Supplement to

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A PUBLICATION OF THE
AMERICAN PUBLIC HEALTH ASSOCIATION

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COVER: In this special supplement to the AJPH: unmasking structural racism as the source of systemic inequities within health care and public health.

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COVID-19, Racism, and Public Health Infrastructure

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CONFLICTS OF INTEREST

Luisa N. Borrell, *AJPH* Associate Editor, Paul C. Erwin, *AJPH* Associate Editor, and Steve Fiala, Guest Editor, served as Editors for this supplement issue on "Public Health 3.0 and Beyond: Incorporating Systemic Racism." L. N. Borrell, P. C. Erwin, and S. Fiala oversaw peer reviewer selection, evaluated peer reviews, and Alfredo Morabia, *AJPH* Editor-in-Chief, made final decisions on editorials selected for inclusion in the supplement. L. N. Borrell, P. C. Erwin, and S. Fiala also authored an introductory editorial which introduces the topic of COVID-19, racism, and public health infrastructure.

CONFLICTS OF INTEREST

Luisa N. Borrell, DDS, PhD, has no conflicts of interest to disclose.

Paul C. Erwin, MD, DrPH, has no conflicts of interest to disclose.

Steve Fiala, MPH, is with the Oregon Health Authority Public Health Division and the Oregon Health and Science University-Portland State University School of Public Health, Portland. He has no conflicts of interest to disclose. AJPH

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Making Equity the Priority

Thomas A. LaVeist, PhD

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We did not know what it would be or when it would happen, but most public health professionals knew that, sooner or later, we would experience a pandemic of some kind. COVID-19 was, in many ways, the test we had all been waiting to take. More than a year and a half later, although we are not exactly failing the test, we are definitely falling short in areas in which we optimistically vowed to excel.

In 2016, public health leaders from the US Department of Health and Human Services began highlighting a concept called Public Health 3.0.[1] Their idea was that the modern age of public health (Public Health 1.0) began around the dawn of the 20th century when scientists significantly advanced understanding of infectious diseases and developed vaccines and antibiotics to address them. The second wave—Public Health 2.0—was kicked off by the Institute of Medicine's 1988 report *The Future of Public Health*.[2] Following that report, we saw the expansion of governmental agencies to coordinate and manage the public's health, organizations that have played a critical part in the response to COVID-19.

Public Health 3.0, which was published in *AJPH* in April 2016,[1] called for the next reimagining of public health. The 111th US Congress had passed President Barack Obama's Affordable Care Act, and although it was not universal health care, it went much further and covered significantly more Americans than ever before. Public Health 3.0 recognized that although individual behaviors drive health status, the physical and social determinants of those behaviors (neighborhood safety, education, availability of reliable transportation, quality of housing, and more) drive those behaviors. Racism would have to be addressed, as racism underlies most social determinants through either unequal access to resources necessary for a healthy lifestyle or exposures to community health risks.

Public Health 3.0 envisioned greater collaboration with community organizations and more flexible funding mechanisms. Although systemic racism was not directly addressed in the report published by the Department of Health and Human Services in March 2016, achieving health equity was a transformational goal of the plan, and it seems axiomatic that achieving health equity would require that racism be addressed.

COVID-19 has demonstrated that we still have quite a distance to travel before we reach Public Health 3.0.

Our response to the pandemic made great use of the technology, tools, and data called for in Public Health 3.0. Those data, however, show that for all our lofty plans, we are still often missing the people who most need such public health services as testing and vaccines. The New York City Department of Health and Mental Hygiene offers a robust selection of data in digestible graphics readily available on their Web site (https://on.nyc.gov/3uaF9hk). Unfortunately, the data still demonstrate that Black residents, particularly those aged 18 to 44 years, have the lowest vaccination rates.

New York City is not unique in this disparity, and it is enormously helpful to be able to see the data and, hopefully, respond. In Illinois, the organization Illinois Unidos formed a network of elected and appointed officials, health professionals, and representatives of community-based organizations to address the disproportionate effect of the virus on the Latino community, particularly in Chicago and Cook County (Del Rios et al., in this issue of *AJPH*, p. S204).

Other demographic groups have also had a harder time accessing services or even being represented in the data. Only about half of US states indicate COVID-19 deaths for Indigenous populations, even though 37 states have Indian Health Service offices (Huyser et al., in this issue of *AJPH*, p. S208). Immigrants, who often serve in essential capacities, may fly under the radar, missing out on the direct and indirect services offered in response to the pandemic. Undercounting and completely missing any sector of the population are potentially disastrous, especially as new, more virulent strains of the virus emerge. The fact that population undercounts most commonly occur in communities of color threatens efforts to address health equity because the number of people who are affected is underreported and budget allocations to communities of color are affected. If considerations of race are not in the forefront, the data-driven approaches outlined in Public Health 3.0 can exacerbate inequities.

There are bright spots. The Marion County Public Health Department in Indiana used a data-driven approach to provide COVID-19 testing in a timely manner (Hansotte et al., in this issue of *AJPH*, p. S197). The Healthiest Cities & Counties Challenge, an effort to improve food access in 20 communities across the United States, used a flexible funding model to provide direct assistance to community-led initiatives.

These are positive examples, but it is not enough, and we have to do better.

We know that health has more to do with where you live and work than genetics. We clearly have the tools to develop data to drive public health initiatives. We need to put mechanisms in place—everywhere—so we can adequately respond to not only this ongoing crisis but also the next one. It is not acceptable that anyone would be left out. We are all healthier when we prioritize everyone's health.

We have the tools. We need the will.

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The author has no conflicts of interest to declare.

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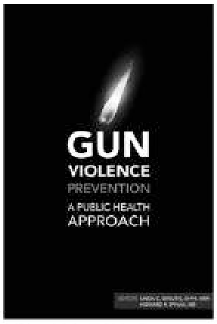

COVID-19—The Historical Lessons of the Pandemic Reinforce Systemic Flaws and Exacerbate Inequity

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The COVID-19 pandemic demonstrates the complex layers of public health practice associated with widespread infectious disease strategies, including containment, mitigation, and medical countermeasures. Through each of these stages of disease intervention, the pandemic exposed deep chasms in our country's ability to ensure that the opportunity to be healthy is an inalienable right for everyone at the highest level of our existence—as a human being—and without regard for one's race, ethnicity, sexual orientation, or economic or social status. I address some of the many examples of how the pandemic further deepened health inequities in our country, how current public health systems failed to address systemic and structural racism rooted in social determinants of health, and how the Public Health 3.0 framework was inadequate in addressing these issues.

Inequities in COVID-19 testing emerged early in the pandemic: during containment efforts. Studies confirmed that Black and Hispanic populations had disproportionately higher rates of hospitalization and death from COVID-19 than did Whites.[1] In New York City, New York, for example, efforts were undertaken to study testing across the jurisdiction by race/ethnicity and neighborhood, showing that more tests were done in geographic areas with concentrations of White people although non-White areas had more positive tests.[2]

Public Health 3.0, introduced conceptually in 2016 by the US Department of Health and Human Services in listening sessions across the country, held much promise as a way to view the crucial role of public health leaders in their communities. Today, our nearly 3000 local health departments and their leadership are theoretically well positioned to be community health strategists. Every day, they must work collaboratively beyond traditional public health programs and across communities to use sector partnerships to collectively effect environment, policy, and systems-level change—all with the promise to address social determinants of health and eliminate inequities. The hope that Public Health 3.0 brought to many public health professionals a mere five years ago was not met. The reality has been much starker and more complex.

A year after the 2016 US Department of Health and Human Services listening sessions, a set of recommendations came forward based on feedback from the public health community.[3] There are a host of reasons some of the recommendations did not result in lasting transformational changes to the public health system.

Although many public health leaders across the country wanted to position themselves as chief health strategists for their communities and embraced the role fully, siloed funding streams remained and hindered engagement in more cross-cutting initiatives to address health equity from a macro-approach across programs. Local health departments continued to experience significant consequences from overall disinvestment in public health, causing a 21% decline in the overall workforce over the past decade.[4] The broader field of public health did not rally to develop the training, tools, resources, and supports necessary to retrain an existing workforce on how to implement the Public Health 3.0 framework tactically and realistically for their institutions.

The recommendation that every community be protected by a Public Health Accreditation Board (PHAB)-accredited health department was never supported through broad political will or investment. Although language was introduced into legislation that supports accrediting all health departments, efforts stalled amid changing administrations, ongoing politics, and the pandemic. According to PHAB, as of May 14, 2021, a total of 39 state, 276 local, 4 tribal, and 1 statewide (in Florida) integrated local public health department systems have achieved five-year initial accreditation or reaccreditation through the PHAB, bringing the benefits of PHAB accreditation to 88% of the US population. Comparatively, as of August 2016, when Public Health 3.0 was introduced, approximately 80% of the US population lived in the jurisdiction of 1 of the 324 local, state, and tribal health departments that was accredited or that PHAB was in the process of accrediting. Because one of the key outcomes of accreditation is improved cross-sectoral relationships in the community—also a primary recommendation for achieving Public Health 3.0—the lag in health department accreditation significantly affects the achievement of Public Health 3.0, especially in the current context of the pandemic.[5]

This pandemic has laid bare the complete lack of data infrastructure—another tenet of Public Health 3.0. The recommendation to ensure data accessibility for communities across the country has not been met, as local health departments still need access to data with as much detail (i.e., at the zip code level) and as quickly as possible. The lack of timely access to data has continued to plague local health departments during this pandemic, limiting full visibility of what is happening in their communities to make informed decisions on local public health measures. Visibility and transparency of data also apply to the public and help reinforce trust in the governmental public health system, including trust in guidance, mandates, and public health orders as well as support for policy change.

To this day, a majority of local health departments have limited access to and visibility of vaccine supply coming into their jurisdictions through the multiple federal government partnerships that are providing vaccines outside local public health (e.g., federal pharmacy programs). This lack of visibility of the vaccine supply across a community inhibits a local health department from, among other things, addressing health inequity related to vaccine distribution and administration; comprehensive vaccination planning, distribution, and logistics; using vaccination logistics to address accessibility; targeting vaccination efforts at the neighborhood level to improve uptake; and coordinating vaccination education efforts.

A robust, interoperable public health data system is the key to responding to any public health emergency, particularly a pandemic of the magnitude of COVID-19. Because of strong advocacy efforts, between fiscal year 2020 funding and the CARES Act (the Coronavirus Aid Relief and Economic Security Act), Congress has provided $550 million for the public health Data Modernization Initiative at the Centers for Disease Control and Prevention. Further efforts will be needed to ensure that these funds are available to strengthen all levels of the governmental public health system, including local health departments. Aside from pure data infrastructure, data collection is an imperative, and the underreporting and lagged reporting of racial and ethnic data during this pandemic has been a tragedy in itself.

General infrastructure funding to support public health beyond the traditional and siloed federal funding mechanisms and outside the boom-and-bust funding cycles related to public health emergencies has not been realized. Public Health 3.0 cannot be fully implemented without sustainable and long-term investment in the grossly deteriorated infrastructure of the governmental public health system at the federal, state, local, tribal, and territorial levels. Funding, whether it is temporary emergency relief funding for pandemic response or longer term investment in infrastructure, must also reach the ground to local health departments in support of the communities they serve. The flow of federal dollars to local health departments across the country remains inconsistent; there are vast differences in funding amounts, restrictions for use, and overall timeliness of receiving funds. And to date, there has been a marked lack of accountability, visibility, transparency, and reporting on how previous and current funding is reaching local health departments. This is not to mention a failure to properly account for and address the short- and long-term consequences and outcomes from these investments.

In an article highlighting the historical context of COVID-19, Amy Forbes suggests that “disease crises have acted as a sort of stress test on society, revealing, amplifying or widening existing social fissures and health disparities.”(6p1) There are important lessons from past public health crises that foreshadowed the atrocious loss of life and inequitable effects of COVID-19. Arguably, these could have been anticipated, even planned for, throughout the federal, state, and local governmental public health system. This work cannot be achieved in a vacuum, and public health is one entity among many stakeholders and partners necessary to proactively address and prevent these outcomes in the future. It is imperative that deeper engagement and relationship building occur across the spectrum of stakeholders, including public health, education, housing, agriculture, labor, transportation, and health care, and the community itself so that each understands their role in contributing to population health and the effects of their policies and systems on the health of the people in our country. AJPH

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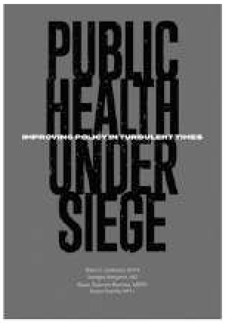

Public Health 3.0 After COVID-19—Reboot or Upgrade?

Karen B. DeSalvo, MD, MPH, MSc, and Kushal T. Kadakia, MSc

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Governmental public health, which in the United States has long been relegated to the periphery, has returned to center stage because of COVID-19. Because of funding for a national forecasting center and a federal mandate for public health data modernization, among other public health steps taken to control the pandemic, there is now unprecedented awareness about the vital role of public health in all sectors of society. Yet in this moment of crisis, it is imperative that policymakers and practitioners avoid reducing the work of public health to pandemic preparedness alone. Health is driven by communicable and chronic diseases as well as social and environmental determinants. Addressing all drivers of health requires relying on governmental public health in collaboration with other sectors, because "public health is what we do together as a society to ensure the *conditions* in which everyone can be healthy."[1]

THE NEED FOR PUBLIC HEALTH

AJPH's special issue "COVID-19, Racism, and Public Health Infrastructure" sounds the clarion call for dealing with the crisis of conditions facing the public's health. The disparate impact of the pandemic on communities of color and low-income populations highlights generational inequities institutionalized in the US health system and broader society. For example, variation in COVID-19 infections and outcomes across the boroughs of New York City, a pandemic epicenter, reflects the profound role that zip codes play in determining the health of people in the United States.[2] Likewise, disparities in COVID-19 mortality between Black and White Americans are a shameful manifestation of the racial/ethnic gaps in life expectancy that have existed since the country's founding.

BUILDING ON THE PUBLIC HEALTH 3.0 VISION

These long-standing health disparities and social inequities are what motivated the articulation of Public Health 3.0, described in a 2016 report by the Office of the Assistant Secretary for Health.[1] This report reflected the voice and vision of leaders across the federal government and from frontline health departments across the country. Public Health 3.0 is a framework for renewing the US approach to governmental public health comprising five critical dimensions: (1) strong leadership and workforce; (2) strategic partnerships; (3) flexible and sustained funding; (4) timely and locally relevant data, metrics, and analytics; and (5) foundational infrastructure.

The report reflected the pioneering work happening in communities across the United States that had begun implementing these elements together to achieve remarkable progress for public health, with notable examples including New Orleans, Louisiana, and Baltimore, Maryland. However, the challenge for governmental public health in the United States has long been the variation in state and local health department capabilities, which contributes to differential outcomes for communities across the country. Consequently, Public Health 3.0 was designed to provide a roadmap for all health agencies serving all communities to achieve an enhanced scope of practice for public health—one that looked upstream of medical care and traditional department functions to address the underlying drivers of health and well-being.

Following the publication of the Public Health 3.0 report, local health departments—the intended users of the Public Health 3.0 framework—began incorporating Public Health 3.0's principles into their strategic planning. Surveys revealed high levels of support for 3.0-related activities.[3] For example, the Boston, Massachusetts Public Health Commission's strategic plan was designed to be in alignment with the vision of Public Health 3.0. Importantly, the majority of staffers and leaders nationwide cited health equity as the primary Public Health 3.0 activity that their departments should be pursuing.[3] This perception aligned with the ethos of the framework itself, which was created with the aspiration that "for the first time in history, every person in America has a truly equal opportunity to enjoy a long and healthy life."[1]

This aspiration was borne from the implicit recognition that the benefits of scientific progress and public health practice had not been distributed evenly across the US population and that achieving equitable outcomes would require fixing the very foundations of society, medicine, and public health. Yet although Public Health 3.0 has taken root in the field, the experience of health departments and communities during the pandemic is a stark reminder about the gaps that persist between the framework's aspirations and public health's actions.

Articles in this issue of *AJPH* offer vivid insight into these structural challenges. For example, Madorsky et al. (p. S185) use the experience of vaccine hesitancy among Black and Brown communities in Chicago, Illinois, to illustrate the consequences of structural racism in both perpetuating the existence of health care deserts and mistrust among communities of color.[4] Likewise, Huyser et al. (p. S208) review how colonial legacies of racism and erasure contributed to data gaps for American Indian and Alaska Native populations during COVID-19, highlighting how inequities are institutionalized in the foundational systems of public health.[5]

Public Health 3.0 provides a lens for how health departments can address the equity challenges highlighted by these authors. For example, the Chicago Mayor's Racial Equity Rapid Response Team is precisely the kind of strategic partnership needed to address the multiple drivers of disparities, and the data gaps for tribal populations are exactly why health departments need access to timely and locally relevant data, metrics, and analytics. And indeed, reports from public health officials included in this issue of *AJPH* illustrate how 3.0 principles were applied in practice during COVID-19, including the Marion County, Indiana, public health department's data-driven approach to identifying disparities to guide resource allocation described by Hansotte et al. (p. S197) and Public Health Seattle and King County's use of partnerships and cross-sector data to monitor and respond to the upstream drivers of health in Washington State, as chronicled by Wong et al. (p. S215).[6,7]

STRENGTHENING PUBLIC HEALTH

These real-world examples illustrate the ongoing value of Public Health 3.0. Yet the reality remains that the majority of health agencies nationwide are not configured to deliver on 3.0's goals of health equity or effective public health practice. The shortcomings are built into the system itself. As Perrote and Noorestani note in their editorial, "Traditional funding practices [in public health] often exclude the very people they strive to support, further reinforcing the power imbalances that contribute to health disparities" (p. S189).

Related challenges exist for the other elements of the Public Health 3.0 framework. For example, as Del Rios et al. (p. S204) highlight from their work with the Latinx community in Illinois, and as Kline and Quiroga (p. S201) observe from their work with the LGBTQ+ (lesbian, gay, bisexual transgender, queer, and others) community in Florida, strategic partnerships will struggle to improve equity unless practices are rooted in the ideals of justice and grounded in local relationships and social networks in the communities that public health is intended to serve.

These challenges are endemic to public health and are obstacles to any framework for change, including Public Health 3.0. Consequently, over the past five years, scholars, nonprofits, and health departments have collaborated to develop a policy agenda for addressing each of these structural barriers. These strategies, coupled with the articulation of health equity as a first principle for change in this month's issue of *AJPH*, offer a pathway for a relaunch of Public Health 3.0 in the postpandemic era.

A critical dimension of enhanced public health practice in the 3.0 framework is flexible and sustainable funding. Legislation has since been drafted on the concept of a "public health infrastructure fund," which is currently under consideration in the US Senate.[5] Likewise, although Public Health 3.0 set a marker for data modernization, many health departments have continued to operate in data silos and use outdated tools such as fax machines. However, roadmaps from the Council of Territorial and State Epidemiologists and the National Academy of Medicine, coupled with new mandates from the White House and funding from Congress, position the field to finally make overdue upgrades to its data and information technology infrastructure.[6,7] Furthermore, although the field has long acknowledged the benefits of partnerships in the abstract, health departments now have tangible examples of how to operationalize collaborations with stakeholders, including health systems and community-based organizations and even nontraditional entities such as technology companies.

COVID-19 has rendered the need for an upgrade to public health more urgent than ever. Now is the time to relaunch the Public Health 3.0 vision—combining existing, consensus-based principles with new tools, policy strategies, and political momentum to renovate the field's foundations and achieve health for all.

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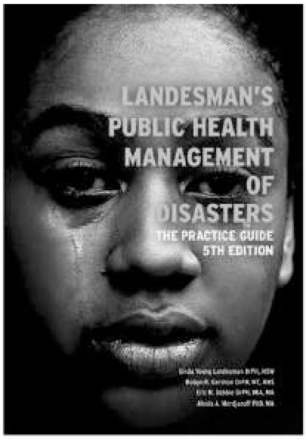

Addressing Racism in Research Can Transform Public Health

Jacquelynn Y. Orr, DrPH, MHA, Monique S. Shaw, PhD, MPH, Rachel Bland, MPH, George Hobor, PhD, MA, and Alonzo L. Plough, PhD, MPH

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The Centers for Disease Control and Prevention recently issued a declaration reflecting what many already realized: racism is a threat to public health and a fundamental cause of health inequity in the United States. As we continue to grapple with COVID-19, now is the time to move beyond research that shines a light on health disparities and provide evidence of what works to address structural racism and improve health equity.

Racism shapes virtually every aspect of life, opportunity, and well-being. It harms individuals and hurts the health of our nation by unfairly lifting up some and oppressing others. It is also the driving force of social determinants of health, including education, housing, and employment.

Rooted in the belief that everyone should have a fair opportunity to lead a healthy life, philanthropy and research have often teamed up to address health inequities in the United States—inequities that became glaringly clear during the pandemic. COVID-19 epitomizes a complex crisis of infectious disease, food and housing insecurity, and mental distress, conditions already felt by communities and individuals that have been historically excluded.

Research is an essential tool that can ensure that the health and social policies enacted during the pandemic positively affect communities for decades to come. For example, the COVID-19 US State Policy Database was developed to inform policy decisions that promote health equity and focus on policies that affect marginalized and historically excluded populations.[1] It is a powerful resource for states seeking solutions for an equitable response, recovery, and reopening.

But calling for more research and framing racism as an upstream public health issue cannot alone dismantle racist institutions or support community healing. We must evolve from Public Health 3.0, which emphasizes cross-sector collaboration and improving social determinants of health, to Public Health 4.0, which is community centered and driven by those most affected, to address racism as a public health issue in and outside the context of pandemic response efforts. We must collectively hold accountable the systems allowing racism to continue to be a barrier to health equity.

REVAMPING DATA

There is a tremendous opportunity to transform public health research, including our nation's data infrastructure and the journals that publish the findings, to better reveal inequities and their solutions and allow collaboration from all sectors. We have learned that consistent and disaggregated data are critical to understanding the lived experiences and outcomes in a public health crisis. Factors such as immigrant status, gender, sexual orientation, disability, language, socioeconomic status, and experiences with structural and interpersonal racism are intersectional, and all significantly influence health outcomes. That detail is lost once data are aggregated into broad categories of race and ethnicity. If we cannot fully understand the social determinants that affect people's health, it is impossible to respond with adequate action or policies.

In 2020, the Robert Wood Johnson Foundation and the Urban Institute released a series of reports to highlight the lack of data on maternal outcomes disaggregated by race and ethnicity, the link of pandemic-related changes to maternity care and preexisting inequities, and opportunities to improve maternal health equity after the pandemic.[2]

Before COVID-19, the United States was already experiencing a maternal morbidity and mortality crisis, and systemic racism has been a key driver of disparate maternal health outcomes. Women of color with low incomes are more likely to face food insecurity, unstable housing, and mental health challenges such as depression and anxiety, all of which may negatively affect health outcomes. And in recent decades, the maternal death rate has nearly doubled, with Black and Indigenous women two to three times more likely to die of pregnancy-related causes than are White women.

The reports emphasize that our existing data systems cannot support maternal health equity and offer opportunities to improve it during and beyond the pandemic. As discussed in Huyser et al. (p. S208), the pandemic unveiled particular historical challenges to Indigenous populations and highlights how the current public health infrastructure perpetuates the effects of systemic racism. Hansotte et al. (p. S197) demonstrate how a local public health department used COVID-19 data disaggregated by race and ethnicity to make equitable resource allocation decisions.

As we continue to reimagine data, the Robert Wood Johnson Foundation established the first of its kind (to our knowledge) independent National Commission to Transform Public Health Data Systems.[3] The commission includes some of the nation's leading experts in areas such as health care, community advocacy, government, business, and public health, and it is tasked to identify the improvements in data systems that will better address social determinants and structural factors that result in inequitable health outcomes. The commission's recommendations are expected in fall 2021.

AMPLIFYING THE MESSAGE

To reduce health inequities, we must use this moment to create a new future—one with strong leadership, commitment, community partnership, and changes in priorities and financing. Awareness of the need for the public health field to address racism is growing, but it will require deeper commitments from those who amplify the message and the data.

Work must continue that ensures that the public health community is explicitly naming racism. A 2018 literature review of peer-reviewed public health literature found that although institutionalized racism is recognized as a fundamental cause of health inequities, it was not often explicitly named in the titles or abstracts of articles published.[4] Naming institutionalized racism refers to explicitly and publicly using language and analyses that describe an issue as a matter of racial justice. By naming institutionalized racism in peer-reviewed literature and being explicit about how systems and institutions are designed to isolate or oppress people of color, we can analyze how these factors influence population health patterns. Researchers and the publications that promote their research have a critical opportunity to highlight how injustice and discrimination have been codified and reinforced in our health systems. Words have power to shift hearts and minds, generate knowledge, share solutions, and shape narratives. Being explicit about naming this critical construct may move the field forward in important ways.

TAPPING COMMUNITY POWER

Community power is the ability of people most affected by inequity to create change through a shared agenda of achieving a larger vision. As Kline and Quiroga (p. S201) showcase, collaboration among researchers, public health practitioners, and community leaders can advance efforts to address social inequalities that inform poor health. A health equity lens must include the power and knowledge of communities who know best what they need to lead full and healthy lives.

The Robert Wood Johnson Foundation is committed to supporting research that provides evidence of what works to advance health equity and addresses racism. For example, supporting the Asian & Pacific Islander American Health Forum to implement the Data Equity Project created an opportunity to engage community leaders across the country, including community public health organizations and social justice advocates, to address health challenges and provide local and regional community organizations with the tools, training, and organizational capacity building needed to advance health equity.[5]

Beyond the research itself, we must think critically about who interprets the results. Expanding the Bench offers a network and pipeline for diverse evaluators and builds demand among funders for those practicing culturally responsive and equitable evaluation.[6] These evaluations must comprehensively assess the research, including whether the research methods or approaches started with culturally appropriate planning and design, set a goal to advance equity, developed cocreated questions with the community meant to benefit from the research, amplified the voice of the community in data collection and disaggregated the data for various populations in the community, and validated the findings with the community.

COMMITMENTS AND NEXT STEPS

To achieve health equity, we must name and identify racism where it exists and challenge the structural racism that shapes our governance, social structures, and policies that perpetuate inequities. Research must provide an evidence base for future policies and interventions that must be implemented at individual and community

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levels to enhance health equity for all. This could look like the following:

- A deeper examination and commitment from journals, funders, and peer reviewers to explicitly name institutionalized racism in public health literature.
- An investment from funders and the philanthropic community to ensure research is conducted by a diverse body of researchers in partnership with community.
- Centering people who bear the greatest disparities—primarily Black, Indigenous, Asian American and Pacific Islander, Latino, Hispanic, and other communities of color—in research design, implementation, and policy advocacy.
- Practice-based research that shifts the paradigm to investigate the joint effects of multiple domains of racism (structural, interpersonal, cultural) so we can better measure racism and not just its effects.

There is no one-size-fits-all solution to combating racism. It will take real commitment, difficult conversations, sincere reflection, and humility from all of us. The time is now for researchers—and all those who apply research in their practice—to examine the mechanisms through which we continue to perpetuate racism and the methods critical to addressing it to lead us to a future of health equity. AJPH

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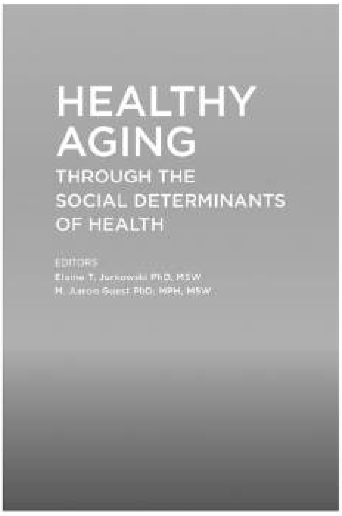

Vaccine Distrust: A Predictable Response to Structural Racism and an Inadequate Public Health Infrastructure

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Black Americans have higher mortality rates from COVID-19 than the general population and also stand out as less inclined to accept COVID-19 vaccination. As of January 5, 2021, 1 in 735 Black Americans and 1 in 1000 Latino Americans has died from COVID-19, in comparison with 1 in 1030 White Americans.[1] As these statistics illustrate, the public health infrastructure has visibly failed to protect Black and Brown communities from disproportionate rates of death from COVID-19. Also, according to Khubchandani et al., only 66% of Black adults and 71% of Hispanic adults say that they would get vaccinated compared with 78% of White adults.[2] The Public Health 3.0 framework introduced by DeSalvo et al. in 2016 committed to creating adequate public health systems that would be able to respond to community needs in times of crises.[3] The evidence of racial inequity in access to COVID-19 prevention and treatment and in the distribution of the social and economic burden of the pandemic calls into question the capacity of the Public Health 3.0 framework to meaningfully address structural racism.

Vaccine hesitancy, as defined by the World Health Organization, is a refusal or a delay in the acceptance of vaccines despite availability.[2] We posit that the term "vaccine distrust" is preferred over the term "vaccine hesitancy" because of the negative connotations of the latter, which in effect faults the individual for their lack of confidence in a system that has historically failed and continues to fail them. We examine the shortcomings of the Public Health 3.0 framework through the instructive case of vaccine distrust, which is both a barrier to health care and a predictable response to the public health infrastructure's failure to respond to structural racism.

ASSESSING PUBLIC HEALTH 3.0

The Public Health 3.0 framework posited that to improve health for all, public health departments needed to engage communities and their leaders in collaborative efforts.[3] This recognition of the role of local communities in public health practice was reinforced by research associating health outcomes with place, summed up in the conclusion that one's zip code is a stronger predictor of health status than one's genetic code.[3,4]

Yet a well-intentioned focus on communities as places can obscure the histories of structural racism that define them as determinants of health. In Chicago, Illinois, zip codes reflect a history of residential segregation, and structural racism continues to permeate civil society, causing the most marginalized members of society to live shorter lives than their wealthier White counterparts. In 2019, researchers from New York University School of Medicine reported that Chicago had the largest life expectancy gap across neighborhoods in the country.[4] The difference is as high as 30 years, and what drives this gap are the differences in the social conditions in which individuals in these communities live. During the COVID-19 pandemic, the public health infrastructure has had the opportunity to demonstrate a capability to address structural racism, the root cause underlying neighborhood-level effects on health, but is so far failing.

PUBLIC HEALTH INFRASTRUCTURE SHORTCOMINGS

Two examples demonstrate the Chicago public health infrastructure's inability to implement the kinds of community collaboration that Public Health 3.0 promised but could not fulfill because of its failure to address structural racism. When key decisions were made for the prioritization of COVID-19 testing sites, Black and Brown communities were marginalized. Many testing sites were drive-ups and largely inaccessible by public transport, and few offered flexible evening and weekend hours that would accommodate the work schedules of the many "essential workers" in Black and Brown communities.

The controversy surrounding reopening Chicago Public Schools, where students are disproportionately Black and Latinx, is another example of a local failure to center racial equity in the public health response to the pandemic. Balancing the imperative to reopen public schools to mitigate the disruption to education with the need to stop the spread of COVID-19 requires precisely the kind of cross-sector, community-led collaboration that Public Health 3.0 sought to deliver. Yet Chicago public school teachers and staff were not prioritized for COVID-19 testing, and only recently was a vaccination prioritization strategy released for them. In the push to have students and staff return to in-person learning, these groups saw delays in communication regarding when they would be eligible for vaccination or what the process would look like, a clear breakdown in cross-sector collaboration and community engagement that has disproportionately affected Black and Brown communities.

The public health infrastructure as it exists today has thus clearly failed to adequately respond to either COVID-19 or structural racism. It did so by failing to prioritize Black and Brown communities in COVID-19 testing measures and is failing again in the rollout and prioritization of the COVID-19 vaccines. In Chicago, the communities that were most severely affected by COVID-19 are not the communities with the highest rates of vaccinations thus far. For reference, the Chicago Data Portal shows that 77.1% of residents of Streeterville (zip code 60611)—a predominantly White and wealthy neighborhood where many doctors and health systems are located—have already been vaccinated with the first COVID-19 vaccine dose, compared with just 34.2% of Englewood (zip code 60621) residents.[5]

Englewood is a predominantly Black neighborhood where many nonmedical, frontline Black and Brown health care workers reside. This discrepancy is again another form of structural racism in that although public health officials had stated their intentions to prioritize Black and Brown communities, the reality-one that these communities are used to-suggests otherwise. After repeatedly being neglected by the health care system, it is rather reasonable that members of Chicago's Black and Brown communities do not trust their public health departments or believe that they will protect them. On January 25, 2021, the Chicago Department of Public Health (CDPH) announced Protect Chicago Plus, a plan that guides an equitable approach to vaccine distribution.[6] Although we are hopeful that this initiative will help to ensure that the vaccine effectively reaches marginalized communities, it does not eliminate the fundamental and repeated lack of protection and prioritization of Black and Brown individuals that fuels vaccine distrust.

VACCINE DISTRUST: A PREDICTABLE RESPONSE

Vaccine distrust during the recent COVID-19 vaccine rollouts must be understood in the context of these painful, avoidable failings of the public health response to the pandemic in Black and Brown communities. For communities of color, these recent experiences confirm that the trust broken through historical abuses by medical and public health professionals (the Tuskegee Syphilis Study, J. Marion Sims's gynecological surgeries, the use of Henrietta Lacks's cell line without her consent, etc.) has not been restored. Yet the public discourse, and too often the public health response, seems to frame vaccine distrust in these communities as the problem rather than a symptom of structural racism and a flawed public health infrastructure. For example, Gabriela Borter and Makini Brice write in the *National Post* that just "49% of Black Americans would be interested in taking it [the COVID-19 vaccine], compared to 63% of White Americans" and that public health officials hope that "Black faith leaders and other Black role models will help alleviate strong skepticism among African Americans about the safety of the vaccine."[7]

We agree that trusted leaders could have a positive impact by acting as liaisons between their communities and medical professionals. But we must acknowledge that to call on Black and Brown messengers for vaccination is to call on the very communities that have been harmed by past abuses to take a chance on trusting the medical and public health institutions responsible for those abuses. Success in vaccinating these communities will be determined as much by that history and the initiative those institutions take to dismantle structural racism in their own houses as by the messengers in Black and Brown communities. If public health and medical leaders rely too heavily on using trusted messengers to bridge gaps and build trust without first earning the trust of those messengers, they might be placing too much responsibility on community leaders to ultimately get the vaccines in people's arms. Moreover, the paternalistic framing of the issue and the top-down advice from public health officials might actually be reinforcing the distrust and fear that Black and Brown communities are being used as guinea pigs for a potentially unsafe vaccine.

The experience of vaccine distrust and the inadequate public health response to it clearly demonstrates the shortcomings of the Public Health 3.0 framework for addressing structural racism as a determinant of health. We propose critical next steps toward a Public Health 3.5 framework that effectively acknowledges and challenges structural racism.

ADDRESS HEALTH CARE DESERTS

One of several complex and interacting factors explaining vaccine distrust is the experience of lower access to health services that are welcoming and respectful to Black and Brown individuals, including undocumented people. In Chicago, there are several communities on the South and West sides that lack adequate access to primary care clinics, specialists, dentists, pharmacies, mental health resources, and more. During the current COVID-19 vaccine rollout, we are seeing the direct effects of the shortage of pharmacies and clinics in these areas.

In the framework of Public Health 3.5, improving access in health care deserts is imperative. The CDPH can incubate replicable solutions by developing methods to efficiently vaccinate individuals living in pharmacy deserts. This plan could include using large venues that are opened to the public, such as schools, libraries, stadiums, parks, and convention centers. The city could also develop innovative ways to deploy qualified persons, such as community health workers and health professions students, to administer the vaccine at these locations. Not only are these spaces more readily accessible to the public, but they are also more "neutral" spaces, where minority individuals might not experience the same distrust that is often associated with hospitals and clinics.

Health care deserts are unceasing barriers to care in vulnerable communities. The discussed solution to pharmacy deserts during COVID-19 vaccine rollout can be adapted to continuously address areas that lack adequate access to care and can be used to prepare a new public health infrastructure for more challenges in the future.

MEANINGFUL COMMUNITY COLLABORATION

Additionally, Public Health 3.5 envisions a fluid, continuous conversation between public health departments and underserved communities. In Chicago, for example, each neighborhood is unique and has different trusted spaces, leaders, and messengers, and thus solutions must be tailored accordingly. Some communities place more trust in religious leaders and places of worship, whereas others might have closer ties to alternative associations and officials. When it comes to vaccine distrust and other forms of medical distrust in Black and Brown communities, it is not necessarily the science they do not trust but rather the scientists. Thus, it is imperative that we first earn the trust of messengers who look like them or come from similar backgrounds so they will be willing to advocate medical developments. However, we do not want to overburden these messengers with the work of fixing the issues that arise from public health infrastructure's failure to address structural racism. At the same time that we are collaborating with trusted community messengers, we must be dismantling the systems in health care that necessitate these messengers.

We envision public libraries playing a significant role by acting as alternative trusted spaces where community members can access information and interact with leaders in and outside their communities, such as public health officials and medical professionals. It is time that we treat community members as experts in their own experiences and actively listen to their criticisms and suggestions. We propose more town halls, webinars, and seminars that are open to the public to allow individuals to directly engage with professionals about specific topics, such as the safety and efficacy of the COVID-19 vaccine. Individuals who do not have access to the Internet at home could use their local library branch to access the virtual events.

AN EQUITY LENS FOR FUNDING DECISIONS

A Public Health 3.5 framework must apply an equity lens not only to the analysis of health outcomes but also to the prioritization of public health resources. Public health departments in the Public Health 3.5 framework would be better equipped with the support they need to give adequate attention to marginalized communities. To address health care deserts during vaccination rollout, the CDPH could allocate funds to educate and use qualified persons to administer the vaccine at public venues. Moreover, along with adding more town halls, seminars, and webinars that are open to the public, the CDPH could employ advocates and messengers to advertise these events to their community members. This would ensure that the events are reaching community members and not simply circulating in medical and educational institutions.

The creation of the Chicago mayor's Racial Equity Rapid Response Team is a step toward prioritizing health equity.[8] This team coordinates with several educational and medical institutions, community-based organizations, and community response networks to flatten the COVID-19 mortality curve in Black and Brown communities. With these actions, along with the recommendations made thus far, Chicago can become a model to replicate health equity initiatives on a national level. Since March 2020, the US Department of Health & Human Services (HHS) has announced that billions of dollars would be spent on efforts to manufacture and distribute a safe and effective COVID-19 vaccine. The timeline and allocation of money is outlined on the Domestic Preparedness Web site in "Fact Sheet: Explaining Operation Warp Speed."[9] In the framework of Public Health 3.5, HHS would have allocated funds and outlined a plan to implement efficient vaccination of the highest-need community members well before a vaccine was approved by the US Food and Drug Administration. If Chicago acts now to begin to realize the vision of a Public Health 3.5 framework, both the national and local public health infrastructure will be better positioned to protect the most vulnerable communities in the next crisis.

CONCLUSIONS

Distrust of medical authorities and distrust of vaccines in Black and Brown communities are not immutable cultural characteristics. They are complex social–historical phenomena, and the failure to account for and respond to this complexity during the COVID-19 pandemic threatens to widen the racial health gap in Chicago and beyond. If the public health infrastructure does not have effective tools to address this complex problem that public health and medicine created, it is because we have not invested in developing, evaluating, and implementing those tools, nor have we dismantled the deeply engrained structural racism in our public health and health care systems.

It is widely known that we are currently dealing with multiple pandemics—COVID-19, racism, distrust, and misinformation. Once we start treating structural racism with the same urgency that we treat COVID-19, we might start making progress in our attempt to eliminate racial and ethnic health inequities. AJPH

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Going Beyond Public Health 3.0: How Flexible Funding Streams Can Help to Break Down Silos, Change Systems, and Advance Health Equity in Local Communities

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Lack of access to nutritious foods, a known social determinant of health that contributes to disparities in chronic disease outcomes and lowered life expectancy,[1] has only grown worse in the midst of the COVID-19 pandemic.[2,3] This is especially true in households with Hispanic/Latino or Black adults, who have consistently reported food insecurity at twice the rate of White adults throughout the pandemic.[2] Historically, people of color have experienced higher rates of food insecurity because of the intersection of multiple other social determinants of health, including racial discrimination, poverty, and unemployment.[4] Given that food insecurity is a multifactoral issue, it requires partners from a variety of sectors to band together to change the environmental conditions and systems that can improve, or inhibit, health and well-being.[1,5]

In 2016, the US Department of Health and Human Services introduced Public Health 3.0, a model intended to pave the way for a new era of public health practice.[5] This initiative promotes multisector collaboration to address social determinants of health at the local level.[5] However, listening sessions have highlighted the need for improved funding streams to support these initiatives and how attention to the poorly resourced public health infrastructure often only comes up “in the context of disasters and crises.”[5(p2)] The pandemic has clearly exposed how the chronic gap in public health funding[6,7] contributes to racial disparities in health outcomes,[7] making it all the more important for various sectors to collaborate to address the most pressing challenges of our time. At the same time, traditional funding practices often exclude the very people they strive to support, further reinforcing the power imbalances that contribute to health disparities.

In light of these concerns, we endeavor to illustrate the ways one funding opportunity, the Healthiest Cities and Counties Challenge (hereafter “the Challenge”), strives to fund multisector work differently to better support local efforts to advance health equity. Based on this experience, we propose a series of recommendations for funders on how to better foster successful multisector initiatives to tackle social determinants of health and improve health equity in communities of color.

SYSTEMIC INEQUITIES IN FOOD ACCESS

Access to nutritious foods is a key social determinant of health that has taken center stage during the COVID-19 pandemic, especially in communities of color. In 2018, 25% of Black and 17% of Hispanic households reported that they were food insecure, and more recent estimates indicate that these rates have nearly doubled during the pandemic.[8] Furthermore, Black and Hispanic/Latino adults are more likely than are White adults to experience very low food security, have to skip meals, or have to go entire days without eating.[3] Food insecurity puts these communities at higher risk for chronic conditions, such as hypertension and type 2 diabetes, that not only lead to more severe COVID-19 outcomes in the near term but could also have a long-term impact on health.[3]

The high rates of food insecurity in communities of color are driven by a lack of food system infrastructure and services as well as by other social determinants, including racial discrimination, education, incarceration, poverty and employment.[4] The “complex interplay among race, social determinants, and health,”[9] paired with the economic impacts of the pandemic,[3] has exacerbated food insecurity disparities. Efforts to dismantle structural racism are imperative for addressing the underlying conditions that lead to disproportionate rates and risks of food insecurity in communities of color.[10] This reality drives the need for multisector collaboration "to address social, environmental, and economic conditions that affect health and health equity"[5(p1)] and "to think and act in a systems perspective,"[5(p4)] as called for in the Public Health 3.0 model.

Unfortunately, many current funding practices do not adequately support complex systems change efforts that aim to address root causes of inequity.[11] Systems change requires financial resources dedicated to partnership development and coalition operations, as well as an investment in community leaders. Often, funders use knowledge gathered from the community to *inform* grant programs,[12] a form of inauthentic, tokenistic engagement,[13] rather than authentically engaging community members and compensating them for their contributions. To effectively address systemic inequities, funders must be willing to examine their own roles in maintaining traditional power dynamics.[12,14] Otherwise, "deploying more money may address deep-seated inequities only at the surface,"[12] for example, by continuing to marginalize the communities most affected by food insecurity. Furthermore, current funding practices "also leave systems change leaders without important nonfinancial support."[11(p29)] Beyond funding, local-level organizations need capacity-building assistance to learn how to engage partners from other sectors and integrate community members into their work. To improve food access and other social determinants of health affected by the pandemic, funders will need to shift their practices to better support successful multisector collaboration and authentic community engagement to change systems that uphold racial disparities in food security and chronic disease.

FUNDING MODEL TO SUPPORT SYSTEMIC ACTION

Although the authors of Public Health 3.0 recognized the need for improved funding models, they did not provide examples of how to address the inadequacies of current funding practices.[5] In our work designing the funding opportunity for the Challenge, our team committed to identifying a better way to support local communities striving to address the social determinants of health and advance health equity. The Challenge, funded by the Aetna Foundation and led in partnership with the American Public Health Association, the National Association of Counties, and Healthy Places by Design, offers the flexible funding and in-depth technical assistance needed to effect systems change. Since July 2020, we have worked with 20 communities to address both access to foods that promote health and access to health services through multisector partnerships and authentic community engagement.[15]

The Challenge wholeheartedly adopts the Public Health 3.0 philosophy "that local communities will lead the charge in taking public health to the next level."[5(p3)] To create flexibility, space, and time for multisector partnerships to be cultivated in each community, the Challenge selection committee chose not to require detailed project proposals and budgets upfront. As a result, grantees were able to use funds to convene and to engage community partners directly in the strategic planning and budgeting process during the first few months of this initiative. Although traditional funding opportunities emphasize the implementation of direct-service projects and programs with short timelines, the Challenge extended the timeline of the grant in response to the pandemic. From the beginning, the Challenge has emphasized the importance of reserving both authentic leadership positions and funds for community members. This created an opportunity for grantees to engage community members directly affected by food insecurity in their planning process and compensate them for their time and expertise, a critical offering at a time when many individuals are facing unemployment and heightened food insecurity.

Recognizing that systems change requires more than just financial support, the Challenge provides cooperative capacity building through one-to-one coaching and a peer-learning community. To effectively facilitate these learning opportunities, the technical assistance team must "build trust with communities by *demonstrating* a listening and learning posture,"[12] with community coaches taking on the role of objective observer, resource broker, and connector, instead of performance monitor. Through this practice, we have cultivated a network of communities that can share their deep experience and expertise based on work at the local level. We believe this technical assistance and capacity-building support is just as important as the funding, if not more so, for supporting the success of multisector efforts and addressing the social determinants of health that drive racial disparities in food security.

RECOMMENDATIONS TO IMPROVE FUNDING

Although the Challenge is in its early stages, it provides a promising application of the Public Health 3.0 framework's call for multisector collaboration to address social determinants of health in local communities. As we emerge from the depths of the COVID-19 pandemic, it is imperative that funders consider the following recommendations on how to improve funding opportunities for public health initiatives and shift resources and power into the hands of local communities facing food insecurity and other health disparities.

Invest in Coalitions

Many local community-based organizations working on food access have spent years developing unique partnerships and relationships with their communities, but they are limited to piecing together funds for individual projects with narrow focus areas.

Funders should invest in long-term support for the operations of community-led coalitions. Giving a community resources that are not linked to preestablished outcomes creates the opportunity to identify strategies that address social determinants of health.

Value Lived Experience

The professionalization of the public health field has led to tremendous growth in educational opportunities and knowledge about effective health promotion strategies. However, this does not replace the need for authentic leadership from the community.

New food access initiatives should ask for specific community engagement strategies in their applications and require grantees to budget for appropriate compensation for people with lived experience of food insecurity to be equal partners in their work.

Offer Learning Support

Changing the systems that influence social determinants of health is complex work, and individuals working in local communities have many competing priorities to address, including providing essential services. Funders often neglect to support their grantees in learning how to operate on a systems level while continuing to carry out the missions of individual organizations.

Beyond providing direct funding, we need to invest in capacity building that deepens individuals' understanding of social determinants and systems change. To achieve this, funders must be willing to shift out of the authority figure role and offer genuine support.

CONCLUSIONS

Food insecurity is a pervasive issue in communities of color that is heavily affected by a myriad of social determinants of health, including access to nutritious foods. This public health crisis has only worsened during the COVID-19 pandemic, which has exposed the need for systemic change like few other disasters in recent history. At the same time, current funding practices limit the capacity of local communities to engage in the multisector coalition building and community engagement efforts required to adequately address social determinants of health.

The Challenge reimagines the traditional funding framework for community-led initiatives to offer more flexibility and support for multisector collaboration, community engagement, and capacity building. If more funders follow our recommendations, the opportunity to transform systems will flourish. To truly improve public health, we need to address social determinants of health in a way that involves the entire community and leads to the development of new systems and policies that no longer disadvantage communities of color.

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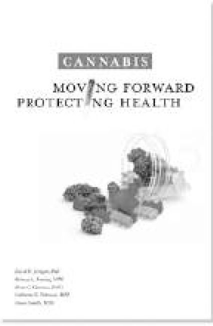

Successful, Easy to Access, Online Publication of COVID-19 Data During the Pandemic, New York City, 2020

Matthew Peter Mannix Montesano, MPH, Kimberly Johnson, MS, Andrew Tang, MPH, Jennifer Sanderson Slutsker, MPH, Pui Ying Chan, MPH, Kevin Guerra, MPH, Jennifer MacGregor, BA, Jeffrey Grossman, BA, Maura Kennelly, MPH, and Corinne N. Thompson, PhD, MSc

Making public health data easier to access, understand, and use makes it more likely that the data will be influential. Throughout the COVID-19 pandemic, the New York City (NYC) Department of Health and Mental Hygiene's Web-based data communication became a cornerstone of NYC's response and allowed the public, journalists, and researchers to access and understand the data in a way that supported the pandemic response and brought attention to the deeply unequal patterns of COVID-19's morbidity and mortality in NYC. (*Am J Public Health*. 2021;111(S3):S193–S196. https://doi.org/10.2105/AJPH.2021.306446)

Early in the COVID-19 pandemic, the New York City (NYC) Department of Health and Mental Hygiene (DOHMH) began reporting COVID-19 data on its Web page. The agency prioritized simplicity, user-friendliness, and transparency in its COVID-19 data communication. We describe the DOHMH's strategy, methods, and results.

INTERVENTION

Because the strategies behind how data are communicated are as critical as the data themselves, the DOHMH published data in a way that made them easy to access, understand, and use. Our goals were to inform the public, guide deployment of city testing and outreach resources, empower researchers and journalists with access to data, and help other jurisdictions plan for the impact of COVID-19.

PLACE AND TIME

The DOHMH in NYC began reporting NYC's COVID-19 morbidity and mortality data on its Web page in March 2020. Our work is ongoing.

PERSON

The DOHMH worked to reach the public, journalists, community advocates, elected officials, and researchers, both locally and globally. The DOHMH designed information for lay audiences to understand and provided details designed to support experts' data use.

PURPOSE

NYC was an early epicenter of the COVID-19 pandemic in the United States as initial undetected spread led to a dramatic acceleration of the local pandemic.[1] The DOHMH prioritized clearly communicating data so that the public, local officials, and other stakeholders could easily and accurately understand the local pandemic. During emergencies, it is vital to collect data on disparities to address them. Data published online by the DOHMH were among the earliest evidence of the disproportionate impact of COVID-19 on the Black and Hispanic/Latino populations in the United States and on high-poverty neighborhoods. Making data easy to access and understand helped focus resources such as testing and supportive services on communities with high burdens.

IMPLEMENTATION

Early in the pandemic, the DOHMH prioritized digitally publishing COVID-19 data. Its data communication strategy followed principles of user-friendliness, emphasizing explanation, open access to data and documentation, and iterative development.

User-Friendliness

To make data easy for all to access and understand, the DOHMH published data through interactive visualizations on standard DOHMH Web pages. The DOHMH used a tool called Datawrapper (www.datawrapper.de). This allowed the agency to design interactive visualizations that allow users to select metrics, filter data, and hover for values (Figure A [available as a supplement to the online version of this article at http://www.ajph.org]). These user-friendly visualizations helped make complex data easy to understand for nontechnical audiences.

Many Web data dashboard platforms fail to accommodate mobile responsiveness, make it difficult to access visualizations' source data, and have limited screen reader accessibility—all of which limit access to people with different needs. Publishing on standard Web page templates allowed the DOHMH to build Web content with basic programming skills in HTML and CSS, the cornerstone languages of the Internet, without requiring custom tools or specialized expertise. Standard Web pages provided flexibility to ensure keyboard navigation, which supported users with mobility impairments, and accessibility by screen readers, which allowed people with visual impairments to access the data. This made data more accessible, regardless of a user's impairments or need for adaptive technologies.

Emphasizing Explanation

A visualization's design affects audience comprehension of data and is especially important when an audience is unfamiliar with the subject. The DOHMH designed visualizations informed by evidence-based approaches to support comprehension,[2] such as simplifying charts by removing gridlines and borders and focusing the data displayed, using color for emphasis, and sorting values from high to low. These approaches are vital for communicating data clearly and effectively. The DOHMH also supplemented visualizations with simple explanations, metric definitions, and comments on limitations throughout the Web pages. Incorporating these explanatory strategies supports the broader use of data by making the stories in the data easier to understand.

Open Access to Data and Documentation

The DOHMH provided the data as machine-readable, comma-separated value files, which allows users such as media outlets, data aggregators, and academic researchers to easily pull data into their systems for analysis. The DOHMH manages these data files on GitHub (www.github.com), a widely used platform for open-source software. Using GitHub allowed the DOHMH to reach a large community of data-savvy practitioners who can automatically download data as they are updated. Furthermore, using GitHub allowed the DOHMH to post extensive documentation that supported users' interpretation and use of the data and avoided cluttering visualizations with footnotes that can compromise comprehensibility.

Iterative Development

As the COVID-19 pandemic evolved, the most important questions of the moment also evolved. Throughout the pandemic, the DOHMH released additional data and visualizations, including ways for users to view data by neighborhood, and displays of recent trends as cumulative data became less informative. These iterative developments were informed by user feedback. Through surveys for Web page visitors, GitHub comments from active users, formal data presentations to local officials, and monitoring social media conversations, the DOHMH solicited user feedback to understand what data elements needed improvement and enhanced the data, visualizations, interactivity, and documentation to aid understanding and use. This ensured that as the pandemic evolved and people asked new questions, the data could continue to help shape the narrative and inform the response.

EVALUATION

After launching, the COVID-19 data Web pages became the most trafficked portion of the DOHMH Web site. From April to November 2020, the data Web pages averaged more than 1.5 million monthly page views, making up more than 40% of all DOHMH Web traffic (Figure 1). The intense interest in these Web pages strongly suggests that they aided access to and use of the data and that clear data communications can be a powerful way to engage audiences.

With news outlets and academics able to easily and reliably access data through GitHub, these data were shared with larger audiences through articles and academic papers, including graphical features in the *New York Times*,[3] and academic papers on profound disparities in the United States.[4]

Widely accessed and used, these data helped frame the narrative on the exacerbation of disparities during the COVID-19 pandemic. Informed by these data, NYC launched "hyperlocal" activations

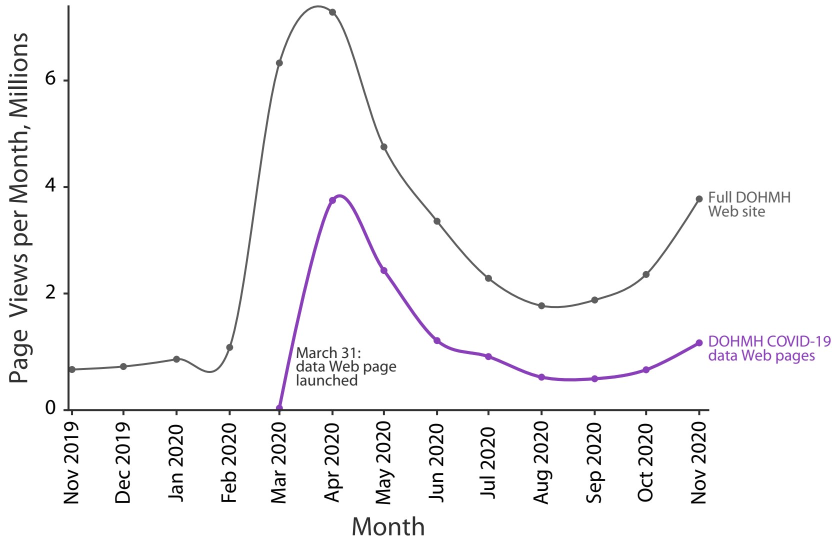

FIGURE 1— **Monthly Page Views to the Department of Health and Mental Hygiene (DOHMH) Web Site and to the COVID-19 Data Web Pages: New York City, November 2019–November 2020**

providing outreach, testing, and supportive services to historically disinvested communities that suffered the highest levels of morbidity and mortality during the first wave of COVID-19.[5]

ADVERSE EFFECTS

No adverse effects were identified, but the DOHMH continues to monitor how data are received and understood by users to ensure that its data are easy to understand and use.

SUSTAINABILITY

For this work, the DOHMH used free products that required few specialized skills and strategies that can be replicated in other jurisdictions. Many public agencies may have limited expertise or infrastructure to produce high-quality digital products, but the DOHMH has shown that communicating data effectively does not require additional resources or specialized technical expertise.

PUBLIC HEALTH SIGNIFICANCE

Collecting and sharing data are core functions of public health agencies,[6] and a part of this responsibility should include providing data in formats that the public can access, understand, and use. By providing open access to data and reliable updates, the DOHMH engendered trust with influential audiences, supported broader use of its data, and laid foundations for future data communication practices.

The COVID-19 pandemic has been marked by inconsistent data availability, sometimes conflicting data,[7] and severe disparities by race, ethnicity, and poverty. An effective population-based response is rooted in part by data that are trusted and understood by many different communities. With a strategy of user-friendliness, explanation, open access, and iterative development, the DOHMH allowed its data to play a powerful role in the response to COVID-19, shape public understanding of the pandemic, and equip all with data that can help people respond. AJPH

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CONTRIBUTORS

M. P. M. Montesano was the lead author. K. Johnson, A. Tang, J. S. Slutsker, and P. Y. Chan provided important analysis. K. Guerra was responsible for the initial production of the data by race and ethnicity. M. Kennelly and C. N. Thompson provided strategic oversight of the work. J. MacGregor, J. Grossman, and M. Kennelly provided editorial oversight of the work. K. Johnson, A. Tang, J. S. Slutsker, P. Y. Chan, J. MacGregor, J. Grossman, and M. Kennelly provided editorial input. C. N. Thompson provided supervision. All authors gave vital contributions to this article and the work it describes.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

The work described did not include human participants, so no institutional review board approval was necessary.

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Supporting Health Equity Through Data-Driven Decision-Making: A Local Health Department Response to COVID-19

Elinor Hansotte, MPH, Elizabeth Bowman, MPH, P. Joseph Gibson, PhD, MPH, Brian E. Dixon, PhD, MPA, Virgil R. Madden, and Virginia A. Caine, MD

COVID-19 highlights preexisting inequities that affect health outcomes and access to care for Black and Brown Americans. The Marion County Public Health Department in Indiana sought to address inequities in COVID-19 testing by using surveillance data to place community testing sites in areas with the highest incidence of disease. Testing site demographic data indicated that targeted testing reached populations with the highest disease burden, suggesting that local health departments can effectively use surveillance data as a tool to address inequities. (*Am J Public Health*. 2021;111(S3):S197–S200. https://doi.org/10.2105/AJPH.2021.306421)

The Marion County Public Health Department (MCPHD) used COVID-19 incidence data to place and promote community testing sites in the highest-need areas, allowing MCPHD to reduce barriers to testing among populations disproportionately affected by the pandemic.

INTERVENTION

MCPHD used a data-driven approach to select sites equitably for COVID-19 testing. We matched positive case reports from private and public laboratories to electronic health records and integrated them into a community-based dashboard.[1] We used these to establish testing sites near populations with higher disease burden. Given the novel and dynamic nature of the pandemic, we based resource allocation decisions on assessments of multiple COVID-19 disease statistics and trends among demographic subpopulations rather than predefined criteria.

PLACE AND TIME

The initial MCPHD community testing site opened on April 2, 2020, in Indianapolis, Indiana, with the first day dedicated to essential personnel. As test availability increased, we opened additional community testing sites. After the launch of the first site, MCPHD staff began to examine trends in COVID-19 incidence by location, race, ethnicity, and other demographics, and we targeted areas with the highest COVID-19 morbidity for expanded testing to mitigate the disproportionate spread of COVID-19. As COVID-19 hotspots emerged, MCPHD sought input from and maintained regular contact with long-standing partners with community influence among inequitably affected groups (notably, Black, Latinx, and Burmese populations). Partners helped determine targeted testing site locations in communities disproportionately affected by the pandemic. In May, we opened testing sites at the largest, predominantly Black church on Indianapolis's Eastside and an educational campus with a large Latinx population. Over time, we established a centrally located main site and opened and closed additional sites in response to changes in incidence. Through the end of 2020, MCPHD operated at least three community sites at a time, with additional short-term, temporary sites used in response to COVID-19 surveillance trends.

PERSON

Anyone could receive free COVID-19 testing at MCPHD testing sites. To ensure equitable access to testing, we located sites near populations with disproportionately high COVID-19 incidence, and community organizations promoted these using flyers, mixed media (e.g., radio ads, webinars, and social media posts), and door-to-door campaigns. MCPHD supported partner promotion efforts with flyers, graphics, and prevention materials such as masks and sanitizer. Most sites were located in areas with a high density of racial and ethnic minorities, a pattern consistent with other urban areas examining morbidity.[2]

PURPOSE

Health inequities disproportionately affecting historically marginalized populations existed long before the COVID-19 pandemic but have been highlighted by it.[3] These inequities are likely an outcome of systemic racism, which is also independently associated with poorer mental, general, and physical health.[4] People facing health inequities are less likely to have a primary care provider, health insurance, or regular access to health care, including COVID-19 testing and treatment.[5,6] In response, MCPHD sought to ensure equity in its COVID-19 testing strategy.

IMPLEMENTATION

MCPHD established ongoing surveillance of COVID-19 in March 2020, including data on number of tests administered, positive tests or case reports, health care use, and deaths. We tracked trends and relative rates by age, race, ethnicity, gender, and location (i.e., by zip code or census tract). We minimized missing data by merging interview, laboratory, death, and other clinical data.

MCPHD worked with community partners to identify and address challenges related to COVID-19 testing. We addressed language and literacy barriers by translating testing materials into languages primarily spoken by affected subpopulations (Spanish and Burmese), establishing a Spanish-language telephone registration system for COVID-19 testing, and working with partners to deliver mixed-media messaging and advertisements about testing site locations. In particular, direct messaging through trusted community leaders and media sources stating that MCPHD did not report to immigration services attempted to allay fears of deportation for some community members accessing testing services.

To increase access to MCPHD testing sites, onsite registration was available for those unable to register in advance because they did not have Internet access, they were unfamiliar with online or call-in registration systems, or English was not their first language. We considered access to public transportation when selecting drive-through site locations, and a walk-up option was available. Sites held weekend hours to accommodate different work schedules.

Figure 1 shows the daily COVID-19 case rate per 100 000 residents by race/ethnicity, and Figure 2 shows COVID-19 testing rates per 100 000 residents by race (Latinx ethnicity testing data were not available). Early in the pandemic, Black residents were disproportionally diagnosed with COVID-19 (April 10, 2020 peak: 23 cases/100 000 Black residents vs 9.7 cases/100 000 White residents), prompting the testing site at the Eastside church, which has an extensive network throughout the county and especially attracted older adults. The rapid increase in Latinx case rates in May (May 10, 2020 peak: 37 cases/100 000 Latinx residents vs 5.5 cases/100 000 White residents) prompted the opening of two testing sites convenient to Latinx residents. The Southside clinic testing site opened in response to an increase in COVID-19 incidence among Burmese residents; testing among Burmese residents increased following this site's opening. Within two months of each of these efforts, the respective case rate gap decreased or disappeared entirely.

EVALUATION

Figure 1 shows that rates of new cases declined for focal racial groups after targeted testing sites and information campaigns began for Black (A), Latinx (B and C), and Burmese (E) residents. Figure 2 shows the notable increase in testing among the county's relatively small Asian population after the Burmese-focused testing site opened (E). The impact of the Eastside church on the countywide testing rate for Black residents is smaller, given the county's large number of Black residents. Countywide testing rates for Latinx residents were not available.

ADVERSE EFFECTS

We are not aware of any adverse effects from this intervention that are not inherent to testing (e.g., discomfort of nasal swab).

SUSTAINABILITY

The testing site intervention will not be sustained past the COVID-19 pandemic, but MCPHD will continue to stratify health statistics by demographics to detect and address disparities.

PUBLIC HEALTH SIGNIFICANCE

Because COVID-19 is frequently transmitted by individuals without symptoms, mitigation strategies require rapid

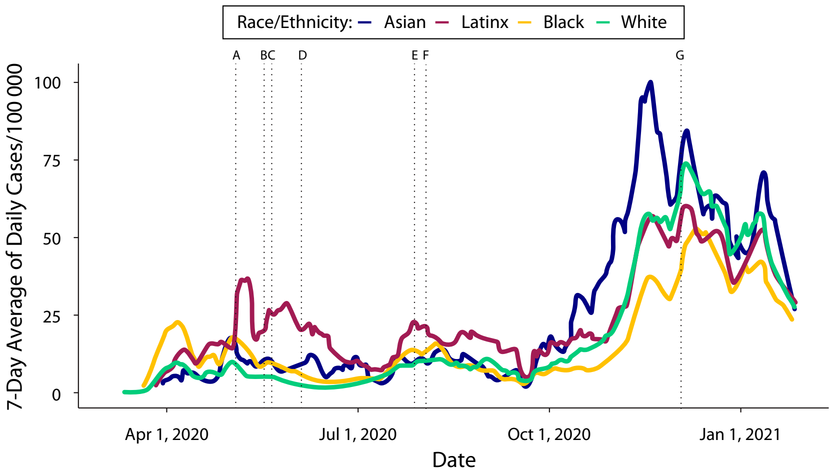

FIGURE 1— **COVID-19 Cases per 100 000 by Race/Ethnicity: Marion County, IN, March 6, 2020–January 27, 2021**

Note. A = Eastside church (Black), B = educational campus (Latinx), C = Westside racetrack (Latinx), D = Marion County Public Health Department (MCPHD) main site, E = Southside clinic (Burmese [Asian]), F = Westside commercial, G = county fairgrounds. Dotted vertical lines indicate opening dates of MCPHD community testing sites. This figure does not include temporary testing sites, which usually lasted less than 3 days.

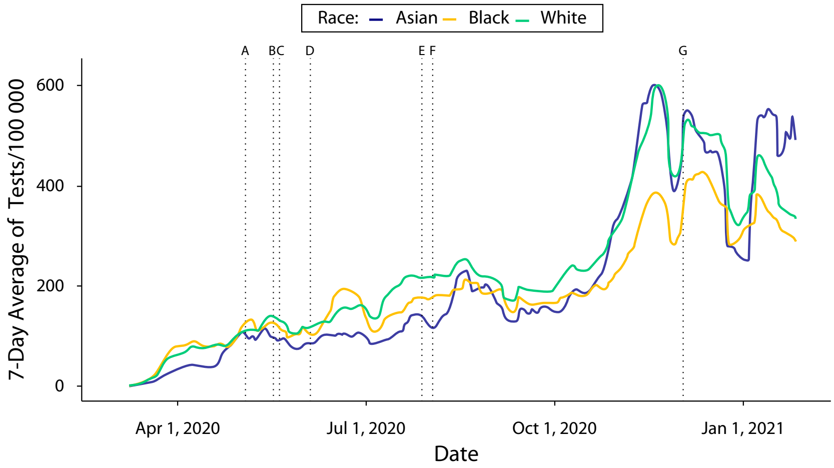

FIGURE 2— **COVID-19 Testing Rates per 100 000 by Race: Marion County, IN, March 6, 2020–January 27, 2021**

Note. A = Eastside church (Black), B = educational campus (Latinx), C = Westside racetrack (Latinx), D = Marion County Public Health Department (MCPHD) main site, E = Southside clinic (Burmese [Asian]), F = Westside commercial, G = county fairgrounds. Dotted vertical lines indicate opening dates of MCPHD community testing sites. This figure does not include temporary testing sites, which usually lasted less than 3 days. Testing data by Latinx ethnicity are not available.

identification and follow-up with infected individuals so they can isolate and their contacts can isolate or quarantine.[7] Targeting testing resources in areas with disproportionate risk ensures efficient and equitable use of resources and decreases disease spread among marginalized populations.

In addition to higher rates of COVID-19 infection and related death, Black and Brown Americans bear a disproportionate burden of chronic illnesses—associated with worse COVID-19 outcomes—and experience greater barriers to accessing quality health care.[3] One role local health departments can serve in countering outcomes of systemic racism is monitoring for and directing resources to address inequitable disease distribution among the population. Populations at highest risk of disease or experiencing inequitable morbidity should receive emphasis in local health department services.

This intervention relied on partnerships that MPCHD built with community organizations, specifically those in historically marginalized communities, over many years through consistent communication and collaboration; financial support of clinics, community centers, and skills-building services; and providing wraparound services.

The Public Health 3.0 framework emphasizes increased use of electronic data to inform the actions of public health agencies. This intervention used a community-based, integrated system designed to capture comprehensive data on COVID-19 infections, hospitalizations, and mortality. Local health departments can use health systems' existing data infrastructure to inform their strategies for addressing health challenges, including COVID-19, that disproportionately burden Black and Brown communities. AJPH

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CONTRIBUTORS

P. J. Gibson and B. E. Dixon coordinated the overarching data-sharing processes between the Marion County Public Health Department and Regenstrief Institute. B. E. Dixon conceptualized the article collaboration. V. R. Madden oversaw the COVID-19 testing sites. All authors drafted, reviewed, and approved the article.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

HUMAN PARTICIPANT PROTECTION

No human participant protection was required for this public health initiative.

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Organizing for Black Lives and Funding COVID-19 Relief: Community Responses to Systemic Racism and Imagining Public Health 4.0

Nolan Kline, PhD, MPH, and Marco Antonio Quiroga, BS

Structural racism is a root cause of poor health in the United States and underlies COVID-19–related disparities for Black and Latinx populations. We describe how one community-based organization responded to structural racism and COVID-19 in Florida. Informed by the literature on how public health practice changed from emphasizing prevention (Public Health 1.0) to collaboration between governmental and public health agencies (Public Health 2.0) and examining social determinants of health (Public Health 3.0), we call for a politically engaged Public Health 4.0. (*Am J Public Health*. 2021;111(S3):S201–S203. https://doi.org/10.2105/AJPH.2021.306408)

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Black and Latinx populations are approximately twice as likely to die of COVID-19 as their White counterparts.[1] Social inequalities underlie this mortality disparity,[2] and such inequalities are rooted in structural racism:[3] a normalization and legitimization of advantage for White populations.[4] Furthermore, Black and Latinx individuals who are also sexual and gender minorities, such as those who are lesbian, gay, bisexual, transgender, and otherwise queer identifying (LGBTQ+), may experience heightened COVID-19–related vulnerability because of intersecting social marginalization.[5] We describe how a community-based organization that focused on racial, sexual, and gender justice in Central Florida responded to the systemic racism that undergirds COVID-19 disparities.

INTERVENTION

To combat the systemic racism that structures COVID-19 inequality, a community-based organization in Central Florida, the Contigo Fund (hereafter "Contigo"), created two initiatives: the LGBTQ+ Relief Fund and the All Black Lives Fund (ABLF). The objective of the LGBTQ+ Relief Fund was to meet individual needs during the pandemic, and the objective of the ABLF was to invest in longer-term racial justice through funding Black-led LGBTQ+ organizations. The goal of both programs was to address structural racism through economic and political interventions.

PLACE AND TIME

Both programs responded to LGBTQ+ people of color in the Orlando, Florida, area. The LGBTQ+ Relief Fund began in March 2020, and the ABLF started in June 2020 alongside renewed national attention to the Black Lives Matter movement. These funds were particularly needed in Florida because the state's economy contracted owing to the pandemic, resulting in increased unemployment. Florida's unemployment assistance program failed to meet applicants' needs, resulting in delayed and insufficient financial assistance to the state's population.[6] Community organization leaders speculated that delays for Black, Latinx, and LGBTQ+ individuals would exacerbate existing economic and social precarity.

PERSON

The LGBTQ+ Relief Fund raised more than $78 458 between April 2, 2020, and March 31, 2021, through philanthropic fundraising and securing grants from private foundations. Applicants were permitted to apply for small grants of up to $500 to meet basic economic needs. Applications were available to individuals regardless of citizenship or immigration status. To be eligible for funding, applicants must have lived or worked in the four counties that comprise the Orlando area, identify as LGBTQ+, and have lost income because of COVID-19. For the ABLF, Contigo secured a total of $100 000 through fundraising and grant-writing efforts between an academic researcher and organization leaders. Eligibility for ABLF funding required that organizations serve Black LGBTQ+ individuals and be committed to advancing racial and gender justice.

PURPOSE

The overall purpose of the LGBTQ+ Relief Fund and the ABLF was to advance racial equity and combat systemic racism during and after the pandemic. Understanding that systemic racism is perpetuated in part by lack of economic investment in Black-led organizations, the motivation for this work was to invest in the lives of LGBTQ+ people of color and Black-led LGBTQ+ organizations to begin reversing structural racism. Accordingly, one goal of the ABLF was to create a leadership pipeline to support LGBTQ+ Black leaders and their visions for new social justice programs designed to combat the social, economic, and political disenfranchisement of Black Central Floridians.

IMPLEMENTATION

The LGBTQ+ Relief Fund was led by four LGBTQ+-focused organizations that received input from leaders of more than 40 organizations that are members of a local LGBTQ+ coalition. Because these organizations are in direct contact with the individuals they serve, they are well positioned to understand and respond to local needs. Coalition members reported high rates of economic insecurity among LGBTQ+ people of color, including undocumented LGBTQ+ immigrants, during the COVID-19 pandemic. In response, Contigo created the LGBTQ+ Relief Fund specifically to address individuals' economic insecurity. The application was made available online and in person at organizations that served the target populations and was made intentionally low barrier and brief in the languages that are most commonly spoken in Central Florida (i.e., English, Spanish, Haitian Creole, Portuguese, and Vietnamese). Contigo members worked with partner organizations and the City of Orlando's LGBTQ+ community liaison to disperse information about the fund through social media and e-mail. Fifteen multilingual volunteers from community organizations reviewed the applications.

The ABLF was implemented through the formation of a community advisory board comprising leaders of Black LGBTQ+ social justice organizations. The board managed the fund, and the expected outcomes of this work are greater investment in leadership development and services for Black LGBTQ+ people in Central Florida. As of July 22, 2021, the fund had $100 000 secured through philanthropic grant making and grassroots fundraising.

EVALUATION

The LGBTQ+ Relief Fund dispersed $67 100 in financial assistance to 671 LGBTQ+ Floridians. Funds covered personal needs such as utility and telephone bills, rent, medication, and food. A formal evaluation of the program has not been conducted, but one organization leader explained clients' appreciation for the funds: "Folks are saying, 'My community was here for me before my government was'" (oral personal communication, March 11, 2021). Such expressions underscore how the LGBTQ+ Relief Fund filled a gap in Florida's public health infrastructure by providing economic aid.

The ABLF dispersed $30 000 each to three Black-led organizations that serve Black LGBTQ+ individuals. These organizations include Bros in Convo, a social support group focused on Black same gender–loving men; Divas in Dialogue, an organization focused on Black transgender women and improving Black transgender sex workers' lives; and the Gender Advancement Project, an organization focused on leadership development for transgender women of color. These organizations had historically been unfunded and saw substantial community needs during the pandemic. With the funds, the organizations provided support groups, HIV prevention services, career transition guidance, and unemployment application assistance to Black LGBTQ+ individuals during the pandemic. Additionally, $10 000 of the ABLF was reserved for rapid and emergency grants as community needs continue during the pandemic.

ADVERSE EFFECTS

Given the ongoing needs community members face and the challenges of the state in responding to those needs, grants larger than $500 may be needed for individual applicants. This complicates efforts to balance the number of applicants served and the need for larger grants.

SUSTAINABILITY

The LGBTQ+ Relief Fund was designed to be a limited effort, but the ABLF is a commitment for Contigo and has become the focus of new fundraising and grant-making efforts. Given this commitment, we foresee ongoing support for the ABLF. Robust program evaluation will be needed, as will continued collaboration with local government officials.

PUBLIC HEALTH SIGNIFICANCE

Addressing COVID-19–related health inequality requires responding to structural racism. Contigo's efforts exemplify how public health as a field can respond to structural racism and indicate future directions for research and practice. Public health has moved through phases with different foci, including Public Health 1.0 (emphasizing prevention), Public Health 2.0 (emphasizing core functions of governmental and public health agencies), and Public Health 3.0 (examining social determinants of health and prioritizing cross-sector collaborations).[7] We argue that there is a need for Public Health 4.0: politically engaged research and practice with community-based organizations that responds to root causes of poor health, such as structural racism. In envisioning Public Health 4.0, we assert that researchers, public health practitioners, and community-based organization leaders can collaboratively advance efforts to address social inequalities that inform poor health. Public Health 4.0 includes racial justice as a necessary component to advance health equity and situates researchers, practitioners, and community members in collaborative relationships to advance this vision. AJPH

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N. Kline led the drafting of this article. M. A. Quiroga led the organization and dissemination of the All Black Lives Fund activities. Both authors conceptualized the content of the article.

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Work related to this study was approved by the institutional review board at Rollins College.

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Illinois Unidos: A Community Demands Equity, Justice, and Inclusion

Marina Del Rios, MD, MS, Aida Giachello, PhD, Shaveta Khosla, PhD, Geraldine Luna, MD, MPH, Ruth Pobee, PhD, Pamela Vergara-Rodriguez, MD, and Noreen Sugrue, PhD

At the onset of the COVID-19 pandemic, neither government officials nor members of the news media fully grasped what was happening in the Latino community. Underreporting of COVID-19 cases led to a systematic neglect of the Latino population and resulted in disproportionately high rates of infection, hospitalization, and death. Illinois Unidos was formed to engage in community mobilization, health communication, advocacy, and policy work in response to inequalities exacerbated by COVID-19 in Latino communities in Illinois. (*Am J Public Health*. 2021;111(S3):S204–S207. https://doi.org/10.2105/AJPH.2021.306407)

COVID-19 data trends during April 2020, Illinois's first pandemic peak, demonstrated that the virus spread among Latinos faster than among any other racial/ethnic group. Yet, COVID-19's impact on Latinos was not emphasized by the media, public health experts, or government officials. Changing the COVID-19 narrative was necessary to ensure equitable responses and resource allocations.

INTERVENTION

To confront this pressing situation in Illinois, we formed a cross-sector partnership: Illinois Unidos. The partnership's main objectives were addressing health, social, and economic impact; reducing transmission; and preventing morbidity and mortality from COVID-19 in Illinois's Latino communities.

PLACE AND TIME

Illinois Unidos first convened on April 11, 2020, via Web conference to enable rapid response strategic planning to evolving COVID-19 data trends. Members initially met for 12 consecutive Saturdays and in June 2020 organized into working committees on education, workplace safety, health literacy, health policy, and community health workers. This transferred the bulk of Illinois Unidos's activities to biweekly committee meetings staggered between general membership meetings (Figure A [available as a supplement to the online version of this article at http://www.ajph.org]).

PERSON

Illinois Unidos's education, advocacy, and policy analysis work was and continues to be focused on Illinois's Latino communities.

PURPOSE

According to the Centers for Disease Control and Prevention, Latinos in the United States have higher age-adjusted hospitalization and mortality rates from COVID-19 than do non-Hispanic White, Asian, and Black people.[1] Consistent with national trends, Illinois's Latinos have been disproportionately affected by COVID-19. In March 2021, Latinos, who comprise 18% of Illinois's population, accounted for more than 25% of infections.[2] Ten of the top 15 zip codes with the highest rates of COVID-19 cases and deaths have a Latino majority population.[3] Latinos account for 30% of Chicago's population and, on April 6, 2021, represented 43% of COVID-19 cases. Age-adjusted mortality rates of Latinos in Chicago are 4 times the rates of non-Hispanic Whites and twice the rates of Blacks and Asians.[4]

Underlying complex causes of the disproportionate burden of COVID-19 among Latinos are explained by the overarching presence of structural racism and xenophobic policies; these predate the onset of the pandemic. Latinos in the United States are too often defined by conditions that place them at increased risk for contracting COVID-19.[5] Proximate risk factors include occupational exposure because of working in crowded, high-risk, low-wage essential jobs and residing in multigenerational overcrowded living spaces. Many Latinos work in occupations with no or limited paid sick leave, thereby increasing the opportunity for further transmission of COVID-19. Latinos experience poor access to health because of financial (e.g., low rates of health insurance coverage), linguistic, and cultural barriers in accessing the health care system as well as uncertain citizenship status.[6] Latinos also have high, and often undiagnosed, rates of chronic diseases (e.g., diabetes, hypertension, obesity).[6] These conditions greatly exacerbate the impact of COVID-19 on Latinos. However, the devastation this pandemic has inflicted on Latinos is still not at the epicenter of the dominant COVID-19 narrative.

IMPLEMENTATION

The current public health framework, Public Health 3.0 (PH 3.0) assumes that “public health experts” with knowledge in public health policy know how to eradicate socioeconomic burdens and advocate for all communities, especially communities where people of color reside.[7] We saw this play out at the onset of the COVID-19 pandemic, when government leaned on scientific experts with academic standing and political connections to design and implement solutions for marginalized communities. Yet, structural change requires leaders who understand daily challenges and are willing to engage the community in mobilization and action to change practices and policies that have kept Latinos oppressed. PH 3.0 has failed those most vulnerable and therefore needs to be redesigned. The founding members of Illinois Unidos recognized the importance of bringing together representatives from multiple sectors to analyze, prioritize, and recommend policies and actions. Illinois Unidos’s membership exemplifies the array of community partners who must be included in successful expansion of public health interventions: frontline health care providers, researchers, community leaders, labor organizers, *promotoras de salud*, and grassroots workers, as well as government officials (Figure A).

The development of Illinois Unidos as a network stands as a vivid example of how to improve public health by improving some of the elements of PH 3.0. Illinois Unidos exposed the limitations of COVID-19–related data on race and ethnicity and the inadequacy of existing metrics used to assess equity. The coalition advocated easily accessible data that reflect the COVID-19 reality in the Latino community. The partnership persuaded officials in both the public and private sectors to reconsider resource allocation based on infection, hospitalization, death rates, and social determinants of health.

The COVID-19 pandemic also reinforced the need for hyperlocal partnerships. When it became clear that the existing strategy for public health messaging was failing Latinos, community leaders joined local and state governments to develop and implement a COVID-19 health communication campaign. *Promotoras de salud*, labor organizers, and community-based organizations partnered with health care providers to create culturally and linguistically appropriate educational materials for community stakeholders, human service organizations, and public health departments to distribute.

Illinois Unidos’s communications team includes media consultants and Latino-owned public relations agency leaders. This team facilitates frequent press releases with policy recommendations that are distributed in ethnic and mainstream media venues, including social media platforms. The communications team has ensured that Illinois Unidos’s messages are regularly infused into the general public dialogue and aimed at key decision makers.

EVALUATION

Box 1 provides some examples of Illinois Unidos’s successes in the areas of data collection, policy, funding, and representation. Illinois Unidos has lifted the voices of Latinos by ensuring the application of equity as a metric for the evaluation of resource distribution; pushed to increase representation of additional Latino leaders in decision-making bodies in the private, philanthropy, and public sectors; secured economic investments for Latinos across Illinois; and ensured that linguistically and culturally appropriate health-related engagement and education occurs throughout the myriad of Latino populations.

LIMITATIONS

The partnership was initially formed to address the needs of all of Illinois’s Latinos, but most members reside in Chicago and Cook County suburbs, thus limiting direct interaction with rural Illinois and the collar counties (DuPage, Kane, Lake, McHenry, and Will counties). In addition, Latino representation in positions of power in government and policymaking remains disproportionately low compared with representation in the Illinois population. Nonetheless, the work of Illinois Unidos has positively

BOX 1— Examples of Illinois Unidos's Successes

Data	Policy	Funding	Enhanced Representation
Advocated improved public health data reporting by state, county, and municipal health departments on COVID-19 testing and positivity, hospitalizations, and mortality by race, ethnicity, and zip code. Partnered with the Chicago Department of Public Health to ensure that public data portals report comparative COVID-19 data through the normalization of populations. Provided leadership to the Data Committee of the Illinois Department of Public Health Equity Task Force and drafted policies for data improvement on COVID-19 and the social determinants of health.	Fostered relationships between health departments and community service organizations, resulting in the expansion of testing and vaccine sites accessible to Latinos. Public health officials partnered with Illinois Unidos to identify vaccine ambassadors to message the Latino community in general and specifically hard-to-reach populations, such as the undocumented. Federal, state, and local elected officials regularly attended Illinois Unidos strategic biweekly planning meetings and actively partner with an array of experts from Illinois Unidos to infuse the policy process with accurate data related to COVID-19 in Latinos.	Sustained efforts alongside supportive members of the Illinois state government led to the allocation of funds aimed at supporting undocumented immigrants and mixed status families who were excluded from federal stimulus dollars. Worked with state legislators to pass health insurance coverage of elderly undocumented persons. Garnered philanthropic financial support for member organizations to develop and implement the following: 1. Hyperlocal interventions to reduce transmission of COVID-19 in Latino neighborhoods. 2. A culturally appropriate and linguistically accessible COVID-19 literacy campaign.	Established partnerships and decision-making roles in other advocacy groups as well as philanthropic and government agencies, such as the Illinois Department of Public Health COVID-19 Health Equity Task Force, the City of Chicago Racial Equity Rapid Response Team, and the Chicagoland Vaccine Corps Partnership The lead team established monthly meetings with representatives from Chicago's mayor's office focused on reviewing and improving COVID-19 policies and programs and ensuring that the needs of the Latino community are addressed. Spanish- and English-language local, national, and international media outlets turn to Illinois Unidos membership for messaging and expert analysis and opinion related to COVID-19 data trends and policy proposals.

Note. This box is not a comprehensive catalog of the successes or impact of Illinois Unidos. For more details and links to programmatic and policy interventions, please contact the corresponding author.

affected Latinos all over the state, including agricultural and farmworkers.

SUSTAINABILITY

Leadership development is a dynamic and organic process; members match their priorities, strengths, and special interests to the development and implementation of specific actions and policies. New leadership roles have emerged as Illinois COVID-19 trends have evolved, and the coalition focuses on the future financial, occupational, and educational consequences of the pandemic. Different levels of government have valued our expertise and are constantly reaching out to members for consultation. Because of the public success of the partnership's activities, private foundations donated a considerable amount of funding to sustain short- and long-term programs and to establish a solid infrastructure (i.e., communication systems, policy, data analyst and staff support). This funding allowed us to distribute mini grants to grassroots community groups to mobilize communities around COVID-19 vaccination and other health equity initiatives.

PUBLIC HEALTH SIGNIFICANCE

Illinois Unidos, a coalition formed as a result of the public health failure to fully address the realities of COVID-19 among Latinos, presents a model for a new public health framework: Public Health 3.x (PH 3.x). Lessons learned from the work of Illinois Unidos serve as a vivid reminder that the health of all requires that public health decisions, resource allocations, programs, and interventions be founded within an equity framework that includes all. PH 3.x should incorporate the Illinois Unidos partnership model to ensure more just policies, resource allocations, and services to marginalized communities (Figure 1). The work of Illinois Unidos unequivocally points to a requirement that accreditation standards that derive from an upgrade from PH 3.0 to PH 3.x reflect a commitment to inclusion, realignment of equity metrics, and expanded definition of public health experts to include trusted community members and organizers. The Illinois Unidos model for PH 3.x applies a social justice lens to all endeavors and ensures that social justice experts and metrics are fully and explicitly at the center of this reconfigured model of public health. As the focus moves from mitigation (i.e., testing, contact tracing) to prevention (i.e., vaccination), the infrastructure set up by Illinois Unidos

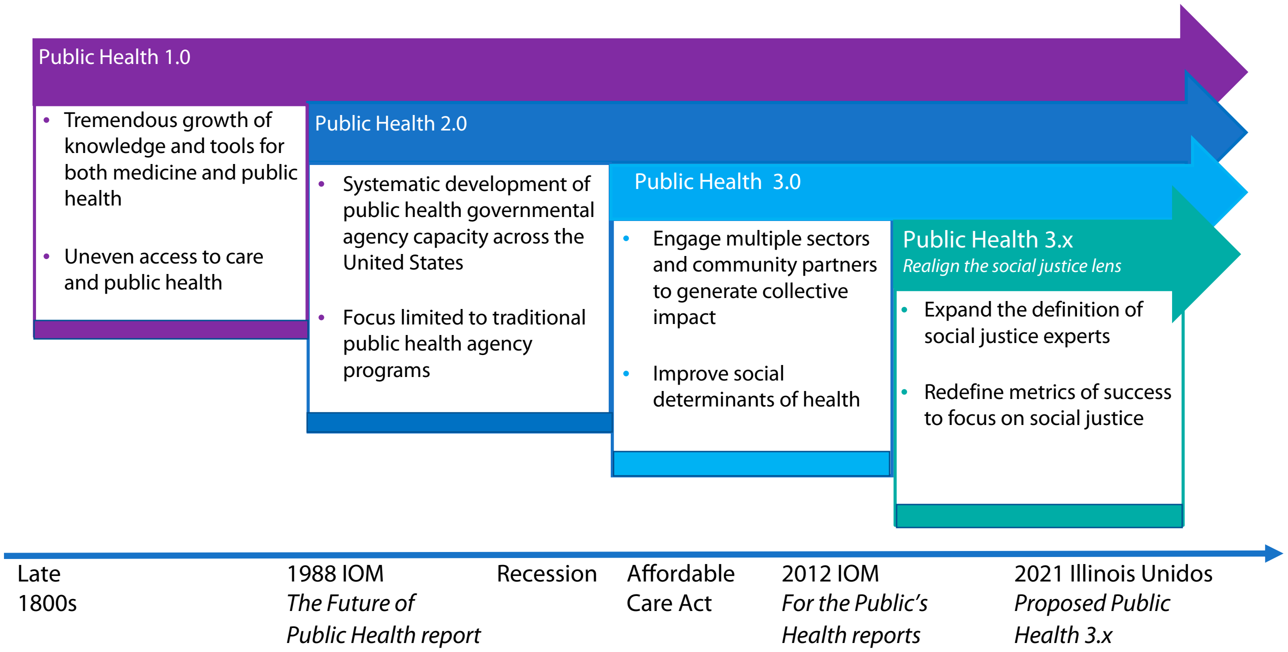

FIGURE 1— **Proposed Upgrade of Public Health Framework 3.x: Realign the Social Justice Lens**

Note. IOM = Institute of Medicine. The new Public Health 3.x emphasizes a commitment to inclusion, a realignment of equity metrics, and an expanded definition of public health experts.

and the new PH 3.x is ready to take on new challenges and promote equity.

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COVID-19 Pandemic and Indigenous Representation in Public Health Data

Kimberly R. Huyser, PhD, Aggie J. Yellow Horse, PhD, Alena A. Kuhlemeier, PhD, and Michelle R. Huyser, MD

Public Health 3.0 calls for the inclusion of new partners and novel data to bring systemic change to the US public health landscape. The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic has illuminated significant data gaps influenced by ongoing colonial legacies of racism and erasure. American Indian and Alaska Native (AI/AN) populations and communities have been disproportionately affected by incomplete public health data and by the COVID-19 pandemic itself.

Our findings indicate that only 26 US states were able to calculate COVID-19–related death rates for AI/AN populations. Given that 37 states have Indian Health Service locations, we argue that public health researchers and practitioners should have a far larger data set of aggregated public health information on AI/AN populations.

Despite enormous obstacles, local Tribal facilities have created effective community responses to COVID-19 testing, tracking, and vaccine administration. Their knowledge can lead the way to a healthier nation. Federal and state governments and health agencies must learn to responsibly support Tribal efforts, collect data from AI/AN persons in partnership with Indian Health Service and Tribal governments, and communicate effectively with Tribal authorities to ensure Indigenous data sovereignty. (*Am J Public Health*. 2021;111(S3): S208–S214. https://doi.org/10.2105/AJPH.2021.306415)

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The United States spends increasingly more on health care with each passing year; yet, relative to other high-income countries, it has poorer health outcomes including lower life expectancies and a greater prevalence of chronic conditions.[1] Public health researchers and practitioners have begun to address these discrepancies by moving from the mere identification of public health problems to the systematic development of governmental agencies tasked with addressing those problems.[2] More recently, the Affordable Care Act has allowed these governmental agencies, informed by social determinants of health equity (such as the particular social and physical environments of underserved areas), to move toward primary prevention and health promotion efforts.[3]

Public health researchers and practitioners, along with the US Department of Health and Human Services, have dubbed this emerging era Public Health 3.0.[2] Among its aims, Public Health 3.0 is envisioned as "cross-sector collaboration and actions that directly affect the social determinants of health,"[2(p622)] aided by timely and relevant local data, metrics, and analytics via the development of health information systems, especially for underserved populations.[2] The vision of Public Health 3.0 will provide American Indian and Alaska Native (AI/AN) communities with the opportunity to improve Native health through new partnerships and collaborations, but must first address these communities' ongoing "data problem,"[4] deeply rooted in systemic racism[5] (i.e., systemic erasure—the fundamental arrangement of the data process that promotes the absence or elimination[6] of the category, classification, and analyses of Indigenous Peoples in health[7] and other official data) and deeply at odds with the goals of Public Health 3.0.

The Public Health 3.0 infrastructure aims constitute a unique moment of possibility for meaningful collaboration between sovereign Tribal Nations and the US federal and state health authorities—this is a true moment of hope for the improvement of Tribal health systems and Tribal health outcomes. Importantly, these sovereign Tribal

Nations are unique, recognized by the US Constitution as distinct governments with their own laws, governing bodies, and legislation within the United States.[8] Accordingly, each of the 574 federally recognized Tribal Nations also retains its data sovereignty rights. Each Tribal Nation has the jurisdiction to monitor and release their members' data on their terms.[5] Many Tribal Nations have mechanisms such as a research ethics review committee that can facilitate and monitor data-sharing agreements.[9] Collaboration and data sharing between sovereign Tribal Nations and the wider US public health structure could allow for impactful systemic changes—a need made more urgent and visible amid the COVID-19 pandemic.

Since early 2020, COVID-19 has disproportionally affected racial and ethnic minority populations in the United States.[10] AI/AN populations have borne an obvious burden, unveiling major discrepancies in Public Health 3.0 objectives: AI/AN persons are significantly more likely to contract COVID-19, experience hospitalization because of disease severity, and die from COVID-19 than other racial and ethnic groups in the United States.[11,12] With the available but limited data, it is estimated that AI/AN persons are 3.5 times more likely to die from COVID-19 than non-Hispanic White persons.[11] In May 2020, the Navajo Nation, a Southwest Tribal Nation, recorded the highest per-capita coronavirus infection rate in the United States, and the top US coronavirus hot spots, reflecting that the highest community-spread infection rates have concentrated on Tribal lands.[13,14] To date, the available data suggest that Indian Country has shouldered an unequal burden under COVID-19.[15,16]

SYSTEMIC RACISM AND EXCLUSION IN HEALTH DATA

COVID-19 data underscore the lack of available, systematic health data about and for AI/AN populations. But the erasure and exclusion of AI/AN persons from health data are nothing new. It is part and parcel of the systemic racism[5] that is embedded in the country's public health policies and practices,[17] and that is so perniciously behind the persistent racial health inequities.[18] One rampant form of systemic racism and erasure in AI/AN population data involves racial misclassification, by which AI/AN patients are recorded incorrectly, whether within various other non-White racial and ethnic classifications or into an aggregate "other" category. Previous studies have found that nearly 30% of AI/AN persons' death certificates misclassified their race[19] and that hospital inpatient discharge records have a nearly 50% rate of racial misclassification for AI/AN individuals.[20] Although they are different forms, these data practices of erasure are inseparable from what scholars term statistical genocide,[21] and they effectively erase AI/AN Peoples from the dominant public health narrative.[22] In short, this enormous and often purposeful data gap prevents any real understanding of Native health concerns and needs, rendering them invisible in public health dialogue. And, as any scientist will tell you, a problem we cannot see is a problem we cannot adequately address. Accurate and reliable data cannot fix centuries of deprivation, but such efforts absolutely require good data to get off the ground.

ASSESSING COVID-19 IMPACTS

In this context, current impact assessments of COVID-19 on AI/AN persons and communities are all but certainly gross underestimates.[4] The paucity of data limits Tribal authorities' ability to interpret and understand how COVID-19 affects their communities, individually and in the aggregate, therefore impairing their ability to make timely and informed decisions to mitigate the pandemic's effects within their sovereign territories. The Indian Health Service (IHS), an agency within the Department of Health and Human Services, is the primary federal health provider for AI/AN persons; it is an important source for innovative health data on AI/AN persons[23] and is often consulted to improve AI/AN mortality estimations.[24]

IHS hospitals and clinics provide health services to some 2.2 million AI/AN persons in 37 states.[25] In fiscal year 2017, IHS had per-capita expenditures that topped out at $4078, less than half the $9726 in per-capita health expenditures for the US population as a whole.[26] Also, the IHS system has only had the use of electronic medical records since 2003 (it is still working to update and integrate this health information infrastructure).[27] Despite these and other fiscal and technological limitations, throughout the COVID-19 pandemic, IHS has successfully tracked and released case statistics by IHS service area and provided biweekly COVID-19 updates to Tribal leaders and representatives.[25] Here, geography becomes a data hurdle, given that the IHS service areas do not comport with US federal geographic designations; this makes it difficult to compare and collate data across different sources. For example, the Shiprock IHS service area crosses multiple counties in the states of Arizona, New Mexico, and Utah. Like others, it serves largely rural populations who have limited Internet access and must travel long distances to access health care.[28,29] The IHS does crucial, careful work to collect data regarding AI/AN persons; its information and expertise built on cultural competence is a case study of meaningful inclusion and collaboration that should inform both Public Health 3.0 and the mainstream US health system.

Still, despite these enormous obstacles, local Tribal facilities have been instrumental in testing, tracking, and vaccinating throughout the COVID-19 pandemic, providing extensive protection for their own memberships and the US populations with which they overlap. Tribal Nations including but not limited to the Navajo Nation (geographically overlapping with the states of Arizona, New Mexico, and Utah), the Tohono O'odham Nation of Arizona, and the Cherokee Nation of Oklahoma have established Tribal COVID-19 dashboards to inform community members of ongoing pandemic metrics and Tribal policies.[30] Before a single member tested positive for COVID-19, the Navajo Nation declared its public health state of emergency in accordance with the World Health Organization on March 11, 2020.[31] The first confirmed Navajo case was recorded 6 days later.[32] From the start, the Navajo Nation publicly reported all COVID-19 cases and COVID-19–related deaths, providing the earliest and most relevant information about the pandemic's spread in surrounding areas and for smaller Tribal Nations like the nearby Hopi Tribe, because the State of Arizona initially resisted reporting cases by geography (i.e., city and zip code).[33] As has happened so often throughout US history, nondominant populations innovated ways to inform and protect each other when the federal and state governments refused to do so.

As of early April 2021, 32% of AI/AN persons have received at least 1 COVID-19 vaccine dose, compared with 19% of non-Hispanic White persons and 12% of Black persons in the United States.[34] While the overall pace of vaccination continues to accelerate, the relatively high prevalence of vaccination among AI/AN populations is a direct result of the coordinated efforts of Tribal governments and the IHS. For instance, a recent joint effort announced by the IHS, Native American Lifelines of Baltimore (an urban Indian health program), and the University of Maryland–Baltimore, will make COVID-19 vaccines available to AI/AN persons living and working in the Baltimore and Washington, DC, areas. And in recognition of the interconnectedness of all peoples within a society, such efforts have worked not only to benefit AI/AN persons: the Chickasaw Nation in Oklahoma, for instance, opened up no-cost COVID-19 vaccinations to all, regardless of Tribal citizenship, employment, or state residency requirements.[35]

Acknowledging that the health data gathered and provided by IHS and Tribal community efforts effectively circumvent some of the challenges of AI/AN representation in data and improve the overall quality of federal health data, it remains critical to also identify the shortfalls attending even this priceless information. Notably, IHS facilities and Tribal communities primarily provide services to AI/AN persons who are enrolled members of a federally recognized Tribe and who reside on Tribal land.[25] Nonresident members (such as the urban Indians who comprise the majority of the AI/AN population) and those persons excluded from formal AI/AN membership by the politics of enrollment[36] are necessarily absent from this data. We remain woefully underinformed when it comes to the provision of public health without comprehensive, systematic, and accessible AI/AN health status data.

Consider, for instance, that facing an unprecedented viral contagion, only those 37 states with an IHS presence even had the capacity to provide COVID-19 data on AI/AN populations; few individual Tribes had the resources or ability to track and implement relevant health care changes in their own populations or triangulate such information with other groups. Of those 37 potential data sources, only 3 states—Arizona, California, and Michigan—actually did report AI/AN COVID-19 cases and deaths in early 2020.[37] By the end of June 2020, 10 states were reporting race-specific numbers, and by December 2020 it expanded to 26 states.[37] Table 1 lists 50 US states and Washington, DC, with the percentage of self-identified AI/AN population, IHS health care location status, whether the state had recorded AI/AN deaths between June 2020 and December 2020, and the date between June 2020 and December 2020 when COVID-19 crude death rates could be calculated for AI/AN persons.[37] The data for Table 1 came from the American Community Survey, state and local health department or other governmental reporting bodies that were publicly reporting online, and the National Center for Health Statistics, US Centers for Disease Control and Prevention.[37]

As illustrated in Table 1, AI/AN COVID-19 data availability does not correspond with the percentage of the population who identify as AI/AN. All but 15 states with recorded COVID-19–related deaths had an insufficient number of identified AI/AN deaths to calculate a race-specific death rate. South Dakota and Alaska

TABLE 1— COVID-19 Data Availability for American Indian and Alaska Native (AI/AN) Populations: United States, June–December 2020

State	% of Population—AI/AN Alone and in Combination[a]	IHS Service State	AI/AN Deaths Recorded	The Month When COVID-19–Related Death Rates Were Calculated for AI/AN Populations[b]						
				Jun 2020	Jul 2020	Aug 2020	Sep 2020	Oct 2020	Nov 2020	Dec 2020
Alabama	1.3	No	No							
Alaska	20.0	Yes	Yes				✓	✓	✓	✓
Arizona	5.7	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
Arkansas	2.0	No	Yes							
California	1.9	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
Colorado	2.2	Yes	Yes							
Connecticut	1.1	Yes	Yes							
Delaware	1.0	No	No							
District of Columbia	0.9	No	No							
Florida	0.8	Yes	Yes				✓	✓	✓	✓
Georgia	1.0	No	Yes							
Hawaii	2.4	Yes	No							
Idaho	2.5	Yes	Yes							✓
Illinois	0.8	No	Yes						✓	✓
Indiana	0.8	Yes	No							
Iowa	0.9	Yes	Yes						✓	✓
Kansas	2.1	Yes	Yes						✓	✓
Kentucky	0.7	No	No							
Louisiana	1.3	Yes	Yes							
Maine	1.7	Yes	No							
Maryland	1.0	No	No							
Massachusetts	0.7	Yes	No							
Michigan	1.5	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
Minnesota	2.0	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
Mississippi	0.9	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
Missouri	1.3	No	No							
Montana	8.3	Yes	Yes			✓	✓	✓	✓	✓
Nebraska	1.7	Yes	Yes							✓
Nevada	2.2	Yes	Yes						✓	✓
New Hampshire	0.8	No	No							
New Jersey	0.7	No	Yes							
New Mexico	10.8	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
New York	1.1	Yes	Yes					✓	✓	✓
North Carolina	2.0	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
North Dakota	6.6	Yes	Yes				✓	✓	✓	✓
Ohio	0.9	No	Yes							
Oklahoma	13.4	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
Oregon	3.1	Yes	Yes							✓
Pennsylvania	0.7	Yes	No							
Rhode Island	1.4	Yes	Yes							
South Carolina	1.0	Yes	Yes							

Continued

TABLE 1— Continued

State	% of Population—AI/AN Alone and in Combination[a]	IHS Service State	AI/AN Deaths Recorded	The Month When COVID-19–Related Death Rates Were Calculated for AI/AN Populations[b]						
				Jun 2020	Jul 2020	Aug 2020	Sep 2020	Oct 2020	Nov 2020	Dec 2020
South Dakota	10.4	Yes	Yes			✓	✓	✓	✓	✓
Tennessee	0.9	Yes	Yes							
Texas	1.2	Yes	Yes					✓	✓	✓
Utah	1.8	Yes	Yes		✓	✓	✓	✓	✓	✓
Vermont	1.3	No	Yes							
Virginia	1.0	No	Yes							
Washington	3.0	Yes	Yes	✓	✓	✓	✓	✓	✓	✓
West Virginia	0.7	No	No							
Wisconsin	1.6	Yes	Yes				✓	✓	✓	✓
Wyoming	3.6	Yes	Yes				✓	✓	✓	✓

Note. IHS = Indian Health Service.

[a] Data source: American Community Survey 2014–2019 5-year estimates.
[b] Data source: National Center for Health Statistics and APM Research Lab.[37]

have AI/AN populations that are 10.4% and 20.0%, respectively (relatively high, compared with the state mode of 1.3% AI/AN population across the United States), but did not release AI/AN COVID-19–related death rates until the fall of 2020. There appeared to be no obvious correlation between size of AI/AN populations and whether a state calculated AI/AN COVID-19–related death rates in the 10 states that began reporting in June 2020. California and Michigan, with AI/AN populations at relatively low 1.9% and 1.5%, respectively, began reporting AI/AN COVID-19–related deaths and mortality rates on June 20, 2020, at the same time as New Mexico and Oklahoma, boasting 10.4% and 13.5% AI/AN populations, respectively. For their part, Alaska and South Dakota identified AI/AN COVID-19–related deaths but did not calculate AI/AN COVID-19–related death rates until more than 6 months into the pandemic. This jagged timeline of attention to, tracking of, and reporting on AI/AN illness and death further evidences a systemic disregard for Indigenous communities—the data, such as it is, makes clear that our collective lack of understanding about the impact of COVID-19 on Tribal Nations is 1 more reason to treat racism as a paramount public health threat in the United States. It both urges and questions Public Health 3.0 as an orienting call.

ADVANCING PUBLIC HEALTH DATA PRACTICES

COVID-19 highlights the importance of meaningful data collection for AI/AN populations and stresses the magnitude of Public Health 3.0 aims to form collaborations, specifically with Tribal communities and stakeholders, to inform the creation of appropriate racial categories and health measures. US health data are often measured through individual, often insurer-defined diagnoses and mortality rates, aggregated by race, age, geography, socioeconomic status, and other variables. Engagement with AI/AN communities would introduce measures drawn from definitions and ontologies of Indigenous health including access to food and water and environmental toxin exposure.[38] With Public Health 3.0's commitment for sustainable and flexible funding, a collaboration across Tribal Nations and the US federal and state health apparatus has the potential to integrate the principles of environmental justice and harm reduction into public health work, significantly bolstering efforts to, say, provide clean tap water to the children of Flint, Michigan, or address food insecurity and malnutrition to raise the nation's lowest life expectancies, found on the Oglala Lakota's Pine Ridge Reservation in South Dakota. Furthermore, Public Health 3.0 will be advanced through a push to more comprehensive metrics and approaches to health.

The ongoing COVID-19 pandemic has been an explicating force that highlights the limitations on the data relevant to the health and health status of AI/AN persons and communities. To overcome these limitations and generate meaningful categories with which to capture AI/AN lives and life experiences, Public Health 3.0 should prioritize instrumental and systemic support that centers and is led by AI/AN tribal leaders and communities. Tribal government and community engagement must be used to determine how best to collect measures of race and measures of Tribal affiliations. These specific Tribal partnerships will provide guidance on whether to collect Tribal affiliation or Tribal citizenship status. Citizenship in Tribal Nations is a political identity similar to citizenship in any nation.[39] For instance, Tribal governments have specific data needs, and it is crucial that data collection enables them to gain information on Tribal affiliation or citizenship that can inform Tribal-specific policy development and resource allocation.

Furthermore, these successive missed opportunities to accurately and effectively assess the health and well-being of Indigenous Peoples and correct the erasure of Indigenous Peoples in health data (particularly for COVID-19) should be a reckoning moment for public health researchers and practitioners. Put differently, the ongoing health emergencies for Indigenous Peoples during COVID-19 provides an unprecedented opportunity to strengthen the public health infrastructure through systemic investment and actualization of Public Health 3.0. In this case, had collaboration with state and Tribal health systems started with the initial COVID-19 health data reporting, more timely and relevant local data, metrics, and analytics might have improved COVID-19–related health outcomes. The devastating impacts of COVID-19 and the disastrous state of AI/AN representation in health data single-handedly unveiled the significant implications of persistent Indigenous erasure in health data for Indigenous Peoples and communities.

We must not overlook this important testament but use it to envision a new public health effort that builds collaboration toward Tribal-driven community health promotion. Specifically, the US federal government must commit to sufficiently funding health programs led by the IHS and Tribal governments. Not only will complete funding bolster the current work being done, but it will also begin to fulfill the federal government's treaty obligations to Tribal Nations. In addition, to advance Public Health 3.0, public health funding models should be flexible to address the concerns of Indigenous communities, including building infrastructure (e.g., access to water and Internet) and advance environmental protections. Federal and state governments and health agencies must learn to responsibly support and collect data from AI/AN persons, and to communicate effectively with Tribal authorities in Tribal-driven decision-making processes to ensure Indigenous data sovereignty.[5,40] Increasing Indigenous representation in federal and state data does not only benefit Tribal governments and their sovereign rights for health promotion, but it also benefits the overall public health to be able to accurately assess and describe the population's health in the United States.

CONCLUSIONS

To truly attend to the health and well-being of AI/AN populations, to ensure the safety, dignity, livelihoods, and futures of Indigenous Peoples, we must understand their lives, life opportunities, and life experiences on their own terms and in collaboration with Tribal communities and governments. As witnessed in AI/AN responses to the COVID-19 pandemic, the protective actions of Tribal Nations extend beyond Tribal citizens to all area residents. As Public Health 3.0 moves toward 4.0 and engages with new partners and new metrics of success,[2] it is vitally important that public health researchers and practitioners, at all levels and in every domain, meaningfully consult with Tribal nations and communities. Collaboration to support and collect accurate and reliable health data are a fundamental step. AJPH

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K. R. Huyser led the writing and compiled data. All authors contributed to the writing.

CONFLICTS OF INTEREST

There are no known conflicts of interest among the contributing authors.

HUMAN PARTICIPANT PROTECTION

This study is national in scope and used public secondary data of American Indian and Alaska Native populations and, thus, is not a Tribal or community-level study and does not include individual or community identifiers. Tribal institutional review boards, Tribal Councils, and Tribal Authorities require review and approval, and currently there is no review board able to approve a study of this kind.

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Cross-Sector Monitoring and Evaluation Framework: Social, Economic, and Health Conditions Impacted During the COVID-19 Pandemic

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Public Health 3.0 approaches are critical for monitoring disparities in economic, social, and overall health impacts following the COVID-19 pandemic and its associated policy changes to slow community spread. Timely, cross-sector data as identified using this approach help decisionmakers identify changes, track racial disparities, and address unintended consequences during a pandemic.

We applied a monitoring and evaluation framework that combined policy changes with timely, relevant cross-sector data and community review. Indicators covered unemployment, basic needs, family violence, education, childcare, access to health care, and mental, physical, and behavioral health. In response to increasing COVID-19 cases, nonpharmaceutical intervention strategies were implemented in March 2020 in King County, Washington. By December 2020, 554 000 unemployment claims were filed. Social service calls increased 100%, behavioral health crisis calls increased 25%, and domestic violence calls increased 25%, with disproportionate impact on communities of color.

This framework can be replicated by local jurisdictions to inform and address racial inequities in ongoing COVID-19 mitigation and recovery. Cross-sector collaboration between public health and sectors addressing the social determinants of health are an essential first step to have an impact on long-standing racial inequities. (*Am J Public Health.* 2021;111(S3):S215–S223. https://doi.org/10.2105/AJPH.2021.306422)

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To guide public health decision-making during the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic and support equitable community recovery in the context of racism as a public health crisis, Public Health–Seattle and King County (PHSKC) is monitoring changes in selected measures of economic, social, and overall health and well-being. We seek to lay out this framework and considerations so that it can be replicated and adapted for other local health jurisdictions' data landscapes.

Our process followed the Public Health 3.0 framework. In this framework, local governmental health departments play the role of a chief health strategist to collect and share community-level health data, adapt to evolving issues, and promote health and wellness for all people in the community.[1] Cross-sectoral collaboration to drive collective action to improve social determinants of health is fundamental to the Public Health 3.0 approach, expanding and building upon the 2.0 approach, which focused on traditional public health programs. This Public Health 3.0 role involves working with nontraditional public health partners across multiple sectors to identify, analyze, and distribute data from new, large, granular, and real-time data sources.

COVID-19 COMMUNITY PREVENTION STRATEGIES IN KING COUNTY

Slowing the spread of COVID-19 became a primary goal for many communities to reduce infections, prevent deaths, and reduce burden on the hospital system. To achieve these goals, many state and local communities including King County, Washington, implemented nonpharmaceutical intervention (NPI) strategies based on evidence from past epidemics that illustrated effectiveness at limiting communicable disease spread.[2] The most effective strategies are those that limit person-to-person contact, such as business or school closures, but these measures have substantial social and economic effects on individuals and communities.[3] Business closures can result in loss of jobs and income, which can make it difficult for workers to meet basic needs (e.g., housing, food, health care, utilities) and increase the need for food assistance.[4] Behavior changes because of stay-home orders and social distancing guidance can contribute to social isolation and stress on family relationships—all of which can adversely affect physical and mental health.[5] These social, economic, and health outcomes are important to monitor during the pandemic to inform strategies to moderate these impacts and promote recovery. As racial and ethnic health disparities and unequal distribution of resources, risks, and protective factors existed before the pandemic, it is essential to examine data by race and other demographics when implementing NPIs to mitigate unintended consequences.

Washington State had the first diagnosed COVID-19 case in the United States, who came through the international airport located in King County in January 2020, and the first confirmed COVID-19–related death in the United States in February 2020 was a King County resident.[6] Washington State's governor established a series of NPIs in March 2020 when community transmission was apparent through subsequent cases diagnosed in individuals who had not traveled.[7] These NPIs increased as case counts surged. Measures included limiting the size of gatherings, closing public entertainment and recreation venues (performing arts, sporting events, and conventions), and prohibiting onsite consumption of food and beverages at restaurants, bars, and coffee shops. Statewide school closures for all public and private K–12 and higher-learning institutions began in March and were extended through the end of the 2019–2020 school year; many schools remained remote into the 2020–2021 school year.

The governor's "Stay Home, Stay Healthy" order, which ordered all Washingtonians to stay home unless they need to pursue an essential activity, banned all gatherings for social, spiritual, and recreational purposes and closed all nonessential businesses as of March 23, 2020. By the end of March, most employers mandated telecommuting for those who could work from home. A phased reopening began in King County on May 5, 2020, but was paused in November 2020 as COVID-19 incidence increased.

RACISM AS A PUBLIC HEALTH CRISIS

In the wake of local and national protests over structural and systemic racism, and in light of growing evidence of disproportionate COVID-19–related morbidity and mortality experienced by Black, Indigenous, and people of color (BIPOC), the King County government declared racism a public health crisis on June 11, 2020.[8] Compared with national estimates, King County performs well on measures of health such as life expectancy; however, county-level health indicators mask the cumulative effects of racism on BIPOC communities, which result in lower life expectancies, education levels, and wealth for these populations.[9] The economic and social impacts of the pandemic have magnified existing racial inequities for BIPOC communities, and this declaration commits to a racially equitable response centered on community and community-led solutions. Data are essential for understanding and addressing these crises.

MONITORING AND EVALUATION FRAMEWORK

PHSKC is the local health jurisdiction for King County, serving a population of 2.2 million in the city of Seattle, Washington, 38 additional incorporated cities, and unincorporated areas. This framework was developed to focus on the following questions:

- What economic, social, and overall health changes occurred during and after the COVID-19 pandemic and associated policy changes?
- How did these changes vary by COVID-19 risk group, race, geography, gender, health status, and socioeconomic status?
- Did health, social, and economic disparities change compared with a prepandemic baseline?
- Based on these changes, how should King County adjust NPI strategies? What additional supports are needed to address adverse effects of NPIs?

Using this monitoring and evaluation framework, PHSKC developed new partnerships, reached across sectors to track policies, accessed nontraditional public health data to show the impact and experiences of county residents, and validated data with community partners. PHSKC disseminated results through online dashboards, issue briefs, blog posts, presentations, and infographics.[10]

Framework Development and Methods

We selected metrics to provide an overview of community impacts under this framework (see Table 1 for indicators and data sets used), aligned with the Centers for Disease Control and Prevention's approach.[11] We developed an initial list of indicators based upon literature review of evidence from previous outbreaks that linked NPI strategies such as social distancing, school closures, and business closures to health and economic outcomes affecting individuals and communities. As part of the development process, we also considered whether data were timely, reliable, and actionable as well as how to ensure data were readily understandable and accessible in a variety of formats. To respond to the rapidly changing environment, data included were

- timely—consistently updated and available on a regular basis (weekly or monthly) that could be analyzed within days to weeks between data acquisition and public availability;
- responsive—likely to change quickly during the pandemic and after implementation of NPIs;
- valid—high quality and reproducible for King County;
- representative—representative of a topic area (e.g., unemployment, food insecurity) and linked to community mitigation efforts, not necessarily comprehensive of a topic; and
- disaggregated—could be analyzed by COVID-19 risk group, race/ethnicity, subcounty geography, gender, health status, or socioeconomic status to understand equity impacts.

Many traditional public health data sets, such as vital statistics, are disseminated on an annual basis after a 1- to 2-year lag. This is not timely enough to measure immediate impacts, which is essential to inform community mitigation and recovery decisions during emergencies such as a pandemic. Initial data used for this project therefore included a combination of publicly available data or data sources available through a preexisting data-sharing agreement. Many of the data sets used for this project address social determinants of health, though they are nontraditional sources for local health jurisdictions because the data are collected by social service or legal sectors (Table 1). We analyzed data sets using R version 4.0.3 (R Core Team, Vienna, Austria) or Stata version 15 (StataCorp LP, College Station, TX) and visualized data using Tableau version 2020.3 (Tableau Software LLC, Seattle, WA). We used Poisson regression to calculate age-adjusted rate ratios of death rates comparing 2020 with previous years. For other analyses, we considered χ^2 test results significant at the $P = .05$ level, and only statistically significant findings are discussed further in this article.[12]

Monitoring Policies Critical to Ensure Context

Local, state, and federal policies implementing NPIs to reduce the spread of COVID-19 and to ameliorate cascading effects were implemented beginning in March 2020. Many federal policies enabled new benefits, expanded existing resources, or waived previous requirements, but some financial supports have expired, and not all supports have benefited people equally. Washington State policies expanded individual unemployment benefit access, health care access through telehealth and waivers of deductibles, remote provision of social services, protections against evictions, and cash assistance programs for individuals to help meet basic needs, and provided business tax relief by waiving interest, fees, and late payments and extending due dates for various taxes. King County and several cities provided additional business and individual tax relief, eviction moratoria, and individual financial and food assistance programs, and promoted physical activity and well-being through closures of some city streets to vehicle traffic (Table 2).

A monthly policy review summarized these relevant local, state, and federal policy changes related to the COVID-19 pandemic and captured the cascading impact of NPI strategies and mitigation policies to better understand the contextual factors that could affect data trends. This review was conducted using promulgated policies and state and local news releases. All quantitative trends in selected metrics are presented alongside a timeline of these policies (see https://www.kingcounty.gov/covid/impacts for examples and additional details). This provides important context for the multiple simultaneous systemic changes and individual behavior changes during the pandemic. This policy context is not designed to attribute temporal changes solely to a single NPI or policy change. By implementing this

TABLE 1— Indicators and Data Sources Used in the Public Health 3.0 Monitoring and Evaluation Framework of the Impacts of COVID-19 and Nonpharmaceutical Interventions on Social, Economic, and Overall Health: Public Health–Seattle and King County, WA, 2020–2021

Topic Area	Indicator	Data Sources
Economic	Unemployment claims	Employment Security Department
	Social service needs	2-1-1 call data Utility assistance program
	Transportation and mobility data	Department of Transportation Cell phone–based mobility
Social	Food insecurity	Supplemental Nutrition Assistance Program Census Household Pulse Survey Local community health needs assessment Special Supplemental Nutrition Program for Women, Infants, and Children enrollment
	Family violence	National domestic violence hotline call data Syndromic surveillance Police call data Child Protective Services data Adult Protective Services data Legal filing data from the county prosecuting attorney's office and Department of Judicial Administration
	Access to Internet and technology	American Community Survey Local technology broadband survey
	Social impacts on childcare, work, ability to stay at home	Local community health needs assessment
Health	Access to care	Medicaid data Census Household Pulse Survey Local community health needs assessment
	Mental and behavioral health	Calls to behavioral health crisis line Syndromic surveillance Emergency medical services calls Census Household Pulse Survey Local community health needs assessment Tobacco quitline enrollment data Poison Center calls
	Changes to death patterns	State provisional death certificate data
	Drug overdose deaths	Medical examiner data
	Mitigation impacts on health	Local community health needs assessment Poison Center calls

Note. Cross-sector collaborations across data sources can address social determinants of health. See https://www.kingcounty.gov/covid/impacts for sample online, interactive graphs.

framework, we have accessed new data sets, gained knowledge of new data sets, rapidly analyzed and released data, and developed community connections.

Partnership to Understand Community Context

Community partners and subject matter experts reviewed findings before release. Community reviewers both have expertise on the topic and represent or serve affected communities. The community review process focused on whether quantitative data aligned with qualitative lived experience, resulting in revisions to quantitative analyses and inclusion of community narrative. This framework centers community to ensure data reflect the lived experience of communities in dissemination products and was an important final step in implementation.

Sharing with communities and understanding the context are important components to share information, power, and resources with communities more severely impacted and to better align the distribution of resources through community-led solutions.

DOCUMENTED IMPACTS ON SOCIAL, ECONOMIC, AND OVERALL HEALTH

Using the monitoring and evaluation framework, we summarize findings to illustrate the extent of NPI impacts on

TABLE 2— Contextualizing Quantitative Data Within the Policy Timeline With the Public Health 3.0 Monitoring and Evaluation Framework of the Impacts of COVID-19 and Nonpharmaceutical Interventions on Social, Economic, and Overall Health: Public Health–Seattle and King County, WA, 2020–2021

Topic Area	Jurisdiction	Sample Policies
Nonpharmaceutical interventions	Federal	Mask mandates (federal property, transportation) Federal site closures
	State	Declaration of State of Emergency Stay-home orders Limits on large gatherings Business closures and restrictions County-by-county phased reopening process Mask mandates Vaccination eligibility K–12 school and higher-education closures
	Local	Limits on large gatherings Mask mandates
Economic	Federal	Pandemic unemployment assistance Student loan forbearance Emergency Rental Assistance Program Economic impact payments Eviction restrictions
	State	State department of revenue business relief Statewide eviction moratorium (residential and business) Financial assistance program
	Local	Local eviction moratorium (residential and business) Business tax and individual property tax due date extensions Individual financial assistance programs Rental assistance programs
Social	Federal	Expansion and approval of remote benefits (e.g., SNAP approval of state emergency allotments, WIC remote benefit, expansion of school meals) Supplemental funding for existing programs (e.g., Family Violence Prevention Services Act, food assistance)
	State	Expansion of school meals Provision of remote services Financial supports to child care providers
	Local	City food assistance program Grocery vouchers Court proceedings switch to virtual visits (e.g., protection orders)
Health	Federal	Center for Medicare and Medicaid Services expansion of telehealth coverage
	State	State expansion of telehealth and coverage for COVID-19–related services New programs supporting mental health Special enrollment period for health insurance
	Local	Street closures to encourage physical activity simultaneously with physical distancing New programs supporting mental health

Note. SNAP = Supplemental Nutrition Assistance Program; WIC = Special Supplemental Nutrition Program for Women, Infants, and Children. See https://www.kingcounty.gov/covid/impacts for sample online, interactive graph illustrating combination of policy context with quantitative data.

social, economic, and overall health; how the proposed framework can be used; and the documented extent of racial disparities. We observed statistically significant changes in overall countywide trends and by race/ethnicity for economic, social, physical, and mental and behavioral health indicators between March and December 2020 (see online dashboard at https://www.kingcounty.gov/covid/impacts for examples and additional details).

Economic

Unemployment rose drastically following the implementation of NPI strategies; between March 1 and December 12, 2020, King County residents filed almost 554 000 unemployment claims.[13] The unemployment rate rose from 2.4% in February to a peak of 14.9% in April, then slowly decreased to 4.3% in November 2020. Those employed in the accommodation and food services, health care and social assistance, and retail trade industries had the highest rates of unemployment claims. BIPOC workers were overrepresented in these highly impacted industries; more than 1 in 3 workers who identified as American Indian/Alaska Native (AI/AN) or Black filed claims as did 52% of Native Hawaiian/Pacific Islander (NH/PI) workers.

Calls to the 2-1-1 social service hotline increased substantially shortly after the beginning of the pandemic, with more than double the number of calls in mid-March compared with February 2020 (prepandemic). Housing and food needs were the most common reasons King County residents called to seek assistance in spring 2020. Hispanic/Latinx (1.6 times), Black (4.7 times), and NH/PI (3.0 times) residents were disproportionately represented among callers seeking food assistance as compared with their proportion of the overall population. In a local needs assessment, BIPOC respondents were 1.9 to 3.3 times more likely to report feeling impacted by and struggling to meet financial obligations or essential needs.

Traffic volume and mobility provided information about economic activity and the extent to which people were staying home and reducing nonessential activity and travel. Across King County, traffic volume fell to its lowest point on March 27, 2020, soon after the statewide stay-home order: a 56% decline in usual weekday volume. Traffic volume gradually rose between April and September and, as of December 15, remained only 15% below the previous year even though many NPI restrictions continued. Cellphone-based mobility data document that 37% of residents stayed completely at home the week of December 15, 2020, compared with 28% the same week in December 2019.

Social

Food insufficiency doubled from March to July 2020, with 11% of adults in the King–Pierce–Snohomish tricounty area reporting that their households did not have enough food in the last week, compared with 5% before March 2020. For households with children, food insufficiency peaked in mid-July 2020 at 17%. Food insufficiency for Black, NH/PI, AI/AN, and Hispanic/Latinx communities were 2.2 to 2.8 times that of Asian residents, who reported the lowest food insufficiency. Enrollment in food assistance programs also increased: 17% more households enrolled in the Washington Basic Food program (comprising the Supplemental Nutrition Assistance Program [SNAP] and the Food Assistance Program for Legal Immigrants) in August than January 2020, and enrollment in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) increased by 8.4% from January to October 2020.

In 2020, emergency department (ED) utilization data[14] showed an initial 4-month decline in domestic violence–related ED visits among county residents from March to June, in parallel with an overall decrease in ED visits for any reason during the early months of the pandemic. However, as of July 2020, domestic violence–related ED visits returned to 2019 levels even while NPIs continued. While ED visits for domestic violence among BIPOC communities remained higher than for Whites in 2020, we observed no differences within race/ethnicity when we compared 2019 to 2020. Domestic violence hotline calls increased 25% from January to December 2020. Legal sector data on felony referrals for domestic violence did not decrease even though courts were closed or transitioned online for a portion of the year. The number of ED visits for suspected child maltreatment followed a similar pattern of an initial decrease. Suspected elder maltreatment investigations remained steady across 2020.

With many employers and schools moving to remote models, access to technology can be a barrier to adhering to NPIs. Prepandemic data showed that 6% (estimated 57 000) of King County households did not have a computer or broadband Internet access. Approximately 21 200 children in the county lived in households that lacked a computer or lacked broadband Internet access, both of which are essential for remote schooling. Almost 500 000 people in King County were digitally insecure (e.g., where Internet access was limited to cellular or public plans, who had a borrowed device or only a smartphone to access the Internet, or who rely on others to use the Internet). Sixteen percent of residents lacked the necessary digital skills to use the Internet independently.[15] Relative to their proportion of the population, a higher proportion of access-limited and device-limited residents were Black or Hispanic/Latinx, with Asians overrepresented among those with limited digital skills. This indicates that additional supports are needed for all populations to successfully work or attend school remotely.

Health

Washington State expanded access to Medicaid under the Affordable Care Act, which increased eligibility for adults aged 18 to 64 years with incomes less than 138% of the federal poverty level, according to the US Department of Health and Human Services. This could provide coverage for some adults who lost health insurance while unemployed. By November 2020, an additional 40 400 King County residents were enrolled in Medicaid, a 10% increase compared with January 2020. Black (1.3 times higher) and AI/AN (1.4 times higher) adults represented a higher proportion of new enrollees compared with prepandemic enrollees. By December 2020, 24% of adults in the tricounty area reported forgoing needed medical care because of the pandemic, with higher rates (31%) reported by AI/AN, NH/PI, and multiracial residents.

Mental and behavioral health is of high concern as the pandemic continues. The percentage of adults in the tricounty area reporting depressive symptoms increased 1.75 times by the week of July 16, 2020, compared with the week of April 23, 2020, with the highest levels of depressive symptoms among those who lost employment or live with someone who lost employment, and among those identifying as AI/AN, NH/PI, or multiple races. In December 2020, depression prevalence remained similar at around 26%. Calls to King County's behavioral health crisis line increased in April 2020 (12% higher than April 2019) and continued to increase during the year (24% higher in November 2020 than November 2019). In a local assessment survey conducted between August and October 2020, 56% of adults responded that their children had experienced more difficulties in emotion, concentration, behavior, or getting along with other people since the pandemic began.

All-cause death rates increased by 12% in 2020, with 14 893 deaths among King County residents in 2020, compared with the 2017–2019 baseline (annual average of 13 137 deaths). All-cause mortality and specific causes of death were selected to focus on leading causes of death and causes potentially ancillary to NPI measures. Overall mortality rates were significantly higher among AI/AN (38% increase) and Hispanic/Latinx residents (37% increase). Increased mortality rates were observed for drownings (61%), homicide (36%), diabetes and its sequelae (23%), overdose (23%), unintentional injuries (19%), and cardiovascular disease (7%). Overall mortality rates did not reflect a statistically significant difference from baseline for deaths attributable to cancer, dementia, suicide, traffic, or firearms. Although causal mechanisms remain unknown for all causes of death, drownings have been attributed to lack of lifeguards when swimming areas were closed.[16] Although firearm deaths did not reflect a statistically significant difference, analyses by manner of death revealed that this was attributable to a decrease in firearm-related suicides that offset an increase in firearm-related homicides.[17]

We found significant economic, social, and health changes with inequitable impacts on BIPOC communities through this analysis. We documented the ongoing impact on unemployment, social service needs, food insecurity, family violence, health care access, mental and behavioral health, and mortality rates during the pandemic. Racial disparities in economic, social, and health indicators increased compared with prepandemic baselines. BIPOC communities were disproportionately affected because they may work in occupations affected by the COVID-19 pandemic. Because of historic and ongoing systemic racism before the pandemic, BIPOC communities were also more likely to experience hardship because of NPIs.

IMPACTS ON SOCIAL DETERMINANTS AND RACIAL INEQUITIES

High-quality disaggregated data were critical to inform decisions that support racial equity during the pandemic response and recovery at multiple stages of program implementation. These data were used to inform development and implementation of an eviction prevention program, a food assistance funding program, and recovery plans including the county's budget decision-making process.

Food insecurity has continued to be a concern during the pandemic, involving factors such as access to healthy foods, availability of food, and cultural acceptance of provided food.[18] King County government utilized findings from this framework to establish and implement a new food security assistance program to fund community-based organizations to distribute food and increase food infrastructure. Food security and food assistance (SNAP and Basic Food, WIC) enrollment data from this framework were used to justify why the food assistance program was needed. The data were then used to inform program development: quantify scope and depth of current need across the county, identify which zip codes had a high density of need and which racial/ethnic groups were disproportionately experiencing food insecurity, and structure the program to maximize reach of available resources. Food security and food assistance data were then used to inform decisions on which racial/ethnic and geographic communities were prioritized for funding awards. Community-based organizations applied to implement the program through a competitive funding process. In the application, they were asked to identify which zip codes and which racial/ethnic groups they intended to serve, with awards prioritized to these organizations to reduce disparities. Program implementation data were then compared with SNAP enrollment data to estimate reach of the program for people who became food insecure because of COVID-19 impacts.

In another example, a local city used information from this framework as performance metric inputs to their economic development plan, which included recovery planning and support strategies. This city also used these findings to understand the prevalence of topics of concern, such as mental health, among city residents, and shared the prevalence along with referrals for local resources. Cross-sector collaborations were critical to informing these important topics. This summary captures just a few of many possible use cases for these publicly available data; these tools and approaches can be valuable to inform both decisionmakers and communities in the midst of the pandemic.

ADDRESSING CHALLENGES TO PUBLIC HEALTH 3.0 APPROACHES

While this example found early and ongoing indicators that warrant concern in planning for response and recovery, there are still important topics that lack comprehensive data such as childcare availability, childcare needs, educational outcomes, housing, and community violence. Likewise, the patchwork of resources and services around domestic violence, even within a single county, required collating across multiple data sets to understand patterns of community experience and resulted in a likely underestimate of domestic violence trends.[19] These data limitations may be unique to our locality, and these topics warrant important consideration in other jurisdictions.

Some data sources in the framework, such as domestic violence or behavioral health crisis calls, do not collect information about race/ethnicity. When disaggregated data were not available, communities consistently expressed that they felt invisible and were less able to advocate for resources to meet their needs. High-quality disaggregated data by demographic characteristics, including detailed race categories, are critical to ensure that data support equity-informed decisions, represent all communities, and do not inadvertently widen existing disparities. Data collection that includes detailed demographic information is the first step to ensure these data are available. Reliance on secondary data sources rather than primary data collection limits comparisons by demographics because of differences in data collection and reporting across sources. In cases in which quantitative data may not capture demographic information or are unreliable because of small numbers, qualitative analysis can enhance understanding of the impacts experienced by specific populations.

Implementing this monitoring and evaluation framework requires developing new cross-sector data partnerships, quickly developing knowledge of new data sets, scaling up workforce skills for automation, and building capacity with quick turnaround and regular updates. Having a well-defined approach,[20] rationale, and framework[11] for why these data were important was helpful when approaching new partners to discuss why we were asking for some of the nontraditional data. In some cases, PHSKC had previously broached the concept of data sharing with data stewards, but had not yet been able to access the data. In cases in which data-sharing agreements needed to be signed, it was helpful to have an experienced contracts office. For the analysis and presentation of the data, developing checklists for the analysis process, conducting quality assurance of the data as it was received and analyzed, and creating data visualization templates help streamline the process. Having an online dashboard available has supported regular updates and public use, as measured by more than 65 000 hits on the main page in 9 months. This represents a much larger reach than our existing interactive dashboards that are updated annually, and demonstrates the importance of timely dissemination.

CONCLUSIONS

This project demonstrates the feasibility, utility, and importance of monitoring the economic, social, and health impacts of COVID-19, including impacts of NPIs, using a novel monitoring and evaluation framework. This framework is intended to be replicable for other governmental health jurisdictions adopting a Public Health 3.0 approach by analyzing and disseminating high-quality, timely, cross-sector data to inform the COVID-19 response and recovery. Cross-sector collaboration between public health and other sectors addressing the social determinants of health are an essential first step to address long-standing racial inequities. While the indicators included in the monitoring and evaluation framework may differ for other jurisdictions because of data availability or local priorities, we believe these approaches are critical to inform development of strategies that simultaneously alleviate racial inequities and promote recovery from the pandemic. AJPH

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CONFLICTS OF INTEREST

The authors report no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

This study was exempt from institutional review board review because of public health practice nonresearch activity (see https://www.cdc.gov/os/integrity/docs/cdc-policy-distinguishing-public-health-research-nonresearch.pdf).

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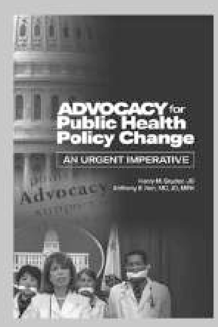

Immigrant Communities and COVID-19: Strengthening the Public Health Response

Lan N. Đoàn, PhD, MPH, Stella K. Chong, BA, Supriya Misra, ScD, Simona C. Kwon, DrPH, and Stella S. Yi, PhD, MPH

The COVID-19 pandemic has exposed the many broken fragments of US health care and social service systems, reinforcing extant health and socioeconomic inequities faced by structurally marginalized immigrant communities. Throughout the pandemic, even during the most critical period of rising cases in different epicenters, immigrants continued to work in high-risk-exposure environments while simultaneously having less access to health care and economic relief and facing discrimination.

We describe systemic factors that have adversely affected low-income immigrants, including limiting their work opportunities to essential jobs, living in substandard housing conditions that do not allow for social distancing or space to safely isolate from others in the household, and policies that discourage access to public resources that are available to them or that make resources completely inaccessible. We demonstrate that the current public health infrastructure has not improved health care access or linkages to necessary services, treatments, or culturally competent health care providers, and we provide suggestions for how the Public Health 3.0 framework could advance this.

We recommend the following strategies to improve the Public Health 3.0 public health infrastructure and mitigate widening disparities: (1) address the social determinants of health, (2) broaden engagement with stakeholders across multiple sectors, and (3) develop appropriate tools and technologies. (*Am J Public Health*. 2021;111(S3):S224–S231. https://doi.org/10.2105/AJPH.2021.306433)

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The COVID-19 pandemic has exposed the many broken fragments of US health care and social service systems, reinforcing extant health and socioeconomic inequities faced by structurally marginalized immigrant communities. With more than 44.7 million immigrants in the United States, immigrants form the backbone of American society and represent a significant portion of the essential workforce including agriculture, food services, construction, and health care industries.[1,2] Throughout the pandemic, even during the most critical periods of rising cases in different epicenters, immigrants continued to work in high-risk-exposure environments while simultaneously having less access to health care and economic relief and facing discrimination.[3]

Promoting equity in the public health response means prioritizing engagement of immigrant communities in discussions related to COVID-19 public relief funds and COVID-19 testing and vaccination allocation. Undocumented immigrant workers have been ineligible for economic relief for more than a year,[4] with the exception of the recently approved $2.1-billion economic relief bill, the Excluded Workers Fund, in New York State. As part of the Healthy People 2030 campaign, the US Department of Health and Human Services launched a new model of public health response, Public Health 3.0, which emphasizes collaboration among federal, state, and community leaders to address social, economic, and environmental factors that contribute to health inequities.[5] This most recent Public Health 3.0 era has a strong emphasis on addressing the social determinants of health, broadening engagement with stakeholders across multiple sectors, and developing appropriate tools and technologies to improve health outcomes for all communities.[5]

The purpose of this article is to illustrate the impact COVID-19 has had on immigrants in the United States and the role of public health to mitigate the short- and long-term impacts of the pandemic on immigrant communities. First, we discuss how systemic racism manifests through racial capitalism, immigration-related policies and citizenship status, and health and social policies that vary based on immigration status.[6] We consider immigration as a social determinant that has an impact on health and overall well-being and that puts immigrant communities at greater risk for COVID-19 infection while they are also less likely to access health care or have greater delays in entry into health care.[3,6] We demonstrate that the current public health infrastructure has not improved health care access or linkages to necessary services, treatments, or culturally competent health care providers, and provide suggestions for how the Public Health 3.0 framework could advance this.

DETERMINANTS DRIVING COVID-19 DISPARITIES

Research increasingly shows that low-income Black, Hispanic/Latinx, Asian American, Native Hawaiian, Pacific Islander, and Indigenous populations are disproportionately affected by COVID-19, with higher incidence, hospitalization, and death rates.[7] Immigrants, many of whom are people of color,[1] are unequally impacted by the COVID-19 pandemic because of socioeconomic-related challenges such as poverty and limited access to health care services. We describe systemic factors that have adversely affected low-income immigrants, including limiting their work opportunities to essential jobs, living in substandard housing conditions that do not allow for social distancing or space to safely isolate from others in the household, and policies that discourage access to public resources that are available to them or that make resources completely inaccessible.

Immigrant Essential Workforce

Despite official public health recommendations for stay-at-home orders and social distancing, many immigrants are unable to work remotely and have continued to work in essential industries, including food services, health care, manufacturing, construction, agriculture, and transportation.[3] Racial capitalism, defined as the social and economic value extraction from people of color, contributes to the root causes for the limited job opportunities available to immigrants and overrepresentation of immigrants in essential and frontline jobs.[2,8] These factors have allowed for the deliberate exploitation of immigrants and communities of color working in low-wage, precarious, and physically demanding jobs, and failed to offer these individuals sufficient compensation, benefits, and worker protections.[9] For example, agricultural and food production workers in the United States, many of whom are immigrants, have experienced a high incidence of COVID-19 outbreaks.[10] In addition to greater occupational exposure to COVID-19 infection, COVID-19 transmission is also aggravated by substandard housing units and unsanitary workplace conditions.[9,10] Although similar COVID-19 outbreaks have occurred in food production facilities in Europe, US workers experienced a disproportionately higher COVID-19 burden that can be connected to poorer worker protections (e.g., paid sick leave, health insurance) and fewer safety precautions (e.g., high speeds for slaughtering and processing animals increase occupational risks and do not allow workers enough time to take breaks).[11]

Immigration Status

Because of increased anti-immigrant sentiments and hostile policies, undocumented immigrants also face legal challenges that increase their exposure to and potential severity of COVID-19.[12] Systemic racism contributes to disproportionate enforcement of immigration policies via racial profiling of immigrants of color and the communities in which they live.[13] Immigration and Customs Enforcement (ICE) has continued immigration raids, detention, and deportation of undocumented immigrants, asylum seekers, and refugees. From February 2020 to January 2021, 9099 cases of detainees who tested positive for COVID-19 while in ICE custody were reported.[14] The COVID-19 spread among the detainees is amplified because of unsanitary living conditions, overcrowding, and limited access to timely medical care.[15]

Before the pandemic, millions of undocumented immigrants and temporary visa holders were ineligible for federal safety net programs.[4] Hostile immigration and enforcement policies deter immigrants from seeking help; the fear of detention and deportation negatively affects the physical and mental health of immigrants. Thus, undocumented immigrants often access health care at lower rates and only seek care as a last resort after health issues become severe.[5] During the pandemic, undocumented immigrants have been left with limited or no access to health care services. Because of the public health guidance to avoid emergency departments, they may delay seeking proper care for COVID-19. Documented immigrants are also dissuaded from seeking medical and social services for which they are eligible because of fear of legal repercussions to their green card or visa applications under the public charge rule. Public charge is a long-established immigration policy rooted in racism and xenophobia that seeks to deny lawful permanent US residence (i.e., lawful permanent residence status or a "green card") to immigrants who receive public assistance, such as Medicaid and the Supplemental Nutrition Assistance Program (SNAP).[16] The Public Charge Final Rule was updated in February 2020 to include more restrictions on immigrant use of public benefits and pathways to legal permanent residence.[16] Public charge was overturned in March 2021, but the fear of public charge and ambiguity on the updates continue to have implications on the health and well-being of immigrants.

SOCIAL AND ECONOMIC IMPACTS OF COVID-19

COVID-19 has adversely affected immigrants socially and economically, resulting in unemployment and significant financial strains for many families.[4] Immigrants contribute significantly to the US economy by paying federal, state, and local taxes, including $458.7 billion in taxes in 2018, with $31.9 billion paid by undocumented immigrants.[17] Yet, undocumented immigrants were ineligible for economic relief through the Coronavirus Aid, Relief, and Economic Security (CARES) Act.[3] Similarly, undocumented individuals living with a spouse or children who are US citizens were ineligible for any economic relief because a valid Social Security number was required.[3] For mixed-status households, in which family members have varied citizenship status (i.e., undocumented immigrants, permanent legal residents, US citizens), this can manifest in avoidance and delay in accessing resources for which they are eligible because it might risk identification of their undocumented family members—so then the whole household misses out on benefits.[18]

Unemployment

The clients of many New York City (NYC) immigrant-serving organizations have reported being ineligible for public benefits or struggling to obtain government assistance despite being eligible.[19] La Colmena, a community-based organization that primarily serves day laborers, domestic workers, and low-wage immigrant workers, estimated that almost all of their clients were not eligible for the first federal stimulus check despite having US-born children.[19] Policies like public charge have disincentivized many immigrants from seeking benefits or assistance during the pandemic. Immigrants also lack information and proper guidance to request benefits, such as reapplying for SNAP and Medicaid, partly because of language and technology access issues that are highly prevalent in immigrant communities.[19] The systematic exclusion from pandemic relief efforts will have long-term financial impacts.

The lack of federal economic support is particularly concerning for immigrant workers reporting high unemployment rates. Nationally, the unemployment rate increased from 4% in February 2020 to 14% among US-born workers but 16% for immigrant workers in April 2020.[20] Low-income immigrant families were even more severely affected, with 26% reporting that they or their spouse or partner lost a job and 26% reporting a family member was furloughed, had reduced work hours, or lost income.[4] The combination of job loss and ineligibility for stimulus payments and cunemployment insurance have also forced many immigrants into essential worker positions, which put them at greater exposure to COVID-19, to pay for rent, utilities, and other basic living needs.

Housing Stability

The COVID-19 economic impact is far reaching beyond income and unemployment. Since losing their jobs and primary income sources, many immigrant families are facing challenges in affording basic needs, which places them in precarious living situations such as unstable housing and food insecurity. Systemic racism also influences the residential patterning of where immigrants live; immigrants are more likely to live in underresourced neighborhoods, which, in turn, affects housing quality.[21] Immigrants living in multigenerational households have increased risk of COVID-19 transmissions, particularly if there is an essential worker in the household who is unable to safely self-isolate from other household members (e.g., older and immunocompromised individuals).[22] Immigrant households are more likely to be overcrowded with insufficient space for social distancing or self-isolation, which is exacerbated by lack of economic resources and threats of eviction.[19,23] The cumulative financial strain from unemployment, income loss, and housing insecurity complicates access to health care services and increases risk of household transmission of COVID-19 for immigrant communities.

Food Insecurity

The neighborhoods where immigrants live also have implications on food availability, food access, walkability, and individual health behaviors. Many immigrant households are experiencing greater food insecurity during the pandemic, exacerbated by unemployment and loss of their primary income sources. Immigrant households, particularly newer immigrants, are at greater risk for food insecurity than US-born households[19] and may live in disinvested neighborhoods with restricted healthy food options because of unaffordable or low-quality foods and far proximity and limited modes of transportation to food establishments.[3] During this pandemic, immigrant families are facing even greater barriers in securing fresh and healthy foods with the additional challenge of grocery and restaurant closures.

Food insecurity is highly prevalent among immigrant communities. NYC community organizations reported that even with local and state resources to increase food access, their clients are told they are ineligible without explanation, are worried about leaving their homes to pick up food, cannot afford food delivery, and are eating fewer meals.[19] Children are equally stressed by food insecurity with concerns about not having enough food at home or not being able to cook for their younger siblings while their parents are working because of lack of cooking knowledge and skills.[19] Food insecurity is exacerbated if fear of public charge leads immigrant parents to disenroll their American children from SNAP or the Special Supplemental Nutrition Program for Women, Infants and Children, or to avoid applying for the Pandemic Electronic Benefit Transfer, which provides money to families of children who were previously receiving free or reduced-price school lunches regardless of citizenship status.[3,4] The essential nutritional and food needs of immigrant communities are in jeopardy as they struggle to find and access affordable and healthy foods during the pandemic.

HEALTH STRESSORS AND HEALTH CARE ACCESS DURING COVID-19

The lack of access to affordable, preventive health services exacerbates risk for COVID-19, as many immigrants have higher prevalence of underlying chronic comorbidities (e.g., obesity, hypertension) linked to severe COVID-19.[3,8] For instance, South Asian immigrants have increased risk of type 2 diabetes and cardiovascular disease, which increase their risk for more severe COVID-19 symptoms. This was apparent in the Bangladeshi community in NYC, the earliest epicenter of the pandemic, where Bangladeshi immigrants suffered high mortality rates.[24] Immigrants with limited English proficiency, particularly individuals with limited digital access and older adults, are also less likely to receive public health alerts and resources in their native language to protect themselves from COVID-19.[25,26]

Mental Health

The COVID-19 pandemic has aggravated health disparities, particularly mental health distress, in immigrant communities. The challenges of social distancing and growing concerns over increased COVID-19 risk in overcrowded, multigenerational households contribute to increasing mental health stressors, including constant anxiety and fear from aggressive antiimmigration policies.[27–29] Poorer mental health has been further amplified during the pandemic because of lack of adequate and clear information regarding COVID-19–related health and social services and limited financial resources for basic necessities.[30] In addition, social isolation may increase the risk of mental health stressors among older immigrant adults who face cultural, linguistic, and digital access barriers.[31]

Mental health care was already inaccessible to many immigrants before the pandemic because of lack of infrastructure for affordable and linguistically accessible services and culturally competent providers.[32] Immigrant families at risk for detention and deportation because of public charge are less likely to seek care and more likely to delay health care use, which has consequences on management and treatment of mental health and chronic conditions.[13,33] In NYC, there has been an increase in mental health stressors and need for services among immigrant communities.[19] Community organizations that largely serve Hispanic/Latinx, Black, and Asian immigrant clients are reporting that there are not enough mental health providers and services to fulfill the mental health needs of the community because of the high demand, transition to telehealth, and barriers to care for individuals with limited or no Internet access.[19] NYC's Academy of Medical and Public Health Services has been providing free mental health therapy services to their clients in English and Spanish; however, they are only able to provide a limited number of free mental health services, and there are long waiting lists.[19] Similarly, Libertas Center for Human Rights reported that their mental health services and referrals have been exhausted during the pandemic.[19]

Sexual and Reproductive Health

Missing from current discussions is the pandemic's impact on access to sexual and reproductive health care for immigrants. Immigrants are ineligible for or have limited access to sexual and reproductive services, including pregnancy-related services and sexually transmitted infection and reproductive cancer screenings offered through public health programs, because of health insurance eligibility restrictions and exclusions for undocumented immigrants.[34] Changes to the Title X national family planning program in 2019 reduced the capacity and services of many publicly funded family centers that primarily served low-income, uninsured immigrant women.[32] In addition, there are few culturally competent providers, particularly in suburban and rural regions in the United States, and immigrants with Medicaid coverage may choose to forgo sexual and reproductive health services or disenroll entirely because of public charge.[34] The pandemic poses a great threat to the health of immigrant women and families because of the limited and delayed access to sexual and reproductive health services, leading to greater health disparities in maternal health outcomes, reproductive cancer, and sexually transmitted diseases.[32]

COVID-19 Testing and Vaccination

The Families First Coronavirus Response Act (FFCRA) passed in March 2020 provided up to 2 weeks of paid sick leave for COVID-19–related illnesses and free COVID-19 testing for uninsured individuals through reimbursements.[35] However, this is no longer in effect as of December 31, 2020, and FFCRA did not cover COVID-19–related treatment. NYC community organizations reported that their immigrant clients were denied COVID-19 testing because of inconsistencies in the interpretation of and confusion about guidelines and shortage of testing kits.[19] COVID-19 testing in NYC was also limited to drive-through tests at specific locations, requiring some individuals to pay for transportation costs or skip testing because of financial constraints.[19] Testing and treatment of COVID-19 for immigrant communities are further delayed because of the lag in official communication from city and state health officials in native languages. The Arab community in Brooklyn, New York, reported receiving little to no outreach or communication regarding the pandemic and were unaware of resources such as free hotel quarantine to prevent the spread of COVID-19 in their homes and neighborhoods.[19] Immigrants do not have access to accurate, up-to-date information on COVID-19 prevention or guidance on how to access care and proper treatment of COVID-19–related symptoms, and are hesitant to seek care for COVID-19 at hospitals.[19] Similar challenges to COVID-19 vaccination access plague immigrant communities, including poor communication and misinformation about vaccine eligibility, costs, and information needed for decision-making alongside social barriers (e.g., low health literacy, language access, transportation).[36]

EDUCATIONAL IMPACTS OF COVID-19

The shift to virtual learning has overwhelmed both parents and children and is a particular concern for immigrant households. Compared with households with US-born parents, households with immigrant parents may be at a greater disadvantage because of cultural and linguistic communication barriers, unfamiliarity with the US education system, and jobs that have little flexibility to work from home or allow more parental involvement.[37] For immigrant parents with limited English proficiency, it is especially difficult to provide educational assistance to their children.[19] Similarly, children may be stressed and isolated in their roles as remote learners, alongside additional responsibilities of assisting their parents with applying for unemployment insurance benefits and other economic relief programs.[19] Even if immigrant parents are able to virtually work, they may be juggling multiple low-wage, full-time positions or acting as caregivers for children and older adults in the household. Crowded living conditions prohibit children from staying engaged and productive in their remote learning environments.[19] Many immigrant families do not have sufficient access to high-speed Internet or appropriate technology to attend virtual classes and complete assignments.[19,38] Despite the NYC Department of Education's attempt to support remote learning by providing students with laptops and tablets, there are still challenges with completing schoolwork because the correct applications are not downloaded on the devices. The educational impacts of COVID-19 on children from immigrant families is closely tied with the socioeconomic and health impacts and, if left unaddressed, could negatively affect their development and have consequences across the life course.

STRENGTHENING THE PUBLIC HEALTH RESPONSE

Improving the public health infrastructure means envisioning a Public Health 3.0 era that includes immigrant communities. We propose recommendations to strengthen the COVID-19 public health response by addressing the social determinants of health, broadening engagement with multisectoral stakeholders, and developing appropriate tools and technologies.[5]

Addressing the Social Determinants of Health

Two ways to mitigate widening disparities include removing access barriers to COVID-19 testing, treatment, vaccination, and general health care, and increasing programs and support for immigrant-owned businesses, immigrant-serving organizations, and immigrant communities.

First, public health institutions should denounce organizations and policies that impede public health efforts, like clearly communicating to immigrants that engaging in health or social services will not have an impact on citizenship status and that collected information will not be used to identify them for detention and deportation.[39] For example, the US Department of Homeland Security issued a press release encouraging everyone to get the COVID-19 vaccine when available to them, regardless of immigration status.[40] The press release further detailed that ICE and US Customs and Border Protection will not conduct enforcement operations near sensitive locations, including hospitals and vaccination distribution sites.[40,41] Promoting a more equitable public health response would include free and easy access to COVID-19 tests and vaccines for immigrant communities, and community immunity protects everyone.[36]

This includes ensuring that COVID-19 testing and vaccination sites are easily accessible (e.g., mobile clinics) and having service providers (e.g., community health workers) who can assist with language access.[3] For example, health care providers can share local health resources and culturally relevant community resources with immigrant families or encourage immigrant families to participate in public programs for which they are eligible and receive free COVID-19 testing and vaccination. Greater investment in linguistically and culturally appropriate preventive health care services (e.g., federally qualified health centers) and increasing funding for organizations that predominately serve immigrants (e.g., immigration legal services) would strengthen communication strategies to immigrant communities in the public health response. Expansion of current policies can also increase health insurance coverage and access for immigrant families, like expanding Medicaid to cover low-income adults, eliminating children's immigration status requirement for the Children's Health Insurance Program, and extending sexual and reproductive services and rights.[34]

Second, state and local public health departments should create emergency cash assistance funds to support immigrant-owned businesses and immigrant workers, continue to extend the eviction moratorium and provide rent relief for small businesses, and protect immigrants who are essential workers with hazard pay and timely access to COVID-19 vaccines.[19] Immigrants should be a priority in the public health response because they are overrepresented in essential industries and are more likely to become unemployed.[42] Furthermore, the number of immigrant-owned businesses decreased by 36% between February and April 2020, compared with 18% among businesses with US-born owners.[43] Expanding eligibility to federal relief funds and resources will be particularly important to mitigate worsening COVID-19–related outcomes for immigrant communities.

Broadening Engagement With Stakeholders

For the immediate response, public health assistance and timely interventions are paramount in the COVID-19 response for immigrant communities. Thus far, community organizations have stepped up to fill the gaps in the public health infrastructure and respond to needs of immigrant communities. Community-based organizations have a track record of collaboration with historically marginalized communities and earned trust in these communities that could bolster COVID-19–related public health prevention measures. For example, the Kovler Center Child Trauma Program (KCCTP) in Chicago, Illinois, rapidly disseminated linguistically relevant information and resources for food pantries, school lunches, and rental assistance to refugee and immigrant families.[44] KCCTP also started remote programming for regular check-ins with youths through text, phone, or video conferences to ensure that youths and their families were adjusting and doing well during the pandemic.[44] Similarly, a joint model of community outreach between a medical student association, Ironbound, and community-based organization, Mantena Global Care, was launched in New Jersey to assist the Latinx immigrant community.[44] Medical students served as telehealth patient navigators to link community members to federally qualified health centers, provided up-to-date medical guidance through social media platforms, and connected community members to nonclinical services like food pantries to address food insecurity.[44] Inclusion of community-based organizations and patient navigators in the public health response would improve patient-centered care and address issues related to health care accessibility by providing culturally and linguistically concordant clinical (e.g., wellness checks) and nonclinical (e.g., enrollment assistance for public benefits) services. Relatedly, funding should be allocated equitably to invest in and adequately compensate community organizations for their expertise and contributions to building a culture of health in their communities.

Developing Appropriate Tools and Technologies

Lastly, public health information systems need to be timely and collect relevant health information. The role of public health information systems, like electronic health records and COVID-19 case and vaccination trackers, is to collect quality demographic and health data; however, these systems have been inadequate in providing real-time data needed to identify high-risk populations. The unique structural vulnerabilities engendered by immigration and documentation status have not been adequately considered in tracking data and deploying tailored responses to immigrant communities in need. For example, having robust health data sources with both race/ethnicity and immigration status could better highlight gaps that need to be addressed in the public health response—like whether immigrants who are eligible for public benefits are enrolled in and using the services. Current public health information systems need to collect and report quality demographic data (e.g., disaggregated race/ethnicity, language preference) and up-to-date COVID-19–related data to support the immediate COVID-19 public health response.

This is an opportunity to build better public health systems for immigrant communities in the longer term by rectifying a legacy of exclusion and disenfranchisement. Strengthening the public health response will require intentional engagement of multisector stakeholders to ensure there are multiple access points to improve health for immigrant communities. In addition, timely, multilevel interventions and collective advocacy for structural improvements in federal policies and initiatives are needed to mitigate the impacts of COVID-19 on immigrant communities.

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The authors have no conflicts of interest to declare.

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This project did not involve human participants and does not meet the definition of research required for institutional review board review.

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