main difference between the implementation of the MDGs and the SDGs is the financial aid. The MDGs had an envelope of funding to support implementation with donor partners playing active roles in specific programs. An example of such funding that Ghana benefited from European Union under a package known as Millennium Accelerated Framework (MAF) program focused on improving maternal health at both community and health facilities levels through the use of evidence-based, feasible and cost effective interventions in order to achieve accelerated reduction in maternal and new-born deaths (MoH-Gh, 2014).

Contrary to the above, the SDGs are to be supported using the countries domestic resource mobilization. Currently, there are dwindling inflow of donor financial support to the health sector

as Ghana obtained the status of Lower Middle Income. Below are some examples illustrated during the 2018 Health Summit.

Donor transition placing additional fiscal pressure to the health sector:

- DANIDA and the Netherlands have already withdrawn from the Ghana health sector
- DFID is transitioning towards provision largely of technical assistance
- USAID assistance expected to decline from 2021
- GAVI and the Global Fund have established transition strategies
- Co-financing is projected to be 19% of government health expenditure by 2020

This surely has negative impact on the overall health sector financing and specifically accidents and emergencies which traditionally had little attention irrespective of the fact that many citizens lose their lives on daily and weekly basis through road traffic accidents.

“We are still in the preparedness state to develop a package of service for universal health coverage and SDGs. This will be based on local capacity to mobilize funds and will surely include funds for accidents and emergencies as a priority. Unfortunately, donor funds are dwindling as we achieved lower middle income status” (MoH-PPME Officer, 2017).

In the 2017 Budget Statement of the Ministry of Finance, the approved health sector budget for the year was GH¢4.226 billion. This comprises funding from GoG of GH¢2.530 billion; IGF GH¢977.254 million and Donor funding of GH¢718.876 million. Allocation of the total health budget for 2017 according to the economic classification areas follows; Compensation of employees was GH¢2.14 billion; Goods and Services – GH¢1.57 billion; and Assets, GH¢521.91 million (MoH-Gh, 2018). This implies that much of the health sector financing is toward payment

of salaries. Nonetheless, many more health infrastructure is being built and more staff is required and more money will be directed towards compensation.

There is therefore the need to rethink how health is being financed in Ghana and if some facilities especially the tertiary hospitals and some selected regional hospitals are made responsible for the salaries of their health work force. This in part will compel some institutions to down size the number of workers who will be redistributed to less endowed facilities or regions. Other challenges exposed during the 2018 summit is how Ghana Beyond Aid looks like in health (MoH-Gh, 2018). Minimal or no government allocation for non-programmatic funds for the regions, districts, and healthcare facilities will impact on health and RTA related services to a large extent.

- Healthcare facilities at all levels rely on internally generated funds (IGF) from OOP and NHIS reimbursements
- Since NHIS coverage is low, approx. 35%, healthcare facilities rely on OOP payments
- Anecdotal evidence shows that healthcare facilities sometime charge user-fees for donor funded services that should be free (e.g ACT for malaria)
- Under-resourcing has compromised service delivery and quality of care.
- Public Finance management challenges In 2017:
 - The budget execution rate for Government of Ghana allocation was 51%,
 - While the overall sector execution rate was 43%

All of these factors will impact on the services provided to people especially those provided for A&E most required when RTA occurs.

3.5 MoH Agencies Directly Involved in Improvement of Road Traffic Accidents

There are various MOH agencies whose functions and mandates have direct implication to RTAs and the management of its impact. Some of these include Health Facility Regulatory Agency, National Health Insurance, National Ambulance Service, Health Regulatory Authorities, Health Training Institutions, St. Johns Ambulance Service, the Ghana Health Services and the Teaching Hospitals.

3.5.1 Health Facilities and Regulatory Agency (HeFra)

Established by an Act of Parliament of the Republic of Ghana entitled Health Institutions and Facilities Act, Act 829 of 2011, the Health Facilities Regulatory Agency (HeFRA) is a body mandated to license facilities for the provision of public and private health care services, to establish the Mortuaries and Funeral Facilities Agency to control and regulate facilities connected with the storage and disposal of human remains, to establish an Ambulance Council to regulate the operation of ambulance services in the country in accordance with policy standards and to provide for related matters as reflected in the Act, Act 829, 2011.

HeFRA is the agency responsible to regulate the establishment of any type of health facility in Ghana irrespective of location within the country and level of intended service delivery. It was revealed that over the years, due to lack of adequate human resources, HeFRA's activities have not been too pronounced. Something that has experienced a dramatic change in the last two years as they now have their own work force to undertake activities. Hitherto, they have relied on the work force of Ghana Health Service in all the 10 regions.

“GHS has to be regulated by HeFRA, depending on GHS staff to perform our activities was not the best”. (HeFRA Officer, 2017).

In relation to management of RTA patients, HeFRA has currently reviewed it’s checklist and has add a bullet point that makes it mandatory for every health facility to create an emergency area, at least, for the provision of first aid before referral to higher level facilities or A&E centers. It demands a 24 hour emergency service provision. The non-availability of such area will disqualify the facility from being licenced, registered and operational. *“This requirement is intended to improve the care for road traffic accident and other clinical and surgical emergencies and at least, to increase the survival chances of patients”.* (HeFRA Officer, 2017).

3.5.2 The National Health Insurance Authority (NHIA)

Established by an Act of Parliament of the Republic of Ghana entitled National Health Insurance Act, Act 852, 2012. The National Health Insurance Scheme (NHIS) is a social intervention program introduced by the government to provide financial access to quality health care for residents in Ghana (NHIA-Gh, 2018). Several categories of health care facilities have been credentialed by the National Health Insurance Authority (NHIA) to provide services to subscribers.

These include:

- Community-based Health Planning and Services (CHPS)
- Maternity homes
- Health centres
- Clinics
- Polyclinics

- Primary hospitals (district hospitals, CHAG primary hospitals, quasi- Government primary hospitals and private primary hospitals)
- Secondary hospitals
- Tertiary hospitals
- Pharmacies
- Licensed chemical shops
- Diagnostic centres. (NHIA-Gh, 2018).

This implies that every patient registered with NHIS will receive service reimbursable by the scheme. The respondent confirmed that per the Act, Act 852, 2012, the provision of emergency care within the first 72 hours was mandatory and free of charge for every person living in Ghana irrespective of status, nationality or any other cause. This provision helps to improve emergency care to all accident patients and emergency care in general. However, respondent refers that it has been recognised by the Authority that some facilities both public and private still practice “Cash and Carry” due to many reasons that includes some medicines and surgical procedures and implants not being included in the Health Insurance Package.

“NHIS is a social intervention established to help every person living in Ghana. We are the purchaser of health service and we insist on quality of care. We pay for accidents and emergencies. However, we sometimes run out of funds but we do our best to pay all facilities within the established time by law.” (NHIS Officer, 2017).

3.5.3 Health Regulatory Agencies

All regulatory agencies under the ministry of health have the mandate to ensure that health care practitioners are appropriately licenced and registered. A process that protects the professions from the infiltration of quack practitioners.

“All practitioners are expected to renew their license for practice every year, failure to do so will automatically disqualify the practitioner” (Medical and Dental Council Officer, 2017).

This is done through participation in Continues Professional Development (CPD) programs. Under A &E, Basic Life Support (BLS) skills are essential, CPDs are also conducted in this area to improve staff skills. However, depending on the level or category of profession, some cadres are required to possess Advance Life Support (ALS), Advance Trauma Life Support (ATLS) and Pediatric Life Support (PLS) training skills. These activities ensure the delivery of quality health care to patients and specifically equip all health care experts with the basic knowledge and skills to deliver essential lifesaving treatment for patients and especially patients involved in road traffic accidents.

3.5.4 Health Training Institutions

Health training institutions are accredited and regulated by their respective regulatory bodies namely: Nursing and Midwifery Council, Pharmacy Council, Medical and Dental Council, Allied Health Professions’ Council and Traditional Medicine Practice Council in collaboration with the National Accreditation Board and the National Council on Tertiary Education.

Training institutions are thereby very vital in any health reforms. All reforms should be reflected in the various training curricula and modern improvements required in the relevant fields. There are various specialised training institutions responsible for training and formation of emergency service personnel for specialist training and expertise. Some of these include Emergency Medicine Specialist, Emergency Care Nurses, Paramedics, Emergency Medical Technicians (EMT) Anaesthesiologists, Certified Registered Anaesthetist, etc. However, other specialists are also trained in specific emergency care including Neurosurgery, Cardiology, and Trauma and Orthopaedic surgery among others.

Ghana is currently under pressure to produce adequate numbers in all these fields of specialization. Hence, the establishment of the Ghana College of Physicians and Surgeons and the Ghana College of Nurses and Midwifery, The Ghana Ambulance training school and other private institutions. The increase provision of trained personnel and appropriate distribution within the entire country will help in the achievement or at least improvement of target 3.6.

However, currently there is a challenge with numbers and mal-distribution of staff. It was revealed through interview that some of the factors for the mal-distribution are attributable to the general conditions in the country and dependent on other ministries. For instance, *“qualified medical staff refuse postings to less endowed regions where education (schools), accommodation and other social amenities are in inadequate supply”* (MoH-PPME Officer, 2017). Remuneration has also been identified as a factor that contributes towards mal-distribution as the salary scheme is uniform for all categories irrespective of place or region of work. However, specialists gain more money performing extra services in form of “locum” in the big cities.

As indicated by the respondent, the Ministry has plans to upgrade some regional hospitals to teaching hospitals to increase the facilities training and building capacity to support the health sector. Volta Regional Hospital and Cape coast teaching hospitals are examples of such upgrades. Equally, through the regulatory bodies, training of house officers is being decentralised to the regions. There are also plans to construct other medical faculties and nursing schools in other parts of the country. Ideally, there should be an established medical faculty per region to increase and decentralize health sector work force. However, the necessary measures are being put in place by the ministry to encourage posting and retention of health staff in less endowed areas. A staff working in less endowed place will be granted further study leave a year earlier compared to a counterpart in the city. “Also, some incentives including weekend allowance are being proposed for staff in disadvantaged areas” (MoH- PPME Officer, 2017). These measures will help staff to remain at post and be available to attend to emergencies including road traffic accidents.

3.5.5 Saint John Ambulance, Ghana

St John Ambulance is an emergency service provider affiliated to a number of organisations in different countries. They teach and provide First Aid and emergency medical services, and are primarily staffed by volunteers. The associations are overseen by the international Order of St John. Likewise, St John Ambulance Ghana is a volunteer-led, charitable non-governmental organisation established in 1937 by the British Police dedicated to the teaching and practice of first aid or emergency medical services in Ghana. It currently operates under the umbrella of Ministry of Health (MOH) with the core mandate of provision of First Aid services, training and ambulance services throughout the country (St John Ambulance, 1937).

“We have been participating in many national events providing First Aid services in collaboration with other agency especially the National Ambulance Service, NADMO, Blood Transfusion Service and Ghana Red Cross Society” (St John Ambulance Officer, 2017).

The staff is constituted mainly of volunteers and few permanent staff located primarily in Accra. In collaboration with other agencies, they participated in the provision of First Aid to spectators during the Cup of African Nations -CAN 2008 football games in Ghana. They work closely with the National Ambulance Service, they also played a role during the collapse of the Melcom shopping centre at Achimota, Accra 2012 by providing first aid services to victims.

“We have the capacity to provide a range of international standard basic first aid emergency medical services courses for the public and specific sections of the community.” (St John Ambulance Officer, 2017).

They conduct community health outreaches to provide medical care and with the idea that people are familiar with their villages, their infrastructure and their environment, they focus on the local people as key for the disaster preparedness programs. St John Ambulance has since been working as an EMS provider in the area of First Aid Service, Care, Ambulance Services and Community Health and Youth development. Nonetheless, multiple are the challenges facing the organization and key to them is limited financial resource. The organization currently has no ambulance and is hoping that the government will come to their assistance. The limited financial resource has also impacted negatively on their capacity to expand nationwide and attract more volunteers.

3.5.6 The National Ambulances Service (NAS)

The National Ambulances Service is the lead agency in the provision of pre-hospital care in collaboration with other agencies within and outside of the health sector. NAS, is an agency under the Ministry of Health established in 2004 under the Health Institutions and Facilities Act, Act 829 of 2011, to provide Emergency Medical Services (EMS), specifically at the pre-hospital level.

The idea of NAS was borne following the May 9th, 2001 tragedy at Accra Sports Stadium. Ghana lost 127 young men and women in a stampede during a football match, something the nation will never forget. The majority died during transfer to the hospital in private and commercial vehicles with most sent to the same facility (37 military hospital) overwhelming its response capacity. The response at the scene was delayed and poorly coordinated, distribution of patients to health facilities with capacity to respond was also poorly coordinated leading too many preventable deaths.

NAS is therefore established with the mandate to appropriately coordinate the prehospital transfer of patients to the hospital in times of accidents and emergencies. The agency has the duty of early response to emergency calls, provision of appropriate on scene care and stabilizing patients, provision of care in transit to health facilities, identification of the appropriate resourced facility in relation to type of injury and handing over of victims well stabilized to definitive care in a hospital. NAS is also involved in transferring patients for rehabilitation, inter-hospital transfer and post hospitalization or discharged transfers. The internationally recommended lifespan of an ambulance is 5 years in circulation but largely depends on where and the condition under which it was used including the nature of road network.

“We started with assistance from the Fire services because their personnel had skills in extrication so we had very few Emergency Medical Technicians (EMTs). Today, we have over 2000 EMTs distributed nationwide, the idea is to have an ambulance station in every district. However, our major challenge is lack of ambulances, those available are old making both maintenance and running cost very high, we need new ambulances to effectively discharge our mandate” (NAS Officer, 2017).

In 2011, NAS established a training school in Ofinso in the Ashanti region to train EMTs, the first of its kind in the sub-region. Training of over 500 Emergency Medical Technicians is currently ongoing in anticipation of the arrival of new ambulances. NAS also has the responsibility to provide community health promotion and accident prevention activities, training of institutions, private and public including schools and community in First Aid and Basic Life Support. The agency currently has 54 functional ambulances however it was revealed through the interview that there are plans for the procurement of 270 ambulances to be distributed to all districts. The main emergency code to reach NAS call control room is 193 (NAS, 2018). Nonetheless, there are many other numbers varying from region to region. All provided services are free of charge to clients. Central Government is responsible for all its operations and in part, pays through the National Health Insurance Authority (NHIA) or direct Government of Ghana (GoG) funding and subsidies.

Despite all the challenges, the agency is ambitious and hopeful with plans to expand service delivery to include air ambulance and boat ambulance in island communities to rapidly evacuate accident patients. Currently, the airlifting of patients is done by the Ghana Military Service. Ghana currently has three facilities with aerodrome or helipad. These facilities are the University of

Ghana Medical Centre, the Octagon and Komfo Anokye Teaching Hospital. Island communities (Ketekrachi, Afram planes) have boat ambulances to rapidly evacuate patients to the main land. Sustainability of these service is dependent on other means of funding. There are many proposals including fee for service. However, the service is viewed as a social intervention to reduce financial burden and improve access to health. Consequently, NAS constitutes the main agency to influence the outcome of accidents and emergencies. If well resourced, NAS can help reduce the complications and mortality from road traffic accidents towards achieving SDG 3.6.

3.5.7 National Blood Transfusion Service (NBTS)

One major cause of death or severe complications in road traffic accident victims is haemorrhage either internal or externally. Reducing morbidity and mortality will therefore require early availability of blood for victims. In view of this, National blood transfusion service which was initially a department within the Institutional Care Division of the Ghana Health Service was upgraded to the status of a full fledge agency of the Ministry of Health. The mandate of the National Blood Service is to ensure an effective and coordinated national approach to the provision of safe, adequate and efficacious, blood and blood products, making it timely, accessible and affordable to all patients requiring blood transfusion therapy in both public and private health care institutions in the country (NBTS, 2016).

“Despite the numerous blood donation campaigns and the annually celebrated world blood day with frequent calls for donation, many citizens are reluctant to response to our call to donate, we need more people to donate” (NBTS Officer, 2017).

Among reason recounted for the above is the history of the stigma of HIV/AIDs. People are still afraid that they might be tested for this disease and try to avoid donations. To mitigate this effect and promote public confidence, some policies and guidelines have been developed to safeguard the identity and privacy of all people who donate and usually explained to donors. This policies includes: Blood Donor Selection Clinical Form and Questionnaire; Clinical Blood Transfusion Policy; and the National Guidelines for the Clinical Use of Blood and Blood Products. (NBTS, 2016). The service has also established nationwide blood donation centers. All regional hospitals have their own blood processing units. The agency aims to constantly educate the public on the importance of blood donation. Blood availability is necessary to successfully reduce mortality and other complications from RTA.

3.5.8 The Ghana Health Service (GHS)

Ghana Health Service (GHS) is established by an Act of Parliament, Act 525, 1996. The GHS is responsible for primary and secondary healthcare while the Teaching Hospitals are responsible for tertiary service delivery as established by same Act, Act 525, 1996. However, some regional hospitals are now delivering services of tertiary level and have eventually been converted into Teaching Hospitals e.g the Volta Regional Teaching Hospital, Cape Coast Teaching Hospital among others. These facilities constitute the definitive care point for emergency care in the country. The GHS has various levels of service delivery from Community-based Health Planning and Services (CHPS), Health Centres, District Hospitals to Regional Hospitals. Every region and district is to be endowed with a Regional and District hospitals. The majority of the facilities across the regions are the CHPS. CHPS is solely manned by GHS staff and distributed nationwide in most remote communities as the lower level of health facilities. They are mostly staffed and equipped

with the lower cadre of staff and equipment. This means there is the need for tailored-made basic curriculum in emergency service not to over burden their capacity. Nonetheless, the staff has the mandate to provide basic life support procedures, minor suturing and first aid.

The CHPS are the closest link between the health system and the communities constituting the first point of call for medical attention. They have the duty to conduct activities of health promotion and prevention, conduct community durbars and home visits. CHPS therefore, constitute an effective means for first aid and the gatekeeper system. For instance, early medical care to minor and some major injuries will reduce further complications and deaths during road traffic accidents. Therefore the role of CHPS must be recognised to provide this first point of call and service.

“We have a national CHPS Policy, we have now included basic emergency care procedures and hopefully some training will soon be done” (GHS Officer, 2017).

Another level of care is the Health Centre (HC), primarily manned by a category of workers known as Physician Assistance (PA). The PA is more trained and can manage a variety of diseases. Although HCs are primary level facilities, they receive a myriad of accidents and emergencies including domestic and road accidents. However, they are faced with human resource, equipment and logistics challenges to manage emergencies including RTAs.

“We will need some training in emergency care, also equipment and consumables. Here, we are known as doctors and we are expected to manage all kinds of diseases especially accidents and emergencies... At times, it is one PA per Health Centre and in some instances health centres do not have any PA” (Physician Assistant, GHS, 2017).

HCs constitute the first level of referral from the CHPS facilities, therefore, having emergency training is necessary to boost their skills and confidence to receive and manage RTA victims.

The Polyclinics and District Hospitals (DHs) are the next immediate point of referral from the CHPSa and HCs. Some facilities are well equipped and staffed better than others. Every district is expected to have a district hospital and every district hospital is supposed to have at least one medical doctor at post. However, there are districts without hospitals creating challenges for patient care and access to emergency services.

“Our District and Regional hospitals are well equipped to handle emergencies. We are working hard to get doctors to the least endowed regional hospitals. We are hopeful the situation will change in the near future” (GHS Officer, 2017).

The Regional Hospitals (RH) serve as the highest level of care in regions without teaching hospitals. Most RHs are well equipped, however, the non-availability of the required specialist in the field of emergency service constitutes a challenge to the Service.

3.5.9 Distribution of Doctors in Ghana Health Service (GHS)

The distribution of doctors continues to be skewed towards Greater Accra Region, which has about 41.2% of all doctors in GHS. Even though GHS has 64.2% of the aggregate health workforce, its share of doctors is only 38.9%. This is a marginal decline of 1% from 2017 to 2018 (GHS, 2018). Nationally, the doctor-to-population ratio (a measure of how many people one doctor could potentially attend to) has been improving steadily from 10,430 to one doctor in 2014 to 7,192 to one doctor in 2018. The doctor-to-population ratio in 2018 (7,192) represents approximately 12 percentage points improvement over 2017 (8,026). Over the last five years, the most dramatic

gains in terms of doctor-to-population ratio were recorded in Upper West Region improved from 54,072 people to one doctor in 2014 to 13,080 people to one doctor in 2018. Nevertheless, Greater Accra Region continues to record the best doctor-population ratio (3,216). Figure 2 provides details of a 5-year trend of the doctor-to-population ratio for all regions (GHS, 2018). However, the below table shows the number of districts without hospitals implying prolong referral procedures that could easily compromise the life of any patient in need of emergency care. Early access to a health facility constitutes a major factor in management and patient survival.

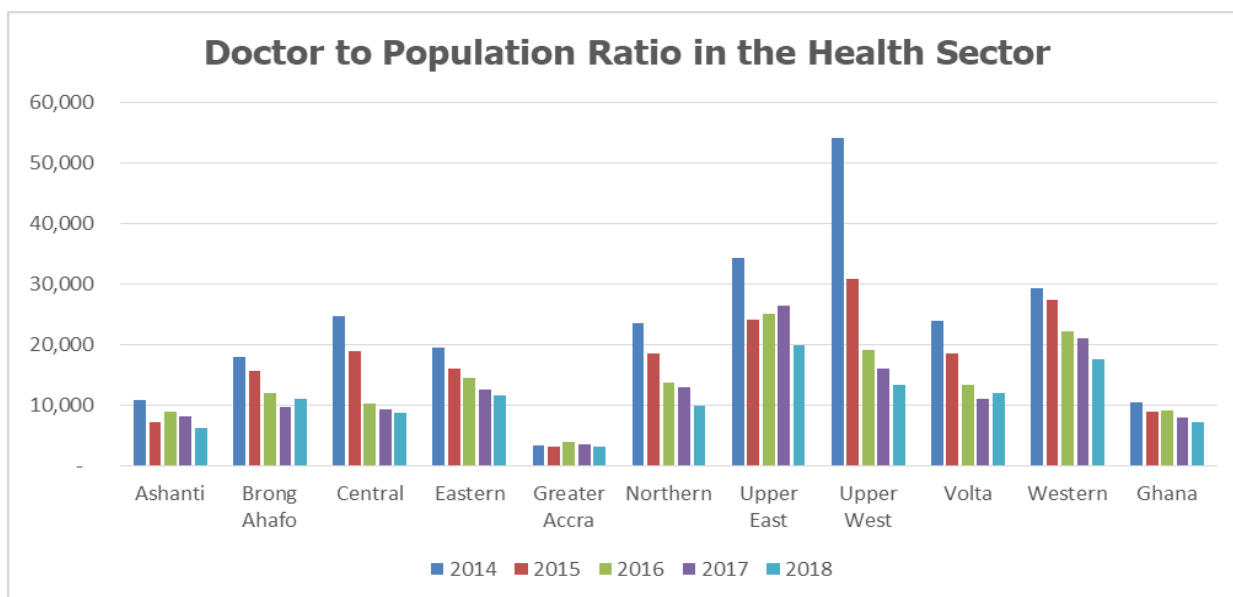
Table 3. 2: Number of Districts without hospitals

Region	Number of Districts without hospitals
Greater Accra	7
Ashanti	11
Northern	6
Upper East	7
Upper West	3
Brong-Ahafo	4
Eastern	8
Western	3
Volta	8
Central	9
Total	66

Source: GHS/Institutional Care Division (ICD), 2018.

The management of RTA requires speed and access, timely care saves lives. However, the lack of health facilities in these areas is indirectly accompanied with lack of the appropriate cadre of human resource for service delivery. This constitutes a threat to access and quality of health delivery. Delays in referrals taking into consideration the distance to nearest hospitals, availability of and cost of transportation, poor roads and infrastructure and geography e.g. mountainous terrain, rivers are also factors to be considered in such circumstances. There is the need to urgently address these issues if SDG Goal 3.6 is to be achieved.

Figure 3. 2: Trend of Doctor to Population Ratio (Health Sector), 2013 – 2018



Source: GHS/Centre for Health Information Management System (CHMS), 2018.

A 5-year trend of the doctor-to-population ratio for all regions, illustrating the need for more doctors to the less endowed regions. The shortage of doctors in these regions constitute a gap in the management of all health related issues and especially the prompt management of victims of road traffic accidents, timely care saves lives.

3.5.10 Teaching Hospitals and Specialised Facilities

The Teaching Hospitals and specialized facilities are considered the highest level of care in the country and the optimum place to receive service and treatment with severe and multiple injuries from RTA. They are established by the same Act of Parliament that established the Ghana Health Service, ACT 525, 1996. The teaching hospitals are tertiary institutions and better equipped with the necessary diagnostic tools, infrastructure including operating theatres, bed capacity and human resources (staff of all levels from professors, consultants, senior specialist, specialist, medical officers and house officers to medical students). Same with nurses and other supporting staff. Not with standing all these conditions, there is usually the “No bed syndrome”. A situation where patients with emergencies get referred from facility to facility without being received or given the necessary first aid but driven away on the account of ‘no bed’ to admit them. Many patients have lost their live in this process causing a national outcry.

“The gate keeper and referral systems are not functioning properly, we get overwhelmed with patients and referrals creating a huge burden on staff and logistics” (Korle-Bu Teaching Hospital Officer, 2017).

Among other recounted reasons include the lack of trained persons in emergency medicine and availability of emergency equipment at the periphery which leads to frequent referral of cases that could have been easily handled at the lower levels. The establishment of a National Emergency Trauma Centre with a sizeable bed capacity has also been outlined as means of providing specialised treatment for emergencies. There is also the need for a closer collaboration and improved referral communication between GHS and Teaching Hospitals to address emergency situations and provide a seamless service delivery.

3.5.11 The Faith-based facilities and Private Health Providers

Faith-based facilities include Christian Health association of Ghana (CHAG) and the Ahmadiyya cluster of facilities. These facilities are also equipped to deliver emergency services. Also, the contribution of the private sector facilities in emergency care is recognized to be tremendous especially in settings where they are the main providers of health care or closest to a RTA.

“We (CHAG) are second to GHS in service delivery, we are in the districts and we attend to all patients including accident victims” (CHAG Officer, 2017).

All these various facilities participate in the management of RTA in various ways by either providing healthcare, capacities and training, resources and technologies required to manage and minimise the impact of road traffic accidents.

3.5.12 Foods and Drugs Authority

The Food and Drugs Authority (FDA) is the National Regulatory Authority mandated by the Public Health Act, 2012 (Act 851) to regulate food, drugs, food supplements, herbal and homeopathic medicines, veterinary medicines, cosmetics, medical devices, household chemical substances, tobacco and tobacco products. An area of concern is the advertising of alcohol beverages nationwide in different forms whether locally manufactured or imported. The regulation of alcohol is so complex and involves multiple sectors. Alcohol manufacturing, sales, advertisement, consumptions, taxation, etc. are all managed by different sectors. This create a complexity in addressing some of the public health issues related to alcohol and its regulation.

“We only approve alcohol adverts in hours that children are expected to be asleep. We further monitor the TV stations and any station found violating this directives is requested to remove the advert” (FDA Officer, 2017).

Drunk driving is an area of concern and has been considered to contribute to numerous RTAs. The need therefore to control the numerous adverts of alcoholic beverages to minimise consumption especially amongst the adolescent group and other ages is necessary to develop a preventive measure. It is evident that to achieve SDG 3.6, we require the collaboration and contribution of all Ministries, Departments and Agencies (MDA).

3.5.13 Ghana Red Cross Society (GRCS)

Ghana Red Cross Society operates within the health sector by providing emergency services but they are not an agency of the MoH. Members of the GRCS are volunteers dedicating their time to support emergencies and accidents.

“We are the largest volunteer group in the country, we are in all the districts. Our people are well trained to provide in first aid, disaster management and in general risk reduction” (GRCS Officer, 2017).

As revealed by a member of the Ghana Red Cross Society,

“One of the causes of the high fatality rates during road crashes is attributable to the fact that post-crash response is slow and not professional” (GRCS Officer, 2017).

The essence of having professional arrive at RTA sites on time is to help minimise impact of the crash. However, this is not mostly the case as reported above. Most often, person arriving at an accident scene lack first aid knowledge. The response from professional emergency services if any are slow at arriving. This leads to avoidable incapacitation and deaths of crash victims. To this effect, GRCS operates within the communities to assist the vulnerable and also conduct First Aid Trainings.

3.6 The Roles of Other Key Stakeholders in Dealing With Road Traffic Accidents in Ghana

Apart from the MOH, there are various other actors involved in the dealing with the road traffic accidents in Ghana. These actors are located in various other sectors such as the Ministries of Interior, Transport, Roads and Highways, National Security, Communication, Information, etc. But significantly, some of these actors are also related to the health sector. Some of these actors also provide emergency medical services and operate within the health sector but are not under the Ministry of Health as their agency.

3.6.1 National Road Safety Commission

The National Road Safety Commission (NRSC) of Ghana was established by an Act of Parliament, Act 567, 1999. The Act mandates the NRSC to play the lead role in championing, promoting and coordinating road safety activities in Ghana. For this reason, the main objective of the National Road Safety Commission is to plan, develop and promote road safety and to coordinate policies related to road safety (NRSS III, 2011-2020). Per mandate by the Act 567, 1999, the NRSC performs the following function in relation to RTA:

- Undertake nationwide road safety education, information and publicity
- Develop a long term road safety plan
- Commission and promote road safety research

NRSC has undertaken several initiatives and activities in prevention, promotions and most recently direct intervention in patient care by constructing “Emergency Response Posts” with financial support from World Bank. (See fig...). NRCS also supports the First Sky Group to renovate some mini clinics located on highways recognised to be accident prone zones.

“We have constructed Health Post at major highways to provide rapid evacuation of RTA victims and provide basic life support before they are taken to the hospital. We believe this will improve survival rate”. (NRSC Officer, 2017).

The roads with medical post are:

- 1) Accra- Kumasi Highway: Asuboi, Bunso, Asankare and Juaso.
- 2) Accra –Aflao Highway: Toje near Ada Junction and Nogokpo
- 3) Accra-Takoradi Highway: Okyereko and Apam Junction/Ankamu.

Among the many challenges recounted is sustainability of the clinics. Most staff are volunteers who are engaged with a motivation package for a year. Maintenance and running cost are equally issues of concern, this includes water supply, electricity, telecommunications gadgets etc. The availability of ambulances to immediately evacuate patients after rescue and stabilization is another great concern. The NRCS recognises road traffic injuries as the number one killer of children and young people between the ages of 5 – 29 years. However, non-fatal road traffic

injuries are also a major drain on human potential and public health resources and therefore the need for intersectoral collaboration towards prevention and better planning for post-crash care.

Figure 3. 3: Emergency Rapid Response Post constructed by NRSC



Source: NRSC-2018.

An emergency response first aid post constructed by NRSC at Asuboi. This location is recognised as an accident-prone area situated along the Accra- Kumasi Highway. This will provide early rescue and first aid to RTA victims while waiting for definite transfer. A measure in line with SDG 3.6.

3.6.2 Ghana Police Service (Emergency Number 191)

Every country has a police service to enforce law and order and by so doing provide security to all citizens without consideration for ethnicity, social status, race or any other attribute. Their main aim is to promote the right of persons and property to protection. The Ghana Police Service is an agency under the Ministry of Interior responsible for enforcing law in Ghana. With regards to RTA, the Police Service operate with the following subsidiaries: National Road Safety Commission and the Motor Transport and Traffic Directorate. For the purposes of this study we will focus on the work of the MTTD.

3.6.2.1 The Motor Traffic and Transport Directorate

The Motor Traffic and Transport Directorate (MTTD) is the main organ within the Service responsible for Road Safety in Ghana. Other functions of the MTTU per their 2017 annual report include but not limited to the following:

- Traffic control and management
- Enforcement of all road traffic laws and regulations
- Investigation on road traffic accident crash cases reported

In addition to the above functions, they also educate and train road users (Pedestrians and motorists) on accident-free road practices (MTTD, 2018). Another important aspect of their activities is to be in-charge of the motorcade of the President of the Republic of Ghana and other state and visiting foreign dignitaries. It was revealed that MTTD staff are well trained and in some instances well equipped to detect, detain and warn or further arrest offending motorists if necessary. Consequently, they are responsible for collation and recording of all accidents for subsequent

quarterly publication. The publication of these statistics could be made in various forms that can easily get to the notice of the general public and this could be in electronic, social media and print format. The MTTD is therefore responsible to initiate the investigation of road traffic accidents in Ghana in collaboration with the Driver and Vehicle Licensing Authority (DVLA).

“People sometime blame us, but they forget that the system should be looked at in a holistic manner. We do our possible best with the limited resource. We have less men on the ground, inadequate toying vehicles, lack of logistics and yet a lot is expected from us. Individual responsibility is paramount to reduce RTA. We shall continue to enforce the traffic laws”. (Police-MTTD Officer 1, 2017).

In an effort to reduce the incidence of RTAs worldwide, speed limits are established depending on the type of road. The MTTD is responsible to enforce speed limits, arrest and find offenders. However, they are generally poorly equipped with the necessary gadgets to undertake this function. This necessitates the availability of speed detectors, breathalyser and vehicles to be able to pursue a runaway offender etc.

In the developed countries, radars and Closed-circuit television (CCTV) cameras are placed in vantage points on highways to help detect offenders, SOS boxes are also placed in major highways to facilitate communication with the highway authorities when in trouble and for first aid constituting a means of early reporting to a central emergency operation center. Towing vehicles are readily available to rapidly tow away any accident vehicle. Zebra crossing and all other road signs are well respected, motor bikes equally respect traffic lights (Nordfjærn, 2012; WHO B, 2018; Adesunkanmi, 2000). Pedestrian walkways are well tarred or tiled. Emergency and Bus

lanes are also clearly demarcated and respected by road users. Depending on the magnitude of the offence, a driver may get a warning, get fined, losing some points on the license or completely lose the license plus a monetary fine and if he or she wishes to drive again will have to re-sit the driving license exams after some years or a period of term established depending on the nature of accident. These measures are strictly enforced coupled with citizen education (WHO A, 2018; Wegman, 2015). In effect, over the years, these measures have helped reduce the number of road traffic accidents.

Contrary to the above, in Ghana, the lack of essential equipment for the MTTD, lack of enforcement, indiscipline of the road users, lack of appropriate education on road and accidents, inappropriate road designs, limited pedestrian walkways with open gutters, rough untarred roads or tarred roads full of potholes without appropriate road signage all contribute to the increase in RTA. Other factors on highways that contribute to the increase RTAs include the rampant cases of overloading of goods while axle points, customs duty posts and police barriers overlook without taking actions. Over speeding without the necessary fines, blatant disregards for Zebra crossing and in some cases, the lack of knowledge of road signs or the intentional disregards of signs contribute to RTA. One major issue is Motorbikes have total disregards for traffic light, wrongful overtaking of vehicles, these and many other indiscipline on the roads contributes to the occurrence of RTAs in Ghana. On the other side, vehicles without Triangles and the lack of First Aid boxes are also of concern (Coleman, 2014; Enu, 2014; Nyamuame, 2015; Afukaar, 2003; Amedorme, 2014; NRSA, 2018). Many of the accidents are unnecessary and avoidable if simple rules and regulations are enforced.

3.6.2.2 Challenges being faced by MTTD

Obviously, the MTTD like other agencies is confronted with many challenges in pursuit of its duties and functions. Some of these challenges as revealed include but not limited to the lack of adequate logistics and equipment for law enforcement, poor capacity to tow and recover broken down vehicles due to lack of towing trucks and poor collaborating with other agencies including the MoH. For MTTD to achieve its goal of reducing road traffic accidents it must closely collaborate with other state agencies with similar or complementary mandates like the Driver and Vehicle Licensing Authority (DVLA), National Ambulance Service, National Road Safety Commission (NRSC) and the Media. There is also the need to collaborate with health facilities to create an appropriate register for RTA which intends feeds the MTTD for proper evidence- based data collection and statistics. The MoH therefore constitutes an obligatory partner through its agencies to collaborate with MTTD towards the achievement of Target 3.6

3.6.3 National Disaster Management Organization (NADMO)

Ghana established the National Disaster Management Organization (NADMO) by an Act of Parliament, Act 517 in 1996 with the core mandate to manage disasters and similar emergencies in the country. These emergencies may be caused by natural and man-made disasters as its growing occurrence is of great concern to humanity.

“We have an ultramodern national Call Center capable of coordinating all disasters including RTAs and we shall soon call all relevant stakeholders to participate in the development of the National Disaster Preparedness Plan” (NADMO Officer, 2017).

NADMO estimates to conclude the development of a comprehensive national disaster management plan by close of 2019. The Organization also plans to continue to educate the public on disaster prevention and rescue proceedings to reduce casualties during disasters. Although many victims benefit from their benevolence of food stuff distribution in the aftermath of disasters, it was clarified that the organization is not only responsible to distribute relieve items to disaster victims as perceive by many but their efforts are geared towards sensitization of the communities, especially on housing and settlements, floods, earthquakes, bush fires and radiation among others.

“NADMO shall always partner with other emergency service providers especially the National Ambulance Service and National Road Safety Commission to rescue victims of road traffic accidents and will always be present in any disaster that may occur in any part of the country, it is our mandate (NADMO Officer, 2017).

3.6.4 Ministry of Roads and Highways

The Ministry of Roads and Highways is the Government of Ghana ministry responsible for road construction and road maintenance in Ghana (MRH-Gh, 2018). Through this mandate, it has a responsibility towards road safety. In designing and building roads and highways, it must consider and inculcate road traffic safety measures which refers to the methods and measures used to prevent road users from being killed or seriously injured.

Typical road users include: pedestrians, cyclists, motorists, vehicle passengers, horse-riders and passengers of on-road public transport. Best-practices in modern road safety strategy includes appropriate road construction with pedestrian lanes, bus lanes, emergency lanes depending on the category of the road. Unfortunately, many roads in Ghana lack the appropriate and separate

pedestrian lanes, emergency lanes or bus lanes but rather open gutters that contribute to dirt accumulation and accidents as vehicles may side track into them. Access to health care is determined by the distance and road network. From this point of view, it is comprehensible the critical role of roads and transportation.

According to the ministry of roads and highways, it has estimated that road transportation carries approximately ninety-eight percent (98%) of the passenger and freight traffic in Ghana. It is for this reason that investment in the provision of road infrastructure is very important. It enhances the performance of the other sectors in the economy. However, major roads in Ghana are in poor state with numerous potholes. Poor roads and lack of road maintenance has led to several road traffic accidents and loss of lives. Ironically, it has also been recognised that there is increasing trend of accidents whenever any new roads is constructed due to over speeding and careless driving (Coleman, 2014; Enu, 2014; Nyamuame, 2015; Afukaar, 2003; Amedorme, 2014; NRSA, 2018).

“We need funding to maintain the roads. The various departments are poorly resourced to undertake their responsibilities” (MRH Officer, 2017).

One of the identified three delays to access to health is the delay in reaching a health facility considering distance and road network. It is therefore essential for MoH to collaborate with this sector especially in citing new health facilities to create easy access as timely access is key to early treatment of victims of RTA. A major concern and frequent cause of RTA is the poor nature of tarred roads with potholes. Potholes slow down movement of ambulances during emergency services. Frequent attempts by drivers to escape such potholes could also lead to accidents. The

neglect of construction of overhead bridges has also resulted into many accidents, example is the Madina- Adenta highway which has caused national outcry (Fig. 3.5).

There are many uncompleted overhead bridges. Some overhead bridges are not user friendly as they are either too high with many stairs or simple not disable friendly, no ramps or elevators as seen in other countries. In conclusion, the actions or inaction of this ministry is fundamental towards the achievement of SDG 3.6. Frantic efforts must be made to improve the road network nationwide including filling of potholes and grading of feeder roads to facilitate transportation and movement. The creation of pedestrian lanes, bus and emergency lanes is also necessary to avoid frequent knock downs and traffic congestion.

Figure 3. 4: Madina- Adenta overhead bridge



Source: NRSC-2018.

A pictorial view of an uncompleted overhead bridge at the Adenta-Madina road in Accra. Considered by pedestrians to be too long and not user friendly. Hence many pedestrian may not use it but across the road at a high risk of RTA.

3.6.5 Ministry of Railways Development

The Ministry of Railway Development was established to promote the developing of alternate means of transport specifically the railway. Currently the country is lacking behind in the area of railway. However, there are frantic efforts to develop the industry in Ghana (MRD, 2019).

Among the flagships initiatives under Environment, Infrastructure and Human Settlement include expanding the railway network to northern Ghana to open up economic opportunities and link the country with neighbouring countries. The availability of railway network would reduce the negative effects of the usually over loaded long vehicles transporting goods within and across the country to Burkina, Nigeria, Togo, Mali, Niger etc. Most accidents occur between the major roads linking the cities, Accra- Kumasi, Accra –Takoradi, Accra-Bolgatanga, Accra-Ho and Accra-Wa. Construction of railway will not only reduce the vehicular congestion on the roads but will also reduce the destruction of roads by the heavily packed articulator tracks and the over loading of passengers.

However, the huge capital investment needed in railway construction constitutes a major set-back and with barely a year to the deadline of SDG 3. Target 6, completion of railways may not necessary help achieve the target in time but will constitute a step in the right direction to minimise future RTAs. Improvement in air and sea transport are also vital to ease the pressure on roads.

“Ghana has a composite plan to make railway a flagship program for development. We will also ride on Agenda 2063 of AU to develop our railway system. It is very expensive to construct a railway across the country. The vision is to start small from region to region with a long term vision to connect the entire country” (Ministry of Railway Development Officer, 2017).

3.6.6 The National Media Commission

The National Media Commission is responsible to regulate the activities of the Press. (Radio, television, newspapers, etc.). The Media constitutes a strong tool in health promotion and preventive activities. However, this requires joint planning and feeding the Media with the desired information. There is therefore the need for closer collaboration between MoH, other stake holders and the Media from the planning stages.

“We are ready to work with health, especially on issues of national interest, but we need to plan together, if we plan together we can reduce the cost of airtime and even together seek for funding for our programs” (Media Officer, 2017).

As it is usually said *“Prevention is better than cure”* this collaboration is therefore fundamental if SDG 3.6 is to be achieved.

3.6.7 Ghana National Fire Service. GNFS (Emergency number 192)

Before the establishment of the Ghana Ambulance Service, the Ghana Fire Service was one of the main agencies endowed with personnel with trained knowledge and skills in extrication and empowered with the necessary tools to adequately rescue victims of RTA from the deleterious effects of compressed or smashed vehicles with stacked-in passengers and over turned vehicles on

passengers. The fire service has this mandate to assist in such situation which will lead to subsequent early evacuation of victims by the ambulance service or other emergence service providers. Fire Service Training Cenetrs were initially used for the training of EMTs until NAS established its own training school. The first badge of EMTs were selected from Fire Service staff, NAS and Fire Service have been conducting joint simulation exercises, Fire Service Officers particpate in the training of EMTs especially in areas of extrication and safety. This collaboration is in the right direction to reduce further injuries and mortality from RTA.

In most countries, especially, in the developed countries, a call for emergency service usually involves a simultaneous team approach by the police, ambulance and fire service. Each of the service with a well-defined role. The police activities will include keeping the scene secured and protected from unwanted activities of by standers including robbery and as much as possible identification of victims. In short, create a conducive environment for the other services to perform their duties. The fire service will lead in extrication, prevention and management of fire, by that facilitating a safe evacuation of trapped victims and subsequent management and transfer by the ambulance service. This implies that all 3 agencies should be well equipped with response vehicles, working closely under a central control center to share the right information at the right time to facilitate early response. However, among the paramount challenges of the fire service is the lack of fire fighting vehicles. Public knowledge of firefighting procedures and prevention including the use of fire extinguishers is vital during RTAs. Lack of such knowledge can endanger the lives of emergency service providers, bystanders and to some extent lead to bush and domestic fire ablaze depending on place of occurrence of the accident.

“We are sometimes called to help with extrication procedures during RTAs. We don’t only deal with fire outbreak but we play an important role in RTA” (Fire Service officer, 2017).

3.6.8 Customs Excise and Preventive Service (CEPS), Ghana. Effects of Tax on RTA

The Customs Division is the organization in charge of determining and collecting direct and indirect taxes for the state (CEPS, 2019). These include Import duty, Import Value Added Tax (VAT), Export Duty, Petroleum Taxes, Import Excise and other levies. These taxes and levies are collected on general goods as well as vehicles. The division is also responsible to prevent and protect the nation from smuggling- an activity performed through border patrols, search for premises and scrutiny of goods and related documents. Majority of imported Vehicles into the country are most often used cars or what is commonly termed as “home used”. Unfortunately, the high taxes on brand new vehicles discourages many from importation of new vehicles but encourages the importation of old and used vehicles. Nonetheless, vehicles beyond 10 years attract special tariffs with penalization to discourage the importation of overly aged vehicles. Some imported home used cars are accident vehicles but imported into the country for repairs and sales. Equally, most imported vehicle spare parts in the market are also home used. These include tyres, breaks pads, batteries, engines and other important parts. The state of a vehicle contributes to road traffic accidents as a failure of breaks or explosion of a tyre are frequent causes of road traffic accidents and injuries. MoH has no control over these events, however, a close collaboration with this sector and further research into accident vehicles from year of manufacturing and year and state in which the entered into the country may influence policy.

3.6.9 The Driver and Vehicle Licensing Authority (DVLA)

The Driver and Vehicle Licensing Authority was established in 1999 by an Act of Parliament (Act 569), 1999. To provide a regulated framework for an enhanced and more effective administration of drivers and vehicles. DVLA has an important role in accident prevention. It is the agency responsible to issue driving license and license driving schools, the agency is also responsible to test and register motor vehicles. Many other functions of the agency include licensing and regulation of private garages to undertake vehicle testing, Licensing driving instructors and provision of syllabi for driver training and the training of driving instructors. In collaboration with the MTTD of the Police Service, they conduct accident investigation. Achieving SDG 3.6 entails a multi-sectoral approach with DVLA playing one of the leading functions in ensuring the driving license are rightfully issued and motors and vehicle road worthiness are of optimum.

3.6.10 Ghana Private Road Transport Union (GPRTU)

The Ghana Private Road Transport Union is the authority that regulates private commercial vehicle owners and their drivers in Ghana and has branches in all 16 regions (Wikipedia, 2020). The G.P.R.T.U. is responsible to ensure the efficient management of private road transport in Ghana. It is estimated that Private Road Transport Union (G.P.R.T.U) constitutes about 70% of road transportation in Ghana (Ocran, 1997). GPRTU is therefore a major stakeholder of interest in preventing road accidents. In the year 2017, 12, 843 road accidents were recorded in the country, 8,877 private vehicles were involved in accidents with, 8,080 commercial vehicles recorded (NRSC, 2017). This is significant contribution towards RTA in Ghana. GPRTU involvement in the prevention and management of RTA is very crucial if any gains are to be achieved.

Below are some responses found in news interview of GPRTU trustee and commercial drivers.

“When you ban night travelling, it wouldn’t solve the problem. Are we the only nation that travels at night? There are other nations that travel at night so let’s do the right thing,”
(Ghanaweb, 2020).

Meanwhile, some drivers blamed the poor nature of roads for the recurring fatal crashes.

“Most of the accidents are not caused by drivers. Almost all our roads are in poor states and most of the roads are single-lanes. The roads are just bad. I’ve heard the minister argue that the Kintampo road is good and such accidents should not have happened there. To me, the accidents on that road are caused by a spirit,” (Ghanaweb, 2020).

“Our roads are bad so when a driver overtakes a car, it is likely to result in an accident. When the roads are good, there will be no accident and drivers will not be tired in the first place.” (Ghanaweb, 2020)

The above responses by the GPRTU members illustrates the misconceptions and the lack of recognition of their own role in reducing or prevention RTA. There is therefore the need for frantic efforts by NRSC to engage, educate and train most commercial vehicle drivers. The need for enforcement of road traffic laws will help prevent or reduce some of the avoidable accidents.

To summarize, multiple actors participate in managing and preventing RTA and work independently or collaboratively towards RTA prevention. It is therefore clear from this discussions and analysis that achieving SDG 3.6 requires multiple actors, collaborative efforts and pooled resources from multiple sectors.

3.7 Discussion

This study assesses Ghana's preparedness towards achieving the Sustainable Development Goal 3.6 focusing on the role of the Ministry of Health and relevant stakeholders. Evidence from the study shows that the Ministry of Health is a critical player in achieving Goal 3.6 of the Sustainable Development Goal as are the role of other key stakeholders. Goal 3.6 aims to halve the number of global deaths and injuries from road traffic accidents. This implied reducing the causes and effect of road traffic accidents (RTA) especially with regards to death and injuries.

Evidence from this study shows that RTA is increasing annually just like most countries globally.

Major causes and high risk factors accounting for these global increase include poor enforcement of road safety regulations, inadequate human resource of regulatory authorities, logistics and poor road infrastructure. Other factors include over speeding, drink-driving and use of other psychoactive substances, non-use of motorcycle helmets, seat-belts, and child restraints. Increasingly, people are driving distracted due to the use of cellular phones while driving, there are also concerns relating to unsafe road infrastructure, poor visibility on road illumination- lack of street lights, unsafe vehicles and inadequate post-crash care. These factors have been proven to cause the growing incidence of RTA (Nyamuame, 2015; Christian, 2014; Siaw, 2013; Fredrick, 2017; Violanti, 1997; WHO A, 2018; NRSC, 2018; WHO, 2018). Notwithstanding these factors, the type of vehicles and lower taxes on used vehicles compared to very high taxes on brand new vehicles, vehicles safety standards, available accurate data repository data on RTA were found to be generally of concern coinciding with other studies (Afukaar,2003; Amedorme, 2014; Asogwa, 1980; Furlonger, 2018; ITSDAG, 2017).

Nonetheless, this study also found that there are adequate policies and guidelines developed by the NRSC before the advent of the SDGs which are in consonance with Goal 3.6 that when enforced will reduce the rate of accidents in Ghana. Similar policies are found in other countries and are recommended by the IRTAD and WHO to enable all countries reduce the rate and impact of RTA (Catherine, 2010; IRTAD, 2007; WHO A, 2018).

The role of the Ministry of Health and its agencies have been found in this study to be of great importance towards achieving Goal 3.6. The MoH especially, has the role to formulate policies and give direction to policy implementation, monitoring and evaluation whilst its numerous agencies provide emergency and collaborative services for crash victims, educate the public and policy directions. There are policies on the management of accidents and emergencies and referral that guide the activities of MoH agencies. However, poor collaboration of the efforts of the agencies, lack of adequate resources and financing have over the years and presently have negative impact on enforcement of agencies to fully compile with established policies. Similar finding where encountered in other ministries of developing countries, contrary to developed countries (Asogwa, 1980; Christian & John, 2014; Catherine, 2010; Zealand, 2016).

The agencies of the MoH including private sector and faith-based health institutions are found to be responsible to implement ministerial policies. Relevant policies include health promotion and prevention activities including awareness creation via nationwide campaigns towards prevention of RTAs. Implementation of the accident and emergencies policy, the national referral policy, prehospital emergency policies including community engagement, education and empowerment in basic emergency care and the national ambulance service are hindered by inadequate health

financing and human resource availability in general. Deficient emergency medical system leads to delay in detecting, reporting, evacuation and transfer of crash victims to appropriate centres of definite care. This increases the severity of the injury and possible complications including death. Similar findings were encountered in other studies expressing the need for an intensive and well-coordinated road traffic education on safe traffic behaviour is adopted and efficiently implemented and complemented with strict law enforcement (Olukoga, 2008; Fredrick, 2017).

The existence of a well-organized pre-hospital emergency care complimented with a well-resourced hospital service with available human resource and logistics are key to patient survival and the reduction of complications. The lack of a well-resourced emergency medical services at most primary care facilities to complement the hospital services nationwide constitute challenges towards the attainment of SDG Goal 3.6 by the year 2020.

With regards to the role of other sectors, enforcement challenges is one of the concerns across the sector. Other studies also raised the question of poor law enforcement and lack of appropriate sanctions applied than the mere availability of financial and human resources (Fredrick, 2017; NRSC, 2012; WHO B, 2018). This problem was raised because there is the need for establishing regular updates and enforcing laws at the national, regional, district and sub-district levels that address the above mentioned risk factors and to enforce the law to limit these factors.

Lack of regular law enforcement leads to indiscipline and lawlessness on the roads as citizens will not comply solely on moral grounds. If the preventive laws on the use of seat belts, obeying traffic lights, use of helmets, speed limits etc. are not enforced then the likelihood of reducing RTA and

achieving goal 3.6 in many countries cannot be achieved. Comparatively, developed countries have a relatively effective road safety measures and are more effective and efficient in enforcing laws in general and road traffic safety in particular irrespective of the status of the offender compared to developing countries (CGRS, 2010; Nordfjærn, 2012; WHO C, 2004). The use of technology helps to eliminate as much as possible the human factor, hence less corruption and enhanced efficiency. These issues remain a problem to be solved towards the attainment of Goal 3.6 in Ghana. Yet these technologies are mostly lacking in Ghana impacting on the possibility of achieving the goals and effective law enforcement.

This study also found as a fundamental the role of other ministries, agencies and departments in promoting safe roads and enforcement of road traffic laws. Some of these roles are directly related to citizen education and law enforcement. For instance, the MTTD of the Ghana Police Service, the DVLA, the Ministry of Road and Highways involves in the education of drivers, regulations of vehicles and licensing of both drivers and vehicles, road construction and adequate illumination of roads and highways. Yet, these functions are problematic due to some of the constraining factors identified earlier. For agencies such as the CEPS, the indirect effect of high taxation on the importation of new vehicles against the low tax on used/accident vehicles and spare parts are a major concern towards addressing the mechanical causes of RTA. The continent of Africa and other developing countries in other continents have become dumping grounds for used vehicles, hence a major source of concern to addressing RTA, environmental pollutions and achieving the Goal 3.6. Very few countries in Africa locally manufacture or assembly vehicles leading to high cost of new vehicles. According to UN figures more than 1.2 million used vehicles were imported into Africa in 2017 (AP News, 2020; Furlonger D, 2018; Mbugua, 2017). Clearly, the road

worthiness of these vehicles have never been a concern for the importing countries leading to the inability to effectively attain the goal 3.6.

Finally, the need for effective inter-ministerial, inter-agency and inter- sectoral cooperation and collaboration with a single national plan and a comprehensive financing strategy involving all stakeholders has also been identified as a gap and as an effective and efficient means of utilizing the scanty financial and human resource to address RTA. Duplication of activities by the different ministries, agencies and department including NGOs and CSO led to a waste of financial resources. Donor funds to different organizations towards the same objective has over the years impeded the synchronization of national development strategies and maximization of resources (Radelet, 2004; Doig, 2005; Knack, 2004). All of these factors have detrimental implication towards the attainment of the SDG 3.6. Based on this discussion, Ghana is undertaking several initiatives and employing several interventions to address Sustainable Development Goal 3.6 which is relevant to reducing road traffic accidents, however, with a year to the deadline of the of goal 3.6, it is realistically difficult to half halve the number deaths and injuries from road traffic accidents by 2020 despite all the gains made.

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CHAPTER FOUR

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

4.0 Introduction

This chapter summarizes the key findings from the study, conclude and provide recommendations per the objectives and findings of the study.

Key Messages

- Overall, multiple stakeholders are working to reduce and prevent road traffic accidents.
- The key actors in the RTA prevention arena include the Ministry of Health and its numerous agencies, Ministries of Interior, Road and Highways, Transport, Communication, Information, and their agencies.
- It is evident that despite the efforts and activities of multiple stakeholders towards reducing and preventing RTA, Ghana cannot half it by the end of 2020.
- There is a general recognition of the importance for inter-sectoral collaboration, effective resourcing of the actors and the adoption of modern technology to improve the efforts being made. Also, there is the need for the creation of a National Trauma Register.

4.1 Summary of Key Findings

- **Findings of Objective 1: To examine SDG 3.6 and its relevance to RTA in Ghana**

In line with objective 1, the SDG 3.6 seeks to ‘halve the number of global deaths and injuries from road traffic accidents by 2020’. The Goal 3.6 is in line with the government’s effort to reduce and/or prevent RTAs in Ghana. The National Road Safety Authority (NRSA) is the leading agency

for the prevention of RTA in Ghana. Various policies have been developed by the NRSA including The National Road Safety Strategy (NRSS), a framework for road safety management in Ghana with ten-yearly strategy plans towards road safety in Ghana. The current National Road Safety Strategy III (NRSS III) represents the strategy between 2011- 2020. Similarly, various sectors and their ministries have developed road safety policies to complement that of the NRSC to promote education, regulation and prevention of RTA. Although Ghana has made gains since the 2000s in preventing road crashes, injuries and fatalities, there are still areas that will need to improve such as road networks, enforcements of speed limits, effective licensing of drivers and vehicles, improved emergency services and the enforcement of road worthiness and enforcement of positive behaviours.

- **Findings of Objective 2: To explore the causes of RTA in Ghana**

The causes of RTA in Ghana are multifactorial, compromising technical, social and environmental factors. Many players in the formal and informal sectors directly and indirectly are responsible for some of these causes of RTAs. The major causes are the general lack of quality and durable roads leading to poor road infrastructure network and the general lack of enforcement of road traffic regulation with minimum sanctions for offenders by the responsible authorities. Also, key amongst them are drink-driving, over-speeding, careless driving in general and reckless use of motorbikes including “okada” riders in the metropolis. Indirectly, the state of used vehicles imported into the country, the issuance of road worthy certificates and drivers licencing to unqualified vehicles and drivers contributes to the causes of RTA in the country. Also, the lack of adequate human resources to be deployed to enforce regulations, lack of available technology and gadgets including radars, CCTV cameras on highways to detect speed limit on highways and lack of logistics including

breathalysers, speed recording devices to appropriately equip the MTTD are considered contributing factors. Lastly, there is poorly sustained nationwide campaign against the high incidence of road traffic accidents although sporadic health promotion activities are undertaken especially whenever there is mass casualty and deaths due to RTA these efforts are not sustained.

- **Findings of Objective 3: To examine the role of Ministry of Health**

The MoH and its agencies have a critical role in the attainment of SDG 3.6. The MoH and its agencies have been undertaking health promotion and prevention campaigns against unhealthy activities that could lead to RTA including drunk driving, over-speeding, reckless driving, etc. The MoH have led several policies, health service provision, training and regulations towards factors to reduce RTA and its effects on injury and mortality. Key contribution to this, is the existence of a health promotion division in the Ghana Health Service, emergency services units in health facilities, the national ambulance service, amongst others. The MoH policies and guidelines for referral and management of victims of RTA are very crucial to managing injuries and fatalities. The National Ambulance Service is the main agency responsible for pre-hospital emergency care, supported by the Saint John Ambulance and the Ghana Red Cross Society to implement community sensitisation and basic emergency life support training for early response. The National Ambulance Service has a school for training of emergency medical technician and paramedics, nonetheless, the limited number of ambulances in the country is considered a major setback. Health facilities are responsible for the curative, rehabilitation and palliative care of victims of RTA. All facilities are organized to provide a 24 hour emergency services, however, the lack of adequate human resource (health staff of the various categories and inappropriate distribution nationwide) coupled with lack of logistics and emergency medicines, good health infrastructure

and national emergency control centre with the appropriate communication network nationwide to promptly detect, report and appropriately refer accident cases constitute a challenge. The lack of a national trauma and emergency center and none existence of a national trauma registry constitute a major delay in accessing quality emergency service and evidence-based policy direction to appropriately address concerns on RTA. The National Health Insurance Scheme is found to be an indirect but influential factor in health service provision in general and emergency coverage in particular as it provides the financial capital to health facilities for service delivery and delays in reimburse has a negative effect in acquisition of medicines and equipment for service delivery.

- **Findings for Objective 4: To understand the roles of other stakeholders**

The roles of other key stakeholders are central to the achievement of SDG 3.6. The Ministry of Roads and Highways responsible for road construction and road maintenance in Ghana has not attained the optimal road structures to prevent and reduce RTA. However, poor funding for road construction, maintenance and monitoring is a key factor influencing the poor status of our roads. The Ghana Police Service's Motor Traffic and Transport Directorate is responsible to enforce the road traffic regulations, however, inadequate human resource and logistic constitute a major challenge to enforcement of safe road regulations. The need for prompt and coordinated involvement of the Ghana National Fire Service in RTA to execute extrication and evacuation of crash victims. The activities of other stakeholders including but not limited to Customs Excise and Preventive Service (CEPS), and DVLA indirectly influence the incidence of RTA. The high import duty on brand new vehicles has encouraged the importation of used and accident vehicles into the country coupled with used spare parts having a progressive negative effect on road worthiness of many vehicles circulating. Hence, accidents due to mechanical failures of some of these vehicles,

i.e. tyre burst, brake failure, etc. are common causes of RTA. Based on these findings, it is evident that there have been several efforts in terms of policy development, road safety regulations, emergency service provision, training and capacity building and regulations of vehicles and drivers.

4.2 Conclusion

Meeting UN SDG 3.6 requires each country to adopt measures that meet its national context and efforts towards addressing road traffic accidents. Accident emergencies have gradually become an issue of public health concern and requires a multi-sectoral approach. Findings in this study illustrates that although the Ministry of Health and other ministries have major roles to play in achieving the SDG Goal 3, it is not attainable without a purposeful multi-sectoral collaboration between the different ministries, agencies and departments contributing towards road safety and the impacts of RTAs. These institutions have contributed in the area of prevention, promotion, enforcement of traffic laws and training.

Road traffic accidents constitute a major cause of morbidity and mortality in Ghana. The gradual and silent increment in its incidence over the years with an increase in case fatality constitutes an emergency of public health concern in Ghana. The two biggest contributing factors are lack of attention to prevention at the one end, and lack of emergency care at the other. Addressing these factors will require an intersectoral approach with a national integrated plan. There are many cross-cutting areas and interdependence in most of the goals including the goal and target under review. The historical vertical implementation of programs and projects by the different ministries, departments and agencies constitute to a large extent a limiting factor towards the attainment of

many of the SDGs including Goal 3.6. A horizontal implementation of programs with a coordinating agency is necessary to avoid duplication of efforts and misuse of limited resources both human and logistics. With a year to the deadline of the Target under review, Ghana will need a serious commitment at all levels with massive urgent investment in human resource, logistics and a national strategic roadmap. The MoH and the relevant stakeholders will need a coordinated effort towards prevention and management of RTA victims if the Goal 3.6 is to be achieved or at least a progress is to be made.

4.3 Recommendations

The following are recommendations made in line with the key findings:

- The creation of a National Trauma Registry to improve evidence-based policy decision making with regards to road traffic accidents. Also, the construction of a National Trauma Centre to facilitate timely care and gradually specialization in care of RTA victims.
- The NRSC should be adequately resourced with financial, logistics and human resource to enable it undertake its duties. The NRSC should effectively collaborate with other relevant agencies especially the Media to conduct a year round sustained campaign on RTA.
- The law enforcement agencies should enforce the law and appropriate sanctions rigorously applied to offenders to deter future offences. The use of modern technology including installation of radars, CCTV cameras, use of breathalysers, speedometers etc should be encouraged on highways to control speed limits. The increase in available and well equipped human resource of the police MTTD to battle RTA offenders. The DVLA should

improve its regulatory activities regarding licensing of vehicles and issuance of Driver License.

- The health promotion division of the Ghana Health Service should liaise and collaborate with other relevant stakeholders within and out of the health sector to promote activities towards prevention of RTA. The prehospital emergency services (National Ambulance Service, St John Ambulance Service, Ghana Red Cross Society and Community) should be well resource to perform their duties including community emergency initiatives. Public and Private Health facilities should be well resourced (Human, logistics, infrastructure, equipment etc) to provide a 24hr emergency care including early rehabilitation and palliative care
- National health insurance should timely reimburse health facilities to enable provision of emergency services. Adequate funding of public health and clinical care activities relevant to RTA beyond the NHIS reimbursements. There is the need for adequate funding of all agencies, departments and relevant stakeholders under a national emergency preparedness strategy.
- The set-up of a multiagency/multidisciplinary committee to foster collaboration in addressing the multisectoral nature of RTA. The set-up of a National Emergency Operation Centre to assist with early reporting, early coordinated evacuation and transfer of RTA victims to the appropriate centres for management.

- There should be a considerable Tax reduction on the importation of Brand New Vehicles as to used vehicles to encourage importation of quality and new vehicles and spare parts into the country. Also, roads in construction should be adequately funded to meet the require quality to prolong life span.
- The Media/Press to be encouraged to sustain a year round campaign against RTA

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APPENDICES

APPENDIX I

Questionnaire

Introduction to questions

I am conducting a research study on SDG.3.6 which seeks by 2020, halve the number of global deaths and injuries from road traffic accidents. The purpose is to evaluate Ghana's preparedness in managing road traffic accidents and if we have the systems in place to achieved this target by 2020.

This study will contribute towards existing knowledge and give recommendations to influence policy and hopefully also set the ground for other future researches in this field.

Please respond to the following questions to the best of your knowledge and ability, there will be some few follow-up questions for clarification. Please be assured that whatever information you will provide will be handled with confidentiality. By agreeing to participate in this interview you have given your consent, however, you can withdraw at any time if you feel uncomfortable. And you may ask any question regarding the study SDG Goal 3. 6.

What are the efforts in place to help reduce RTA?

- 1) Please, are you aware of the Sustainable Development Goals and especially Goal 3, Target 6
- 2) What is the role of your Organization in helping to reduce RTA in Ghana? (Structures, Policies, activities achievement and challenges)
- 3) Is there any interministerial committee to collaborate on issues regarding RTA in the country?
- 4) In general, What do you see as the main challenges that Ghana might face in achieving SDG 3.6,
- 5) Any other thing you may want to share.
- 6) Thank you very much for your time. God bless you.

APPENDIX II

Persons Interviewed

List of Persons interviewed

1. Ministry of Health (4 Persons)
2. Police-Motor Traffic and Transport Directorate (2 Persons)
3. National Road Safety Commission (2)
4. Ghana Health Service (2 Persons)
5. Ghana Red Cross Society (1 Person)
6. Christian Health Association of Ghana (1 Person)
7. Korle-Bu Teaching Hospital (1 Person)
8. Saint John Ambulance Service (1 Person)
9. National Ambulance Services (1 Persons)
10. National Health Insurance Authority (1 Person)
11. Physician Assistant Group (1 Person)
12. Medical and Dental Council (1 Person)
13. National Blood Transfusion Services (1 Person)
14. Food and Drugs Authority (1 person)
15. National Disaster Management Organization (1 Person)
16. Ridge Hospital Accident and Emergency (1Person)
17. Ministry of Road and Highways (1 Person)
18. National Fire Service (1 Person)
19. Ministry of Railway Development (1 Person)
20. Driver Vehicle and licensing Authority (1 Person)
21. Health Facility Regulatory Agency (1 Person)
22. Journalist (1 Person)