



# WEATHERING COVID-19: Lessons from Wuhan and Milan for Urban Governance and Sustainability

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The global spread of COVID-19 has exposed the world's largest and densest urban centres to bearing the brunt of this pandemic. The invisible virus has forced thriving metropolises to empty their streets and shops to dead spaces absent of people and activity. It even triggers the doomsday question of, "Does COVID-19 mean the end of cities?" In this article, we compare how two

great cities of the East and West – Wuhan and Milan – have responded to the deadly virus, with their internal and external strengths and constraints. We also take the reader deep into the two cities' neighbourhoods for a realistic sense of how their local residents have dealt with COVID-19. We end by drawing critical lessons for urban governance and sustainability.

Over the first few months of 2020, the novel coronavirus, which erupted in the Chinese city of Wuhan around 1 January, engulfed around 200 countries and regions, infected over 12 million people and killed over 550,000 as of 8 July. This rapid spread from one locality to the entire world has quickly mobilised our responses to fighting COVID-19. Little collective response, however, has taken place, leaving most nations to muster their own resources to stem the virus within their closed borders. This has facilitated comparing nation-based data on new cases, death counts and relative performances in containing the virus. However, it has overshadowed a local focus on responses to COVID-19, especially by the most affected cities.

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While global in scope, COVID-19 has hit cities very differently. As the first epicentre of the pandemic, Wuhan lost 3,869 residents, about 80% of China's total COVID-19 deaths. New York City, the epicentre of the pandemic in the United States, has accounted for almost one-quarter of all deaths in the country. Since the coronavirus spreads faster in closer social and spatial interactions, is density to blame for the high death counts in Wuhan and New York, whose urban cores have around 7,000 and 11,000 people per km<sup>2</sup>, respectively? Not so fast. Despite a density of over 20,000 people per km<sup>2</sup> in central Shanghai, the city of 25 million people had only 339 COVID cases and seven deaths. Other factors must be considered and can reveal a lot about cities' capacities to respond to an unprecedented public health crisis and to enhance post-crisis governance and sustainability.

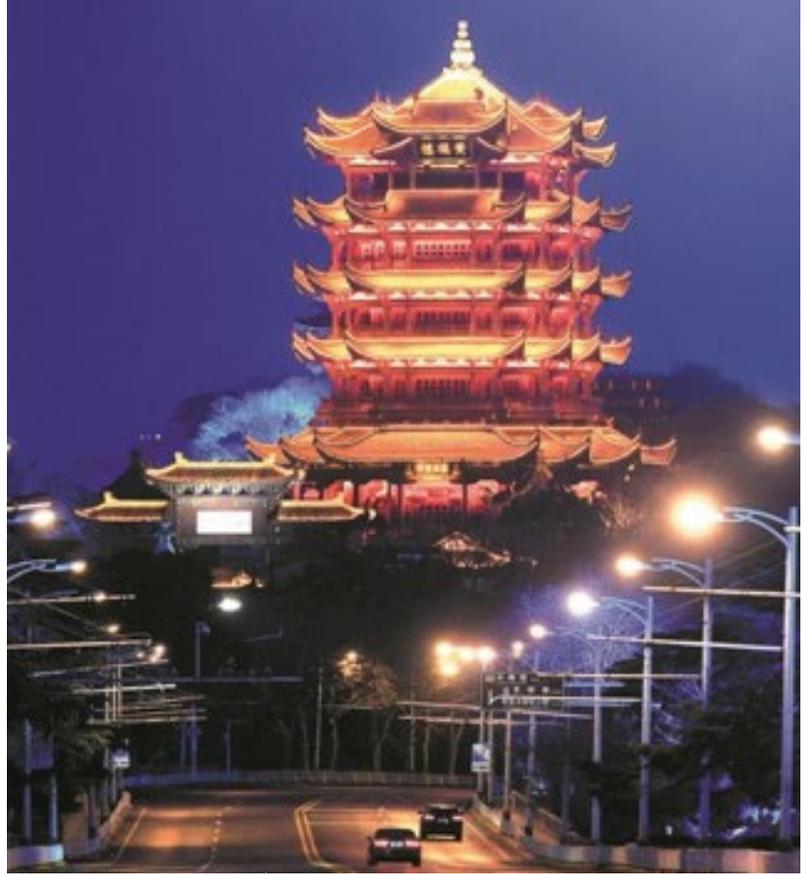
To probe into these factors, we conduct a comparative analysis of two COVID-19 epicentres – Wuhan and Milan. The first section looks at the trends in COVID-19 infections and deaths in the two cities in global and regional contexts. The second section examines municipal and community responses to COVID-19 in terms of containment strategy, medical infrastructure and external support versus constraint. The last section draws important lessons for urban governance and sustainability.

## 1. Seeing Through the Data

COVID-19 has generated a deluge of data on infection and death in real time. We contextualise city-level data on Wuhan and Milan through a statistical look at China and Italy in the global picture of COVID-19 and the domestic regional contexts of the two cities.

### *A Global Glance*

China and Italy have been among the world's most COVID-affected countries. But they have very different trajectories in the virus's spread, containment and destruction compared with other most-affected countries. China led the world in active cases and deaths from early January until late March. During that period, China and Iran were the only two developing and non-Western countries among the top 10



A deserted highway near the Huanghelou tourist site at night.

Source: Photo from Xinhua; accessed from [www.chinadailyhk.com/article/124842](http://www.chinadailyhk.com/article/124842)

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countries ranked by total coronavirus cases. After Wuhan's lockdown on 23 January, China peaked at 4,670 cases on 12 February, and around 80,000 cases on 1 March.<sup>1</sup> These dates marked a sharp decline in new cases and slight increases in cases mostly due to imported cases.

Italy had few cases when China's new cases peaked on 12 February. Despite a regional-to-national quarantine on 8 March, Italy's 4,825 deaths surpassed China's total number of deaths (4,632 on 17 April)<sup>2</sup> on 21 March. Italy's cases reached 86,500 on 27 March and surpassed China's highest number of around 83,000 on 1 May. In comparison, the United States topped 100,000 cases on 27 March and surpassed Italy in the number of deaths at 5,151 on 31 March. The US, Italy and several developed European countries remained among the world's top 10 most-affected nations through April. Turkey and Russia joined the list at the end of April, as did Brazil in early May. At this point, China was no longer in the initial top 10 countries. As of early July, increased infections in more developing countries like Pakistan, Peru and South Africa had pushed Italy out of the top 10 and China out of the top 20.

### *A Regional Perspective*

To further frame the Wuhan-Milan comparison, we highlight the regional settings in which the two

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cities have been affected disproportionately. Hubei province, with Wuhan as its capital, is the regional epicentre of COVID-19 in China. When the infected cases in Hubei peaked at nearly 5,000 on 25 February (see Figure 1A), they accounted for 83.3% of all of China's cases. This percentage remained more or less the same until 6 May, after China brought the virus under control. While Wuhan consistently accounted for the majority of cases in the province, at 73.9% on 6 May, it was not an isolated epicentre. As of 6 May, four out of 17 cities in Hubei had accumulated 9,399 cases, which accounted for 13.8% of all cases in Hubei.<sup>3</sup> The four cities border Wuhan on all sides. Not only did Wuhan have Hubei province as the outer layer of its COVID cases, it also spread the virus around its surrounding areas.

Lombardy, Italy's wealthiest region in the north, was the regional epicentre of the pandemic for Italy earlier during the outbreak. We see this through a combined analysis of the national data from Worldometer and the subnational data reported by the Italian Ministry of Health (see Figure 1B). Given the absence of official data for February, we have picked three points in time to trace the trajectory of COVID-19 in Lombardy from early March. When Italy had only 2,502 cases on 3 March, 1,520 (60.8%) were concentrated in the Lombardy region. This share dropped to 39.7% on 3 April, and to 36.8% on 3 May. Lombardy was hardest hit earlier on, before the virus spread to other parts of Italy.

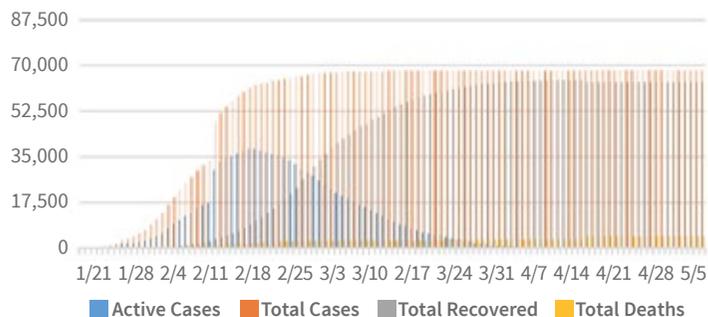
Lombardy differs drastically from China, where Hubei and Wuhan remained the regional and local epicentres throughout the pandemic. Lombardy's epicentre over time, Milan's share of Lombardy's cases rose from 7.4% on 3 March to 21.9% on 3 April, and to 25.9% on 3 May. Similar to the virus connection between Wuhan and its surrounding cities, the city of Bergamo, 50 km from Milan city on the edge of Greater Milan, was an integral part of the

regional epicentre. Some 40,000 people travelled from Bergamo and Spain to a Champions' League football game in Milan on 19 February 2020, of whom many partied overnight, accelerating the spread of COVID-19 in the region.<sup>4</sup> The Milan Fashion Week of 18-24 February also drew its usual large attendance. These large social gatherings, coupled with geographical proximity of Milan and smaller nearby cities, contributed to the virus's spread in Lombardy.

### A Local Comparative Focus

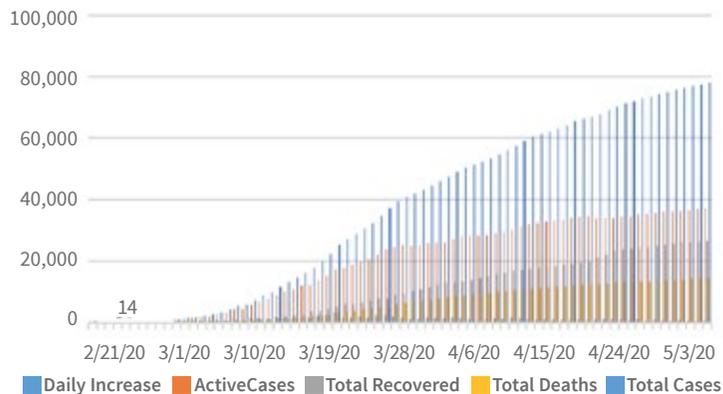
Hubei and Lombardy help us focus on Wuhan and Milan as urban epicentres where COVID-19 has inflicted the worst destruction and has been tackled most forcefully with local and non-local policy tools and medical resources. Figure 2 compares COVID-19 trends for both cities, even though the

Figure 1A: COVID-19 Trends in Hubei Province



Source: Graphed from data reported by Hubei Provincial Sanitary and Health Commission.

Figure 1B: COVID-19 Trends in the Lombardy Region



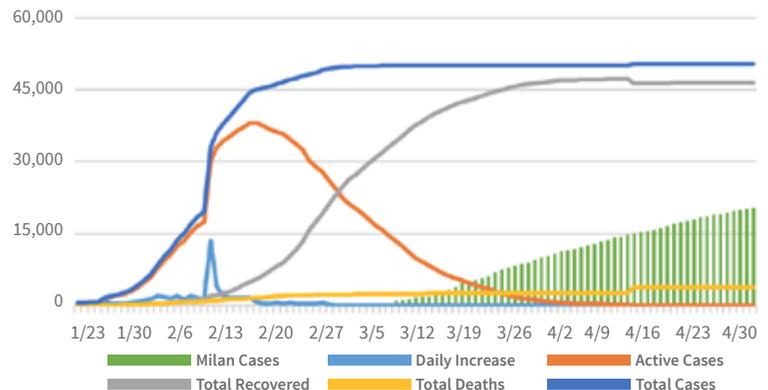
Source: Graphed from data reported by Italy's Ministry of Health.

data on Milan are limited to just one indicator. Wuhan experienced a spike in new cases early, pushing up both active and total cases, which then diverged sharply. Wuhan's active cases dropped dramatically as the pandemic was brought under control, while total cases flattened out. Although coronavirus hit Milan later, its total cases grew continuously. Lurking behind these trends is the critical measure of case fatality for both cities. Wuhan's case fatality rate peaked at 6.6%, the highest in China, on 16 April when China adjusted the data on Wuhan upward, although it was still seen as lower than expected outside China. Given the absence of death counts for Milan, we estimate the city's case fatality rate to be around 15% around 16 April based on its total cases relative to Lombardy's and the midpoint between the death rates for Lombardy vs Italy. This large differential between the two cities' case fatality rates anticipates a focal analysis and explanation later.

More people outside China are likely to have heard of Milan than of Wuhan, certainly before COVID-19. Wuhan, however, has carried the moniker of "the Chicago of China" since around 1900, when an American journalist visiting the city labelled it as such for its location by major lakes, heavy industries and hub status for rail transportation.<sup>5</sup> Wuhan has also preserved a small Concessions area by the Yangtze River that was built by European colonialists and adventurers who had sailed up the river from Shanghai in the early 20<sup>th</sup> century. While Milan serves as Italy's top financial centre and one of Europe's top fashion centres today, it has been a major industrial centre since around 1800, albeit on a smaller scale today.

Other indicators in Table 1 show the two cities' similarities and comparisons of their varied responses to COVID-19. Wuhan's urban core and Milan's (contiguous) urban area were comparable in population, and so were Wuhan and Greater Milan, counting Wuhan's population according to household registration. One of densest cities in Italy and Europe, Milan's density was similar to Wuhan's urban core. While Wuhan and Milan have different economic sectors, they are among China's and Italy's top economic centres. The two cities share a mixture

Figure 2: COVID-19 Trends in Wuhan and Milan



Sources: Graphed from data reported by the Health Commission of Wuhan and Italy's Ministry of Health. Note: There was only data on infected cases for Milan.

Table 1: Comparative Indicators on Wuhan and Milan (Lombardy)

Indicators	Wuhan	Milan	Notes
<b>1. Population:</b>	10,892,900 (8,536,516)	1,378,689 (City)	2017 data for Wuhan; people with household registration in brackets; 2015-2018 data for Milan
1.1 Urban core (seven districts)	6,655,800 (4,941,769)	3,250,315 (Metropolitan city)	
1.2 Outer districts (six districts)	4,237,100 (3,594,749)	5,270,000 (contiguous Urban area)	
		8,220,170 (Greater Milan)	
<b>2. Density (average)</b>	1,271 per km2	7,315 per km2 (City)	017 data for Wuhan; people with household registration in brackets; 2015-2018 data for Milan
2.1 Urban core	6,969 per km2	2,029 per km2 (Metropolitan city)	
2.1 Outer districts	557 per km2	2,783 per km2 (Urban area)	
		420 per km2 (Lombardy)	
<b>3. Economic importance</b>	- GDP ranked 9 <sup>th</sup> among the top 10 Chinese cities; - A major manufacturing center (auto, steel, IT)	- Second largest GDP among EU cities; - 10% of Italy's GDP; - 20% of Italy's GDP; - Italy's top economic, financial, fashion and media center	- Milan - (Lombardy)
<b>4. Medical infrastructure</b>			2018 data on Wuhan;  2017 data on doctors & nurses (Italy as a whole)
4.1 Hospitals/100,000 people	3.59	2.00 (Milan, Lombardy)	
4.2 Hospital beds/1,000 people	7.38	8.00 (Lombardy)	
4.3 Doctors/1,000	3.57	3.85	
4.4 Nurses/1,000	4.91	5.25	
<b>5. Location</b>	Central China	Northern Italy	
<b>6. Ecology</b>	River/lake city	River/lake city	
<b>7. Administrative composition</b>	13 districts (7 urban core, 6 outer districts)	Nine administrative Borough Councils (Milan City)	
<b>8. Administrative status</b>	Capital city of Hubei province	Capital city of Lombardy Region	
<b>9. Transport importance</b>	China's largest hub for rail, air, land and water transportation (busiest national rail hub with three stations)	One of Italy's most important rail hubs, with five stations	

Source: Computed and compiled from Wuhan city and health statistical yearbooks, OECD, Wikipedia, and other online sources.

of different and similar indicators on medical infrastructure. Wuhan and Milan have a similar location relative to major rivers, political status as capitals of their respective regions, and as national transport hubs, especially for rail. While some similarities may lead us to expect similar local responses to COVID-19, they alert us to different factors that matter to the two cities' different responses to the coronavirus.

## 2. Factors That Really Matter

Diverse conditions at the municipal level and beyond mediate COVID-19's local impacts and responses. The relationship between the pandemic and local responses reveals a lot about cities' capacities to manage a major crisis.

### *Governmental Response as a Difference-maker*

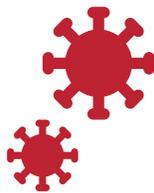
The origin of COVID-19, Wuhan quickly became China's and the world's epicentre before the virus spread far and wide and turned Milan and New York into their countries' epicentres. In early January, there was confusion in Wuhan about the nature, spread and impact of the coronavirus. It not only led to an initial delay in governmental response but also to a lack of transparency and information-sharing as perceived by the outside world. As the virus began to spread locally and regionally, the Chinese government locked down Wuhan on 23 January when the city of 11 million people had around 500 confirmed cases, which accounted for half of the world's cases at the time. The lockdown was very soon extended to 15 other cities in Hubei, affecting 35 million people. By 14 February, four other provinces and 48 cities had issued lockdown policies that affected around 500 million people.<sup>6</sup>

Under lockdown, people were not allowed to leave Wuhan and a few worst-affected Hubei cities, where all public transport systems were shut down,

**While Wuhan and Milan have different economic sectors, they are among China's and Italy's top economic centres. The two cities share a mixture of different and similar indicators on medical infrastructure.**



Piazza della Loggia in Brescia, Lombardy during coronavirus lockdown.



while Shanghai and Beijing only restricted movement among communities and neighbourhoods. Since the lockdown began right before the Chinese New Year, the year's busiest travel period, about five million residents, including many migrant workers, had left Wuhan for the holiday prior to the lockdown. Wuhan also had around three million short-term residents, mostly migrant workers, not included in Table 1. This means the lockdown kept around nine million people in place. As China's busiest rail hub, Wuhan's three rail stations normally see around 150 million trips through annually, with the heaviest traffic before the Chinese New Year holidays. The lockdown sealed off the largest channel of transmission through mass mobility between Wuhan and the outside world. Halting any movement out of Wuhan ironically went a long way in preventing the virus from ravaging other parts of China.

Unlike Wuhan, Milan had a gradual and phased response. After the confirmation of 14 cases in Lombardy on 21 February (Figure 1B), Milan and 10 other cities in northern Italy were put under quarantine requiring social distancing and sheltering at home. On 25 February, the quarantine expanded to school closures and teleworking for Lombardy and other northern regions, creating a vast "Red Zone". These quarantine measures were extended to all Italian regions the next day. On 8 March, Italy's Minister of Health issued a new decree extending most restrictive measures to the Lombardy region

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and other provinces in central-northern Italy, which put 16 million people under quarantine. Taking advantage of lax enforcement, a growing number of people left the north for southern Italy to flee the virus, spreading transmission to other largely unaffected regions. In response, the government adopted a new “staying at home” decree on 11 March to implement true quarantine. It was followed by a ban on all non-essential activities on 21 March. People who went out without a legitimate reason would be fined up to €4,000. Despite these incremental efforts to contain the virus, they left enough openings and loopholes for continued transmission within and beyond Milan and Lombardy until COVID-19 reached all corners of Italy, which became the world’s No. 2 in cases behind the US by early May.

The total lockdown of Wuhan (and Hubei) stopped the spread quickly, while the phased quarantine in Milan (and Lombardy) was less effective in containing the virus for some time. The lockdown of Wuhan came so suddenly on 23 January that some local residents did not know about it until their relatives outside China informed them via the Chinese messaging app WeChat.<sup>7</sup> The lockdown shut down Wuhan’s highways, railways and intra-city public transport systems. It imposed curfews on communities and allowed people to enter and exit only at particular times. And all government-owned national, provincial and local TV stations conveyed a consistently strong message about the lockdown’s necessity and benefits. In Milan, residents were initially misled by the public information that they could continue their normal life after the initial set of cases and that masks were useless and they should just wash their hands. “It took Italian people a long time to realise the seriousness of this emergency because of the slow government response and incorrect media promotion.”<sup>8</sup> The differentially effective responses reflect the differences in governance capacity that play into other key factors.



### *Making the Medical Infrastructure Work*

To contain and suppress COVID-19 in a pandemic epicentre, local medical infrastructure must work effectively under extraordinary pressure. An integral part of the municipal service apparatus, healthcare facilities depend in quantity and quality on sustained investment and enhancement by local governments, with supplementary support from higher-level authorities. Lombardy has the best healthcare system in Italy. It was even regarded as the second most-efficient in the world, illustrated by a promotional brochure featuring the line, “Be healthy, come to Lombardy.”<sup>9</sup> While we expected Milan’s medical infrastructure to be superior to Wuhan’s due to Italy’s generally more advanced economy, Table 1 shows comparable indicators which, except for hospital availability, favour Wuhan. Yet the two cities’ medical responses to the coronavirus have gone far beyond a few indicators on local medical infrastructure.

Wuhan had 4,639 healthcare facilities in 2018, only 398 of which were hospitals, which translated into 3.59 hospitals per 100,000 people (Table 1). The surge of cases from late January to mid-February overwhelmed the local hospitals, most of which were not equipped to handle COVID patients. The accelerated transmission occurred as a result of large numbers of people who rushed to hospitals but were told to quarantine at home, which in turn spread the virus within families and around neighbourhoods. The 4,241 community medical centres, neighbourhood clinics and other small facilities were of little use to combat this vicious virus. The national government stepped up into this fight. By 6 February, the national government built two new hospitals in Wuhan in less than 10 days to relieve the strained local hospitals.



Moreover, the municipal government built 16 Fangcang shelter hospitals. Rapidly converted from existing public venues such as exhibition centres and stadiums, these large, makeshift health-care centres isolated COVID patients with mild to moderate symptoms from their families and communities and provided them with basic medical care, food, activities and shelter.<sup>10</sup> These hospitals treated 12,000 patients, one out of every four patients in Wuhan. They lightened the burden on designated hospitals for acute patients where ICU beds had already been occupied.

In the early days of the pandemic, the national government sent over 42,000 generally younger medical workers from across the country, including military medical personnel, to Wuhan and other affected cities in Hubei province.<sup>11</sup> This mobilisation of national medical resources was critical in containing the virus locally by halting the spiral of deaths, taking the infected from homes and helping them recover. This was reflected in the rapid drop in new cases and the noticeable decline in active cases around 18 February (see Figure 2). On 1 March, all the patients at one Fangcang hospital were discharged. By then, 7,255 of the 13,467 beds at 16 Fangcang hospitals had become available. Of the 26,911 beds at designated COVID hospitals, 6,704 were unoccupied.<sup>12</sup> On 10 March, all Fangcang hospitals were retired, including the one converted from the city's largest convention centre. By mid-March, 3,000 members of 21 medical teams left Wuhan for their home cities and provinces.<sup>13</sup> Wuhan's own medical infrastructure would not have been able to withstand the marauding virus without an unprecedented infusion of extra-local medical assistance. It literally broke the curve of the outbreak.

Unprepared to deal with a surge in COVID-19 patients early on, hospitals



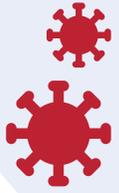
Patients infected with the coronavirus take rest at a temporary hospital converted from Wuhan Sports Center in Wuhan in central China's Hubei Province

in Milan and Lombardy quickly became overburdened by early March. This was not unexpected, given the lesser hospital capacity adjusted for the populations of Milan and Lombardy (see Table 1). Unlike Wuhan, Milan could not expect or count on massive assistance from the national government, due to Lombardy's considerable regional autonomy and most-wealthy status among all Italian regions. In the period up to 10 March, a growing number of infected people arrived at hospitals in Milan and the broader region, with some barely able to breathe

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upon arrival. Of Lombardy's 737 ICU beds available for COVID patients, more than 600 were filled. At a major hospital in Milan, half of the beds were dedicated to treating COVID patients. Rushing to add ICU beds, Lombardy's health chief talked about adding 500 ICU beds at Milan's expo centre.<sup>14</sup> In Lombardy, 20-30% of the medical personnel were infected and some of them took up ICU beds. By 25 March, 40 Italian doctors had died from the virus, most of them in Lombardy.<sup>15</sup> The Italian government tried to rush 10,000 medical school students into service before graduation. Insufficient hospital beds and doctors forced some sick patients to return home, which contributed to a very high case fatality rate of 8.5%, twice as high as elsewhere in Italy.<sup>16</sup> This was even higher than Wuhan's highest rate of 7.7%, reached on 16 April when the Chinese government adjusted the death count upward by 50%. By then, Italy's case fatality rate was in the double digits and led all countries at 14% up to mid-May. With the world's second-oldest population, after only Japan, Italy suffered a disproportionately high fatality rate among its elderly, with 41% and 35% of all deaths in the 80-89 and 70-79 age groups.<sup>17</sup>

Given the comparable indicators on available hospital beds and doctors relative to the populations of Wuhan vs Milan (Table 1), why did the former fare better in hospitalising and caring for COVID patients? It is tempting to attribute this mainly to the rapid construction of dedicated new hospitals, the creation of Fangcang hospitals and deployment of outside doctors and nurses in Wuhan. A more important difference resides inside Italy's national and regional healthcare systems in dealing with a severe pandemic. Under Italy's decentralised regional healthcare since the 1990s, private hospitals have done better than public hospitals by taking



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both insured and paying patients. The public hospitals lost around 25,000 beds during 1995-2018. The competition has forced public hospitals to upgrade themselves at the expense of community care facilities and services. During the pandemic, Lombardy's underfunded community healthcare services could do little for rapidly growing infections as COVID patients rushed to public hospitals and overwhelmed them.<sup>18</sup> Community health centres and clinics in Wuhan, which accounted for the majority of its medical facilities, also helped little in containing the virus.

### *Communal and Individual Responses*

The success of lockdowns and quarantines in halting or reducing mobility and creating and sustaining social distancing depends on reactions from communities and residents. Community support for individual physical and mental health and individual adaptation during lockdowns and quarantines are critical to how effective medical infrastructure can be in isolating patients from homes, containing viral transmission and mitigating death rates through care and treatment. Top-down containment won't work well without bottom-up cooperation. Wuhan in comparison to Milan and Lombardy illustrates the importance of communities' and residents' responses relative to top-down containment measures in local contexts.

For Wuhan, the total lockdown and its rigid enforcement caught many communities and residents off guard and initially in shock. Communities were figuring out how to operationalise government restrictions on movement. Some residents were concerned about whether the virus could be contained and how to obtain food and medicine. With the lockdown imposed right before the Chinese New Year, many families had already purchased and stored a certain amount of basic food items, such as cooking oil, rice and meat. In cooperation with municipal and district governments, community-level administrative units organised people

living in high-rise towers of residential compounds (xiao qu) into large WeChat groups of up to 1,000 residents. WeChat also allowed health authorities to use a green QR code on people's cell phones to verify people's health status regarding COVID-19 and moving around locally, and later nationally after the lockdown was lifted on 8 April. The legacy of state-owned enterprises and agencies as work units (danwei) was reactivated to help organise these virtual groups. They became the primary mechanism for sharing mass communication and medical information, recording the daily temperature, assisting the administration of testing, and placing orders for deliverable groceries.<sup>19</sup> While the municipal and district governments assigned officials to help neighbourhoods deliver groceries, community volunteers, including younger retirees, played a stronger role in enforcing lockdown regulations and responding to residents' daily needs.

In Milan and the Lombardy region, initial community and individual responses were coloured by the health authorities' early underestimation of COVID-19 as a normal flu. The quarantine of Lombardy and other northern regions on 8 March woke most people up to the COVID-19 threat. Many tried to take trains out of Milan, despite travel restrictions. This exodus also reflected the fact that a good number of people in Milan and Lombardy were off-site students or workers who wanted to return to their families, even though it could spread the virus to more people. The public response became more accepting as the regional quarantines were extended to other parts of the country. A Milan resident's expression of being responsible for self and others<sup>20</sup> reflected a broader public acceptance of the quarantine. According to a nationally representative survey of 3,452 Italian adults between 18 and 20 March, nearly 100% of the respondents endorsed four recommended public health measures: handshake avoidance (95.2%), social gathering avoidance (94.7%), non-essential activities curfew (93.1%) and



non-essential-shop closure (89.0%).<sup>21</sup> Regarding masks, the government issued a series of guidelines from the end of February to 4 May, when it became compulsory to wear masks nationally. While not intentional, this phased approach gave people incremental time to overcome the original refusal and the lack of a tradition of wearing masks. Different from and yet similar to Wuhan and Hubei, people in northern Italy and nationally adapted to the gradual and less restrictive quarantine as the government messaging sank in and the gloomy reality of more deaths set in.

The Wuhan case demonstrates a quick and complete communal and individual acceptance of the lockdown. The top-down control was met and absorbed by cooperation from and between the subordinated community and collectively minded residents living in a denser and more-managed residential environment. This still left enough space for informal responses from some WeChat-linked groups within and outside residential blocks to provide help. These groups, often run by volunteers, could help isolated residents secure food, medicine and other supplies. They also provided emotional support, with members trading recipes and virtual workouts.<sup>22</sup> Since the intra-city public transport system was shut down, a small number of young volunteers with their own cars drove doctors and nurses to their hospitals and delivered emergency medicine to elderly residents.

In Milan, the “Voluntary Emergency Brigades”, a grassroots initiative in partnership with the municipal government and the Italian NGO Emergency, organised young people to



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Masses resumed as Italy is easing its lockdown measures. (AP Photo/Luca Bruno)



bring groceries and medicines to infected people in quarantine, especially the elderly and other vulnerable people. Many of the project’s 300 volunteers were students or young people who had lost their jobs and used their unfortunate idle time to help those in need.<sup>23</sup> In Lombardy, priests, who are central to Italian communal life, stepped up as the spiritual pillar of the affected communities and families. They risked, and sometimes gave, their lives in attending to the spiritual needs of the often older and devout Italians hardest hit by the virus. Bergamo, a smaller city not far from Milan but hit harder, lost 24 priests in 20 days. During their risky visits to hospital wards or family homes, the priests delivered last rites through WhatsApp to the dying, at hospital bedsides and outside family bedrooms.<sup>24</sup> In different and similar ways, the two cases confirm that the government responses through rigid lockdown or loose quarantine would have worked less well without adaptive and cooperative community and individual initiatives.

### 3. Lessons for Urban Governance and Sustainability

As two of the hardest-hit cities, Wuhan and Milan have gone through a lot of pain, with the loss of thousands of their residents and the shattering of their local economies and urban life. The empty and eerie streets during Wuhan’s 76-day (23 January-8 April) lockdown and Milan’s 72-day (8 March-18 May) quarantine have etched into the memories of their residents. While both cities have recently reopened, their slow return to a new normal begs the big question of what COVID-19 reveals about the governance and resilience of large and dense cities.

Cities do not and cannot combat and beat a global pandemic by themselves. Wuhan and Milan have proved it, and so has New York more recently as another pandemic epicentre. In dealing with the unprecedented crisis posed by COVID-19, different cities can expect and receive different assistances, given their national and global contexts. Wuhan can expect and has received massive medical and financial support from the national government. This outside help has also included horizontal assistance in medical teams from all provinces and major cities.



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Medical workers from Jilin University cheer before boarding a flight out of Wuhan on April 8. Four days earlier President Xi Jinping and Premier Li Keqiang bow their heads to the coronavirus's victims.

The other hard-hit cities near Wuhan also obtained targeted infusion of medical resources from Beijing and other provinces. This alleviated the financial burden of Hubei province that otherwise would have had to relieve cities under its administration. The government also paid all testing and treatment expenses for Wuhan's residents and patients. These massive and expensive government measures added up to what turned out to be a won "people's war" against the coronavirus. The victory has been touted with a repeated reference to Wuhan as a "heroic city". The uneven cross-city effort in China to contain SARS in 2003 offered a historical lesson for fighting COVID-19 with a coordinated national campaign.

The wealthiest region of Italy, with considerable economic autonomy, Milan and Lombardy have received little direct help from the national government, despite being hardest hit. Although Italy was the first and hardest-hit country in the European Union, it received little early assistance from other EU members. Only later did Germany accept 47 COVID patients from Italy, while it also stopped 800,000 surgical masks shipped from China en route to Italy.<sup>25</sup>

Whether extra-local help comes or not, crisis-stricken cities need strong local leadership during and after a major crisis. Yet municipal leadership is accountable to both higher authorities and local residents differently in different systems. In the Chinese context, the central government replaced both the Party Secretaries of Hubei province and Wuhan on 13 February for under-reporting and incompetence in the early stage of the pandemic. The new municipal and provincial leaders immediately introduced a new governance system, deploying many

officials to the neighbourhood level to monitor and enforce the lockdown. This was critical in bringing the pandemic under speedy control. On 10-11 May, when six new COVID cases were discovered in a district of Wuhan, the municipal leadership removed the district's Party Secretary for negligence and slow response. This small relapse prompted the municipal government to instruct all district authorities to test all 11 million residents across Wuhan's 13 districts in 10 days, despite its daunting execution and cost. With 67% of all the COVID cases concentrated in its dense urban core (see Table 1), Wuhan can use the recovery to accelerate its long-term plan for creating six sub-centres of high-tech-led development and its induced urban living in the city's much less crowded outer districts.<sup>26</sup>

Milan has had a strong mayor at the head of the city council since 1993. In responding to COVID-19, Mayor Giuseppe Sala has exercised a strong and steady hand. When Milanese continued to congregate around Navigli, a popular area for people to enjoy traditional afternoon drinks (*aperitivo*) and dinners, even after the quarantine, Mayor Sala publicly threatened to close the entire area. In planning for post-COVID recovery and redevelopment, Mayor Sala has decided to reallocate 35 km of road space previously used by cars to bikes and pedestrians. A new 30-km-per-hour speed limit aims to make traffic more fluid and give pedestrians more space to spread out safely.<sup>27</sup> These measures are part of Milan's post-pandemic effort to fast-track key elements of the Milan 2035 Master Plan for implementation by 2025. Unlike in China, however, Milan's mayor faces far more constraints from competitive political parties and diverse civil groups in using bold and aggressive policy tools to counter an unprecedented crisis like COVID-19. The pandemic has also cast a spotlight on cross-border policy mobility in urban governance and responses to a major public health crisis. Similar to what Milan has done but with a more aggressive twist, the Mayor of London, Sadiq Khan, and Transport for London have announced plans to turn parts of central London into one of the largest car-free zones in any large and dense city in the world. We can also trace forward the Fangcang shelter hospital converted from Wuhan's Convention Centre to the temporary use of Milan's Expo Centre and New York's Javits Centre as makeshift hospitals for COVID patients.





## COVID-19 has woken up large and dense cities to improve their governance capacities, strengthen their pre-pandemic public health infrastructure and conduct a new round of planning, or refine their exit plans in full recognition of their national and global advantages and constraints exposed by COVID-19.

Finally, there is an opportunity in any crisis, as implied by the two Chinese characters (危机) making up the English word “crisis”. COVID-19 has woken up large and dense cities to improve their governance capacities, strengthen their pre-pandemic public health infrastructure and conduct a new round of planning, or refine their exit plans in full recognition of their national and global advantages and constraints exposed by COVID-19. If this happens, the world’s greatest cities, like Wuhan and Milan, will not only survive this pandemic but also thrive in a more sustainable post-COVID urban world. 

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