UNIVERSITY AT ALBANY
State University of New York

Differential Impacts of COVID-19

Understanding and eliminating minority health disparities in New York

June 2021

In April 2020, the University at Albany was asked by Gov. Andrew Cuomo to research why communities of color in New York have been disproportionately impacted by COVID-19. The goal of this research, carried out in partnership with the New York State Department of Health and other partners, is to add to the existing well of knowledge about health disparities in New York by identifying the environmental, socioeconomic and occupational factors that explain why COVID-19 has disproportionately harmed Black and Hispanic New Yorkers – and to propose practical intervention strategies to eliminate these disparities and save lives.

For additional information about this project please see albany.edu/mhd or contact Theresa Pardo, special assistant to the president and project director for this initiative at tpardo@albany.edu.

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EXECUTIVE SUMMARY

The COVID-19 pandemic has exacted a starkly unequal toll on New Yorkers of color – both in terms of the virus itself and the accompanying social and economic impacts of the pandemic. These are not separate issues. They stem from the structural racism embedded in American society. While our work begins by establishing a statistical baseline for how the virus's unequal toll played out in the early months of the COVID-19 pandemic in New York, any analysis of these disparities that looks solely at hospitalizations and deaths misses a tremendous piece of this tragic and preventable story. Minority health disparities have always existed in the United States. But COVID-19 has exposed and exacerbated these disparities in ways policymakers cannot ignore; doing so would mean accepting inequity with life and death consequences.

The COVID-19 pandemic also exposed gaps in existing knowledge about the causes of these inequities and, more important, how to end them. We need, for example, more and better data about the toll of the virus in New York's Indigenous communities and Indigenous communities more generally. Additionally, our work suggests important differences exist in the way different minority groups experience the progression of the disease. More work is needed to fully explore those differences and their causes, particularly as they relate to New York's Asian American Pacific Islander communities. This project is an important initial step toward filling some of these gaps and identifying interventions that, by necessity, must be informed by and rooted in community experiences and insight.

The University at Albany (UAlbany) began this project at the direction of Gov. Andrew Cuomo with extreme urgency at the height of the most serious public health emergency New York has faced in a century. That urgency led to the creation of a new health equity research ecosystem at UAlbany that will long outlast this project and continue to produce new knowledge, insights, and recommendations to combat future public health threats we have yet to even imagine. The trauma inflicted on New Yorkers by the COVID-19 pandemic cannot be undone. But university researchers and government policymakers should jointly pledge to do everything in their power not to allow the lessons learned from COVID-19's unequal path across New York to go unheeded.

Introduction

This report is the second and final brief on the research commissioned in April 2020 by Gov. Andrew Cuomo to analyze COVID-19's disproportionate impact on New York's Black and Latinx populations. The University at Albany (UAlbany), one of the State University of New York's (SUNY) four research centers and one of the most diverse R1[1] universities in the country, was chosen to lead this project.

In response, UAlbany President Havidán Rodríguez outlined a vision to strengthen the University's short- and long-term capability to meet unprecedented and time-sensitive crises like the COVID-19 pandemic with relevant, timely and action-oriented community-engaged research. The president's vision was grounded in UAlbany's existing research strengths, including the Center for the Elimination of Minority Health Disparities (CEMHD); a first-of-its kind College of Emergency Preparedness, Homeland Security and Cybersecurity (CEHC); and interdisciplinary expertise in public health, social welfare, and public policy, as well as across the arts and sciences and education. It was also grounded in UAlbany's commitment to diversity and inclusion as one of the institution's five strategic core priorities. With an undergraduate population that includes nearly 40 percent of students from backgrounds underrepresented in higher education— of which 17.6 percent are Hispanic and 19.7 percent are Black or African American— many UAlbany students and their families belong to communities disproportionately impacted by COVID-19. An additional 8.3 percent of UAlbany's undergraduate population is of Asian descent. In a pandemic in which communities of color and immigrants have proved especially vulnerable and where significant disparities in health care and outcomes have had tragic consequences, UAlbany's students mirror the broader population in New York.

UAlbany's rapid response resulted in the creation of a new collaborative research ecosystem organized around strengthening our understanding of the complex factors contributing to minority health disparities and developing evidence-based interventions to mitigate and eliminate these disparities, improve health outcomes, and save lives. Given the urgency of the still-unfolding public health crisis, the University mobilized quickly to ensure the work of this team could contribute to the state's immediate pandemic response in addition to help increase New York's long-term capacity to confront future public health emergencies in a timely way. This collaboration has led to new insights about the epidemiology of COVID-19 as well as the social, environmental, and occupational factors contributing to the disproportionate impact of the virus on New York's Black and Latinx communities.[2]

Leveraging seed funding from SUNY, this project has grown well beyond Gov. Cuomo's initial vision and has led to additional externally funded research, strengthened and expanded partnerships within the SUNY system and between UAlbany and the community, and developed new mechanisms for the rapid dissemination of research findings and policy and practice recommendations. These collaborations will endure beyond the end of this project and are poised to continue producing cutting-edge interdisciplinary research to inform evidence-based policies and interventions to advance health equity in New York for many years to come.

This report serves two purposes: 1) to summarize the currently available results of the year-long COVID-19 minority health disparities project spearheaded by UAlbany and 2) to briefly describe how UAlbany built the new research ecosystem that produced this work in hopes that it might serve as a model to others in the future.

THE PROJECT

In April 2020, as evidence of the disproportionate impact of the COVID-19 pandemic on New York's Black and Latinx communities mounted, Gov. Andrew Cuomo charged University at Albany President Havidán Rodríguez with assembling and leading a team of public health, social welfare, emergency preparedness, and other research and practice experts in a study of the environmental, socioeconomic, and occupational factors contributing to disproportionate racial and ethnic impacts of COVID-19.

More information: www.albany.edu/mhd

The first section of this report highlights key findings and concludes with a set of recommendations for continued research to further health equity in New York. Due to the large volume of work produced by the 14 research projects carried out under the umbrella of UAlbany's COVID-19 minority health disparities enterprise, not all of the findings can be discussed here. A more comprehensive summary of each of the 14 projects and a set of related white papers and journal articles can be found in the University at Albany Scholars Archive.

The second section provides an overview of the rapid response research and collaboration ecosystem developed by UAlbany to execute this project. We offer this overview as a potential model for future university-government collaboration. The hallmarks of this ecosystem are its multidisciplinarity and the collaborations it fostered with New Yorkers in impacted communities, healthcare organizations, and other SUNY institutions and government agencies. Bringing scholars from diverse disciplines together with community organizations, frontline healthcare providers and administrators, researchers from SUNY Upstate and Downstate, and state Department of Health staff members has stimulated the growth of new research collaborations in the short term. In the long term, this enterprise has cultivated a new professional network, fostered the recognition and exploration of shared interests and values, and built a reservoir of collegiality, good will, cooperation and trust. This social capital will help sustain our work beyond this pandemic as we collectively work toward achieving health equity in New York.

In total, this brief should not be viewed as the capstone of a project with a discrete beginning and end but rather as a status report as this work enters a critical new phase. The research collaborations seeded over the last year have begun to take root and leverage external funding to more deeply explore minority health disparities and their causes. New York's investment in this project, in other words, will continue to bear fruit. That is a testament both to New York's commitment to health equity and the power of its public universities to help realize that goal.

Framing the research

Our approach to this project was anchored by one difficult but inescapable truth: COVID-19 did not create disparities in health outcomes but rather exposed and exacerbated them in ways policymakers cannot ignore. Systemic racism has produced, and continues to produce, deeply entrenched differences in health care and the social, economic, and environmental conditions that account for inequities in longevity and the likelihood of disease. This was true long before the first case of COVID-19 was diagnosed in New York on March 1, 2020 and will remain true unless the resources and will exist to make systemic changes. Pre-existing co-morbidities, unequal access to health care, crowded housing, differences in jobs deemed essential and the ability to work from home, and disparities in other social determinants of health have been linked to more severe COVID-19 outcomes for people of color compared to whites. All of these factors are inseparable from racism in the United States.

The earliest days of the pandemic in New York were ones of uncertainty and crisis as government leaders, researchers, and the world at large watched with horror the breathtaking speed of contagion and illness that was projected to overwhelm healthcare facilities in New York City in a matter of weeks. Amid a swiftly escalating public health emergency, and in the face of grim early statistics once again suggesting stark disparities in hospitalizations and death, UAlbany's research teams sought first to better understand differences in the extent of COVID-19 exposure, infection and the resulting stages and severity of illness. While the notion of minority health disparities was far from new, COVID-19 was a novel threat. This first step established a critical baseline against which we could then more fully explore the deeply entrenched social determinants of these differences.

This project overview begins with early evidence uncovered by UAlbany researchers that documented disparities in COVID-19 health outcomes for New Yorkers of color and that formed the basis for our first report in July 2020: "Differential Impacts of COVID-19 in New York State."[3] The overview then turns to later work conducted by the multidisciplinary researchers who focused on understanding the origins and effects of these health disparities as well as promising interventions with the potential to mitigate or eliminate them.

[1] https://carnegieclassifications.iu.edu/classification_descriptions/basic.php

[2] We recognize that the terms used by members of different communities to refer to themselves vary. When referring to specific research conducted for this project, this report uses the demographic terms employed by the respective research teams. Otherwise, the report uses the terms in the governor's original charge (i.e., Black, Latinx).

[3] The Project website can be found at https://www.albany.edu/mhd. The July 2020 brief is located at: https://www.albany.edu/communicationsmarketing/covid-19-documents/Racial%20Disparities%20in%20COVID-19%20Bonus%20Briefing%20Paper%5b2%5d.pdf.

ACCESSING PROJECT RESEARCH

Project updates and results are available in three forms:

1. This report provides an overview of project activities, highlights from individual research studies, and recommendations.
2. A comprehensive white paper provides synopses of 14 projects conducted/planned under the umbrella of this enterprise and is available in the University at Albany Scholars Archive.
3. Reports and published journal articles present updates from individual research studies, study findings, and recommendations for policy and practice. Project reports, publications and other resources are available in the University at Albany Scholars Archive.

This overview includes work in various stages of development — from completed studies based on data available in the early phases of the pandemic to pilot studies that form the foundation of external funding proposals and more extensive investigations planned for the future. More information about the 14 research projects launched as part of this effort is available in a comprehensive white paper, and project-specific papers are available in the University at Albany Scholars Archive for the project.[4]

The work is organized by four topical areas: 1) documenting COVID-19-related minority health disparities in New York, 2) place-based determinants of minority health disparities, 3) disparities in the effects of COVID-19, and 4) interventions. We conclude this section with general recommendations we believe to be essential to the attainment of health equity in New York.

Documenting COVID-19 minority health disparities in New York

THE ANTIBODY STUDY

In late April 2020, as New York became the epicenter of COVID-19's spread in the United States, **Dr. Eli Rosenberg** and his team including staff from the New York State Department of Health used antibody testing to reveal the extent of virus infection across New York. This testing exposed some of the earliest and most compelling evidence of the disproportionate effects of race and ethnicity in accounting for who was infected with Sars-CoV-2.[5]

The team conducted a seroprevalence study of more than 15,000 people at grocery stores in 26 counties across New York looking for the presence of SARS-CoV-2 antibodies, the detection of which offered the most reliable estimate to date of cumulative infection. Based on this data, researchers estimated that more than two million New Yorkers had been infected – though not necessarily diagnosed – through late March 2020 and that the pattern of infection showed marked racial and ethnic disparities.

Antibody rates for Hispanic/Latino New Yorkers were more than 19 percentage points higher than their share of the state's adult population, while antibody rates for non-Hispanic Black/African-Americans were more than six percentage points higher than their share of the population. Asian New Yorkers had antibodies at a rate nearly one percentage point lower than their share of the adult population, while white New Yorkers were estimated to have been infected at a rate of nearly 34 percent – dramatically less than their 58 percent share of the adult population.

THE DISEASE CONTINUUM

The antibody study was complemented by a research team led by **Dr. David Holtgrave**, dean of UAlbany's School of Public Health, which documented racial and ethnic COVID-19 disparities across the disease continuum.[6] Researchers compared white, Black, and Hispanic adults in New York at the infection, diagnosis, hospitalization, and fatality stages. Similar to the antibody study, they found profound racial and ethnic disparities in infection. Beyond infection, they found large differences in the extent to which Black and Hispanic adults, in comparison with non-Hispanic white adults, proceed across the disease continuum from infection to hospitalization and death.

This analysis suggested that disproportionate fatality rates among Blacks and Hispanics were a function of factors at earlier disease stages. Specifically, the disparity in fatality rates for Hispanic New Yorkers relative to whites appeared to be related to their disproportionately higher levels of exposure and subsequent infection. The disparity in fatality rates for Black vs. white New Yorkers, however, appeared to be driven by both greater exposure and greater illness severity (as indicated by hospitalization rates after infection) among Black New Yorkers. This work was the foundation of this project's first report, "Differential Impacts of COVID-19 in New York State," which was produced in July 2020 and is available at https://www.albany.edu/mhd. Its findings confirmed early statistical evidence of COVID-19 health disparities and set the stage for a deeper exploration of the social determinants of COVID-19 disparities conducted by other UAlbany research teams.

DISPARITIES ACROSS THE DISEASE CONTINUUM

In New York City, the age-adjusted fatality rates among Black and Hispanic New Yorkers were double or more the rate for white individuals. Further, Black and Hispanic New York City residents were hospitalized at more than double the age-adjusted rate of white New Yorkers. Despite making up 18 percent and 14 percent of the state population respectively, Black and Hispanic individuals comprised 34 percent and 18 percent of COVID-19 hospitalizations. Hispanic New Yorkers were much more likely to be infected with COVID-19 (28.4 percent) than Black (18.7 percent) and white (8 percent) New Yorkers.

Place matters in minority health disparities

To contain the spread of COVID-19, many governments around the world instituted unprecedented mandatory "lockdowns" that restricted individual mobility to reduce virus transmission from day-to-day interactions. The effects of these policies on pandemic outcomes, however, remain largely unknown. Further, existing research has focused on infections and deaths at the city, county, state or country level, but significant disparities can exist *within* a city and have received less scrutiny. Infectious diseases tend to be clustered spatially and diffuse across space. UAlbany geographers and demographers used finely tuned statistical and spatial methods for observing disparities that are linked to locations as well as socioeconomic conditions and an individual's place of birth. This work has documented that where individuals live and where they were born make a difference in the likelihood of contagion and in the progression of the disease.

THE EFFICACY OF STAY-AT-HOME ORDERS

What was the effect of restricting mobility and other urban factors on health disparities in the pandemic within New York City? **Drs. Youqin Huang** and **Rui Li** explored how mobility restriction policies, mobility within census tracts and socioeconomic factors shaped intra-city health disparities during the pandemic. Their findings demonstrated the effectiveness of the stay-at-home order in limiting movement. On average, people spent about 20 percent more time at home in 2020 than during the same time period in 2019. Increases in time spent at home in 2020 corresponded with decreased infections and deaths. Meanwhile, the number of MTA subway train stations, and especially bus stops (as an indicator of mobility within a census tract), were associated with a greater number of infections and deaths – further evidence of the link between mobility and spread of the disease. Socioeconomic factors also shape pandemic outcomes and spatial disparities. Census tracts with a higher concentration of racial or ethnic minorities, higher poverty rates, larger household size, more households living with overcrowding, and a larger share of elderly people saw higher rates of infection and death.

[4] We feature names of the lead researcher(s) for each of the projects described with affiliations and contact information provided in the Appendix. Information about members of each of the project teams can be obtained from the comprehensive white paper and from individual project reports.

[5] Rosenberg, E. S., Tesoriero, J. M., Rosenthal, E. M., Chung, R., Barranco, M. A., Styer, L. M., Parker, M. M., Leung, S.-Y. J., Morne, J. E., Greene, D., Holtgrave, D. R., Hoefer, D., Kumar, J., Udo, T., Hutton, B., & Zucker, H. A. (2020). Cumulative incidence and diagnosis of SARS-CoV-2 infection in New York. *Annals of epidemiology*, 48, 23-29.

[6] Holtgrave, D. R., Barranco, M. A., Tesoriero, J. M., Blog, D. S., & Rosenberg, E. S. (2020). Assessing racial and ethnic disparities using a COVID-19 outcomes continuum for New York State. *Annals of epidemiology*, 48, 9-14.

IMMIGRANTS AND THE PANDEMIC

Through independently conducted but complementary research, **Dr. Samantha Friedman** and her research team produced a spatial analysis that yielded similar results on socioeconomic factors but that further explored the relationship between place of birth and pandemic outcomes. New York City is well-known as a major destination for immigrants. In 2017, more than 37 percent of New York City's population was born outside the United States, and among whites, Blacks, Hispanics, and Asians, the shares of foreign-born population were 22 percent, 32 percent, 40 percent, and 71 percent respectively. These percentages are much greater than those for the United States as a whole.

NEW YORK CITY NEIGHBORHOODS & COVID-19

New York City is a racially and ethnically segregated city, and decades of redlining and disinvestment make communities of color and immigrants more susceptible to greater levels of COVID-19 mortality than neighborhoods that are predominately white.

Among other findings, this team's analysis showed that communities with large shares of foreign-born Hispanics and foreign-born Asians were particularly vulnerable to COVID-19 mortality, even after controlling for socioeconomic factors, health, and the age of those living in these areas. These results suggest that nativity and immigration must be considered when accounting for the variation in COVID-19 deaths in New York City and perhaps other major metropolitan areas.

LANGUAGE PROFICIENCY AMONG IMMIGRANTS

Another important line of inquiry focuses on the difficulties that immigrant populations have in gaining access to health care due to the lack of linguistic and cultural assistance within the healthcare system. **Drs. Dina Refki**, **Jeanette Altarriba**, and **Rukhsana Ahmed** are exploring the impacts of the lack of culturally and linguistically appropriate services within the healthcare system. Their empirical work is focused on specific policies and practices and on examining interventions that make healthcare systems compliant with the federally mandated *Culturally and Linguistically Appropriate Standards*.[7] At the time of this report, they are fielding a survey of healthcare professionals focused explicitly on the perspectives of practitioners and their actions to improve the access of clients with limited English proficiency to healthcare services. Their work with video and visually based communication strategies seeks to promote health literacy through the creation of culturally and linguistically tailored health information. This information is important all the time – but especially so during a pandemic when other socioeconomic factors make these same populations even more vulnerable to severe outcomes.

Effects of COVID-19 in New York

It may be years before researchers fully understand the complex impact of the pandemic on the well-being of New Yorkers. It is already painfully clear, however, that residents of color experienced disproportionate harm that manifested in numerous and often compounding ways. Some of our research in this area addressed broad, multifaceted pandemic effects, while other efforts focused more narrowly on issues like sexual and reproductive health, community support networks and food insecurity. The main takeaway from this work is that the unequal outcomes of COVID-19 are not limited to infection, hospitalization and death. They also manifest in a cascading series of social and economic hardships that stem from pre-existing inequality, the disease itself and the extraordinary measures taken to contain it.

RACE, ETHNICITY, AND SEXUAL AND REPRODUCTIVE HEALTH

The time-sensitive needs of pregnancy care, prevention and termination are often sidelined during crises. Prior to the pandemic, racial disparities in access to prenatal, obstetric, and family planning care and in birth outcomes and maternal-infant mortality rates were already well-documented throughout New York. As a result, the effects of race and ethnicity on the quality of sexual and reproductive health care received during the pandemic also are critical to understand. **Drs. Rajani Bhatia** and **Elise Andaya** explored how existing disparities may have been compounded by the disproportionate impact of COVID-19 on racial and ethnic minorities. Interviews with frontline healthcare providers and advocates who serve minority populations suggest that the pandemic exacerbated existing disparities in access to, and the quality of, sexual and reproductive health care. Some reported that those giving birth in hospitals were denied access to support persons and that mothers were separated from their newborns – both producing negative birthing conditions. Further, there was widespread fear of hospitals and increased anti-immigrant political sentiment directed at minority and immigrant populations already hard-hit by the pandemic, leading them to avoid care altogether or to delay accessing time-sensitive prenatal and abortion care. Respondents reported that those already most vulnerable to poor maternal and birth outcomes also were fearful of U.S. Immigration and Customs Enforcement and/or child welfare agencies. Further, lack of coordination between New York State and New York City, among hospitals, between hospitals and local health departments, and between hospital administrators and frontline providers produced widespread confusion about safety protocols and clinical policies, which increased fear and anxiety for both patients and providers. Closure of health services during local lockdowns and differences in telehealth access only further fueled access disparities among vulnerable groups.

SUPPORT FROM THE BLACK CHURCH

Community organizations play important roles in sustaining their members during uncertain times. The Black Church has historically served as a consistent source of strength, fellowship, information, and resources for daily life in the Black community. **Dr. Julia Hastings** is conducting research aimed at understanding how the Black Church continued to fulfill this vital role without one of its hallmarks — providing physical space for people to gather, seek fellowship, worship and pray. Early findings indicate that Black churches were differentially prepared to support their congregations during the COVID-19 pandemic.

Churches that already had a virtual presence explored alternative ways to deliver messages about COVID-19, support their communities through ministry, and offer sermons to comfort their congregants. Some churches used social media to circulate easily accessible pandemic-related health information and resources that resembled information available from public health departments. In support of stay-at-home mandates, pastors created workshops on navigating COVID-19 and shared fitness routines, recipes, self-employment best practices, and information on financial literacy. In general, pastors encouraged their congregants through social media to find activities resembling life before the pandemic. It is vital that we assess the roles and capacities of community organizations like the Black Church as we consider more effective interventions to prevent health disparities in the future.

FOOD INSECURITY AND OTHER EFFECTS

Several research teams fielded surveys to assess a range of effects of the pandemic on New Yorkers. Teams led by **Drs. Lawrence Schell, Beth Feingold** and **Ashley Fox** surveyed a total of nearly 2,000 New Yorkers during different time segments between late November 2020 and early February 2021.

Already a pernicious problem prior to COVID-19, food insecurity rose to greater heights during the pandemic for respondents of all racial and ethnic groups. Dr. Feingold's survey of Capital Region residents found that before COVID-19, nearly 78 percent of Black respondents experienced food insecurity, rising to nearly 94 percent after the pandemic began. Similarly, nearly 63 percent of Hispanic respondents experienced food insecurity before the pandemic, which increased to more than 76 percent following it. By comparison, 20 percent of white respondents experienced food insecurity before the pandemic, rising to 40 percent after the pandemic began. In Dr. Schell's survey, 43 percent of City of Albany residents disclosed that it had been difficult to get food for themselves and their families due to COVID-19, but there were no statistically significant differences on the basis of race/ethnicity. Forty-seven percent disclosed being somewhat or extremely concerned about being able to obtain healthy food for their families. Dr. Fox's survey of New York residents revealed that one-third of the respondents reported food insecurity during the pandemic, and nearly 50 percent had sought food assistance. Hispanic respondents were most impacted, with 39 percent cutting down or skipping meals and 56 percent using some type of food assistance, while 50 percent of non-Hispanic (NH) Black respondents reported seeking food assistance compared with 39 percent of white respondents. These rates were even higher among parents, with 74 percent of Hispanic parents seeking food assistance, followed by 70 percent of NH Black and 55 percent of NH white parents.

Respondents of all ethnicities experienced effects on employment with additional evidence of disparities.

[7] https://minorityhealth.hhs.gov/assets/pdf/checked/finalreport.pdf

Slightly more than half of the sample (55 percent) in Dr. Fox's survey of New Yorkers reported at least one of the following: job loss, furlough, reduced work hours, pay cut or insurance loss. More Hispanics (58 percent) reported one or more of these job issues, followed by NH white (55 percent) and NH Black (51 percent) respondents. In Dr. Schell's survey, 90 percent of Albany residents experienced COVID-19-related employment effects, with 16 percent losing their jobs. Some experienced reduced working hours (32 percent), while others were required to work more hours (11 percent). In Albany, Black/African American respondents were significantly more likely to experience one of these consequences than others in the sample. While there was no significant difference within the Albany sample in the proportion of Black/African Americans versus others receiving stimulus checks or deposits, significantly fewer Hispanics received stimulus checks than non-Hispanics. It is not known what role immigration status may have played in this finding because data on immigration status was not collected out of concern for inhibiting participation in the survey.

Finally, slightly more than half of the respondents in Dr. Fox's survey of New York residents reported difficulty making payments for recurring expenses over the previous six months, including 23 percent with difficulty paying rent/mortgage and 19 percent with difficulty paying utilities. More Hispanic respondents reported these issues than either of the other race/ethnicity groups. Hispanic respondents were 23 percentage points more likely to have experienced difficulty paying bills than NH white respondents, and NH Black respondents were 16 percentage points more likely. Similarly, in Dr. Schell's Albany sample, more than 50 percent of respondents were concerned about losing their housing, and Black/African Americans were significantly more likely to be concerned about losing their housing compared to others. Only 17 percent of Hispanics were not concerned about losing housing, whereas 40 percent of non-Hispanics were not concerned. In short, the economic fallout from the pandemic for New Yorkers of each demographic group manifested with disparities broadly similar to those seen in health outcomes. This is important because these impacts were felt by even those who never became ill, and it challenges us to think more holistically as we consider the unequal toll of the pandemic in New York.

Three critical interventions

Each research project in our portfolio focused on generating actionable recommendations. Here we highlight three projects that assessed the adequacy and potential success of several large-scale policy interventions aimed at reducing contagion and mitigating disparate health outcomes. The work described below proposes strategies for reducing vaccine hesitation,[8] improving contact tracing, and using community health workers to improve access to health care.

VACCINE HESITANCY

Safe and effective vaccines with the potential to seed herd immunity are viewed by many as game-changers in the battle against COVID-19. But systemic racism, and the justified distrust in both the medical profession and government that it has caused, have profoundly complicated personal decisions to take the vaccine. Several national polls conducted in mid-2020 found nearly half of Black and Hispanic respondents unwilling to be vaccinated against COVID-19 compared to about one-quarter to one-third of white respondents. Black hesitancy appeared to have decreased by winter 2021 but remained higher than among white and Hispanic respondents.

In August 2020, **Dr. Kate Strully** and members of the UAlbany minority health disparities project team collaborated with the Healthcare Association of New York State to convene focus groups of healthcare professionals working in Long Island, Brooklyn/Queens, Syracuse and Buffalo to discuss attitudes toward potential COVID-19 vaccines. The participants, and the communities they served, were characterized by substantial racial-ethnic diversity and included immigrant and refugee populations.

Participants in these groups consistently expressed distrust of the government and medical institutions rising from inequities in the U.S. healthcare system and legacies of historical medical abuse, including references to the infamous Tuskegee experiment. Participants also reported being inundated with contradictory messages about how quickly a vaccine could be safely developed and about political influences on the government's vaccine-related decision-making. Participants emphasized the importance of early and ongoing engagement with communities through partnerships and honest and transparent conversations. Much has changed since the summer of 2020, but several key themes still ring true: justified distrust continues to be a central challenge, as is contending with frequently changing information about vaccine eligibility and availability. Using these insights as well as prior research on vaccination, Dr. Strully found that hesitancy within minority communities would be a significant barrier to widespread acceptance of newly developed COVID-19 vaccines and the attainment of herd immunity.

Dr. Strully's research resulted in a series of recommendations, available in full here. Broadly, this research concluded that overcoming distrust requires a campaign that begins well in advance of vaccine delivery and that acknowledges and addresses the historical injustices that drive suspicion among racial and ethnic minorities. Further, such a campaign must emphasize understandable and culturally appropriate messages that directly address people's concerns about the vaccine-development process and leverage existing community infrastructure and trusted voices to deliver timely and accurate information.

CONTACT TRACING

Contact tracing is an important tool for managing community spread of COVID-19 and supporting economic reopening. In some regions of the United States, however, nearly half of those who test positive decline to provide detailed information about their contacts. One significant factor in that resistance is distrust, which is particularly relevant in minority communities. **Drs. Jason Randall** and **Dev Dalal** collected and analyzed survey data that indicates the importance of both misinformation and distrust as determinants of contact tracing compliance. Specifically, trust in contact tracers, contact tracing knowledge, and political partisanship all predict individuals' intentions to comply with contact tracing requests. This suggests that members of minority groups must see contact tracers as reliable, competent, and concerned about their interests in order to follow their guidance. Additionally, the more members of minority communities know about contact tracers and what they do – including what information they gather and the importance of contact tracing in the fight against COVID-19 – the more likely they are to comply with contact tracing requests. While distrust of and noncompliance with contact tracing is certainly not limited to racial and ethnic minorities, it merits special attention because of their disproportionate risk of infection and severe disease due to other socioeconomic factors.

COMMUNITY HEALTH WORKERS

Community health workers (CHWs) have been one promising response in the search for healthcare interventions that address disparities in access to health care. As trusted members of the communities they serve, CHWs connect vulnerable individuals to vital health and human services and help build individual and community capacity by providing support while empowering individuals to act on their own behalf. **Dr. Annis Golden** conducted interviews to document the impact of COVID-19 on CHW programs and their clients, the strategies employed by CHWs to overcome pandemic-imposed barriers, and how CHWs sustained connections with their clients given their former reliance on face-to-face interactions.

Some CHWs used video platforms like Zoom, although more often Facebook Messenger or other social media applications, in addition to phone calls and socially distant in-person home visits. They shared information by providing video links to clients via texts, PDF documents attached to emails, and Facebook postings, along with low-tech solutions like mailing or hand-delivering clients printed materials. These CHWs emphasized the importance of meeting clients wherever they are in terms of technology and face-to-face meetings and mixing technologies rather than attempting one uniform approach. CHWs also stayed connected to each other through Zoom and group texts and, in some better-resourced programs, also connected clients to each other through Zoom-hosted education and support groups.

One major hurdle was the variation in the technology available to CHWs, as many CHWs and their clients initially lacked dedicated smartphones, laptop computers, tablets, and the skills required to use them. Moving forward, it is critical to identify the needed digital resources to keep CHWs and their communities connected because inadequate access to technology is yet another inequity highlighted by COVID-19. In short, the pandemic powerfully underscored the fact that access to the internet itself is a social determinant of health.

Reflections on the research program

The UAlbany research teams seized the unique opportunity presented by COVID-19 to conduct research under ongoing, real-world pandemic conditions. As of the writing of this report, however, the pandemic continues to evolve and we can envision

[8] This work was presented in January 2021 to Gov. Cuomo's Vaccine Equity Task Force.

additional issues in need of systematic investigation with an emphasis on health equity – as they relate to COVID-19 and future as-yet-unknown health crises. Three such issues are discussed below.

THE IMPORTANCE OF EXPANDING TELEHEALTH ACCESS FOR ALL, ESPECIALLY IN LANGUAGES OTHER THAN ENGLISH.

While the technology has been available for decades, telehealth and the internet connectivity it relies on have now become essential resources that must be more fully exploited by institutions that provide health care. In a future likely to include continued threats from infectious disease, it is vital that all patients and providers be able to access telehealth services, especially those from diverse language and cultural communities.

THE INTERCONNECTEDNESS OF POVERTY/ SOCIAL VULNERABILITY AND RACE/ ETHNICITY.

These variables are highly interrelated. Poverty and social vulnerability measures capture disadvantage resulting from economic, educational and social inequalities. Meanwhile, race and ethnicity variables may capture vulnerabilities developed over lifetimes of discrimination, inequalities in access to and quality of medical care, and exposure to environmental toxins. Our research does not clarify the interrelationships among these factors but convincingly establishes that the level of risk and the progression of this disease may differ between minority groups, suggesting the need to tailor interventions to racial-ethnic communities depending on unique factors relevant to each.

THE PERNICIOUS LACK OF TRUST IN THE MEDICAL COMMUNITY AND IN GOVERNMENT.

Our research on vaccination, contact tracing and community health workers underscores the critical importance of building trust in medicine and government. In some cases, the lack of trust is historical and deeply rooted in past egregious practices as well as ongoing biases and neglect. In other cases, distrust has been created through the politicization of public health. Trust in government, especially public health in government, needs to be rebuilt, and that will likely require renewed efforts on the part of policymakers to create public health and communication systems that are credible and command the respect and confidence of the public. Health equity is not possible without it.

Not surprisingly, the totality of this work raises more important questions than it is now able to answer. There is considerably more work to be done. In addition to addressing these larger themes, it is imperative that we emerge from the COVID-19 pandemic with a better understanding of the conditions for rapid and effective exchanges between university researchers who produce knowledge, the members of communities whose lives depend on it, and the government policymakers who must apply it to the problems of today and to the crises of tomorrow.

Building a rapid-response, interdisciplinary research ecosystem

While the findings of this research project are compelling, they would not have been possible without the collaborative research ecosystem assembled at UAlbany to support the work. In addition to producing important insights about the unequal toll of the COVID-19 pandemic in New York, this project provides a useful model for how to rapidly mobilize university researchers in support of government's emergency response in a way that promotes multidisciplinary collaborations that will outlast the immediate emergency.

The following sections of the report outline both UAlbany's ongoing efforts to respond to Gov. Cuomo's initial charge as well as our work to increase the state's readiness to respond to future pandemics in a way that accounts for and mitigates the likelihood of health disparities. These activities are aimed at institutionalizing and strengthening UAlbany's health equity research and collaboration ecosystem to ensure ongoing attention to the importance of building mutually beneficial community-university partnerships, carrying out cutting-edge interdisciplinary research and producing actionable, evidence-based policy and practice recommendations.

CREATION OF THE ENGAGED RESEARCHERS GROUP

By May 15, 2020, the core of a novel multidisciplinary research and collaboration ecosystem, known as the University at Albany COVID-19 and MHD in NYS Engaged Researchers (ER) Group, was established. The ER Group includes more than 35 UAlbany researchers and professionals who partnered with other universities and community organizations impacted by COVID-19 to produce new knowledge for research and practice. The ER Group committed itself to understanding how systemic racism, embedded in the fabric and dynamics of our social, economic, and political structures, creates unequal conditions of well-being, disease and death. The group was focused both on responding directly to the charge from Gov. Cuomo to illuminate the ways in which social determinants of health have become life and death issues in the COVID-19 pandemic as well as to identifying interventions that reduce or eliminate these unequal impacts of social factors on disease.

ENABLING RAPID RESPONSE RESEARCH THROUGH SEED FUNDING

The seed funding associated with this project was used to support the rapid implementation of research projects designed to generate policy-relevant insights about the differential impacts of COVID-19 in New York's Black and Latinx populations. Eleven projects were selected for funding through a competitive process, and funds were distributed to research teams beginning in September 2020. Funded teams were required to produce a white paper describing their results by the end of January 2021, to present a lightning talk on their findings to the ER Group, and to pursue additional external funding to advance their work. While results from these projects are summarized in the first part of this report, more extensive synopses are available in the University at Albany's Scholars Archive. Researchers used a variety of methodologies to conduct this work, including focus groups, interviews, and surveys. Many collaborated with long-standing community partners to identify and engage community representatives in both defining the research and in carrying it out.

BUILDING A HEALTH EQUITY RESEARCH AND COLLABORATION HUB

President Rodríguez's vision for this project set the stage for the creation of a novel multidisciplinary and multi-campus research and collaboration hub to explore and produce actionable recommendations to combat minority health disparities resulting from COVID-19. This project offered a powerful opportunity to build new research infrastructure that would outlast it and enable UAlbany to continue to support the state's efforts to understand and eliminate minority health disparities into the future. These efforts included the creation of a shared health equity research agenda with SUNY Upstate Medical University and SUNY Downstate Health Sciences University; a valuable knowledge-sharing partnership with the Healthcare Association of New York State (HANYS) that includes co-leading a monthly health equity webinar series; a symposium and an edited volume of health equity work; and a new web-based platform to expand the research and collaboration ecosystem through additional partnerships and funded research focused on ongoing health equity research and its translation to practice.

PURPOSE-DRIVEN PARTNERSHIPS

Strategic partnerships were critical to executing this project's ambitious goals. Existing partnerships among faculty in the School of Public Health and the New York State Department of Health made it possible for UAlbany researchers to quickly produce the first research brief on the extent of the disparities experienced by Blacks and Hispanics in New York during the earliest weeks of the pandemic. Further, the longstanding partnership between UAlbany and the Rockefeller Institute of Government served as the foundation for the later joint release of key research.

New partnerships were also seeded. Engaging Northwell Health, for example, ensured that the project's first research brief reflected the most recent data on infections and hospitalizations. Partnering with HANYS allowed the rapid collection of data about vaccine hesitancy from focus group participants across the state, as well as the co-creation of an ongoing national webinar series for healthcare policymakers and practitioners.

To provide community-informed disparity mitigation and prevention strategies, UAlbany researchers drew on their long-standing expertise in community-engaged scholarship. In some cases, research teams tapped into existing community networks to carry out their work, and in other cases, new partnerships were forged. For example, three UAlbany researchers who had not worked together prior to meeting as part of this new ecosystem have formed a new multidisciplinary research team and developed a research program around their shared interests in culturally and linguistically appropriate public health messaging. Through this project, the UAlbany team met and began working with researchers from both SUNY Upstate and SUNY Downstate on two different-but-related projects, both of which include community partners in the development

and testing of messaging strategies in the clinical setting. This team has been approached by multiple community-based organizations, including the Tug Hill Commission, interested in co-research projects and practice guidance.

Still more collaborations are being explored. For example, UAlbany is working with SAS, the statistical software provider, through the company's Data for Good (DfG) program. DfG organizes data analytics volunteers, within the framework of appropriate data-sharing agreements, to work with researchers and community-based organizations engaged in data-rich projects to analyze and develop new insights from the data.

EXPANDING THE CONVERSATION BEYOND OUR CAMPUS

To ensure this project benefitted from the deep well of knowledge across SUNY, UAlbany's Division of Research partnered with its counterparts at SUNY Downstate Health Sciences University and SUNY Upstate Medical University to strengthen existing and build new research and practice collaborations focused on health equity. With this goal in mind, the research divisions convened a three-campus community conversation that resulted in a set of recommendations for building a multi-campus health equity research and collaboration hub and identified a set of enabling conditions for success. These conversations were carried out through a series of virtual sessions in January 2021. Across the three sessions, more than 200 individuals from the three campuses and beyond participated. Small group discussions were facilitated to consider two questions:

- What research, collaborations, and/or approaches to conducting research are needed to advance efforts to eliminate minority health disparities?
- How might current or future partnerships help advance a health equity agenda? What new partners do you need?

The resulting report on the three-campus community conversation highlights the shared goal of capitalizing on cross-campus strengths and providing infrastructure to fuel collaboration to solve complex problems and deliver rapid responses to emerging health equity problems. Among other things, the recommendations call for cross-campus data sharing, creating and institutionalizing processes that support meaningful community and stakeholder engagement, prioritization of projects that could be accelerated by cross-campus collaboration, and shared curricula and training.

AMPLIFYING THE MESSAGES

A key takeaway from this project is the need to share the progress made and the knowledge generated as rapidly and widely as possible with stakeholders and, more important, to meaningfully incorporate their feedback into ongoing research. Doing so provides an essential mechanism to give a voice to communities that have long been unheard in academic research and government policy-making environments.

Over the last year, the UAlbany project team made numerous presentations on this work to a wide array of constituencies, including the Puerto Rican and Hispanic Task Force of the New York State Legislature, HANYS Executive Committee, and various community-based organizations including, for example, Common Ground and the Albany Minority Health Task Force. Project updates and results were presented to groups including the NYS COVID-19 Vaccine Equity Task Force, and the researchers themselves have regularly presented lightning talks to each other about their research interests, plans and findings.

One outcome of the partnership with HANYS is an ongoing monthly webinar series called "Turning the Tide: Understanding and Eliminating Minority Health Disparities." This series pairs UAlbany experts with nationally prominent colleagues from community-based organizations and other universities to describe the differential impacts of COVID-19 on communities of color in New York and elsewhere, identify factors that contribute to the disparities, and share promising practices to eliminate them. This series is scheduled monthly through December 2021.

The UAlbany ER Group has continued to generate findings to inform research and practice related to minority health disparities and continues to release this new work through editorials, podcasts and blogs. Researchers also have made virtual (and generally recorded) presentations on their work to numerous communities, organizations and as part of academic and professional conferences and workshops. Findings that first appeared in project-related white papers are now increasingly being published in peer-reviewed journals. To ensure permanent access to products generated through this work, the UAlbany Libraries have established a Scholars Archive Repository for permanent preservation and easy access.

Conclusion

Collectively, this body of research offers compelling evidence for the need to think expansively about health equity. The COVID-19 pandemic exposed not just how this novel virus appears to have exacted an unequal toll on New Yorkers of color but also suggests they were disproportionately harmed by the cascading social and economic damage inflicted by the pandemic. These are not separate issues. Each, in its own way, stems from the inequity and structural racism deeply embedded in American society. Any analysis of the unequal toll of COVID-19 that looks solely at hospitalizations and deaths misses a tremendous piece of this tragic and preventable story. Minority health disparities have existed for as long as the United States – and, in fact, much longer. But COVID-19 has exposed and exacerbated these disparities in ways policymakers cannot ignore because doing so would mean accepting inequity when its consequences are the difference between life and death. This pandemic also exposed important gaps in existing knowledge about the causes of these inequities and, more important, how to end them. We need, for example, more and better data about the toll of the virus in New York's Indigenous communities and Indigenous communities more generally. Additionally, our work suggests important differences exist in the way different minority groups experience the progression of the disease. More work is needed to fully explore those differences and their causes, particularly as they relate to New York's Asian American Pacific Islander communities.

The UAlbany minority health disparities project is an important initial step toward filling some of these gaps and identifying interventions that, by necessity, must be informed by and rooted in community experiences and insight. As the University now transitions toward executing a long-term health equity research agenda, the researchers involved in this project have committed to produce an edited volume of essays and theoretical and empirical chapters focused on COVID-19 and minority health disparities in New York. A June 2021 symposium brought together experts to share work specifically focused on New York and will result in the production of a peer-reviewed and edited volume that will provide an additional opportunity to expand on these important themes and messages.

Through these efforts, a project that began with great urgency at the height of the most serious public health emergency New York has faced in a century will live on to produce new knowledge, insights and recommendations to combat future public health threats we have yet to even imagine. The trauma inflicted on New Yorkers by the COVID-19 pandemic cannot be undone. But university researchers, community organizations, and government policymakers can and should jointly pledge to do everything in their power not to allow the lessons learned from COVID-19's unequal path across New York to go unheeded.

Appendix A

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