THE INADEQUATE PUBLIC HEALTH RESPONSE TO COVID-19 IN BROOKLYN

May 29, 2020

ABSTRACT

The COVID-19 pandemic swept through New York City in early March of 2020, sickening, hospitalizing and killing New Yorkers is at a rate not seen for the past 100 years. This report focuses on the healthcare delivery system's inadequate response that resulted in excess deaths and suffering. We have made recommendations to change the system to be more prepared and responsive for future pandemics. We highlighted the health disparities in the borough of Brooklyn, however we believe our findings and recommendations are applicable throughout the country.

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I. Executive Summary

The COVID-19 pandemic peaked in New York City on April 6, 2020 when 6361 new cases were reported that day. The next day more than 590 New York City residents died from the infection. Brooklyn had the highest death rate of any county in the America. Health disparities in the United States of America became apparent when in the same borough of Brooklyn, Canarsie/Flatlands zip code 11239 with a mostly black older population, had 10 times the death rate as the affluent mostly white neighborhood of Downtown/Heights/Park slope 11215.

America leads the developed world in poor health outcomes with the highest infant and maternal mortality rates and the lowest life expectancy. Yet, Americans spend more per capita on healthcare than any other country in the world. This pandemic has exposed the weakness of our national health disaster preparedness. It also demonstrated the limited capacity of our hospitals to respond effectively to surges in hospitalization and critical care management. Our health delivery system failed to adequately protect doctors, nurses and other healthcare workers. The American Government failed to protect the population from wide spread infection because COVID-19 diagnostic tests were generally not available and the underfunded public health system failed.

The COVID-19 pandemic has ravaged through the land causing suffering, death and economic devastation. However, we have the opportunity to rebuild, but we must build better.

- We must have an adequately funded Public Health System in order to keep national readiness to pandemics and other public health disasters.
- We must not allow politically guided defunding of the public health system.
- Federal funding should be directed to maintaining community health clinics, independent medical practices and community hospitals.
- There should be a national emergency/disaster Public Health Corps to rapidly respond to pandemics and epidemics.
- Strategic reserves of vital health supplies such as personal protection equipment and respirators should be maintained throughout the country with one system of coordination involving federal state and local governments.

- Our healthcare system needs to be rationalized with universal single-payer health insurance.
- National health planning should involve all levels of government. Hospitals and other health facilities and health manpower should be organized to deliver all levels of medical care with primary care as the backbone of the healthcare delivery system.

If we make these changes to our healthcare delivery system, we are likely to have better health outcomes. Our health facilities would be more resilient and our health manpower would be better protected. Our healthcare system would also cost less, and endemic and pandemic diseases would have less negative impact on our life expectancy and economic welfare.

II. Project Initiation:

At the request of Congress Member Yvette Clarke, 9th Congressional District, we have assembled a team of health professional thought leaders with particular interest in correcting the health disparities in Central and South Brooklyn.

Purpose

The purpose was to ensure quality healthcare for the residents of the 9th Congressional District during and after the COVID -19 Pandemic and to build the groundwork to address longstanding and systemic health inequities in Black and Brown communities in Central and South Brooklyn.

Project Need

It is expected that almost 2 million Americans will contract COVID-19 and over 100,000 will die. Many Americans will die and suffer not of COVID-19 but because of it. Because the health delivery system was repurposed to respond to the epidemic many Americans have had limited access to chronic disease maintenance, emergency services and desperately needed treatments for life-threatening and life ending endemic diseases. These circumstances were worse for Black and Brown Americans because of the many disparities they endure.

Objectives

1. To assist government in the development of a health plan that better distributes community and federal health resources to the areas of greatest need.
2. To support our local hospitals, community health clinics and medical practices in securing testing and maintaining the capacity to effectively treat COVID-19 and other diseases
3. To facilitate the use and movement of human resources to areas of greatest need.
4. To identify primary care networks and practices that can and will manage patient with COVID-19 and similar future health emergencies.

III. Findings

Epidemiology

1. As of May 25, there have been 53,518 confirmed COVID-19 cases in Brooklyn and 6,602 reported deaths. The epidemic in New York City peaked in early April with most new confirmed cases in 1 day, 6361 reported on April 6 and the highest daily confirmed COVID-19 deaths of 590 occurring on April 7. On May 25 we had 214 new cases and 13 deaths in New York City suggesting that we may be in the post-peak phase of the epidemic.

2. There were significant disparities in the infection rate and death rate in Brooklyn communities. Canarsie/Flatlands had 10 times the death rate as Downtown/Heights/Park Slope and 5 times the case rate.

3. News reports suggest that there have been excess deaths in New York City, not accounted for by reported COVID-19 disease diagnosis. This is expected as we predicted that endemic disease would increase during the course of the epidemic. This is likely due to increase societal stressors, unavailable usual care, and the unintentional consequences of social distancing. Also, there may be underreporting of COVID-19 disease as many people that died at home or in nursing homes were never tested.

Testing

4. Although COVID-19 testing have been available, albeit sporadically, in areas of Central and South Brooklyn, it may not be directly linked to necessary medical care.

5. It is our perception that in Brooklyn, testing is being organized and implemented as a solo strategy, unconnected to contact tracing and treatment. The Governor and Mayor have made arrangements with large medical providers (Northwell, MedRite, City MD, etc.) to perform testing but none of them, with the exception of Health and Hospital Corporation (HHC), appear to have a long-term strategy to link their testing to contact tracing and clinical care.

6. Our findings suggest that physician offices are doing very limited testing, possibly due to the unavailability of swabs for testing, limited PPE and very little direction from the health departments. Hospitals on the other hand, particularly the private ones, would like to avoid testing so as to keep their facilities "COVID free". We also got the impression that they did t feel the need to extend their capacity to provide COVID-19 testing beyond their staff and immediate patient population.

7. Based on New York State's antibody sampling tests, of 15,000 New Yorkers as of May 1, 2020, 20% of New York Cities' population was infected. This would extrapolate to 520,000 COVID-19 infected Brooklynites. Also, when excess deaths are taken into consideration the mortality rate in Brooklyn exceeds 0.28% which represents approximately 7400 actual deaths. This represents the highest death rate of any county in the country.

8. The team learned from news reports that 1000 contact tracers would be hired to serve New York City. Much of this planning was apparently done without much input from New York City Department of Health and mental Hygiene (NYCDOHMH). We believe that contact tracers should be distributed to areas with the highest incidence of COVID-19.

9. On Saturday evening 5/19/2020, Governor Cuomo revealed he would add 24 temporary testing sites at churches in NYC. The primary care network of community physicians were not included in the planning nor execution of this plan.

Access to Care

10. There were gaps in the availability of medical care and the coordination of care. It was unclear to us whether there was adequate strategic planning to redeploy the delivery system to provide post COVID-19 medical care.

11. Healthcare workers, front line essential workers and the community had inadequate personal protection equipment (PPE). Access to testing and treatment was often unavailable and frequently ad hoc.

12. There will be the loss of access to medical care due to the loss of health insurance. This is because health insurance for most Americans is employer-sponsored and many people have lost their jobs.

13. Our hospitals have been suffering from **low occupancy** and devastating income loss since the epidemic peaked. For SUNY Downstate this situation was exacerbated by the New York State COVID-19 designation. This designation has remained in place while new cases, hospitalizations and deaths from COVID-19 are on the decline in New York.

14. Most physicians have continued practicing during the epidemic, many at reduced levels and the overwhelming majority have employed telemedicine (Telehealth) as their main form of patient encounters.

IV. Recommendations

Pandemics and disasters are the stress test to the healthcare delivery system. We now have the unusual opportunity to assess the gaps and weaknesses of our healthcare delivery system. The most obvious weakness is the high case rate and the high mortality.

Funding

1. We recommend federal legislation to adequately fund the public health system in order to keep national readiness to pandemics and other public health disasters.

2. Federal legislation to prevent politically guided defunding of the public health system.

3. Federal funding directed to maintaining community health clinics independent medical practice and community hospitals.

4. Federal legislation to strengthen the strategic national reserves.

5. Federal legislation to develop and fund a national health disaster emergency public health corps to rapidly respond to pandemics and other

health disasters nationally and internationally when invited. The corps would serve as first responders, providing manpower until local resources can be mobilized.

Testing

6. Further COVID-19 testing should be performed in primary care settings that are linked to medical care (community health centers, hospital clinics and primary care physician offices).

7. Governor Cuomo and his task force reconsider the testing strategy with Northwell Health as the plan bypasses the usual community primary care networks, leaving them under resourced. It exposes non-medical community places to infectious agents.

8. Testing occur in places of usual care such as community health centers, doctors' offices and hospital clinics.

9. A coordinated testing strategy in Brooklyn that is linked to contact tracing and clinical care.

10. All front line physicians, nurses and healthcare workers should be tested immediately and periodically for COVID-19 and any future infectious contagious disease that is spread airborne or by contact.

11. All hospitals participate in the community treatment of COVID-19. That should include testing, contact tracing and treatment.

Local Strategy

12. Creation of a directory of providers that treat COVID-19 and are accepting referrals.

13. Hospitals should quickly return to usual and customary care for endemic diseases and COVID-19 complications.

14. Isolation and quarantine can be carried out in hotels and at home when appropriate.

15. Nursing homes should be supported and encouraged to receive patients requiring a higher level of skilled nursing than they would normally provide. This will decrease the length of stay of COVID-19 patients with complications in hospitals.

16. Remove COVID-19 designation from hospitals and allow them to return to their usual business.

17. Compensate hospitals, nursing homes and healthcare providers for their investment in preparing to meet the emergency health needs of the population and the consequent loss of income from deferring their usual business operations Assemble a strategic work group of public health officials, institutional administrative and clinical leaders and independent medical providers (represented by local medical societies) to develop an integrated, coordinated plan for the post-peak phase of the pandemic.

18. Nonprofit voluntary hospitals must serve the care needs and provide public health support to the community. If the goal of the community is to avoid hospitalizations, then the hospitals must be involved with preventive care.

19. Set aside at least 30% of the initial 1000 contact tracers for Brooklyn residents and at least 50% should be people of color.

20. The public health system focus on health promotion to mitigate further transmission of disease.

V. Testing

COVID-19 Testing in the post-peak and post pandemic phases

Testing has been touted as the pathway to re-open the economy. It is also said the testing followed by contact tracing will affect the progression of disease post-peak and post-pandemic phases. What seems to be lacking in the process we observed in New York so far is a direct connection between testing, treatment and the resolution of disease at this stage of the COVID-19 pandemic.

- Our initial investigations suggest that after people are tested they are left bewildered because of the high false negative rates of many of the tests.
- The care infrastructure lags behind community needs. That is to say, after a person knows their results often there is no available knowledgeable health professionals to give advice. If care is required, it is often not available.
- The circumstances and dynamics of families can be quite complex and often test results need to be accompanied with counseling.

Linkage to care

Testing should occur in established healthcare settings such as doctors' offices, community health centers and hospital clinics where it can be easily linked to clinical care. These sites are designed to protect medical staff and patients. Other advantages include:

- the availability of counseling,
- the ability to initiate and continue treatment,
- contact tracing,
- medical record keeping,
- Follow up care.

Medical facilities generally have good spaces for privacy, maintaining good hygiene such as handwashing they generally provide good ventilation and adequate toilets. Also, the usual health care setting allows the opportunity to bill the appropriate insurance for the service and the assurance that both the venue and the individuals involved in the testing are certified, insured and credentialed.

Fear of testing

African Americans have had a long history of research abuses that have occurred under the disguise of treatment. This has left the community fearful of outsiders coming in to draw blood or take other biological samples as they did for 40 years in the Tuskegee syphilis experiment. Careful oversight of health systems contracted to do testing work must be in place and the community needs to be assured that their health, privacy and personal interest will be protected.

New COVID-19 Test

The newest test approved under the FDA Emergency Use Authorization (EUA) is the Quidel Rapid Antigen Test. This test will be easier to administer and have more timely results than the more familiar and frequently used molecular RT- PCR test. The antibody test has lower sensitivity and specificity and will require a confirmatory test before treatment is administered. These complexities could be lost in "pop-up" testing arrangements.

Governor Cuomo's Testing Strategy

Late Saturday evening, May 9, 2020, Governor Cuomo announced that testing in minority communities hit hardest by COVID-19 would be administered by Northwell Health, the largest health system in New York. Northwell will establish 22 temporary testing sites at churches in predominantly low income and minority communities. This will be in addition to previously established walk-in, drive-through and public housing testing sites. While this strategy of temporary "pop up" site testing might have been appropriate at the pre-peak or acceleration phase of the pandemic, it may not be necessary at this time when we are in the post-peak phase.

We believe there is a definite role for churches and other faith-based institutions in screening and health promotion activities. However, it may be unwise to steer testing to churches because people seeking COVID-19 diagnostic tests are more likely to be infected. In addition, church basements, roadside tents and public housing community rooms and lobbies are not the ideal venue for medical procedures such as nasopharyngeal swabs, venipunctures and fingersticks.
The Governor's proposed new strategy will require the expenditure of a lot of federal dollars. It appears to follow the "business as usual" flow of money through a large corporation that is outside of the community. It is common to have a large company with facilitated connections to government get contracted to perform a service in the community. Often this company has no significant investment in the communities and is usually headquartered elsewhere.

After the contracted work is completed, the company leaves much richer but the people in the community remain poor and the institutions and businesses remain underfunded. This flow of federal dollars needs to be disrupted this time, particularly since the COVID-19 has disproportionately affected this

population. We agree with Governor Cuomo that we want to build better, not the same.

Alternative Testing Plan

The Clarke Health Team has contacted local, state and national medical societies along with their ethnic and specialty counterparts to initiate discussions to develop an alternative testing plan that better serve the residents and health providers in communities of color.

Testing occurs in a variety of traditional and non-traditional temporary sites in Brooklyn. Many community health centers, doctors' offices, walk in clinics and hospitals are performing limited testing. The Governor's plan calls for additional temporary testing sites. A coordinated strategy to organize testing and distribute testing supplies rationally will better utilize our limited resources and assure more equitable allocation of funds and access to care. Stakeholders such as the State and City Health Departments, Health and Hospitals Corporation, hospital and nursing home associations and organized medicine should meet and coordinate regularly.

VI. Testing Plan

Structure

Laboratories: Quest, LabCorp, Bio-Reference, local laboratories (Lenco, Sunrise, Empire, Quality), hospital laboratories

Testers: primary care offices, community health centers, walk-in clinics and hospital clinics and practices

Supportive Care: radiologists, NY Home X-ray; isolation facilities- hotels; house call services; visiting nursing services

Process

- Each medical provider should be expected to offer or refer their regular patients for COVID-19 testing.
- There should be direct link and communication between testers and contact tracers.

- Testers should be prepared to offer treatment to or refer all positive patients to clinical care
- Insurance Plans should cover Covid-19 diagnostic testing at an enhanced rate given its risk and necessity.
- Creation of a directory of providers that treat COVID-19 and are accepting referrals

Outcome measures

The measure of effectiveness of the aforementioned recommendations would be how much the testing, contact tracing and treatment contributes to the suppression of new cases and deaths from COVID-19.

VII. Contact tracing

What is value of contact tracing in Brooklyn at this stage of the epidemic?

Contact tracing is most manageable and most effective early in an epidemic. It allows for finding individuals who are infected but don't know it. This can result in early diagnosis and treatment. It also allows public health officials to quarantine those exposed who might become infected and for medical professionals to isolate the infected. The results of these actions would be reduced new cases of disease and reduced death.

At the time of this writing, May 25, the COVID-19 pandemic appears to have already peaked in Central in South Brooklyn and is less widespread in the community. Contact tracing will have less impact as there will be fewer new cases and deaths would have already declined significantly. In the event of a second wave, contact tracing would also have some value. It is unlikely, however, that the second wave would be as disastrous as the first wave was so widespread in NYC and there is probably significant herd immunity.

Nonetheless, there may be still some need for contact tracing in specific clinical scenarios. One example is where it may be necessary to inform the close contacts of an infected individual of their potential risk, need for treatment, isolation or quarantine. Contact tracers can be assigned to community health clinics, hospital clinics, and primary care offices to assist in contact follow up.

Now that it has been established that the public health policy in the post- peak phase of the pandemic in Brooklyn will rely heavily on testing followed by contact tracing, it is important that the resources allocated for this activity remain in the district. It is here where our faith-based and local community institutions can serve an important role. At the core of contact tracing is effective communication and trust. As with testing, respect for the contacts along with maintaining their privacy should be assured. These principles are often already in place in the relationship with the faith community however privacy and harm reduction lie within the purview of the health professionals and their regulators.

We are very fortunate in the 9th district to have SUNY Downstate School of Public Health. Dean Kitaw Demissie has offered the resources of this educational facility to serve the community in areas of health promotion. There is a great opportunity here to engage the school and the New York City Department of Health and Mental Hygiene in the contact tracing process. The Health Team has been fortunate to have one of its members appointed to a NYCDOHMH advisory committee on contact tracing

We believe the best strategy for contact tracing is to assign them where testing should be performed and where treatment and follow up would normally occur. This would be community health clinics, medical clinics and hospitals clinics. The faith-based institutions can work with the health providers in health promotion and support the contact tracers.

Contact Tracing in New York City

Contact tracing falls within the purview of the Department of Health and Mental Hygiene for New York City. The department is working closely with the community through the T2 Community Advisory Board. For contact tracing to be effective, the individuals being traced must trust the contact tracers and their agencies. The Brooklyn strategy should involve hiring people from the community. This would make it easier to assure cultural competence and cultural sensitivity within the process. We recommend that at least 30% of the initial 1000 contact tracers be Brooklyn residents and at least 50% should be people of color. These hiring quotas should remain as additional contact tracers are hired.

Contact tracing is the process of identifying people who may have been exposed to someone who is infected with a disease (index case)

Contact tracing consists of 3 steps

Contact identification

Once a case has been confirmed, the infected individual will be asked to recall all their activities since onset of illness to identify anyone who is a high risk for having contracted the virus.

Contact Listing

Anyone considered to have been exposed to the infected individual will be listed as a contact. Attempts will be made to reach out the individuals, inform them of their contact status, and advise what their next steps should be.

Contact follow-up

Follow-ups should then be conducted with all contacts to monitor any symptoms or signs of infection.

Time is of the essence…

Identifying contacts as quickly as possible is crucial to containing the spread of a virus.

For this process to work efficiently and effectively, not only must **patients maintain transparency**, but the **workers must also ensure patient privacy and confidentiality**. This promotes an honest and open environment.

VIII. The Epidemiology of COVID-19 in Brooklyn

20% of New York City residents have been infected with COVID-19 based on a statewide antibody testing sample of 15,103 New Yorkers. This means that about 1.7 million of the 8.4 million New York City residents are likely to have been infected with COVID-19. This is 10 times the confirmed cases. The actual deaths from COVID-19 in New York City as of May 1 calculated from confirmed cases + probable COVID-19 deaths + excess deaths totaled 23,000, almost twice the amount of confirmed deaths.

Table 1 – Actual Cases and Deaths in New York as of May 1, 2020

Region	Confirmed cases	Actual Cases	Actual Cases /100,000	Reported Deaths	Adjusted Deaths	Adjusted Deaths /100,000
Brooklyn	44,303	520.000	20,000	3902	7400	285
New York City	166,883	1,700,000	20,000	18,282	23,430	278
New York State	240,586	2,400,000	12,300	24,069	-	-

The epidemic in New York City peaked in early April with the most new cases, 6361, reported on April 6 and the highest daily death of 590 occurring on April 7. On May 25 we had 214 new cases in New York City and 13 deaths suggesting that we are now entering the post-peak phase of the epidemic.

The number of confirmed cases represent 2% of Brooklyn's 2.6 million residents. However, based on New York State's antibody sampling tests, 20% of New York City population is infected. This would extrapolate to 520,000 COVID-19 infected Brooklynites. A minimum of 0.24% of Brooklyn's population have died from COVID-19 or 0.3% of the adult population. However when excess deaths are taken into consideration this percentage exceeds 0.28% which represents more than 7400 actual deaths. This represents the highest death rate of any county in the United States.

Table 2 - Cases and Deaths of COVID-19 Worldwide as of May 25th, 2020

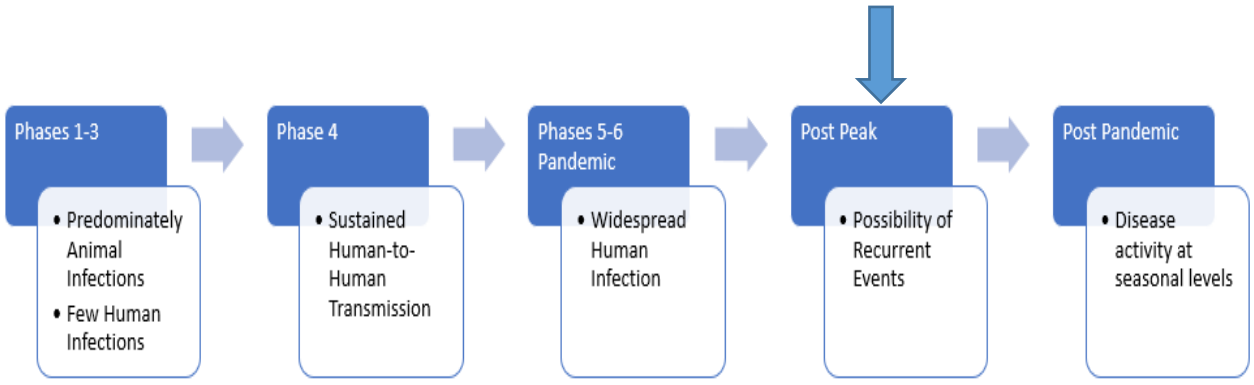
Region	COVID-19 Cases		COVID-19 Deaths		
	Confirmed cases	Cases per 100,000	Confirmed deaths	Deaths per 100,000	Population
Brooklyn	55,955	2122	6,602	250	2,637,000
New York City	203,220	2438	20,059	241	8,337,000
New York State	372,494	1915	29,310	151	19,796,000
USA	1,706,154	516	99,804	30	328,240,000
World	5,582,367	72	347,563	4	7,786,960,000

One analysis determined the infection fatality rate of New York City at 1.4% by dividing the 23,000 actual deaths by the 1.7 million estimated cases. The mortality rates of 0.28% was calculated by dividing the actual cases by the New York City population. It is therefore quite likely that more than 520,000 people in Brooklyn have been infected with COVID-19 and over 7400 have died. Mortality rates in Brooklyn neighborhoods were as high as 620/100,000 with 40,000/100,000 people infected to as low as 60/100,000 with 862/100,000 infected. This reflects the gross inequities within race and income that determines who gets sick and die versus who is protected and survives.

Table 3 - Neighborhood Disparities in Cases and Deaths in Brooklyn as of May 25, 2020

Neighborhood	Cases	Cases/ 100,000	Reported deaths	Deaths/ 100,000
Canarsie/Flatlands	489	3939	77	620
Borough Park	2934	3160	206	220
Downtown/Heights/ Park Slope	597	854	42	60

IX. Suppression Strategy for the Post- Peak Phase of the COVID-19 Pandemic in Brooklyn



Dr. Torian Easterling informed us that the New York City Department of Health and Mental Hygiene is now gearing up for the suppression phase of the COVID-19 pandemic. Some Asian, some European countries and Australia that experienced the pandemic before the United States have already entered the post-peak phase and are beginning to employ a suppression strategy.

In order to improve our performance at this phase we must begin our strategic planning for Brooklyn right now. Coordination between health facilities, public health officials and government is necessary. The solution should be a local one: employing local health providers, utilizing local health resources and facilities and thereby strengthening the community health infrastructure.

This will help the community to better manage future epidemics and better control endemic disease. Importing health care solutions from providers outside

the district will only serve to further drain economic resources from the community and perpetuate healthcare disparities. Hospitals, clinics and medical providers that serve minority communities are perpetually underfunded and poorly paid. This results in unequal segregated facilities and this, along with structural racism, result in unequal treatment and poorer health outcomes.

X. Low occupancy hospitals and limited availability of medical care

The Health Team learned from Patricia Winston RN, Vice president and chief operating officer of SUNY Downstate Hospital, that occupancy rates have fallen significantly over the past three weeks as we entered the post-peak phase of the epidemic. SUNY Downstate Hospital, a state designated COVID-19 facility, has been functioning at less than 50% occupancy. The hospital built tents on its grounds to accommodate the expected high volume of COVID-19 patients but our findings indicate that they were never fully utilized. Robert Guimento, President and CEO of New York Presbyterian Brooklyn Methodist Hospital reported the same low occupancy rates after the peak of the epidemic.

Clearly there was a period when hospitals in New York were overwhelmed by COVID-19 cases where many patients required ventilators and many died. At this point however, as hospitalizations and new cases of COVID-19 have decreased, Downstate, like so many other hospitals in New York and so many health facilities in the district suffer from low income due to low service volume.

SUNY Downstate is particularly hampered by its COVID-19 designation since many patients avoid the hospital thinking that they will have a greater risk of contracting the disease there. Ms. Winston has expressed her desire that this designation be removed. She pointed out that Downstate loses patients to Kings County Hospital next door which is not perceived as a COVID-19 hospital even though they are The Health Team strongly supports the removal of this designation from both hospitals.

XI. Physician Impact Survey

An analysis of the COVID-19 physician impact survey done by the Medical Society of the County of Kings (MSCK) revealed that of the doctors surveyed about 50% had to reduce their work hours and 27% had cut staffing. About 40% had stopped

practicing for a limited time. 70% had reduced income but only 37% received money from the federal stimulus. Less than a quarter provided diagnostic testing for COVID-19 and 55% did not feel they had adequate PPE. These findings are consistent with this service reduction and income loss of health providers in the District.

A Medical Society of the State of New York (MSSNY) survey revealed that 84% of the physicians surveyed had implemented telehealth.

XII. Gaps in clinical care

Our investigations have identified numerous gaps in coordination of care, availability of care and inadequate strategic planning for future outpatient primary and tertiary medical care.

An example of a gap in coordination of care is the case of a 72-year-old lady with COVID-19 pneumonia who was discharged home from the hospital after 2 weeks. As she lived alone, home care with home health aide, oxygen and pulse oximetry monitoring was prescribed. At the time of the transition of care medical visit, the patient did not have a pulse oximeter and the home health aide had not been deployed. In this case the services were prescribed, covered by insurance and potentially available.

A serious and life-threatening gap in care occurred in an 81-year-old hospitalized COVID-19 patient who was a resident of a nursing home. The patient was chronically disabled from a previous stroke and required full assistance with feeding. As she was in isolation and had a poor appetite from the acute illness, a temporary nasogastric tube was placed for feeding. After two weeks it was determined that she needed a more durable PEG tube but this was not readily available as "elective" procedures were not being performed. By the third week the patient had become severely malnourished, develop a rapidly worsening bed and sore became septic. The gaps in this case were inadequate feeding due to isolation from family and nursing care and unavailable medical procedures.

When our team discussed strategic planning for future care with community health centers, hospital officials and frontline primary care physicians,

it was not clear to us that these executives and practitioners had clarity in what the next steps should be.

The Team surmised that innovative ideas will not come from the bureaucrats and administrators as they are focused moment to moment on the daily tasks at hand. They see solutions that worked with the previous paradigm which for obvious reasons do not apply in this pandemic and post-pandemic world. We anticipate that these innovations will appear when we coordinate with academia, the church and community organizations.

Building tents, drive-through testing, pop-up public health teams are not the solutions for a densely populated, highly developed community as exists in Central and South Brooklyn. There is a very strong public health infrastructure which includes: a Public Health School, a University Hospital with a medical school, established churches, and numerous community organizations. We also have a well-established medical community with strong county and ethnic medical societies. These are the structures we should lean on in times of an epidemic. We should support these institutions so they remain strong and have adequate resources to reduce excess deaths and suffering from epidemic and endemic diseases.

XIII. Treatment

The World Health Organization (WHO) and the US Center for Disease Control (CDC) state that there is no drug or vaccine approved for the treatment or prevention of Novel Coronavirus 2019. The treatment is supportive care. Preventive measures include non-pharmaceutical interventions such as physical distancing, masks and disinfection of surfaces and fomites.

Vaccines won't help us in this pandemic. Non-pharmaceutical interventions are the mainstay of epidemic/pandemic management. By definition, vaccines and drugs are not helpful in controlling novel epidemics since they are not available. We might see a useful vaccine and maybe some helpful drugs if COVID-19 remains endemic with high disease rates and there are recurrent epidemics.

It is unlikely that we will be successful if we use technology and innovation only to fight infectious contagious diseases like COVID-19. A strong public health system

with good surveillance, a ready- rationalized-universal-comprehensive health delivery system and intelligent leadership is how we mitigate against high infection rates, suffering, death and economic loss during a pandemic.

Treatment and preventive protocols should include the following:

1. All individuals diagnosed with COVID-19 should be isolated until clear of active infection. If isolation cannot be carried out effectively at home (multiple individuals living together with inadequate number of bathrooms and bedrooms) then isolation in a separately designated facility should be ordered by a qualified health professional.
2. Persons under investigation for COVID-19 should be quarantined from all individuals presume to be free of active COVID-19 disease. If quarantine cannot be carried out effectively at home (multiple individuals living together with in adequate number of bathrooms and bedrooms) then quarantine in a separately designated facility should be recommended by a qualified health professional.
3. Hotels, hostels and other rooming facilities not adequately utilized can voluntarily become certified as quarantine or isolation facilities. Should it become medically necessary, some facilities should be designated as isolation and quarantine facilities by the appropriate state and federal authorities. The facilities and their workers can be paid by the government and will operate with the assistance of health and medical personnel.
4. Routine health care services should be delivered mostly by telemedicine throughout the epidemic.

XIV. Discussion

Health outcome data continue to show that America leads the developed world in poor outcomes. America has the highest infant mortality and maternal mortality among OECD countries. America also has the lowest life expectancy. At this point there is enough data to show that America has suffered the worst outcome from COVID-19 of the developed countries, including China. This is not because we have not spent a lot of money on healthcare. In fact, we spend more than any other country in the world. Our health outcome are poor because we have a profit-driven healthcare financing system that is not universal, not comprehensive and not rational. Each stakeholder acts with their own interest in mind. There is inadequate national planning. We have an underfunded and marginalized public

health system. This became apparent in our high COVID-19 case rate and mortality rate with the usual pattern of marginalized populations suffering worse outcomes.

It is true that viruses do not discriminate when they affect humans, however human exposure to disease, subsequent infection, treatment and care are based on one's race and income. Low income service workers who are predominantly Black and Latino have less opportunity to work from home, shelter safely, quarantine or isolate effectively. Nurses aids, home health aides, custodians, cleaners, transit workers, delivery people, store clerks, cashiers and other front-line service workers have higher exposure to disease as they interact in proximity and for extended periods with potentially infected disease carriers. Often they are poorly protected. When infected they have a greater risk of suffering worse sickness and death. Lower income and racially disadvantaged individuals suffer the worst consequence of the **social and structural determinants of health**: *poor segregated housing*, *high population density* (too many people in the same household with inadequate bedrooms and bathrooms), *poor sanitation* (infrequent garbage pick-up and street sweeping, poor pest control), *poor nutrition* (neighborhood stores with bad food options), *poor access to healthcare (*no insurance, under-insurance, under-resourced hospitals and clinics*)* , and *knowledge of good hygiene practices.*
As with all disasters, we have the opportunity to rebuild but we must build better.

The foundation of any healthcare system is the primary care. Independent medical practices, community health clinics, walk-in/urgent care clinics, hospital practices and clinics are the primary care providers in our system.
This is where the patient enters the system. It is where relationships based on trust develop with the healthcare delivery system. Therefore, these institutions must be strengthened in order to keep suffering, hospitalization and death as low as possible. Primary care was never a significant part of this pandemic response. Primary care physicians were generally excluded from the testing programs.

We have a moral obligation to fix the health inequities that cause excess deaths and suffering in our neighborhoods, cities and country. Our survival as a species and the future of our nation and our children require immediate political action.

It is time for us to reduce the income gap. We need a livable minimum wage and a guaranteed minimum income for all Americans now. We need one comprehensive, universal health insurance for all Americans that is financed based on income and wealth and not employer sponsored.

XV. About the Authors

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The authors of this report thank the individuals and consultants who have provided intellectual and technical support including Lisa Eng, D.O., Crystal J. Anderson, M.P.H. and Ashley Moore