

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

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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. 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)

he 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.<sup>3</sup>

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,<sup>4</sup> 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.<sup>5</sup>

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.<sup>3,6</sup> 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 lowincome 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. Immigrants, many of whom are people of color, are unequally impacted by the COVID-19 pandemic because of socioeconomicrelated 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.<sup>3</sup> 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. <sup>2,8</sup> 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.<sup>10</sup> 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).<sup>11</sup>

## **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. 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 longestablished 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.<sup>3</sup> 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 lowwage 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.<sup>20</sup> 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.<sup>21</sup> 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 selfisolate from other household members (e.g., older and immunocompromised individuals).<sup>22</sup> 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<sup>19</sup> and may live in disinvested neighborhoods with restricted healthy food options because of unaffordable or lowquality 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.<sup>3,4</sup> 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.<sup>24</sup> 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.<sup>27–29</sup> 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.<sup>30</sup> In addition, social isolation may increase the risk of mental health stressors among older immigrant adults who face cultural, linguistic, and digital access barriers.<sup>31</sup>

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.<sup>32</sup> 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 pregnancyrelated 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 lowincome, uninsured immigrant women.<sup>32</sup> 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.<sup>34</sup> 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.<sup>32</sup>

#### 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.<sup>35</sup> 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 guarantine 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).<sup>36</sup>

## **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.<sup>37</sup> 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.<sup>5</sup>

# 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.<sup>39</sup> 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.<sup>36</sup>

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.<sup>3</sup> 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.<sup>43</sup> 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.<sup>44</sup> 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 patientcentered 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. **⊿**ĬPH

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#### **CONFLICTS OF INTEREST**

The authors have no conflicts of interest to declare.

#### **HUMAN PARTICIPANT PROTECTION**

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

#### **REFERENCES**

- 1. Batalova J, Hanna M, Levesque C. Frequently requested statistics on immigrants and immigration in the United States. Migration Policy Institute. February 14, 2020, Available at: https://www. migrationpolicy.org/article/frequently-requestedstatistics-immigrants-and-immigration-unitedstates. Accessed July 13, 2021.
- 2. McClure ES, Vasudevan P, Bailey Z, Patel S, Robinson WR. Racial capitalism within public health—how occupational settings drive COVID-19 disparities. Am J Epidemiol. 2020;189(11): 1244-1253. https://doi.org/10.1093/aje/kwaa126
- 3. Clark E, Fredricks K, Woc-Colburn L, Bottazzi ME, Weatherhead J. Disproportionate impact of the COVID-19 pandemic on immigrant communities in the United States. PLoS Negl Trop Dis. 2020;14(7): e0008484. https://doi.org/10.1371/journal.pntd. 0008484
- 4. Berstein H, Gonzalez D, Karpman M. Adults in Low-Income Immigrant Families Were Deeply Affected by the COVID-19 Crisis yet Avoided Safety Net Programs in 2020. Urban Institute, 2021. Available at: https:// www.urban.org/sites/default/files/publication/ 104280/adults-in-low-income-immigrant-familiesdeeply-affected-by-pandemic-yet-avoided-safetynet\_0.pdf. Accessed August 25, 2021.
- 5. DeSalvo KB, O'Carroll PW, Koo D, Auerbach JM, Monroe JA. Public Health 3.0: time for an upgrade. Am | Public Health. 2016;106(4):621-622. https:// doi.org/10.2105/AJPH.2016.303063
- 6. Castañeda H, Holmes SM, Madrigal DS, Young M-ED, Beyeler N, Quesada J. Immigration as a social determinant of health. Annu Rev Public Health. 2015;36(1):375-392. https://doi.org/10.1146/ annurev-publhealth-032013-182419
- 7. Rubin-Miller L, Alban C, Artiga S, Sullivan S. COVID-19 racial disparities in testing, infection, hospitalization, and death: analysis of Epic patient data. KFF. 2020. Available at: https://www.kff.org/reportsection/covid-19-racial-disparities-in-testinginfection-hospitalization-and-death-analysis-of-

- epic-patient-data-issue-brief. Accessed July 13, 2021
- Laster Pirtle WN. Racial capitalism: a fundamental cause of novel coronavirus (COVID-19) pandemic inequities in the United States. *Health Educ Behav*. 2020;47(4):504–508. https://doi.org/10.1177/ 1090198120922942
- Handal AJ, Iglesias-Ríos L, Fleming PJ, Valentín-Cortés MA, O'Neill MS. "Essential" but expendable: farmworkers during the COVID-19 pandemic—the Michigan Farmworker Project. Am J Public Health. 2020;110(12):1760–1762. https://doi.org/10. 2105/AJPH.2020.305947
- Waltenburg MA, Victoroff T, Rose CE, et al. Update: COVID-19 among workers in meat and poultry processing facilities—United States, April-May 2020. MMWR Morb Mortal Wkly Rep. 2020;69(27): 887–892. https://doi.org/10.15585/mmwr. mm6927e2
- Huber B. How did Europe avoid the COVID-19 catastrophe ravaging US meatpacking plants? Mother Jones. June 13, 2020. Available at: https:// www.motherjones.com/food/2020/06/ meatpacking-plants-covid-hotspots-europeregulations-line-speed. Accessed April 7, 2021.
- Wallace SP, Young ME de T. Immigration versus immigrant: the cycle of anti-immigrant policies. Am J Public Health. 2018;108(4):436–437. https://doi. org/10.2105/AJPH.2018.304328
- Fleming PJ, Novak NL, Lopez WD. US immigration law enforcement practices and health inequities. *Am J Prev Med.* 2019;57(6):858–861. https://doi. org/10.1016/j.amepre.2019.07.019
- US Immigration and Customs Enforcement. ICE guidance on COVID-19. January 27, 2021. Available at: https://www.ice.gov/coronavirus. Accessed January 29, 2021.
- Okonkwo NE, Aguwa UT, Jang M, et al. COVID-19 and the US response: accelerating health inequities. *BMJ Evid Based Med.* 2020;bmjebm-2020-111426. https://doi.org/10.1136/bmjebm-2020-111426
- US Immigration and Customs Enforcement. Public charge provisions of immigration law. A brief historical background. Available at: https://www. uscis.gov/about-us/our-history/history-office-andlibrary/featured-stories-from-the-uscis-historyoffice-and-library/public-charge-provisions-ofimmigration-law-a-brief-historical-background. Accessed April 7, 2021.
- New American Economy. Immigrants and the economy in: United States of America. Available at: https://www.newamericaneconomy.org/ locations/national. Accessed December 19, 2020.
- Castañeda H, Melo MA. Health care access for Latino mixed-status families: barriers, strategies, and implications for reform. *Am Behav Sci.* 2014; 58(14):1891–1909. https://doi.org/10.1177/ 0002764214550290
- Amandolare S, Gallagher L, Bowles J, Dvorkin E. Under threat & left out: NYC's immigrants and the coronavirus crisis. Center for an Urban Future. 2020. Available at: https://nycfuture.org/research/ under-threat-and-left-out. Accessed December 19, 2020.
- Migration Policy Institute. US unemployment trends by nativity, gender, industry, & more, before and during pandemic. Available at: https:// www.migrationpolicy.org/programs/migrationdata-hub/us-unemployment-trends-duringpandemic. Accessed July 13, 2021.

- Riley AR. Neighborhood disadvantage, residential segregation, and beyond—lessons for studying structural racism and health. J Racial Ethn Health Disparities. 2018;5(2):357–365. https://doi.org/10. 1007/s40615-017-0378-5
- Fry R, Passel JS. The growth in multi-generational family households. Pew Research Center's Social & Demographic Trends Project. July 14, 2014. Available at: https://www.pewsocialtrends.org/ 2014/07/17/the-growth-in-multi-generationalfamily-households. Accessed January 29, 2021.
- Hernández D, Jiang Y, Carrión D, Phillips D, Aratani Y. Housing hardship and energy insecurity among native-born and immigrant low-income families with children in the United States. J Child Poverty. 2016;22(2):77–92. https://doi.org/10.1080/ 10796126.2016.1148672
- Sadeque S. NYC's Bangladeshi community struggles to cope with coronavirus. Al Jazeera. April 29, 2020. Available at: https://www.aljazeera.com/features/2020/4/29/nycs-bangladeshi-community-struggles-to-cope-with-coronavirus. Accessed July 13, 2021.
- Yoon H, Jang Y, Vaughan PW, Garcia M. Older adults' Internet use for health information: digital divide by race/ethnicity and socioeconomic status. J Appl Gerontol. 2020;39(1):105–110. https://doi. org/10.1177/0733464818770772
- Das LT, Kutscher EJ, Gonzalez CJ. Addressing barriers to care for patients with limited English proficiency during the COVID-19 pandemic. *Health Affairs Blog.* July 29, 2020. Available at: https:// www.healthaffairs.org/do/10.1377/ hblog20200724.76821/full. Accessed December 5, 2020.
- Wilson FA, Stimpson JP. US policies increase vulnerability of immigrant communities to the COVID-19 pandemic. *Ann Glob Health*. 2020;86(1): 57. https://doi.org/10.5334/aogh.2897
- von Werthern M, Robjant K, Chui Z, et al. The impact of immigration detention on mental health: a systematic review. *BMC Psychiatry*. 2018;18(1): 382. https://doi.org/10.1186/s12888-018-1945-y
- Lovato K, Lopez C, Karimli L, Abrams LS. The impact of deportation-related family separations on the well-being of Latinx children and youth: a review of the literature. *Child Youth Serv Rev.* 2018; 95:109–116. https://doi.org/10.1016/j.childyouth. 2018.10.011
- Brooks SK, Webster RK, Smith LE, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*. 2020;395(10227):912–920. https://doi.org/10. 1016/S0140-6736(20)30460-8
- Sepúlveda-Loyola W, Rodríguez-Sánchez I, Pérez-Rodríguez P, et al. Impact of social isolation due to COVID-19 on health in older people: mental and physical effects and recommendations. J Nutr Health Aging. 2020;24(9):938–947. https://doi.org/ 10.1007/s12603-020-1469-2
- 32. Giacco D, Matanov A, Priebe S. Providing mental healthcare to immigrants: current challenges and new strategies. *Curr Opin Psychiatry*. 2014;27(4): 282–288. https://doi.org/10.1097/YCO. 00000000000000065
- 33. Cabral J, Cuevas AG. Health inequities among Latinos/Hispanics: documentation status as a determinant of health. *J Racial Ethn Health Disparities*. 2020;7(5):874–879. https://doi.org/10.1007/s40615-020-00710-0
- 34. Desai S, Samari G. COVID-19 and immigrants' access to sexual and reproductive health services

- in the United States. *Perspect Sex Reprod Health.* 2020;52(2):69–73. https://doi.org/10.1363/psrh. 12150
- Families First Coronavirus Response Act. Pub L 116–127 (March 18, 2020). Available at: https:// www.congress.gov/116/plaws/publ127/PLAW-116publ127.pdf. Accessed January 7, 2021.
- Clark EH, Fredricks K, Woc-Colburn L, Bottazzi ME, Weatherhead J. Preparing for SARS-CoV-2 vaccines in US immigrant communities: strategies for allocation, distribution, and communication. *Am J Public Health*. 2021;111(4):577–581. https://doi. org/10.2105/AJPH.2020.306047
- Antony-Newman M. Parental involvement of immigrant parents: a meta-synthesis. Educ Rev. 2019;71(3):362–381. https://doi.org/10.1080/ 00131911.2017.1423278
- Vogels EA. 59% of US parents with lower incomes say their child may face digital obstacles in schoolwork. Pew Research Center. September 10, 2020. Available at: https://www.pewresearch.org/ fact-tank/2020/09/10/59-of-u-s-parents-withlower-incomes-say-their-child-may-face-digitalobstacles-in-schoolwork. Accessed January 8, 2021.
- Yusuf Y, Misra S, Singh S, et al. Unmasking an invisible community: unique influences on and consequences of COVID-19 among South Asians in the United States. AAPI Nexus Policy Pract Community. 2020;17(1 & 2). Available at: http:// www.aapinexus.org/2020/10/29/articleunmasking-an-invisible-community. Accessed July 13, 2021.
- 40. US Department of Homeland Security. DHS statement on equal access to COVID-19 vaccines and vaccine distribution sites. February 1, 2021. Available at: https://www.dhs.gov/news/2021/02/ 01/dhs-statement-equal-access-covid-19vaccines-and-vaccine-distribution-sites. Accessed April 7, 2021.
- US Department of Homeland Security. Enforcement actions at or focused on sensitive locations.
  October 24, 2011. Available at: https://www.ice.gov/doclib/ero-outreach/pdf/10029.2-policy.pdf.
  Accessed April 7, 2021.
- Capps R, Batalova J, Gelatt J. COVID-19 and unemployment: assessing the early fallout for immigrants and other US workers. Migration Policy Institute. 2020. Available at: https://www. migrationpolicy.org/sites/default/files/ publications/COVID-19-Unemployment-Industry-Nativity-Gender-FS-Final.pdf. Accessed April 7, 2021
- 43. Fairlie RW. The impact of COVID-19 on small business owners: evidence of early-stage losses from the April 2020 Current Population Survey. NBER Working Paper No. 27309. National Bureau of Economic Research. June 2020. Available at: https://www.nber.org/system/files/working\_ papers/w27309/w27309.pdf. Accessed April 7, 2021
- Endale T, St Jean N, Birman D. COVID-19 and refugee and immigrant youth: a community-based mental health perspective. *Psychol Trauma*. 2020; 12(suppl 1):S225–S227. https://doi.org/10.1037/ tra0000875