

Chapter 6: The Influence of Spatial Segregation: Population, Health Facilities and Time Use when Emergence Happens Interrogated

The chapter explores the distribution of population as compared to the health services provided within the cities. It also explains how the provided health services respond to peoples need during times of emergency. The main argument presented in the present chapter is that spatial segregation has caused disparities in the cities in terms of health service provision. In the sense that some areas are well-built and provided urban infrastructure that differs from other depressed regions. The difference is marked by economic status of the people, literacy rate, race and age of the people. Urban areas tend to be heterogeneous in terms of the allocation and location of facilities like health services. The study deploys a desktop study. The data were analysed. Results shows that the distribution of social groups, infrastructure, health activities or other elements has given birth to disparities in the areas. Many segregated areas experience economic decline. This causes the health systems to dilapidate as well. It is recommended that in the course of constructing new settlements the responsible authorities should consider equal provision of health services that are ready and capable of addressing the need of the people during the emergency times.

Over the past decades, there have been witnessed much suffering within the cities that emanated from spatial segregation. This has caused chain problems in cities and rural areas. Spatial segregation is caused by sociocultural, institutional, and economic factors. It has result in poverty, unequal access of better living standards and disparities in urban infrastructure development. The main driver of urban segregation comes from the idea that different groups of households have different willingness to trade consumption and locations in the city. Spatial segregation has not necessitated negative impacts on the social and economic status of the city inhabitants, but also on the health services. There has been substantial interest in the associations between city living and health relatively. The separation of the groups of people have indicated some sense of inequality considering access to quality and effective health services. This later caused a

distinctive gap on mortality and morbidity rates in parts of the cities. Spatial segregation has created situation where other areas experience high mortality and mobility rate in other areas as compared to others. Research has been done concerning the segregation yet, the existing literature has little information that explains the way in which spatial segregation affect the health services and their response during the time of emergency. The chapter covers the gap by exploring how spatial segregation within the city affects easy access to quality health facilities

The notion of spatial segregation refers to the distribution of social groups, infrastructure, activities, or any other element in space. Spatial segregation is broadly defined as the imposed or preferred separation of groups of in a particular territory. The separation depends on race, lines, ethnicity, language, religion or income. It is also defined as the degree of spatial separation between two or more population groups in a region.

Spatial segregation is also referred to as the distribution of social groups, infrastructure, activities or other element in space. It is also viewed as an inherent feature of cities and becomes a problem excluding or hindering certain groups from accessing services, activities and spaces the separation of groups within the city is because of social cultural, institutional and economic factors (Rasse, 2019). Health facilities are regarded as locations where healthcare is provided. They are also defined as place that provides healthcare. Health facilities include hospitals, clinics, outpatient care centres, and specialised care centres such as birthing centres, and psychiatric care centres. Originality of the city development in different countries provide the facilities that provides health to the communities were designated in different areas. These include hospitals, clinics, outpatient care centres that include birthing centres, psychiatric care centres.

Much effort was made towards placing these health infrastructures in different areas. However, despite these actions by government, non-governmental organisation and private sectors, some areas have been and are still facing challenges in accessing quality health services in their vicinity as compared to other areas. The health facilities in existence besides being of poor quality, they lack the ability to stand firm and strong during the times of

emergency in certain areas. The distribution of households across a city determines the outcomes of services to be offered (Ananat *et al* 2011).

The chapter seeks to explore the impact of spatial segregation to health services and its response during the times of emergency. The study was guided by theories surrounding the spatial segregation and health services. Various sources were used to acquire data from the studies that were already done in the past pertaining spatial segregation. The information in the chapter was derived from the secondary sources and it is desktop research.

Several measures are to be made towards addressing the identified gap that exist due to spatial segregation. It is of great importance to understand that spatial segregation affects the health services and its response during critical times. The measures to be taken concerning this situation should close all these health disparities and ensures that the health facilities provided can respond to the need during the times of emergency. The government need to appreciate that closing the gaps that were created by spatial segregation will enable equal access to quality of health in all areas. This can only be achieved mapping the population and equating them with the distribution of health services. This is the initial stage to address the disparities in health services that occurred because of spatial segregation. Recommendation notes that the government should note resort to aggressive measures to fight spatial segregation and curb its effects on the life of the people. The government must improve place-based investment to improve the health services of the cities.

Segregation turned into made regulation numerous instances in 18th and nineteenth-century America as a few believed that Black and white humans had been incapable of coexisting. Segregation quickly have become legit coverage enforced with the aid of using a chain of Southern legal guidelines. Through so referred to as Jim Crow legal guidelines (named after a derogatory time period for Blacks), legislators segregated the entirety from colleges to residential regions to public parks, theatres, swimming pools, cemeteries, asylums, jails and homes (Carniglia & Escobar 2020). There had been separate waiting rooms for white and black people in expert places of work and, in 1915, Oklahoma have become the primary kingdom to even segregate

public phone booths (Boustan 2011). It has regarded to be in all components of the world, wherein multiracial communities, wealthy and poor exist. It is assumed to have emanated from the colonial era where the colonists separated their settlements and services from the colonized people. The separation endured among the wealthy and poor and feature have led to variations in access to fundamental services within the cities. In southern states of the United States, discrimination started in late nineteenth century where it turned into legalized feature. In some regions the segregation is related to the racial businesses, ethnicity or religion while on other places it is associated with income status. Across Europe, policymakers fear that segregation will exacerbate local inequalities and in the long run have a negative impact on social cohesion (Andersson 2017). In Santiago and Chile, the segregation started in the period between 1979 and 1985 where the Pinochet regime existed. Though it turned into on a small scale the separation affected the extra than 2000 low-earnings households. This group turned was evicted from the high and middle-earnings residential regions. The wealthy people had been separated from the poor; the goal turned into creating neighbourhoods that were uniform depending on socioeconomic group.

In the United States of America, the population groups were assorted into distinct spatial neighbourhoods this was based on the race. The divisions among the blacks and the white race commenced. The income status contributed up to an extent where the demarcation was created between the white themselves depending on how much they earn. This segregation was not pronounced as compared to the black and white separation. The separation continued up to date where in the United States metropolitan areas have a China town, a little Italy, or other ethnic enclaves that host higher significantly concentrations of ethnic or cultural groups (Anderson 2016). In the United States, negative forces of segregation were just as effective but applied through restrictive property covenants. When these were declared illegal, they remained effective though less overt. The Realtors Code of Practice forbade the promotion of change of ethnicity in a neighbourhood. The prevalence of such a segregation is exacerbated by poverty as poor people are more likely to see their economic prospects and social relationships improved within their own ethnic group

In Africa, the forces that contribute to spatial segregation are many and varied. Segregation in Brazil depended on social elegance that have become dominant in the structure of cities and public policies. It started with the separation of groups due to social classes and exacerbated as the years progressed. The apartheid legal guidelines of South Africa were one extreme case of large-scale, government-sanctioned spatial segregation. Other cases have garnered less international attention, such as the Brazilian government's destruction of favelas in the 1960s, when the poor inhabitants were eliminated to other segregated locations (Boustan 2011). The white people settled in South Africa in 1952, that is when the segregation developed its roots and commenced to boom. Segregation grew out of its ideology that there are fundamental differences among various groups of people in South Africa and that the groups should be separated. Based on this segregation ideology, several legislations were enacted between 1910 and 1925. The 1910 Pass Law limited black families from moving to cities on a permanent basis. Blacks were allowed to seek employment in the city, but were prohibited from residing in cities. They were compelled to reside on reserves (land set aside for Blacks). In Africa, South Africa, Blacks consisted of 76.1%, Whites 12.8%, Asians 2.6% and those of mixed origin 8.5. The estimated rate of natural increase is 2.3% per year (Anderson 2016). In an extreme case, such as Johannesburg, the black south-western township Soweto was built 20 km from the centres of the city so that its presence would not inhibit white urban development in the south-western sector of the city itself.

Zimbabwe was colonized by the British in the 19th century. The country suffered from high levels of intergroup conflict, economic development, political and white resistance. The blacks suffered from the discrimination by the white people (Graham C. Kinloch 2003). They were restricted from occupying land in urban areas and were given space in the reserves. These areas were only meant for black hence was lagging in terms of the facilities needed for the wellbeing of the people. The black majority in Zimbabwe were excluded from owning more resources through the Land Apportionment Act. White people dominated all the facilities in the country. After the independence, the segregation became spatial as the demarcation were being made depending on the income status of the people. The rich were settled in

less crowded areas and have access to better infrastructure and services. On the other hand, the low-income earners were located in the high-density areas.

A distribution or set of geographic observations representing the values of behaviour of a particular phenomenon or characteristic across many locations on the surface of the Earth. The factors determining population distribution are resources, infrastructure, access to basic services and accessibility like distance from the central business district. The term generally describes how the population is spread out (Borregaard & Nachman 2008). As in what areas it takes place. Population distribution signifies the spatial pattern due to dispersal of population, formation of agglomeration. The distribution of population is not even in any location or city with varying degrees of concentration of population giving rise to varying densities in the different parts of the world. Areas that consist of high-income earners have sparse population. These areas have better facilities in terms of health care. Due to the fact that the areas have less population as compared to the low-income neighbourhoods, the healthy facilities tend to have the ability to respond to the times of emergency. The distribution of health facilities across the world is not even in the sense that the areas that are areas with low-density have better facilities on health as compared to the high-density areas.

In Africa the concept of spatial distribution has gained understanding as the phenomena that population describes how the population is spread out in a certain location. This works hand in hand with the population density that describes the number of individuals in a given space. There are factors that determine the distribution of people at a certain location in Africa. These include. In African cities like Harare, Johannesburg, Kinshasa, Nairobi, Dakar and Lusaka the rich and poor people in different societies (White *et al.*, 2012). The segregation depends on the income earned by an individual. This means that even the health care facilities provided to these two groups differs in terms of quality, efficiency and the ability to respond to during the times of emergency. In areas where low-income earners are located consist or high population in which at times overrides the provided health care centres (Turrell 2009). From the fact that these people are low-income earners, they

cannot afford to build themselves the better facilities for their health care. Given a situation where the resources are being sponsored, the resources channelled in the lagging neighbourhoods are far below the expected quality as compared to the high-income earner's neighbourhoods. World Health Organisation's distribution of health services recommend that there should be minimum threshold of 23 doctors, nurses and midwives per 10 000 population.

In Zimbabwe, the distribution of health facilities is said to be equally accessed in all the cities. The health services are accessed by every individual despite the income status, race, gender, age, language or religion. The Constitution of Zimbabwe (2013) section 29 (1) alludes that the state must take all necessary steps to ensure the provision of health services that are accessible, adequate and basic throughout the country. On Section 29(2) states that the state is obliged to act in an appropriate way to provide fair, and reasonable measures to ensure that the distribution of health services do not have any restrictions during the times of emergency at any health institution. The Public Health Act section 76(1) states that every citizen and any permanent resident of Zimbabwe has the right to adequate health care (Zimbabwe's health delivery system 2018). This means that the distribution of the facilities is equal despite the being a citizen of the country or not. As observed by Zimbabwe National Health Strategy (2016-2020), the situation on the ground in Zimbabwe has at least 2 doctors at every district and at least 2 doctors at every primary health care.

Massey's theory of segregation and poor neighbourhoods' formation is based on population dynamics of segregation on the context of racial inequality in poverty rates (Quillian 2012). The idea being brought by this theory is that segregation separates high-poverty racial groups from low-poverty racial groups. High-poverty in this context means the people who lives in low-income neighbourhoods whilst the low-poverty are referred to as the high-income earners. Due to this separation, poverty concentrate within the low-income neighbourhoods while the people who earn high income are shielded from poverty contact. By adding some degree of poverty status segregation within race, poverty is further concentrated, producing high neighbourhood poverty contact for the poor of high-poverty racial groups (Quillian 2012).

The people who in these areas suffers from inequalities from basic facilities such as health facilities. The infrastructure is lagging in nature. The people in these areas suffer from diseases and rarely gets desired or suitable treatment. If there are diseases outbreaks, the healthcare centres neighbourhoods do not have the ability to respond to the emergencies. If they have the ability, they are overwhelmed due to the high population. This shows that segregation has impact on the distribution of the health facilities. The high-income neighbourhoods consist of low population density and benefits from the high-quality medical facilities.

At global context, segregation by race or income is a universal feature of cities around the world (Boustan 2011, Musterd *et al.*, 2017). Segregation urban areas considered disadvantageous for minorities and low-income households in the cities. Segregation affects the provision of infrastructure to the public mainly the health facilities that are up to standards. The absence of urban integration defines the reasons why other communities are lagging in terms of health systems. Segregation in this context means that the city inhabitants are in a certain way suffering from denial to equal access to health services that addresses the need of the population. The people are actively excluded from the allocation of resources and access to the institutions. The resources channelled towards the development of health system are not equally distributed in all the areas. the existence of the separation between the low-income and high-income neighbourhoods in the city

Segregation means the separation of groups depending on the race, socio-economic status. The people are excluded from equal access to basic needs in the city (Parisi *et al.*, 2011). Regionally, segregation in South Africa has been experienced because of race. The blacks were separated from accessing the facilities and services that were being accessed by the white people. The way in which the residential areas where the black people were built is far much different from the way the dwelling places of the white people. The provision of health facilities was not equal in both sides. The economic status of the black people was not stable hence could not manage to build themselves hospitals and clinics. The poverty was exacerbated by the fact that the blacks were viewed as cheap labour as a result they were being awarded salaries that

could sustain them from hand to mouth and left them with no money to build hospitals that will sustain them during the times of emergency.

In Zimbabwe, segregation from the colonial era is still imprinted on the urban space. The segregation in local context has witnessed the separation or isolation of low-income neighbourhoods. These neighbourhoods are characterized by lack of essential facilities (Sampson *et al.*, 2002). The neighbourhoods are demoralized because they lack access to the required basic needs. Access to better quality of health facilities is influenced by the segregation within the city that occurs due to income status, race and religion. The segregation has affected the healthy system in the sense that even if the medicines are provided, the infrastructure still will not allow other health care operations to be carried out within the low-income neighbourhoods (Command 2017). This is contrary to the situation in areas like Borrowdale and Mt Pleasant, most high -income earners are located. These people have access to quality health services because they can afford to pay the services, this is shown by the mushroom of private hospitals in the southern part of Samorah (Low density areas). The health care facilities being built that side are expensive and only little population can manage to get treatment. Segregation gives people who are disadvantaged with no choice. This is so as they cannot access the quality health services within their vicinity at the same time, they do not earn income that allows them to go for better medical facilities in other areas.

Health care is a multidimensional concept that is subject to sociodemographic or boundaries. As a matter of fact, sickness know no boundaries any more than equality does, hence the distribution of the facilities need to be considered. Peipins et al (2011) states that the distribution of healthcare facilities is based on the socioeconomic status and location of residential areas in a city where suburban residents had lower access to the facilities than in the central city.

A health facility is defined within the global context, locations, institutions or centres that provide health care to the people. In the global context the health facilities are known as health houses, since they provide basic needs for the community and the surrounding areas (World Health Organisation 2002).

Iran consists of a population of about 80 million people who resides in the 31 provinces of the country having 74% resides in the urban settings. During 2016, the number of health care facilities that were distributed totalled to 921 (Roudi *et al.*, 2017). Galobardes (2007) states that the distribution of hospitals was in favour of the district with larger residential floor area. the distribution of the facilities in high class area differs from lower class area (Table 6.1).

Table 6.1: Shows unequal distribution of health facilities in Iran (Inequality in geographical distribution of hospitals and hospital beds in densely populated metropolitan cities of Iran)

Item	Mashhad	Tabriz	Shiraz	Tehran	Esfahan
Districts	13	10	9	22	14
Total population (in number)	3,001,184	1,558,693	1,565,572	8,693,706	1,961,260
Total hospital	39	29	40	162	36
Private	1099	803	1026	7488	689
Public	6769	4995	5488	22,719	5107
Total	7868	5798	6544	30,207	5796

Africa has got disparities in terms of the distribution of health facilities. They are usually caused by geographic inequalities and financial instabilities. In Africa, provision of health facilities distribution state that distribution of the services be it planning or other activities should ensure that the actual services are accessible to all the population and not even a single individual is marginalised from these basic services (English *et al.*, 2006). World Health Constitution (WHO) (1946) provides that the distribution of health facilities should make sure that the facility is accessible to every human being. The constitution states that the human rights in Africa creates a legal obligation in ensuring timely access, affordable health care that is of better quality and can withstand the pressures during emergency. Equality and non-discrimination principle provide that no human rights are exercised without segregation based on race, language, socio-economic status and religion. In terms of health facility distribution, it states that all the discrimination should be rectified. The availability of a strong health system all the time is noted in (Article 12) was defined in General Comment 14 of the Committee

on Economic, Social and Cultural Rights – a committee of Independent Experts, responsible for overseeing adherence to the Covenant (Maina 2019).

In Zimbabwe 14% of the health facilities in cities and the rest are in rural areas. In 1980, the country targeted to distribute the health facilities usually within 8 kilometres (Chimhou, 2012). By 1990s, it becomes difficult for the country to provide these kind of health facilities. This witnessed the people paying of their pockets to access health facilities. In times of emergency, the situation becomes calamitous especially in areas where most poor people are concentrated. The government owns around 70% of the country's healthcare facilities, while the private sector owns the remaining 30% (Chimhou 2012). The private healthcare sector in Zimbabwe, that initially caters to the upmarket clients, is now open to low-income urban populace. With the number of trained medical personnel on the rise, even 'high-density' suburbs can seek treatment privately.

The provided information consists of missing links. This is so as the population increases at a doubling rate as compared to the actions of distribution of health facilities in the areas. A sustainable aid to the distribution of health facilities does not consider the accessibility only but also the location and threshold as well.

The health facilities in cities despite being unequally distributed, it faces difficulties with transport system both externally and internally. The transport system affects the response of the health team during the times of crisis. Traffic causes significant challenge on the travel time (Fraser *et al.*, 2020). This result in life-threatening delays for injuries or sickness that require medical emergencies. The time taken transporting a patient in areas where the roads are less congested is less than what is being taken in congested part of the city. Usually in low-income areas are characterized by few wide tarred roads and bigger population. This defines how congested the roads were, hence affect the time taken for the health vehicles to travel to and from the hospitals. The transportation barriers result in deferred care of patients, medication use and missed appointments. People who live in the part of the city where the are many transportation barriers carry a burden in their lives. The relationship between poverty and transportation availability

is reflected (Wallace *et al.*, 2005). Using the case of Atlanta, the patient who do not have private cars suffers from the delays in receiving medical care due to long distance and congestion.

In many low and middle-income countries (LMICs), timely access to emergency healthcare services is limited. At regional context, Nairobi and Kenya are counted among the most congested cities in Africa (Fraser 2020). Despite the fact that the Low Economically Developed Countries (LEDCs) have poor vehicles to assist during the times of emergencies, congestion within the cities triple the travelling time. This causes the health system to fail during the dire times where urgent response is needed. In Kenya, insufficient resources have affected the response of medical system. The country lacks ambulance services and some hospitals have contracted the private companies (Khan 2017). People who live in the peripherals of the city are in most cases transported by taxis and trucks to the hospitals. Considering that the ambulance faces challenges in manoeuvring out of the congestion, in the event of using a taxi or a truck the situation becomes dire.

Beginning with vehicles that are used to transport patient between hospital. The country is facing shortages in functioning ambulance. Out of 200 fleet that is needed in the country, only 134 are functioning to ferry patients to the hospitals during life threatening situations (Xinhua 2020). The ambulances are not equipped with devices that can track the location of the patient in of the help. In low-income neighbourhoods like Mbare, the ambulances use the nearby police station to track the patient. This takes much time to attend the patient. In addition, the road infrastructure in Zimbabwe is in a dilapidated state as they are potholed. Comparing the speed of the ambulance and the state of these roads, the travelling time becomes long that the patient might even pass away on their way to the clinics (Peipins 2011). The potholed roads are concentrated in low-income neighbourhood areas. these areas consist of people who are very poor and cannot manage to construct roads themselves, hence resources are channelled unequally within the city. The state in which the ambulance is deplorable in the sense that, the equipment for pre-hospital care are not enough to the patient hence they fail to respond during the times of emergency.

The key ingredient to realising the efficient health service provision to the city inhabitants is neither provision of more finances, nor legislation although they are of great importance but good transport services. The transport system that does not promote delays during the transportation of patient to the hospitals. Even if the government try to provide the required fleet of vehicles for transportation of patient to and from hospital. There is need for technological advancement in the provided vehicles because even the few that is in use now have delays on its own. The vehicles need to be equipped with radios to communicate with the hospital staff to get them prepared in case of an emergency. Another missing link is that there is need for well-trained hospital people to operate the vehicles, these people have skills to attend in a first aid situation.

The study adopted desktop research. It basically involves the process of collecting data from existing sources (Permentier *et al.*, 2013). Desktop research can also be called secondary data collection, and the data is collected without any field work involved. The researcher reviewed the existing literature considering the spatial segregation and health system within different countries to get more understanding of the topics. The sources were published reports and statistics, research papers, online newspapers and documents. This method of data collection was adopted in the chapter because it is a low-cost technique since it does not involve going to the field. Desktop research do not consume time, it is quick and cheap. The information is easily fetched on the internet.

The distribution of population is not even in any location. There are some areas that are densely populated than others. This has caused differences in pressure on the health facilities. The separation of groups in the city have influenced the accessibility of health services. Using a case of Nairobi, where the densely populated areas are characterized by low-income earners who struggle to access medical facilities from their pockets and vice versa (Maya 2020). The distribution of the population does not tally with the distribution of health services that are able to respond during the critical times. In low-income neighbourhoods, the health facilities are fewer as compared to the high-income earning neighbourhoods. Providing the services that tally with the population distribution within the specific area will give the health

system the ability to respond during the times of emergencies. The distribution of population should be determined by the facilities in which the area is able to provide to the residents.

Separation of groups within the city affects the distribution of health facilities. The distribution of these facilities is based on economic status and locational in the area. It has been noted that the equal distribution of healthcare systems in locations has reduced the morbidity and mortality rate in cities. Unlike in the era where divided cities are been created through inequalities in the distribution of infrastructure and services. The equal access to health facilities have caused eradication of disparities in cities

It has been noted that segregation caused inequalities within the city in terms of health infrastructure distribution. The low-income earners are excluded from accessing quality medical facilities. This has resulted in the high morbidity and mortality rate in the affected areas. Equal distribution of health facilities lessens the burden to the people that live in low-income neighbourhoods. The existing health infrastructure is also relieved from the excessive pressures exerted by the high demand of services from the city inhabitants, hence are enabled to respond during times of emergency. Beside that the system itself is able to provide efficient services for all services.

Transport system also determines the response of the health system. The provision of adequate transport system in the city also improves the health system. Decongesting roads in the city allows the vehicles carrying patients to the hospital to move faster. Timely access to health facility is improved by the provision of better transport system in the city. Low death rates are achieved through provision of the required number of ambulance fleets. This means health systems are responding very quick during the time of emergencies.

The inequalities within the urban areas in continuously causing much problems day by day, hence need to take necessary actions that can deal with the situation. Many causes of the segregation have been identified and how it affects the living standards and social life of the people. Understanding that spatial segregation within the city affects the distribution of health facilities is very crucial. The areas within the cities have been suffering from the

disparities in economic and social sector. Many countries have struggled to provide ways that can address the socio-economic problems, in a way that the health system provided in any given area is stronger enough to respond during the critical times. Shortage of health care facilities in other areas has caused problems in the cities. The theory of segregation highlighted that due to this separation, poverty concentrate within the low-income neighbourhoods while the people who earn high income are shielded from poverty contact. This shows that health facilities being accessed by the two groups are different. The transport system affects the response of health system. People who are poor have barriers to transport that can ferry them to and from the hospital. Understanding that the spatial segregation affects the distribution of health services can help in addressing the situations.

In light of the knowledge that spatial segregation within the city affects the distribution of health systems and its performance during times of emergency. The separation of people into groups like poor and the rich causes the inequalities in terms of the services being received. This will cause the local government and the private sector to develop cities and spread the healthcare centres as observed by the number of people located in that area. The theory of segregation links with the existing literature as it indicates some sense of inequalities in the distribution of services. The government as well is enlightened on the issue of separating the groups of people. Since it has been outlined that in low-income neighbourhoods, there are people who are poverty tormented and cannot afford private health services. In the case of population count, these areas contain large number of people, hence should be provided with services that tally with their demands and can be able to sustain it during the critical situations.

The government of the countries should also take note of the transport system and infrastructure within the cities. In light of the points highlighted in the concept, that the transport system and infrastructure affect the response of the of the provided health system. This reflects that the government should pay more attention to traffic congestion within the country and make arrangements that can address the problem accordingly. Traffic congestion has causes delays and death in transit of many patients.

Also not side-lining the state of the vehicles used to transport the patient to and from the hospital. The government should provide the required number of ambulance and all the fixtures like GPS system to track the patient's location.

In all the efforts of creating liveable places in urban areas. There is need to understand that spatial segregation affects the distribution of health system and its response during times of emergency. The chapter was about the spatial segregation that happens within the city and mapping the distribution between population and health facilities and time when emergency happens. It provided the existing literature, theory, and concepts of the context. By having this information, government and the health sector will know the way in which the health service centres are supposed to be distributed against the population on ground. They were able to evenly distribute the services and resourcing depending to the population in a certain area. Considering the knowledge that even if the health system is distributed in a certain area but without considering the total population within that space, it will weaken the system from responding to critical situations. The local government should consider this in the process of building new cities and regularization of others. The transport sector should be alarmed that the congested cities with dilapidated road infrastructure also affect timely response of the health system when emergency happens. Health service providers are recommended to adopt some new technology in use of the ambulance.

The present chapter has explored the distribution of population in relation to the health services provided within cities. It has also explained how these health services have responded to people's needs during emergencies. The main argument presented has been that spatial segregation has caused disparities in health service provision across different urban areas. Some regions have been well-developed with urban infrastructure, while others have remained deprived due to differences in economic status, literacy rates, race, and age. Urban areas have remained heterogeneous in terms of the allocation and location of health facilities. A desktop study has been deployed to collect data, and the analysis has shown that disparities in social group distribution, infrastructure, and health services have persisted. Many

segregated areas have experienced economic decline, which has contributed to the deterioration of health systems. It has been recommended that, in the planning of new settlements, responsible authorities should ensure equal provision of health services that are capable of responding effectively during emergencies.