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# **Coronavirus Case Study**

## **From global to local: Framing the impact of COVID-19 on vulnerable populations living in NYC**

*Prepared by the students of Translating Research into Practice: Adapting and Implementing Public Health Based Interventions*

*Brian Badloo, Berta Canaleta Caballé, Meghan E Chang, Emily Spencer Cowan, Mehreen Karim, Parris Lloyd, Francesca Minardi, Jacqueline Montesdeoca, Chiemena N. Osuagwu, Julianne Rocco, Senti Sojwal, Alexa Stufano, Coumba Sy, Gene Chi Chun Yeh (葉祈均)*

*GPH-GU 2270 001*

*Prof. Sonia K. González, DrPH, MPH*

*College of Global Public Health*

*New York University*

# Table of Contents

<b>Chapter 1. COVID-19: Global impact</b>	<b>3</b>
Mainland China	4
Taiwan	5
Italy	7
Spain	8
Global COVID-19 Policies	8
Case Study Questions - COVID-19: Global Impact	9
References	10
<b>Chapter 2. COVID-19: U.S. Federal Policies, Politics &amp; (Mis)Communication</b>	<b>17</b>
Public Health Communications of COVID-19	18
Misinformation on social media	18
Politics and COVID-19	19
Anti-Asian xenophobia and race-based misconceptions	20
Misinterpretation of ‘social distancing’	20
Metaphors of the epidemics: Consequences of framing it as a war	20
Case Study Questions - COVID19: US Federal Policies, Politics, (Mis)Communication	21
References	22
<b>Chapter 3. COVID-19 and Systemic Racism</b>	<b>27</b>
Black community	27
Testing	28
Treatment	28
Data Collection	29
Economic Fallout of COVID-10 on Low-Income Minorities	29
Case Study Questions - COVID-19 and Systemic Racism	30
References	30
<b>Chapter 4. NYS &amp; NYC: Burden, Response, and Mitigation</b>	<b>33</b>
NYC Burden, Response, Mitigation	35
Overburdened Communities and compounded vulnerabilities in NYC and beyond	36
Institutionalized	36
Incarceration	36
Nursing homes and long term, mental health facilities	37
Systemically marginalized	38
Undocumented Immigrants	38
Homeless or Housing Displaced Peoples	39

New York City Labor and Public Housing Residents	39
NYC Labor	39
Public Housing	40
Issues within Sexual, Reproductive and Gender Identity Health	41
LGBTQ+ Populations	41
Reproductive healthcare as essential healthcare	41
Domestic violence	42
Case Study Questions - New York State and City: Burden, Response, Mitigation	43
References	43
<b>Appendix 1: COVID-19, Selected Timetable</b>	<b>51</b>

# Chapter 1. COVID-19: Global impact

The first report of the novel Coronavirus (COVID-19) surfaced on December 31, 2019 when Chinese authorities began treating pneumonia cases of an unknown cause in Wuhan City, Hubei Province of China. Through mid-January 2020, the infectious agent was identified (SARS-CoV-2), sequenced, and associated with a probable source, a Hunan Seafood Wholesale Market in Wuhan City (Mackenzie and Smith 2020). The virus quickly spread from Wuhan City to Japan, South Korea, the United States, Italy, and Iran among others, generating a global pandemic.; these countries reported their first cases between January 15 and February 29. The World Health Organization (WHO) declared a global health emergency on January 30, upgrading its classification to a global pandemic on March 11 (World Health Organization 2020b).

The emergence of COVID-19 in Wuhan City is attributed to zoonotic spillover, the disease spreading from animal species to humans. Zoonotic spillover is common, and can be traced to historical epidemics such as SARS, MERS, and HIV/AIDS (Rogers 2020). Viral crossover can occur when wild animals come into close, prolonged contact with humans (Rogers 2020, Plowright et al. 2015). Under these stressful and unnatural conditions, infected animals release secretions and increase viral shedding, which in turn, may increase the likelihood of disease spillover to humans (Scripps Research Institute 2020). Intermediate Horseshoe Bats, a bat species native to Central China and Southeast Asia, are believed to be the original host of the virus, while Malayan Pangolins are thought to be the intermediate hosts, for they are the world's most trafficked animal, and no cases of direct transmission from bat-to-human have been documented (Scripps Research Institute 2020, Mackenzie and Smith 2020).

COVID-19 is spread through respiratory, aerosol, and contact transmission. Respiratory transmission happens when an infected person coughs or sneezes and the droplets enter the airways of an uninfected individual. Aerosol transmission occurs when a pathogen lingers in the air, and is then inhaled by a susceptible person who is standing near the infected individual. Contact transmission occurs when virus particles were present on a surface and came into contact with a person's nose, mouth or eyes, which allowed for infection via the mucous membranes (Ghose 2020).

On average, it took 5 to 6 days for an infected individual to begin exhibiting symptoms of COVID-19, but in some cases it took as little as 2 days or as long as 14 days (CDC 2020). Infected individuals were most contagious in the days before presenting symptoms. Symptoms were typically mild to moderate, and mimicked symptoms of the flu or the common cold, namely: fever, body aches, lethargy, chills, dry cough, sore throat, loss of appetite, and/or loss of smell. Individuals with severe symptoms presented with high fever, severe cough, and shortness of breath, all characteristic of pneumonia (Harvard Health Publishing 2020). In some severe cases, pneumonic symptoms persisted and required hospitalization with a ventilator for breathing assistance (Gelles and Petras 2020). Individuals older than 65 years or with uncontrolled underlying health conditions including chronic lung disease, asthma, immunocompromised, severe obesity, diabetes, chronic kidney disease undergoing dialysis and liver disease, were identified as being at the highest risk for severe illness (CDC 2020). Other infected individuals were asymptomatic.

## Mainland China

In December 2019, cases of pneumonia rose in Wuhan, Hubei province of China and were reported to the local Center for Disease Control and prevention (CDC). These pneumonia cases were thought to be connected to the Huanan Seafood Market, which was subsequently temporarily closed down (National Health Commission of the People's Republic of China 2020i). On January 1, 2020, experts from the National Health Commission (NHC) were sent to Wuhan for further investigation (Wikipedia 2020a). The novel coronavirus, SARS-CoV-2, was identified as the infectious agent for the pneumonia-causing disease, which was later named COVID-19 (National Health Commission of the People's Republic of China 2020c). The cases grew exponentially. On January 10, 2020, 41 cases and 1 confirmed death was announced, and 729 people who had interacted with these confirmed cases were investigated (National Health Commission of the People's Republic of China 2020i). By January 20, cases started to appear outside of Wuhan, with 291 confirmed cases in four provinces, and 54 suspected cases in 14 additional provinces (National Health Commission of the People's Republic of China 2020a).

On January 21, the NHC convened to discuss policies and strategies for controlling the spread of COVID-19. This meeting requested all sectors in the provinces to strengthen prevention procedures for infectious disease, and required large scale assessments in airports, train stations, and harbors (National Health Commission of the People's Republic of China 2020e). Guidelines for health organizations and research centers were introduced, and national insurances were revised to ensure healthcare-related workers were well-compensated and protected from contracting this disease (National Health Commission of the People's Republic of China 2020l, k, h).

Within a few days, the incidence and mortality rates from this virus rose dramatically. By January 23, 830 cases and 25 deaths were confirmed - 24 in Hubei Province alone (National Health Commission of the People's Republic of China 2020b). With such a rapid increase of cases, the local Wuhan City government ordered all transportation services to temporarily shut down (National Health Commission of the People's Republic of China 2020f). Only individuals with special permissions were allowed to leave Wuhan, and similar strategies were implemented in other areas of China, later on. By February 12, there were 207 different levels of administrative divisions in China that were under movement control or lockdown (Wikipedia 2020b).

A variety of strategies and policies were implemented in many areas of China. The local government in Anhui cancelled the Chinese Lunar New Year holiday to decrease travelling (National Health Commission of the People's Republic of China 2020g). In Fujian, the local government established a clinical treatment expert task force to train and strengthen health providers' skills in treating coronavirus patients (National Health Commission of the People's Republic of China 2020j). Upon realizing that the level of anxiety and panic deeply impacted society, health providers and clinical settings, new principles to include mental wellness strategies were implemented by local governments (National Health Commission of the People's Republic of China 2020d).

Despite these efforts, the disease spread swiftly to all provinces of mainland China by January 29 with 7,711 confirmed cases and 170 deaths (News 2020). A couple of weeks later, on February 12, the daily number of new cases peaked over 15,000 (Xinhua 2020). China continued the battle against the disease with major strategies that included mobilizing regional resources, training healthcare providers on how to effectively treat patients, halting travel

between cities and requiring residents to stay home (Xinhua 2020). After a month of combating the virus, China announced the peak of new cases had passed on March 13, with only single-digit daily cases being reported. In response, provinces lowered their emergency protocols, and non-essential businesses resumed operations (Xinhua 2020).

## Taiwan

Taiwan was amongst the first locations to confirm cases of COVID-19 and were prepared to combat the spread of the virus. With experience from the SARS (severe acute respiratory syndrome) outbreak in 2003, Taiwan maintained adequate preparations and processes for another such outbreak. On December 31, 2019, the CDC (Taiwan) implemented a new assessment plan for passengers arriving from overseas, requesting all passengers to provide information to support identification of suspected cases (Taiwan Centers for Disease Control 2020h). Three days later, the Taiwanese CDC had their first meeting on potential outbreak responses (Taiwan Centers for Disease Control 2020n), which led to several policies and strategies to defend against the virus. Precautions were announced, which strongly advised citizens to regularly wash hands with soap, wear face coverings, limit contact with wild animals, and avoid going to poultry markets and hospitals (Taiwan Centers for Disease Control 2020m).

The first suspected cases appeared on January 17, 2020 (Taiwan Centers for Disease Control 2020c). Each case was tested after arrival and ordered to self-quarantine for 14 days (Taiwan Centers for Disease Control 2020c, b). As suspected cases started to appear, the CDC established the 'Central Epidemic Command Center (CEC Center), a special task force to combat the virus on January 20 (Taiwan Centers for Disease Control 2020l). One of their priorities was to ensure adequate human resources (such as health providers), personal protective equipment (PPE) and medical equipment necessary to tackle the viral spread in the following weeks (Taiwan Centers for Disease Control 2020l). This policy intended to communicate to citizens that their public health professions were well prepared. It also served to educate the public and to minimize community panic (Taiwan Centers for Disease Control 2020l). The CEC Center devised strategies to prevent the spread of misinformation and encouraged citizens and travelers to cooperate with government policies. International arrivals were given reading materials with self-report and self-quarantine information before de-boarding planes (Taiwan Centers for Disease Control 2020l).

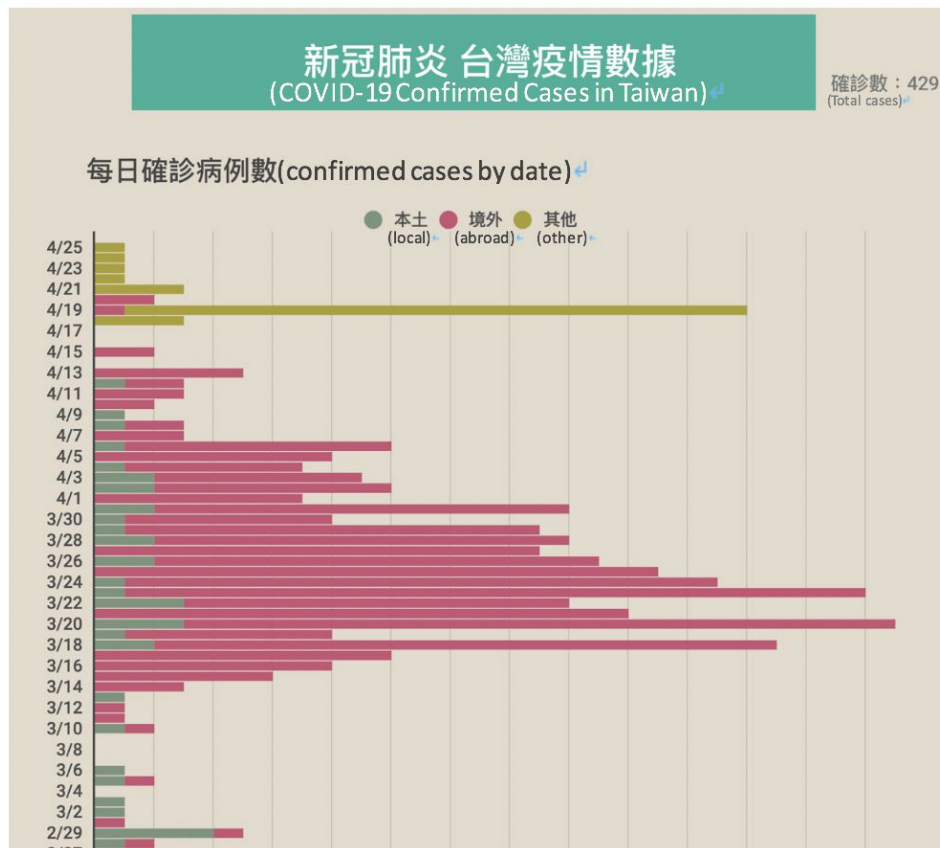
Taiwan's first confirmed case, a middle-aged female working in Wuhan, was reported on January 21, 2020 (Taiwan Centers for Disease Control 2020k). She exhibited symptoms upon arrival at the airport and was sent directly to the hospital to be tested. Through contact tracing, another 46 individuals were identified as being exposed and ordered to isolation until the confirmed cases were treated and tested negative twice (Taiwan Centers for Disease Control 2020k). Three days later, two more cases were confirmed and 168 persons were tested (Taiwan Centers for Disease Control 2020j). In response to the increase of cases, a new policy was announced. All passengers from mainland China, Hong Kong and Macau were asked to fill out the Novel Coronavirus Health Declaration Card; eventually, passengers from all countries were required to complete the form (Taiwan Centers for Disease Control 2020a).. Policies aimed to decrease travelling were also implemented, such as forbidding all passengers from Hubei Province to enter Taiwan, and mandating a 14-day self-quarantine for international arrivals (Taiwan Centers for Disease Control 2020g). Prevention guidelines for public transportation,

public gatherings, businesses, and schools were published, containing detailed instructions on surface sanitation (Taiwan Centers for Disease Control 2020f).

Ensuring that health providers and citizens have adequate PPEs was also part of Taiwan’s prevention plans. Since the outbreak in Wuhan, the CDC (Taiwan) took inventory of masks in all hospitals and redistributed them for adequate PPE for the duration of the spread of Coronavirus (Taiwan Centers for Disease Control 2020i). Millions of additional masks from the government’s stockpile were also distributed to all citizens (Taiwan Centers for Disease Control 2020d). On January 31, the government pushed local PPE manufacturers to increase the volume of production and took over all clinical mask manufacturers (Taiwan Centers for Disease Control 2020d).

As of March 17, 17,793 persons were tested and 100 cases were confirmed (Taiwan Centers for Disease Control 2020i). Out of all confirmed cases, 71 were infected before entering Taiwan while 29 were local transmissions (Taiwan Centers for Disease Control 2020i). Daily confirmed cases reached their peak in late March (UDNnews 2020). On April 17, Taiwan announced their first ‘zero new cases’ within a month with a total number of 51,603 persons tested and 395 cases confirmed (Taiwan Centers for Disease Control 2020e). Among the 395 cases, there were six deaths; 340 of them were transmitted from outside of Taiwan while 55 of them were local transmissions (Taiwan Centers for Disease Control 2020e).

Graphic x. COVID-19 confirmed cases by date as of April 25, 2020.



Source: (UDNnews 2020)

## Italy

Italy carried one of the highest disease burdens in the world, with over 30,500 deaths due to COVID-19 as of May 10, 2020 (Governo Italiano 2020d). The first two cases of COVID-19 were reported in Italy on January 30 - a couple travelling from China who had been hospitalized in Rome the day before (Governo Italiano 2020a). The next case would not be found until February 18, in a small town 37.5 miles away from Milan (Governo Italiano 2020a). The situation rapidly worsened in northern Italy, while the public health authorities were practicing contact tracing and increased testing. Amid the evolving situation, the national government eventually attempted to prevent the epidemic from expanding to other areas of the country by imposing a national lockdown. Starting on March 9, increasingly restrictive measures were enforced in the entire Italian territory, and the Government mandated that all Italian residents quarantine at home until May 3 (Governo Italiano 2020b). Starting May 4, the country entered the so-called 'Phase 2'; national authorities eased the lockdown and people living in Italy were given permission to leave their homes for activities such as visiting nearby family members or using public open spaces, including parks (Governo Italiano 2020c).

The peak of positive cases was reached on April 19, when over 108,000 positive cases were counted; the majority of them were in the North Italian administrative regions of Lombardy (n=34,497, 31.9%), Piedmont (n=14,470, 13.4%), and Emilia-Romagna (n=13,552, 12.5%) (Governo Italiano 2020d). On the same day, the positive cases in the Southern Italian regions -- Abruzzo, Basilicata, Calabria, Campania, Molise and Puglia -- accounted for 8.2% of the total cases in the country and those in Sardinia and Sicily (two Italian islands) accounted for less than 3% (Governo Italiano 2020d).

The health emergency was mainly confined to Lombardy, where over 52% of deaths related to COVID-19 were registered (Governo Italiano 2020a). A few provinces in Lombardy - Milan, Brescia and Bergamo - carried an overwhelmingly high burden of the disease resulting in hospital overcrowding, high infection rate among health care professionals (almost 17,000 cases), and shortage of Intensive Care Units (Boccia, Ricciardi, and Ioannidis, 2020 (Governo Italiano 2020d, Boccia, Ricciardi, and Ioannidis 2020, Task force COVID-19 del Dipartimento Malattie Infettive e Servizio di Informatica 2020). At a national level, the containment decree curbed the incidence rate of COVID-19, but the slow down failed to meet the experts' forecasts and remained higher than expected (Jones and Amante 2020).

The national lockdown effectively protected southern Italy, where the local health systems have scarce resources and significant structural limitations (Giugliano 2020). The Italian government, however, was criticized for its management of the public health crisis. Some considered that the Executive made excessive use of its power in the attempt to curb the epidemic, largely ignoring the economic consequences of a national paralysis (Giugliano 2020, Jones and Amante 2020). Others argued that the national government's reaction to the onset of the epidemic came too late in a country with the second oldest population in the world and a high prevalence of comorbidities that exacerbate the risk of death in patients affected by COVID-19 (Boccia, Ricciardi, and Ioannidis 2020).



## Spain

After the outbreak in Italy, COVID-19 rapidly spread to the rest of the European Union . The Spanish government confirmed the first positive case on January 31 and its first related death on February 13 (Gobierno de España 2020b, a). At first, the Spanish health authorities did not enact strict precautions, allowing for massive demonstrations to mark International Women’s Day and sport events to take place. However, due to a sharp rise in cases and an infection pattern similar to Italy, the State of Emergency was declared on March 13, when around 4,000 cases and 120 deaths were reported (Gobierno de España 2020c). A nationwide lockdown began on March 14 and was enforced with the threat of fines. Leaving one’s home was allowed only under very specific circumstances and required carrying a certificate of proof downloadable from an official webpage (Gobierno de España 2020d). Some of the measures had already implemented these policies prior to the government implementing the policy widely, including the hardest-hit communities including Madrid and Catalonia (Gobierno de España 2020).

Cases escalated and Spain became the country with the second highest number of COVID-19 cases, after the United States (World Health Organization 2020a) On March 27, a group of concerned experts shed light on the mismanagement of COVID-19 and possible collapse of the health system in the following weeks if stricter measures were not taken (Mitjà et al. 2020). The authors proposed a series of actions to help flatten the curve and reduce the impact of the pandemic on the Spanish population, including intensified lockdown, massive use of diagnostic tests and the creation of a robust surveillance system (Gobierno de España 2020e).

As of April 25, Spain reported a total of 205,905 confirmed COVID-19 cases, 2,506 new cases and 22,902 deaths (Gobierno de España 2020, Gobierno de España 2020e). The country ranked second in the world for COVID-19 cases and third for deaths related to COVID-19. However, in relative terms (per 1M population), Spain reported higher numbers than Italy and the U.S. for both cases (4,786 vs 3,231 and 2,889, respectively) and deaths (490 vs 436 and 164, respectively) (Worldometer 2020). The lockdown in Spain was extended until May 10 but became less restrictive; non-essential workers returned to work on April 13 and children were allowed to go out in turn and with limitations starting April 26 (Gobierno de España 2020, Generalitat de Catalunya 2020).

## Global COVID-19 Policies

Table 1. Global COVID-19 Policies at a Glance

Country	Global policies
<b>Australia</b>	<ul style="list-style-type: none"><li>• Activated emergency response on Feb 27, 2020<ul style="list-style-type: none"><li>• First out of all the advanced economies</li><li>• Allowed for emergency funding to be released gave tax breaks and allowed hospitals to prepare for patients</li></ul></li></ul>

	<ul style="list-style-type: none"> <li>• Everyone traveling there must self-isolate for 14 days</li> </ul>
<b>Britain</b>	<ul style="list-style-type: none"> <li>• Aimed for “herd immunity”- wanted to let the virus take its natural course</li> <li>• On March 16, 2020: imposed a total lockdown <ul style="list-style-type: none"> <li>• Citizens could only leave for medical reasons, the supermarket or for exercise</li> </ul> </li> </ul>
<b>Germany</b>	<ul style="list-style-type: none"> <li>• Adopted strict measures early on <ul style="list-style-type: none"> <li>• Shut down schools, daycares and banned gatherings</li> <li>• Closed their border</li> </ul> </li> <li>• Implemented large amount of testing</li> <li>• Had a high rate of critical care beds</li> <li>• Manufactured their own ventilators</li> </ul>
<b>France</b>	<ul style="list-style-type: none"> <li>• Delayed elections</li> <li>• Only allowed trips to doctors and food stores</li> </ul>
<b>Israel</b>	<ul style="list-style-type: none"> <li>• Shin Bet, their international security service, deployed its counter terrorism technology to curb spread <ul style="list-style-type: none"> <li>• Used digital tools for contact tracing, i.e., to track Israeli citizens who were sick <ul style="list-style-type: none"> <li>• This technology has never been used on their citizens before</li> </ul> </li> </ul> </li> </ul>
<b>Sweden</b>	<ul style="list-style-type: none"> <li>• Used mostly voluntary measures</li> <li>• Closed certain schools</li> <li>• Largely kept restaurants and shops open</li> </ul>
<b>Singapore</b>	<ul style="list-style-type: none"> <li>• Emphasized their strong healthcare system <ul style="list-style-type: none"> <li>• Strict virus testing, tracing and containment programs</li> </ul> </li> <li>• Did not entirely shut down the country</li> <li>• 14 day quarantine issued for all arrivals</li> </ul>
<b>South Korea</b>	<ul style="list-style-type: none"> <li>• Implemented a rigorous screening program <ul style="list-style-type: none"> <li>• Tests takes 10 minutes and paid for by the government</li> <li>• All results sent via text message</li> </ul> </li> <li>• One of the first countries to utilize drive-through testing</li> </ul>

Source: (Hjelmgaard 2020)

### Case Study Questions - COVID-19: Global Impact

- Different countries were criticized for their responses and delay in moving their countries into a lock down. What factors should be considered when making a

decision to move a region or country into lockdown?

- The infections in New York originated with travellers from Europe. Why do you think the travel ban, on January 31, 2020 was initially applied only to travellers from China? Why were travellers from South Korea and Italy not restricted until February 29, 2020?
  - How did this impact the burden of disease in the U.S.?
- If you've carried out a lockdown enforceable with military support contact tracing without incident, does that make you more inclined to choose that option a second time? What are the privacy implications and how can those be mitigated?
- How do developed versus developing countries' situations differ from one another in their ability to respond to COVID19? How are they similar? Who is left unprotected?
- If, with the benefit of hindsight, others can charge you with making the wrong decision during one outbreak, one that results in excessive preventable morbidity and mortality, how might you avoid overcompensating during the next one? Or repeating the same mistakes?
- As the COVID19 pandemic rolled across the world, a few countries enforced strict lockdown measures. What responsibility do countries have to protect the public's health?
- Is the expansive approach and geographic reach to the lockdown that China and other countries espouses useful across the world? List its pros and cons.
- What is the role of climate change in pandemics? In other words, how do fluctuations in temperature affect disease incidence?
- The US and Brazil have seen the highest number of cases in the world and both countries have authoritarian leaning Presidents who have been slow to act and who have actively contradicted public health recommendations; How has their authoritarian leanings impacted health within this crisis and how has it impacted health more routinely outside pandemic circumstances?
  - How have they continuously been harming the health of populations and the people who voted for them?

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## Chapter 2. COVID-19: U.S. Federal Policies, Politics & (Mis)Communication

On January 31, the first U.S federal policy was enacted by the Trump administration. Chinese foreign nationals and individuals who traveled to China within the last 14 days were prevented from entering the country. The administration made exceptions for the return of immediate family members of U.S citizens, as well as permanent residents. These individuals were screened to allow entry; however, these screenings had limited efficacy and failed to identify pre-symptomatic cases since symptoms of COVID-19 can appear 5-6 days after exposure (Corkery and Karni 2020). The Trump administration announced additional travel bans from Iran by foreign nationals, a “do not travel” warning for areas of Italy and North Korea in February (Trump Calls, 2020), and extended a 30 day travel ban on the European Union in March (The New York Times 2020b, Collinson 2020).

As unrest grew in the U.S over a shortage of testing and increasing positive cases (1,678 cases confirmed), President Trump officially declared a national emergency on March 13, under the Stafford Act and National Emergencies Act allowing up to \$50 billion in federal assistance to bolster state and local governments, in addition to the \$8.3 billion Emergency Spending Bill to acquire medical resources (Ordonez et al. 2020). The national emergency declaration also banned visitors from all nursing homes and waived interest on federal student loans until further notice using an executive order (Ordonez et al. 2020). The Coronavirus Relief Bill (H.R 6201), was also passed, authorizing free testing for COVID-19 and paid emergency leave (Foran and Barrett 2020).

In an effort to respond to COVID-19 on a national level, the CDC developed a Community Mitigation Framework (CDC 2020a). Recommended personal protective mitigation strategies included handwashing, hand-sanitizing, cough etiquette, and wearing face coverings. These recommendations addressed the concerns of several ongoing studies, which revealed that a significant portion of the population infected with the disease may be asymptomatic, and that pre-symptomatic people were contagious before exhibiting symptoms. N-95 masks were not recommended for use by the general public, in efforts to reserve these supplies for healthcare workers. Instead, non-medical grade masks, and the use of bandanas, scarves, and other fabrics as homemade face coverings were suggested (CDC 2020b). Few states mandated face coverings when visiting essential businesses or using public transportation, prohibiting work or entrance to a business without one (Andrew and Froio 2020). Surface cleaning was recommended at home and in community settings, as well as social distancing -- maintaining 6 feet of distance between people in community settings --, and staying at home. Essential businesses limited operating hours to sanitize entire stores and non-essential businesses and public spaces were closed throughout the country.

President Trump announced new social distancing guidelines during a press conference on March 16, named “15 Days to Slow the Spread”. These guidelines included limiting all gatherings to fewer than 10 people, recommending all individuals avoid eating and drinking at restaurants/bars and all unnecessary travel. The White House gave the country a 15-day window to flatten the curve; however, Dr. Fauci, the Director of the National Institute of Allergy and Infectious Disease at the NIH, clarified this time frame as a trial period to be re-evaluated at a later point (McCaskill, Kenen, and Cancryn 2020). On March 16, 2020 Trump signed the Coronavirus Relief Bill (H.R 6201) into law after it was passed by the U.S Senate. The

provisions in this law included free testing for COVID-19 and paid emergency leave (Foran and Barrett 2020). President Trump announced that the Federal Emergency Management Agency (FEMA) would fund the activation of the U.S National Guard to be deployed to California, New York and Washington due to their steadily growing case rates (LeBlanc 2020). On March 24, 2020, FEMA announced utilizing the Defense Production Act to obtain 60,000 testing kits, and acquired 500 million protective masks to be distributed to healthcare facilities.

As a result of the policies, the US Economy was projected to recede by 5.9% (Riley 2020). Many companies in the US furloughed workers or executed mass layoffs and firings, especially straining individuals living paycheck-to-paycheck (Maidenberg 2020). Unemployment in the US reached a record high on April 23 - 26.4 million people, 15% of the US workforce. In response, the US passed the CARES Act, a \$2 trillion relief package, including cash payments to individuals, extra unemployment payments, and student loan forgiveness (Sherman 2020, Snell 2020). The CARES Act also includes aid to small businesses in the form of grants and loans, and allocated extra funds toward the health system hospitals, community health centers, drug access, the CDC, veteran's health care, the telehealth program, and for Medicine and supplies to the Strategic National Stockpile and hiring for healthcare jobs and the development of treatments, a vaccine, and diagnostic testing (Snell 2020). The provisions in this bill consisted of three main streams: an additional \$310 billion in funding for the Paycheck Protection Program (PPP), \$75 billion for hospitals; \$25 billion to support testing efforts; and \$60 billion for emergency disaster loans and grants, in addition to funding for states to aid in the combat of COVID-19 (Chalfant 2020). In NYS alone, revenues are expected to decline \$13.3 billion (NY Governor Andrew Cuomo 2020), potentially impacting public projects and the funding of public health initiatives.

Despite continued spread of COVID-19 throughout the United States, Donald Trump announced on April 14, that he would suspend funding the World Health Organization (WHO) during a review of the organization's response to COVID-19. The president reasoned the WHO "severely mismanage[ed] and cover[ed] up the spread of the coronavirus" and "[its] attack on travel restrictions put political correctness above life-saving measures" (Chalfant and Samuels 2020). The American Medical Association (AMA) backlashed stating this was a "dangerous step in the wrong direction" and urged Trump to reconsider (Chalfant and Samuels 2020). The President's three-phase approach to reopening the US economy was also met with resistance. Under this plan, Phase 1 included opening large venues, such as restaurants and places of worship, under strict physical distancing rules. Phase 2 allowed for nonessential travel to resume as well as schools and bars to reopen. Finally, Phase 3 allowed states with a downward infection rates to engage in "public interactions" with physical distancing, permitted unrestricted staffing of worksites, and visits to care homes and hospitals (BBC 2020). Ideally, phase 3 would be considered the "New Normal", a phrase coined by media outlets to describe life after the pandemic.

## **Public Health Communications of COVID-19**

### **Misinformation on social media**

The escalation of COVID-19 into a public health pandemic generated the spread of an infodemic. According to the World Health Organization, infodemics are an excessive amount of information about a problem resulting in difficulty to identify a solution in part due to inaccurate and unreliable information (World Health Organization 2020b). Thus, infodemics spreading

misinformation during a public health crisis can suppress an effective response, and create confusion and distrust among people. Misinformation around COVID-19 included alternative cures, including alcohol/bleach consumption and hot baths (there is currently no cure or vaccine); conspiracies on the spread of the virus through radio waves and mobile networks, and that the virus was a man-made concoction by the government (World Health Organization 2020a). Further misconceptions about who is at risk and a carrier played a role in the fast spread of COVID-19.

Social media platforms are major vehicles of misinformation because of their large audiences and broad reach. According to a global digital 2019 report from Hootsuite, about 3.7 billion people are active social media users (Hootsuite 2019). This accounts for almost 50% of the global population. Of those, 3.6 billion are active through mobile devices, increasing the availability and access of misinformation (Hootsuite 2019). Social media platforms have made efforts to mitigate the spread of COVID-19 misinformation. These platforms have partnered with health organizations like the WHO and CDC to provide accurate and up to date information. Facebook, a social media platform with almost 2 billion users (Iqbal 2020), flagged false posts to remove misinformation, banned ads and commerce listings that offered cures and preventive products, and fact checked claims underneath posts (Frenkel, Alba, and Zhong 2020, Clegg 2020). In addition, a Coronavirus Information Center was featured at the top of a user's newsfeed. Instagram (owned by Facebook) removed accounts and content related to COVID-19 not posted by credible health organizations, blocked and restricted hashtags and ads that spread misinformation, and instead, redirected users to resources from credible health organizations (InstagramComms 2020).

YouTube, with 2 billion users, banned videos claiming alternatives to preventing coronavirus and blocked ads capitalizing on the pandemic but provided monetization opportunities to content creators if they followed guidelines (Iqbal 2020, Bergen and Vynck 2020). The platform added an health information panel on its home page linked to health organizations' websites (such as the WHO and the UK's NHS), and expanded its medical misinformation policies (YouTube 2020). Snapchat, with 360 million users, provided curated trusted news organizations such as NBC, Sky News and The Wall Street Journal on their Discover page and prevented an open news feed where unvetted users could present misinformation (Snapchat 2020). In addition, Snapchat launched a COVID-19 Myth Busting game on March 25 to engage users and educate them (Iqbal 2020, Kraus 2020). Lastly, WhatsApp, with 1.5 billion users in 180 countries (Iqbal 2020), partnered with the WHO to offer health alerts through a chatbot (WhatsApp 2020). Users signed up to receive WHO Health Alerts providing a daily report of COVID-19 cases, tips on how to prevent the spread of the disease, commonly asked questions, and myth busters. In addition, on April 7, the platform imposed a limit on message forwarding aimed at reducing the spread of misinformation (Hern 2020).

## **Politics and COVID-19**

The proliferation of false information on social media has been compounded both by false information coming from the government itself and from politicizing the crisis by elected officials at many levels who challenged public health guidance and scientific knowledge daily. Throughout the crisis, President Trump repeatedly made false claims regarding possible cures including using bleach as an internal disinfectant; he downplayed the severity of the crisis, challenged recommendations made by the CDC, asserted that states and hospitals were

responsible for the PPEs shortage, threatened to withhold federal assistance from Democratic governors and refused to take federal action to mobilize resources and enact safety measure nationwide (Yglesias 2020, Rupar 2020, Paz 2020, Milman 2020, Kwon, Newland, and Parker 2020, Blake 2020). In addition, there was a political bi-partisan contrast in policy decision making by which Republican and Democratic governors relied on different information and metrics to measure the crisis (Roberts 2020, Brownstein 2020). Undermining and contradicting official public health recommendations eroded public trust and frayed the ability of public health officials to communicate clearly and effectively to get the necessary public buy-in for collective action of public health protection..

### **Anti-Asian xenophobia and race-based misconceptions**

A study utilized online questionnaires to better understand the knowledge of the COVID-19 pandemic among those in the U.S. and the U.K. (Geldsetzer 2020). The U.S. sample included 3,000 adults living in the country and approximated the distribution of the population by age, sex, ethnicity, household income and educational attainment. The survey detected widespread false beliefs around COVID-19, including an overestimation of case-fatality, overconfidence in the effectiveness of surgical masks to prevent the transmission of the virus and the specific need to avoid contacts with East-Asian communities in the country (Geldsetzer 2020).

As cases climbed in China and appeared in several Asian countries, a misconception started gaining popularity: Asians were to blame for the spread of COVID-19 in the U.S., often referred to as the “Chinese virus” by the president himself. This, despite the origin of COVID-19 was brought to NYC mainly by travelers from Europe, not Asia (The New York Times 2020a).

The COVID-19 surveillance system of the U.S. lacked a racial lens to the cases being reported and that, in addition to the lack of reported cases from African countries in the initial phase of the pandemic, contributed to a misconception that Black people were immune to the virus (Mock 2020).

### **Misinterpretation of ‘social distancing’**

Public health authorities have consistently called for social distancing to help slow down the contagion of COVID-19. To most this was a novel concept and individuals felt unsure about what behaviors were appropriate to observe and even showed some resistance to changing daily habits.. A considerable part of the population, it has been argued, seemed to misinterpret or feel scarcely compelled to follow an advice that sounded too much as a “fanciful or theoretical social construct,” with elusive practical implications, to borrow the words of Asaf Bitton, director of Ariadne Labs -an health system innovation center linked to both the Brigham and Women’s Hospital and the Harvard T.H. Chan School of Public Health (Chotiner 2020).

### **Metaphors of the epidemics: Consequences of framing it as a war**

Many countries - including the United States - lacked a recent experience with countering the outbreak of a life-threatening viral pneumonia (such as SARS, or MERS) to look at in search for wisdom (Henriques 2020). In the absence of a proper term of comparison and with the global death toll increasing exponentially every day, the collective imagination often

portrayed COVID-19 as an enemy, and the onset of the disease perceived as the outbreak of a war.

The way we frame a problem implicitly determines the strategy we chose to tackle it and, inherently, the set of possible future outcomes; Semantics shaping the public narrative around the pandemic become a matter of particular sensitivity (Testa 2020). For. After showing a dismissive attitude toward the spread of COVID-19, President Trump himself finally began speaking about the public health crisis as if it were a war (Stevens and Tan 2020). On March 16, when the confirmed cases in the U.S. were over 3,500 and more than 60 deaths had been reported, he stated “we have an invisible enemy”, and a few days later, he described himself as a “wartime president”; glorious victory was repeatedly promised to the country (Stevens and Tan 2020).

Annamaria Testa, communication specialist, warned against the use of the war metaphor. Adopting such a frame for a pandemic not only misleads the public (a virus is not an enemy because it has no conscience at all), but also instills in the society belligerent attitudes that leave no space for inclusivity, cooperation and care, ultimately preparing the masses for accepting authoritarian directives and setting expectations for noble sacrifices in the interest of the nation (Testa 2020). The difference between building a public narrative on the war metaphor and centering it on a public health crisis may not appear clear at first, but is vital: While nations engage in a war to preserve a status quo, affirm power or conquer new resources, resilient societies interiorize a crisis to gain precious collective awareness and leverage its transformative power towards a fairer use of power and resources.

### **Case Study Questions - COVID19: US Federal Policies, Politics, (Mis)Communication**

- Some described the three-phase approach to reopening the economy as “vague” and “inconsistent”. Dr. Fauci also warned that a quick reopening of the economy could lead to another spike of the virus (“Coronavirus”, 2020). What sorts of things should be taken into account in finding a balance between protecting the public’s health and reopening the economy?
- In the midst of a public health crisis, what is the importance and responsibility of the government to allow public health officials to communicate effectively with the public? Or does the government have the responsibility to act as an independent source to question public health officials?
- What role does a president have to educate themselves about public health (mis)information? How can they be held accountable for spreading misinformation?
- Statistics can be manipulated to tell a specific story. How might this process be standardized so political leaders at all levels operate from a standardized data set?
  - Are there any downfalls to this approach?
- To prevent massive unemployment, some countries used a different model to support businesses. Which approach do you think will lead to a faster economic recovery at the country-level?
- Why did the American Medical Association vehemently oppose Trump’s threat to suspend WHO funding?
  - What were the repercussions of this had it been enacted?

- The phrase “New Normal” was used expansively, what is the meaning of the phrase? What are the differences for different members of society based on creed (i.e., age, race, ethnicity, gender, religion, etc.), if any?
- How is social media ensuring responsible coverage/reporting, especially when irresponsible or alarmist reporting often attracts wider audiences?
- How does social media endorse clear, evidence-based common messaging that cuts through a broad variance of cultures, lifestyles, and communities?
- What opportunities and consequences do social media platforms offer around public health? List the pros and cons for utilizing social media platforms to disseminate information about public health issues.
- COVID-19 highlighted the rapid spread of misinformation. What lessons might be applied for other existing and future epidemics and pandemics?

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# Chapter 3. COVID-19 and Systemic Racism

Structural racism are the complex systems in which policies, practices, and cultural norms perpetuate racial inequities (Institute 2020). For decades, persons of color have experienced structural racism in politics, healthcare, and socio-economic advantages. It has been especially prevalent during the COVID-19 pandemic, which has magnified the injustices communities of color face in diagnosis, treatment, and mortality rates. The Black community has contracted and died from the virus at a much higher rate than any other racial/ethnic groups (Kijakazi 2020). According to the Urban Institute, residents in predominantly Black counties have had three times the infection rate, and six times the fatality rate than residents living in predominantly White counties (Kijakazi 2020). Barriers and biases in the health system amongst communities of color have a direct linkage to the disproportionate COVID-19 deaths spiking in these communities.

According to the Center for Disease Control, COVID-19 hospitalizations data show that 33% of patients are Black, but represent only 13% of the US population (CDC 2020). The disproportionate rates can be explained by the high prevalence of diabetes, obesity, and high blood pressure within the Black community -- preconditions that put those who have tested positive for COVID-19 at a higher risk of worsening outcomes (Aubrey 2020). Black people also have a higher prevalence of stress and mental health disorders, often experienced amongst those who face structural racism and racial discrimination, which has a direct linkage to higher levels of inflammation amongst adults (Thames et al. 2019). Chronic stress over a period of time can increase susceptibility to infection by lowering the body's ability to fight infection (Thames et al. 2019).

The US healthcare delivery system exhibited under-preparation in the midst of the pandemic due to the impact of racism, systemic segregation, and discrimination in communities of color. The disproportionate rates in the disease were a direct consequence of institutional and government policies and unjust practices, including incarceration at disproportionate numbers, and social norms that leave a large population of Black people in chronic poverty, living in neighborhoods with inadequate access to quality health care, working low paying jobs that place them at greater risk (Geronimus 2000, Farmer 2004, House 2002). The COVID-19 pandemic highlights the health disparities and inequities that have pre-existed in communities of color for decades. This outbreak has exposed and exacerbated the many pre-existing cracks in our social safety nets and the lack of systemic support for vulnerable populations.

## Black community

According to several states' analysis of the data, Black communities have been infected and their residents killed at a disproportionate rate across the country as a result of the COVID-19 outbreak (Artiga et al. 2020). The communities hit the hardest were already experiencing barriers to health care and suffer racial and economic health disparities: low income communities, communities of color especially Black and Latinx communities, undocumented people, and low-income people (Artiga, Garfield, and Orgera 2020a). According to the CDC, even though the racial breakdown from the population was 59% White, 14% Latino and 18% Black, 45% of hospitalized coronavirus patients were White, 8% were Latino, and 33% were Black, "suggesting that Black populations might be disproportionately affected by COVID-19" (Thomas and Anoruo 2020). Additionally, the economic burden of the disease is

expected to fall hardest on the communities who rely most heavily on the social safety net. For example, in New York City, Mayor Bill de Blasio has taken the unusual step of calling for \$1.3 billion in agency-wide cuts to brace for the economic impact of the COVID-19 shutdown, including cuts to youth employment programs and early childhood education (Shahrigian 2020).

## Testing

Testing within communities of color is happening less frequently compared to wealthier zip codes and boroughs in New York City. New York City Public Advocate Jumaane Williams (D-Brooklyn) stated, “As the data shows, the COVID-19 crisis is hitting communities of color the hardest – while those same communities have less testing to diagnose the disease or resources to fight it” (Eligon et al. 2020). Data also showed that 22 of the 30 wealthiest zip codes in New York City have been the most tested. In Staten Island 3.8 out of every 100 residents have been tested, in Queens 2.5 out every 100, in the Bronx 2.9 out every 100, and in Brooklyn and Manhattan 1.9 out every 100 being tested -- the worst testing rates in the city (Eligon et al. 2020). The vast majority of low-income communities and communities of color have limited to no access to testing unless symptoms are severe enough for hospitalization (Eligon et al. 2020).

## Treatment

The pandemic has stretched the U.S. healthcare system and resources thin, with a worsening of existing health care disparities. Most of the Black and Latinx population who have been hospitalized and discharged are unable to self-isolate because they often live in multi-generational households that lack the adequate living space to practice proper social distancing (Gupta 2020). In addition, many of these patients either are essential workers or live with one — they cannot simply practice social distance (Gupta 2020).

In addition, several states and organizations have started to release crisis standards of care guidelines in recent weeks which are meant to help hospitals ration critical resources like ventilators and intensive care unit beds (Hick et al. 2020). To identify which patients get priority in treatment, many of the care guidelines recommend that hospitals use frameworks such as the patient age and a measure of how critically ill a patient is during admission to the hospital (Baker and Fink 2020). The guidelines also include, what comorbidities and additional underlying medical conditions that can place patients who have tested positive for the disease at a higher risk for worsening health outcomes (Baker and Fink 2020). COVID-19 is already affecting and killing a disproportionate number of Black and Latinx patients across the United States. Using comorbidities as a proxy for disease severity to allocate resources, without taking into account race and ethnicity, will almost certainly mean that racial and ethnic minorities will be placed in the "back of the line" for critical care resources (Baker and Fink 2020).

## Data Collection

Many if not all the states in the US have been aggressively gathering data regarding COVID-19 to understand its current and future state impact. Unfortunately, less than a dozen

states have limited public data to understand the racial and ethnic patterns of the disease, sounding an alarm for public health surveillance. In order to effectively and aggressively manage inequities during this pandemic healthcare institutions, local and state departments of health, and federal agencies must begin to collect data and make it publicly available. Publicly available data will allow for clear and responsive information regarding the pandemic, ensure equitable access to treatment, ensure the distribution of adequate resources for present and future emergency preparedness and response (Maybank 2020).

The US needs data disaggregated by race and ethnicity on who receives tests, who tests positive, who is hospitalized, who dies, and, once developed, on who receives treatment and a vaccine, along with who participated in clinical trials which historically lack representation for black and brown people (Maybank 2020). Without timely and accessible data on the race and ethnicity patterning of the pandemic, we limit our capability to: (1) focus efforts and messaging that are culturally responsive and appropriate that quell misinformation and fears, (2) ensure equitable access to testing and treatment, and (3) ensure equitable distribution of resources in the present and for future emergency preparedness and response (Maybank 2020).

## **Economic Fallout of COVID-19 on Low-Income Minorities**

Given the devastating economic impact of COVID-19, many financial leaders believe that the nation will be heading into one of the biggest economic recessions since The Great Depression (Hale 2020). The recession will not only impact industries such as airlines, hospitals, hospitality/travel, and small business but fallout will disproportionately impact low-income families and minorities the hardest (Hale 2020). According to the Bureau of Labor Statistics, roughly 8% of Black and Latinx workers earn wages below poverty level, compared to just 4% of Caucasian workers. What is even more alarming is that 10% of Black women and 9% of Latinx women are classified as the working poor (Hale 2020).

With the threat of a recession looming and the impact of shrinking incomes, communities of color are more likely than non-minorities to report a range of financial concerns including being worried about paying monthly bills such as: rent, mortgage, or other housing costs; and minimum payments on credit cards (Artiga, Garfield, and Orgera 2020b). They also are more likely to experience food insecurity (Artiga, Garfield, and Orgera 2020a). Comprehensive data by race and ethnicity is needed in order to understand the impacts of COVID-19 across communities of color and economic disparities going forward.

### **Case Study Questions - COVID-19 and Systemic Racism**

- Why is diversity in vaccine testing so important for the development of an effective vaccine?
- Currently, the Navajo Nation has one of the highest rates of COVID-19 in the country, what systemic issues have led to these rates?

- What are the systemic drivers of this overlap in COVID-19 morbidity and mortality between American Indian communities and Black communities?
- Using a health equity lens, what factors should be taken into consideration by hospitals when allocating resources and treatment?
- In the months following the COVID-19 outbreak in the US, several Black Americans died at the hands of White police officers, igniting conversations around structural racism. How do COVID-19 morbidity and mortality rates among predominantly Black counties versus predominantly White counties emphasize this point?
  - What are the disparities attributed to by individual, community, and structural levels?
- How does having less access to testing and treatment impact evidence-based public health approaches? What about its impact at the policy level?
- What policy changes can be made to correct the health disparities highlighted by COVID-19? Consider housing, education, and employment, and other structural issues.
- How do calls to defund the police around the country relate to the inequality seen throughout the pandemic from testing to treatment to outcomes?
  - How do our current funding systems illuminate tertiary vs primary prevention priorities in community health from pandemic response to policing?

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## **Chapter 4. NYS & NYC: Burden, Response, and Mitigation**

The densely populated area of New York City and its surrounding areas experienced large numbers of COVID-19 infections and hospitalizations. As of early-April 2020, NYC was deemed the epicenter for the virus in the United States, requiring mitigation at the state and city level (McKinley 2020). In New York State, as of April 30, there were 304,372 confirmed cases and 18,321 deaths (Biaggi 2020). To mitigate the threat of overwhelming hospital capacity, and experiencing outcomes similar to those in the EU (see Chapter 1), New Yorkers were encouraged to practice social distancing, go outside only when necessary, and to prioritize the health of the elderly and those who are immuno-compromised. Non-essential businesses were closed (see Appendix 1), as the city moved to prioritize public health. Several deficits in the system were exposed, and they were addressed by public, private, and government cooperation.

On February 22 a middle-aged man, “patient one”, from New Rochelle, a city in Westchester, NY, fell ill and was hospitalized five days later (Gold and Ferre-Sadurni 2020). Both he and those in close contact tested positive for COVID-19, including his immediate family, his neighbor who brought him to seek medical care, and individuals at his synagogue. These individuals and the medical professionals at a Westchester County hospital where he received care were advised to immediately quarantine for 14 days. Patient one was then transferred to a New York City hospital due to his worsening symptoms. Like many Westchester residents, he commuted to Manhattan for work on the Metro North Railroad, unknowingly placing others at risk. Upon his diagnosis, health officials attempted to trace all locations at which he and his family could have exposed others, as depicted in a graph published by the New York Times (Fig. 1).

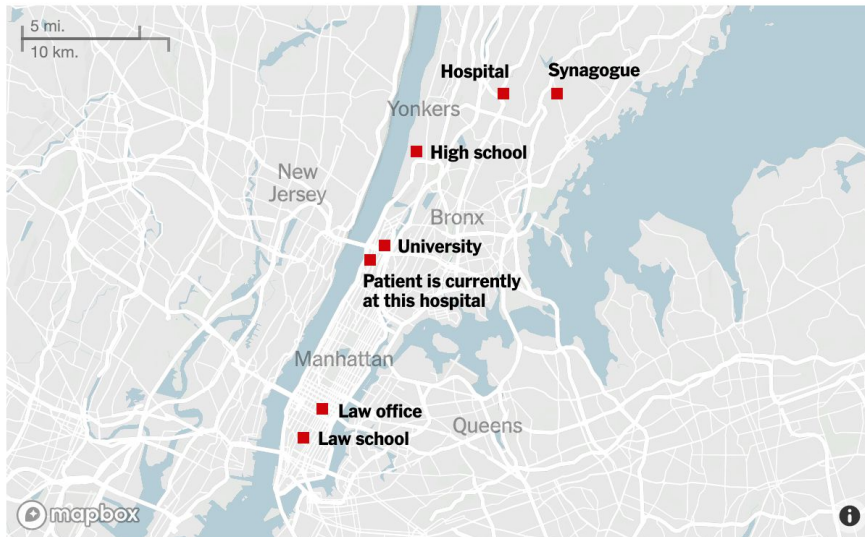
Patient one’s synagogue became the epicenter of the COVID-19 outbreak in Westchester, accounting for the majority of cases in New York at that time. In an effort to halt the spread, a containment zone of a one-mile radius surrounding the synagogue, where a number of people tested positive was established (Chappell 2020). Residents within the containment zone could go to grocery stores and pharmacies, but facilities that fostered large gatherings such as schools and places of worship were closed. Furthermore, the National Guard was deployed to the area to sanitize public spaces, and distribute food to those in need (Meminger 2020).

Simultaneous to the cases in Westchester, additional cases were being identified in New York State, the first was confirmed on March 1, and on March 7 there was a declaration of a state of emergency in NYS, and regulations to mitigate the spread of the virus were introduced on March 15 (Lapin 2020). The March 7 order was periodically updated imposing additional restrictions. Eventually, bars and restaurants were ordered to serve take-out and delivery only, schools were closed by March 18. On March 22, a stay-at-home mandate was placed in effect, effectively closing all non-essential businesses (NY Governor Andrew Cuomo 2020c).

Figure 1:

### The Search for Potential Exposure

Locations where the second coronavirus patient and his sons could have exposed others to the virus.



The New York Times

Source: (Gold and Ferre-Sadurni 2020)

As New York State cases rose, so did the demand for healthcare professionals, hospital beds, ventilators, and personal protective equipment. Around 85,000 health professionals volunteered to work with COVID-19 patients in New York State, including 22,000 doctors, nurses, and other medical staff coming from out-of-state hospitals in early April (NY Governor Andrew Cuomo 2020a). The New York State Governor, Andrew Cuomo, directed all general hospitals, surgery practices, and surgery centers to increase bed capacity by 30 percent. The State's demand for ventilators grew rapidly, prompting New York to place bids to acquire ventilators in the federal stockpile as it continued to depend on donations of ventilators from China and other US States, but thousands more were needed to meet the demand (NY Governor Andrew Cuomo 2020a). The need for personal protective equipment was met by increased manufacturing and donations from private, public, and non-profit businesses (Biaggi 2020).

Governor Cuomo called for the federal government to influence companies to speed up the production of ventilators and protective equipment (Cline-Thomas 2020). New York City Mayor, Bill DeBlasio, specifically called for the "nationalization of crucial factories and industries that could produce medical supplies to prepare this country for what it needs" (Leonardi 2020). Mayor DeBlasio was referring to PPE, hand sanitizer, ventilators, and medical tests. However, the nationalization of these industries did not come to fruition. New York State responded by manufacturing its own hand sanitizer, branded "NYS Clean" (Kim 2020). Small businesses and individuals began producing and selling face masks to meet the demand for face coverings to be used in public. Additional measures enacted in New York State included policies to increase testing by opening community testing sites in hospitals, parks, pharmacies, and at drive-through testing sites. The first drive through site was opened in New Rochelle and tested almost two-thousand people in its first few days of operation (Nir 2020). Testing criteria was expanded to include all first responders, health care workers and essential employees, allowing testing of asymptomatic individuals (The New York Times 2020a). To supply the upwards of 28 testing

sites, NYC developed the capacity to produce an estimated 50,000 3D printed COVID-19 testing kits per week (Spectrum News Staff 2020).

Communication strategies were implemented by local governments. In New York City, the Department of Health sent text alerts to residents providing real-time data updates. In some areas of Westchester, Mayors recorded daily COVID-19 updates, which were then disseminated by nightly phone calls to all households. Additionally, the New York Times provided real-time updates on the number of cases and COVID-19 related deaths in New York City and individual counties across NYS. These communication strategies align with the Theory of Planned Behavior Change and the Health Belief Model, in which perceived threats could encourage higher intention for behavior change, encouraging adherence to the CDC Guidelines.

## **NYC Burden, Response, Mitigation**

In NYC, as of April 30, there were 162,142 COVID-19 cases, accounting for about 53% of the cases in NYS (Biaggi 2020). New York City was subject to the New York State legislation discussed above. However, to meet the increasing city specific needs, additional measures were adopted. To meet the need of increasing hospitalizations in NYC, the Javits Center was turned into a temporary medical facility, a temporary field hospital was erected in Central Park, and the USNS Comfort, a Navy hospital ship, docked on the west side of Manhattan, able to house 1,000 non COVID-19 patients. Testing centers were opened throughout NYC Health and Hospitals sites and NYCHA Housing. Face coverings were freely distributed in parks. The NYPD enforced social distancing measures. The NYC Subway system reduced its service hours to accommodate nightly sanitation (Pix11 Web Team 2020).

NYC leadership delivered ineffective and contradicting communications regarding the severity of the coronavirus threat. Despite a declaration of a Public Health Emergency by the WHO on January 30 and the U.S. on January 31, New Yorkers were urged to continue business as usual while maintaining everyday precautions. NYC Health Commissioner Oxiris Barbot urged New Yorkers not to change their Lunar New Year Plans on February 2, insisting NYC was at low risk. Additionally, Mayor Bill DeBlasio and Commissioner Barbot emphasized contact transmission of the virus and minimized the risk of aerosol transmission. Hand washing/sanitizing and distancing from vulnerable persons were recommended as best practices. Through early March, messaging emphasized that transmission through casual contact was unlikely, and that transmission required direct, and prolonged contact (DeBlasio 2020, Spectrum News NY1 2020). On March 10, DeBlasio reassured New Yorkers that schools would not be shut down long term (DeBlasio 2020). By March 16, NYC public schools were closed to both reduce transmission and increase social distancing efforts.

In order to maximize New York State's capacity to respond to COVID-19, Governor Cuomo asked private and public hospitals to share staff, medical equipment, and patient care across the state (NY Governor Andrew Cuomo 2020b). The Central Coordinating Team implemented a strategic approach in anticipation of a surge of COVID-19 patients. Under this effort, medical professionals from upstate facilities were shifted to NYC, the epicenter of the virus. NYC is home to 11 public hospitals that serve over one million undocumented, uninsured and working class residents (NYC Health and Hospitals 2020, NYC Mayor's Office of Immigrant Affairs 2018). Elmhurst Hospital, located in Queens, was the first hospital with a surge of cases. Within hours, this public hospital was operating at its maximum capacity. An Elmhurst doctor described the scene as "apocalyptic" as patients died waiting for treatment and refrigerated trucks were needed to manage the overflow of dead bodies (Rothfield et al. 2020). As a result,

the city immediately sent additional supplies and resources such as 169 clinicians to help relieve the burden on staff. Through the 'surge and flex' initiative, private and public hospitals were able to work and function as one.

To help relieve the pressure in local hospitals and in anticipation of the COVID-19 apex, emergency medical facilities were established in iconic areas such as Central Park and the Javits Convention Center. On March 28 Governor Cuomo announced additional sites in Brooklyn, Queens, Staten Island, and the Bronx to house temporary hospitals during the outbreak. New spaces relieved hospital burden, and added 4,000 hospital beds (Tsioulcas 2020, WRGB Staff 2020). Operationally, NYC's healthcare system was not ready for early containment, as the state lacked vital equipment to test and provide timely results to the public. As a result, the state saw a rapid rise in hospitalizations overwhelming clinical care systems. Large scale COVID-19 testing was proven to be a large undertaking for all states (Goodnough, Thomas, and Kaplan 2020). Widespread diagnostic testing was needed to treat and isolate those infected; thus, preventing the spread. Furthermore, results from a rapid test, allow people to know if they have developed immunity from the virus (Sanchez 2020).

## **Overburdened Communities and compounded vulnerabilities in NYC and beyond**

Early into the pandemic the CDC highlighted vulnerable populations at highest risk including those aged 65 and older, pregnant people, and people of all ages with underlying medical conditions. In addition to these individuals, this pandemic has also exposed health disparities among other populations. Systemic marginalization in New York City and beyond has left immigrants, the incarcerated, institutionalized, homeless, and the LGBTQ community, etc. at a severe disadvantage during the COVID-19 pandemic.

### **Institutionalized**

#### **Incarceration**

Mass incarceration has come into focus during this pandemic. Historically, prisoners are housed in living conditions that negatively affect health. Prisons and jails facilitate the spread of the virus. Practicing social distancing is nearly impossible in these facilities due to overcrowding - inmates living in close proximity and sharing toilets and showers. Furthermore, the spread has been exacerbated by the policies and regulations put in place. In the prison system, basic needs to combat the virus like soap was in shortage or not provided while hand sanitizers were considered contraband due to the alcohol content. The majority of prisons charge co-pays for physician visits, medications and testing, because of the limited income available to incarcerated persons, these co-pays put medical care out of reach for many within the prison system (Prison Policy Initiative 2020). In addition, visitations by loved ones were suspended, increasing the risk of psychological repercussions.

In January, the average daily population in correctional facilities in New York City was 6,988 prisoners (City of New York Department of Correction 2020). The NYC Board of Correction called for the release of all high-risk inmates at Rikers Island after a corrections officer tested positive on March 18, days after an investigator died from COVID-19 (New York 4 2020b). By March 22, city officials reported 46 confirmed cases in the jail system after an inmate at the Metropolitan Detention Center in Brooklyn tested positive the day before (McCarthy

2020). Governor Cuomo on March 27, ordered the release of 1,100 parole violators, 600 of these parolees from New York City jails (Lyons 2020). In conjunction with state efforts, many social justice organizations, such as The Legal Aid Society, worked to secure the release of people from Rikers Island, dropping the jail population below 5,000 prisoners (Marsh and Feuerherd 2020).

### **Nursing homes and long term, mental health facilities**

Incarcerated individuals were not the only institutionalized communities with increased risk. Nursing homes and mental health facilities experienced high mortality rates and conditions that placed an incredible burden on residents, families and caregivers. In March, Governor Cuomo said, “Coronavirus in a nursing home can be like fire through dried grass” (Harris, Leland, and Tully 2020). Nursing home residents are elderly, often with pre-existing conditions, living in close quarters and coming into close contact with caregivers who are also working closely with other residents creating the perfect conditions for the virus to spread between patients and workers. By the first week in April over 1,400 nursing home residents had died of COVID-19 statewide (Harris, Leland, and Tully 2020). In New York City the first confirmed case was reported in a facility on March 8th (Leland 2020). As of April 23, 492 nursing home residents died in the Bronx, 364 in Brooklyn, 228 in Manhattan and 653 in Queens, according to government data (Department of Health 2020). The mortality data from nursing homes was confounded by whether residents died in the nursing home or a hospital, whether residents who died had been formally tested, and the reliability of reporting within nursing homes (Harris, Leland, and Tully 2020, The New York Times 2020b). Conditions inside these facilities were chaotic as staff and administrators scrambled to find personal protective equipment and put protocols in place to keep residents and staff safe. Part of the effort to keep facilities safe barred visitors meaning virtually all residents who fell ill and died during that time, did so without being able to see friends or family (Leland 2020).

Long-term, psychiatric and disability care facilities in New York City also bore a disproportionate burden of illness and death, and existed farther outside the public consciousness than nursing homes. Like nursing home staff, long-term disability care personnel, traditionally thought of as specialized caregivers, transformed into essential, frontline healthcare workers struggling to keep residents and fellow workers safe, with few resources or outside support. By early April, 1,100 developmentally disabled residents in New York tested positive for COVID-19 and 105 of them died (Hakim 2020). An independent study found that, compared to the general population, residents of group homes in and around New York City were five times more likely to both contract COVID-19 and die from the virus (Hakim 2020). These facilities struggled to provide tests, protective equipment, and access already overburdened hospital resources for sick residents. Disability rights advocates worried that developmentally disabled patients would receive fewer resources and life-saving care once in hospitals and called for immediate enactment of policies that ensured the fair allocation of ventilators in case of shortages (Hakim 2020). Complaints were filed in several states, including New York, that claimed existing policies established clear bias against disabled patients and their equal right to life saving equipment (Hakim 2020).

## **Systemically marginalized**

### **Undocumented Immigrants**

Undocumented immigrants living in the U.S. were another high-risk population highlighted by advocacy groups during this pandemic. While health officials were advising people to work from home and call doctors or 911 if symptoms appear to worsen, a majority of the millions of undocumented immigrants in the US work essential jobs and were on the frontlines of the pandemic in grocery stores, restaurants, hospitality, construction and personal services (Villa 2020). In NYC, about 504,000 people are undocumented immigrants and about one million New Yorkers live in mixed status households, where at least one person is undocumented (NYC Mayor's Office of Immigrant Affairs 2019). This precarious status meant that many could not afford to take off work, effectively risking their lives by possibly contracting COVID-19. In addition, many immigrants lost jobs as companies face loss of revenue. As such, immigrants living paycheck-to-paycheck carried a deep financial burden and faced tremendous uncertainty without qualifying for the benefits of the stimulus package or unemployment benefits made to U.S. citizens and other documented workers.

Furthermore, many undocumented immigrants do not have the option of calling a primary doctor. The Affordable Care Act excludes undocumented immigrants from eligibility for coverage, and an estimated 7.1 million undocumented immigrants lack health insurance (Cheng, Kanaya, and Araneta 2019 ). Policies such as the Families First Coronavirus Response Act covered testing for the uninsured but did not cover treatment and the Coronavirus Aid Relief and Economic Security Act provided funding to hospitals to treat the uninsured but excluded patient cost-sharing or physician bills (Turret et al. 2020, Levitt, Schwartz, and Lopez 2020). Thus, policies aimed to reduce out-of-pocket costs and encourage individuals to seek medical care, left out this sub-population and deterred undocumented immigrants from seeking care early, if at all. In addition, despite the severity of the pandemic in the U.S. and NYC specifically, Immigration and Customs Enforcement (ICE) continued to carry out enforcement operations, even in and around hospitals, claiming they are only targeting immigrants who pose public safety risk and have committed serious crimes (U.S. Immigrations and Customs Enforcement 2020). Advocacy groups like the New York Immigration Coalition pressured ICE to suspend all activities (NYIC 2020). In addition to ICE presence, anti-immigrant policies like the "public charge" rule also discouraged many immigrants from seeking needed care due to fear. The rule change, which went into effect February 24, penalizes immigrants who use forms of public assistance by preventing them from receiving legal permanent resident status or a visa (Zallman et al. 2019).

On April 16, NYC Mayor De Blasio, in partnership with Open Society Foundations, announced the \$20 million New York City COVID-19 Immigrant Emergency Relief program. This program provided 20,000 undocumented immigrant workers and their families a direct one-time emergency relief payment (Office of the Mayor 2020). In addition, immigrant focused organizations like SOMOS Community Care, established testing sites in boroughs hardest hit to help immigrants get tested despite barriers including insurance coverage, lack of money and language translation (Fertig 2020). On April 28, the Trump administration, in conjunction with UnitedHealth Group, launched the COVID-19 Uninsured Program Portal which reimburses hospitals for COVID-19 testing and treatment for uninsured individuals who test positive (Pifer 2020).

## **Homeless or Housing Displaced Peoples**

According to a 2019 US Department of Housing and Urban Development report, about 567,715 people in the US are homeless, an increase of three percent from the previous year (Henry et al. 2019)(OCPD, 2. In NYC, there are an estimated 62,679 homeless people in shelters, not accounting for those residing in private shelters, runaway youth shelters, emergency housing or drop-in centers (Coalition for the Homeless 2020a). On April 19, NYC officials reported that 615 homeless people had tested positive for the virus and 40 had died (Gartland 2020a). People who are experiencing homelessness were at high risk of contracting COVID-19 because of a lack of housing and lack of access to sanitation facilities. Individuals living on the street are often living in clusters and sharing personal items. Those in shelters face overcrowding, close sleeping arrangements, shared bathing facilities and communal meals. As such, it is nearly impossible to practice social distancing and consistent hand washing to reduce the spread of infection. The situation was exacerbated, during this pandemic, as shelters, gyms and other public dwellings were mandated to close. Additionally, food pantries and soup kitchens had limited resources and were short staffed.

With marginally housed people already suffering from higher rates of acute and chronic illnesses such as tuberculosis, hepatitis A, diabetes and COPD the population was at a higher risk of mortality (Institute of Medicine (US) Committee on Health Care for Homeless People 1988). On March 26, the Legal Aid Society sent a letter to the NYC Department of Homeless Services citing how the city's inadequate response to the crisis had led to reports of unfair treatment of homeless people who either had COVID-19 or were at risk of getting the virus (Berger 2020). Other advocacy groups, including Coalition for the Homeless, released a letter to Mayor de Blasio and Governor Cuomo suggesting the opening of vacant hotel rooms throughout the city for the homeless population (Coalition for the Homeless 2020b). Mayor DeBlasio, in response, issued a new plan in April to utilize hotels and their vacant rooms as quarantine sites for homeless individuals (Matthews, Villeneuve, and Hill 2020).

## **New York City Labor and Public Housing Residents**

### **NYC Labor**

Public employees in the city of New York, from teachers to MTA bus drivers have experienced a disproportionate number of COVID-19 illnesses and fatalities highlighting the city's struggle to protect their essential workers unable to work from home. Over a hundred municipal workers had died as of mid-April, not including MTA workers who are classified as state employees (Goldenberg and Muoio 2020). Those one hundred plus deaths represent paramedics, correctional officers, city maintenance workers, police officers, teachers, principals and school department paraprofessionals (Goldenberg and Muoio 2020). Those deaths reflect the racial and class dimensions of this virus. Department of Education paraprofessionals, are overwhelmingly Black and Latinx, earn less money than teachers and account for 41% of the department's deaths despite representing 17% of the workforce (Zimmerman 2020). Unions for these essential workers have highlighted low-pay, lack of resources, and unclear or delayed guidelines and protective measures, including the delayed closure of New York City schools (Goldenberg and Muoio 2020, Klein, Edelman, and Gray 2020).



As of April 22, 83 MTA workers died from COVID-19 (Rubinstein 2020). These workers were overwhelmingly subway workers and bus drivers coming into close contact with the public on a regular basis as they struggled to keep the transit system operational for other essential workers (medical professionals, grocers, etc.) needed to keep the city running (Rubinstein 2020). The MTAs workforce is working class and largely male, 22% of the workforces is aged 55 to 62, 40% Black and 16% Latinx (Rubinstein 2020, Martinez 2020). While the Transit Authority took steps to protect workers, implementing rear boarding in buses, distributing masks and gloves to workers, the mortality disparities highlight the vulnerability of these essential, working class and employees of color who did not have the luxury or the means to stay home. The agency, like others, has been criticized for not putting protective measures in places early enough, but the agency complied with CDC guidelines, both when they were discouraging the use of masks for non-healthcare workers and when they reversed that policy, highlighting the complexity of meeting diverse population needs in the midst of an unfolding crisis.

### **Public Housing**

Amidst calls to stay home and the idea that being home is the safest place you can be, public housing residents faced particular challenges. Like many of the populations discussed above, public housing residents are living in conditions that are often out of their control and in environments that contribute to increased susceptibility to COVID-19. The New York City Housing Authority (NYCHA) buildings are densely populated and almost a quarter of residents are over 62 years old, many with pre-existing conditions (Spivak 2020). The majority of residents live below the federal poverty line and many utilize SNAP and Medicaid benefits which means their ability to access timely and sufficient resources are tied to forces outside of their control (NYC Open Data 2019). Conditions in NYCHA housing have been a serious issue for decades and a major contributor to poor health among its residents. As recently as this February, residents of NYCHA housing in Brooklyn brought legal action against NYCHA for failing to provide safe and decent housing to tenants (Gartland 2020b). In a 2018 survey by the Department of Health of NYCHA housing, 83% of units inspected were found to contain at least one severe health hazard (New York State Department of Health 2018). Severe hazards included mold and insect or rodent infestations as well as structural and mechanical issues (New York State Department of Health 2018). Mold and insect infestations were the two most commonly cited hazards. These, together with poor ventilation, have created a disproportionate incidence of asthma among children living in NYCHA housing and leave residents of all ages vulnerable to respiratory infections including COVID-19 (Lopez 2015 , Goldberg 2020).

Power, water, and heat outages are also common, making health and housing maintenance a constant challenge. Since the COVID-19 crisis began in NYC at least three NYCHA developments have been without water for 24 hours or longer, rendering thousands of tenants unable to wash their hands and practice the basic safety measures called for by the CDC and the city itself (Gartland and McShane 2020). While NYCHA said that it would implement new cleaning routines and stricter measures, their response was halting - workers were not required to wear masks until April 2 and tenants from across the city reported no visible change in cleanliness or increased COVID-19 messaging and information (Kully 2020, Zuylan-Wood 2020). In addition, like many other public institutions in the city, the underfunded housing authority was slow to establish any comprehensive mechanism for testing residents and workers and many of the cities underreported COVID-19 deaths at home were happening in NYCHA communities (Anuta 2020).

## **Issues within Sexual, Reproductive and Gender Identity Health**

### **LGBTQ+ Populations**

COVID-19 is likely going to widen LGBTQ+ health disparities due to individual health behaviors, and social determinants of health including structural factors, social disparities, and immunocompromised conditions. In an open letter about COVID-19 and LGBTQ+ communities initiated by a coalition of six organizations (The National LGBT Cancer Network; GLMA Health Professionals Advancing LGBT Equality; Whitman-Walker Health; SAGE; the New York Transgender Advocacy Group; and National Queer Asian Pacific Islander Alliance) that engendered the support of over 100 national and local organizations, identified three key underlying factors that increased vulnerability. Tobacco use in this population is higher than the general population (truth initiative 2018). Smoking damages the airways and the small air sacs located in the lungs. Since COVID-19 is a respiratory illness that attacks healthy cells in the lungs, smokers are at increased susceptibility. In addition, high rates of the immune compromising conditions, HIV and cancer, among the LGBTQ+ lead to increased risk of serious COVID-19 complications. Furthermore, members of the LGBTQ+ community have difficulty accessing meaningful and culturally appropriate healthcare, thus, are less likely to receive care. In particular, during this pandemic, transgender and nonbinary people have had difficulty accessing gender affirming care services. Many awaiting gender affirming surgeries have had postponed or cancelled appointments because of the overburdened hospitals and the prioritized COVID-19 response (Daniari 2020). Such disruptions lead to psychological repercussions and an increase in risky behaviors such as smoking, alcohol and substance abuse.

One challenge in understanding the degree of those disparities stems from a lack of data collection. In New York, the state Department of Health has not tracked COVID-19 cases by sexuality because “the virus does not discriminate,” a remark made by Governor Cuomo (Johnson 2020). Multiple advocacy groups, including Callen-Lorde Community Health Center, NY Transgender Advocacy Group and Hetrick-Martin Institute have banded together to demand that the LGBTQ+ community be served during this pandemic. Their priorities included surveillance efforts, messaging tailored to the community and providing resources on finding welcoming, inclusive healthcare providers (National LGBT Cancer Network and GLMA 2020). In addition, many organizations like Stonewall Foundation provided relief funds and resources to strengthen and support the community during the pandemic (Stonewall Community Foundation 2020).

### **Reproductive healthcare as essential healthcare**

In the midst of the global response to COVID-19, the UN Secretary General Antonio Guterres advised governments to “put women and girls at the center of efforts to recover from COVID-19.” In his plea, the UN Secretary General further elaborated on the pandemic’s devastating socio-economic impacts on women and girls (Guterres 2020). Due to the increased demand and under preparedness of health systems around the world, women have faced increased barriers to reproductive healthcare services. Barriers to reproductive healthcare services, such as abortion care and family planning, are essential health services for women and families worldwide. The growing demand to identify abortion as an essential health service is founded by evidence showing that barriers to abortion and family planning services lead to high rates of maternal mortality and more (Amnesty International 2020).

## **Domestic violence**

State and federal 'stay at home' guidelines revealed how critical domestic violence support programs and resources are in NYC. According to the CDC, approximately 1 out of every 4 women and 1 out of every 7 men experience physical violence by their partner. Additionally, women aged 18 to 34 experience the highest rate of physical abuse by their partners (Dzhanova 2020).

Domestic violence programs and shelters experienced a decline in client seeking services as compliance to stay-at-home orders isolated at-risk individuals at home (Dzhanova 2020, New York 4 2020a). These individuals were not only faced with having to comply with social distancing guidelines, they also had to measure the risk of whether seeking help was worth the possibility of contracting COVID-19, or worse, having their children contract it. While the shelters experienced a decline, the National Domestic Violence Hotline (call and chat) volume remained stagnant. During a single day, the hotline received, on average, 1,800-2,00 calls, however, the Chief Executive Officer of the hotline stated the calls they are receiving are of survivors concerned about the virus (Dzhanova 2020). This static rate could be presumed to be from individuals who couldn't call while in the home with their abuser.

During the COVID-19 outbreak, domestic violence survivors lost everyday respites; simple outings like dropping kids off at school or grocery shopping (Dzhanova 2020). Additionally, these social distancing orders made it difficult for partners to separate during a fight. Which can lead to bigger and more frequent arguments. Privacy and the ability to seek help outside the home was abruptly taken from these individuals. Besides a lack of space; abusive environments are known to accelerate during the kind of stressful situations epitomized by the pandemic (Lee 2020).

Not only did certain domestic abuse resources see a decline, but others closed down temporarily. The Family Justice Centers, which focused on offering assistance to victims and survivors, was temporarily closed in March leaving cracks in the survivor support systems (Lee 2020). Alternatively, NYC Hope, an online resource for domestic violence victims/survivors saw a spike of 95 visitors per day from March 18 to March 30 and identified 354 new visitors on the site, averaging 27 visits per day (Lee 2020). In order to try and mitigate the rise of domestic abuse cases, Governor Cuomo and Mayor Bloomberg brought this issue into the spotlight. They advertised resources on their social media as well as during their press briefings. Politicians outside of New York also tried to find ways to remove barriers for these survivors. Senator Bernie Sanders called for "emergency shelters" to be constructed for those who are fleeing dangerous situations (Dzhanova 2020).

### Case Study Questions - New York State and City: Burden, Response, Mitigation

- With so much quickly unfolding, should NY state have collected data by sexuality to better understand the scope of who was being infected to serve the nearly 570,000 lgbtq+ residents in nyc alone?
- How has the virus and its response exposed the cracks in NYC's social safety net across populations?
- 22,000 out-of-state providers and PPE donations came from public, private, and non-profit businesses. What lessons might be drawn for future health needs might this be applied?
- There was a declaration made by the WHO that NYC officials down-played and ignored, claiming NYC was at "low risk". How might future officials prevent from making the same mistakes
- Although changes were made to reduce the incarcerated population to prevent the spread of coronavirus. What else could have been done? What about for nursing homes and long-term mental health facilities?
- Draft a SWOT analysis on expanding or contracting immigrant health and the impact felt on society, especially considering the front line work that COVID-19 highlighted.
- What are the pros and cons to using hotel rooms to quarantine homeless or the housing insecure? What sorts of factors should be thought through in making this decision?
  - What about this approach for the incarcerated?
- Outside of the widely reported vulnerable populations at risk of contracting COVID-19 (elderly aged 65 and older, underlying conditions and the immunocompromised), what other populations are often overlooked
  - What makes these populations especially at risk of infection?
- How is the city grappling with the COVID-19 response in those communities?
- How can new policies be implemented to mitigate the risk for any of the above populations?

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## Appendix 1: COVID-19, Selected Timetable

<b>WORLD, including the US</b>	<b>NYS and NYC</b>
December 2019	
Dec 31 -- China reports pneumonia cases in Wuhan for unknown etiology	
January 2020	
<p>Jan 3 – Cluster of pneumonia reported in Wuhan</p> <p>Jan 15 – Japan reports first confirmed case (coming from Wuhan)</p> <p>Jan 21 – First confirmed case in Taiwan and US (both coming from Wuhan)</p> <p>Jan 23 – Hubei Province of China goes into lockdown</p> <p>Jan 30 – WHO declares global health emergency – First two confirmed cases in Italy (coming from China)</p> <p>Jan 31 – First confirmed case in Spain – US declares Public Health Emergency – US restricts travel from China</p>	
February 2020	
Feb 29 – US restricts travel to Italy and South Korea	<p>Feb 2 – Commissioner Barbot assured New Yorkers to not change holiday plans, avoid the Subway, or certain parts of the city</p> <p>Feb 6 – Commissioner Barbot communicates that NYC is at low risk and preparedness is high</p> <p>Feb 22 – Patient One in Westchester falls ill</p> <p>Feb 27 – Patient One in Westchester is hospitalized</p>
March 2020	
Mar 3 – US officials approved widespread	Mar 1 – First confirmed case in NYS

<p>COVID-19 testing</p> <p>Mar 9 – Italian national lockdown starts</p> <p>Mar 11 – WHO declares outbreak a pandemic</p> <p>Mar 13 – President Trump declares national emergency</p> <p>Mar 15 – CDC recommended no gatherings over of 50 or more people in US</p> <p>Mar 14 – Spanish national lockdown starts</p> <p>Mar 16 – President Trump announces “15 Days to Slow the Spread”, introducing social distancing guidelines</p> <p>Mar 19 – CA implemented stay at home order (first state in the US)</p> <p>Mar 27 – CARES Act signed into law</p>	<p>Mar 4 – Mayor DeBlasio asks individuals travelling from ‘at-risk’ countries to voluntarily quarantine for 14 days</p> <p>Mar 4 – Mayor DeBlasio recognizes community spread of virus</p> <p>Mar 7 – State of emergency issued for NYS</p> <p>Mar 14 – Mayor DeBlasio calls for nationalizing of crucial factories and industries</p> <p>Mar 15 – NYS Executive Order 202.3: Large gatherings over 500 people are postponed; bars and restaurants should only serve food/beverage for off-premise consumption, closure of casinos and video lottery gaming, closure of gyms/fitness centers/movie theatres</p> <p>Mar 16 – NYS Executive Order 202.4: Non-essential workers can work from home or take leave without using accruals (PTO), ordered closure of public schools by Mar 18</p> <p>Mar 16 – Westchester County declares a state of emergency</p> <p>Mar 17 – Mayor De Blasio urges for a “shelter in place” mandate</p> <p>Mar 18 – Governor Cuomo states he will not approve “shelter in place” mandate</p> <p>Mar 19 – NYS Executive Order 202.7: closure of hair salons and barbershops by March 21</p> <p>Mar 22 – NYS Executive Order 202.8: utilize telecommuting as much as possible, reduce in-person workforce by 100%, no enforcement of evictions/foreclosures for 90 days, extension of deadline to file taxes</p> <p>Mar 23 – NYS Executive Order 202.10: Non-essential gatherings of individuals of any size for any reason are cancelled or postponed.</p>
<p>April 2020</p>	
	<p>Apr 17 – Face coverings mandated in NYC</p>
<p>May 2020</p>	

