

Who Is Dying, and Why?

May 20, 2020



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It is commonly asserted, with some justification, that viruses do not recognize social boundaries. And yet the statistics on the demographics of those afflicted and felled by Covid-19 show startling disparities by race, ethnicity, and socioeconomic status that emerged early in the US epidemic. This paper documents and considers the reasons for this. Since the disease is especially deadly for the elderly, it is important to keep in mind that different demographic groups have very different age distributions. As a result, inferences from data that are not age-adjusted must be made with great care. With this in mind, we explore some of the particularities of disparities across groups, including intersections between race-ethnicity and socioeconomic status. We consider the composition of the essential workforce, and of facilities such as prisons, detention centers, long-term care establishments, and specific industrial sites such as meatpacking plants that have been prominent loci for the spread of disease. Finally, we address the question of how policy responses can actively work to mitigate these disparities.

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We thank Danielle Allen, Glenn Loury, and Tommie Shelby for guidance and feedback on earlier versions.

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01 Introduction

It is commonly asserted, with some justification, that viruses do not recognize social boundaries. And yet the statistics on the demographics of those afflicted and felled by Covid-19 show startling disparities by race, ethnicity, and socioeconomic status that emerged early in the epidemic. This paper documents and considers the reasons for this. It also addresses the question of how the Roadmap to Pandemic Resilience proposed by [Allen et al. \(2020\)](#), which is based on large-scale testing, tracing and supported isolation (TTSI) for those who need it, can actively work to mitigate these disparities.

We begin with a look at the age distribution of fatalities both because this is one of the most striking and consistent patterns in the data, and because it is important to keep in mind that different demographic groups have very different age distributions. This latter fact means that inferences from data that are not age-adjusted must be made with great care, and that additional examination of age-specific mortality rates by race-ethnicity is important for understanding how mortality risk varies by age across communities.

We then explore some of the particularities of disparities across groups, including intersections between race-ethnicity and socioeconomic status. We consider the composition of the essential workforce, and of facilities such as prisons, detention centers, long-term care establishments, and specific industrial contexts such as meatpacking plants that have been prominent loci for the spread of disease. Within this context, we analyze the TTSI strategy outlined in the roadmap and discuss how it may be made relevant to the task of combating pervasive inequality in health outcomes across groups.

Our data thus far show significant health disparities across communities, and we postulate historical exclusion, residential segregation, discrimination, and persistent barriers to care as possible reasons for these observed phenomena. However, as the disease spreads across the United States, data on confirmed cases, hospitalizations, and deaths are being updated frequently ([Thebault and Hauslohner, 2020](#)).

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Introduction

Patterns that exist at one point in time may deepen or vanish in due course. Consequently, the empirical regularities we describe here ought to be viewed as tentative, especially those based on relatively small sample sizes. Other regularities, such as the age distribution of fatalities, reflect robust findings across multiple countries and are unlikely to change in any significant way.

02 The Age Distribution of Fatalities

Figure 1 shows upper and lower bounds for the estimated case fatality rate by age group. It reveals that older Americans are far more vulnerable to the disease than the young, with the likelihood of death conditional on diagnosis rising with age at a sharp and accelerating pace.

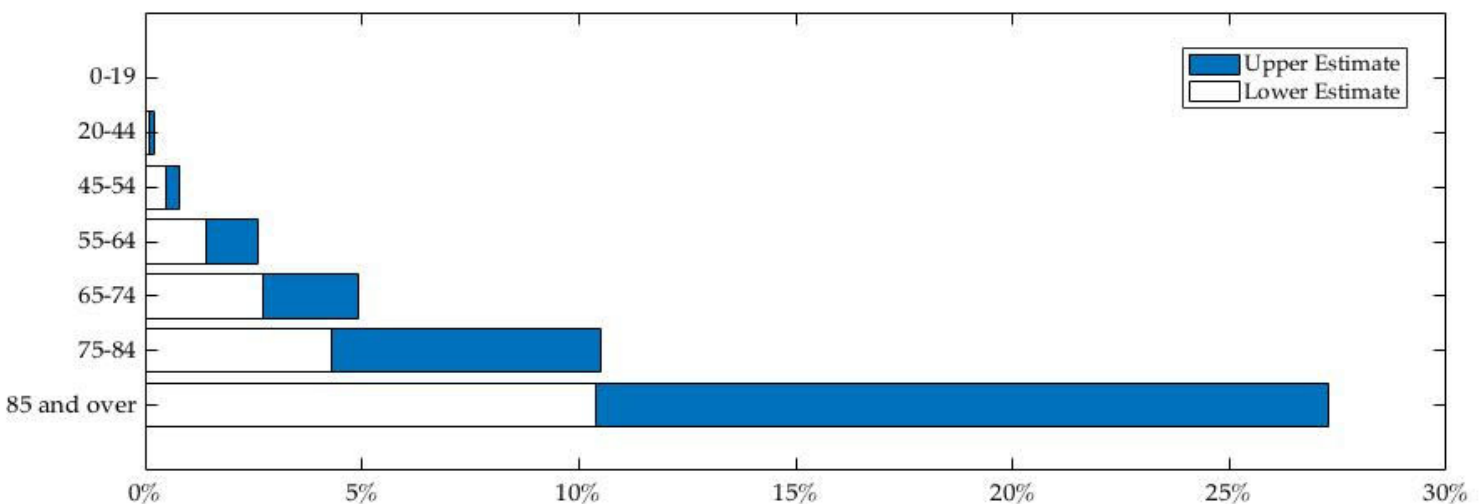


Figure 1. Covid-19 Case Fatality (Upper and Lower Bounds) by Age Group between February 12 and March 16, 2020, in the United States. Data Source: Centers for Disease Control and Prevention.

This pattern is reflected in the extreme vulnerability of those who live in long-term care facilities such as nursing homes and assisted living establishments. Data compiled by the [Kaiser Family Foundation](#) reveals that among the 36 states reporting this information, a staggering 41 percent of all fatalities are associated with long-term care facilities. In half of these states the share exceeds 50 percent, and in three states—Minnesota, New Hampshire, and Rhode Island—it exceeds 75 percent. The age distribution of fatalities reflects both the particular dangers faced by the elderly and the fact that many of them live in congregate facilities where transmission is accelerated.

This is important to keep in mind when interpreting data on disparities along other dimensions, since different demographic groups do not share the same age distribution. Age distributions by race-ethnicity

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The Age Distribution of Fatalities

are shown in Figure 2. White Americans (excluding those who identify as Hispanic or Latino) are significantly overrepresented among the elderly and significantly underrepresented among children and youth. Latinos are the youngest population, followed by African Americans and Asians. In 2019 the mode age for Latinos was 11, for African Americans, 27, for Asians, 29, and for whites, 58.⁸ Similarly large differences exist in mean and median ages across groups.

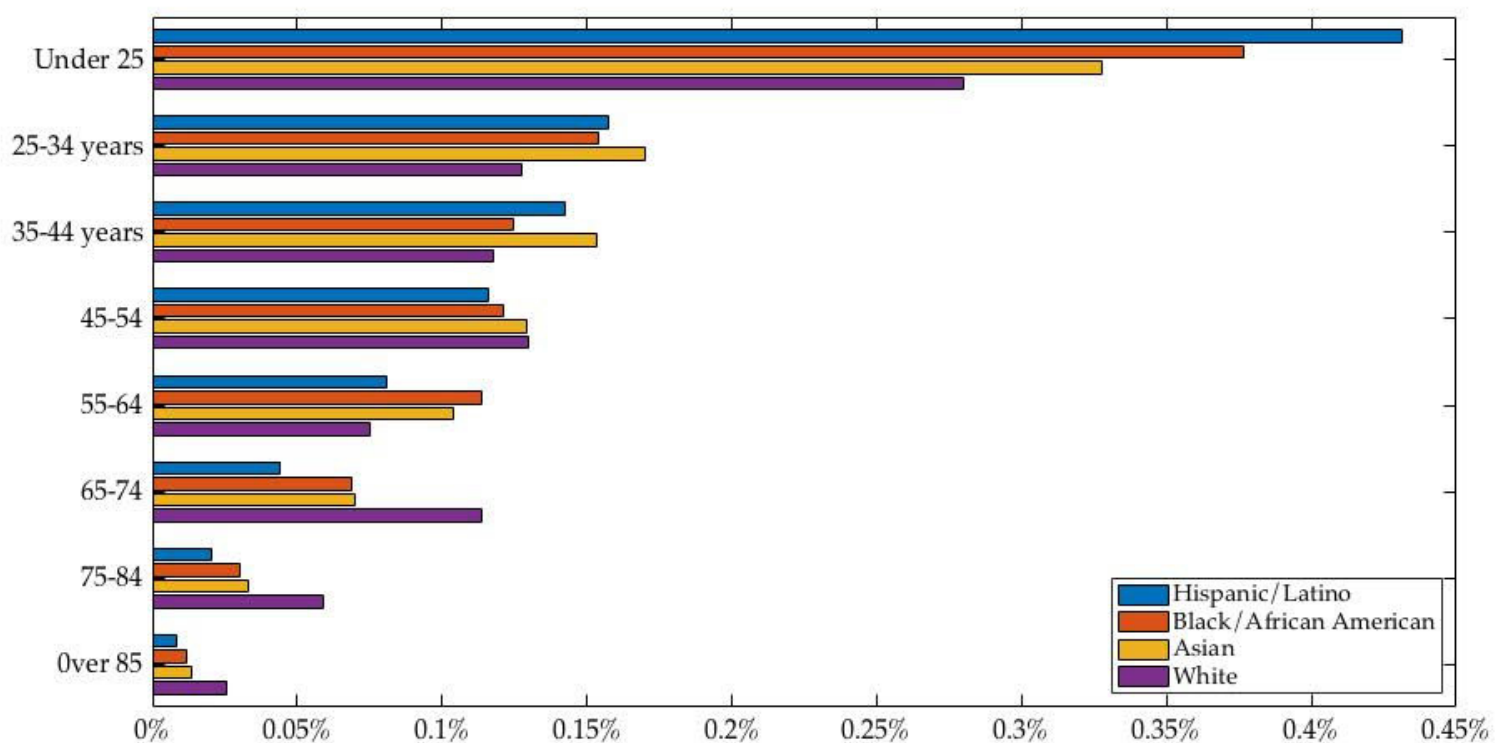


Figure 2. Age Distributions by Race-Ethnicity in the United States in 2018. Data Source: US Census Bureau

⁸ See [Schaeffer \(2019\)](#). We drop the qualifier non-Hispanic when referring to white Americans throughout this paper.

03 Disparities by Race-Ethnicity

Differences in age distributions imply that if the virus were affecting all communities uniformly, whites would be dying at significantly *higher* rates. If one finds, instead, that fatalities among whites are lower than among other groups, then disparities in fatality rates by race and ethnicity are even greater than they appear in the unadjusted data.

The point may be illustrated by examining the case of New York City, which has released both unadjusted and age-adjusted rates of mortality. As of May 20, there were more than 1.5 million confirmed cases and over 92,000 deaths in the United States.⁹ Almost 20,000 of these deaths were in New York City alone; the city has already lost one out of every 500 residents to the disease.¹⁰

These losses have not fallen evenly across different groups. As of May 6, the city had [compiled demographic data](#) for 87 percent of fatalities, from which deaths per 100,000 population can be computed. These are displayed in Figure 3, with the top panel showing unadjusted rates and the bottom panel showing age-adjusted rates.¹¹

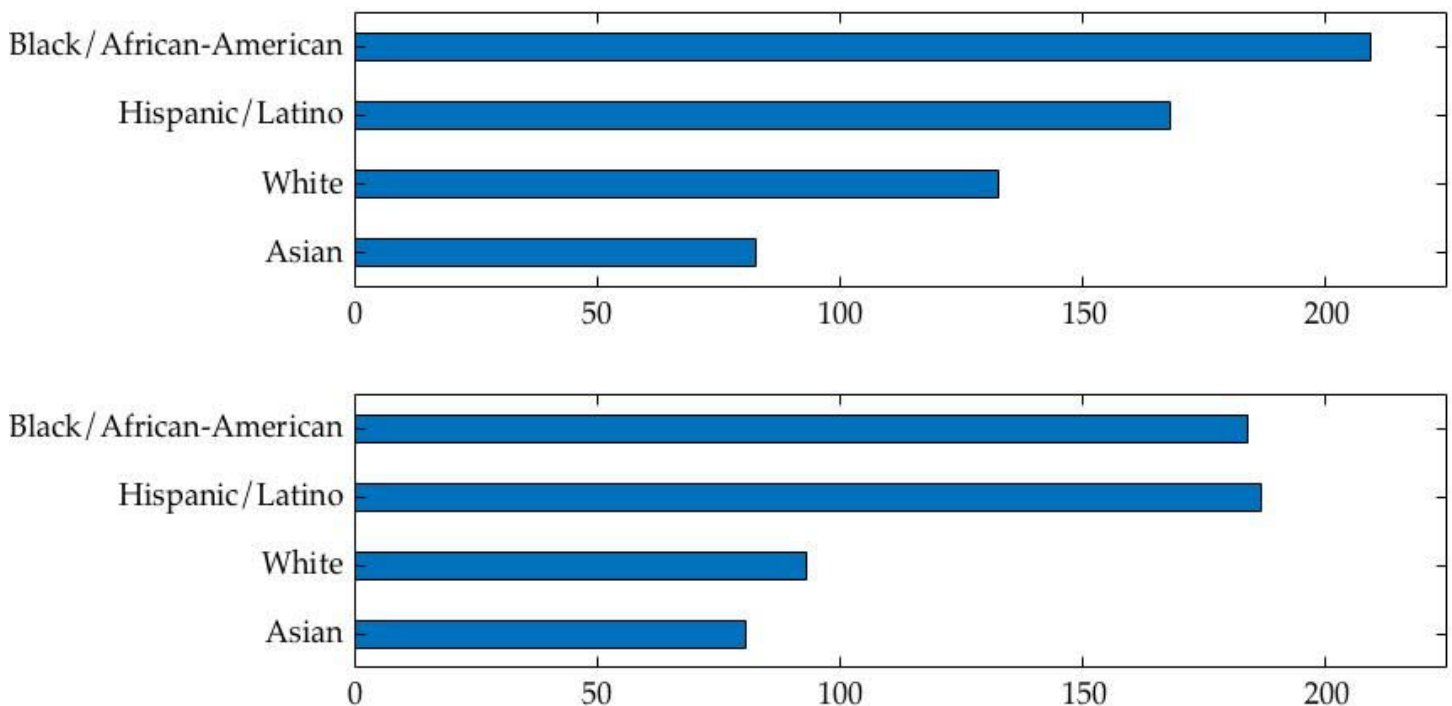


Figure 3. Unadjusted and Adjusted Number of Deaths per 100,000 Population as of May 6 in New York City. Data Source: NYC Department of Health and Mental Hygiene.

⁸ See the [Johns Hopkins Coronavirus Resource Center](#) for the latest figures.

¹⁰ See the NYC Health [Covid-19: Data](#) page for the latest figures.

¹¹ The age-adjusted rates shown are those computed and made available by New York City.

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Disparities by Race-Ethnicity

If the virus were killing people evenly across race-ethnic groups within age brackets, Latino and African American communities would have a lower overall death rate on account of the fact that the populations in these groups are generally younger. In New York, what one sees is the opposite. In the unadjusted rates, whites have lower mortality than Latinos and African Americans, and adjusting for age makes these differences even starker. For similar reasons, Asians appear to have much lower mortality than whites in the unadjusted data, but this gap narrows considerably when one adjusts for age.

Adjusting for age allows us to see disparities arising from factors other than the age distribution. Figure 3 reveals that the rate at which African American and Latino New Yorkers have died, relative to their age-adjusted populations, is approximately double the rate at which whites and Asians have died.¹² What we see in the case of New York is that disparities (relative to whites) persist, and indeed widen, after age adjustments.

With respect to African Americans, large disparities exist in much of the country even in data unadjusted for age. This can be seen in Figure 4.¹³ If African Americans were dying at the same rate as other groups in the population, this ratio would equal 1. Most states lie above this threshold, although there are a couple of exceptions. Some states are well above the threshold, with Kansas and Wisconsin being the most extreme. In these states African Americans are dying at about five times the rate at which they are represented in the population. In Michigan and Missouri, the African Americans share of fatalities is about three times as great as their share of the state population.

¹² While age adjustment removes the impact of race-ethnic variation in population age structure, it can obscure the large differences in age-specific mortality rates. Age-specific mortality rates (by race and ethnicity) have not been made publicly available for New York City.

¹³ Not all states have released data on fatalities by race-ethnicity. Figures 4 and 5 are based on states that have done so, and have baseline populations that are large enough for the CDC to publish the data without raising privacy concerns.

Disparities by Race-Ethnicity

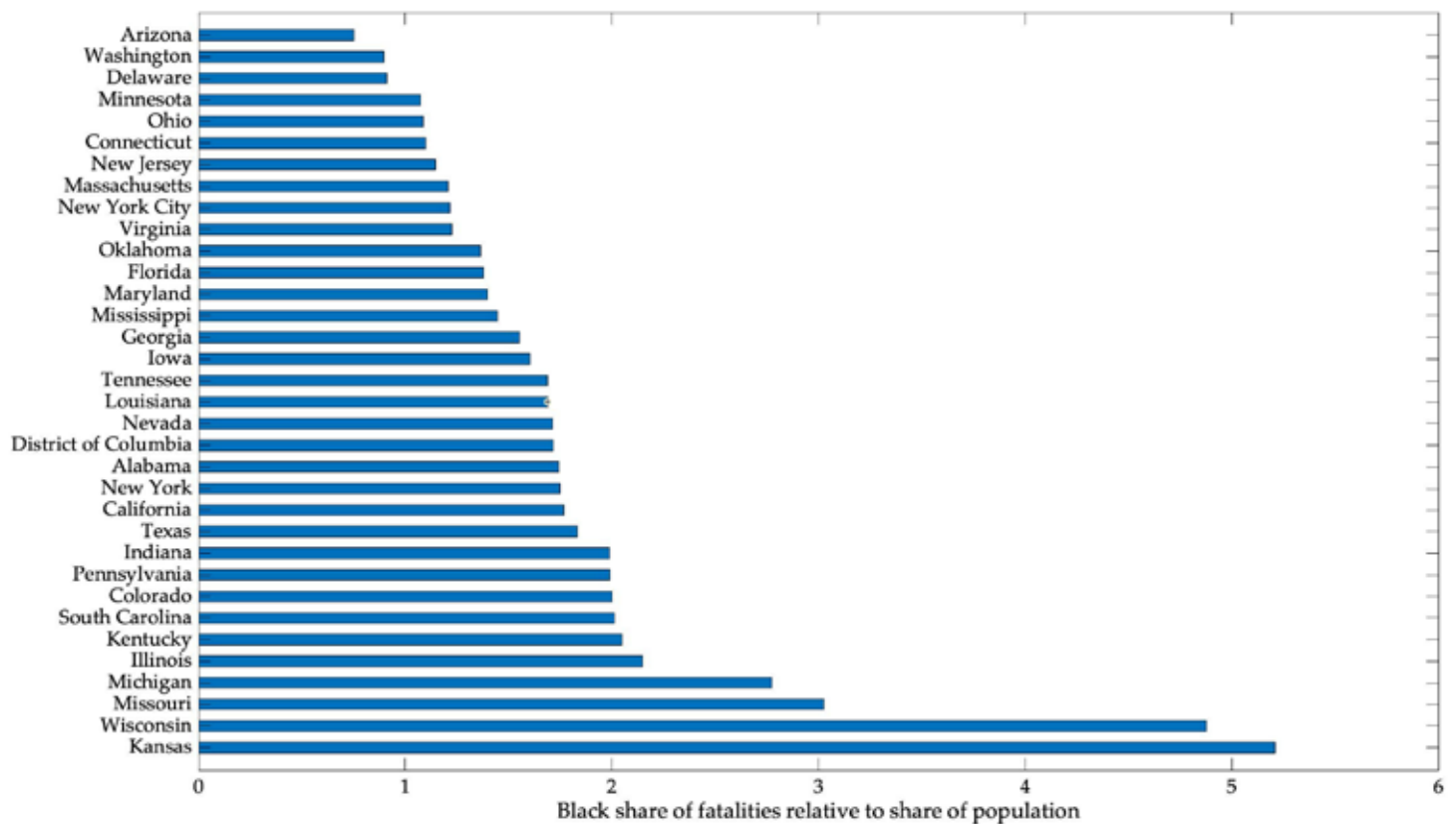


Figure 4: Black share of fatalities relative to share of population, by state. New York excludes New York City, which appears as a separate entry. Data Source: US Census Bureau, CDC.

Next consider nationwide trends for Latino communities ([Jordan and Oppel, 2020](#)). Evidence has emerged suggesting that particular regions have struggled disproportionately, for example Chelsea ([García, 2020](#)), a Boston neighborhood predominantly inhabited by Latino immigrants, and in Baltimore ([Juarez, 2020](#)), where Latinos constitute 5 percent of the population but 12 percent of coronavirus patients. However, state level data (unadjusted for age) do not reveal disproportionately greater fatalities among Latinos. This can be seen in Figure 5, where almost all states' ratio of Latino share of fatalities to share of population is less than 1.

It is crucial here to recall that Latinos are the youngest ethnic group in the country, and the least likely to be in long term care facilities. This means that they can be overrepresented among cases and yet <https://ethics.harvard.edu/who-is-dying>

Disparities by Race-Ethnicity

underrepresented among fatalities. For instance, in Colorado, Latinos make up 22 percent of the population, 29 percent of confirmed cases, and 18 percent of fatalities ([Artiga et al., 2020](#)). Similarly, in Michigan, Latinos make up 7 percent of the population, 12 percent of confirmed cases and 5 percent of deaths ([Artiga et al., 2020](#)). If Latinos had an age distribution that skewed older, more of the Covid-19 cases that they are experiencing at disproportionate levels would lead to severe outcomes and death.

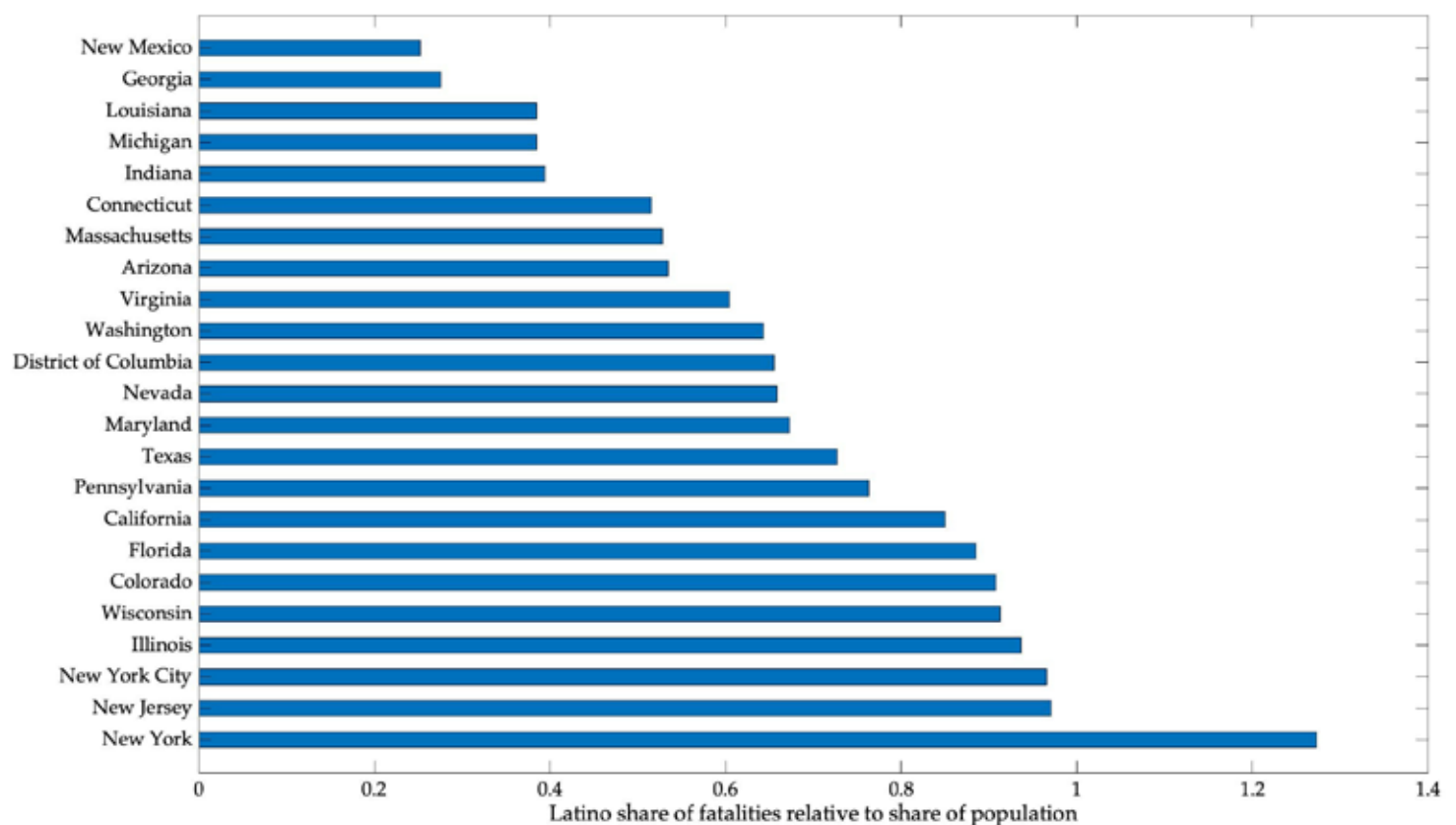


Figure 5. Latino share of fatalities relative to share of population, by state. New York excludes New York City, which appears as a separate entry. Data Source: US Census Bureau, CDC.

Native American populations in most states are too small for statistical regularities to be inferred at the state level, but there are some exceptions ([Artiga and Orgera, 2020](#)). The Navajo Nation, with territory spanning Arizona, New Mexico, and Utah, has been hit especially hard ([Klemko, 2020](#)). Just 4 percent of Arizona's population is Native American, but this group constitutes 18 percent of deaths as of May 11.

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Disparities by Race-Ethnicity

Essential Workers

In New Mexico, Native Americans are just 9 percent of the population, but 38 percent of fatalities.¹⁴ These disparities are comparable to those faced by African Americans in Wisconsin and Kansas. Furthermore, the age distributions of Native Americans and African Americans are virtually identical ([Schaeffer, 2019](#)), so the high fatality rate among the Navajo cannot be attributed to an elderly population.

What accounts for such large disparities? Relevant factors include the demographic composition of the essential workforce, differences across groups in socioeconomic status, housing conditions and crowding, multigenerational households, disparities in underlying health conditions and insurance status, and generally various forms of exclusion from care and support that have compounded over generations. We consider some of these factors next.

Essential Workers

One factor that could be driving racial and ethnic disparities in fatality rates is that infections are concentrated among essential workers, among whom are frontline workers who cannot work from home. This group constitutes about 40 percent of the workforce, and their particular vulnerability has been widely documented.

In thinking about essential workers, it is worth distinguishing between those whose work is essential for the general population and those for whom work itself is essential for survival. The term “essential workers” is commonly used only in the former sense, but the continued labor market participation of

¹⁴ The fact that Native Americans are such a large and disproportionate share of fatalities in New Mexico and Arizona also explains why Latinos are so underrepresented among fatalities in these two states. The population as a whole can be neither over- or underrepresented so disproportionately high fatalities in one group mechanically lower the disparities in others. Similar considerations apply when looking at Wisconsin, where extreme disproportionality faced by African Americans mechanically lowers the measured disparity faced by Latinos.

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Disparities by Race-Ethnicity

Essential Workers

the latter group of workers is also important in identifying vulnerability to disease and death. Workers in the health and care sectors, first responders, sanitation workers, farm workers, and others in the food supply chain are essential in the former (and often also in the latter) sense. But there are also low-wage workers in retail, delivery, and food service occupations for whom continued workforce participation is an absolute necessity ([Hertel-Fernandez et al., 2020](#)). Furthermore, essential workers in public safety (fire, police, etc.) often have much better access to health care, sick leave, and other benefits based in part on an explicit recognition of their unique vulnerability in the course of serving others. Other kinds of service workers are not afforded that kind of recognition.

Consider, for instance, the following report from a physician working at Elmhurst Hospital in Queens, which encompasses workers who are essential in both senses:

It's become very clear to me what a socioeconomic disease this is... People hear that term "essential workers." Short-order cooks, doormen, cleaners, deli workers—that is the patient population here. Other people were at home, but my patients were still working. A few weeks ago, when they were told to socially isolate, they still had to go back to an apartment with ten other people. Now they are in our cardiac room dying ([Galchen, 2020](#)).

Frontline workers who cannot work from home earn lower wages on average, are more socioeconomically disadvantaged, and are more likely to be African-American or Latino ([Blau, Koebe, and Meyerhofer, 2020](#)). According to the Current Population Survey, 38 percent of black workers are employed in essential sectors ([Hawkins, 2020](#)), while this is the case for only 27 percent of white workers. Within the healthcare sector, 54 percent of health-support workers are non-white ([Blau, Koebe, and Meyerhofer, 2020](#)), including 25 percent who are black, compared to 12 percent in the U.S. population at large. Among New York City transit workers, 41 percent are black compared to 24.3 percent of the NYC population that is black ([LMIS, 2009](#)). In Boston, a recent study ([ACLU MA, 2020](#)) found that Covid-19

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Disparities by Race-Ethnicity

Essential Workers

population-adjusted rates were highest in neighborhoods with the most concentrated proportions of essential workers, which also align with the neighborhoods with the highest proportions of non-white residents.

Despite the fact that the essential and frontline workforce is disproportionately non-white, New York has also experienced pockets of infection among communities of white essential workers. That exposure to Covid-19 is related principally to participation in the essential workforce and how that workforce is racialized is suggested by the experience of Staten Island. In New York City, two of the [zip codes with the highest case counts](#) (relative to population) are 10312 and 10314 on Staten Island, both predominantly white and working class, with high populations of first responders. The population in the former zip code was over 91 percent white in the 2010 census, the latter was over 75 percent white.

Staten Island is home to a disproportionate number of public safety workers, including one-third of the city's firefighters and one fifth of its police officers, who in some ways are materially better positioned to deal with the challenges of Covid-19 than other frontline workers. As of April 6, nearly 20 percent of NYPD officers were out on sick leave ([McCarthy and Marsh, 2020](#)), and as a workforce NYPD officers are unionized and have unlimited sick days ([Strum, 2020a](#)). The high ratio of first responders also partially explains how Staten Island has a much higher testing rate than the rest of the city ([Strum, 2020b](#)), something that neighborhoods populated more heavily by other service and delivery workers have not been afforded. This points to the more complex relationship between race, class, and Covid-19 vulnerability.

Vulnerable Facilities

Another consistent pattern emerging from the data on Covid-19 cases and deaths per capita is the

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Disparities by Race-Ethnicity

Vulnerable Facilities

extreme vulnerability of those living or working in long-term care and correctional facilities, and those employed by meat-processing plants.

The [Midwest Center for Investigative Reporting](#) has counted that as of May 20, there have been more than 15,000 positive cases tied to 192 meatpacking facilities in 32 states. These cases include both workers and family members in close contact with them. Several plants have more than 100 confirmed cases, one of them (Tyson Foods in Waterloo, Iowa) had more than a thousand. At least 63 workers across 31 plants have lost their lives, with eight of these fatalities associated with the JBS plant in Greeley Colorado.

Many plants have responded to outbreaks by temporarily closing, although there has been pressure to remain open due to fear of supply chain disruptions. Companies that are still open are scrambling to implement changes in the workplace to follow social distancing guidelines. The industry has been notorious for poor working conditions and a crowded floor plan, with workers typically standing shoulder-to-shoulder on production lines ([Jordan and Dickerson, 2020](#)). Some companies have provided incentive structures, including bonuses for those without absences, that induce even ailing employees to report for work ([Grabell, 2020](#)). In the face of a pandemic, this short-sighted policy has led to serious outbreaks.

These industries are highly dependent on a large immigrant workforce, many of whom are also undocumented and acutely vulnerable to workplace coercion and unsafe conditions. Before this crisis, insecure legal status as well as language barriers and a lack of knowledge of worker's legal rights has led to a workplace environment of fear in many plants ([Stauffer, 2019](#)). The coronavirus pandemic has the potential to exacerbate abuses and insecurity within this industry.

Prisons have also emerged as hot spots of Covid-19 transmission. As of May 13, more than 25,000

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Disparities by Race-Ethnicity

Vulnerable Facilities

prisoners have tested positive for Covid-19 ([Marshall Project, 2020](#)), and 373 prison deaths have been attributed to the virus. Within many prisons, rates of infection have been staggering, as in the Marion Correctional Institution in Ohio, where more than 80 percent of prisoners have tested positive. There have also been reports of inadequate medical care and limited access to personal hygiene products and sanitation services ([Alexander, 2020](#)). These conditions, in addition to high density and overpopulation ([ACLU, 2015](#)), make prisoners extremely vulnerable to infection. Furthermore, due to many severe sentencing laws beginning in the 1970s that kept people in prisons for decades, the prison population is an aging one, with the rate of prisoners over 55 growing faster than the prison population as a whole ([Williams, 2012](#)). This adds a further dimension of risk, considering Covid-19's fatality rate among the elderly.

Many advocacy groups have demanded that prisons release offenders to reduce density, with varying degrees of success across the country (Williams, Weiser, and Rashbaum, 2020). Yet prison administrators and their surrounding communities face another challenge: to ensure that released prisoners are connected with reentry services when emerging into the turbulent economic situation that Covid-19 has caused. Many advocates fear that inmates being released with no plan, home, or job prospects could lead to increased homelessness and recidivism, which in turn can contribute to the spread of disease ([Hamilton, Queally, and Tchekmedyian, 2020](#)).

Extreme racial disparities in the American criminal justice system have been widely documented.¹⁵ But the racial and ethnic composition of the incarcerated population cannot be a major factor in accounting for the disparities in the nation as a whole, since the number of fatalities among prisoners is less than one half of one percent of total fatalities -- 373 deaths out of a total of almost 92,000 as of May 19 ([Marshall Project, 2020](#)). Wisconsin has had no deaths in its state prisons to date, even as it has one of the most extreme differences in fatality rates by race. It is non-incarcerated individuals' deaths that are

¹⁵ See, for instance, Loury, 2008, Alexander, 2010, Pfaff, 2017, Forman, 2017, and O'Flaherty and Sethi, 2019.

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Disparities by Race-Ethnicity

Vulnerable Facilities

primarily responsible for the disparities we see in the data.

It is also important to recognize that jails and prisons are embedded within a larger ecosystem of social contact. While carceral facilities are uniquely dangerous for the incarcerated, they also pose great exposure risks to guards, staff, and their families. One facility, the Cummins Unit in Lincoln County, Arkansas, has seen infections among 900 inmates and 60 guards, and has allowed prison guards to work while infected ([Paschal, 2020](#)). Covid-19 outbreaks that spread rapidly within prisons can spill out and begin to spread through local communities. Similar concerns are relevant for meatpacking facilities. Due to economic necessity, many workers among the largely immigrant workforce live in crowded housing and multigenerational homes that are not likely to afford many opportunities for social distancing or quarantine ([Molteni, 2020](#)).

Similar considerations apply to those working in long-term care facilities, who are at risk themselves and also potential vectors of transmission. Nursing homes are poorly regulated and staffed by low-wage workers who often work at multiple facilities in order to make ends meet. As of 2016, more than a third of nursing home workers were reliant on public assistance and many lacked paid sick leave ([ElderLaw Answers, 2020](#)).

Intersections with Class

In addition to membership in the essential workforce and association with high-risk facilities, socioeconomic status is closely tied to vulnerability and correlated with race-ethnicity.

Socioeconomic status encompasses a number of factors that encumber health, such as occupation, educational attainment, income, wealth, and class background. Also relevant are housing patterns

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Disparities by Race-Ethnicity

Intersections with Class

and density, which have been shaped historically by residential segregation and redlining practices. The presence of multiple generations within the same housing unit also leads to greater exposure of the elderly; this was an important determinant of disease transmission and fatalities in Italy ([Horowitz and Bubola, 2020](#)). Another notable factor is differences in underlying health and preexisting conditions among different groups. For example, African Americans have higher rates of hypertension, diabetes, and heart disease, all comorbidities associated with Covid-19 ([Harvard Chan School, 2016](#)).

In this section we examine the role that income and class within minority communities plays in exacerbating or mitigating Covid-19 disparities, using data compiled from three sources: the [US Census Bureau's Median Income by Race-Ethnicity](#) (inflation adjusted dollars in 2018), [Comparative Demographic Estimates](#) (from 2018), and the [Centers for Disease Control's Provisional Death Counts for Coronavirus Disease](#) (Covid-19). Included are all states that reported Covid-19 fatalities by demographic group.

As a measure of income inequality faced by a group we used the ratio of median income in the group to the median income in the population as a whole, by state. This was plotted against the group's share of fatalities relative to its share of the total population, again by state. If there were no disparity across groups in fatalities, the latter ratio would equal 1.

Figure 6 shows the results for African Americans. If members of the group were dying at a rate equal to their share of the population, all states would be clustered around the dashed horizontal line in the figure, regardless of income inequality in the state. Instead, the scatter plot exhibits a negative relation between the two ratios (with correlation coefficient -0.40), indicating that increases in black median income (relative to state median income) are associated with smaller disparities in fatality rates. That is, on average, lower relative median income for African-Americans is associated with a higher share of fatalities compared with their representation in their states.

Disparities by Race-Ethnicity

Intersections with Class

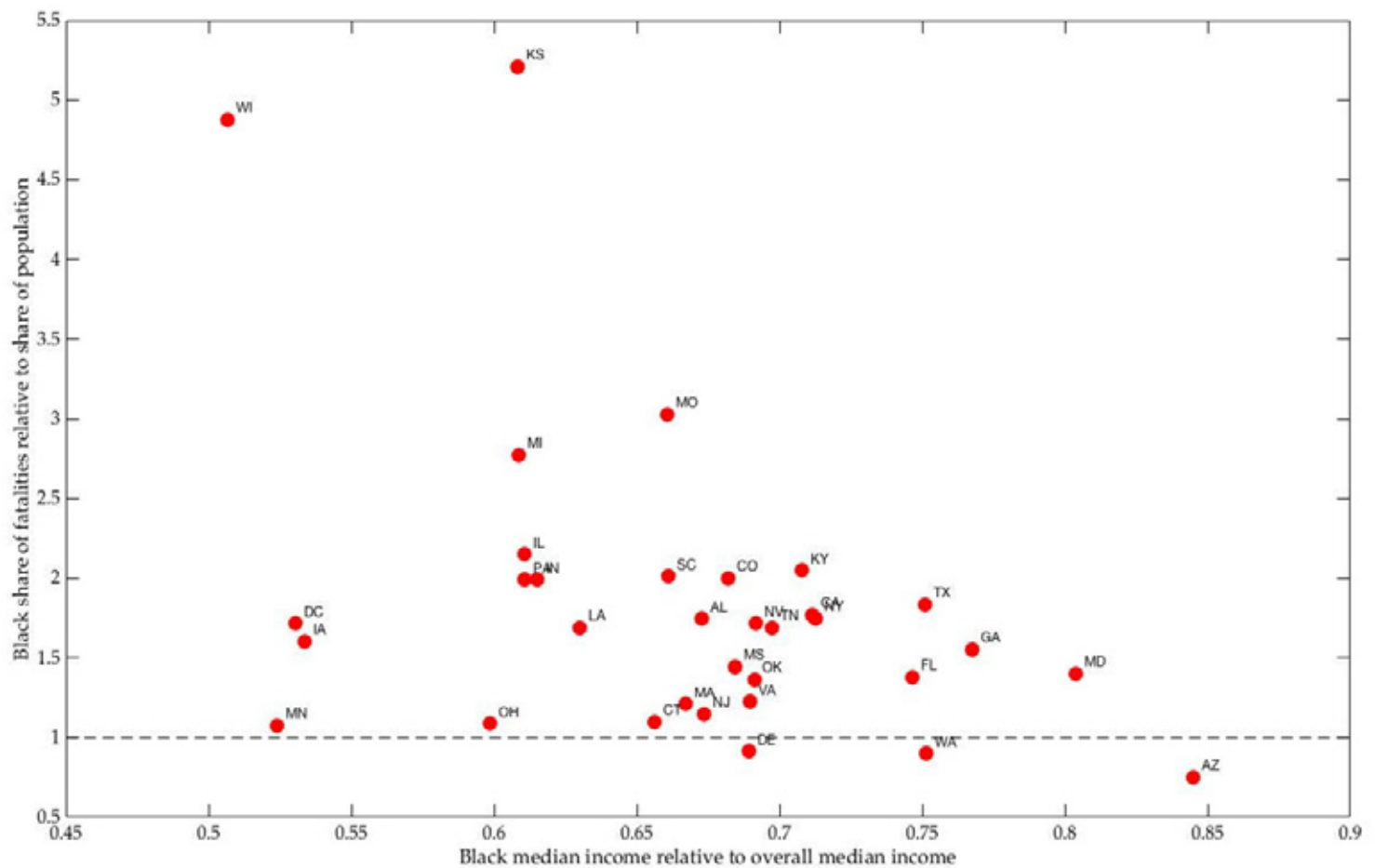


Figure 6. Scatterplot of the Ratio of Black Median Income to Average Median Income to the Ratio of Black Share of Covid-19 Fatalities to Black Share of Population. Data Source: US Census Bureau, CDC.

As was already apparent in Figure 4, Wisconsin and Kansas exhibit extreme disparities, with the share of African-Americans among fatalities being about five times as great as their share in the population. But here we see that some states, such as Minnesota and Ohio, have considerable income inequality across groups but are nevertheless close to parity in fatality rates.

Maryland has the highest ratio of black to white median income among states with a significant black population (Arizona's black population is a little over 3 percent of the state population). Yet Prince George's County, one of the nation's wealthiest majority-black counties, is among one of the hardest hit counties <https://ethics.harvard.edu/who-is-dying>

Disparities by Race-Ethnicity

Intersections with Class

in Maryland per capita (Montgomery County, another DC suburb with a large middle class black population, is third). The county has fewer hospital beds and doctors than neighboring counties, and higher rates of comorbidities. The case fatality rate recorded in the primary hospital is about 7.2 percent, double the rate at the twelve other hospitals in the system, and per-capita case rates in the county far outstrip those in nearby Baltimore City ([WBALTV](#)).

Figure 6 shows how the relative risk of death faced by African Americans varies with their relative median income. One might also ask how the absolute risk of death varied across states in relation to relative median income. Here again the relationship is negative, though weaker, with a correlation coefficient of -0.32 . Michigan, New Jersey, Connecticut, Massachusetts, and the District of Columbia have all lost more than one in a thousand of their black residents. New York City has lost one in four hundred.

Figure 7 repeats the exercise on which Figure 6 is based, but for Latinos rather than African Americans. In this case almost all states lie below the horizontal line of parity, indicating that according to the current data on fatalities, Latinos are dying at rates lower than their share of the population would predict (this was already apparent in Figure 5). But these data are not age adjusted, and so fail to take into account the fact that Latinos are a much younger group. Proper adjustment for differences in the age distribution would shift all points vertically upwards, but to a degree that will vary by state according to age distributions and fatality rates by age.

Disparities by Race-Ethnicity

Intersections with Class

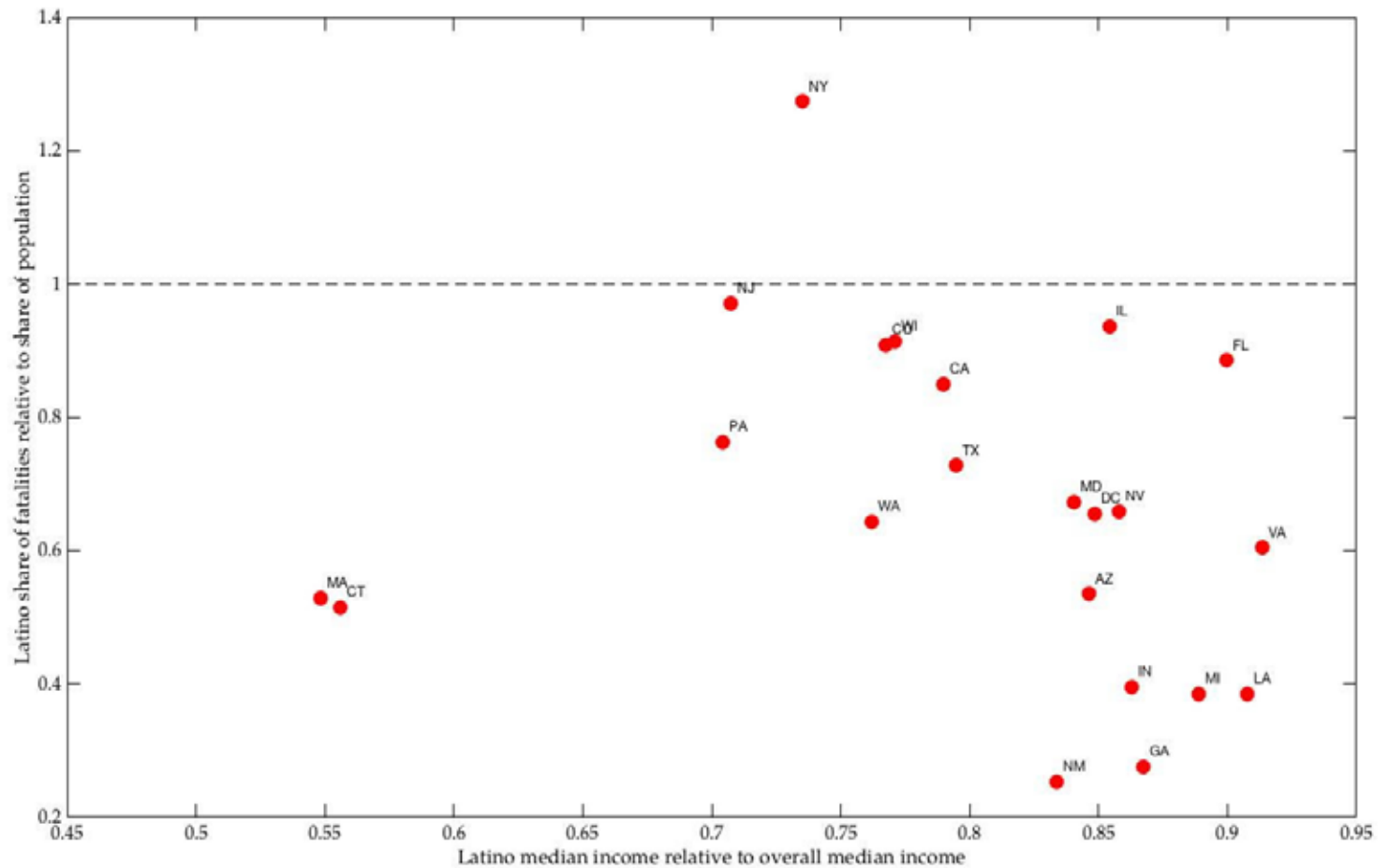


Figure 7. Scatterplot of the Ratio of Latino Median Income to Average Median Income versus the Ratio of Latino Share of Covid-19 Fatalities to Latino Share of Population. Data Source: US Census Bureau, CDC.

04 Strengthening the Roadmap to Pandemic Resilience

The roadmap proposed by [Allen et al. \(2020\)](#) advocates large-scale testing, widespread contact tracing, and supported isolation. We next consider the likely effects of this strategy on race-ethnic and socio-economic disparities, and argue that the roadmap is well placed to reduce them. We also recommend that the plan go further, engaging with community organizations, supporting mutual aid, and providing targeted resources and care for those who need it most. There are tangible ways to protect marginalized communities from worse outcomes as we manage this pandemic, and there are policy choices that our nation can make to lessen the impact of these disparities. Crises exacerbate existing material divides and disadvantages. But, historically, they have also provided a unique opportunity to build new and better social systems. With our pandemic response strategy, we can bridge this gap and use our long-term investments to set the stage for a more prepared and more equal society.

Currently, Phase 1 of the roadmap targets testing and tracing to essential workers, acknowledging that “reopening the economy” is an incorrect framing when 40 percent of workers are still at their jobs, but operating without the needed security and protection. The initial wave of testing will ensure that workers do not need to live in daily fear of possible Covid-19 exposure to themselves or with the fear of being a vector for the disease to their families or to others. Large-scale testing and tracing will cut through current uncertainty, providing a much-needed baseline of safety in the workplace. Through the subsequent phases, as restrictions lift and service-sector jobs return, such safety measures will remain in place, and testing and tracing will expand to accommodate this return to work.

However, while crucial for identifying disease vectors and targeting quarantine, neither testing nor tracing by themselves can make self-isolation a reality, especially given that more than half of Americans reported living paycheck-to-paycheck before the crisis ([Charles Schwab, 2019](#)). Low-income communities often have unequal access to the possibility of working from home ([Miller, Kliff, and Sanger-Katz, 2020](#)), <https://ethics.harvard.edu/who-is-dying>

Strengthening the Roadmap to Pandemic Resilience

and also make up a disproportionate share of the workforce currently deemed essential. These high-exposure jobs often provide little job security and no support for quarantine. Two-thirds of the lowest earners have no access to paid sick days ([Bureau of Labor Statistics, 2019](#)), with the US lagging behind the rest of the world in universal paid sick leave ([CEPR, 2012](#)). In many ways, this makes staying at home, social distancing, and self-isolation, to say nothing of accessing health care with a positive diagnosis, a luxury that many cannot afford. In addition, many grocery stores and other sites of essential work that had raised pay (albeit often marginally) to support workers risking their lives to report to their jobs have also cut these benefits ([Hussain, 2020](#)). Thus, in terms of targeting health disparities, supported isolation is crucial, ensuring that resources, care, and job security are provided to those who need to quarantine. This support should extend to non-workplace-related measures, such as prohibitions on evictions, rent forgiveness, and rent moratoriums, since many Americans are facing the prospect of housing loss in the face of layoffs and reduced hours ([Peñaloza, 2020](#)).

In addition, recent guidance has focused on the allocation of scarce testing and tracing capacity. Given unfortunate limits on current capacity, recommendations have focused on allocating tests to low-prevalence areas, where the disease can be suppressed with considerably fewer resources. It is crucial that this method of allocation not exacerbate the described disparities at the local level. The provided guidance is at the level of metropolitan statistical areas (MSAs). However, these areas are often vast and highly heterogeneous, containing populations of very different levels of vulnerability, and thus very different transmission and fatality rates. The current program may also inaccurately allocate to areas like the Navajo Nation, which now has more cases than 48 states ([Gifford, 2020](#)) and faces significant barriers to testing and treatment ([Morales, 2020](#)). In future models, more accurate measurements of vulnerability could come from a combination of low-prevalence prioritization and a more disaggregated, granular incorporation of county- or neighborhood-specific demographic, historical, and economic factors, as has been done within NYC's boroughs in looking at case counts ([Honan, 2020](#)).

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Decentralized, locally focused models are best placed for this type of analysis.

Distinguishing between frontline workers and others could also contribute to this targeting. Food processing facilities, nursing homes, and hospitals, as well as facilities such as warehouses and grocery stores, are currently centers of transmission and morbidity. There is also the case of prisons, in which incarcerated populations and those who work within correctional facilities, often also from vulnerable communities, are at high risk. Of course, allocating resources, particularly personal protective equipment and testing, to these facilities is crucial. However, equally crucial is ensuring that the possibility of transmission is reduced. In food processing plants, this means not only incorporating distancing practices but also actually slowing production if needed—something that has been difficult to accomplish in several plants due to the reluctance to test workers, support isolation, or change policy in any way ([Corkery and Yaffe-Bellamy, 2020](#)). These went on to become hot spots of the virus, leading to community spread and preventable death.

Similarly, populations in detention facilities and prisons should be further reduced. Steps that have been taken to date, although positive, are insufficient, and we recommend following a rigorous plan to reduce admission to jails, increase the rate and number of releases, and minimize face-to-face contact in the criminal justice process, as laid out by the [Prison Policy Initiative](#) (2020; [Wagner and Widra, 2020](#)). Overall, decarceration should be a priority. This is particularly true in the case of ICE detention facilities, where significant scale-down, or, ideally, dissolution, is required. These centers, in addition to already being accused of major human rights violations pre-pandemic, have been sites of spread and fatalities, and have not been given any of the necessary resources to protect those housed within ([Hendricks, 2020](#); [De Valle and Herrera, 2020](#); [Herrera, 2020](#)).

Well-intentioned programs put in place to provide support to vulnerable communities often struggle

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both in determining what support is most necessary and in getting resources to those in need. Consistent dialogue with advocacy groups and relevant civil society organizations will be needed to ensure that these programs are effective. Hyperlocal mutual aid groups across the US are currently engaged in high-exposure, grassroots work to ensure that community members have the support they need ([Tolentino, 2020](#)). Directly engaging with and working through such groups (particularly for testing and tracing implementation) will go a long way towards correcting existing trust deficits in disproportionately impacted communities.

Historical exclusion may promote unequal distribution of resources, and programs must be cognizant of this. Some of this is due to harmful stereotypes or long-standing, generational neglect. We see this dynamic in the underfunding of Historically Black Hospitals and Historically Black Colleges and Universities ([Barker, 2019](#); [Gamble, 1997](#))—all organizations that welcomed minority communities when few others were willing to. Health organizations that serve minorities should be given the resources they need to treat their communities in this time of crisis.

Therefore, programs should be operated through funding and co-creation on the terms of the community itself, rather than through top-down, interventionist measures. Direct transfers of funding, minimally mediated through grant programs, have often been the most effective way of working with community-based, grassroots groups, from mutual aid organizations to long-standing nonprofits and community centers ([ODI, 2015](#); [Think NPC, 2012](#)). The federal nature of the US governance system, reflected in the implementation plan of the TTSI roadmap, is well placed to allow for this devolution of agency and authority to trusted, hyperlocal groups—particularly since there is no centralized repository of such efforts, and partnership will require community knowledge and presence.

TTSI will also need to consider those who can easily fall through the cracks of a population-level strategy,

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notably the incarcerated, housing-insecure or people currently experiencing homelessness, and undocumented immigrants. Conducting testing and tracing thoroughly, through trusted community organizations and spearheaded by long-term community leaders, is critical in ensuring that these populations are served by the proposed strategy. While privacy-preserving, technology-augmented tracing has been suggested as a way to supplement manual contact tracing, employing manual tracers from the community, who can also provide information, resources, and solidarity, will be crucial. As reports grow of police-enforcement of public health measures such as face coverings and social distancing ([Jouvenal and Brice-Saddler, 2020](#); [Noor, 2020](#)), the need for such a civilian workforce becomes ever more apparent.

We also note that there are many pieces to combatting Covid-19 health disparities that are not covered by TTSI, which is primarily a framework for limiting the rate of spread, protecting essential workers, and safely easing restrictions on economic activity. To the extent that TTSI reduces the spread of Covid-19 among disadvantaged social groups, it would have the effect of mitigating disparities at the point of care because fewer would need medical care to begin with. Yet beyond this, disparities at the point of care, and medical disparities in general, are not addressed by this plan. Bias in medicine against minority populations is well-documented. In addition, undocumented individuals have also often not sought care or social support due to fears of arrest or deportation. In the long term, we acknowledge the need to dismantle the structural inequities—from environmental factors, wealth inequality, existing health outcomes, exclusion from institutions, and unequal use of force—that are often at the root of the observed disparities.

05 Discussion

It is clear that the impact of COVID-19 has been highly uneven across communities in the United States. However, as [Glenn Loury \(1987\)](#) has observed, “the mere existence of group disparities” does not “evidence the oppressive treatment of individuals.” Given the conversation around racial disparities in the US, we find it important to explain, therefore, why these disparities are deserving of special analytical distinction, especially where much of what “race” might explain is more proximately caused by such factors as concentrated comorbidities, poverty, or employment type. There are three possible themes that can be offered in justification of this special focus: cumulative disadvantage, contemporary discrimination, and racialized distrust.

Racial disparities reflect, in part, historical injustices whose disadvantages have been concentrated and cumulative. Thus, even if employment type, education, class background, and residential density explain much of the vulnerability to sickness and death from the disease, these conditions themselves have partially racist origins. As Tommie Shelby puts the point in [Dark Ghettos](#) (2016), there is an implicitly moral concern in highlighting that contemporary disadvantages clustered around African Americans have their origin in forms of racial injustice in the past, namely that “justice requires these handicaps to be remedied.” If ghettoization, for instance, is partly a result of historical racial and economic injustice, then that raises additional questions of justice in the present pandemic, given the relationship between Covid-19 exposure and associated features of concentrated black disadvantage—environmental pollution, increased exposure to toxicity, and wealth inequalities that sharply limit the ability to quarantine safely.

Emphasis on the structural character of these disadvantages and their (partial) origins in racist practices can help avoid what Shelby criticizes as the “medical model” approach to ameliorating social injustice. The medical model narrowly targets its interventions in ways that tend to “treat the background structure of society as given and focus on alleviating the [most immediate] burdens of the disadvantaged.”

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This way of approaching the question tends to fall victim to status-quo bias, offering solutions like “raise awareness” or “bias training” without raising more fundamental questions about access to health care, sick leave, and childcare among other goods.

Perhaps more importantly, its focus only on the symptoms of disadvantage leave largely untouched moral questions concerning the sources of disadvantage. So, for example, the moral question of joblessness in this moment is not simply that the dramatic rise in unemployment is a problem of disadvantage to be “solved” by putting people back to work safely and swiftly. It is that a principled refusal to work in this moment also reflects morally legitimate objections to how the benefits and burdens of social cooperation in the midst of a major health crisis are being distributed. Currently, the professional class relies on precarious labor (often treated as “independent contractors” rather than wage workers with benefits) to reproduce their living standards even under quarantine (through meal delivery, Amazon, and the like) without providing reliable access to personal protective equipment, health care benefits, sick leave, safe quarantine opportunities outside of the home, and so on. To the extent that such burdens appear coercive, exploitative, and racialized, they may provoke forms of resentment, distrust, and dissent that become obstacles to the administration of rational public health policy.

Similarly, as Shatema Threadcraft argues in *Intimate Justice* (2016), something like the push to provide child care for “essential” workers has to be thought through in terms that do not unduly disadvantage or render inordinately vulnerable the working class women (often of color) who provide a great deal of this intimate labor under economic compulsion and at some cost to their own families, especially when provision of education is being pushed onto families themselves. How will states, for example, help support the health care of child care workers and their families who are providing care to the “essential” employees from whom we all stand to benefit?

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Another element to consider here is contemporary racial discrimination ([Ahmed, Mohammed, and Williams, 2007](#)). While less of a causal problem than the cumulative effects of racial injustice, discrimination nevertheless raises important questions in the context of racial disparities around Covid-19. One such question is the documented relationship between the stresses engendered by experiences of racial discrimination and racial tension, and the comorbidities around heart disease and blood pressure that disproportionately affect African Americans. In this sense, acts of racial discrimination (and high-profile acts of racial violence) can have some deleterious effect on vulnerability to Covid-19 in and of itself.

Another form of contemporary racial discrimination particularly relevant to Covid-19 is discrimination within hospitals and other medical service providers ([Institute of Medicine, 2003](#)). There is evidence in normal times of African Americans and Latinos receiving inferior access to appropriate medicine or medical interventions such as surgeries, diagnostic testing, and transplants, even when controlling for comorbidities, insurance status, income, and other factors. In addition to a general anti-discrimination standard in test provision and medical care, there is a case for requiring that hospital performance on these questions over the course of the pandemic be intensively reviewed in retrospect and tied to future oversight or funding decisions.

Finally, consider the issue of civic trust. Thinking about Covid-19 responses in light of cumulative disadvantages has political significance in part because of congealed forms of civic distrust. In some cases, racialized distrust of official sources of information and advice have proven fatal. Resonant with longstanding themes of profound biological differences between “black” and other bodies, a tragic rumor that blacks were immune to Covid-19 circulated in the early days of the pandemic ([Patterson, 2020](#)), creating confusion at a critical time for the spread of accurate information ([Mock, 2020](#)). Special care needs to be taken to enlist well-respected voices for dissemination of public health information, and special vigilance exercised to keep abreast of and combat “fake news” of this kind.

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Further, rhetorical framings by medical officials which emphasize that disparities are partially related to injustice and many different forms of social inequality helps undermine the naturalization of such disparities. Public health action should operate with the historically informed knowledge that pandemics and questions of contagion are powerful sites for the production of racial stigma and ideology and should frame messages accordingly. There has been a great deal of coverage about incidents of anti-Asian racial discrimination and violence here in the United States. China has also seen a noted surge, it appears, in anti-black racism and discrimination bizarrely associated with the pandemic ([Wang and Qin, 2020](#)).

The enforcement of regulations concerning social distancing and critical pandemic response actions—such as contact tracing, closing of non-essential businesses, and prohibition of large gatherings—are also undermined by relations of distrust. Social media has seen a wave of videos featuring contentious scenes between largely black gatherings in public housing and police attempting to enforce social distancing orders ([Southall, 2020](#)). A sense that such practices are not being enforced fairly, or are being treated as an opportunity for other forms of repression, make public health regulation more difficult to achieve. Given the punitive stance of much American policing and public opinion, and the difficulties of achieving police accountability even in more “normal” times, enforcement actions during the pandemic can exacerbate social estrangement and the racialized corrosion of trust.

Legal scholars distinguish between *disparate impact* and *disparate treatment*, where the former refers to unequal effects across groups of policies that are facially neutral and not explicitly race contingent. While some accounts of disparate treatment have emerged during the pandemic ([Eligon and Burch, 2020](#)), evidence of disparate impact is overwhelming, as we have documented throughout this paper. This disparate impact is not incidental—it has deep historical roots and reveals profound structural inequalities. In the landmark 1971 Supreme Court decision in *Griggs v. Duke Power Co.*, Chief Justice Warren Burger observed that the Civil Rights Act “proscribes not only overt discrimination, but also practices that are

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fair in form but discriminatory in operation.” The pandemic has exposed the extent to which existing structures and policies, even if facially neutral, give rise to a highly unequal distribution of health risk and mortality. Though often “fair in form,” these institutional structures are “discriminatory in operation” and a cause for moral concern and targeted action.

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