

## EDITORIAL

# Disproportionate Impact of COVID-19 Among Socially Vulnerable Patients

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Disease outbreaks may impose substantial hardships on local health infrastructure and the quality of life of socially vulnerable communities.<sup>1,2</sup> The COVID-19 pandemic has highlighted glaring inequities in disease susceptibility. The Mexican Institute of Social Security data set reported that patients in the lowest income decile had a 5-fold higher probability of experiencing COVID-19–related death than those at the top decile.<sup>3</sup> In the United States, counties with greater social vulnerability—as measured by the social vulnerability index—showed a 2-fold higher risk of becoming COVID-19 hot spots than those with lower vulnerability, especially among rural counties, counties with a higher proportion of racial and ethnic minorities, and inadequate housing units.<sup>4</sup> Additionally, adherence to social distancing and other risk mitigation strategies at the height of the pandemic was lower among socially disadvantaged groups, including Black and Hispanic communities, possibly related to preclusive social and occupational demands.<sup>5</sup>

### See Article by Islam et al

In this issue of *Circulation: Cardiovascular Quality and Outcomes*, Islam et al<sup>6</sup> add further evidence on the disproportionate impact of social vulnerabilities on in-hospital mortality and major adverse cardiovascular events in patients admitted with COVID-19 infection across 107 US hospitals. The authors cross-linked zip codes of individual patients with COVID-19 in the American Heart Association COVID-19 Cardiovascular Disease Registry with the Centers for the Disease Control and Prevention county-level social vulnerability index data between January 2020 and November 2020. The key findings

were that COVID-19 patients from the most socially vulnerable counties had a higher burden of comorbidities, including obesity, diabetes, and chronic kidney disease. In addition, patients from the socially vulnerable counties had higher odds of in-hospital mortality and major adverse cardiovascular events than their less vulnerable counterparts, with little attenuation of observed risk after accounting for demographics, comorbidities, and acuity of illness. Finally, patients with vulnerable attributes were markedly sicker and more likely to receive mechanical ventilation and circulatory support. However, they were less likely to receive COVID-19 treatment (steroids, remdesivir, tocilizumab, and convalescent plasma).

What could be gleaned from the findings highlighted in this study? The authors cited various well-established social determinants of health (SDOH) as explanatory mechanisms for their results, such as crowded housing and greater susceptibility to air pollution, socioeconomic challenges, neighborhood deprivation, limited access to health care resources with attendant lower vaccination rates, and the inequitable health care environment faced by vulnerable patients. Unfortunately, health care systems in the United States continue to treat SDOH as a separate entity from the clinical determinants of health, which presents a missed opportunity to tailor care based on patients' unique socioeconomic status. That said, even in an ideally equitable health care environment, individuals from socially deprived backgrounds may experience worse outcomes than their more privileged counterparts owing to cumulative life course impairment,<sup>2</sup> which underlines the importance of prehospital social circumstances in perpetuating disparate health outcomes. Therefore, addressing SDOH requires a multidimensional approach focusing on upstream policy changes with targeted

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universalism, individualized assessment of SDOH burden, and integration of SDOH assessment tools into health care systems that may capture the entire paradigm of social factors.

Targeted universalism refers to structural policy changes focused on inclusivity and the formation of programs that cater to the needs of all groups toward achieving universal health goals.<sup>1</sup> Community-level SDOH measures, such as social vulnerability index, allow us to observe the baseline susceptibility of the community to natural hazards or diseases based on their social structure. Once vulnerable communities are identified, the governance and health care delivery system must be tailored to ensure fair resource distribution, equitable opportunities for healthy lifestyles, food availability, and affordable care plans.<sup>6</sup> Counties in the states that implemented Medicaid under the Affordable Care Act noted a minor increase in cardiovascular mortality compared with counties in states that did not expand Medicaid.<sup>7</sup> In contrast, the largest concentration of socially vulnerable was clustered across the states that have not yet adopted Medicaid expansion.<sup>8</sup> On a policy level, health care systems should shift from a predominantly clinical model to a hybrid disease management model, which values, integrates, and creates opportunities to address the social and environmental factors predisposing vulnerable communities to suboptimal health. Finally, health care delivery systems should harmonize measures of SDOH, such as social vulnerability index or area deprivation index, with electronic health record systems. Such tools allow efficient identification of individuals from socially vulnerable communities and offer unique opportunities to intervene and coordinate efforts to address SDOH via linkages to community resources.

This study by Islam et al is a stark reminder of the pervasive effects of social vulnerability on health and quality of life in underserved populations. To the same end, the COVID-19 pandemic has unmasked deeply rooted social and health care inequalities in our system. Therefore, it is imperative to realize that improvements in individual and population health cannot be achieved without acknowledging and alleviating SDOH at the community level via interventions to address unfavorable social circumstances of individuals and health-system

level via integration of SDOH with clinical decision support systems to inform management for improving the health care. In essence, larger goals should be enacting national-level policy shifts, innovating the health care delivery system with integrated SDOH assessment tools and public health interventions to mitigate the future risk of a pandemic like COVID-19.

## ARTICLE INFORMATION

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### Disclosures

None.

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