

**THE CONTRIBUTION OF TRANSPORT (ROAD) IN HEALTH CARE DELIVERY  
“A CASE STUDY OF MANKRANSO DISTRICT HOSPITAL IN THE AHAFO ANO  
SOUTH DISTRICT OF ASHANTI REGION”**

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**ABSTRACT:** This project seeks to link the contribution of transport to health care delivery. The main objective of the study was to conduct a Strategic analysis on the role of transport in quality health care delivery. A variety of qualitative and quantitative instruments were employed to gather data to respond to the study research questions. The primary data for the study were collected from the respondents through questionnaire administration and interview conducted by the researcher. The study’s findings confirmed the existence of healthcare transport as a supportive service in quality health care delivery but due to the poor road network, few health facilities and high transport cost most household do not access medical treatment. It is also difficult for health workers to embark on outreach programs and be at work on time because of transport infrastructure and services. These have tended to negatively impact on the delivery of healthcare commodities and services for Ahafo-Ano residents. A strand of thought that filters through the discussion is the establishment of a good road network, increase medical outreach and mobile health clinics.

**Keywords: Health, Transport, Infrastructure, Emergence, Hospital, Ambulance**

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## BACKGROUND OF THE STUDY

Transport is identified as a key constraint on achieving the child and maternal health goals in many of the developing countries in Africa (World Bank, 2011). It is clear that transport and health are inextricably linked. Transport has major health impacts – through accidents, levels of physical activity undertaken, effects on air pollution, and access to a range of services. Although there are different mode of transport (or means of transport or transport mode or transport modality or form of transport) but the term used to distinguish substantially different ways to perform transport. The most dominant modes of transport are aviation, rail transport, road transport and water transport, but other modes also exist, including pipelines. They fall into one of three basic types, depending on over what surface they travel – land (road, rail and pipelines), water (shipping), and air. The study will basically look at road transportation given vehicle the upper hand over motorbikes/cycles.

WHO/UNICEF (2010) starkly describes the consequences of inadequate transport for the delivery of basic health care: "The most impoverished – usually rural areas have few or no health care facilities, or the means to transport people for medical assistance. About 90 per cent of children dying die at home, often without their families even seeking health care". Lack of transport and cost of transport are important reasons why people do not use healthcare services, especially services requiring a referral. Health services are often not accessed by the very poor and by women in particular. Key obstacles for accessing healthcare service are healthcare charges, long distances to facilities, inadequate and unaffordable transport systems, poor quality of care, and poor governance and accountability mechanisms. Problems with transport also affect the ability of staff to deliver health services. Access to appropriate transport services is a major issue for communities isolated by their remoteness, or as a consequence of social, cultural or economic factors Use of health care services declines as the individuals' distance from the facility increases. Distance has been related to delays in treatment, increased mortality for some health problems such as ischemic heart disease. Lack of accessible, affordable and timely public transport is a risk factor for health. There must be smooth and prompt vehicles to address emergence cases and referral cases at every level of health care (whether the lower level or the higher level of care). From literature review transport causes delay in deciding to seek care and in receiving care at health facility were identified as contributing to deaths among women with Obstetric complications( Fam,1992; Maine, 1997).

Transport infrastructure and services have significantly improved the livelihoods of poor people living in rural areas. Transport facilitates the timely and affordable delivery of basic health, education, water and sanitation services, it connects communities to markets and information, and can empower vulnerable groups.

The organization of health services can add to or alleviate all these impacts, as well as making it more or less difficult for patients, relatives and staff to travel to and between healthcare settings. The provision of transport services (including issues such as car parking) have major cost implications, as does addressing the health issues associated with transport. Transport issues are an

integral element in meeting a range of health service aims, including those set out in national service frameworks and other policy documents, and in the health service environmental standards. There are significant inequalities in the impact of transport on the health of individuals and communities, both directly (e.g. through the social distribution of child pedestrian deaths); and indirectly (e.g. through the influence of planning decisions to accommodate car access). This work looks at some of the reasons why health managers should be concerned with transport management. It also looks at some practical approaches to managing transport

One reason why health managers need to be concerned with the management of transport for health service delivery is that transport costs are the third largest part of most district health budgets (after staff and drug costs), and often the largest part of the budget under the direct control of the district manager. Secondly, introducing effective transport management can greatly improve health service delivery. In South Africa, for example, the introduction of an effective transport management system increased the availability of transport for the health sector by nearly 40 per cent, and nearly tripled the amount of vehicle time used for service delivery.

### **Problem Statement**

Although transport is a supportive service in health care delivery, lack of transport and cost of transport are important reasons why people do not use health care services, especially services requiring a referral. Problems with transport also affect the ability of staff to deliver health services. The distance from the neighboring communities to the district hospital is far with deplorable road network making it unattractive for private transport users to use in case of emergency.

Limited transport in the district hospital makes it difficult when there are many emergency cases from either the lower level to the higher level. Health services are often not accessed by the very poor and by women in particular. Key obstacles are healthcare charges, long distances to facilities, inadequate and unaffordable transport systems, poor quality of care, and poor governance and accountability mechanisms.

Access to appropriate, affordable and timely transport affects women's ability to receive preventative and emergency obstetric care that is essential for their survival. The World Health Organization estimates that 75 per cent of maternal deaths can be prevented through timely access to child-birth related care (WHO 2001A). The transport sector therefore plays an important role in achieving the fifth millennium development goal 5 - to reduce maternal mortality by 75 per cent by 2015.

Distance, poor roads and lack of ambulances and other means of transport delays the management of life threatening complications especially obstetric emergencies are difficult to predict, when they occur during a home delivery, getting the mother to a hospital is critical. In most of the District hospital in Ghana e.g. Mankranso health centres.

### **Objective of the Study**

The main objective of the study is to assess the effects of transport (road) on healthcare delivery (that is, health workers satisfaction, patient satisfaction and the district satisfaction) of Ahafo Ano

South District Hospital, Mankraso. Furthermore, the study aims at the following specific objectives.

1. . To find the role of transport in quality healthcare delivery in the district.
2. To examine the accessibility of transport to health care centres in the district.
3. To find out the availability of transport in referral cases from the villages to the district and to the teaching hospital.
4. To establish the impact of transport on staff to work in Mankraso District Hospital

### **Research Questions**

The specific objectives are used to formulate research questions for the study. The questions that formulated are:

1. What is the role of transport in quality healthcare delivery in the district?
2. Is transport easily accessible to health care centres in the district?
3. How available is transport in referral cases from the villages to the district and to the teaching hospital?
4. How does transport affect health workers to work in Mankraso District Hospital?

### **Significance of the Study**

The findings of the study will show the impact of transport on service delivery to staff, Patient and also provide recommendation as to the way to improve upon them in order to maintain quality health delivery service. The study will also serve as a reference guide for the government in planning and implementation of its budgetary allotment to the health sector with adequate program and strategies. The suggestions and recommendations of this research would serve as a useful source for references to future studies and would also help MDH to improve its transport system efficiently and effectively.

### **RESEARCH METHODOLOGY**

There are three options of academic research which are exploratory, explanatory or descriptive (Yin, 1994). Since the purpose of this study is to gain better understanding on the role of transport in the achievement of quality healthcare delivery, the research can be adopted both exploratory and descriptive approaches. Again, this study adopted qualitative approach to collect and analyse data since it is more concerned with understanding the meaning of some phenomenon rather than attempting to quantify these phenomena through data collection and analysis. . There are many research strategies available to researchers but what the researcher finds appropriate for this particular study is the case study strategy. A case study is a strategy for doing research which involves an empirical investigation of a contemporary phenomenon. It is a research strategy under which the researcher can make use of different data gathering techniques including observations, interviews, surveys, questionnaires and secondary information. Both Primary and secondary data were gathered for the study. The primary data for the study were collected from respondents

through questionnaire administration and interviews conducted by the researcher. Secondary data was collected from various sources. These include, The Geography of Transport system, Transport Management Manual, Transaid Worldwide, 2000, Journal of Transport Geography, and Health Journal of World Health Organization (WHO) and the web site of World Health Organisation (WHO), World Bank (WB) and Ghana Health Service (GHS) were also used. The researcher purposively selected Mankranso District Hospital for the study. The medical superintendent, Pharmacists, Health Administrator, District Transport Officer, Hospital Drivers, midwives, nurses, Local Drivers as well as some patients was conveniently selected to be part of the respondents used for the study. The patients who were used for the study were randomly selected. The total respondents for the study were one hundred and sixty five (165). The developed questionnaire was in two short focus group meetings: patients in the district and health managements or key informants. The analysis of the data was based on simple percentages and frequency tables. Responses from individual/personal interviews were processed manually.

## LITERATURE REVIEW

### **Transportation Infrastructure in Developing Countries**

In the 1960s and 1970s roads were being constructed and networked at a much faster pace than the corresponding maintenance budgets and institutional capacities. In fact, according to a 1988 World Bank Policy study, an estimated \$45 billion dollars was invested in road construction alone in 85 developing countries (Harral 1988). The consequences of this infrastructure boom and lack of maintenance are road deterioration and eventually the “effective size of the network” will diminish (Edmonds 1983). Much of the problems associated with road deterioration can be prevented before it even has a chance to start. However, prevention requires education, motivation and accountability.

Roads deteriorate slowly for the “first half to two-thirds of their service life, depending on traffic” (Harral 1988). After which, roads deteriorate much more rapidly, accelerating with time. It is also noteworthy to add that heavier traffic and axle loadings exceeding design capacities of the road also contribute to the deterioration of roads. In many cases, people in developing countries were slow to make the connection between road deterioration and the rising costs of vehicle operation and prices of goods. Furthermore, evidence that there is a lack of public accountability is seen when governments fail to give road maintenance high priority in their budgets. It is evident that for rural transport to be effective a variety of means of transport should be available to mobilize people and their goods.

### **Rural Transportation Infrastructure**

As previously stated, development depends on transport. Even so, transport is dependent on infrastructure and modes of transportation. According to the WB (2000), 70% of world population lives in the rural areas. WB defines rural transport as all transport activities that take place at local government and community household levels. Rural transport, in particular, features several types of infrastructure and modes within any given region. From paved roads to gravel and earth roads to tracks and footpaths, these infrastructures promote motorized and non-motorized mobility alike. This includes the “intra – and near- village transport network...and access to higher levels of the

road network” (Lebo 2001). Essentially, the goal in providing and/or improving rural transport is poverty reduction. Inaccessibility and immobility due to isolation have left many rural inhabitants in utter desolation. By introducing new systems of rural transport infrastructure (RTI) within a community, the quality of life immediately improves, thus alleviating many effects of poverty. The statement of MDGs which was signed by all the Sub-Sahara African governments, as well as those of aid-giving countries, and developing countries from other parts of the world, in the months following the UN Millennium Summit of September 2000, makes no explicit reference to transport. However it has always been recognized that transport infrastructure and services indeed have an important supporting role to play (UN, 2004). The existing rural transport infrastructure consisting of the local roads, tracks, footpaths and bridges varies in quality, usually depending on weather or construction. Also, intermediate means of transport such as wheelbarrows, bicycles, and animal drawn carts are usually too expensive for people in rural villages. Most rural transport simply involves walking and carrying between villages and to main roads for long distances. Women have been identified to be the gender group that bear most of the transport burden in rural communities such as fetching water, going to farms and accessing markets and health services (WB 2000).

The lack of concentrated demand for transportation, however, has constrained the development of affordable, more efficient services. Another problem with rural transport in many developing countries is that it is time-consuming. Therefore, much transport is not far from villages and any external trip must be of high economic or social importance.

### **The Role of Transport in Healthcare Delivery**

Hall et al (2006) conducted a study in the Eastern Cape province of South Africa with a view to understanding the impacts of transport to healthcare service delivery. Their findings demonstrated not only the need for improved transport services in the delivery of health, but also the importance of using the right type of vehicles. Their study also revealed that during the rainy season, it was exceedingly difficult for delivery vehicles laden with drug supplies to access health facilities largely because of poor road infrastructure running along hilly, often broken and generally difficult terrain that characterize the province. In wet weather, these roads become muddy and slippery. In fact, health transport problems are indeed most severe in the wet season for most rural areas not only in South Africa but also in other developing countries (Gray & Suleman (1999). This severity is felt much more keenly in emergency cases.

In a study done by Mobility and Health (2008) in Namibia, it was demonstrated that transport for emergency cases comes at a higher cost for people living in rural and largely marginalized areas. Very often, patients get too exhausted or die while waiting for Ambulances, which take over three hours on average to report at the scene after a callout. In South Africa, there is a huge backlog in terms of the provision of emergency medical services (EMS) especially in the public health sector. This situation is exacerbated by the short supply of specially designed and equipped vehicles as well as well-trained staff or paramedics – the hallmark of EMS. Small wonder then that organizations such as the Southern African Rural Poverty Network (SARPN) have clamored for the generation of a national EMS strategic plan (as part of a concerted efforts to achieve the

Millennium Development Goals) using the 2010 FIFA Soccer World Cup as a fillip (SARPN, 2007).

Lack of adequate and affordable transport services particularly in remote rural and marginalized areas, under-girded by sound transportation infrastructure, are obstacles to achieving meaningful service delivery. Clearly, without proper transport infrastructure and services, healthcare facilities in these areas will remain under-serviced in terms of maintaining adequate levels of medical supplies and retaining medical staff as well as eliciting confidence and therefore regular utilization of the facilities by locals (Mashiri et al, 2007b; Mashiri et al, 2008). As part of the overarching framework of the National Transport Policy for South African, it is envisaged that policies in the transport sector will be outward looking, shaped by the needs of society in general (Department of Transport, 1996). Among those needs is transport for health service delivery. The importance of transport services is summarized by Hall et al (2006) as:

*“...Adequate and appropriate vehicles, which are efficiently managed, are essential for delivery of quality healthcare within a health system. The correct number and vehicle mix, suitable for topographical area in which the service is provided, is required. A comprehensive management system for monitoring and evaluating transport services is essential...”*

### **Transport Accessibility to Healthcare Facilities**

People travel in order to gain access to goods, services, employment, friends and family, leisure pursuits and healthcare. Many people travel much greater distances than in the past for routine purposes, as a result of the increasing affordability and accessibility of driving. Overall motoring costs are at or below 1980 levels, over which time average disposable income has increased by 90%, and planning decisions are based around the expectation of car use by all (DfT, 2003). Consequently, a survey conducted by Department of Transport, UK showed that 28% of households who are without access to a car find it harder to travel to get to shops, employment, healthcare and other services. While only 7% of those in the highest income quintile have no access to a car, 62% of those in the lowest income quintile are without such access (DfT, 2003). Access to appropriate transport services is a major issue for communities isolated by their remoteness, or as a consequence of social, cultural or economic factors (National Public Health Partnership, 2001). People who do not have their own means of transport suffer considerable disadvantage within the community, particularly if they live in low density areas. Use of health care services declines as the individuals' distance from the facility increases. Distance has been related to delays in treatment, increased mortality for some health problems such as ischemic heart disease.

A study conducted in the village of Vanathavillu in the north-western Province of Sri Lanka by Wettasinghe and Pannila (2002) illustrates that even where rural communities are better served with intermediate and motorized transport and a paved road, transport of those who are too ill to travel by bus is prohibitively costly. Added to this is the problem of gaining access to medical staff once the health outlet has been reached. Due to the low ratio of health workers to the populations they serve, villagers need to travel early and queue for many hours if they are to have any chance of being seen by qualified medical staff.

### **Impact of Inadequate Transport on Health**

There are few studies that have quantified the health impacts of poor transport to health facilities in developing countries. A few case reports have been published and these are discussed in the context of rural poverty, gender and health. The distribution of health facilities in rural areas is usually sparse, particularly of hospital-based facilities. (Babinard and Roberts, 2006) Contrary to this, there is usually a concentration of health facilities and manpower in urban areas, where disproportionately more health professionals are also found. It is in rural areas where transportation and other infrastructure may also be at their most deficient and where the effect of poor transport on health is likely to be greatest.

The World Health Organization (WHO) has set a target maximum distance from health care of 8kms. In practice only 40 to 60 per cent of the poorer country populations have this level of access. For example in the Orumia region of Ethiopia only 43 per cent reach this target (TRANSAID, 1999). Therefore transport and outreach services are crucial in enabling rural communities gain access to health care.

### **The Costs of Transport to Access Healthcare Services**

Transport costs of accessing health facilities have been calculated to represent 25% of the total outlay on health in north-east Brazil (Terra de Souza et al 2000) and 28% in Cameroon (Sauerborn et al 1995). Wyss et al (2001) in a study of the costs of TB care for households in urban Tanzania found that households spent between US \$ 13 and \$20 accessing drug therapy during their short-course treatment using the cheapest forms of transport. Research findings from Bangladesh reveal that in the breakdown of patient costs, travel to service centres requires the greatest financial outlay of all health costs after expenditure on medicines (CIETcanada 2000). For HIV/AIDS patients undergoing treatment, the costs of transport to health facilities represents an extreme burden on financial resources already under strain from reduced income and productivity of patients and their careers. In Chad, a study by Wyss et al (2004) revealed the costs of transportation using public services to be the second greatest expenditure for AIDS patients after that of medicines.

### **Rural Transport Services and Vehicle Availability**

The problems caused by the lack of reliable, well-maintained rural road systems are worsen by the lack of motor vehicle capacity caused by relatively small vehicle fleets and the poor condition of the vehicles that exist in these communities. Survival and continued use of many vehicles have depended on the ingenuity of good indigenous mechanics in modifying vehicles to the prevailing conditions including the spare parts available. Notwithstanding these remarkable achievements, vehicle capacity and availability remain inadequate. Even where motor able roads exist, transport services are unreliable and infrequent in most rural areas; where available, such services are for-hire and the majority of rural inhabitants cannot afford them (Carapetis et al, 1984).

### **Access to Health Services in Rural Ghana**

Use of health facilities in Ghana is still low. Assistance in birth delivery proves the insufficient delivery of health care: Whereas 79% of births in urban areas are supervised by a medical practitioner, the rural figure is only 33%. (Heyen-Perschon, 2005). Here, 36% of births are supervised by midwives and the remaining third is unsupervised. In some regions in the north, unsupervised deliver is the norm. It is been found that in Malawi and Ghana children are at times



born on the roadside while pregnant women are walking to the clinic (Grieco, 2005). 70% of the poor population is citing costs as one key reason for non-use of medical services. This includes cost for medicine, treatment but also transport to and from the facility. In addition to this, physical location of health facilities does not meet households' needs, meaning distance as a major obstacle to the rural population. (Hanson 2004). Up to 70% of the rural poor needs more than 30 minutes to the next health facility. But this reflects only the portion of the rural population, consulting medical personnel. The assumption, that access is a main bottleneck of health care is proved by the fact that more than the half of the rural population (55%) is not consulting medical personnel. Clearly, distance is not the only impediment to health care access treatment fees commonly impose an even greater barrier (Airey, 1995; AU/UNECA, 2005) but in emergencies (where treatment fees are certainly waived in some places and cases) distance and transport failures imposes a critical hurdle (Murray and Pearson 2006).

### **Transports for Healthcare Professionals and Care Workers**

The lack of transport to ensure timeouts transfer of patients between levels of health care and for delivery of medicines, vaccines, and other essential equipment is a commonly heard cry from health workers, particularly from those working in rural areas, but is often overlooked and rarely researched. A multi-country study on transport management in the health sector carried out in four sub-Saharan countries demonstrated the importance of a functional transport system for ensuring the effective and efficient delivery of health services (Nancollas. 2001).

Bundred and Levitt (2000) have likened inequalities that exist between and within countries, to those that exist between developed and underdeveloped areas to better understand the *raison d'être* for health professionals' location decisions. The authors came to the inescapable conclusion that professionals migrating from poor to developed areas are often influenced by perceived better opportunities such as income and good working conditions. Translated into tangibles, 'good' working conditions' would imply, among others, easily accessible and well-equipped medical facilities.

In the same vein, healthcare workers such as home-based care workers often visit patients in their homes. The Institute for Transport and Development Policy (ITDP) (2003) argues that about 70% of adults and over 80% of children living with HIV/AIDS are in Africa – living in the most underdeveloped areas. Persons living with HIV/AIDS cannot always visit healthcare facilities due to difficulties they face in travelling – they often require the assistance of healthcare workers due to physical weakness in environs characterized by inadequate and unaffordable transportation services (Mashiri et al, 2007a; Mashiri at al, 2007b,). While the need to mobilize healthcare workers who do outreach work is recognized, the need for improved transport services cannot be over-emphasized.

### **Emergency Medical Services**

These are a type of emergency service dedicated to providing out-of-hospital acute medical care and/or transport to definitive care, to patients with illnesses and injuries which the patient, or the medical practitioner, believes constitutes a medical emergency. The use of the term emergency medical services may refer solely to the pre-hospital element of the care, or be part of an integrated

system of care, including the main care provider, such as a hospital.. Emergency access to care is particularly vital for developing countries and its rural communities to accessing available preventive and curative services, and also supports indirect determinants of health including livelihoods and education (Babinard P, Roberts, 2006). Emergency medical services may also be locally known as: first aid squad, ambulance service,

Emergency care in the field has been rendered in different forms since the beginning of recorded history. The New Testament contains the parable of the Good Samaritan, where a man who was beaten is cared for by a Samaritan Luke 10:34 (NIV). - "He went to him and bandaged his wounds, pouring on oil and wine. Then he put the man on his own donkey, took him to an inn and took care of him." The goal of most emergency medical services is to either provide treatment to those in need of urgent medical care, with the goal of satisfactorily treating the presenting conditions, or arranging for timely removal of the patient to the next point of definitive care.

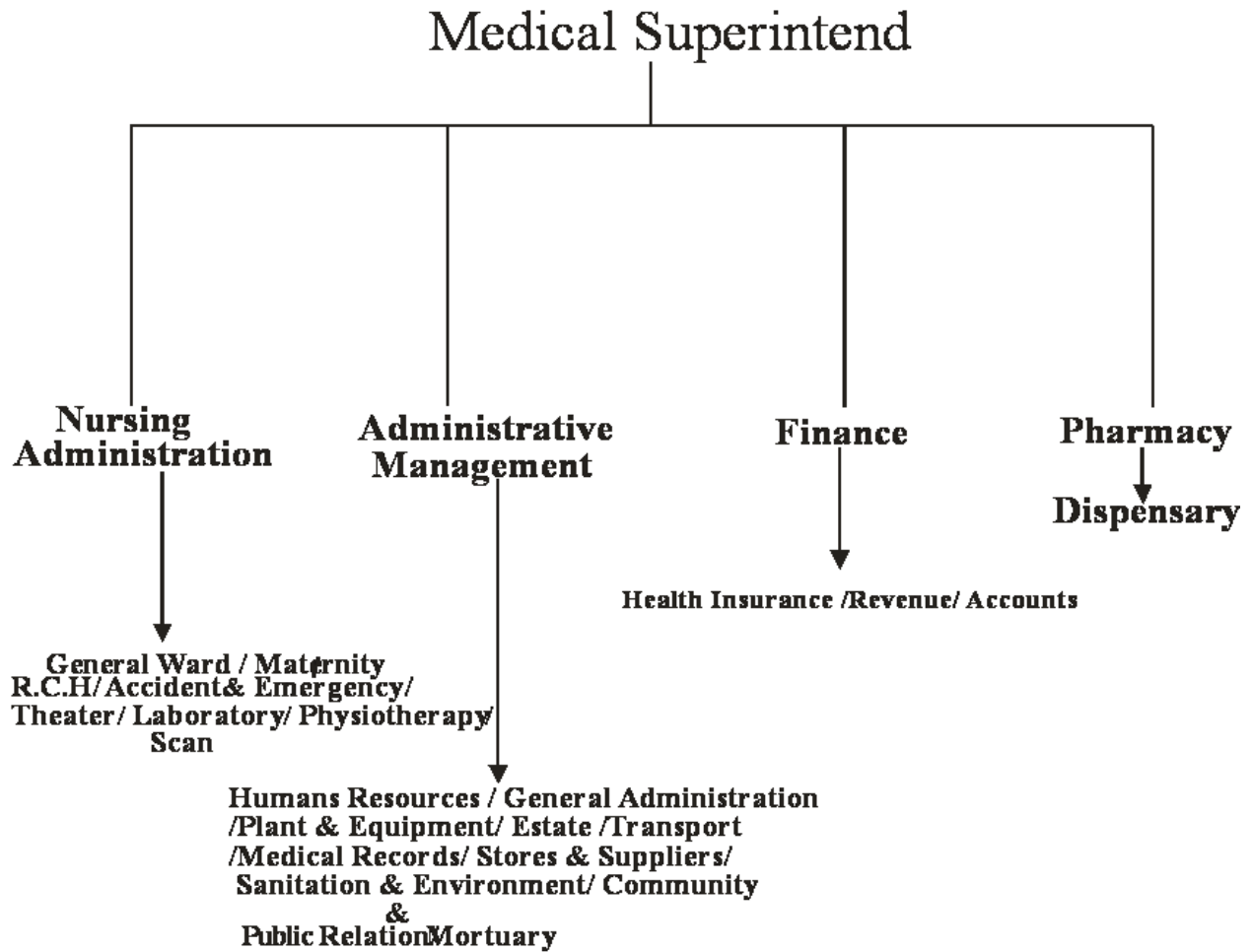
### **Availability of Transport for Emergency Healthcare**

The response times of emergency services will be influenced by the transport infrastructure. In developing countries this has not been well quantified either but short response times for ambulances are accepted policy and practice in reducing mortality and morbidity from life threatening conditions. Transport plays a critical role in the effective and efficient delivery of health care. It enables people to access services and health workers to reach communities, especially in sparsely populated rural areas (Babinard and Roberts, 2006). Minimum standards for response times are normally set as part of delivering a service of acceptable quality. For serious trauma, the 'golden hour', or the first hour after trauma, is accepted as the period of time beyond which further delays result in increased fatalities. Delayed transport can worsen outcomes in maternal health e.g. increased maternal mortality due to delays in transport include eclampsia and hemorrhage. According to Hamlin (2004) obstetric fistulas are a preventable through a combination of access to adequate transport services and effective management of child delivery services. This is also true for cardiovascular disease and other medical emergencies, where shortening the time to definitive care results in health gain. A case series from Malawi describes childhood deaths from meningitis and cerebral malaria whilst awaiting transport from the health centre to hospital.

## **DATA PRESENTATION, ANALYSIS AND DISCUSSION**

### **The Organizational Structure of the Mankranso District Hospital**

The study was conducted in District hospital which serves the six sub-districts namely Mankranso, Pokukrom, Mpasaso, Wioso, Sabronum and Biemso all in the Ahafo-Ano South District.



**The Role of Transportation in Quality healthcare**

**Table 3.1** The role of transport in quality healthcare

	<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Main constraints</b>			
1	Few facilities	27	23%
2	Poor roads	38	32%
3	Transportation cost	54	45%
<b>Accessibility to transportations</b>			
1	From community	39	32%
2	Foot to neighboring towns	53	45%
3	By the main road	27	23%
<b>Duration of wait</b>			
1	0-30 minutes	19	16%
2	Up to an hour	57	48%

3	About two hours	43	36%
<b>Cost</b>			
1	Cheap	-	0.0%
2	Expensive	70	59%
3	Moderate	49	41%
<b>Number of transits to hospital</b>			
1	One trip	16	13%
2	Two trips	61	52%
3	Three trips	42	35%
<b>Occurrences of death</b>			
1	Yes	47	39%
2	No	72	61%
<b>State of road to facility</b>			
1	Good	22	18%
2	Fair	28	24%
3	Poor	69	58%

Source: researcher's survey

From the table 3.1 it can be deduced that major hindrances, influencing peoples visit to the Hospital were inadequate facilities, Poor Road networks, and transportation cost. 23% respondents argued that there weren't enough health facilities in to give them proper care while another 32% respondents blamed the Road network; the other 45% respondents blamed it on high transportation cost.

Probing further, it came to light that 32% got access to vehicles from within their communities to the Health centre, 45% had to walk to neighboring towns to get access to vehicles to convey them to the facility, 23% walk to the main road to be able to access some form of transportation to the Health Centre.

Table 3.1 shows that, 16% respondents had to wait between 0- 30 minutes to get a vehicle, while another 48% respondents had to wait close to an hour to be conveyed and the remaining 36% respondents made it in 2 hours after waiting.

In terms of cost, table 3.1 shows that, 70 respondents said it is expensive to travel to the health centers while 49 respondents thought it to be moderate. None of the respondents thought the fair is cheap. The table 3.1 again shows that 13% travelled to the health centre in one trip, another 52% in two trips and the remaining 35% made it in three transit trips to seek medical treatment. Some of the respondents had witness death of relative when finding their way to the health centre because of the above constraints coming their way. The bottom of table 3.1 shows that out of the 119 respondents 18% argued that the roads linking the health centre from their communities is in a good shape, another 24% argued that the roads are fairly good; the last fraction of 58% respondents argued that the roads linking their communities and the health centre are in a poor state. The survey

shows that most of the households find it harder to travel to get to healthcare and other services because of few health facilities, poor roads and high transport cost.

### Accessibility of Transportation to health care

**Table 3.2 Accessibility of Transportation to health care**

	VARIABLES	FREQUENCY	PERCENTAGE
<b>mode of transportation</b>			
1	Vehicle	85	72%
2	Motor bike/Bicycle	22	18%
3	Other	12	10%
<b>Distance to hospital</b>			
1	Within the community	20	17%
2	Within 5km	27	23%
3	Over 10km	72	60%
<b>Period of difficulty</b>			
1	Between January and March	-	0%
2	Between April and June	-	0%
3	Between July and September	119	100%
4	Between October and December	-	0%

Source : (Researchers survey)

Table 3.2 shows the nature of accessibility to the health facility. From the table 3.2, out of 119 respondents, 72% have access to vehicles to convey them to the facility, another 18% use motor bike/bicycle whiles the other 10% get to the facility by some other means (walk).

In terms of mileage, 17% respondents had to travel few kilometer to access the facility, another 23% respondents had to cover within 5km to access the facility, whiles the remaining 60% respondents had to cover over 10km to access the facility. This 60% shows that, higher number of patient has longer travel distance before accessing health care. The target maximum distance from health care is 8 kilometers in enabling rural communities gain access to health care (WHO TRANSAID, 1999). In this instance, the higher percentage (60%) shows below the set target. The table 4.2 again shows the most difficult times to access the facility was within the period of July and September as all 119 respondents stated, given it a 100% confirmation.

Due to the deplorable nature of the road, it is difficult to use the road during the rainy season. According to some residents, accessing health care is not easy as vehicles are stack in the mud for hours and sometimes no movement at all. In these periods, rivers over flow their bound, bridges are covered with flood whilst others are broken down with mighty trees fallen unto the road making it extremely difficult to use the road. It has been recorded in such wet season when an emergency

pregnant woman has to lose her life because the vehicle could not move to transport her early to the hospital.

### Availability of transport in referral cases

**Table 3.3 Availability of transport in referral cases**

	VARIABLES	FREQUENCY	PERCENTAGE
<b>Emergency Transportation</b>			
1	Ambulance	10	8%
2	Commercial car	102	86%
3	Private car	7	6%
4	Motor cycle/bicycle	-	-
<b>Assistance in Emergency</b>			
1	Yes	99	83%
2	No	20	17%
<b>Ways of assistance by neighbors</b>			
1	Getting a commercial vehicle	85	78%
2	Getting a private vehicle	9	8%
3	Carrying on to the hospital	17	14%

Source : ( *Researchers survey* )

From the table 3.3, 10 respondents representing 8%, had access to an ambulance from the Hospital while 102 respondents that is 86%, made it with commercial transport, 7 respondent's which is 6% used motor cycle/bicycle during an emergency case. All respondents had some form of assistance in cases of emergency is just about 17% who express regret of no assistance in such situation. 78% respondents had neighbor help them in getting commercial vehicles to convey them to the health facility 8% respondents were lucky to have neighbors with private vehicles to assist the situation.

The last 14% respondents had to be carried by others to the facility. Although Ghanaians are notable to be hospitable all the time, in the rural set up, they are much more caring to their neighbours in case of emergency. But the number of private vehicles can be counted easily. Those with commercial vehicles mostly stay in Kumasi and environs transporting people here and there. At the day time they do help but during the night, problem compounds.

Since there is only one (1) ambulance anytime there is series of emergency patient are false to find their own transport. For instance, if the ambulance has already set off to the Regional hospital waiting for it to be back will cause danger if another patient is to wait for its arrival, therefore has to find different alternative. The Ambulance response to emergency cases is very limited to the communities; others do not realize it services been effective. The Ambulance has a critical role to play because of the need for urgent evacuations to the hospital since there are preventive and curative services in it as compared to commercial transport means to save his life.

**The impact of transportation on health service delivery.****Table 3.4 The impact of transportation on health service delivery.**

VARIABLE	FREQUENCY	PERCENTAGES
<b>Sponsor of transport to work</b>		
Self	28	93%
Health facility	2	7%
Others	-	-
<b>Outreach program</b>		
Yes	6	20%
No	24	80%
<b>No outreach due to lack of transport</b>		
Yes	18	60%
No	12	40%
<b>Transport an integral part of outreach</b>		
Yes	30	100%
No	0	0
<b>Emergency transport</b>		
Public transport	0	0
Private transport	0	0
Ambulance	30	100%
<b>Transport for Referred cases</b>		
Provided by the hospital	12	40%
By patient	18	60%

Source : (Researcher's survey)

From the table 3.4, 7% of health workers have their transportation being taken care by their administrations, the other 93% of health workers have to look for their own means of transport to work. Out of the 30 health workers who responded to the questionnaire, 24 out of the total have not been doing outreach programmes in the surrounding communities and only 6 health workers have been embarking on outreach programmes in the communities. Thus, 80% of health workers in the community had no form of outreach programme while 20% conducted outreach programme to educate the inhabitants of the community. The table 3.4 shows that transportations is the major constraints that hinders health workers from conducting outreach programme, as 24 respondents blamed the situation on inadequate vehicles to transport them to the place where the outreach programmes is scheduled and 6 respondents had access to vehicles that help them to do outreach programmes. The outreach programme is usually for critical prenatal and neonatal periods, preventive and curative services and also supportive health advice on livelihoods and education. The people are ill informed about common diseases because health workers cannot go for outreach programs. From the table 3.4 it is evident that all respondents to the questionnaire argued that transportation played a major role in effective health care delivery as all were in favour of the argument. All respondent to this question positively affirm that, transport plays a critical role in the effective and efficient delivery of health care which enables people to access services and health workers to reach all surrounding communities. Transport is also essential for delivering supplies of resources such as drugs and personnel to health centres, and for transferring patients between health facilities and to the different levels of care.

Table 3.4 again shows that all 30 health care workers agreed that the Ambulance was the safest way to transport referred cases indicating a 100% positive choice. The Ambulance has a critical role to play because of the need for urgent evacuations of patient to the hospital since there are preventive and curative services in it as compared to commercial vehicle. It is fast, convenient and urgently attended to at the referred hospital on arrival as a delay in treatment can make difference between life and death. The response times of emergency services will be influenced by the transport infrastructure. Short response times of ambulances are accepted policy and practice in reducing mortality and morbidity from life threatening conditions where shortening the time to definitive care results in health gain. In cases of emergencies qualified health personnel have to accompany the patient and not the relatives to the hospital. But it is on few occasions that some patients luckily use the Ambulance. The last section of table 3.4 shows that, the patients have to provide their own means of transport when there is no ambulance at the hospital or when the hospital vehicle is faulty. Out of the 30 respondent of the health workers , 12 of them argued that the hospital does assist the relatives in looking for vehicle in emergencies and this represent 40% of the respondents whiles the other 18 health workers representing 60%, stated that relatives of patients have to arrange for transport during emergencies.

### 3.5 The impact of transport on staff to work in Mankraso District Hospital

**Table 3.5 The impact of transport on staff to work in Mankraso District Hospital**

Variables	frequency	percentage
Reporting time to work		
Less than 7:30 am-8:00am	6	20%
8:00am-8:30am	6	20%
After 8:30am	18	60%
Departure time from work		
2pm-4 pm	24	80%
After 4 pm	6	20%
Distance covered to work		
Less than 5 kilometers	6	20%
5kilometers -10 kilometers	13	43%
10kilometers – 15 kilometers	11	37%
Means to work		
On foot	6	20%
By car	24	80%
Type of vehicle		
Public transport	23	77%
Office Vehicle	1	3%
Private vehicle	6	20%
Duration to work		
Less than 30 minutes	7	23%
30- 60 minutes	6	20%
Greater than 1 hour	17	57%



The table 3.5 above shows the reporting and departure time of health workers that is how long it take them to report to work and when they sign out from work. From table 3.5, out of the 30 respondents 6 workers, representing 20% of the health workers go to work between 7:30am to 8:00am, another 6 workers go to work between 8:00 am to 8:30am, representing 20% of the total. The remaining 60% got to work after 8:30am. It was reveal that most of the health workers go to work late and lateness of health workers affects quality health care delivery.

The health workers who responded to the questionnaire, 24 of them close from work between 2pm and 4pm representing 80% of the total respondents, the remaining 20% that is 6 respondents close from work after 4 pm. This shows that, most of the health workers close from work late and because they have to look for their own means of transport, they are always in a rash because of long distance they have to travel to their homes.

In terms of distance covered to work, 20% of the respondents covered within 5 kilometers to work while another 43% covered between 5 kilometers and 10 kilometers to work every day. The last fraction of 37% covered over 10 kilometers to 15 kilometers to work daily. 60% health workers found their way to work by vehicle and 40% of the health workers got to work by foot. The distance they cover before getting to work usually make them tired before the start of work.

Lastly, table 3.5 shows the duration spent to get to work by respondents. 23% of the respondents spent less than 30 minutes to get to work while 20% spent within an hour to get to work the remaining 57% spent greater than an hour to get to work. Transportation is seen as an integral part of health care delivery, without transport people cannot be carried from one angle to the other. Basically the research shows that most of the health workers live far from the hospital and due to that, they do not spend enough time to attend to the patient resulting in poor healthcare delivery. They are always in hurry to leave back to their homes. This situation compounds in times of emergencies.

## **SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

### **Summary of finding**

The major hindrances, influencing peoples visit to the Hospital were inadequate facilities, Poor Road networks, and transportation cost. Probing further, it came to light that it is difficult to get access to transport from their communities to the Health centre, some have to walk to neighboring towns to get access to vehicles to convey them to the facility, others have to walk long distance to the main road to able to access transport to the Health Centre. The survey shows that, it is most difficult to access the facility within the period of July and September as all 119 respondents, thus 100% confirmed the difficulty during this period. Due to the deplorable nature of the road, it is difficult to use it during the rainy season. From the survey most of the respondents had some form of assistance in cases of emergency. It is just about 17% who express regret of no assistance in such situation. All respondent to the survey positively affirm that, transport plays a critical role in the effective and efficient delivery of health care which enables people to access services and health workers to reach all surrounding communities. Again, the study showed that most of the

Health professionals live far from the hospital and due to that they do not spend enough time to attend to the patient resulting in poor healthcare delivery.

### **Conclusion**

The study has look at the impact of transportation on health care delivery. The affected parties (the patient and the health workers) have been discussed. Based on the findings of the study the following conclusions are reached. Transport to and from the facility is very high, as physical location of health facilities does not meet households' needs, meaning distance as a major obstacle to the rural population. A higher percentage of the rural poor needs to travel for hours to the next health facility. Most of the households find it harder to travel to get to healthcare and other services because of few health facilities, poor roads and high transport cost. Even where motorable roads exist, transport services are unreliable and infrequent; where available, such services are for-hire and the majority of rural inhabitants cannot afford them.

However, this same study found that, the Ambulance response to emergency cases is very limited to the communities; others realized it services been ineffective. Although, the ambulance has a critical role to play because of the need for urgent evacuations to the hospital since there are preventive and curative services in it as compared to commercial transport means to save life.

The outcome of the research on health professional at Mankranso indicated that, lack of transport to convey staff to and from work causes them to wait for long hours and struggle with other passengers for transport. These frustrations make staff already tired by the time they get to work. The already tired workers get irritated and not motivated to do their best. Also transportations is a major constraints that hinders health workers from embarking on outreach programmes because of inadequate transport infrastructure and service .The outreach programme is usually for critical prenatal and neonatal periods, preventive and curative services and also supportive health advice on livelihoods and education.

### **Recommendations**

Based on the findings, it was recommended that, Health workers need to be provided with buses to convey them to and from work and for outreach programs. To solve transportation problem facing the health workers, the services of a public transporter should be engaged to convey from vantage points to and from work. Hospital management should negotiate with the transport driver on the amount to be paid per week and staff made to pay on weekly basis. Hospital management should also bear the cost for the outreach programmes. Again, it is precondition for appropriate policy action to improve rural access and mobility in order to safe and sustain lives in the rural communities.

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