Annex A: Intranational Inequality and COVID-19: Studies of Brazil, the United States, and India at a Snapshot in Time

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SUMMARY

This annex explores how internal inequalities have affected COVID-19 outcomes across the three countries most affected by the pandemic: Brazil, the United States, and India. Each of these States has significant societal fault lines, which have been shown to be statistically correlated with negative COVID-19 effects. Across all these nations, similar inequities endanger disadvantaged groups; placement in jobs where social distancing is unavailable, lack of access to health care, overcrowded housing, and inadequate resources are identifiable in every country researched. While these communities all face unique challenges as well, the unifying thread of this annex is that structural inequality has created significant risk for the social second-class around the world. This Annex serves as a snapshot in time, and specifically covers the first year of the pandemic. While COVID-19 has evolved in the second half of 2021, the lessons that can be learned from these case studies remain salient both now and in the future.

Part I will discuss Brazil, one of the countries hardest hit by the COVID-19 pandemic. It will explore how regional, ethnic, and economic divisions within the country relate to COVID-19 incidences and mortality, finding a strong correlation between certain identities and negative COVID-19 outcomes. Part II will explore how the racial divide in the United States is correlated with COVID-19 outcomes, specifically presenting evidence as to the considerable connection between Black, Latinx, and Indigenous identities in the United States and COVID-19 infections and deaths. Part III investigates how the caste system in India is correlated to COVID-19 outcomes, and proposes, based on the available evidence, a connection between being in a socially disadvantaged caste and experiencing negative outcomes of COVID-19.

I. BRAZIL

Brazil is one of the countries most affected by the COVID-19 pandemic, with 18,855,015 confirmed cases of COVID-19 and 526,892 deaths resulting from COVID-19 as of 8 July 2021.1 Within the country, the effects of the pandemic have also been exacerbated and intensified by existing socioeconomic and health access inequalities. COVID-19’s effects in Brazil can be tracked and correlated to societal status, reflecting the influence things like race and wealth have on health

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A. Outcomes by Region

The northern and northeastern states of Brazil rank as the highest on the socioeconomic vulnerability index and have the fewest adult ICU beds per 100,000 residents in the entire country. The northern region of Brazil, comprised of states like Amazonas, Roraima, Amapa, and Pará, have the highest levels of housing vulnerability in the country, along with the lowest number of ICU beds relative to population. Additionally, these regions struggle with a number of quality of healthcare issues, including a shortage of doctors, poor epidemiological surveillance, and a lower percentage of the population with access to piped water. The population of those states also has some of the lowest risk factors for COVID-19 fatality, with a low percentage of the population at an advanced age or with chronic diseases. Again, the northern region has the lowest percentage of population over 60 in the country.

And yet, over the first six months of the pandemic, when adjusting for age, the North region boasted the highest rate of COVID-19 deaths of any region of Brazil. Despite the initial outbreaks of the disease occurring in population dense metropolitan centers like Sao Paulo and Rio de Janeiro, “death rates increased quickly in states with marked socioeconomic vulnerabilities, particularly in the North and Northeast regions.” Eventually, local governments in socially vulnerable areas were able to somewhat mitigate the spread of COVID-19 by enforcing strict and long-lasting social distancing programs; however, it is telling that “the initial spread of COVID-19 infections and deaths in Brazil was mostly affected by patterns of socioeconomic vulnerability rather than population age structure and prevalence of existing chronic disease morbidity.”

The data on mortality rates reflects these issues clearly. Amazonas had a rate of 353.17 deaths per million population, by far the highest in Brazil, far outstripping the more socioeconomically stable regions of Sao Paulo (103.37) and Rio de Janeiro (152.77). Infections are also far more prevalent in the Northern and Northeastern regions of Brazil; the largest study of antibody occurrence in Brazil found that of the 34 cities with antibody occurrences above 2%, 11 were Amazon cities in the North region, while 14 were cities in the Northeastern region. Other than in Rio de Janeiro, these were the highest rates in the country.

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3 Id. at 786-87.
5 Rocha et al., supra note 2, at 786.
6 Id. at 787-88.
7 Id. at 787.
8 Id.
This regional proportionality is also borne out when examining health outcomes for patients admitted to the hospital with COVID-19 in Brazil, as there were “a substantially larger percentage of non-survivors in the north than in the central-south” among those admitted to hospital for treatment.\footnote{Pedro Baqui et al., \textit{Ethnic and regional variations in hospital mortality from COVID-19 in Brazil: a cross-sectional observational study}, \textit{8 LANCET GLOB. HEALTH} \textbf{1018}, 1021 (2 July 2020), \url{https://www.thelancet.com/pdfs/journals/langlo/PIIS2214-109X(20)30285-0.pdf}.} Additionally, these regions suffer from “substantial under-reporting of deaths and cases of COVID-19”\footnote{Ribeiro, \textit{supra} note 4, at 977.} meaning these results may actually underestimate how significant the effect of the pandemic has been.\footnote{Maria de Lourdes Beldi de Alcântara, \textit{Indigenous World 2020: Brazil}, International Work Group for Indigenous Affairs (11 May 2020), \url{https://www.iwgia.org/en/brazil/3616-iw-2020-brazil.html}.} It is worth noting that the other correlation with these states is with indigenous population. Roraima, Amazonas, and Pará have the highest concentration of indigenous peoples in Brazil.\footnote{Tavares, \textit{supra} note 9, at 4.} 22.7\% of all indigenous people in Brazil live in the Northern region, the highest percentage in the country.\footnote{Baqui et al., \textit{supra} note 11, at 1024.} Given the above correlation between socioeconomic levels and COVID-19 mortality, it is notable that “lower socioeconomic development was correlated with a larger Pardo and Black population in the north region.”\footnote{Id. at 1018.} 

\textbf{B. Outcomes by Race}

COVID-19 health outcomes were also found to be correlated with ethnicity in Brazil. Black and mixed-race (\textit{Pardo}) Brazilians were found to have significantly worse outcomes of COVID-19, and much higher mortality rates, than other Brazilian ethnicities.\footnote{Id. at 1019.} In fact, more so than comorbidities or any other statistic than age, “\textit{Pardo} ethnicity was the second most important risk factor for death [from COVID-19] after age.”\footnote{Id. at 1022.} White Brazilians were also more likely to be admitted to the ICU than \textit{Pardo} Brazilians, suggesting that “the increased death rate of \textit{Pardo} Brazilians might be partly due to non-ICU admission.”\footnote{Id. at 1023.}

An examination of outcomes within the central-south region specifically reveals this to be a significant factor. In fact, the proportion of White Brazilians admitted to the ICU likely reflects disparities in the access to private health care, a more expensive and exclusive option.\footnote{Id.} While just 25\% of Brazilians are served by private health care, the amount spent on public and private health care is the same, suggesting that “on average, a patient in a private hospital costs three times more than one in a public hospital.”\footnote{Ribeiro, \textit{supra} note 4, at 977.}

Furthermore, within Brazil most doctors are White, while non-medical health staff are majority Black and \textit{Pardo}. It is these non-medical staff “who are more exposed to COVID-19 risks . . . sometimes without adequate protection equipment and tests to identify early contagion.”\footnote{Ribeiro, \textit{supra} note 4, at 977.} This has further exacerbated these disparities.
Prevalence of COVID-19 antibodies among non-White ethnic groups in Brazil further bolsters this correlation. Positive test results for Indigenous, Pardo, and Black Brazilians showed antibody presence in 6.3%, 3.6%, and 3.4% respectively, while White Brazilians had a rate of 1.4%.

The government of Brazil itself has also fomented this racial divide when it comes to COVID-19. Brazil’s prisons, overwhelmingly populated by ethnic minorities, have faced devastating rates of COVID-19, and a lack of adequate testing or medical care means the extent of the pandemic’s effects are impossible to fully ascertain. Even though a national judicial oversight board recommended the release from jail of non-violent, at-risk individuals to prevent COVID-19's spread, the predominantly white judiciary of Brazil has refused to do so. President Jair Bolsonaro has repeatedly denied the effects of the virus, an indifference which has “disproportionately affect[ed] black and indigenous Brazilians.” In July of 2020, Jair Bolsonaro was denounced before the International Criminal Court by a coalition of more than one million Brazilian health care workers, who alleged his policies during the pandemic amounted to genocide. Such structural racism has led to devastating COVID-19 outcomes for ethnic minorities in Brazil.

C. Outcomes by Economic Status

There is also a significant correlation between poverty in Brazil and negative COVID-19 health outcomes. Poverty in Brazil, like in many places, creates two major risk factors separate even from the lack of access to adequate health care; it both limits people’s ability to take preventive measures, like distancing and sanitizing, and people’s ability to recover from COVID-19, due to lack of food security and clean water. Lack of food security (measure by share of food expenditure), access to clean drinking water, and monetary poverty all showed significant positive correlations with COVID-19 deaths per million, while access to private insurance and physicians per 1,000 people, indicators of wealth, showed significant negative correlations with COVID-19 deaths per million. Once again, antibody testing showed significantly more instances of COVID-19 amongst the indigent than the wealthy; the poorest quintile of Brazilians had a positive rate of 3.7%, while the wealthiest had a rate of 1.7%.

What all of this shows is that in Brazil, inequality has a significant effect on COVID-19 outcomes. In what is a post-colonial nation, still divided socially and economically down racial and geographic boundaries, being Black, Indigenous, or Pardo, being poor, or living in a socioeconomically vulnerable region demonstrably increases your mortality chances if infected with COVID-19.

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22 Hallal et al., supra note 10, at 1394.
24 Id.
26 Id. at n. 12.
27 Tavares, supra note 9, at 1, 7.
28 Id. at 4-5.
29 Hallal et al., supra note 10, at 1390.
II. UNITED STATES

The United States has dealt with the most COVID-19 incidences, with 33,451,965 confirmed cases and 601,231 deaths as of July 9, 2021. The United States also has some of the worst structural health inequality of any country in the world, with only Portugal and Chile ranking higher in income-based health inequities.

A. Outcomes by Race

Black, Indigenous and Latinx communities in the U.S. have been the worst hit by COVID-19. By the raw numbers, 1 in 390 Indigenous Americans have died from COVID-19, while 1 in 555 Black Americans have died, both considerably higher than the 1 in 665 rate for White Americans. In every region of the United States, Latinx people had the highest proportion of hospitalized patients with COVID-19 of any ethnic group. This disparity grows when adjusting the mortality rate for the average age of these populations, with Black Americans twice as likely to have died as White and Asian Americans. Indigenous Americans, when adjusting for age, are 3.3 times as likely to have died from COVID-19 as White and Asian Americans. Latinx Americans, with the same age adjustment, were 2.4 times more likely to have died from COVID-19 than White and Asian Americans.

1. COVID-19 outcomes in the Black community

One major county-level analysis of COVID-19 rates in America found that “each percentage point increase in Black population is associated with a statistically significant increase in case rate by a factor of 1.011 . . . and an increase in death rates by 1.8%.” This study also considered the effect of structural racism factors, like residential segregation and the degree of minority unemployment, and found that “counties with higher levels of structural racism were more severely impacted by the virus.”

This is exacerbated by the fact that counties with higher instances of structural racism, and with higher minority populations, were less likely to receive COVID-19 tests and more likely to test positive than similar white working-class populations. Residential segregation also plays an important role in limiting the

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34 APM Research, supra note 28.
35 Id.
36 Id.
predominantly Black communities’ ability to physically distance. Segregated areas are often deprived of essential food, employment, and health resources, and the necessity of travel to access these staples means additional potential exposure to COVID-19. Additionally, Black Americans are significantly more likely to be employed in an “essential” role, with just 19.7% of Black workers reporting being able to work from home during lockdown, against 29.9% of White workers. The nine occupations found to be highest-risk for contracting COVID-19 are all disproportionately occupied by Black workers in the U.S. As a specific case study, in April of 2020, President Donald Trump signed an executive order forcing meat processing plants to remain open as essential businesses; rates of infection rose significantly among those workers, and 87% of the workers who contracted COVID-19 were ethnic minorities.

The underlying reasons for these disparities in health outcomes due to COVID-19 are insidious. Black households have a higher average number of persons per room (“PPR”), a measure of infectious spread that has been shown to be perhaps more reliable than urban density. America’s history of redlining, a form of credit-withholding racism that is officially discontinued but which still greatly affects the makeup of Black communities, also has an effect on COVID-19 outcomes. A study of Denver’s COVID-19 hospitalization and incidence rates by neighborhood found that the worst-affected areas aligned with the “residential security map” used to ostracize and ghettoize the Black community in the 1930s. A similar study of Washington, D.C. reveals the same pernicious divide, with COVID-19 vulnerability outcomes differing across the same East-West divide that redlining once imposed. Historically, the Black community has faced worse health outcomes during pandemics in America; during in the 1918 Spanish Influenza outbreak, available data shows the Black community faced higher case-fatality rates.

41 Id. at 7.
42 Rogers et al., supra note 27, at 312.
43 Id. at 319.
than the White community. Racial barriers in public health meant Black people were left untreated and ignored, even after death; one anecdote notes that “[i]n Baltimore, for example, white sanitation workers refused to dig graves for Black flu victims.”

During COVID-19’s spread, even within hospitals Black Americans also have significantly worse outcomes than White Americans. Black patients were significantly more likely to die or spend a long period of time on a ventilator after entering hospital than White patients, even when controlling for comorbidities. Black patients were also at a much higher risk of complications from COVID-19 as well. Overall, the pandemic is expected to reduce life expectancy in the Black population of America three to four times more than that of the White population, increasing the Black-White life expectancy gap by 39%.

One of the common arguments against making a correlation between being Black and having a negative COVID-19 outcome is the higher volume of certain co-morbidities, such as diabetes and cardiovascular disease, which exist in the Black community. This is not, however, an effective counter to the existing evidence. First, studies holding these variables constant have found that regardless of comorbidities, the correlation between a higher Black population and negative COVID-19 outcomes is still statistically significant. For instance, in Michigan, among all COVID-19-related deaths, the mortality rate for Black individuals under 65 without comorbidities was 12.6 times higher than that for similarly situated White individuals.

Second, the existence of these comorbidities is further indicative of a health system infected by structural racism. Disparities in health outcomes for Black Americans did not begin with COVID-19; HIV, cancer, low birth rate, and air pollution related health issues all show similar patterns in relation to the Black population. This is in part due to a lack of adequate health care, with Black Americans nearly twice as likely to be uninsured as White Americans.

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49 Madeline Drexler, Deadly Parallels: Health disparities in the COVID-19 pandemic mirror those in the lethal 1918 flu, HARVARD PUB. HEALTH MAG. (Fall 2020), https://www.hsph.harvard.edu/magazine/magazine_article/deadly-parallels/.


51 Id. at 7.


53 See Millett et al., supra note 43, at 38 (“[t]he primary question was whether the rate ratios of COVID-19 cases and deaths for disproportionately black counties remained significant after controlling for comorbidities”).


55 Millett et al., supra note 43, at 37.

56 Rogers et al., supra note 27, at 312.
income communities in the United States have no ICU beds, another health care deficiency that disproportionately affects minority populations.\textsuperscript{57} This is not a new phenomenon, as cuts to health spending “which have specifically targeted hospitals in Black and Brown communities” have been occurring for decades.\textsuperscript{58} An analysis of disproportionately Black counties, meaning those with a greater share of Black residents than the US average, found that county-level rates of health insurance were negatively correlated with an increase in Black population.\textsuperscript{59} These pre-existing elements of structural racism set up the catastrophic results of the COVID-19 pandemic on Black communities in the US.

The COVID-19 problem also intersects with other elements of structural racism. For instance, over the course of the pandemic, jails and prisons have been sites of some of the worst outbreaks of COVID-19.\textsuperscript{60} While this annex does not cover the many racial inequities which have led to the grossly disproportionate imprisonment of Black Americans, it is clear that the mass incarceration system has worsened the COVID-19 crisis in the Black community. A study of Cook County, Illinois, found that “for each arrested individual cycled through Cook County Jail in March 2020, approximately five additional cases of COVID-19 in their ZIP code of residence are independently attributable to jail cycling”, and that 86% of this viral burden was borne by Black and Hispanic zip codes.\textsuperscript{61} The study found that carceral infections may have actually seeded the virus in these already disadvantaged communities, spotlighting how the network of structural racism in America has interacted and devastated Black communities during the pandemic.\textsuperscript{62}

As COVID-19 vaccines have rolled out across America, disparities are also observable in which communities are receiving inoculation. As of 4 July 2021, 58% of the vaccine doses administered had demographic data available; 9% of those doses have gone to Black Americans, despite making up over 13% of the general population.\textsuperscript{63} In almost every state, the Black community’s share of COVID-19 deaths far outstrips the share of vaccines received; in Washington, D.C., for instance, Black Americans have received 43% of vaccinations, while making up 71% of COVID-19 deaths.\textsuperscript{64} In every single state in the nation, the total Black population share is the same or higher than the vaccine share.\textsuperscript{65}

Part of this is driven again by the significant number of Black Americans in “essential” work; those jobs limit these populations’ flexibility to actually go and get vaccinated, and potentially miss work due to side effects.\textsuperscript{66} The rollout policy of the
federal government also has played a significant part in this disparity. By implementing strict age-based vaccine cutoffs for the first months of their availability, statistical analysis showed that while significant numbers of White deaths from COVID-19 were avoided, less than half of Black fatalities due to the virus were effectively addressed when using age alone as the qualifier for vaccination.\(^67\) The significant differences in health outcomes for younger Black people suggested that a system considering “local demographics, intersectional risks, and both large-scale (e.g., large metro areas) and small-scale (e.g., Census tract disadvantage) geographic stratification” would have been far more effective at combatting COVID-19 across racial lines;\(^68\) this was not, however, the strategy implemented.

There is also the simple fact that many vaccine sites were, until recently, entirely absent from Black communities. Major cities, especially across the Southern United States, placed vaccination sites almost entirely in majority White neighborhoods, limiting Black communities’ access to these facilities.\(^69\) This is partially due to existing medical infrastructure being located in these White communities, but that again only further highlights the healthcare inequities that were present long before the COVID-19 pandemic.\(^70\) However, there is also evidence that vaccines have been specifically distributed to white, wealthy areas; during the initial stages of the vaccine rollout, Florida officials gave special access to the “whitest and richest” areas of one county near Tampa Bay. When confronted about this plan, Florida Governor Ron DeSantis threatened to pull the vaccine doses from the county entirely.\(^71\)

Despite the heightened effects COVID-19 has had on the Black community, inoculation plans against the virus have not only not prioritized Black Americans, but have actually limited their ability to protect themselves. This once again is indicative of the structural racism and inequality in the American health system that has made this pandemic so devastating to communities of color. Finally, the ingrained history of racism in the medical industry has also influenced some Black Americans’ willingness to get the COVID-19 vaccine. A distrust in the government and medical field has contributed to depressed vaccination rates in the Black community, with some “citing our nation’s history of racism in medical research and in medical care as key reasons for their hesitancy.”\(^72\) The “legacy of medical experimentation and inadequate healthcare”\(^73\) for Black Americans still resonates,

\(\text{shots/2021/04/26/989962041/why-black-and-latino-people-still-lag-on-covid-vaccines-and-how-to-fix-it.}\)


\(^68\) Id. at 7.


\(^70\) Id.


\(^73\) Cynthia Prather et al., *Racism, African American Women, and Their Sexual and Reproductive Health: A Review of Historical and Contemporary Evidence and Implications for Health*, 2 HEALTH EQUITY 249, 255 (22
and “balancing the ‘known’ of COVID-19 against the unknown of vaccination” has left some members of the community justifiable ambivalent about vaccination.\textsuperscript{74}

Again, this shows how structural racism has amplified the effects of COVID-19 in the Black community; a lack of vaccine access, combined with a well-founded distrust of the medical community, has increased negative outcomes from the virus for Black Americans.

2. COVID-19 outcomes in the Latinx community

The Latinx community has also experienced significant impacts from the COVID-19 pandemic and has statistically suffered some of the worst health outcomes of any group. Overall, life expectancy at birth for Latinx Americans has declined by an estimated 3.05 years, compared to 0.68 years for White Americans.\textsuperscript{75}

Various macro and micro-level studies in the United States have shown the Latinx population to be overrepresented in both COVID-19 cases and deaths. In California, 70% of cases of COVID-19 were Latinx, despite representing just 39.1% of the population.\textsuperscript{76} The mortality rate from COVID-19 was similarly elevated, with 59.2 Latinx people dying per 100,000 cases, in comparison to 38.3 White people per 100,000 cases.\textsuperscript{77} Countrywide, one study found that 39% of Latinx COVID-19 patients required the ICU, in comparison to 30% of White patients.\textsuperscript{78} Even when accounting for the presence of comorbidities, Latinx patients were hospitalized at twice the rate of White patients.\textsuperscript{79}

There are several risk factors for COVID-19 which specifically have disadvantaged Latinx people in America. The first is the large immigrant population; amongst undocumented immigrants, significant fear of deportation while utilizing health care resources has meant less willingness to seek treatment.\textsuperscript{80} Like in the Black community, Latinx households have a higher average PPR than White households, again increasing the risk of infectious spread.\textsuperscript{81} Out of all racial and ethnic groups in the United States, Latinx people in America have by far the lowest rates of health insurance coverage, with 19.8% of Latinx people uninsured prior to

Sept. 2018), https://doi.org/10.1089/heq.2017.0045 (specifically noting the “Tuskegee Study of Untreated Syphilis,” a program in which Black Americans were deceived into believing they were having their syphilis treated in order to examine the effects of leaving the virus untreated. This ethically abhorrent study lasted 40 years, cost dozens their lives, and continues to affect views of the medical industry within the Black community today); see also Cydney Livingston, \textit{Black Americans’ Vaccine Hesitancy is Grounded in More Than Mistrust}, Duke Rsch. Blog (8 April 2021), https://researchblog.duke.edu/2021/04/08/black-americans-vaccine-hesitancy-is-grounded-by-more-than-mistrust/ (noting the initial testing of radiation, fistula surgery, and the theft of Henrietta Lacks’ cell samples as further examples of the historical abuse of Black Americans by the medical system).

\textsuperscript{74} Elisa J. Sobo, Diana Schow, Stephanie McClure, \textit{Black and Latino communities often have low vaccination rates—but blaming vaccine hesitancy misses the mark}, PBS Newshour (8 July 2021), https://www.pbs.org/newshour/health/black-and-latino-communities-often-have-low-vaccination-rates-but-blaming-vaccine-hesitancy-misses-the-mark.

\textsuperscript{75} Andrasfay, supra note 45, at 2.


\textsuperscript{77} Id.

\textsuperscript{78} Izzy et al., supra note 47, at 6.

\textsuperscript{79} Id. at 8.


\textsuperscript{81} Id.
COVID-19. Language barriers also contribute to worse medical care, and limit communication between patients and health care providers. There are a number of potential reasons why COVID-19 outcomes in the Latinx community have been so negative; undiagnosed comorbidities due to a lack of health insurance, fears of deportation, and a lack of local health resources all may contribute. What is clear is the significant correlation between Latinx identity and COVID-19 impact, and the heightened impact the pandemic has had on this communities.

3. COVID-19 outcomes for Indigenous peoples

Pandemics have often taken the greatest toll upon the Indigenous communities of the US. The H1N1 influenza outbreak, for instance, cause four times more fatalities amongst Indigenous peoples than the general population. And while the current COVID-19 numbers suggest that again, Indigenous communities have been ravaged by the pandemic, the decentralized and underfunded nature of the Indian Health Service (“IHS”) means these statistics are highly likely to have been under counted. Issues of accuracy of race classification has also led to likely underestimation of the true toll of COVID-19 among Indigenous peoples.

Like formerly redlined Black communities, Indigenous communities suffer from a severe deprivation of necessities, which has contributed to these negative health outcomes. Indigenous Americans have suboptimal health resources and lack access to nutritious food and basic utilities. One in three members of the Navajo Nation do not have access to running water or electricity.

As far as health care resources, Indigenous peoples are serviced by the IHS, which has a budget of $6 billion per year, for a population of 2.5 million. Per capita, “this represents far lower resources than that of Medicare, Medicaid, and the Veterans Health Administration.” Here, the legacy of colonialism is clear; US Indigenous communities have been consistently marginalized, ignored, and underfunded, and that is reflected in the significantly higher rates of negative COVID-19 outcomes within the Indigenous population.

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83 See Gil et al., Hospitalization in Rhode Island, supra note 68, at 67.

84 See generally Izzy et al. supra note 47.


86 Id. (“The various organisations that provide healthcare to American Indians and Alaska Natives do not consistently collect or submit data on outcomes for these populations’’); APM Research, supra note 28 (noting the data for Indigenous Americans “is a known under-count’’).


88 Burki, supra note 71, at 325.

89 Id.

90 Id.
III. INDIA

India has been one of the hardest hit nations by COVID-19, with 30,709,557 confirmed cases of COVID-19, and 405,028 deaths as of July 8, 2021. This is likely also undercounted; India has faced significant issues with collecting accurate data, and the real statistics may be much higher. COVID-19 outcomes in India also show correlations between socially disadvantaged groups and mortality.

The existence of the caste system in India, which while officially abolished is still widely observed, has major connections to both COVID-19 preparedness and outcomes.

A. Outcomes by Caste

First, in terms of castes, a specific situation somewhat unique to India, the “lowest” caste groups have experienced the worst effects of the COVID-19 pandemic. The castes in India can generally be qualified as general caste (“GC”), which has the highest status in the country, other backward caste (“OBC”), which is composed of disadvantaged people and groups who are still within the caste system, and schedule caste/schedule tribe (“SC/ST”), comprised of people outside of the caste system who face significant disadvantages and prejudice.

First, OBC and SC households face significant existing disadvantages, ranking far lower than GC households in terms of access to clean water, sanitation, energy, communication services, and liquid assets. This left them significantly worse off during the periods of lockdown India underwent, with just 12% of OBC households and 10% of SC/ST households in India considered fully ready for lockdown, compared to 25% of GC households.

This kind of disparity in lockdown readiness “implies severe hardships with potentially long-running consequences for households” especially in light of the multiple, long-lasting lockdown impositions India took to control COVID-19.

The various lockdowns have also taken a major toll on the already precarious economic situations of the lower castes. SC/ST and OBC workers had considerably worse economic outcomes from COVID-19, with SC/ST workers three times as likely to lose their jobs than GC workers, and OBC workers more than twice as likely to do so. SC/ST workers also often must periodically move from their villages to urban areas to take periodical jobs; many ended up trapped by the lockdowns in

95 Id.
96 Id. at 10.
unfamiliar cities with no food or resources. In addition to COVID-19 deaths, thousands of SC/ST workers died trying to return home in road or train accidents, and many more died by suicide. Given the correlation between socioeconomic vulnerability and COVID-19 mortality, this is particularly devastating to these communities.

Along economic lines, SC households were also in large part not given access to COVID-19 relief packages distributed by the government. 66% of SC households and 79% of ST households were not informed of free testing or treatment provisions which were available to low-income households. This is especially egregious when considering that SC/ST workers are the primary workers expected to work in mortuaries and sanitation, without any prophylactic measures, or even awareness of the risk of COVID-19.

In terms of health outcomes, one of the biggest issues when reviewing the impact of inequality within India on COVID-19 outcomes is the lack of information collected within the country; there simply is little data on the demographics of COVID-19, and public domain death and case counts within the country are seemingly very inaccurate. The Indian government has refused to release the data it has collected, making analysis even more difficult. As vaccines have rolled out across India, there are also signs that SC/ST individuals are not being inoculated. SC/ST individuals are almost 3.5 times more likely than OBC individuals to be vaccine hesitant, a problem that has contributed to low rates of COVID-19 vaccination for SC/ST communities. Access to the vaccine for SC/ST communities is also a problem; vaccination appointments are secured digitally, but many SC/ST individuals have no ability to access the internet.

The available information, however, presents a grim picture for SC/ST households. Pre-existing inequalities have left these groups at major risk for COVID-19 infection and death. 51% of SC/ST households have access to soap

99 *Id.* at 4.
101 *Id.*
103 Priyanka Pulla, *supra* note 78.
104 *Id.*
107 Association for Progressive Communications, *The digital divide in India: How access to technology and reliable information affects India’s response to the pandemic*, (Jun. 17, 2021), https://www.apc.org/en/node/37367 (noting 18 million households in India have no working mobile phone and no internet access).
and water, in comparison to 80% of GC households. The elements of active discrimination also play an important role in preventing SC/ST households from receiving help. Distancing is also impossible, with an average of 3.54 people living per SC/ST household room. Even the use of the phrase “social distancing” has affected the caste system in India, with “the notion of social distancing provid[ing] the ground for the casteist precept of distancing one from each other based on birth.”

This has a deleterious effect on the delivery of public health services, as most doctors within India come from the GC class. Reports from SC/ST people in India suggest hospitals are actively turning away SC/ST patients because of an unwillingness to treat them. Currently, accurate information on the measurable effect of COVID-19 by caste is unavailable, as India’s government continues to refuse the release of its COVID-19 data. With variants and mortality rates skyrocketing, however, and the significant risk factors present among the OBC and SC/ST communities, it is very likely that the pandemic will take a devastating toll on the health and livelihood of an already impoverished and disenfranchised group.

109 Id. at 9.
111 Arindaam Arjunrao Pol, Casteism Among Indian Doctors: A Critical Review, 5 WORLD J. OF PUB. HEALTH 99, 102 (8 Dec. 2020), http://www.sciencepublishinggroup.com/journal/paperinfo?journalid=287&paperId=10052189 (“The presence of dalits in the healthcare sector is lesser than the other higher castes and this difference is more prominent in rural areas”).