

Ambulance Emergency Services and Healthcare Provision in Ghana: A District Level Performance Appraisal

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ABSTRACT

This study evaluates the benefits of a reliable and effective ambulance emergency services towards healthcare provision at the district level in Ghana. It establishes the relationship between ambulance emergency services, healthcare provision and implications. A case study research approach is adopted to achieve the objectives of the research. Purposive sampling procedure is used to select 100 respondents from the target population comprising people with the experience of emergency cases and endured the service. The National Ambulance Service in the district has contributed to filling the lapses created by the ambulance service that hitherto operated in the district. The ambulance service is an effective extension of the regular health system to inaccessible and/or traumatised members of the district. The services are however being affected negatively by a perception that ambulances carry dead bodies, they demand for money before patients are transported by ambulances, the challenge of rising cost of fuel, inadequate number of ambulances and failure of emergency patients in paying the agreed hospital bills and emergency services. Public education on the ambulance and emergency services is imperative to rid of these false perceptions. A district emergency fund to help alleviate the heavy financial burdens on patients and their families will increase the patronage of the ambulance and emergency services.

Keywords: *Ambulance, Emergency Services, Healthcare, patients*

INTRODUCTION

Healthcare are services provided to individuals, communities by health service providers for the purpose of promoting, maintaining, monitoring or restoring health (WHO, 2004). The US Congress (1996) defines healthcare as including any care, service, or supply related to the mental or physical health of an individual. For the purpose of this study, healthcare is used to mean the treatment, management and prevention of illness and the preservation of the physical and mental well-being of a person with the help of medical and allied health professionals. Healthcare must be provided to curb medical conditions to ensure an improvement in the health of people. Certain conditions in life require immediate medical care and a minute delay may result in dire consequences affecting a person's life. Such conditions are referred to as emergency situations. Kobusingye *et al* (2006) writes that emergency medical conditions occur though a sudden insult to the body or mind often through injury, infection, obstetric complications, or chemical imbalance and they may also occur as a result of persistent neglect of chronic conditions. It has been identified that minutes directly following emergency situations are often critical to saving victims' lives or minimizing the long term effects of conditions as such timeliness and level of expertise at

which care is given are critical factors in increasing the survivability of an emergency situation. Transporting patients from the location of an acute event to a health facility is a crucial element of emergency care as such lack of transportation is often the major barrier preventing patients from accessing emergency care. The transportation of victims during emergency situations are preferably made by ambulances. For Kobusingye et al (2006), emergency transportation should be accessible at short notice; a vehicle with a stretcher is ideal suggesting ambulance as the ideal vehicle. Ambulance services have the equipment, expertise and experience in emergency intervention, assessment, management and transport of patients in a variety of controlled, uncontrolled, and disaster environments (Gaston, 2007). Based on these, this study evaluates Ambulance Emergency Services and Healthcare Provision in Ghana, with particularly appraising the performance at the district level.

Ambulance Emergency Services and Healthcare Provision in Ghana

Ambulance services are the primary providers of an all-day response to medical and trauma related emergencies and the interventions. Ambulance services can be by ground or air referring to a vehicle or aircraft designed for transportation of sick or injured people to, from or between places of medical treatment. Emergency services, of which ambulance service forms a part is bedeviled with many difficulties, especially in the public sector and these difficulties include being generally under resourced, understaffed and poorly equipped to service the large areas which they cover. The above mentioned difficulties, including the high rates of motor vehicle accidents and trauma in South Africa, has overstretched the state emergency services and as such the private sector has joined in offering “rapid response” emergency services to augment efforts being made by the state. In Canada, the provision of emergency medical service is the duty of every province while the ministry sets policy and standards in the fields of training, certification, and backbone services such as communications and dispatch networks. Emergency Medical Service is clearly positioned to play a larger role in augmenting healthcare, especially in areas such as paramedicine and primary healthcare (EMSCC, 2006).

In Ghana, cases requiring emergency medical services have been left unattended to over a long period. Accident cases recorded over the years, suggest that the country has left this very important sector of health in a neglected state (Amponsah, Amoako, Darkwah and Agyeman, 2011). The medical emergencies and tragedies that have occurred over the years have strongly highlighted the need for Ghana to initiate an Emergency Medical Service. In 1999 President Kuffour of Ghana in his Sessional Address emphasized the urgent demand for ambulance services as part of the emergency response system (Ministry of Health, 2008). This became unfortunately clear with the Accra sports stadium disaster in 2000 in which 126 people lost their lives (Ministry of Health, 2008). Thus, in 2004 the Ministry of Health in collaboration with the Ministry of Interior established the seven pilot ambulance stations which later grew to become the National Ambulance Service (NAS) (Ministry of Health, 2008). The NAS aims at providing accessible 24-hours ambulance service nationwide through its own ambulance service and by collaborating with other service providers such as the Fire Service and other hospital-based ambulances (Ministry

of Health, 2008). The presence of the NAS is now felt in every district. Currently, ambulance services make a huge range of unmeasured contributions to patient outcomes in emergency situations. These include the minimisation of clinical harm; the early defibrillation in sudden cardiac arrest; the early restoration of vital organ perfusion in major trauma, the rapid transportation of critical patients to definitive care, and others. To enhance emergency medical service, the adoption of emergency management has been proposed. Emergency management is used to traverse the four phases namely mitigation, preparedness, response and recovery. **Mitigation** deals with preventing disasters or taking steps to lessen the impact of unavoidable disasters (Hanus, 2012). **Preparedness** includes all actions taken before the crisis occurs, it requires that emergency plans be developed, personnel at all levels and in all sectors be trained, identifying available resources which can be tapped during a disaster and communities at risk be educated and that these measures be monitored and evaluated regularly (WHO, 2007). Response is taking immediate action upon the occurrence of a disaster or emergency. The term **Recovery** deals with restoring all systems to normal including all actions to ensure safe and normal life (Hanus, 2012).

An inefficient ambulance and emergency service leads to preventable and premature deaths and disabilities. Every day, approximately 800 women around the world die from preventable causes related to pregnancy and childbirth (WHO, 2012). As much as 99 percent of all maternal deaths occur in developing countries where emergency care is often lacking (WHO, 2012). More than half of these deaths occur in sub-Saharan Africa and almost one third occur in South Asia (WHO, 2012). It is estimated that 15% of all pregnant women experience a potentially life-threatening condition and will need emergency care (Kobusingye *et al*, 2006). Approximately 5.8 million people worldwide die annually as a result of injuries which accounts for 10 percent of the world's deaths (WHO, 2010). Nearly one third of the 5.8 million deaths from injuries are the result of violence and nearly one quarter are the result of road traffic crashes (WHO, 2010). This could be averted with the help of timely and efficient ambulance service and emergency care.

In Ghana medical cases that are termed emergency usually result from road traffic accidents, during which victims of such accidents require care which is not available. A report by the Ghana Health Service (2012) reveals that Ghana recorded 1,022 maternal deaths in 2011. The results from Ghana Maternal Health Survey (2007) identify haemorrhage as the largest single cause of maternal deaths. Abortion, hypertensive disorders, sepsis, miscarriage and obstructed labour, all emergency situations, were the causes of maternal death. The conditions leading to maternal deaths can all be identified as which could be curbed by appropriate and timely emergency care of which ambulance services play an important role.

MATERIALS AND METHOD

This study adopts the case study research design. It takes the case of Bibiani-Anhwiaso-Bekwai district is among the 22 districts of the western region. It is found in the northeastern part of the Western Region of Ghana. It encompasses a surface area of approximately

873km square with Bibiani as the district capital (BABDA, 2010). It is bordered to the north by the Atwima Nwabiagya District in the Ashanti Region, to the west by Sefwi Wiawso District, to the south by Wassa Amenfi District and to the east by the Upper Denkyira District in the Central Region and Amansie East District in the Ashanti Region (BABDA, 2010). The district has a total population of 123,272 (Ghana Statistical Service, 2012) and holds a total of 309.3km length of roads (BABDA, 2010). The district is essentially rural with most of the inhabitants (indigenous Sefwi) engaged in small-scale farming and petty trading. Out of 101 major settlements, there are only three urban centres. As such the urban population makes up 37 percent of the total population (Donkor, 2011). The District Directorate of Health manages and coordinates health delivery in areas of both curative and preventive healthcare. These services are delivered at community, sub-district and district levels. The district is blessed with both private and public hospitals. Emergencies are mostly catered for at the district hospital in Bibiani which is the only public hospital, with complications referred to Komfo Anokye Teaching Hospital in Kumasi. The major means of transport in the district is by road. All major settlements in the district have telecommunication coverage. Telecommunication services are offered by both the public and private communication companies. Figures 1, 2 and 3 show the location of the district in national, regional contexts as well as the map of the territory.

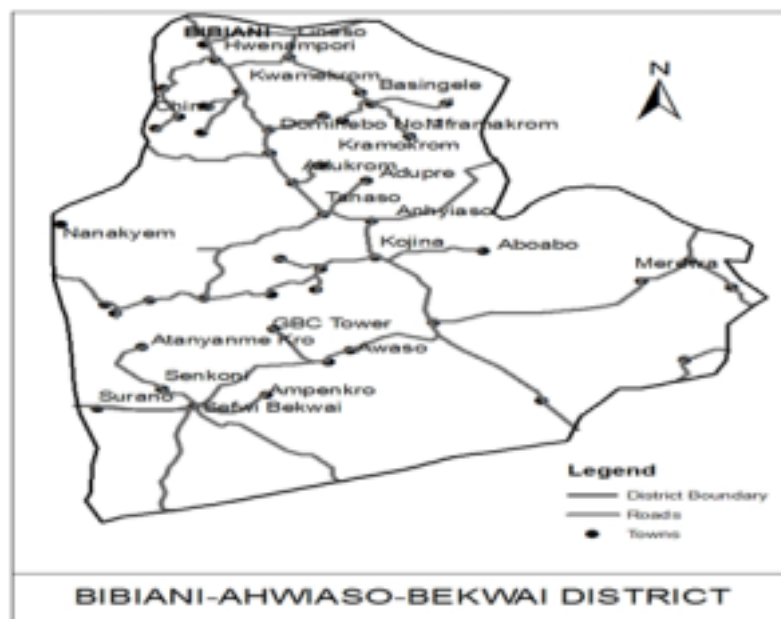


Figure 1: Current Map of Bibiani-Anhwiaso-Bekwai District

Source: Base map of Ghana Districts (2007)

The report evaluates the ambulance and emergency services and healthcare provision in the Bibiani-Anhwiaso-Bekwai district. The study covered citizens of the district and institutions operating ambulance services and responding to emergencies which are medically related. Data on how people perceived the ambulance and emergency services, state of the ambulance and emergency service, contribution of ambulance and emergency

service to secure healthcare, factors affecting the service and the way forward to an efficient and reliable ambulance and emergency service in the district were collected. The various stakeholders whose views were sought in assessing the benefits of a reliable and efficient ambulance and emergency service towards healthcare provision included the Bibiani Government Hospital, the Divine Love Hospital, the Noble Gold Company Hospital and the district office of the National Ambulance Service (NAS). Citizens of the district who have ever had an emergent medical condition were also interviewed. Hospitals were selected on the basis that they operate an ambulance service and also are into healthcare delivery. The NAS was also chosen because it is the main public institution mandated to provide emergency ambulance service filling the lapses created in the delivery of emergency ambulance service by hospitals. Primary data were received from citizens purposely selected, hospital administrators and the officer in charge of the district office of the National Ambulance Service (N.A.S). The data were analysed using table, chart, frequency distribution and simple percentage.

RESULTS AND DISCUSSION

From the findings of the study, emergency medical situations that are reported to hospitals in the district include among others accidents, complications from surgery, dizziness, fainting, stomach upset, and malaria. The means of transporting emergency victims to hospitals presents four alternatives: by ambulance, taxi, personal vehicle and people. Table 1 shows the emergency medical conditions and the means of transporting emergency victims to the hospital during the period of investigation. Table 1 indicates that accidents top the emergency list with 33 per cent, while obstetric conditions, thus labour complications experienced by women rank second with 20 per cent. Stomach upset, fainting and complications from surgery follow obstetric conditions with 17 per cent, 13 per cent and 10 per cent respectively. These figures are confirmed by survey results from the hospital in the district as it was discovered that the most emergency cases attended to include accidents and obstetric conditions. With reference to means of transporting emergency victims to the hospital, 59 per cent of victims were transported by taxi.

Out of the 59 per cent, accidents and obstetric cases alone contributed to 35 per cent. The least used means of transportation was through ambulance which recorded 7 per cent of emergency victims transported to hospitals. The 7 per cent is solely contributed to by accident victims. Even though people believe ambulances are faster and are able to bypass traffic so as to get emergency victims to the hospital within the shortest possible time, its patronage was low. This is as a result of frequent breakdowns of ambulances, demand of money for the purchase of fuel for the ambulance, use of ambulances for carrying dead bodies and ignorance about numbers to call to access ambulance service. Emergency ambulance service is provided by particular institutions which are the hospitals and the National Ambulance Service (NAS) in the district. There are three privately owned hospitals in the district. Two of them belong to mining companies and these hospitals provide services to miners and close relatives of miners. It responds to emergencies that happen on the mine site and for transporting patients on referral for further treatment. The

main hospitals into emergency ambulance service for the general public are the Bibiani District Hospital and the Divine Love Hospital which is privately owned but is National Health Insurance Scheme accredited. The district hospital follows a planned preventive maintenance approach for maintaining the ambulance while the Divine Love Hospital maintains its ambulance when the need arises. The ambulance services in both hospitals are financed by both the hospital and clients. Clients are made to pay for what is referred to as fuel fee, which is used for purchasing fuel for the ambulance, however the hospital sees to the vehicle and equipment maintenance.

The National Ambulance Service (N.A.S) was created upon recommendation by the committee set up to look into the Accra Sports Stadium Disaster. The service was created to fill the lapses created in the ambulance service by health facilities. The service has as its motto “Timely service saves lives” thus providing timely care to save lives. The N.A.S at the district is attached with Emergency Medical Technicians (EMTs) who are prepared to provide paramedical service to emergency victims. From the survey, it was identified that taxis have taken the role of transporting emergency victims to the hospital as people do not usually engage the services of the ambulance. The NAS at all levels is under the purview of the Ghana Health Service and the Fire Service. When an emergency victim is picked up by the ambulance the EMTs on board fills a form known as the National Ambulance Service, prehospital report form which contains personal information about the patient and information about the medical condition of the patient. This form is presented to the hospital on arrival and it gives first-hand information to health practitioners which aid them in administering treatment to the patient. The prehospital sheet has a component which is used to check equipment in the ambulance to make sure the equipment are in their best shape to respond to emergencies. The service operates a preplanned maintenance schedule for vehicle maintenance, which is tendered by a group of engineers called COMET. The maintenance schedule is arranged by COMET and communicated to the district office; representatives of COMET go around to various ambulance stations to service the vehicles. With regards to equipment maintenance, the district office puts in a memo to the National Headquarters for refill of stock levels when stock level falls.

Collaboration between the ambulance service, the health service and fire service helped ensure efficiency in the service which contributes to the provision of quality healthcare. The National Ambulance Service is very much attached to the fire service even though the two services are under different authorities. The fire and ambulance services share the same station and upon every distress call to the fire service which is to be attended to, the ambulance accompanies the fire tender. This is a step in the right direction with reason being that the ambulance is able to arrive on time at an accident or fire explosion scene and offer care to victims who may have been injured through the accident. The ambulance is also able to transport victims to the nearest hospital for onward treatment. This helps to save lives and reduce mortality and disability. The service is linked with hospitals in the district especially the district hospital such that for any emergency where service of the N.A.S is needed, the hospital is able to get in touch with the N.A.S office and within the shortest possible time, the ambulance avails itself to respond to such calls.

The study established that benefits of the NAS are not limited to saving lives and responding to emergency medical conditions. The NAS also helps ensure industrial safety. Employers in Ghana are required by the Ghana Labour Act 2003, Act 651 to ensure their employees are not exposed to conditions that would lead them to work related injuries or illnesses. Employers are to ensure that occupational accidents and illnesses are also attended to. As a result employers are to maintain certain items at the work place which responds to accidents and illnesses associated with the occupation. The district has three mining companies where representatives from the NAS visit periodically to assess their readiness towards ensuring occupational health and safety. The NAS at the district inspects whether they are corrective and preventive measures in place to respond to emergencies that may occur at the mine sites, reports are then furthered to the national headquarters of the ambulance service. The service also offers expert advice to the mining companies on how to respond to emergencies that occur at the workplace.

Figure 2 depicts how respondents view the ambulance service in the district as they were made to rate the service. Forty one per cent of the respondents rated the service satisfactory but stated that there was more room for improvement. The main reason given for rating the service satisfactory is that ambulances are able and ready to transport patients on referral. Thirty-one per cent of respondents rated the service bad while giving reasons as hospitals making patients pay for fuel cost for the ambulance, ambulances going off road most times because of mechanical faults and the fact that they do not know the ambulance numbers to call because they have not been educated on the service at all. Twelfth eight per cent of the respondents rated the service very good because they believed the service was up to task as they arrive mostly on time at accident scenes. In addition to the above reasons given, it was realised that a substantial number of respondents thought ambulances were for carrying dead bodies. This perception is hampering the progress of the ambulance service.

As a result of this perception, some citizens of the district fail to engage the services of an ambulance thinking that on-lookers would think it is a dead body being carried away. Again, as a result of this perception, some citizens of the district prevent any ambulance from parking in front of their residence as other people might see this and perceive it to be an impending funeral in the family. From the survey, it was discovered that citizens of the district who live outside the district capital believe they have been left out of the ambulance service because they were aware that ambulances refuse to go beyond the district capital thus Bibiani and as a consequence could not attend to emergency conditions outside its borders. This perception led to people patronizing the services of taxis in transporting them to the hospital during emergencies and not requiring the assistance of the National Ambulance Service even though the service is free of charge.

CHALLENGES OF AMBULANCE SERVICES IN GHANA

Rising Cost of Fuel: The rising cost of fuel poses a major challenge to the ambulance and emergency services in Ghana. High fuel cost increases maintenance cost and also the cost of supplies for the ambulance. As a result of this the operating cost of the ambulance service keeps increasing.

Inadequate Number of Ambulances: Due to frequent breakdowns, ambulances for the hospital are mostly out of service and therefore rely on the NAS to provide ambulance service. The NAS has only one ambulance and as a matter of fact is overwhelmed by the quantum of workload on them; accompanying the fire tender on attending to distress calls, responding to accidents and other emergency medical conditions and transporting patients on referral to the Komfo Anokye Teaching Hospital.

Failure to Settle Hospital Bills: The main challenge facing hospitals in the district with respect to the provision of emergency services is the refusal of some patients to pay the agreed bill. Some patients are brought in under very critical conditions which require immediate attention. Under these circumstances the hospitals agree to treat patients while patients make payments after treatment, however, when patients get well they leave the hospital without making good the bill. The study has established that the majority of patients who refuse to pay hospital bills are those who have emergency conditions and are brought to the hospital under serious conditions.

Inability to pay Ambulance Fuel Cost: Again, some patients are unable to pay the amount of money designated as fuel cost of the ambulance. This money as explained by hospital officials is used to purchase fuel for the ambulance before transporting patients on a referral from one hospital to another. As a result transportation of patients on referral is delayed until they are able to make payment.

Inadequate Staff: In the hospitals, because of inadequate staff, patients on referral are placed in the ambulance to be transported for further treatment alone with the ambulance driver without any accompanying clinician. The district office of the N.A.S complained that they have not been able to carry out education on the ambulance and emergency services because they lack staff. As such if they carry out such programme, they may be overwhelmed by the demand for the services by citizens of the district. With this, raising peoples' interest in the service to be trained as EMTs must be encouraged. This would ensure that more EMTs are obtained to help in the service, thereby curbing the problem of inadequate staff.

Table 1: Emergency Situations and Means of Transportation to Hospitals

Condition	Means of Transport				Total (%)
	Taxi	Personal Vehicle	Carried by People	Ambulance	
Accidents	21	2	3	7	33
Obstetric Conditions	14	6	-	-	20
Stomach Upset	12	3	2	-	17
Fainting	6	-	7	-	13
Complications from surgery	2	7	-	-	9
Dizziness	3	-	-	-	3
Malaria(Feverishness)	-	3	-	-	3
Excessive Vomiting	1	-	-	-	1
Swellings	-	-	1	-	1
Total (%)	59	21	13	7	100

Source: Field Survey, 2013

Table 2: Functions Performed by Ambulance and Emergency Service

No.	Function
1.	Basic life support, rescue and first aid
2.	Obtain diagnostic signs
3.	Cardiopulmonary resuscitation
4.	Oxygen therapy by resuscitators
5.	Arrest of hemorrhage
6.	Treatment of shock and burns
7.	Airway management and suction
8.	Management of spinal injuries
9.	Use of lifting and handling equipment
10.	Monitor flow of intravenous fluid
11.	Extricate entrapped persons
12.	Activated charcoal
13.	Defibrillations
14.	Endotracheal intubations

Source: National Ambulance Service Survey (Bibiani) March, 2013

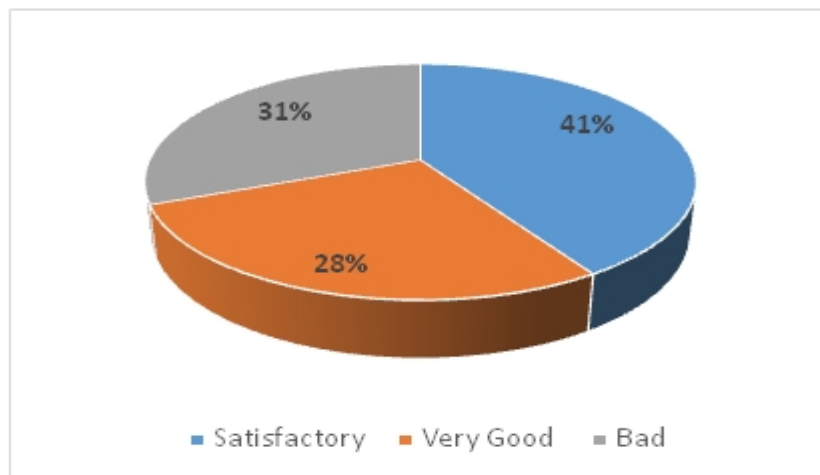


Figure 2: Perception of the Public on Ambulance Service in the District

Source: Field Survey, 2013

CONCLUSION AND RECOMMENDATIONS

Emergency medical services are public services that often provide the first line of response to urgent healthcare needs within a community; as a result emergency care needs to be projected as an integral component of public health systems in the nation. Emergency care must be viewed as a total system with interdependent components, including prehospital care, transportation, and hospital care. Local hospitals or facilities that treat emergencies (often district hospitals) are best positioned to coordinate these services as an uninterrupted unit. To ensure an effective ambulance and emergency services there should be an integration of planning into all aspects of the services. A field survey may be conducted to identify the ensuing health related incidents and needs that can stem from the routine emergency response. From this, a plan may be drawn that outline an immediate response structure

and a secondary, health-centric response framework. In addition, the plan may include non-traditional emergency response partners, such as power utility companies, and other non-profit/non-governmental organisations, and faith based organisations. Based on the findings of this study, the following recommendations are made:

Education on the Ambulance and Emergency Services: To address the issue of wrong perception held by people in the district, education on the operations and activities of the ambulance service must be conducted. This must be done by the district office of the N.A.S by holding talk shows on several radio stations across the district where citizens could be made aware of the existence of the N.A.S in the district. Citizens would also be taught basic first aid tips and the dos and don'ts when there is any emergency situation. As citizens are made aware of this, it is expected that they would better appreciate the ambulance and emergency services and learn more about ways by which the public can co-operate and contribute to make the ambulance and emergency services more effective and efficient.

Financial Control Mechanisms: Lack of money often stops people from using emergency services or patients after receiving treatment may refuse to settle hospital bills and bolt away. Even though lack of money is a barrier to emergency medical service especially in a rural district like the Bibiani-Anhwiaso-Bekwi district, the high cost of fuel makes running the service expensive and therefore there has to be some modalities put in place for clients to absorb some of the cost. Contributions towards emergency services can be made indirectly through taxation. A district emergency fund can be created where organisations and philanthropists make donations. This fund can be used to cover transportation and other requirements while clients are drawn to pay just a token to supplement the fund when necessary. This option as a financial control mechanism would help create a sustainable and efficient emergency medical service.

Increase Number of Ambulances: To ensure a reliable and efficient emergency medical service in the district, more ambulances must be made available to the N.A.S to augment the work already started by the only ambulance available. It is suggested that the government, NGOs and other philanthropist should come on board to help acquire more ambulances. Preferably, since the district is made up of three circuits, each circuit should have its own ambulance. The circuits in the district are Bibiani, Anhwiaso and Bekwai. It is hoped that when each circuit has an ambulance, emergency services can reach the length and breadth of the district covering every part of the district. When this is done, the ambulance service offered in saving lives by performing field stabilisation and by expediting the arrival of critical patients to the nearest hospital can be made better. As the service improves people would be willing to provide financial support towards the service as studies have shown that the financial support of an ambulance unit may rely on the value perceived by the hundreds of patients who are comforted by having rapid access to care or by knowing ambulances are there if needed, even though their lives and health are not actually improved by ambulances.

Ensure efficient and effective Administration of the Ambulance Services: In improving the execution of emergency services, the various components of the service, such as personnel, medical, buildings, transportation, equipment and communication must be properly linked to ensure that the whole system works as a unit. There should be a local co-ordinator who would be responsible for supervising and co-ordinating all emergency medical care at the district. The co-ordinator should work with a committee that has representatives from key sectors such as hospitals and health facilities, transportation and the district assembly. The NAS must also utilize the services of a Public Relations Personnel who will mediate between the ambulance service and the general public.

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