

Navigating Planning Crises: Karachi's Response to COVID-19

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<https://doi.org/10.62345/jads.2024.13.3.7>

Abstract

The COVID-19 pandemic has invariably highlighted the critical role of spatial planning in managing public health emergencies, particularly with the need for social distancing. Historically, effective spatial planning has been essential for governments in navigating crises such as floods and earthquakes, employing strategies like designating containment zones, repurposing infrastructure, and constructing temporary facilities. The research focuses on Karachi's response to the pandemic. It examines how the city's spatial planning strategies were adapted to meet the challenges of its dense urban environment and socio-economic diversity. As Pakistan's largest city and economic hub, Karachi confronted significant challenges in balancing public health measures with financial activities. The study investigates how state institutions implemented awareness campaigns and emergency spatial planning, including the creation of quarantine centers, isolation zones, inoculation centers, and modifications to public spaces. Similar to other mega-cities, Karachi is vulnerable to natural disasters and emergencies, as it balances a range of issues that require effective spatial and urban planning. The city's response to COVID-19 reflects broader trends in emergency planning, highlighting its approach to managing crises through strategic interventions. The study aims to uncover the complex relationship between spatial planning and crisis management by illustrating response timelines, temporary structures taxonomy, and infographics. It offers insights into how cities can better prepare for and respond to future crises. It emphasizes the importance of restructuring governance and adaptive and context-specific planning in urban health management.

Keywords: COVID-19, Spatial Planning, Pandemic Response, Crisis Management.

Introduction

Karachi is the 12th largest city in the world (United Nations, 2018), with an area of 1,460 square miles, and the most populous city in Pakistan with an estimated number of 18 million inhabitants. Karachi is considered the most ethnically, religiously, and linguistically diverse (Inskeep, 2012) city of Pakistan. Karachi is also the industrial and financial hub, with an estimated GDP of \$164 Billion (GoP, Finance Division, 2019). More than 1/3rd of Pakistan's tax revenue, 30% of industrial output, and 20% of its entire GDP are generated by Karachi.

Apart from the Karachi Stock Exchange, headquarters of quite a few local and international corporations, Karachi is significant because of its strategic location as it hosts two deep seaports that handle 95% of Pakistan's foreign trade (Jonah, 2014). It is of immense strategic interest to China as Gwadar, a small fishing town close to Karachi, is developed as the flagship project of One Belt One Road (OBOR) under the title of China-Pakistan Economic Corridor (CPEC) (Bhattacharjee, 2015). The total investment estimated for CPEC is \$62 Billion (Said, 2019). and

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upon completion, China intends to re-route global trade as Gwadar will provide China direct access to the Arabian Sea, making Karachi an important economic and financial node internationally as well.

Karachi is located in the South of Pakistan, in the province of Sindh. It is developed on the coastal plains along a natural harbor of the Arabian Sea (Qureshi, 2010) and has witnessed layers of political control that span more than two centuries. Karachi emerged as a trade and commerce center during the British Raj when it was connected with extensive railway networks. Later, Post-Indian Partition and Independence, Karachi became the first Capital of Pakistan. Since communities of various backgrounds have occupied Karachi (Stanley, 1983), it has been subjected to communal violence, political unrest, and internationally sponsored terror activities since the Soviet-Afghan War in the 1980s (The World, 2012) that continues to the present day.

Considering the turbulent past and a complex socio-political structure, Karachi remains in a whirlpool of planning issues that translate into climatic crises, ethnic violence, water and sanitation, under-provision of housing, illegal encroachments, and unregulated private developments (Anwar, 2013). These are the most pressing concerns that have contributed negatively to the livability of the city (World Bank Group, 2018).

Meanwhile, the governance structure of Karachi is made up of an overarching body called the Karachi Metropolitan Corporation, which is subdivided into six wings: Karachi East, Karachi West, Karachi South, Karachi Central, and Malir (Rashid, 2019). Essentially, it is a four-tier division, The top one being the Divisional Council, District Council, Municipal Council, and Union Council being at the bottom, divided up to 170 local unions.

The economic, ethnic, and sectarian division in Karachi and the immense interactions the city hosts for sustenance take the governance to the brink of failure on many occasions. Like other developing regions of the world, the more profound issues have been managing the infection, labor markets, and households, especially in parts where the population is dense and income is low. The pandemic has been responsible for a loss of 20.71 million (Mian, 2021) registered individual jobs and the unregistered, informal daily workers that make up the 65 million (Latif, 2020) labor force unaccounted for in Pakistan. The following chapters will focus on how the governance systems have responded to the Pandemic and what spatial measures were taken to contain the infection, along with the management of economically weaker sections of the city.

Social and Spatial Context

The first registered case of COVID-19 in Karachi was reported on Feb 26th, 2020 (Bhatti, 2020), and it was the first city (Arain, 2020) that adopt a total citywide lockdown in Pakistan. Karachi managed to contain the infection quite efficiently, as later the data suggested, but early strict measures contributed to the curb of infection within the city. Even though Karachi and Sindh province were second in terms of infection, its healthcare system and socio-economic structure are more vulnerable to the impact of the pandemic in comparison to any other urban context of Pakistan (UNDP, 2020), as millions of unregistered or daily wage workers commute in and out of Karachi from rural areas that do not have access to healthcare or adequate food resources.

Within Karachi, densely populated wings such as Malir, Central Karachi, and West Karachi, which host two-thirds of Karachi's population, belong to the lower and middle classes. Orangi Town, for instance, is the world's 5th largest slum with 2.4 million inhabitants (Habitat for Humanity, 2016), and several other informal settlements known as *Katchi Abadis* host millions of rural to urban migrants, refugees, and daily wagers (Arif, 2003). The pandemic prompted a concern for social distancing that can't be practiced within neighborhoods as densely packed. Hence, strict measures

were taken to block all transit routes and restrict traveling (Mugheri, First lockdown imposed on KHI 2020), along with a general closure of educational institutions and working spaces and grounding of flights throughout the city.

In order to understand the vulnerability of a region, income data alone is not enough; hence, it is coupled with 11 other indicators (UNDP, 2021) examining long-term structural weaknesses that surfaced after the pandemic. According to the index, 126.6 million people can generally be considered vulnerable to COVID-19, and 49 million have already moderate to severe food insecurity (Farrukh, 2020), which is expected to rise further. Rural areas that surround Karachi have a higher poverty index and a more significant number of food-insecure districts. On the contrary, the city itself has a higher vulnerability index considering the contagion and unemployment. However, limited access to healthcare and services is an issue faced by both urban and rural areas throughout the country.

Socio-economic Impact and State Response

The pandemic has been responsible for a sharp domestic decline in consumption, demand, and growth because of containment measures, as the overall economic activity related to construction, hospitality, manufacturing, and trading came to a half both in formal and informal sectors. Considering Karachi's huge population barely above the poverty line, the measures caused millions to fall back into poverty, leading to food insecurity coupled with daily shortcomings of drinking water, sanitation, healthcare, education, and affordable housing. Pakistan raised 40% of its population from the poverty line from 2001 to 2015 (World Bank, 2018), and it is projected that the Pandemic will curb 1.5% of the total GDP (IMF, 2020), which will undo years of work done for the poor population mainly centered in major cities like Karachi.

The government's response to ensure adherence to the containment measures, continued food supplies, access to healthcare, and fiscal stimulus was provided to the economically weaker sections of the city. A national action plan (United Nations, 2020) for the pandemic aims to implement instant strengthening of inter-sectoral collaboration with the government and the private sector at the provincial level. The plan spans guiding logistics, laboratory support, food security, communication, infection containment, quarantine measures, isolation wards, curbing community exposure, and monitoring the spread. On the other hand, to mitigate the economic aspect, fiscal stimulus packages were ensured, local utility stores were subsidized for household and grocery items, and electricity/ gas bills were waived.

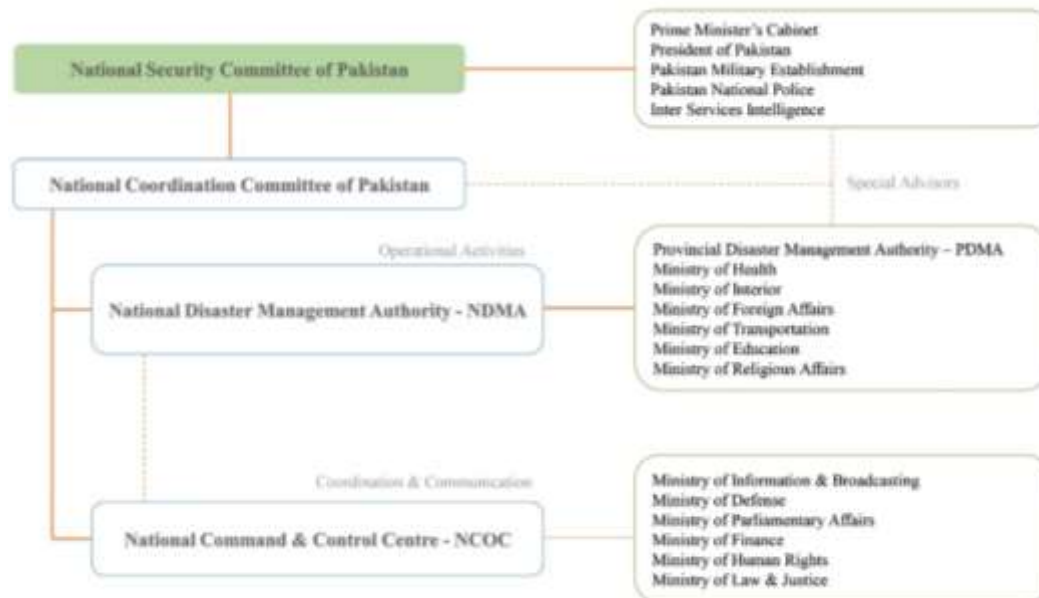
Governance Restructuring

The National Security Committee of Pakistan constituted a National Coordination Committee to formulate and implement a comprehensive strategy to mitigate the socio-economic impact and transmission of the virus. The committee was composed of all concerned Federal Ministers, Provincial Chief Ministers, and Provincial Health Departments that subsequently designated the National Disaster Management Agency (NDMA) as the leading authority (Government of Pakistan 2020). To ensure coordination between the departments and maintain the flow of information, a National Command and Control Centre (NCOC) was established (Mosharraf, 2021). All the operational activities were streamlined to NDMA, while NCOC oversaw information and articulated relevant activities.

NDMA had extensive experience confronting traditional emergencies and was quite efficient with procurement and delivering relief supplies during crises like earthquakes, floods etc. COVID-19 posed a pretty unusual challenge that required more than such expertise, particularly with

information and interpretation, as NDMA has a national jurisdiction that is shared by provincial agencies as well. The problem with a federal organization operating as a leading authority is the risk of misinterpreting various data points that are presented by provinces to the federal government, as the data is only sometimes collected in a bottom-up fashion. Hence, it can be subject to confusion. A sweeping mechanism to understand the mechanics of COVID-19 and its implications to make decisions about stimulus packages, lockdowns, establishing temporary structures to accommodate testing, treatment and an overall surgical attitude rather than a general one was required. To bridge this gap, NCOC was formed, combining the authority of a federal body and the responses of a local government. NCOC extensively used technological tools with reliable data to draw insights and, based on it, communicate efficiently with the concerned bodies along with mapping a coherent national response. NCOC can be considered a hub through which real-time data flowed and reflections were made that led to critical decision-making and effective interventions.

Figure 1: Emergency governance organizational structure



Source: Author

An overall action plan was devised that was composed of 8-point agenda:

1. National Level coordination, planning & monitoring
2. Risk communication and community engagement
3. Surveillance, Rapid response teams and case Investigation
4. Control on points on entry
5. Laboratory Network
6. Infection prevention and control
7. Case Management
8. Operational support and logistics

The national action plan was jointly implemented by the Ministry of National Health Service (NHS) and NDMA. The multi-sectoral partnerships provided financial and technical support to the

plan along with implementation of some training and enabling activities for health workers. NHS oversaw such activities to ensure adherence to national guidelines and the quality of training. Coordination with international agencies was being conducted on both national and provincial level. International NGOs like the UN, IFI, and local NGOs such as Edhi Foundation (Al Jazeera, 2017) that runs the world's largest volunteer ambulance service in Pakistan, were all aligned with the national action plan and contributed using the existing infrastructure. Provincial Disaster Management Authority (PDMA) also engaged Polio workers, who while conducting drive door-to-door polio vaccination drive, carried out surveillance visits to health facilities and reported their assessment to district polio officers as additional data collected on the pandemic (WHO, 2020). Prior to the national action plan, Sindh province had to operate without consulting the center and considering the implications on a national level, making Karachi the first city to opt for a total lockdown (Shubash, 2020) and ensured SOPs in workplace and public spaces alongside launching campaigns for public awareness.

Spatial Response

On 1st of February 2020, The National Institute of Health acquired the viral RNA Extraction kits and for COVID-19 diagnostics and immediately 18 real time PCR testing facilities were established in all provinces conducting over 2500 – 3000 tests daily (Saadeh, 2021). Around 70 Rapid Response Teams (RRTs) were constituted to attend emergency cases and conduct tracing. The first two COVID-19 cases were registered on February 26th, 2020. One was in Karachi and the other was in Islamabad. Both patients had returned from a pilgrimage in Iran (Zulfiqar, 2021), which prompted a concern for the western borders shared with Iran and Afghanistan, that were immediately sealed. Screening of all the passengers was made mandatory and quarantine facilities were set up close to the airports and the borders but soon enough, locally transmitted cases started to surface.

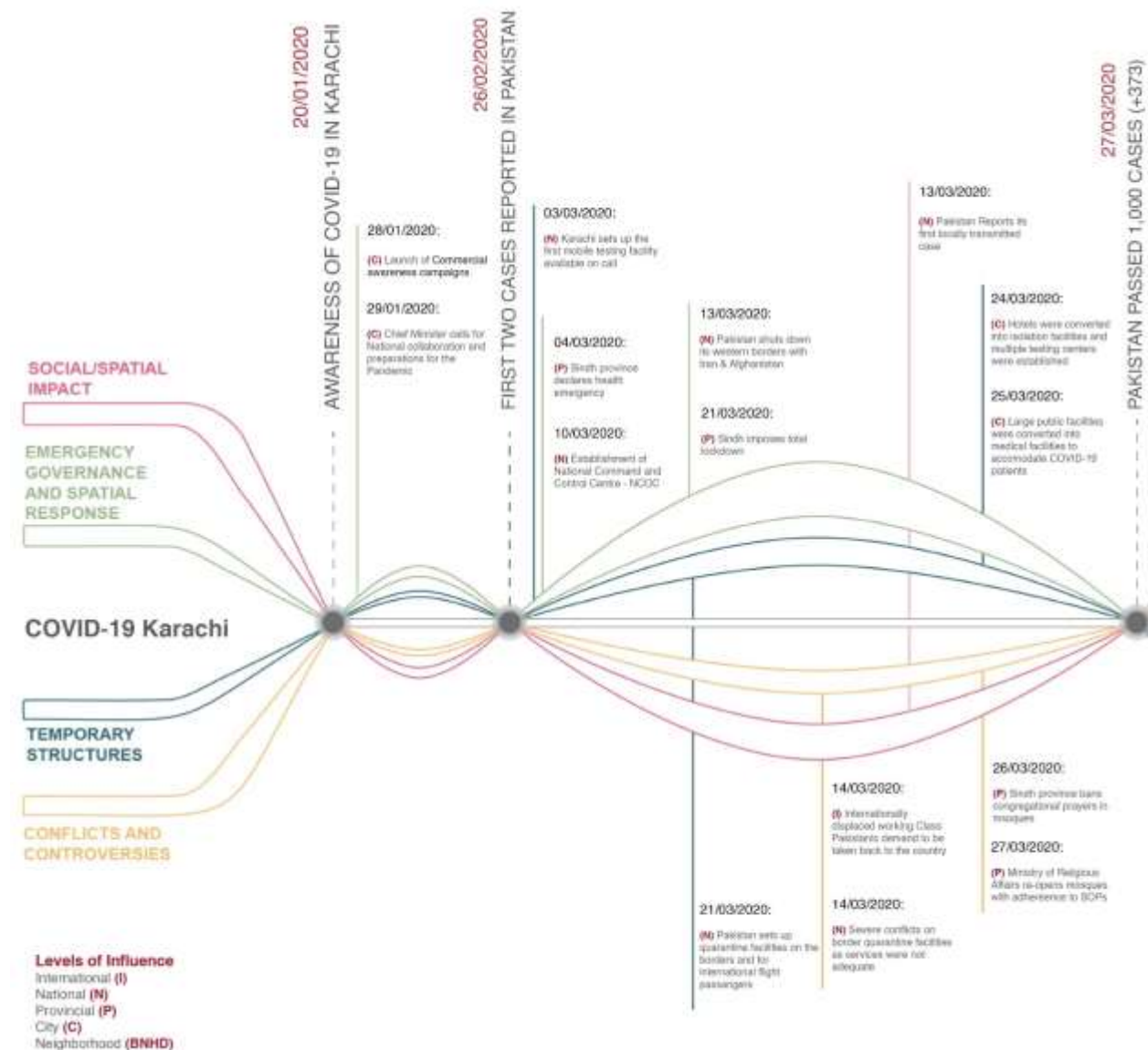
By March 13, a health emergency was declared (Tribune, 2020) educational institutions were shut down, international flight operations were grounded, passenger trains were grounded, and local commute was restricted. Mosques and all other religious congregations were banned but this decision was met with immense resistance and had to be reversed later when social distancing and SOPs were ensured (Abi-Habib, 2020). Business districts and social gatherings of all sorts were also banned. On March 21, Karachi, along with the entire Sindh province went into a total lockdown that extended from two to six weeks.

Although the lockdown curbed the infection rate, the economic pressure was mounting so the government decided to move from a general, overall lockdown to partial lockdown (Ali, 2020) that entailed specific business hours, regulations for offices, restaurants, institutions, religious congregational and public spaces. Economic Relief funds were released to the economically weak sections of the city and a steady supply of food was maintained. However, it was quite evident that for an economy as fragile, lockdowns need to be tailored to up to the neighborhood scale so the rest of the urban space can operate, and markets keep on running. Hence the government deployed a strategy called 'The Smart Lockdown' (Ahmad, 2020) which was limited only to the COVID-19 clusters identified by the positive tests and spatial data collected from mobile phones of infected individuals and the contacts made by them recently (Jahangir, 2020).

The Smart Lockdown was a distinct feature that allowed effective deployment of the scarce resources in Karachi and the rest of the country. In hindsight, it would not be overstatement to say that establishment of NCOC and Smart Lockdown minimized the economic damage and alleviated significant pressure of the healthcare system. WHO praised Pakistan's response to COVID-19

(Junaid, 2020) as it was based upon a deep understanding of political and social context of the country that enabled effective governance and communication with a surgical spatial and economic response.

Figure 2: COVID-19 Response Timeline



Source: Author

Temporary Structures

As a response to the pandemic in Karachi, four programs had to be accommodated: Testing, Quarantine, Treatment and Vaccination. Each of these facilities had an integrated real-time information system that fed information directly to the NCCO.

Mainly, existing buildings in Karachi were repurposed and opened to public with some informal structures such as kiosks, and sometimes just tents were installed on a local and rural neighborhood

level. Large public spaces such as parks, parking lots and exhibition spaces were dedicated to such activities as footprint was immense and distance had to be maintained.

In the past, Karachi has experienced urban flooding, heat waves, haphazard garbage management, terrorist attacks, earthquakes and the usual governance & management crises on religious occasions and other mega-events (The News 2019). To handle such situations of emergency or to take preventive measures ahead of time, the local municipal government establishes temporary structures called 'Relief Camps' that collect data on a neighborhood scale and provide guidance to the residents or urban management units. These temporary structures are usually set up in an open public space and act as a node between the government and the neighborhood.

The structures are merely tents set up on soft ground such as playgrounds or community parks, with a staff of 3-5 personnel, often working manually on registers and submitting data by the end of day to the municipal corporation office. Relief camps were put in place to guide the public, distribute masks and soaps (Doctors Without Borders, 2020) conduct testing and tracing in old settlements of Karachi that have high density and low vehicular accessibility because of narrow streets (Hassan, 2020). The camps were also the primary source of guidance in case of health and other management affairs such as registration for economic stimulus packages, distribution of ration packs and informing relevant authorities of any emergency.

Parts of Karachi that had high vehicular accessibility were directed to take tests at drive-thru tests (Mugheri, Drive-through testing, KHI 2020) that were set up at main road junctions. The structure was essentially a movable container converted into a testing lab transferring real-time data to the municipality. Door-to-Door testing (Dawn, 2020) was also conducted within neighborhoods that were identified as hotspots and remained under a strict lockdown, but it was halted as around 25 health workers were infected.

Private welfare organizations that were previously working for Polio (Alaoui, 2020) and TB in Karachi with an extensive ambulance service were also working to conduct tests in mobile labs (Indus Hospital 2020), mostly in neighborhoods that they had already been working on. Apart from the tests conducted in the relief camps and drive-thru, and mobile labs, most of the testing was done in public/ private labs (Dawn, 2020) that performed as usual with an appointment or first come first serve basis with a limited walk-in capacity.

Upon the guidelines provided by NCOC, Karachi converted around a dozen of hotels and guest houses into quarantine facilities (Gul, 2020). Some of the hotels that were within the vicinity of airport and large public/ private hospitals to accommodate international travelers (Azeem 2020) and the patients that exceed a hospital's capacity.

Provincial disaster management authority and the ministry of health administered the quarantine facilities and after consultation with NCOC, proceeded to convert large scale public buildings into integrated facilities to alleviate pressure from the rest of the healthcare infrastructure. Following the decision, Karachi's Expo Center (Tribune, 2020) which is one of the largest exhibition spaces in Pakistan, was converted into an integrated COVID-19 facility (Ahmad, 2020). In the first phase expo center carved out space for 1,200 patients and went up to 2,000 in the second phase.

Karachi, much like other metropolitan cities, had a shortage of ventilators as well as equipment to handle COVID patients with severe symptoms. The expo-center facility was integrated in terms of testing, diagnostics, quarantine, treatment and later, vaccination was added to it as well. Since the facility went functional in April, out of the 1,200 patients' capacity, 493 were immediately taken. By the end of first week of May 1/3rd of them recovered and were sent home and only 8 patients had to be referred to the ICU to other hospitals.

The facility housed more than a hundred paramedics and around 60 doctors. The facility is supervised by provincial health department officials, Deputy Commissioner of East-District and Civil Hospital's Medical Superintendent along with the Military assistance serving as an administrative guardian of the entire facility keeping the logistics in line.

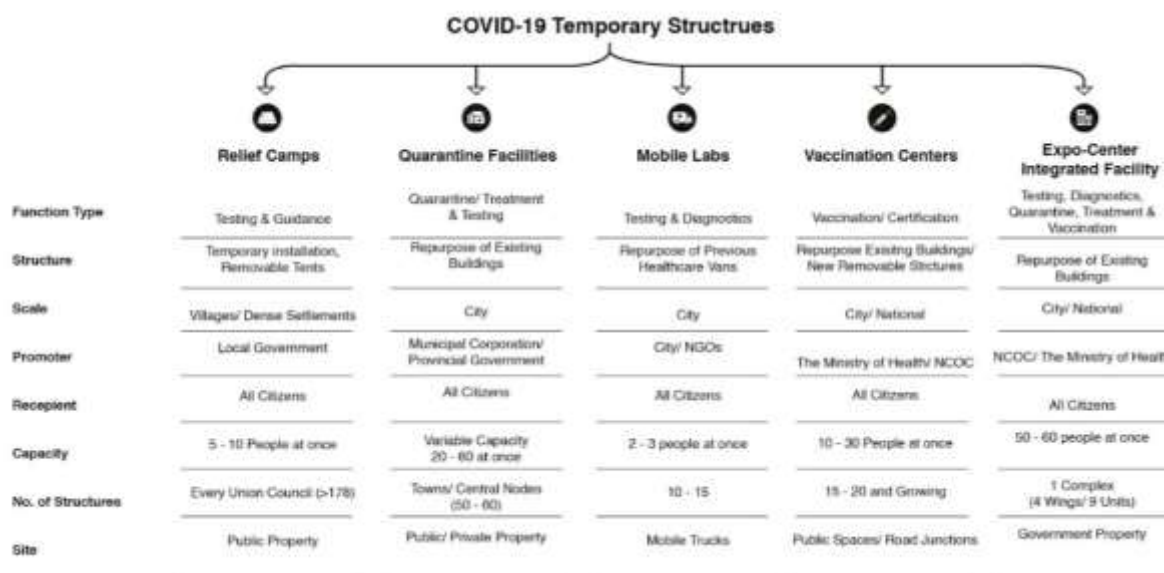
The facility was divided into 18 units with separate departments for infection control, human resources, training, supply chain, lab services, food, security, pharmacy, housekeeping, etc. Overall, the facility was equipped with all the necessary digital equipment and ventilations centers for some patients with breathing difficulties. Lastly, to ensure patients mental wellbeing, skype workshops were conducted for patients regularly.

Karachi initiated its vaccine drive for healthcare workers by the end of March 2021 and within a month, it established vaccination facilities that were opened to the elderly population and individuals at high risk. Gradually, the drive kept going down in age groups as steady supply of vaccines was maintained. To date, Karachi is vaccinating around 231,000 individuals every day (Dawn, 2021).

By May 9th, Karachi's Expo-Center's Southern-Wing, became the first 24-hour vaccination center (Dawn, 2021) capable of inoculating 100 individuals at once, it can facilitate up to 25,000 people daily (Ayub, 2021). Around 25 more vaccination centers were established within the next couple of days with 4 operating in District-South of Karachi and 5 in District-East while in the Central District and Malir, a total of 7 centers went operational along with the rest in the outskirts of Karachi.

Karachi adapted the same framework as before and vaccination continued once again with Drive-Thru, Door-to-Door, Relief Camps, and Mobile services (The News International, 2021). As steady supply was ensured, Karachi established 11 mass vaccination centers by 1st of August that included Dow Ojha Campus, Khaliq Dino Hall, JPMC, Lyari General Hospital along with a few other Hospitals to avoid bottlenecks at already established facilities. Lastly, a vaccination center was also established at the University of Karachi (Express Tribune, 2021) to administer the students and teaching staff.

Figure 3: Taxonomy of temporary structures



Source: Author

Methodology

This research adopts a qualitative approach to examine Karachi's spatial planning response to the COVID-19 pandemic through secondary data sources. The study involves an extensive review of relevant documents, including government reports, UN and World Bank reports, policy statements, media articles, and public health records. This review aims to consolidate information regarding the spatial planning strategies implemented by authorities, such as the creation of quarantine centers, isolation zones, and inoculation facilities.

To facilitate a deeper understanding and to visually represent the data in a palatable manner, the research includes the development of structure typology, response timelines, and infographics. The aforementioned visual tools are designed to synthesize and present the information in an accessible form, highlighting the spatial and strategic interventions undertaken. By providing these graphical representations, the study seeks to enhance comprehension of Karachi's response measures and to offer insights into the effectiveness of spatial planning in managing public health emergencies. The methodology not only aims to consolidate existing data but also contributes to the academic discourse on urban health management and crisis response through adequate visual documentation.

Findings and Implications

The research highlights that effective governance restructuring was critical in Karachi's swift response to the COVID-19 pandemic. As a megacity, Karachi required rapid and adaptive measures, with the implementation of the "smart lockdown" policy being particularly significant. This approach allowed certain areas to remain open while imposing micro lockdowns in specific zones, balancing public health needs with economic activities.

The spatial response was crucial, considering Karachi's complex urban fabric. The city effectively utilized various typologies of structures for different purposes, such as vaccination centers and isolation facilities, which played a vital role in the overall management of the crisis. However, despite the effectiveness of these strategies, the response was not without controversy. Socially, there were debates over the equity and fairness of the lockdown measures, particularly in densely populated and economically disadvantaged areas.

The implications of this study suggest that Karachi's experience offers valuable lessons for future urban crisis management. Understanding the taxonomy pertaining to temporary structures and the spatial planning decisions made can inform better preparedness and adaptability in similar contexts.

Conflicts & Controversies

Much like other developing countries, Pakistan was under acute pressure to keep the economic wheel spinning as poverty and unemployment were high, and most of the population was part of the informal economy (Sen, 2020). At the beginning of the Pandemic, the central government understated the threat faced by the virus outbreak and urged the provinces to continue working with rudimentary measures. On the 22nd of March, the Prime Minister criticized Sindh province for imposing the lockdown (Dawn, 2020). Still, in hindsight, it is pretty clear that Sindh adopted a suitable strategy in comparison to other provinces.

However, the lockdown over livelihood argument is quite authentic. Still, the lack of strategic decision-making by the central government in the beginning caused immense problems and confusion among the public. For instance, the immediate lockdown caused widescale disruption of general supply lines and transportation within the country (The Express Tribune, 2020). The ineffective negotiations with the religious community caused substantial conflicts that emerged

into protests and non-compliance around the country (Hashim, In Pakistan, mosques become coronavirus battleground issue 2020). Late closure of western borders, despite early warnings, also contributed significantly to the early spread of infection and longevity of the lockdowns.

By May 18th, 42,125 people were infected, and 903 had died from the virus. Long, complete lockdowns proved effective, but more than 150 million people suffered economically because of it even though preparations were underway simultaneously. Even though the resources and time allocated later by the central government proved to be quite efficient, a lot of economic and social damage could have been avoided. The establishment of NCOC resolved the communication and logistical gaps between the provinces and the center. Still, in the beginning, the provincial and central governments could have operated Collamore abortively and focused more on political optics. Nonetheless, Karachi operated quite independently and managed the pandemic quite well with clear communication, strategic lockdowns, and strong decision-making while strengthening the social and healthcare system.

On the front of lockdown, a myriad of concerns was also raised. In the beginning, when the Sindh authorities imposed a total lockdown, the trade unions and other organized sections of the market resisted quite a bit as other provinces were still free to conduct business as usual (Dawn, 2021). The practice of provincial autonomy and criticism from the central government divided the public into two opposing views on the lockdown. Complete lockdown also resulted in massive layoffs and as unemployment went up, unrest in the public became more evident.

The smart lockdowns were framed by the markets and unions as discriminatory as one market was operational and the other went into a lockdown. The Karachi Tajir Action Committee (KTAC) set up protest camps and even went on hunger strikes to end the lockdown (Geo News, 2021). The Karachi Traders Union (KTU) protested the limited working hours and social distancing regulations in dense marketplaces. Restaurants protested the half-seating capacity, and retail stores also voiced concern about closing shops at 7 pm.

Karachi is composed of multiple political representations like MQM, PPP, JUI, and PTI are the most prominent ones among a few others. Strict restrictions, lockdowns and regulations became subject to political point scoring on a local and national level as well (Anis, 2021). However, the implementation of the lockdowns and conflict management was administered by the Police and Rangers from the Military, hence no violent protest outbreak was reported.

Lastly, when it came to vaccination, according to a Gallup survey conducted in Pakistan, around 37% of the population will not take the vaccine (Gallup, 2020). The suspicion around COVID vaccines is shared globally, but Pakistan has a long aversion to vaccines that stem from Polio eradication drives. In remote areas of Pakistan, Polio workers have been killed (Lamble 2018) for vaccinating children, and the same attitude extends to COVID-19 vaccines.

However, the government has made it mandatory for every citizen to be vaccinated, and certificates are compulsory for all public and official spaces. Even after a month since the vaccination began, Pakistan only administered 197,000 doses or 0.09 out of 100 members of the population (Hashim, Vaccine hesitancy in Pakistan heightens the risk of COVID resurgence 2021). The public is non-compliant because there is a fear of allergic reactions and other conspiracies such as 5G microchips, etc. Even now, a large portion of the population is in total disbelief of the existence of COVID-19 (Farooq, 2021).

Despite the non-compliance, the country has vaccinated around 23% of its overall population of 220 million individuals (Reuters, 2021). Pakistan aims at vaccinating the entire population by early 2022 and continues to expand the vaccination drive as a steady supply of vaccines has been maintained.

Conclusion

Karachi's response to COVID-19 illustrates the multifaceted challenges in a context where socioeconomic pressures and political dynamics are weaved together. The initial phase of the pandemic in Pakistan was marked by a lack of cohesive strategy and coordination between the central and provincial governments, leading to confusion and disruptions. However, Karachi, operating with a degree of collaborative autonomy in terms of governance, implemented strategic lockdowns, clear communication channels, and decisive measures that allowed it to navigate the crisis more effectively than most other cities globally.

Despite the efforts mentioned above, the response in Karachi was challenging. The imposition of smart lockdowns, designed to target specific areas while allowing others to remain operational, led to accusations of discrimination and promoted social unrest among business communities and the general public. The economic impact of these measures was significant, with massive layoffs and widespread discontent highlighting the balance between safeguarding public health and sustaining economic activities in a densely populated urban fabric.

Furthermore, vaccine hesitancy, deeply rooted in historical mistrust of inoculation programs, such as polio, posed a significant hurdle in the city's efforts to control the spread of the virus. Misinformation and conspiracy theories, coupled with suspicions from previous health initiatives like the Polio eradication drive, resulted in substantial resistance to the COVID-19 vaccination drive. Despite these obstacles, Karachi, like the rest of Pakistan, made remarkable progress in vaccinating its population.

Karachi's experience during the pandemic provides critical insights into urban crisis management, especially in developing countries with complex socio-political landscapes. The city's handling of the crisis prompts the need for rapid governance restructuring, adaptive spatial planning, and proactive public engagement to manage future public health emergencies effectively. It also highlights the importance of addressing socioeconomic inequalities and dispelling misinformation to foster a more resilient urban environment capable of responding to crises in a way that protects both public health and the local economy.

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