Re-planning Begging? Harare's Health Infrastructure Under the Impact of COVID-19

NESBERT MASHINGAIDZE[1]

Abstract

The eruption of infectious diseases such as cholera and COVID-19 in cities and towns requires city health authorities to rethink soft and hard health infrastructure re-planning. Infrastructure (hard and soft) is the operational framework of any institution or organization. Therefore, an organisation cannot function properly if the existing infrastructure is not serving its function. COVID-19 has caused serious havoc in towns and cities. The rate at which infectious diseases such as COVID-19 are spreading shows that the carrying capacity of hospitals and clinics has been exceeded, leading to the conversion of some structures into health infrastructure amid fears of increasing numbers of infected persons. The geometric increase of COVID-19 cases in some cities provides a clear signal to city authorities to prepare for international standard health infrastructure that accommodates more patients. Spiking figures of COVID-19 cases in towns require city authorities to re-plan and re-orient health infrastructures guided by international health standards guidelines set by World Health Organisation (WHO). Additionally, some of these pandemics are ground-borne and others are air-borne. This means that proper planning and orientation of health infrastructure is needed, taking into account issues of accessibility and affordability by its users. With this in mind, the outbreak of COVID-19 can be viewed as a game-changer in the planning of city health infrastructure than just a passing phase. The article argues that current city health infrastructure considers re-planning and orientation to cater for the voluminous increase in the number of

patients to be accommodated, especially with the outbreak of COVID-19.

Keywords: *planning, health infrastructure, COVID-19, social development*

INTRODUCTION

Towns, cities and metropolitan provinces have become epicentres of different forms of development. When these towns and cities are planned, they are meant to cater for all aspects of human life: social, economic, political and cultural development. Barton (2009) asserts that places where people spend their lives have a profound impact on their physical, mental, social, environmental and economic well-being. However, COVID-19 has ravaged villages, towns and cities and caused havoc in cities, prompting urban planners and developers to think of the re-planning of health infrastructure in cities and towns. It has brought several challenges and a myriad of problems to the economic, political and social setup of urban areas mainly because of large concentrations of populations and centres of activity.

It is of paramount significance to note that infrastructure (both hard and soft) is the mainstay of social, economic and political activities. Of particular importance is the urban health infrastructure. Studies have shown that there is a nexus between health infrastructure and planning. Within communities, healthcare specialists research the terms of the health of the individuals. Of that, importance is brought to one of the aspects that need to be taken into account, to be identified, whether the individuals are well aware in terms of measures and approaches that are regarded as crucial in promoting health problems. The massive increase in COVID-19 patients and fatalities overwhelmed the health centres in towns and cities, especially capital cities, such as Harare. This prompted urban pundits to think of the re-planning of city health infrastructure.

The city health infrastructure, primary, secondary and tertiary available in most towns and cities of Zimbabwe occur in the form of poly-clinics, referral hospitals and major hospitals. Mobile clinics were not planned and sited in light of pandemics such as COVID-19 but were meant to cater for a significant number of patients. However, COVID-19 is a

different case as it spreads very fast and requires larger and easily accessible health infrastructure. Additionally, the location of these health infrastructures needs re-orientation as some of them are located far away from communities and others are in the centres of residential suburbs and it is very difficult for some patients to access these health institutions. Despite accessibility, some residents complain about the location of infectious diseases as they are within the vicinity of their neighbourhoods. It is important to recognise that coordination and communication around the public health agenda are not only split between the planning and public health disciplines, but are fragmented further between medical practices, social services, housing and regeneration (Crawford, 2010).

In terms of capacity, some of these hospitals were not prepared to accommodate the high increase in COVID-19 infections and fatalities. This has seen the emergence of planning in the form of converting some disused infrastructure and tertiary institutions into health centres. However, in practice, there is need to prepare for these pandemics since COVID-19 has provided urban pundits and other relevant authorities a clear signal of the need for more re-orientation of city health infrastructure. With this view, planning and re-planning of health infrastructure is important for people's well-being. Crawford *et al.* (2010) argue that the nexus between health and planning is meant to strengthen the roots of planning and health, the urban planners' health inequalities and place planning and health in the centre of people and the planet. The article argues that there is need for re-planning of city health infrastructure with a COVID-19 lens. To date, several pandemics have occurred and built environments must prepare for these pandemics.

In literature, there is deep concern about the impact of urban environments on health outcomes and the lack of a shared vision of supporting health styles (*ibid.*). It is further argued that the relationship between health and the built environment goes far beyond physical factors (*ibid.*). The publication *Delivery Health Communities* (RTPI, 2009) identifies the planning contribution to health outcomes through its influence on environmental quality, social cohesion and social capital, for example, through inclusion, mixed-use, community infrastructure and

design factors and economic activity such as the relationships between commercial land use and transport infrastructure.

BACKGROUND OF THE STUDY

The professions of planning and health can be dated back to the 18th-century when the emergence of planning was a result of poor sanitation caused by squalor conditions. This view is supported by Crawford *et al*. (2010) who assert that the professions of urban planning and public health emanate directly from the same services that were a direct response to overcrowding and lack of adequate sewerage and water infrastructure in rapidly industrialising cities during the 19th century. According to the World Bank (2016) and Eurostart (2016), in the 21st century, cities around the world are facing new demographic and health challenges, including rapidly growing urban populations by 50% globally. However, in the UK, there were two major reforms introduced by the central governments (Carmichael *et al.,* 2019). The two major reforms were in public health and spatial town planning. These major reforms offered prospects for urban (spatial) planners in England and Wales to be enablers of urban health.

It is suggested that inadequate health systems have a disproportionate and crippling effect on developing countries (ICM, 2016). However, the crippling effects vary from one region to another and in terms of scale. Jebwab (2020) weighs in and argues that some diseases, such as the Black Death, claimed 45% of Europe's population between 1347 and 1352. Of importance is that Black Death was the largest demographic shock in modern history. He further adds that some regions and cities were spared, and others were devastated. Statistically, England, France, Italy and Spain lost 50-60% of their populations in the first one or two years. The Black Death was a comparatively pure population shock (Waldinger, 2015). It is added that disasters such as floods and fires kill fewer people but in this scenario, physical geography is considered. This follows that diseases, such as malaria, HIV or the 1918 influenza, disproportionately kill sub-groups of the population, much like COVID-19 (*ibid*.). Currently, this goes well with the call for African cities to prepare for future disasters. This call was made by African leaders in the Ordinary Session of African Union in 2021.

LITERATURE REVIEW

Infrastructure forms a critical part of health service delivery in any country. Of importance to this infrastructure are elements of availability, accessibility, affordability, equity and quality of services that are highly determined by the distribution, functionality and quality of infrastructure. It is argued that a health system is composed of various elements such as infrastructure, human resources, data system and financial system (Kleezkowski *et al*., 1984). Furthermore, the state of cities and shires is the outcome of patterns of development that have yielded differing forms and locations of infrastructure and organisation of public buildings and public space, residential areas and services, including health, recreational and cultural facilities (Chapman, 1997). It has been seen during the Ebola crisis in 2014 and other pandemics that population movements between urban and rural areas and transnational movements are likely to increase, as people seek to return to their areas of origin, looking for informal safety and/or out of fear (Mishra, 2020).

These systems are important networks for smooth health delivery systems. The concept of infrastructure is broad. It includes buildings, equipment, supplies and communication equipment (Kleezkowski *et al.,* 1984). However, in this article, the term infrastructure is restricted to health infrastructure that enables the smooth delivery of health services.

t is suggested that poor infrastructure has consequences of poor health service delivery and this will be evidenced by reduced health delivery, hospital patient congestion, shortages of medical equipment and consequently an increase in death tolls (Garret, 2003). This suggests that there is need for the re-planning of city health infrastructure concerning the renovation of buildings up to the modern standards in light of pandemics, buildings that catch up with new technologically advanced diagnosing health equipment for a multitude of diseases and develop fast and reliable communication systems. However, all these developments are jacketed under the pillar of 're-planning of city health infrastructure'. The re-planning of city health infrastructure facilitates improved and good health service delivery, especially in this era of COVID-19.Barton (2009) argues that health and planning are historically linked. Modern planning

originated in the 19th century to combat the unsanitary, overcrowded and inhumane conditions of the burgeoning industrial cities (*ibid*.).

It is argued that cities hold the key to sustainable development, quality of life and a healthy human society, However, urban life is partly responsible for the global environmental crises. Healthy environments are certainly a precondition to quality of life in communities (European Sustainable Development and Health series 2, 1997). Global pandemics present a new frontier at the intersection between urbanisation and globalisation. This crisis and its management locally and globally will require a rethinking of sustainable urban development models influenced by a rebalancing of the public and private sectors and new ways of working and living (Mishra, 2020). Additionally, towns and cities face two key issues that show a clear pathway between land development policy and health outcomes. These issues are priorities for allocation of resources and poor urban design. However, with the coming of the indiscriminate COVID-19, these issues become a real story of peri-urban and rural to urban connections, in places that are often absent on the global map. UN-Habitat (2009) asserts that spatial planning is linked to the achievement of development goals and has a great role to play in reducing the negatives of COVID-19. With goal number 11 for sustainable cities, it is equally important for these cities to prepare for pandemics, especially on health infrastructure. Crawford (2000) suggests that there are particularly deep concerns about the impact of urban environments on health outcomes and the lack of a shared vision of how to support healthy lifestyles. It is argued that social, economic and environmental contexts contribute to the creation of a healthy human society, but do not operate in isolation or independently of each other. Rather, they are interact and interdepend, and it is the complex interrelationships between them that determines the conditions that promote health (Chapman, 1997).

Kid (2007) weighs in and argues that there are both economic and social drivers for a paradigm shift. He further adds that the contributors provide additional insights into emerging relationships between spatial planning and public health professionals and emphasize related shifts in professional paradigms. The links between environmental factors and health outcomes have been recognised and acted on since the early days of public health

management (Chapman, 1997). Moreover, as Crawford (2010) adds, the relationship between health and the built environment goes far beyond physical factors.

Carmichael *et al.* (2019) assert that reforms in public health included the following: various institutions and new set boards were formed to integrate guidance over local population health. Another reform was a significant overhaul of the spatial or town planning system to make it less complex and more accessible. To do this, a New Town Planning Framework (NTPF) was introduced. However, this policy specifically mentions the need to promote healthy communities and associated planning practices. This population growth has led to many urban ills, including the mushrooming of squalor and poor urban sanitation. This then follows that it is the era of global urbanisation, the rise of non-communicable Diseases (NCDs) and rapid climate change (*ibid.*). Duhl *et al.* (1963) suggest that in the early times, planning was a process of pure survival, hunters and gatherers substituted by their understanding of available resources. Therefore, this means that the link with health has come after its concentration with resources.

Kline (2012) asserts that public health infrastructure is the underlying foundation that supports the planning, delivery and evaluation of public health activities and practices. Therefore, in light of pandemics, the planning of infrastructure requires a lot to be done. The link between the prospects of urban planning and public health spring directly from the source: that is, the response to overcrowding and lack of adequate sewerage and water infrastructure in rapidly industrialising cities in the 19th century. However, in the 21st century, a comparable movement is occurring in industrialising nations, as spatially planning is linked to the achievement of development goals (UN Habitat, 2009). As far as the nexus between health and planning is concerned, the American College of Physicians (ACP) argues that public health works to protect and improve the health of communities through education, policy development, promotion of healthy lifestyles and research to improve chemical case and injury prevention. In addition, Kline (2012) encourages the development and implementation of a comprehensive, nationwide public health informative infrastructure, sharable by all public health stakeholders. This

will require significant investments in new and improved technologies, standard methodologies, human resources and education (Kline, 2012).

The meaning of city health and the health of populations in a country concentrates on the health of the population, rather than the care of the individual patients. Therefore, the public health action planning methods described considers health as an outcome of the effects of all the factors affecting the lives of individuals, families and communities in different ways and through different pathways (Chapman, 1997). However, Chapman (2007) argues that a view is a contrasting approach to the medical model that underpins disease-focused interventions and the it makes health care services responsible for improving and maintaining health. Therefore, a linking of the models is fundamental to the good health and quality of life of residents in communities (*ibid*.).

The Independent Commission on Multilateralism (ICM, 2016) asserts that pandemics such as malaria, polio, ebola, tuberculosis and HIV&AIDS, and resurgent diseases like severe acute respiratory syndrome (SARS) are threats to public health, particularly in developing countries. These diseases have had a devastating effect on the social, economic and political development of countries. However, the outbreak of pandemics at times does not provide some warnings or shots but occur naturally. This means that the health infrastructure must prepare for such changes. It is argued that these threats take place amid a lack of investment in health infrastructure and uneven burden-sharing during the global health crisis. In addition, it is important to note that a robust health system lies at the heart of building a stable multi-lateral environment comprising countries that have healthy populations, healthy societies and healthy economies.

THEORETICAL FRAMEWORK

Re-planning of city health facilities includes removal and eradication of old operational protocols and manoeuvring towards implementation of modern and sophisticated operational mechanisms (Jigyasu *et al.,* 2014). This does not only promote the delivery of services but it also makes the human capital more effective and efficient in health service delivery in hospitals. It is beyond doubt that global cities constitute the majority of

the total population of any country. This is due mainly to rural-urban migration and cities as centres of activity. This means that the current status of towns and cities no longer accommodates any modicum of changes brought by COVID-19. Therefore, the idea of re-planning of city health infrastructure plays an important role in promoting adequate health service delivery in cities providing inclusive health and accommodating other health changes brought by COVID-19 (Aghapour *et al.,* 2019).

It is imperative to note that deteriorated health buildings are not only unattractive to staff and patients but could become positively dangerous. Critical areas such as operation theatres and labour wards could habour life-threatening infections if not maintained properly and if not accommodating sporadic changes in the health sector. Of importance is the soft infrastructure aspect of health, including the human resource and related health policies that must be in place to support the entire health system (Hongoro, 2004). This suggests that the refurbishment of city health infrastructure must provide attention to soft infrastructures such as human resources, supply of adequate equipment and financial systems. This view is supported by Bitner, (1992) who asserts that the human resource is the essential tool in any organisation that endeavours to achieve its objective. It is argued that if health facilities are equipped with a skilled workforce, the delivery of quality health services is enhanced. It is estimated that less than half of all medical equipment in developing countries is usable (WHO, 1984).

Amongst the key health infrastructure is Information and Communication Technology (ICT), it is an essential tool that must be highly considered in setting up a city health facility that is organised in logistics planning. ICT constitutes a supportive framework for the delivery of quality health services. It has been noticed that in the past two years, Zimbabwe was one of the African countries that made significant strides in upgrading and installing ICT in city health facilities. This was meant to facilitate and embark on an effective data gathering, analysis and presentation of health service delivery.

Internet improves communication through emailing and video calling using Local Area Network (LAN) and in-depth research and diagnosis of

diseases. However, Fitzsimmons (1994) argues that fax machines and emails are not common modes of communication in health institutions, but in some African countries, wireless radio call system has been and is used for communication between hospitals, while in Bangladesh and India, wireless communication is used mainly in the security sector by the police force. This connotation paves the way toward the re-planning of city health infrastructure concerning a communication system that is essential in a hospital setup to communicate emergencies and other services (Benjamin, 2004). Non-governmental organisations (NGOs), such as Global Fund, play a pivotal role in the installation of internet services in governmental hospitals as a way of promoting the delivery of quality health services (Lucas, 2008).

Over the years, global governments supported by organisations such as the World Health Organisation (WHO) and the United Nations (UN), communities, philanthropists and religious organisations, have all been active in building health centres in cities. They have been driven by the desire to respond to the social obligation of providing health facilities to people. The World Bank (1993) propounded that overall observations indicate that delivery of maternal and neo-natal health (MNH) services are improving in addressing the needs of women and children. This observation is essential and it becomes a pillar towards the research towards re-planning of city health infrastructure. Once city health facilities have been established, there is need for close monitoring to notice the magnitude so that health service is delivered and ascertain the need for the re-planning to fill the loopholes. WHO embarked on the research to analyse the contributory factors behind the development and spread of pandemic diseases in operational activities of health facilities. Their research dovetails with the research of re-planning of city health infrastructure because there can be a multiplicity of health facilities but their operation might be hindered by insufficient machinery, inadequate medication, poor operational facility (lack of proper light system, the challenge of electricity). Therefore, it is essential to go beyond and further interrogate and facilitate the need to re-plan city health infrastructure and attain quality health service delivery.

Studies by the World Health Organisation (2010) suggest that city health facilities need to be re-planned, considering renovation and painting of buildings, improve communication systems and transport as a way of promoting the delivery of quality health services. However, the purpose of this study is to further interrogate the magnitude of improving health service delivery and promoting the creation of a friendly homogeneous working environment that is free from work-related accidents and incidents. Refurbishment of health facilities increases the health and safety of employees at the workplace and this will be explored in this research. This research focuses on splendid advantages that are brought forward by the practice of re-planning of city health facilities. Prior researches advocate that it is more prominent to capacitate health facilities for the goodness of reducing deaths in hospitals whereas this research further entails the significance of re-planning of city health infrastructure giving concern towards employees' health in the workplace.

RESEARCH METHODOLOGY

Qualitative methods, including key in-depth interviews and some key informant interviews with planning experts from the city Health Planning Department, were used. Desk review was used to obtain information on the re-planning of cities and health. This information was obtained from a document review from renowned academic journals on public health, planning of cities and health infrastructure.

RESULTS

Provincial hospitals are found in all provinces of Zimbabwe except Bulawayo and Harare, as these cities have central hospitals to treat referrals from other health facilities. Provincial hospitals receive referral patients from all provinces. These referral hospitals are located in urban areas. Their capacity may be exceeded if there is an upsurge in patients. Of these hospitals, there are major central hospitals that have the most advanced equipment. These six central hospitals are in Bulawayo, Harare and Chitungwiza. The hospitals have staff and pharmaceuticals to deal with the most severe casualties. However, these central hospitals require re-planning of their structures and re-aligning these infrastructures with WHO standards. However, most health initiatives are taken principally for environments/reasons for improving human health. In explaining new

responses to the health problems found in cities and towns, the WHO health, cities project represents the relationships between municipal departments, other bodies, the community and the policy framework as pillars of health. This helps to meet the required standards and caters for emergencies and disasters, such as COVID-19.

Even though the City of Harare has vast plans for health infrastructure, re-planning of health infrastructure is needed so that it caters for the vagaries caused by COVID-19. It is interesting to note that the City of Harare has been financed to the tune of millions of dollars plus other resources from council partners to kick-start major health infrastructure projects in Zimbabwe. This project will see the construction, refurbishment and upgrading of health facilities around the city. There are some marked improvements in the construction and refurbishment of health infrastructure in Harare. Up to date, the city has vast plans of upgrading its health infrastructure, the plan involving the construction of state-of-the-art polyclinics in its four (east, west, north and south) and refurbishment and upgrading of existing health facilities. The four clinics in the four zones will be enhanced polyclinics that are between a polyclinic and district hospital, save for admissions facilities. This is a significant move towards improving health infrastructure. However, there is a need to consider whether these plans are incorporating the ills of COVID-19.

Research reveals that the City of Harare, using its resources, has completed the construction of two clinics that had been lying idle, Kuwadzana Clinic Phase 5 and Budiriro Clinic, which had been lying incomplete for many years. Additionally, a prototype of the new polyclinics has been completed already at Mabvuku Clinic and has been upgraded from a mere polyclinic to an enhanced polyclinic that is between a polyclinic and a district hospital. This means that the local authority has made a significant stride in improving the city's healthy infrastructure. Added to that, preparations for the construction of Glen Norah Clinic have been completed and they have done refurbishments of Highlands Boundary Clinic, which are, however, is not complete yet. The council has budgeted to set up a clinic in Stoneridge. This is a positive step towards in improving health infrastructure. However, the siting of these health institutions requires re-orientation.

The location of infectious diseases should be properly done and carefully sited. This is because currently, the City of Harare has two important infectious diseases, namely the Wilkins Infectious Diseases Hospital and the Beatrice Road Infectious Diseases Hospital. Wilkins is located in the middle a residential suburb, Milton Park and Beatrice close to Mbare residential area. Even though these hospitals are located close to their users, with the nature of COVID-19, some people are scared of being in close proximity with these hospitals. Moreover, these hospitals were constructed in such a way that they accommodate small manageable sizes of patients but the COVID-19 outbreak has seen a big increase in patients in some hospitals. Therefore, this is a clear signal to the authorities that planning and designing of health infrastructure, that more space should be allocated to the construction of health infrastructure and improving its design, to include the required technology. Therefore, the local government can demonstrate commitment to public health through its corporate and operational plans and other planning instruments such as local government planning schemes, and its effective administration and enforcement of public health-related legislation.

As noted by the Ministry of Health and Child Welfare (MoCHW) representatives, Zimbabwe's healthcare system does not exist in isolation from other factors and organisations outside the health sector. When considering future actions to be undertaken to strengthen the health system, the following factors affecting the health system in Zimbabwe need to be taken into consideration (Osika, 2010). Access to roads, communication technology, housing and a healthy environment are key determinants of health in Zimbabwe. The current infrastructure issues caused by economic difficulties have limited the ability of some patients to travel to their nearest health care facilities (*ibid*.).Other factors include increases in fuel costs that can further limit transportation and quick transportation of COVID-19 patients to the hospitals.

In Zimbabwe, the MoHCW recognises that communication technology, especially as the availability of cellular phones continues to increase, presents opportunities in health communications, health data sharing, and contacting health services that are part of the essential soft infrastructure that improves the health welfare of urban residents. Additionally, safe,

quality and healthy housing is a strong need among many Zimbabweans and can mitigate various unhealthy conditions and injuries. Therefore, the affordability of health by residents has been viewed as crucial in the expansion of health infrastructure. Some residents cannot afford the costs of transport to emergency hospitals; hence the location of health infrastructure must be within proximity to its users.

Affordability is a key issue for housing and may impact the economic and personal financial choices that an individual may take regarding their access to health services. This needs to be considered when planning for health infrastructure. Higher costs in rent and purchasing housing, may leave a family with less income for health services.. It is added that secondary care hospitals receive patients via referrals from primary care facilities. Services at their level should be adequate to handle the emergencies referred from the primary care facilities (Makuto and James, 2007). The has been a shortage of health personnel in major and referral hospitals of Zimbabwe and they have not been ablee to handle the COVID-19 situation. Additionally, on the soft infrastructure, health personnel need to be capacitated. This capacitation will range from skills in handling infectious diseases and social- psycho-support. In practice, the district and mission hospitals that have been designated as district hospitals represent about 3,6% of all health facilities in the health system (*ibid.*).

DISCUSSION

Diseases shape cities (Klaur, 2020). This view has been seen in the most iconic developments in urban planning and management, especially in the 19th century. For instance, the development of the London Metropolitan Board of Works in mid-19th century was a result of a poor sanitation system. It was developed in response to public health crises such as Cholera outbreaks, the Spanish flu of 1918 in New York and Mexico City and the ebola virus disease in West Africa in 2014. All these have enduring marks on urban spaces. While urban living offers prospects of better economic opportunities and infrastructure, including health care facilities, the way cities diversify and expand plays a huge role in the spread of infectious diseases (Chapman, 1997). However, the advent of COVID-19 presented a myriad of challenges in towns and cities,

especially where informal settlements are increasing. Informal settlements and slums are particularly vulnerable because of their overcrowding, lack of access to water, sanitation and formal health services and food insecurity. The known solutions to slow transmission of the virus (self-isolation, quarantine, physical distancing, contact tracing) are very hard to apply in these settings (Mishra, 2020). Moreover, as the urban poor have no financial buffer, the need to combine the best possible health response with socio-economic mitigation measures will be extremely acute in informal settlements and slums (*ibid.*).

It is further argued that the interaction of urban design and public health is an increasingly critical territory. Several studies have been done to understand urban planning dimensions of pandemic preparedness (Klaur, 2020). Outbreaks of diseases imply enlightening the shape and the way cities are designed. It is important to note that health facilities in Zimbabwe take two wings, namely publicly-owned and privately-owned hospitals. With COVID-19, people have seen an overwhelming number of patients seeking medical help from public. It is of importance to note that there is a wide range of factors influencing human health, from genetics and individual behaviours to upstream determinants such as socioeconomic status, the physical environment and climate change. However, in this era of global urbanisation, the rise of non-communicable diseases (NCDs) and rapid climate change, research has identified several urban planning principles essential for the deliverance of human health and well-being outcomes. The built environment, including the corporation and shape of human settlements, transport and green infrastructure, has been identified as an important determinant of health worldwide. Additionally, urban planning is central to managing a complexity that is socio-economic, environmental and territorial context and securing win-win policy solutions.

Cities hold the key to sustainable development, quality of life and a healthy human society. However, urban life is responsible for the global environmental crises. Healthy environments are certainly a precondition to quality of life in communities (Davey, 2001). The initiative taken principally for environmental reasons improves human health, although this may not be explicit. In explaining new crises to the health problems

found in cities and towns, the World Health Organisation cities' project represents relationships between municipal departments, the community, the policy framework and other bodies, as pillars of health. This means that the city health has its foundation deeply rooted in the national level. COVID-19 has intensified the need to understand and link the way settlements are planned. It is further argued that creating healthier cities requires an integrated approach to planning at the local level (Chapman, 1997). However, it is has been observed that local governments are at the frontline of the epidemic but their capacity to respond rapidly depends heavily on the governance context and the financial health of the local government and its budgetary authority (Mishra, 2020). Furthermore, support to local governments and service providers is essential and a vehicle to link the natural response with what the local private sector and communities themselves can do.

Though it is argued that effective planning is complex and demanding (Chapman, 1997), roper planning and designing of health infrastructure are crucial. This will provide a safety net for urban residents. However, Davey (2001) argues that effective planning is complex and demanding as it involves developing a climate with the political will for planning for health, meaning that strategies must accommodate the unique political context of cities and their organisation. Planning is a key public activity for regulating land development, harnessing local knowledge through consultation, interpreting health evidence and regulating urban design. Research shows that policies for regulating land use, connectivity and density, transport and green infrastructure offer a pathway to improved health outcomes.

Research reveals that if publicly-owned and managed health facilities are of poor standards and not enough to cater for changes brought by infectious diseases, people will opt for the private sector (private hospital), leading to scrambling for limited resources. This situation is likely to lead to an increase in health prices as the law of demand and supply prevails. This means that health facilities will be accessed only by those who can afford them (the haves) while the poor (have-nots) will have no option other than dying or resorting to home remedies.

This view was further supported by Marlock *et al.* (2004) who assert that the existing health system faced many problems, including the ineffective geographical distribution of resources. It is further added that the underutilisation of hospitals because of their social size and lack of resources in rural areas (World Bank, 2003) will worsen the situation. Moreover, there is an ineffective allocation of resources, for example, a hospital may have a general surgeon but not an anaesthesiologist. Osika (2010) asserts that there is concern that the shortage of specialists in Zimbabwe due to outmigration has led to serious cases, referred from the primary and secondary levels (National Health Strategy 2009-2013).

Osika (2010) asserts that overall, it is intended for patients to first present at primary care facilities and then move up via referrals to the appropriate level of the health care system. However, for the past 10 years, the referral system has not worked, with numerous patients seeking primary care at all facility levels due to geographical convenience. According to the National Health Strategy (2009-2013), many Zimbabweans perceive that primary care facilities lack supplies, staff, and ability to provide good service. They, therefore, seek primary care at secondary, tertiary and quaternary healthcare facilities.

This means that there is need for reforms in the health sector to be enlightened by COVID-19 and its various waves. In some developing countries, reforms in health institutions have been put place. It is argued that developed countries have already introduced several reforms including the UK central government that offered prospects for urban (spatial) planners in England and Wales to become enablers of urban health (Carmichael, 2019). The first reform was the re-organisation of public health functions (*ibid.*). This is evidence that the health infrastructure, both soft and private, was not prepared for such biological disasters. There was the second reform in the UK, and this reform was a significant overhaul of the spatial or town and country planning system, ostensibly to make it less complex and more accessible (*ibid.*).

However, research in pre-2012, the English context suggested several challenges for delivery. This planning for health agenda, includes 'Silo thinking', a lack of awareness and requisite resources and a largely reactive

planning regime (Carmichael et.al, 2012). In some cities, some health facilities have been closed and some are in a bad state in terms of their infrastructure. A study by Gunes (2009) considering the impacts of the closing of a hospital, incorporates bounds on several resources that can be transferred and proposes a more realistic view of facilities as space and number of rooms.

CONCLUSION AND RECOMMENDATIONS

This research entails the impact of re-planning of city health infrastructure towards improving the delivery of quality health services and the creation of a healthy and safe environment for the workforce that is not hazardous and minimises operational incidents and accidents. Through this research, insight on ways to improve health facilities in cities is provided. City health infrastructural developments include renovation and painting of buildings, sufficient transport, improvement of communication system and increase in both technical and mechanical hospital equipment. However, not only the outlook of structures is needed to achieve re-planning of cities. The recommendations by Mishra (2020) hold value in re-planning cities in the wake of COVID-19. Mishra (*ibid.*) asserts that the lack of pre-crisis resilience and lack of progress against the SDGs calls for a strong focus on early recovery planning and its comprehensive strengthening of resilience against all hazards (pandemics, economic, shocks and climate)

The socio-economic impact of COVID-19 and health response measures, such as lockdowns in urban areas, is not limited to only reduced incomes and loss of livelihood. The strong relationship between the informal and formal economy often remains a challenge in combating the pandemic and mitigation measures will be extremely acute in informal settlements and slums. Therefore, soft infrastructure in the form of proper urban frameworks is required. Moreover, a comprehensive approach requires a focus on the immediate impact of access to adequate housing for those in informal settlements, taking into account the need for safe mobility to access livelihoods, or working from home is in most cases not an option for those in the informal economy.

Moreover, mapping and spatial analysis are key to informing planning and health decisions. It is crucial to map and understand the emergence of hotspots and their relationships to essential services. This promotes local area planning. Mishra (*ibid.*) asserts that mapping hotspots can help to predict and monitor population movements. This mapping and analysis can shape and localised response, re-organising informal markets and urban transport hubs, allocating space or buildings to be repurposed for emergency health services. It is added that in areas where informal settlements are mushrooming, there is need to promote integrated community-driven responses in informal settlements and slums. This is because most of the urban poor live from day to day with no buffer for sustained crises. Therefore, a health-focused response (taking contact tracing) must be accompanied by a stressful social-economic approach that addresses the daily survival need to access livelihoods, food, basic amenities and health services. This helps the urban dwellers to feel comfortable working in an environment that makes them valuable than becoming redundant and idle.

Therefore, it can be concluded that the status of cities requires collaboration efforts from different departments, ministries and academic institutions. These institutions must work together towards the improvement of the city health infrastructure in line with COVID-19 health guidelines. This will enable a safe and healthy working and interactive social environment. Furthermore, urban planning must provide consistency for major infrastructure and land development and social health planning must be an important factor in the city re-planning process.

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