

DIFFERENTIAL IMPACTS OF COVID-19 IN NEW YORK

Understanding and eliminating minority health disparities in a 21st-century pandemic

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 Northwell Health, 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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Minority Health Disparities in a 21st-Century Pandemic: A comprehensive report of project research focused on New York

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 additional minority communities in New York. This project has been 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 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.

Table of Contents

<i>Introduction</i>	5
<i>Documenting minority health disparities in New York State</i>	7
The Antibody study.....	7
The disease continuum	8
<i>Determinants of/precursors to minority health disparities</i>	8
Stay-at-home orders and spatial disparities in the COVID-19 pandemic in New York City	8
New York City neighborhoods, racial-ethnic residential segregation, and COVID-19 ...	10
Immigrants and the pandemic	13
Risk and policy as determinants of COVID-19 testing and vaccination	14
<i>Effects of COVID-19 in New York</i>	16
Capital Region collaborative community survey to document disparate COVID-19 impacts	16
Race, ethnicity, and sexual and reproductive health	20
Mental health effects in multigenerational households	22
Support from the Black Church.....	24
Food insecurity in New York and nationally.....	25
Food insecurity in New York’s Capital Region.....	27
COVID-19 effects and public attitudes	29
<i>Three Critical Interventions</i>	33
Understanding and addressing vaccine hesitancy	33
The promise of community health workers.....	35
The effectiveness of contact tracing.....	38
<i>Toward the realization of health equity</i>	39

Introduction

This is a report of the research carried out under the umbrella of UAlbany's project "Eliminating Minority Health Disparities in a 21st Century Pandemic." The project was commissioned by Gov. Andrew Cuomo to analyze the disproportionate impact of COVID-19 on New York State's (NYS) Black and Latinx populations.¹ The University at Albany, one of the State University of New York's four research centers, was chosen to lead this project. The 14 research studies synopsized here were conducted by teams of public health, social welfare, emergency preparedness, and other experts assembled to study a broad range of factors related to the disproportionately negative experiences and outcomes with COVID-19 that residents of color were confronting. In this report, we describe what has been learned so far from the research produced in part or wholly in response to this request over the subsequent year and some of its implications. A companion report describes how UAlbany built the new multidisciplinary research ecosystem that produced this work in hopes that it might serve as a model to others in the future.

Although our struggles with COVID-19 are far from over, it is not too soon to take stock of what we have learned in this project about the pandemic and what we are still striving to know. The knowledge created by researchers at the University at Albany over the past year has informed policy responses to this public health crisis and will improve our understanding of how we may best confront similar threats in the future. Moreover, what we learn now enables us to understand the conditions for rapid and effective exchanges between researchers who produce knowledge and the communities that consume it, especially government policymakers who must apply what is learned to address pressing problems now and in public health crises that loom ahead.

The earliest days of the pandemic in New York were ones of immediate crisis, as government leaders, researchers, and the world at large were shocked by the breathtaking speed of contagion and illness projected to overwhelm healthcare facilities in New York City in a matter of weeks. UAlbany researchers sought first to better understand differences in the extent of COVID-19 exposure, infection and the resulting stages and severity of illness. The rapid growth of infection along with a better understanding of the role played by asymptomatic individuals in the spread created an appreciation for how broad and ongoing testing could help build strategies for containment. Two research teams from UAlbany's RNA Institute responded to the need for better testing.

However, as deaths multiplied over those initial weeks so did the recognition that other characteristics correlated with the identities of those stricken. Some of the earliest research from UAlbany researchers documented the stark and significant, although at

¹ 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).

that time incomplete, evidence of racial and ethnic inequalities in the toll of the virus on NYS residents. While minority health disparities were far from a new phenomenon, COVID-19 was a novel threat. This initial work established a critical baseline against which we could then more fully explore the deeply entrenched social determinants of these differences.

As many now acknowledge, while the COVID-19 pandemic did not *create* disparities in health outcomes, it has *exposed* and *exacerbated* them. Research has well established that health is partly a function of socioeconomic position and that social determinants – in addition to biological or genetic factors – play a significant role in health. Systemic racism produces deeply entrenched differences in health care and the social, economic, and environmental conditions of life that account for inequalities in longevity and the likelihood of disease. Pre-existing co-morbidities, unequal access to health care, housing and living arrangements, inequalities within job categories deemed essential versus those enabling work from home, and other social determinants of health are factors that have been linked to COVID-19 outcomes but also are themselves legacies of racism perpetuated by the structures of U.S. society.

Research conducted as part of this project has informed policy responses to COVID-19 and will improve our understanding of how to confront similar public health crises in the future. Beyond the statistics that lay bare the grim contours of the disparities in hospitalizations and death, our research teams provide important insight on:

- How the level of risk – and the progression of the disease – differs across minority groups, providing key insights into how to begin to tailor interventions
- How mitigation measures such as stay-at-home orders affect infection and death, outcomes that also vary by census tract based on factors such public transit density and socioeconomic indices
- The importance of expanding telehealth access in languages other than English and for a variety of health conditions, including low-risk sexual and reproductive health services
- The critical role of the Black Church in providing accurate and potentially life-saving public health information to congregants
- The effects of distrust of the medical community on willingness to vaccinate and participate in contact tracing

Our research illuminates the ways in which poverty, living conditions, discrimination, unequal access to health care, and justified distrust of the medical system are life and death issues in the COVID-19 pandemic — and will continue beyond it — in the absence of acknowledgement, understanding, and reform. To be sure, this work raises more questions than it answers. But it is imperative that we emerge from this pandemic with a better understanding of how to enable rapid and effective exchanges between

researchers who produce knowledge and the policymakers who must apply it to the problems of today and the crises of tomorrow.

Our discussion begins with early evidence that documented the presence of disparities in COVID-19 outcomes among residents of color in New York State.² The topics then turn to later work conducted by a team of researchers that focused on understanding the origins and effects of health disparities, along with interventions that have the potential to mitigate or eliminate them. Much of this research began in the summer of 2020, and this collection features work in various stages of development — ranging from completed studies based on data available in the early phases of the pandemic to pilot studies and proposals for additional funding and more extensive investigation in the future.³

This report is organized by four topical areas: 1) documenting COVID-19-related minority health disparities in New York State, 2) the causes and precursors of minority health disparities, 3) disparities in the effects of COVID-19, and 4) interventions. We conclude with general recommendations about research that should be pursued in the future.

Documenting minority health disparities in New York

The antibody study

The earliest UAlbany research was instrumental in exposing the disproportionate effects of race and ethnicity in accounting for who was infected, who became sick enough to be hospitalized, and who ultimately died. In late April 2020, **Prof. Eli Rosenberg** of UAlbany's School of Public Health and his team used antibody testing to reveal the extent of virus infection across the state as well as demographic characteristics of those who had been infected.⁴ At that time, NYS was the epicenter of SARS-CoV-2 transmission in the country.

The team conducted a seroprevalence study of over 15,000 individuals at 99 grocery stores in 26 counties across NYS looking for the presence of antibodies, the detection of which provides an estimate of cumulative COVID-19 incidence. Based on this data, it was estimated that over two million individuals in NYS had been infected through late March 2020. In contrast to their percentage of the population, cumulative incidence was higher for Hispanic/Latinos (36.6 percent vs. 17.4 percent of New York adults) as well

² The Project website can be found at <https://www.albany.edu/mhd>.

³ It is not possible to summarize everything that each of the research projects have sought to accomplish, but herein an effort is made to convey the focus of each project and some of the most interesting findings. Authors' names are linked to the associated white paper in the University at Albany [Scholars Archive](#), which can be used to obtain more detail.

⁴ 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., Hofer, 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.

as non-Hispanic Black/African-Americans (20.2 percent vs 13.9 percent of New York adults) and lower for non-Hispanic Asians (7.6 percent vs 8.6 percent of New York adults) and non-Hispanic White adults (33.7 percent vs 58 percent of New York adults).

The disease continuum

The antibody study was complemented by the work of another research team led by **Dean David Holtgrave**, also of UAlbany's School of Public Health, which documented a more precise view of racial and ethnic disparities in the effects of COVID-19 across the progression of the disease.⁵ Here the researchers created a disease outcome continuum with stages corresponding to infection, diagnosis, hospitalization, and fatality (or recovery) and compared white, Black, and Hispanic adults at points across these stages. Like the Rosenberg et al. (2020) study, but in this case using data from New York City, they found disparities in infection based on race and ethnicity. Beyond infection, they found large differences in the extent to which Blacks and Hispanics, in comparison with whites, proceed across the disease continuum from infection to hospitalization and possible fatality.

This analysis suggested that the 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. However, the disparity in fatality rates for Black vs. white New Yorkers 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 the project's early Issue Brief "[Differential Impacts of COVID-19 in New York State](#)" produced in July 2020. Its findings set the table for a deeper exploration of the social determinants of health conducted by the other research teams.

Determinants of/precursors to minority health disparities

Later UAlbany research has turned to finely tuned statistical and geographic methods for observing how disparities in experiences with the virus are linked to spatial, socioeconomic, nativity, and environmental factors. Here we discover that where individuals live, where they are born, their proficiency in English language, their perceptions and decision-making, and conditions of their daily lives make a difference in the likelihood of contagion and the progression of the disease.

Stay-at-home orders and spatial disparities in the COVID-19 pandemic in New York City

⁵ 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.](#)

The issue. A key strategy adopted by much of the world has been the unprecedented “lockdowns” mandated by government leaders that restrict individual mobility due to the risk of infection through free movement and the interaction between individuals. However, the effects of this policy on pandemic outcomes remain largely unknown. Existing research has focused on infections and deaths at the city, county, state or country level, but significant disparities *within a particular city* have been less studied. Further, infectious diseases tend to be clustered spatially and diffuse across space along with predictive factors that vary over space. Thus, a specialized spatial approach can be useful in studying pandemic outcomes viewed as intrinsically spatial phenomena that can differ on the basis of location. What was the effect of restricting mobility on health disparities in the COVID-19 pandemic within New York City? How can that information be used to identify appropriate policy interventions for optimal outcomes? [Prof. Youqin Huang and Rui Li](#)⁶ in UAlbany’s Department of Geography and Planning conducted research to determine how mobility restriction policies shaped intra-city health disparities during the pandemic.

The investigation. Profs. Huang and Li explored the hypothesis that the lockdown policy contributed to spatial disparities in infection and death rates. Beyond mobility restrictions, previously existing socioeconomic indicators, along with an uneven mobility infrastructure in the city defined by public transit networks, may also contribute to spatial disparities.

The project used a spatial method to study COVID-19 infection and death rates using census, transit network, and cellphone mobility data. The public transit network data consisted of the number of bus and subway stations in each census tract and was used to indicate the connectivity and mobility infrastructure for each tract. Cell phone data, courtesy of SafeGraph, enabled the researchers to measure time spent at home and time spent outside of home by comparing data in 2020 to the same period in 2019 to assess the effectiveness of the stay-at-home order and consequent mobility reduction. Finally, the 2018 American Community Survey (ACS) 5-year estimates provide census-tract level socio-demographic data such as age structure, average household size, ethnic group composition, education, median household income, poverty level, crowding, and commuting mode.

The findings demonstrated the effectiveness of the stay-at-home order. On average, people spent about 20 percent more time at home in 2020 than in the same time period in 2019. With every one percentage point increase in time spent at home in 2020, infections and deaths decreased by 0.5 percent and 0.7 percent respectively. Meanwhile, the number of MTA subway train stations, and especially bus stops (indicating the extent of mobility within a census tract), were positively associated with pandemic outcomes, as census tracts with each additional station or stop are expected to have more infections and deaths. Socioeconomic factors also shape pandemic outcomes and spatial disparities. Census tracts with a higher concentration of ethnic

⁶ Profs. Huang and Rui thank Nicholas Schiraldi from Information Technology Services and Jonathan Kappel from Geography and Planning at the University at Albany for their contributions in data retrieval and processing in this project.

minorities, higher poverty rates, larger household size, more households living with overcrowding, and a larger share of elderly people (60+) have higher infection and death rates. The lack of health insurance resulted in higher death rates, but not higher infection rates. Other analyses demonstrated that the effects of the stay-at-home order, public transit system, and socioeconomic indicators vary significantly across space. High-risk census tracts can be identified based on the effects of one or more specific factors. However, city-wide spatial clusters can be fashioned based on their similarities in pandemic outcomes and other factors.

What we are learning. While policy interventions such as stay-at-home orders are generally applied uniformly across the city, this research showed that their effects are often spatially varied. Thus, localized policy interventions targeting high-risk neighborhoods and clusters may produce more effective results and minimize impacts of the virus on vulnerable neighborhoods and subpopulations. Through a spatial lens, we can see how a mobility restriction policy and public transit infrastructure, together with socioeconomic indicators, shape spatial disparities in pandemic outcomes. This helps us to identify the institutional and environmental sources of health disparities. The adoption of a spatial approach and a focus on the connections between government policies, the built environment, and mobility point to some important new directions in understanding health disparities.

New York City neighborhoods, racial and ethnic segregation and COVID-19

The issue. A spatial approach also allows us to explore variation in COVID-19 mortality rates across neighborhoods in New York City, which so far has lost more lives from COVID-19 than any other U.S. city. However, these lost lives have not been equally distributed across New York City's neighborhoods. Given NYC's racial and ethnic segregation and deep history of redlining, communities of color and immigrants reside in NYC neighborhoods with poorer opportunity structures than whites, which make these communities more susceptible to higher levels of COVID-19 mortality. [Prof. Samantha Friedman](#) of UAlbany's Department of Sociology and her research team⁷ explored spatial variation in COVID-19 mortality rates from February 29, 2020 to February 1, 2021 across neighborhoods in NYC that vary in the racial, ethnic, and nativity status compositions of their residents. This analysis is particularly unique for its examination of nativity status because this is one way of understanding how immigrant communities have fared during the pandemic.

The investigation. New York City is a major destination for immigrants; in 2017, 37.1 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 22.0 percent, 32.3 percent, 40.3 percent, and 70.9 percent respectively. These are percentages that are much greater than the numbers for the United States as a whole. Thus, it is possible to characterize neighborhoods on the basis of the percentages of

⁷ Tabassum Insaf, New York State Department of Health; Jin-Wook Lee, University at Albany, SUNY; and Temilayo Adeyeye, New York State Department of Health.

native- and foreign-born non-Hispanic whites, Blacks, Hispanics, and Asians. Also considered were the effects of 1) a concentrated disadvantage index, based upon poverty level, unemployment rate, welfare receipt, percent of female-headed households, and percent of children under 18 years of age, and 2) the percentage of the population in neighborhoods that are age 64 and older and have been told they have high blood pressure.

What we are learning. The analysis reveals a hierarchy based on racial, ethnic, and to a lesser extent nativity status composition, in the communities hardest hit by COVID-19 mortality. Most of the neighborhoods with large shares of native-born, white populations are those with the lowest levels of COVID-19 mortality. For example, most of the middle and southern sections of Manhattan (see Figure 1) fall in this category as well as the southern portion of Staten Island, neighborhoods in Greenpoint and Downtown-Heights-Park Slope, Brooklyn; and neighborhoods in Long-Island City-Astoria and Bayside-Little Neck, Queens. However, communities such as Fordham-Bronx Park, Crotona-Tremont, High Bridge-Morrisania, Hunts Point-Mott Haven, Pelham-Throgs Neck in the Bronx; Bedford Stuyvesant-Crown Heights, Flatbush, Canarsie-Flatlands, and East New York in Brooklyn; and Jamaica, Queens, with large shares of native- and foreign-born Black populations, have fared among the worst. Neighborhoods composed of large percentages of native- and foreign-born Hispanic populations have lower levels of COVID-19 mortality rates relative to Blacks, but they fare much worse than neighborhoods that have greater shares of native-born white population. Neighborhoods with large percentages of native- and foreign-born Asian and foreign-born white populations fall in the middle of the hierarchy of places on the continuum of COVID-19 mortality rates.

Further analysis reveals that the percentage of older residents and the level of concentrated disadvantage are all positively and significantly related to the level of COVID-19 mortality in communities across New York City. Communities with greater levels of concentrated disadvantage contain more residents at lower levels of socioeconomic status, who have consistently been shown to have poorer health outcomes and higher rates of mortality than people at higher levels of socioeconomic status. In addition, communities beset by concentrated disadvantage tend to have higher levels of crime and greater levels of disinvestment, leading to poorer structural resources like educational and healthcare institutions and the widespread availability of recreational facilities and first-rate supermarkets. The percentage of native-born Black residents is also positively and significantly related to neighborhood-level COVID-19 mortality, but once the health of neighborhoods is accounted for, the percentage of native-born Black population is rendered insignificant. This is attributable to the fact that neighborhoods with large shares of native-born Black population and greater levels of COVID-19 mortality rates are in areas with a high burden of hypertension, which has shown to be a reflection of the persistent racial residential segregation faced by Blacks in New York City.

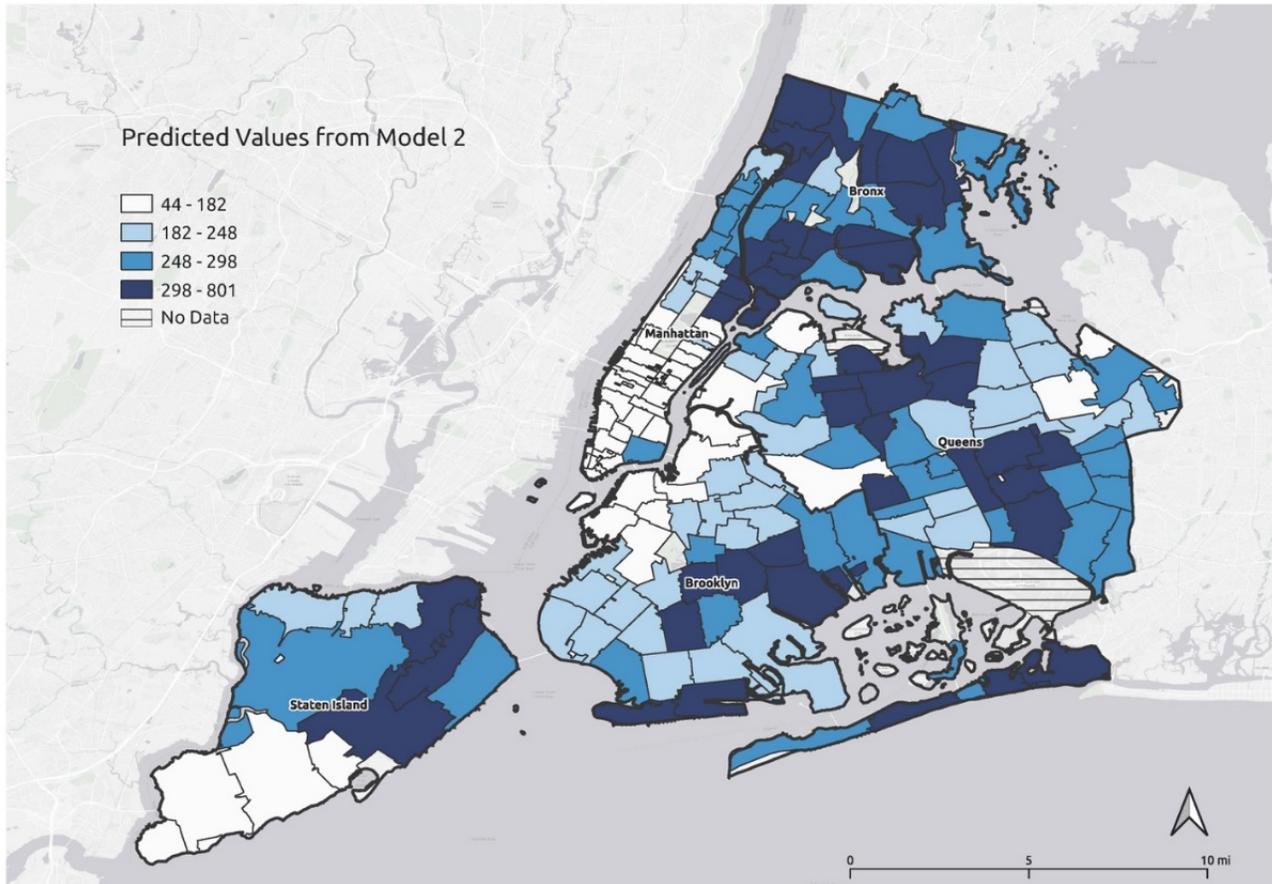


Figure 1. Predicted rates for COVID-19 mortality per 100,000 population at the ZCTA* level in New York City, Feb 29, 2020 to Feb 1, 2021

*ZCTA = Zip Code Tabulation Areas are statistical entities that represent United States Postal Service Zip Code service areas.

The analysis also shows that communities with large shares of foreign-born Hispanics and foreign-born Asians are particularly vulnerable to COVID-19 mortality, even after controlling for concentrated disadvantage, health, and age composition of these areas. These results suggest that other factors need to be considered in accounting for the variation in COVID-19 deaths in New York City and perhaps other major metropolitan areas. Because many of the deaths in New York City resulted from the population becoming ill at the outset of the pandemic, when masks were not mandated and stay-at-home orders were not in place, it is possible that communities of immigrants may have been more vulnerable because of contact with others who recently traveled from overseas. In addition, immigrant communities tend to have extensive social networks, thereby putting them at higher risk.

Immigrants and the pandemic

The issue. One of the reasons that immigrant communities have suffered a disproportionate share of COVID-19 deaths may be the difficulties that immigrants have in accessing health care due to language and other communication barriers. **Prof. Dina Refki**, director of the Center for Women in Government and Civil Society, **Dean Jeanette Altarriba** of the College of Arts and Sciences, and **Prof. Rukhsana Ahmed**, chair of the Department of Communication, are exploring the effects of the lack of culturally and linguistically appropriate services within the healthcare system and what healthcare providers are doing to address them.

Communicative and cultural non-concordance in health care are strongly associated with outcomes such as lack of access to preventive care; delays in, misunderstanding of and denial of treatment; receipt of the wrong treatment and errors in diagnosis; ethical compromises; costly and unnecessary diagnostic tests; lack of patient satisfaction; and increased healthcare costs.

Patients with Limited English Proficiency (LEP) experience disparities in health outcomes due to the lack of linguistically and culturally appropriate information and services. During the pandemic, LEP residents have experienced lower access to testing and higher probability of a positive test. Further, immigrants face multiple social vulnerabilities arising from low labor access and protections. They are affected by deportations, detentions, and family separations, pointing to the effects of governance and legislation.

The investigation. To deepen our understanding of the needs of LEP residents and healthcare providers during COVID 19 and to identify strategies that providers and community health workers use to address barriers, the research team has fielded a national survey asking community and frontline health workers and social service providers about their perceptions of barriers and experiences in developing innovative practices to address the unique prevention and treatment needs for this population. Providers are asked what they and their organizations face in treating and caring for LEP patients and what linguistic and cultural strategies would be most helpful in helping them to meet the needs of LEP patients. These data will be used to design and test interventions that address this public health crisis and those in the future.

In related work, the team is exploring the effectiveness of video-based communication strategies for addressing health disparities, having received seed funding from the State University of New York's Prepare Innovation Grant to evaluate the effectiveness of existing YouTube videos in promoting COVID-19 prevention.⁸ The team is assessing changes in knowledge and attitudes in four language communities (Arabic, Bengali, Chinese and Spanish) to make recommendations on how to use videos as a creative, low-cost communication medium for communicating culturally and linguistically appropriate health messages.

⁸ See also: <https://www.albany.edu/news-center/news/2021-student-faculty-team-weighs-effective-covid-19-messaging-those-limited> and <https://twitter.com/ualbany/status/1377339542794084363?s=20>

In another project, the team has partnered with SUNY Downstate Health Sciences University in a proposal to create *fotonovelas*, which are visual novellas often using photographs rather than drawings, that are culturally and linguistically appropriate. The *fotonovelas* will be prepared in five languages to educate members of five language communities about COVID-19 prevention and test their effectiveness in behavioral change. The team also partnered with SUNY Upstate Medical University to seek funding to support a study that examines the effectiveness of an implementation process that institutionalizes an integrated care model for serving culturally and linguistically diverse patients. Another study advances social cohesion in the Tug Hill region of New York to address the impacts of community fragmentation, isolation, and disorganization as a social determinant of health.

What we are learning. The goal of this team is to assess intervention strategies from several health care vantage points. They have designed a systematic literature review that identifies all structural interventions that have proven effective in enhancing healthcare outcomes for LEP patients. Their empirical work is focused on policies, practices, and interventions that make healthcare systems compliant with the federally mandated Culturally and Linguistically Appropriate Standards (CLAS). The survey of healthcare professionals is focused explicitly on the perspectives of practitioners and the actions they take to improve access of LEP clients to disease prevention and healthcare treatment. Their work with video and visual-based communication strategies seeks to cultivate health literacy through the creation of culturally and linguistically tailored health information. The *fotonovelas* are a new and innovative genre for conveying important healthcare information and messages.

Risk and policy as determinants of COVID-19 testing and vaccination

The issue. Vulnerability in crisis often arises from conditions over which individuals have no control. At times, however, information is available that could enable individuals to assess their risk and make decisions about future behaviors. Complicating this situation, one's assessment of risk can be affected by government policy, potentially mitigating factors, as well as by barriers making it difficult to engage in helpful behaviors. Merely being a member of one group or subpopulation does not increase disaster risk; instead, risk within a group or subpopulation is likely associated with norms of behavior within a group, a group's access to resources, the influence of laws and policies, and the level of discrimination that a group may encounter. Communities of color are disproportionately vulnerable to hazards, face resource barriers to hazard adjustments, typically have less information about hazards, and lack the political representation necessary to advocate for change.

To sort out this complex array of interdependent factors, **Prof. DeeDee Bennett, Alex Greer, and Samantha Penta** of the College of Emergency Preparedness, Homeland Security, and Cybersecurity are addressing: 1) how risk-based decision-making differs among minority populations regarding testing and vaccination and 2) which multilevel barriers are experienced by minority populations with regard to COVID-19 testing and vaccination. Answering these questions requires insight into how individuals and groups

interpret and perceive risk; how the understanding of risk influences decision-making; how policies and social factors can affect risk and the ability to mitigate risk; and how demographic changes can influence vulnerability.

The *Protective Action Decision Model* (PADM) is a multistage framework that enables comparisons across groups regarding risk and decision-making processes about a variety of hazard-adjustment actions. More specifically, the PADM suggests that psychological factors (such as risk perceptions, perceptions of protective actions, and perceptions of stakeholders), hazard exposure and experience, demographic factors, perceived efficacy, associated costs (in both time and financial investment), and perceived implementation barriers (such as requirements for cooperation or specialized knowledge) each have the potential to influence hazard adjustments. Since population vulnerability is likely to change over time depending on local policy responses, sudden loss of jobs/income, and/or evolving trends in population mobility during the COVID-19 outbreak, the analysis requires dynamic models that can continuously adjust estimates based on new data.

The investigation: The research proposal encompasses individual, community, institutional, and policy levels. The study combines both qualitative and quantitative analyses, with advanced data science methods. The team will conduct two online nationwide surveys to understand hazard-adjustment decision-making regarding COVID-19 testing and vaccines for African-American and Hispanic/Latino populations compared to white/Caucasian Americans. Essential workers will be over-sampled as these groups are at the highest risk of being infected due to greater opportunities for exposure. The first nationwide survey will focus on questions regarding perceptions and protective actions for COVID-19 testing. The second survey will focus on questions that assess the PADM (components of the risk communication process) as well as those regarding vaccination. Given the importance of exposure, the survey will ask respondents about their risk factors associated with COVID-19 (i.e., pre-existing conditions, contact with the public, age, etc.). After that, respondents are asked to report their actual adoption of hazard-adjustment activities (testing and vaccinations), the likelihood that they will adopt these hazard-adjustment activities, and the perceived attributes (efficacy, cost, and cooperation and effort required) of these adjustment activities.

A related investigation will evaluate the health impacts of COVID-19 control policies, which encompass nine state-level policy actions enacted throughout the United States: 1) stay-at-home orders; 2) mandatory quarantine for travelers; 3) non-essential business closures; 4) large gathering bans; 5) school closures; 6) restaurant limits; 7) primary election postponement; 8) facial masking, and 9) emergency declarations. These policy actions will be treated as independent variables in models that predict COVID-19 infection, death, testing, and vaccination rates in each county of the U.S.

In one further analysis, the team will use the daily number of residents receiving COVID-19 tests or vaccination as the outcome, and the variables from multiple domains identified above, such as social factors, as the predictors (all at the county level) to

develop models that can be used to predict (spatially) or project (temporally) testing and vaccination rates.

What we are learning. This study applies important concepts from disaster research (e.g., risk perception, communication, the decision-making process, and social/community vulnerability) as well as theoretical models that explain how individuals can be expected to respond in the face of pandemic to COVID-19 research. By bridging disaster research and public health to assess multiple domains of influence on COVID testing/vaccine, findings derived from this study will help improve access to and acceptability of COVID-19 testing and vaccination. The work is innovative in applying multiple disaster research models and state-of-the-art data mining techniques to its goal of creating unique, dynamic, evidence-based and sustainable predictive models to promote COVID-19 testing/vaccination uptake.

Effects of COVID-19 in New York

It may be years before researchers fully understand all the ways in which the pandemic has affected the day-to-day well-being of New York residents. However, it is already increasingly clear that New Yorkers of color are experiencing disproportionate effects that manifest in numerous forms. Below we describe current research addressing broad and multifaceted pandemic effects followed by research projects that pay special attention to sexual and reproductive health, mental and physical health, and food insecurity.

Capital Region collaborative community survey to document disparate COVID-19 impacts

The issue. As the pandemic unfolded over time, residents of New York, and particularly members of vulnerable communities, faced immediate health challenges imposed by the difficulties of enacting mitigation policies, minimizing exposure, and obtaining testing. Social, emotional, and economic consequences soon followed. In collaboration with the Albany Minority Health Task Force (AMHTF), [Prof. Lawrence Schell](#), director of UAlbany's Center for the Elimination of Minority Health Disparities, together with **Profs. Annis Golden** of the Department of Communication, **Alex Pieterse** of the Department of Counseling Psychology, and **Archana Krishnan** and **Masahiro Yamamoto** also of the Department of Communication along with a team of graduate student collaborators,⁹ surveyed the impacts of and challenges posed by COVID-19 to a sample of predominantly Black and Hispanic community residents of New York's Capital Region. The AMHTF is comprised of professionals from the Albany community who collaborate with researchers at the University at Albany on issues of

⁹ Elizabeth Holdsworth, Department of Anthropology; Pallavi Khurana, Department of Communication; Olivia Mata, Department of Communication; Amy Williams, Department of Communication; and Hnin Wai Lwin Myo, Department of Epidemiology and Biostatistics, all of the University at Albany.

local concern. They represent themselves rather than agencies or institutions and seek to identify health issues from their perspectives as members of Capital Region communities. The goal of this community-engaged project was to document the disparate health, social, emotional, and economic impacts and challenges of COVID-19 in communities of color of the Capital Region.

The investigation. The survey asked about COVID-19 impacts, strategies used by residents to diminish risk of exposure, as well as barriers they experienced to enacting preventive measures and accessing healthcare services. Survey items also assessed preferred sources of health information about COVID-19 together with the use of technology for COVID-19 health-related purposes. Finally, the survey was designed to tap into particular areas of concern and challenges in coping with the pandemic locally. These areas included assessing the efficacy of 1) local testing centers through questions about why respondents did or did not use them; 2) the value of educational interventions such as the provision of Chromebooks; 3) interventions aimed at addressing food insecurity; and 4) vaccine hesitancy.

The study was carried out in two phases. The first was a survey distributed in December 2020/ January 2021 attracting over 239 respondents residing in Albany neighborhoods through the recruitment efforts of community organizations that serve under-resourced residents. The survey oversampled Black/African Americans (92 respondents), Hispanics (41 respondents), and Native Hawaiian/Pacific Islanders (11 respondents), but not Asians (7 respondents), and Whites (120 respondents). A second phase consisted of follow-up in-depth interviews with 25 survey participants to provide additional context.

What we are learning.

Employment consequences: Reviewing some of the most important findings, the survey tells us that 90 percent of respondents experienced COVID-19-related employment effects with 16 percent losing their jobs. Of those who lost their job, 62 percent worked in retail, customer service and/or food service. Some experienced reduced working hours (32 percent), while others were required to work more hours (11 percent). Black/African Americans (B/AA) were significantly more likely to experience one of these consequences than others in the sample. However, 29 percent of Black/African Americans were unable to claim any unemployment benefit (regular or supplemental) in contrast to 33 percent of non-Black/African Americans, a difference that is statistically significant. While there was no statistically significant difference in the proportion of Black/African Americans and others receiving stimulus checks or deposits, Hispanics and non-Hispanics did differ significantly with fewer Hispanics receiving stimulus checks. 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.

Life necessities: Regarding life necessities, 43 percent of the sample disclosed that it had been difficult to get food for oneself and their families due to COVID-19, but there

were no differences here based on race/ethnicity. Forty-seven percent admitted to being somewhat or extremely concerned about being able to afford and obtain healthy food for their families. Those interviewed also reported a financial impact in terms of spending more money on food than pre-pandemic because of children being home for all meals (and finding school-supplied take-away food unacceptable) and in some cases having additional family members who had been displaced from their housing added to their household. More than 50 percent of respondents were concerned about losing their housing. Black/African-Americans were significantly more likely to be concerned about losing their housing compared to all other respondents combined. Only 17 percent of Hispanics were not concerned about losing housing whereas 40 percent of non-Hispanics were not concerned, another significant difference.

Health and virus mitigation strategies: More than 60 percent of respondents in the sample had health insurance; in fact, Black/African Americans were significantly more likely to have health insurance than others. Overall, 46 percent had a primary care physician who is seen regularly, in comparison to 51 percent of whites. Regarding access to healthcare services for non-COVID-19 health concerns since mid-March 2020, overall 50 percent strongly or somewhat agreed that they had experienced difficulty with no significant differences on the basis of race/ethnicity. However, difficulty in seeking mental health care was reported by 21 percent of Black/African Americans while 38 percent of others (non-B/AA) did so, which was a significant difference. The same percentage of both groups reported not needing mental health care. On the other hand, in the interview accounts (from a predominantly B/AA cohort), mental health surfaced as a strong concern for self and others. Some interviewees reported the isolation imposed by pandemic restrictions exacerbated previous problems with depression and lack of adequate mental health services, or a lack of knowledge about where to obtain mental health services.

Of all survey respondents, 93 percent said they wear a mask or a face covering when they leave home; there were no significant differences between Black/African Americans and others or between Hispanics and non-Hispanics. However, among interviewees, participants expressed concern about what they observed as widespread failure on the part of individuals in their immediate neighborhood to observe masking and physical distancing recommendations. The discrepancy between these reports and what the survey data suggests may point to a self-selection bias on the part of study participants such that they may be more concerned with the impact of the pandemic than others in their communities.

With respect to vaccination, 73.8 percent of respondents reported they were somewhat or extremely likely to receive the vaccine; however, Black/African-Americans were significantly less likely to report receptivity to vaccination with reasons focusing on doubts about its safety. Among the interviewees, while some participants welcomed the possibility of receiving the vaccine, others were hesitant though rarely absolutely rejecting the possibility; they took more of a “wait and see” attitude than refusal. Interestingly, when asked whether they thought getting the vaccine would change their lives and the constraints on activities they currently face, many, even those who

expressed intention to get the vaccine, said no – pointing to the possibility of an unexploited avenue for messaging. It has been observed in the press that the effectiveness and usefulness of the vaccines has been undersold by the public health authorities, with too much emphasis placed on what you can't do after being fully vaccinated and not enough on how it will change your life for the better. This has changed somewhat since the interviews were conducted, with new messaging in April and May 2021 regarding travel recommendations and masking for fully vaccinated individuals.

Trust: With respect to trust in doctors, opinion was moderate, averaging 3.54 on a 5-point scale with no differences between Black/African Americans and others. Of Black/African Americans, 35 percent trust federal health agencies while 56 percent of others do, a significant difference. Sixty-five percent of B/AA respondents trust religious organizations entirely, a lot or somewhat while 54 percent of others do, a significant difference. Black/African-Americans and Hispanic respondents were significantly more likely than other racial groups to report experiencing racism or racial discrimination generally.

Emotional reactions: Respondents were asked about their feelings over the past four weeks. Among whites, 54 percent felt “very nervous” all the time, most of the time or a good bit of the time compared to 41 percent for non-whites, a statistically significant difference. The frequency of feeling “calm and peaceful” did not differ on the basis of race/ethnicity, nor did the frequency of feeling “downhearted and blue”, nor feeling “happy.” However, a statistically significant difference between Black/African Americans and others was found for the frequency of feeling “so down in the dumps that nothing could cheer you up” in that 25.5 percent of Black/African American respondents reported feeling this all the time, most of the time, or a good bit of the time while only 17 percent of others reported that feeling so frequently.

Much more remains to be explored in this multi-faceted dataset. This includes COVID-19 testing strategies in vulnerable neighborhoods and for individuals with underlying medical conditions, guidelines for physical distancing among essential service employees, and the challenges posed by vaccine hesitancy.

One of the most valuable outcomes of this project, however, has been to provide a vehicle for enabling the community perspective to be heard in a way that can inform effective, culturally competent, and community-relevant mitigation and elimination strategies for the future. One recommendation of the Albany Minority Health Task Force calls for greater localization in the distribution of resources – including food, testing, and vaccination. Community members without cars, and fearful of public transportation, found it difficult to access these resources. Localization includes reducing the financial impacts and barriers to access related to obtaining personal protective equipment, home-testing kits, and other recommended and needed resources addressing at-home safety.

Another AMHTF recommendation is to strive for greater transparency in communication from public officials. Participants felt that information related to the spread of COVID-19, testing and its availability, and vaccines was not shared as widely and expeditiously as it could have been. This means ensuring that NYS entities and agencies that provide direct public health services should follow state guidelines and requirements for translating documents, forms, and instructions, including ensuring that physicians have language-appropriate public health information that is accessible in all media forms. This may be achieved by targeting and tailoring public health information and developing culturally inclusive public service messaging in all media for communities of color to address vaccine and testing hesitancy and skepticism surrounding efficacy, safety, and ease of access. Messaging should include reminders to the public about their normalized health behavior regarding other virus-borne diseases controlled in the population or that have been eliminated because of vaccines (e.g., polio, chickenpox, tetanus, shingles, MMR, etc.).

Race, ethnicity, and sexual and reproductive health

The issue. The time-sensitive needs of pregnancy prevention, termination, and care are often sidelined during conditions of crisis. Thus, the effects of race and ethnicity on the quality of sexual and reproductive health care received during the height of the pandemic are among the most pressing concerns. Prior to the pandemic, racial disparities in access to sexual and reproductive health (SRH) and outcomes were well documented throughout New York State; these disparities range from access to prenatal, obstetric, and family planning care to birth outcomes and maternal-infant mortality rates. **Prof. [Elise Andaya](#)** of the Department of Anthropology and **Rajani Bhatia** of the Department of Women's Gender, and Sexuality Studies explored how such disparities may have been compounded by the disproportionate impact of COVID-19 on racial minorities.

The investigation. The researchers interviewed 19 frontline sexual and reproductive health (SRH) providers and advocates who serve minority populations, with a focus on prenatal, obstetric, and postpartum care, as well as abortion and contraception provision. Their interviews asked about: 1) adaptations to care provision during COVID-19; 2) the impact of such adaptations on minority patients; 3) obstacles to care during the pandemic; 4) the impact of the pandemic on pre-existing efforts to mitigate disparate outcomes in reproductive health; and 5) policies or practices that would support access and quality of reproductive health care for racial minorities.

Despite several pre-pandemic state policy initiatives and taskforces aimed at addressing racially/ethnically disparate maternal and infant health outcomes and SRH access, the providers and advocates interviewed agreed that the pandemic had exacerbated already-existing disparities in both health status and access to health care. Important executive orders issued during the pandemic, particularly from March to June 2020, helped to clarify SRH services as essential and provided guidance for providers and institutions. However, these measures could not prevent an overall worsening of reproductive health and healthcare disparities within a national context

of heightened racialized and anti-immigrant rhetoric accompanying deep economic and health institutional drivers of uncertainty.

The interviews suggested that the pandemic exacerbated existing disparities in access to, and the quality of, SRH care. For example, some reported that women giving birth in hospitals were denied access to support persons and mothers were separated from their newborns, both producing negative birthing conditions. Further, there was widespread fear of both hospitals and increased anti-immigrant political sentiment among minority and immigrant populations hard-hit by the pandemic, leading them to avoid care altogether or to delay accessing time-sensitive prenatal care and abortion care. Fear of U.S. Immigration and Customs Enforcement and/or local child protective services agencies was experienced disproportionately by those most vulnerable to poor maternal and birth outcomes.

Lack of coordination and communication between New York State and New York City, between 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. Important services were closed during lockdown, such as school clinics providing contraceptive and sexually transmitted infection care to adolescents, as well as postpartum visitation services for low-income and at-risk families. All this created troubling gaps in service that have not been fully addressed.

Finally, the interviewees indicated insufficient funding for PPE, COVID testing, and the pivot to telehealth in public hospitals and clinics. Inequities in the quality of telehealth services were particularly stark for non-English speaking patients and those with connectivity issues.

Despite these challenging experiences, providers across SRH domains underscored some positive outcomes of pandemic-driven care. The interviews revealed numerous creative initiatives by individuals and institutions to ensure continuity of care and deliver timely and compassionate care under extremely challenging circumstances. Further, for those able to use them, telehealth platforms streamlined care provision and resulted in higher-than-usual attendance at routine appointments such as contraceptive counseling. Providers universally supported the continued expansion of telehealth in the future.

What we are learning. Beyond the suggestion to include pregnant people in medical research generally and in research related to the treatment of COVID-19 in particular, Profs. Andaya and Bhatia recommend numerous initiatives for improving and supporting SRH care. One of the most important is to prevent gaps in care due to changes in insurance status as a result of loss of employment or patient movement across state lines. The extension of pregnancy-related Medicaid coverage from 60 days to 12 months to allow continuous care for a full year after delivery, an initiative recently adopted by the state of Illinois, would greatly increase access to medically

recommended postpartum care, as well as contraceptive and other SRH care, for vulnerable groups.

The interviews also underscored the importance of telehealth as an essential complement to in-person service delivery. Public providers should be supported in their efforts to expand telehealth, particularly in languages other than English. Out-of-state providers should continue to be allowed to practice across state lines and via telehealth platforms to the extent that their licenses allow. The executive order requiring that telehealth appointments be reimbursed at the same rate as in-person visits should be made permanent, with telephonic health appointments included in this order.

Pregnant and birthing people should be allowed to reduce travel when not absolutely required. Current restrictions on low-risk services that can be provided through telemedicine should be lifted, and the requirement that abortion medication be dispensed in person should be permanently lifted. Uninsured people should be permitted to obtain free or very low-cost SRH medications, including oral contraceptives and medication abortion at private pharmacies or via mail services rather than requiring in-person visits to healthcare providers.

During crisis, healthcare providers must find better ways to disseminate locally specific information about open/closed services and safety protocols, particularly at safety net hospitals, to encourage patients not to delay medically necessary care. Indeed, facilities need to maintain an updated “pandemic preparedness plan.” At minimum, a pandemic preparedness plan should specify safety protocols for patients and providers in the event of a pandemic as well as services that will be designated as essential. For those giving birth, facilities must ensure allowable support persons during labor and create guidelines to facilitate their entry and ability to provide support. Finally, advanced practice providers (such as physician assistants, nurse practitioners, midwives, etc.) should be allowed to perform minor procedures like sexually transmitted infection testing, pap smears, birth control, and provision of medication abortions.

Clearly, access to sexual and reproductive health services can be improved for vulnerable groups in periods of crisis. This research provides some important foundations for policy development.

Mental health effects in multigenerational households

The issue. Racial and ethnic minorities are disproportionately affected by financial and social disruptions caused by the pandemic, including job loss, reduction in community services, and disconnection from supportive networks. These same populations often live in multi-generational households and rely on family members as caregivers; however, the capacity for multi-generational households to exacerbate or buffer family members from the negative mental health consequences of social isolation and trauma due to COVID-19 is unknown. How changes in social interactions (household composition, social network) and family life circumstances such as unemployment, working from home, school closings, loss of health insurance) relate to mental health

outcomes during the pandemic is a focus of research by Prof. [Elizabeth Vásquez](#) of the School of Public Health's Department of Epidemiology and Biostatistics and her team.¹⁰

In the general population, early studies of adults report widespread and worsening mental and physical health problems during the COVID-19 pandemic, including depression, anxiety, and sleeplessness, particularly among adults who stopped working because of business shutdowns. These findings are consistent with studies of past large-scale traumatic events, where the prevalence of mental health problems has been as high as 54 percent in community samples. Further, the increased risk of mortality and severe, long-lasting morbidity due to COVID-19 among older adults and the social restrictions implemented to lower risk have contributed to increased isolation, strain, and stress in this vulnerable population. Children and adolescents are also heavily affected by the social isolation, uncertainty, and parental stress stemming from the current pandemic, exhibiting elevated mental health symptoms.

The investigation. The project focuses on multiple generations of household members to identify strategies to reduce racial/ethnic and socioeconomic status-based disparities in the physical and mental health consequences of the COVID-19 pandemic in New York. The work began with an effort to identify the immediate and long-term consequences of the COVID-19 pandemic on the physical and mental health of parents, children, and extended household members and further examines how changes in social interactions (household composition, social network) and life circumstances (unemployment, working from home, school closings, loss of health insurance) exacerbate health disparities during and after the pandemic.

The research team advertised the pilot through their community partners and collaborators (Upstate KIDS, Maternal and Child Health Network, NYS Department of Health) using multimedia platforms. They have received overwhelming interest in participating from eligible parents of school-age children in New York State. The electronic surveys were completed in January 2021 and analysis is in progress. Their initial sample (n=100) is 15 percent Asian, 22 percent Black, 20 percent Latino, and 43 percent white. Participants ranged in age from 18-49 years and approximately 43 percent had some college education, while 26 percent had a college degree. The questionnaire includes measures of mental health, stress, family composition, caregiving, social networks, and chronic disease risk, as well as items that assess changes in household employment and composition/support because of the pandemic.

What we are learning. This data collection will allow the researchers to determine the feasibility of recruiting an expanded multi-generational cohort for a follow-up study of the long-term consequences of the COVID-19 pandemic on children, parents, and grandparents in participating households. Their findings will provide preliminary data for a future set of investigations examining how trajectories of mental health and COVID-19-related stressors affect selected chronic disease risks and outcomes across the

¹⁰ Prof. Erin Bell, Department of Environmental Health Sciences, and Prof. Melissa Tracy, Department of Epidemiology and Biostatistics, School of Public Health, University at Albany

lifespan (for children, middle-aged and older adults). The long-term goal of this project is to identify intervention strategies that will support multiple generations of household members.

Support from the Black Church

The issue. The Black Church has served historically as a consistent source of strength, fellowship, information, and resources for daily life in the Black community. The most recognized, trusted, and stable social institutions in their communities, the Black churches have significantly enhanced psychological, physiological, educational, and cultural well-being for their members. Having overcome numerous crises throughout its history, the Black Church has been challenged to provide support during the unprecedented COVID-19 pandemic. **Prof. Julia Hastings**, jointly appointed in both UAlbany's School of Social Welfare and School of Public Health, and a colleague¹¹ are conducting research aimed at understanding how the Black Church continues to play its role without one of the most essential parts of its legacy – the ability of its people to gather, pray, worship, and fellowship together.

The investigation. This study examines the nature and accuracy of pandemic-related information shared in Black faith-based institutions. Prof. Hastings randomly selected 10 Black churches from the Capital Region of New York and 10 from New York City. Using qualitative data, she examined the content distributed through social media, sermons, and messages recorded and circulated, as well as the way their use changed over time. Early findings indicate that Black churches were differentially prepared to support their congregations with COVID-19 information. Some churches used social media to circulate pandemic-related health behavior content that resembled information available from a public health department. Some social media content was exclusively dedicated to circulating information about coronavirus resources that were easily accessible. The service recordings showed many pastors alone in their church or home offices, an early demonstration of social distancing. However, other churches were not similarly prepared to distribute health behavior content as readily.

At the pandemic's beginning in March 2020, many churches were ill-equipped for the swift shift from in-person to virtual services but now needed to comply with social distancing mandates. Compounding the difficulties, they were facing bleak financial futures because of the decline in tithing. As a result, many adjusted the way they tended to Church ministries. Churches that already had a virtual presence explored alternative ways to get messages about COVID-19 to their congregants, support their communities through ministries, and provide sermons that comforted their congregants during this difficult time.

By May 2020, some pastors returned to the pulpit using social distancing measures for the choir members and musicians present for the videotaped service. The social media content for Black Churches transitioned to support “stay-at-home” mandates. For

¹¹ Collina D. Cooke, School of Social Welfare, University at Albany

example, pastors created many workshops on “Navigating COVID” and shared fitness routines, recipes for cooking, self-employment business practices, financial literacy, and relationship refreshers during COVID. In general, pastors encouraged their congregants through social media to find activities resembling life before COVID, while attempting to uplift individual spirits.

What we are learning. The coronavirus pandemic has encouraged churches to explore innovative forms of communication to share messages of comfort with their congregants. Despite the shift from in-person to online communications, the Black Church continues to serve as a beacon of hope and a source of strength for congregants and community members alike.

Food insecurity in New York and nationally

The issue. Food is a critical determinant of health, and food insecurity is a growing social problem with root causes that precede the pandemic and that are often beyond the control of individuals. The concept of food security is multifaceted in that it involves the *availability* of enough safe and nutritious food, having *access* to that food, and being able to effectively *utilize* that food for household consumption. Availability has to do with the supply chain, which is affected directly by the social and physical environment. Access is related to the social and economic factors that determine individuals and households’ well-being and socioeconomic opportunities. Similarly, utilization is influenced by those same individual and household factors that are affected by skills and socioeconomic opportunities. Hunger, on the other hand, is defined as not having enough food to meet daily nutritional and caloric requirements rather than whether there is enough of any type of food available. **Prof. [Janine Jurkowski](#)** and **Tomoko Udo** of UAlbany’s Department of Health Policy together with **Angela Hackstadt** of the University Library call our attention to evidence documenting the effects of the pandemic on the availability of nutritionally adequate food and the experience of hunger in New York State and nationally.

Reductions in food insecurity require interventions that target food availability and access at neighborhood or regional levels and address how to ensure consumption of healthy food. Food insecure households may need to make trade-offs between other basic needs like paying for rent, electricity or medical bills on the one hand and buying nutritionally adequate food on the other hand. But availability of food at the neighborhood or regional level is often affected by historically racist policies, unfair distribution of food, and food system vulnerabilities.

Effects of COVID-19: Socioeconomic disadvantages such as concentrated poverty, unemployment, and disabilities are strongly associated with food insecurity, conditions historically much more prevalent among racial/ethnic minorities. Thus, food insecurity historically has also disproportionately affected racial minorities. Socioeconomic disadvantages have certainly been exacerbated by COVID-19. Although statewide data is not yet available for New York, New York City reported food availability problems early in the COVID-19 pandemic. For example, an overreliance on one port that

experienced major delays due to COVID-19 caused a food shortage in NYC that had the greatest impact on Black and brown communities. At that same time, food access was also a problem for those same communities because wealthier families stockpiled food. During New York State on PAUSE, food access became challenging due to significant increases in demand for emergency food across the state. Relative to 2019, demand for emergency food increased by 58 percent in the Capital Region and 100 percent in the Southern Tier.

Comprehensive assessment of the impact of the COVID-19 pandemic on prevalence of food insecurity in NYS is difficult due to lack of consistent and continuous surveillance data. However, FeedingNYS.org reported that there was a 50 percent increase in emergency food distribution through the food banks during the summer of 2020, demonstrating the highest demand for emergency food since the Great Depression. Some projective models suggested that New York's 3rd Congressional District experienced a 96 percent increase in food insecurity in 2020 and the 15th Congressional District is projected to have the highest food insecurity rate among children, 46 percent, in the entire country. Nassau County ranks fifth overall in the United States for highest percentage increase in food insecurity and had the greatest increase in NYS. The county saw an 83 percent increase in food insecurity (5.3 percent to 9.8 percent) from 2018 through 2020.

Some studies have used the 2020 Household Pulse Survey from April 23 to July 21, 2020 ($N = 74,413$ households) to evaluate the national impact of the COVID-19 pandemic on racial/ethnic disparities in food insecurity. According to one study, increases in the prevalence of U.S. households with food insecurity were similar across all racial groups between March 13 and April 23-May 5 2020, and the severity of food insecurity did not differ by racial/ethnic groups. However, the study also found that relative to non-Hispanic (NH) whites, non-Hispanic Black households were more likely to report food insecurity because they could not afford to buy more food whereas non-Hispanic whites were more likely relative to other races and ethnicities to report that the stores did not have what they wanted. Another study reported that, as the pandemic continued, the prevalence of food insecurity had significantly decreased for NH whites by June 23-28 2020, but it did not significantly change for Hispanics and NH Blacks. Between April 23 and June 28, 2020, 41 percent of NH Blacks, 36.9 percent of Hispanics, and 23.2 percent of NH white households reported food insecurity. Furthermore, echoing historical patterns after the 2008 economic crisis, the same report also predicted slower reductions in prevalence of food insecurity among NH Blacks, compared with Hispanics or NH whites. Collectively, these studies raise significant concerns about the long-term implications of the prolonged pandemic for widening racial/ethnic disparities.

It is important to note that racial/ethnic disparities in food insecurity seem to persist even after accounting for socioeconomic differences, which suggests that structural inequalities due to racial discrimination in K-12 education, housing and job opportunities may also contribute to food insecurity. Thus, while public health and policy interventions

aiming to directly improve access to food, especially healthy food, are crucial, they may not be enough to fundamentally address racial/ethnic disparities in food insecurity.

What we are learning. The research team argues that New York State needs to conduct population-level surveillance of the availability of and access to food as well as household-level hunger and food insecurity. This surveillance must consider the effects of race/ethnicity and socioeconomic status as well as city/town and urban/rural differences so that government agencies can target and tailor programs in a way that can address limitations in food access that have the greatest impact on minority communities.

The team further recommends an expansion of Supplemental Nutrition Assistance Program (SNAP) and SNAP for Women, Infants and Children (WIC) eligibility to more low-income households to fill some of the gap between eligibility and food security. It is important to expand healthy food access to include culturally appropriate food in areas with concentrated poverty, a history of segregation, and low food access to facilitate the reduction in food insecurity among minority populations. Further, programs should be developed to promote access to and utilization of affordable, healthy, and culturally appropriate foods at food pantries or through SNAP and WIC. Participatory research that engages racial/ethnic minorities is effective for developing culturally appropriate and sustainable programs.

Food insecurity in New York's Capital Region

The issue. While the research reviewed above suggests that food insecurity is widespread across New York State, we can acquire a deeper understanding of the effects of COVID-19 on this critical health issue through survey research conducted by **Prof. Beth Feingold**, from UAlbany's School of Public Health, and her colleagues.¹² This research has focused on food insecurity in the eleven counties of New York's Capital Region. The study uses recruitment methods that complement and extend findings from approximately 17 similar studies conducted by researchers who are part of a larger project known as the National Food Access and COVID Research Team (NFACT) using data from New York City, New York State and across the nation.

The investigation. Prof. Feingold's survey provides an in-depth and broad understanding of the extent of food insecurity, household dietary data, coping strategies, food access and utilization (stores, food bank/pantry), and participation in government food programs. Questions were framed to distinguish between chronic food insecurity and more recent insecurity due to COVID-19, as well as whether the quality and diversity of fruits/vegetables, dairy products, and meat/poultry/fish/eggs available at

¹²Mariana Torres Arroyo, Environmental Health Sciences Department; Christine T. Bozlak, Health Policy, Management, and Behavior Department; Akiko Hosler, Epidemiology & Biostatistics Department; Trevor Craft, Rockefeller College of Public Affairs & Policy; Hailee L. Edwards, Environmental Health Sciences Department, and Xiaobo Xue Romeiko, Environmental Health Sciences Department; all of the University at Albany.

food pantries/food banks has changed. To examine associations with other determinants of health that are especially relevant for COVID-19, the survey included questions about chronic health condition status of self and other household members and essential worker status.

Data were collected via an anonymous online survey of adults (age 18 and older) in the Capital Region. The survey was conducted over five weeks from early January to early February 2021 and yielded 454 responses, 62 of which were from Black respondents, 56 from Hispanic/Latino respondents, and 10 from Asian respondents. The sampling strategy relied on targeted Facebook ads and direct outreach to community-based partner agencies serving low-income individuals to provide sufficient numbers of responses from rural and non-white individuals and those at various levels of food insecurity.

What we are learning. With data still being analyzed, some preliminary insights are reviewed below about the contours of food insecurity in this region of New York during the pandemic and the extent to which COVID-19 has exacerbated pre-existing disparities. In what follows, data are reported in terms of both food *security* and food *insecurity*, depending upon the way the questions were posed to survey respondents.

Overall, among respondents, food *security* decreased from 64.9 percent to 46.3 percent when compared to pre-pandemic conditions, while those with very low food security increased from 11.5 percent to 25.2 percent. Among those experiencing food *insecurity* since the pandemic started, 53 percent were considered to have low food security and 47 percent were considered to have very low food security.

Following New York State's shutdown, 19 percent of respondents were newly food insecure. Of those same respondents, 34 percent reported persistent food insecurity; that is, they were experiencing food insecurity prior to and since the shutdown. Given the rapid and large increases in unemployment since the shutdown, the research team found that job disruptions accompanied food insecurity. Overall, those respondents who experienced a job disruption were more likely to be food insecure; those who had reduced work hours were more than two times as likely to be food insecure than those who did not.

Among non-essential workers, food insecurity was 73.9 percent higher in the months following the COVID-19 shutdown in New York compared to the year beforehand, while essential workers saw a 33.5 percent increase during the same time frame. However, food insecurity among essential workers in the months since the shutdown started was statistically significantly higher than food insecurity among non-essential workers.

Among survey respondents of different races/ethnicities, before COVID-19, 77.59 percent of non-Hispanic (NH) Blacks experience food insecurity, which rose to 93.55 – an increase of about 17 percent – after the start of the pandemic. Similarly, nearly 63 percent of Hispanics experienced food insecurity before the pandemic, which increased to 76.36 percent since the pandemic began – an increase of 17.55 percent. By

comparison, 20.27 percent of NH white respondents experienced food insecurity before the pandemic, which rose to 40 percent since the pandemic began – an increase of 49.33 percent.

Compared to Capital Region respondents living in rural and suburban areas, urban-dwelling respondents experienced the most food insecurity during the pandemic. Comparing pre- and post-COVID-19 food insecure individuals, suburban areas saw the greatest increase in food insecure respondents at 64 percent, with the rates in rural and urban areas increasing by 56.7 percent and 47 percent respectively.

There was a general inverse relationship in this survey between household income and food insecurity both before and during the COVID-19 pandemic. There was also increased food insecurity since the COVID-19 pandemic in every income group, although the extent of the percentage increase differed. The greatest percentage increase of food insecurity was seen in the \$75,000-\$99,999 household income group (112.5 percent increase) followed by \$10,000-\$24,000 household income group (103.9 percent increase). The group with the smallest percentage increase of food insecurity were households with income of less than \$10,000, although this group had the highest level of pre-pandemic food insecurity (56.3 percent) and the second-highest food insecurity level since the pandemic (73.7 percent).

These survey findings point to pandemic effects on food insecurity that span the lives of people across multiple demographic categories including occupation, income and residential location as well as race/ethnicity. Below we consider research that provides a deeper look into a wider variety of pandemic effects that vary for individuals on the basis of race and ethnicity.

COVID-19 effects and public attitudes

The issue. Another critical question to ask is how COVID-19 has affected the economic, social, and educational well-being of New York residents. While many are facing extreme economic hardship, others work in sectors or industries that are doing quite well. How have New Yorkers of different races and ethnicities been differentially affected by the lockdowns, the overall reduction in economic activity and stimulus payments? A full accounting of the impacts of the economic downturn and how policies aimed at its mitigation are affecting different groups (e.g., low-income Black New Yorkers versus low-income whites; rural versus urban populations; parents of young children versus others, etc.) in NYS has yet to be conducted. [Prof. Ashley Fox](#) of UAlbany's Department of Public Administration and Policy and a colleague¹³ are exploring some of these issues in a survey that addresses impacts that differ by race/ethnicity and, in analyses to be conducted at a later date, the effects of such differences on voting and attitudes toward government.

¹³ Yongjin Choi, Department of Public Administration and Policy, University at Albany.

The investigation. Data from minority communities are often missing from population-based data sources, in part because such surveys fail to recruit samples sufficient to adequately represent the experiences of minority respondents. However, the survey fielded by Prof. Fox, was designed to pursue comparisons between race/ethnicity groups. Overall, survey research of this kind provides point-in-time descriptive estimates about the size and scope of differences across race/ethnicity groups against which future changes can be gauged. It also allows estimating the associations between race/ethnicity, sociodemographic characteristics and social determinants of health required to target interventions aimed at eliminating disparities.

Findings from this study are based on a survey of 1,353 Qualtrics respondents fielded between November 23, 2020 and December 8, 2020. Black and Hispanic respondents were oversampled to produce a balanced sample of 429 non-Hispanic (NH) whites, 443 NH Blacks and 481 Hispanics.¹⁴ Respondents were drawn from both downstate (43 percent) from upstate (57 percent) New York.

Sample characteristics: While the survey results cannot be interpreted as representative of the state population, the sociodemographic characteristics of the sample roughly match those of New York. Because each of these characteristics varied by race-ethnicity, the results presented in the white paper are stratified by race-ethnicity both unadjusted and adjusted for age, gender, and annual household income. However, the data reported in this document are adjusted for age, gender, and annual household income in 2019.

Nearly 60 percent of the sample reported at least one of ten health conditions (diabetes, heart disease, hypertension, cancer, HIV/AIDS, asthma, chronic lung disease, COPD, obesity/being overweight, opioid addiction) that are known to complicate COVID-19 presentation and treatment. Diabetes, heart disease, asthma and obesity/being overweight were the most common, with between 10 percent and 15 percent of each race-ethnic group reporting any of these health conditions. Interestingly, there were no differences between respondents by race/ethnicity in the likelihood of having a health condition that might complicate COVID-19 infection and treatment.

Approximately one-third of parents reported their child had a health condition that might put them at risk of a complication from COVID-19 infection, with more Hispanics reporting children's health conditions. The most frequently mentioned health issue was asthma.

The survey results are too numerous to report here in their entirety. However, some of the results bear on effects discussed earlier in this report and thus will be highlighted.

¹⁴ While this project focused on recruiting only people who identify as NH White, NH Black or Hispanic, 31 individuals in the sample identified as Middle Eastern, South Asian, Native American/Pacific Islander, etc., but did not identify as one of the other race-ethnicities. Rather than exclude these individuals from the analysis, they were coded with Hispanics for the purpose of comparison.

COVID-19 health status: Across the three race/ethnicity groups, more Hispanics reported direct experiences with COVID-19, followed by non-Hispanic (NH) Blacks, and NH whites. Within the sample overall, approximately one-third reported having tested positive for COVID-19 themselves and one-third reported that an immediate family member did. However, these rates are highest among Hispanics, with 38 percent reporting having themselves tested positive and 38 percent reporting an immediate family member had tested positive. Reports of COVID deaths of a family member also were highest among Hispanics (24 percent vs. 15 percent of NH Blacks and 15 percent of NH whites), as were deaths of a close friend (30 percent vs. 26 percent of NH Blacks and 19 percent of NH whites).

Economic effects: Nearly 40 percent of the sample reported working from home since the onset of the pandemic, with Hispanics and NH Blacks moderately more likely to report working from home compared with NH whites. Hispanics were also more likely to report that their jobs were considered to be essential at 54 percent compared with 47 percent of NH whites, and 46 percent of NH Blacks.

All groups reported substantial negative economic and social effects since the start of the pandemic. Slightly more than half of the sample (55 percent) reported at least one of the following: job loss, furlough, reduced work hours, pay cut or insurance loss. Overall, more Hispanics (58 percent) reported any of these job issues, followed by NH whites (55 percent) and NH Blacks (51 percent).

Similarly, slightly more than half of the respondents reported difficulty making payments for recurring expenses over the previous six months, including 23 percent with difficulty paying rent/mortgage and 19 percent difficulty paying utilities; more Hispanics reported these issues than either of the other race/ethnicity groups. Hispanics were 10 percentage points more likely to have experienced difficulty paying bills compared with whites, and NH Blacks were 5 percentage points more likely.

While 65 percent had received a stimulus check from the government, NH Black and Hispanics were about four or five percentage points *less likely* than whites to have received a government payment. However, while 15 percent of the sample had received unemployment benefits, there were small differences across race/ethnicity with 14 percent of whites, 14 percent of NH Blacks, and 17 percent of Hispanics receiving unemployment benefits.

Mental health and substance use: A quarter of the sample reported “little interest in doing things” and “feeling down.” More Hispanics and NH Blacks reported these symptoms of depression than NH whites: 37 percent of Hispanics reported feeling down compared to 24 percent of NH Blacks, and 19 percent of NH whites. Additionally, 27 percent of Hispanics reported little interest in doing things compared to 23 percent of NH Blacks and 21 percent of NH whites.

Respondents were asked if they engaged more often in a range of substance use behaviors since the start of the pandemic, including using pain medications, alcohol,

cigarettes, marijuana and other drugs. Between 10 percent (other drugs) and 16 percent (pain medications) of respondents reported using substances more frequently, but there was little difference across race/ethnicity groups. Increases in healthy behaviors were also recorded. About a fifth of the sample overall, as well as each race-ethnic subgroup, reported they more often got eight hours of sleep per night, engaged daily in physical activity, and ate five fruits and vegetables per day.

Food security: One third of the sample reported some degree of food insecurity during the pandemic, and nearly 50 percent had sought food assistance. Hispanics were most impacted: 39 percent cut down or skipped meals and 56 percent used some type of food assistance, while 50 percent of NH Blacks have sought food assistance compared with 39 percent of NH whites. These rates were even higher among parents, with 74 percent of Hispanic parents seeking food assistance, followed by 70 percent of NH Black and 56 percent of NH white parents.

School Attendance: One third of the respondents were parents of school-aged children (N=465), and this proportion was similar across race/ethnicity groups. Overall, 33 percent of the sample with school-age children reported that at least one of them was in school full-time in-person, but more NH white parents (39 percent) had at least one child in full-time in-person school than either NH Black (26 percent) or Hispanic (32 percent) parents. Nearly 10 percent of both NH Blacks and Hispanics reported not having reliable internet access to facilitate online learning, compared to two percent of NH whites. Of the full sample, 35 percent had trouble finding reliable childcare and 45 percent reported needing to leave their child/children in an unsafe situation due to not having childcare, with little difference across race/ethnicity groups. Parents were asked about their support for schools requiring children to vaccinate against COVID-19 to attend school if it would enable schools to fully reopen for in-person instruction; a majority (84 percent) reported they would somewhat or strongly support this measure, with little difference across race/ethnicity groups.

Vaccine hesitancy: Overall, 42 percent of the sample reported that if a COVID-19 vaccine were approved by the U.S. Food and Drug Administration through normal procedures, and available today for free to the public, they would definitely get the vaccine as soon as possible, while 14 percent reported that they would definitely *not* get the vaccine. NH Blacks were overrepresented among those who reported that they would definitely not get the vaccine right away at 17 percent compared with 14 percent among NH whites and 12 percent among Hispanics. Among a list of reasons not to take the vaccine (side-effect concerns, the belief that the disease is not that bad, not being high-risk, wanting to know how well it works, fear of needles, religious objection), the most frequently endorsed items were concern about side-effects (56 percent) and wanting to know more about how well it works (58 percent). More NH Blacks than Hispanics and NH whites indicated these two reasons. This data was collected in late 2020. Vaccine hesitancy figures have evolved continuously over time since as more is learned about the vaccines' safety and effectiveness.

What we are learning. This survey documents a plethora of COVID-19 effects of considerable magnitude. While 65 percent had received a stimulus payment, 55 percent had suffered financially, 53 percent were concerned about paying bills, 33 percent were food insecure, nearly 50 percent had sought food assistance, 25 percent were experiencing signs of depression, and 12-16 percent were engaging in higher than normal rates of alcohol and drug use.

Further, the substantial array of differences based on race/ethnicity documented by this survey conveys part of the economic and socio-emotional toll of differential exposure to COVID-19 as well as to deaths of loved ones. Without economic recovery and efforts to mitigate the differential economic impacts of the pandemic, health disparities and generalized economic inequality are likely to deepen into the foreseeable future. We can glimpse now the future toll on education that may take many years to redress. Lost schooling will perhaps have the deepest long-term effects on inequalities, potentially affecting an entire generation. More effort is needed to understand how best to both understand and alleviate the economic and social harms from COVID-19 mitigation strategies. Of course, full consideration should be given to how these economic and social effects may compound existing health disparities into the future.

Three critical interventions

Every research project described in this report is focused on generating recommendations for addressing the issues under consideration. However, some projects have also examined the adequacy and potential success of several large-scale policy interventions aimed at reducing contagion and mitigating disparate health effects. The work described below proposes strategies for reducing vaccine hesitancy, increasing contact tracing compliance, and improving how community health workers can link vulnerable communities to healthcare providers.

Understanding and addressing vaccine hesitancy

The issue. In the battle with COVID-19, safe and effective vaccines were viewed by many as game-changers, bearing the potential to establish herd immunity. But systemic racism, and the justified distrust in both the medical profession and government that are its consequences, have complicated personal decisions to take the vaccine, thus slowing the achievement of herd immunity. Beyond the complex task of safely storing and distributing millions of vaccine doses across the state, New York has had to find a way to prevent the disparities that defined earlier stages of the pandemic from replicating similar disparities in the vaccination phase.

Vaccine hesitancy refers to delays in the acceptance or outright refusal of vaccines. A now-common phenomenon, vaccine hesitancy is context-specific, with reasons that vary by vaccines and groups. Hesitancy is expressed by many demographic groups in America, but especially by communities of color, which have already experienced the most devastating effects of COVID-19. Several national polls conducted in mid-2020 found nearly half of Blacks and Hispanics unwilling to be vaccinated against COVID-19

along with one-quarter to one-third of whites. In more recent polls, we find that Black hesitancy appeared to have decreased, but is still higher than white and Hispanic respondents.

The investigation. In August 2020, [Prof. Kate Strully](#) of UAlbany's Department of Sociology and members of the UAlbany MHD COVID-19 project team, in collaboration with the Healthcare Association of New York State (HANYs), assembled four focus groups composed of healthcare professionals working in four New York locations (Long Island, Brooklyn/Queens, Syracuse and Buffalo) to discuss attitudes on the part of the individuals they served about potential COVID-19 vaccines. The participants, and the communities they served, were characterized by substantial racial-ethnic diversity as well as by immigrant and refugee residents.

Participants shared feelings of justified distrust in the government and medical institutions that arise from contemporary inequities in our healthcare system and legacies of historical medical abuse that go back to the infamous Tuskegee experiment and experimentation under slavery. Indeed, the Tuskegee experience was mentioned in all four focus groups and was described as knowledge passed down through families and friends. In addition, participants reported feeling inundated with contradictory messages about how quickly a vaccine could be developed and expressed fear about what political influences it might be subject to. They emphasized that these conditions made building trust more challenging and underscored the importance for early and ongoing engagement with communities based on partnerships and through honest and open conversations. Much has changed since summer 2020, but justified distrust is still a central challenge as is frequently changing information, which earlier centered on vaccine development but has since focused on who can get vaccines, where, and how.

What we are learning. Using insights gleaned from conversations with these groups as well as existing research on seasonal flu and the H1N1 vaccination, Prof. Strully found that vaccine hesitancy within minority communities would be a significant barrier to widespread acceptance of newly developed COVID-19 vaccines and, potentially, the attainment of herd immunity. By early fall 2020, well before safe and effective vaccines received emergency authorization from the U.S. Food and Drug Administration, Prof. Strully and colleagues¹⁵ issued a [white paper](#) describing the vaccine hesitancy that state policy makers would soon face and outlining a series of recommendations to address it. The white paper noted that overcoming existing distrust would require a campaign beginning well in advance of vaccine delivery and that acknowledges and addresses the historical injustices that drive suspicion within communities of color. Further, such a campaign would need to emphasize culturally appropriate messages that directly address people's concerns about the vaccine-development process. Policy makers should tap existing community infrastructure to make full use of trusted community voices to deliver timely and accurate information about the vaccine. Such a campaign should be overseen by a state task force for vaccine equity composed of community leaders from across the state and diverse representatives from relevant

¹⁵ Teresa M. Harrison, Theresa A. Pardo, and Jordan Carleo-Evangelist, all of the University at Albany.

state and local agencies and guided by the goals of transparency, equity, and building trust.

On December 21, 2020, Gov. Cuomo announced the launch of the [NYS COVID-19 Vaccine Equity Task Force](#), which is now carrying out the work of “reducing barriers to vaccination and ensuring an equitable distribution of COVID-19 vaccine.” Prof. Strully has since appeared before that Task Force to discuss her perspectives. Her work on this topic has been recently published by [Frontiers in Public Health](#).

The promise of community health workers

The issue. In the search for interventions that successfully address disparities in access to health care, scholars and public health practitioners have recommended programs tailored to the context of local communities. Arguing that top-down, one-size-fits-all approaches have been ineffective, they advocate interventions that are culturally appropriate, that take into account the particularities of population, community, family and individual differences, and staffed by individuals who are “community competent.” One promising response has been the growing trend to incorporate *community health workers* (CHWs) into health programs as part of the broader movement to address health disparities at the community level.

Because they are often members of communities in which they work, or have special knowledge of those communities, CHWs are assumed to be able to interact with residents in a culturally relevant manner and bridge divides between provider organizations and vulnerable community members. As trusted members of the communities they serve, CHWs connect vulnerable individuals to vital health and human services. Further, they build individual and community capacity by empowering individuals to act on their own behalf as well as by providing assistance and support.

In mid-March 2020, when New York State went into lockdown, a cornerstone of the CHW programs – face to face interaction, sometimes including home visiting – was profoundly disrupted. [Prof. Annis Golden](#) of UAlbany’s Department of Communication initiated research¹⁶ to document the impact of COVID-19 on CHW programs and their clients, the strategies employed by CHWs to sustain connections with their clients, and the barriers they have encountered.¹⁷

The investigation. Prof. Golden recorded interviews with CHW advocates, CHW supervisors, and CHWs themselves. Participants were recruited through the Healthcare Association of New York State, the NYS Department of Health and professional referrals. The study involved 12 organizations and 15 different programs, spanning urban and rural settings and a variety of health programs, with 48 interviewees who

¹⁶ Amy Williams, Department of Communication, collaborated on the development of the white paper that is the basis for this report.

¹⁷ Prof. Golden thanks Lawrence Schell, Elise Andaya, Rajani Bhatia, Rose Greene, and Sandra McGinnis, all of whom participate in the University at Albany’s Engaged Researchers group, for their support of her work in this study.

participated in 29 interviews. Six of the programs specialized in maternal and child health, while the remainder focused on chronic disease management and other public health programs.

How did CHWs maintain connections with their clients and carry out other program activities with the onset of the pandemic given their former emphasis on face-to-face interaction and home visiting? CHWs reported the use of video platforms including Zoom, although more often Facebook Messenger or other social media apps, and also made use of lower-tech solutions such as phone calls and socially distant house calls. They shared information by providing video links to clients via texts, PDF texts attached to emails, and Facebook postings, along with low-tech solutions like printed materials sent by postal mail or hand delivered to client's homes. They emphasized the importance of meeting clients wherever they are in terms of technology and face-to-face meetings, mixing technologies rather than one uniform approach. CHWs also stayed connected to one another through Zoom and group texts and, in some better resourced programs, they connected clients to each other through Zoom-hosted group education sessions and support groups.

Despite their best efforts to use technology, a substantial barrier to these efforts was the variation in what CHWs had access to, as some programs were not technologically equipped to meet the new demands. Many CHWs initially lacked dedicated smartphones, laptop computers, and tablets, although some were able to add these resources as they went along. CHWs also vary in their digital literacy skills, with digital natives being the most skilled, though this did not necessarily insure they could use all the relevant technologies. Variation also exists, of course, in their clients' access to devices, connectivity, and skills required to use these technologies.

Prof. Golden's research asked how the pandemic is changing the kinds of support that CHWs are now providing to clients. One new activity has been responding to clients' questions and fears about the virus, which they addressed by accessing and sharing COVID-19-related information from credible sources such as the Centers for Disease Control and Prevention. They also reported teaching clients how to use technology, including personal communication technology, patient portals, telehealth applications as well as children's school connections, although some CHWs reported struggling with technology themselves. Food insecurity has been a major theme. CHWs helped clients by providing information about available resources, which have tended to change by the day and week throughout the pandemic. They reported intensification in the need to provide emotional support for clients, which was particularly pronounced among downstate participants. Overall, CHWs' role as a kind of "human portal" expanded, sometimes describing themselves in the words of their clients as a lifeline to other services and information as individuals and families faced disconnection and isolation.

Finally, the research considered the potential for CHW-based programs to support the public health effort in mitigating and eliminating the disproportionate impact of COVID-19 on communities of color, with a particular focus on vaccination. This emerged as a complex issue. The interviews confirm that CHWs are a trusted source of information

about COVID-19, including vaccination, and that they are already passing along public health information. However, CHWs' dual roles as members of the vulnerable communities they serve and of health-related service organizations position them somewhat differently in relation to the vaccination effort than health care and public health professionals who are not also members of historically marginalized communities. They may be more likely to be hesitant to take the vaccines themselves but also have more access to reliable sources of information. The CHW model of health promotion emphasizes respect for client autonomy and self-determination and "meeting them where they are" in comparison to more traditional models of persuasion that prioritize adherence to institutional recommendations. Very few CHWs actually said that they would attempt to persuade clients to be vaccinated. Most said they would pass along information from sources they trust so clients could make up their own minds. Some expressed personal reservations about vaccines and the difficulty of advocating for something when one has their own reservations. Many predicted significant hesitancy on the part of the communities they serve. It is important to note that this study was conducted in October and November 2020, prior to vaccine rollouts, and that recent national polls point to increasing levels of acceptance among communities of color and a shift in focus to issues of accessibility. However, significant reservations remain, including among healthcare workers of color.

What we are learning. Although there is still much to consider, it is clear CHWs are a powerful force in eliminating minority health disparities. They are ideally positioned as trusted members and credible messengers in the communities they serve to convey essential public health information to help clients reduce their risk of contracting COVID-19. Situated as they are in programs that are administered by community-based organizations, they play a crucial role in bridging gaps between members of vulnerable communities and resources provided by healthcare systems. However, they need help in responding to the specific concerns of communities in a way that respects CHW principles of empowerment and self-determination.

It is particularly critical to identify the needed digital resources required to keep CHWs and communities connected. Digital technologies play a key role in keeping people connected, but digital resources emerge strongly from this study as another inequity highlighted by COVID-19. The pandemic has illuminated how the digital divide is implicated in health and well-being and called our attention to the fact that the internet itself is a social determinant of health. CHWs recounted the challenges of connecting with some clients when face-to-face encounters were disrupted, the challenges of connecting clients with services, and the expansion of the areas of support they provided to include advocating on clients' behalf to internet service providers.

There is increasing recognition of the role of internet access in all of the social determinants of health (SDOH). As defined by the American Medical Association (AMA), these include healthcare system access, economic stability, education, food security, community and social connections, interactions with the neighborhood and physical environment; proponents of including internet access among the standard SDOH also include access to information. Prof. Golden plans to continue research on

this important topic: She is part of a team led by the Northern Manhattan Perinatal Partnership and including NewYork-Presbyterian hospital that has received funding from the New York State Health Foundation to conduct a CHW-supported initiative promoting the use of telehealth in addressing maternal-child health disparities.

The effectiveness of contact tracing

The issue. Contact tracing is a potentially invaluable tool for managing COVID-19 community spread and supporting economic reopening; however, it has not proven in practice to be a successful intervention in many Western countries. In some regions of the United States, nearly half of those who test positive decline to provide detailed information about their contacts. Among the factors contributing to the faltering of contact tracing is distrust, which is particularly prevalent within minority communities. Research conducted by [Prof. Jason Randall and Dev Dalal](#) of UAlbany's Psychology Department helps us understand what the public currently knows about contact tracing and how misinformation and distrust might influence intentions to comply with contact tracers' requests.

The investigation. Working with a sample of over 300 individuals with racial/ethnic minority status living throughout New York (over 46 percent self-identified as African American or Hispanic; 48 percent of the sample self-identified as Asian), respondents replied to survey questions that asked what they knew about contact tracing (e.g., Who are contact tracers? Why is contact tracing important?) as well as sources of distrust and misinformation about contact tracing and what might be done to address them. While distrust of and noncompliance with contact tracing is certainly not limited to racial and ethnic minorities, special attention is merited because of the disproportionate risk of infection and severe disease due to other socioeconomic factors.

The survey results present a broad spectrum of what is known – accurately and inaccurately – about contact tracing. Respondents had a relatively good understanding of basic facts and information about contact tracing (average score of 78 percent on a basic knowledge test); however, the variability in scores (SD = 12 percent) and open-ended responses suggested some persistence of misinformation. Trust in contact tracers was, on average, neutral (M = 3.80 on a 5-point scale), but again with a wide degree of variability as well (SD = 0.73). This suggests that although on average the minority individuals sampled here did somewhat trust contact tracers, there was also a sizable number who did not. For example, over 10 percent of the sample believed that information shared with contact tracers could also be shared with the general public, local law enforcement or state/local government, a perspective directly at odds with state law making it illegal to share contact tracing information. Moreover, only 40 percent of the sample correctly believed that contact tracers could not “get you in trouble for not following public health guidelines.” In short, although people do have generally accurate knowledge about contact tracing, a sizeable number of respondents still believe false information.

The data analysis 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 predicted intentions to comply with contact tracing requests. This suggests that individuals in minority groups need to see contact tracers as reliable, competent, and concerned in order to follow their guidance. In minority communities in New York, those who identify as more right-leaning in their ideological beliefs indicated they were less willing to comply with contact tracing requests. This emphasizes the need for clear messaging and proactively fostering trust and knowledge sharing across the political spectrum. Additionally, the more minority individuals knew about contact tracers, including what they do, what information they gather, their individual rights and responsibilities when responding to tracing requests, and the importance of contact tracing in the fight against COVID-19, the more likely they were to indicate a willingness to comply with tracing requests.

The results also showed that increased intentions to comply with contact tracers were indirectly influenced by trust in healthcare professionals, government healthcare officials, and news media, all of which tended to increase trust in contact tracers. Further, greater health literacy and political liberalism increased trust in contact tracing by increasing knowledge of contact tracing. This provides several options for intervention to increase contact tracing compliance by building trust and combating misinformation in minority communities.

What we are learning. Profs. Randall and Dalal have fielded several recommendations for increasing the efficacy of contract tracing. They suggest the simple need to combat misinformation by increased sharing of accurate information about the basics and efficacy of contact tracing. Further, distrust may be combatted by clearly describing the motives and authority of contact tracers, stressing the confidentiality of the information gathered, and explaining why this method is effective in controlling COVID-19 spread. It is vital to involve healthcare professionals, government health officials, and the news media in building trust. But we must also ensure contact tracers have the skills and knowledge they need to clearly and respectfully communicate in order to build trust in contact tracing overall. Finally, we need to combat politically polarized responses to contact tracing through values-affirming messaging and targeted efforts to engage conservative media outlets.

Toward the realization of health equity

These projects have documented inequities among New Yorkers based on race and ethnicity that put them in danger of potentially devastating health consequences from COVID-19, as well as the cascading economic, educational, mental health, and other social consequences of the pandemic. Synopsized only briefly here, the findings paint a grim picture of infection, suffering, death, fear, and distrust, while at the same time providing glimpses of creative accommodations, resilience, and resolve on the part of many frontline providers supporting the needs of their communities. The outcome is an intimate understanding of inequalities that are now, in spring 2021, still in the process of unfolding, albeit with the promise of better times ahead. Taken together, we begin to

more fully appreciate the multiple ways in which many New Yorkers, but most particularly New York's residents of color, have suffered.

UAlbany's researchers have taken advantage of the opportunity to do their work under real-time pandemic conditions, many of which are ongoing. It is unlikely that the pandemic will simply stop; more likely, conditions will continue to evolve in directions that shape the challenges of the future. It is thus important to envision long-term lines of research in need of systematic investigation as well as interventions whose effectiveness may become the object of research within a broader health equity agenda. Below we provide brief descriptions of some important directions for future research.

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 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. The former are measures of disadvantage resulting from economic, educational and social inequalities. Race/ethnicity may function to index health vulnerabilities developed over lifetimes of discrimination, inequalities in access to and quality of medical care, and environmental toxins that accumulate over time. 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 among minority groups, suggesting the need to tailor interventions for racial-ethnic communities depending on factors relevant to each.

Adapting interventions to communities. Descriptive data is useful for documenting inequities and disparate effects. However, it is also important to move from general description to tighter focus on the sub-groups for whom targeted interventions are most needed or most likely to have an impact. It is unlikely that generic strategies and interventions will provide relief to communities characterized by ethnic, historical, or other cultural differences. Instead, interventions adapted to community needs are most likely to succeed. One of the most important lessons taught by COVID-19 is how essential it is to work closely with communities and apply the sensitivity required to adapt interventions to specific needs.

From description to model building. Going further than descriptive data raises the possibility of model building, the advantage of which lies in exploring how a variety of social factors work together to produce particular outcomes. The ways in which, for example, the perception of risk, available information, government policy, along with demographic factors all work together to influence decision-making can provide important insight. Models further provide the ability to explore particular subgroups and project outcomes based on interventions featuring relevant and influential factors.

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 in 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 require renewed efforts by 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, which means there is considerably more work to be done. 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.

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 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 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.