



Commentary

Operationalizing equity during local pandemic response (submission eclinm-D-21–00233R1)

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“Race and place matter a lot for health outcomes in our country,” Dr. Marcella Nunez-Smith, chair of the Biden Administration’s COVID-19 health equity task force, stated in February of this year [1]. Being part of local level responses to the pandemic in New England has shown us firsthand how the interplay of race and place contributes to COVID-19’s disproportionate toll on communities of color in the United States.

The risk of COVID-related death amongst these communities is significantly higher nationally compared to the white population, and life expectancy among these groups is projected to fall 3–4 times more than white counterparts as a result of the pandemic [2]. However, there is no commonly accepted criteria for how federal, state, and local governments should identify and better care for the most vulnerable populations in their specific jurisdictional context.

Local leaders have been making highly consequential decisions at each stage of the pandemic that affect the equity and efficacy of COVID-19 responses without any doctrine and training specifically designed to help them do so. For these officials, the decisions they have had to make are where politics and public health collide - often with tragic results.

In May of last year, the City of Dallas placed COVID-19 testing sites in overwhelmingly whiter, wealthier neighborhoods (Fig. 1) [3]. Meanwhile, the burden of infections occurred disproportionately in Dallas’ communities of color.

Dallas County, in a course correction, developed a vaccine distribution plan in 2021 that prioritized eleven predominantly black and Latinx neighborhoods for vaccination. However, Texas state health officials threatened to reduce weekly supplies of the vaccine if county

officials did not offer the vaccine to all residents regardless of where they live [4].

Emergency managers in the US are not starting entirely from scratch in terms of vulnerability mapping. In 2011, the Centers for Disease Control and Prevention (CDC) first published its Social Vulnerability Index (SVI), which uses census tract data to help identify vulnerable groups prior to the onset of a spectrum of disaster scenarios ranging from hurricanes to infectious disease outbreaks [5].

A recent study by Biggs, et al. supports the utilization of the CDC SVI for identification of vulnerable groups in the context of COVID-19 retrospectively [6]. However, SVI’s level of demographic granularity and temporal-spatial resolution is inadequate for supporting the decisions local governments have had to make during the pandemic.

The first step in filling this urgent methodological gap is agreeing upon common definitions for social “vulnerability” and “susceptibility,” which have been used interchangeably since the pandemic began. We believe “vulnerability” should be defined in the context of local COVID-19 response as a measurement of a population’s risk of significant negative health consequences if exposed to the pathogen.

“Susceptibility,” by contrast, is often used to denote the simple potentiality of being harmed by an infectious agent. Unfortunately, this narrow definition becomes impractical when dealing with a novel pathogen. Susceptibility during pandemic events such as COVID-19 needs to encompass how both physical locations and human behaviors within those locations represent varying levels of opportunity for pathogen exposure.

It is this contextually specific intersection of vulnerable demographics with location-based activity scenarios that often drive community transmission. We call this phenomenon a “nexus.” The iterative identification and analysis of these nexuses is the key to effectively preventing and mitigating them through local pandemic response operations.

There are multiple instances throughout the pandemic of nexuses in which vulnerable cohorts and locations associated with conditions and behaviors that increase susceptibility have collided with horrific consequences. Meat packing plants, long term care facilities, and commercial kitchens are prime examples of this phenomena.

To identify nexuses at hyperlocal levels, elected leaders and civil servants first need set criteria for systematically assigning

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Dallas: Testing Sites Concentrated In Wealthier, Whiter Neighborhoods

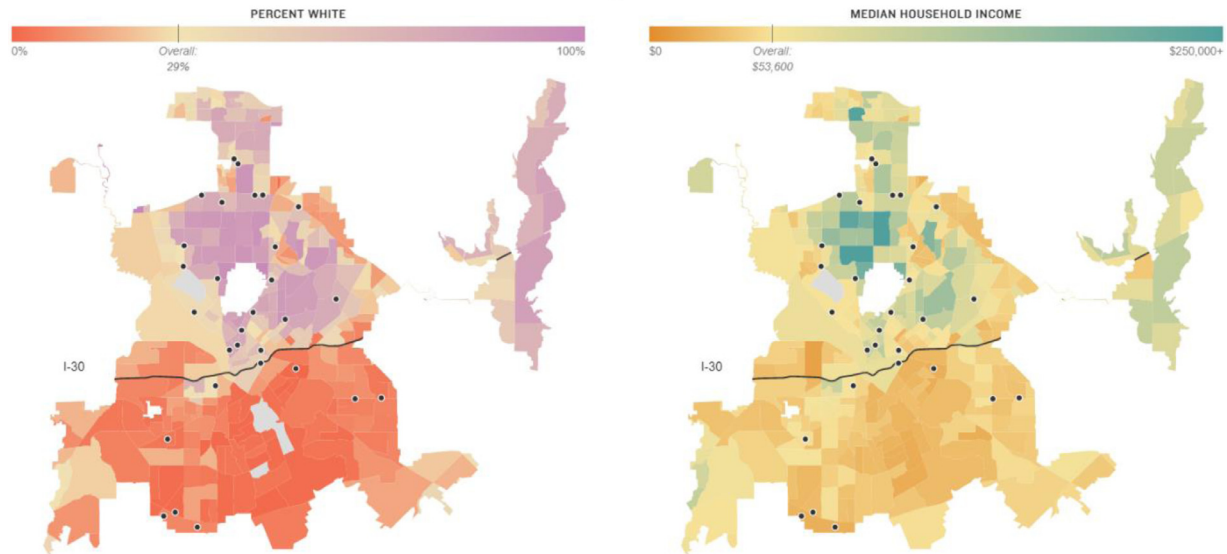


Fig. 1. Obtained via National Public Radio (NPR) website – <https://www.npr.org/sections/health-shots/2020/05/27/862215848/across-texas-black-and-hispanic-neighborhoods-have-fewer-coronavirus-testing-sit>
 Title of article: In Large Texas Cities, Access To Coronavirus Testing May Depend On Where You Live
 Date Published: May 27, 2020
 Enlarged Text from Figure:
 Credit: Ruth Talbot, Stephanie Adeline, Audrey Carlsen and Sean McMinn/NPR.
 Source: Census Bureau (demographic and income data), NPR research (testing site locations)

vulnerability ratings to demographics found in their jurisdictional contexts. Second, shared systems and methods are required for how to pinpoint and map potential locations that could prove highly susceptible for transmitting the pathogen.

Third and finally, local emergency managers need to have common frameworks for community level nexus identification. A common approach helps triage limited resources, target mitigation measures where they can have the most impact, and ensure the key data is demographically disaggregated to ensure effective monitoring.

“Equity is our north star here,” Dr. Nunez-Smith said at a recent White House briefing on vaccine distribution. Without a science and ethics-based methodology for navigating towards that north star, local responses will continue to struggle to equitably find their way forward during pandemics - both today and tomorrow.

Declaration of Interests

The authors declare that there are no conflicts of interests

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