



UNIVERSITY  
OF ILLINOIS  
SYSTEM

## Institute of Government and Public Affairs

Task Force on the Impact of the COVID-19 Pandemic  
Policy Spotlight

April 28, 2020

### Visualizing Vulnerability and Capturing the Pandemic's Human Toll

**Moira Zellner**, Director, Urban Data Visualization Lab, College of Urban Planning and Public Affairs; Associate Professor, Department of Urban Planning and Policy, Research Associate Professor, Institute for Environmental Science and Policy, University of Illinois at Chicago

**Ahoura Zandiatashbar**, Ph.D., Geo-data Scientist, Urban Data Visualization Lab, College of Urban Planning and Public Affairs, University of Illinois at Chicago

**Robin Fretwell Wilson**, Director, Institute of Government and Public Affairs, University of Illinois System; Roger and Stephany Joslin Professor of Law, University of Illinois College of Law, University of Illinois at Urbana-Champaign

At the request of President Tim Killeen, IGPA has assembled more than four dozen interdisciplinary faculty experts from all three System universities to assess COVID-19's effects on the state. This COVID-19 Policy Spotlight, the first in a series, builds on the report of the Community and Family Resilience Impact Group. Spotlights drill down on a specific dimension of the challenges facing Illinois and are an important piece of the Task Force's overall efforts.

#### Executive Summary

COVID-19 has created a crisis with little precedent.

Illinoisans have lost family members. People have died in hospitals alone. But the human toll of the pandemic can be measured in more than lives lost. There have been other health effects, such as delayed surgery and lack of access to primary and behavioral healthcare. Many have lost jobs, which means lost health insurance, lost wages, and food insecurity. In Illinois, a half million people filed for unemployment in five weeks.<sup>1</sup> For most people, the ability to shelter, clothe, feed, and care for ourselves and our families comes through productive work.

Staying at home has created the potential for increased incidents of partner and child abuse. Sheltering in place has led to feelings of hopelessness and isolation. It has frayed emotions and relationships. The existential threat posed by COVID-19 is unlike anything most Americans have experienced—except, perhaps, those who lived through the Great Depression.

It is nearly inconceivable to think that having approximately 1/4 of the economy offline nationally is not wreaking havoc on the lives and well-being of Illinoisans.<sup>2</sup> Many face compounding vulnerabilities: to the virus itself and to the economic repercussions. Some Illinoisans came into the pandemic with hypertension, cardiovascular, and other health conditions that increase the risk for being a [severe patient](#). Others struggled financially long before the pandemic. [Persons of color](#) and those [living in poverty](#) number among those hardest hit by the pandemic.

Despite the incredible and rapid work of many professionals inside and outside of government, information that is crucial to making informed decisions remains radically incomplete. We remain uncertain about fundamental facts about the pandemic itself—the true rate of infection and whether immunity is building, for example.

We also are missing a systematic understanding of what the pandemic has meant for people's lives and life chances—and especially what it means for those who are least able to withstand those impacts. Even with that understanding, we will need devices to pinpoint

compounding vulnerabilities. We know the human toll will shake some persons and communities more than others—pinpointing those persons and places is urgently needed to minimize the fallout and provide targeted relief as the pandemic unfolds.

## **Grasping the Scale of the Pandemic’s Human Toll on Illinoisans**

Policymakers in Illinois and across the nation face difficult choices ahead: When and how to begin easing restrictions that both slow the disease but also deplete our capacity to care for ourselves and our families.

Building a more complete understanding of the pandemic’s impact is essential to making informed policy decisions. **In order to do this, we must better understand the magnitude of the economic and social suffering Illinoisans are experiencing.**

We recognize that human impacts are inevitable: some of the measures taken to combat a perilous virus cannot happen without impacting the life chances of the very people we seek to protect from harm. However, we need to assess the suffering people are experiencing so it, too, can inform next steps.

IGPA is constructing a series of Pandemic Stress Indicators. These will:

- take the temperature of three sets of experts about when to reopen the economy. These panels would consist of public health experts, economists and vulnerability scholars. These groups would be polled on a weekly basis. Although experts are not infallible, experts are attuned to changes that would escape the notice of the general public.
- draw directly from regularly scheduled interviews with leaders of impacted vulnerable communities, especially communities of color. Understanding how these communities are experiencing the pandemic provides critical insight into not only individual social and economic losses, but those of communities.
- draw on the lived experiences of ordinary individuals (especially from marginalized groups), who will work with scientists to create new knowledge. These individuals will document the impact of the COVID-19 on their lives through videos and journals uploaded with their cell phones. These citizens-turned-scientists can share their resiliency experiences and strategies in real-time.
- regularly assess directly what Illinois’ citizens think, using a focus group of citizens that includes persons from vulnerable populations.

Surveying people about economic conditions measures their perceptions of economic conditions, not the conditions themselves. Nonetheless, having more data about the toll of the pandemic and social distancing is crucial in its own right. Decisions about next steps will be better for considering the felt impacts on individuals.

## **Visualizing Vulnerabilities is Needed to Proceed Wisely and to Help Those with the Least**

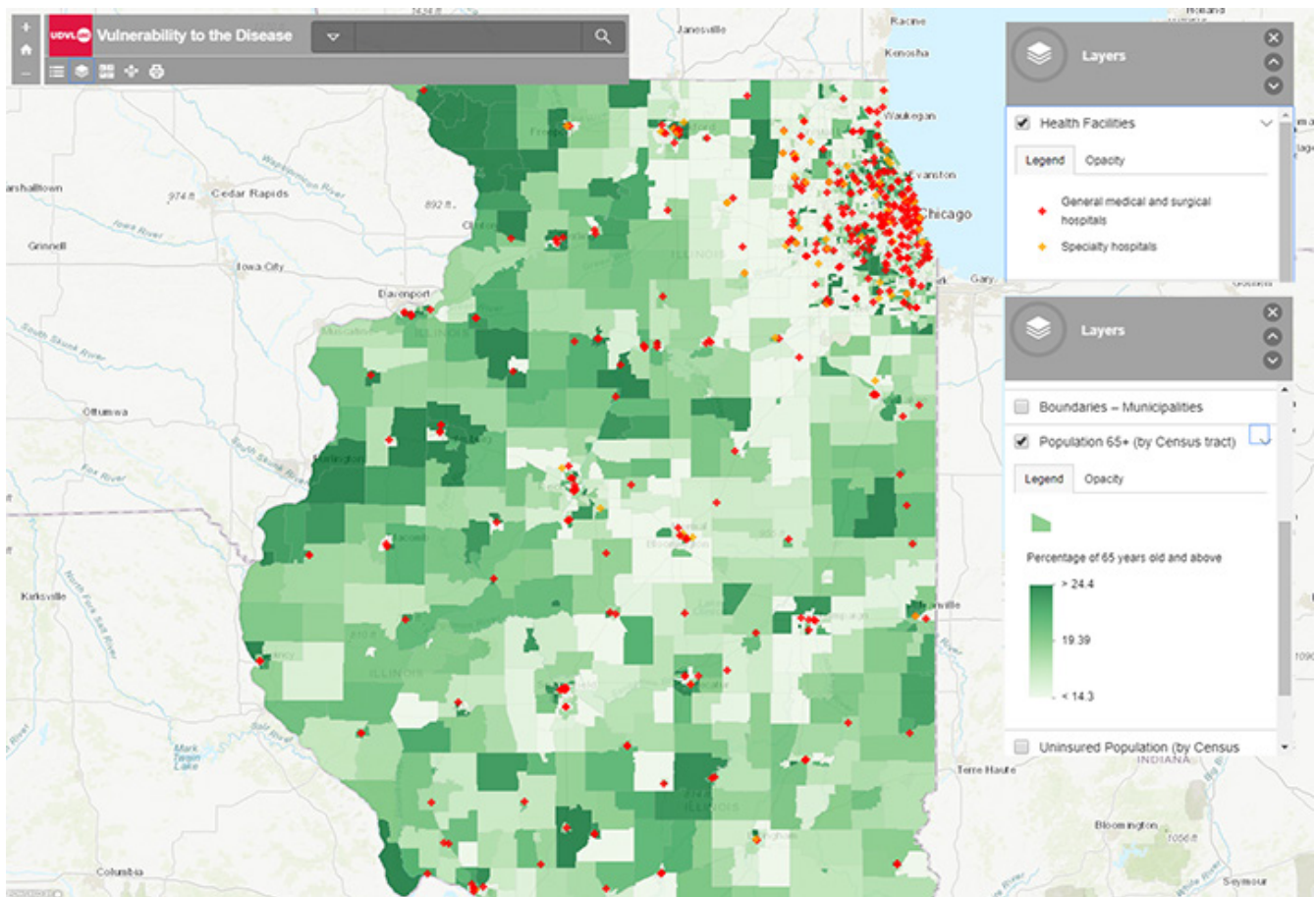
We must be mindful of the costs borne by identifiable vulnerable populations. Many of Illinois’ residents lack the wherewithal to shelter in place with no end in sight. Many lack shelter itself. Some Illinoisans experience a double whammy: they are vulnerable both to the virus itself and to the economic fall-out.

IGPA has collaborated with UIC’s Urban Data Visualization Lab to develop maps that visualize and identify compounding vulnerabilities, both to the virus and to the socio-economic impact of the pandemic. There is, however, some overlap between the two. Those most vulnerable to the disease due to chronic health issues tend to have limited access to healthcare and live in lower-income communities that are already stressed by limited economic resources and may thus be less resilient to an extended economic recession. Still, chronic health issues are widespread

among all socio-economic levels, and highly specialized sectors of the economy may also be less resilient to the disruption caused by the pandemic.

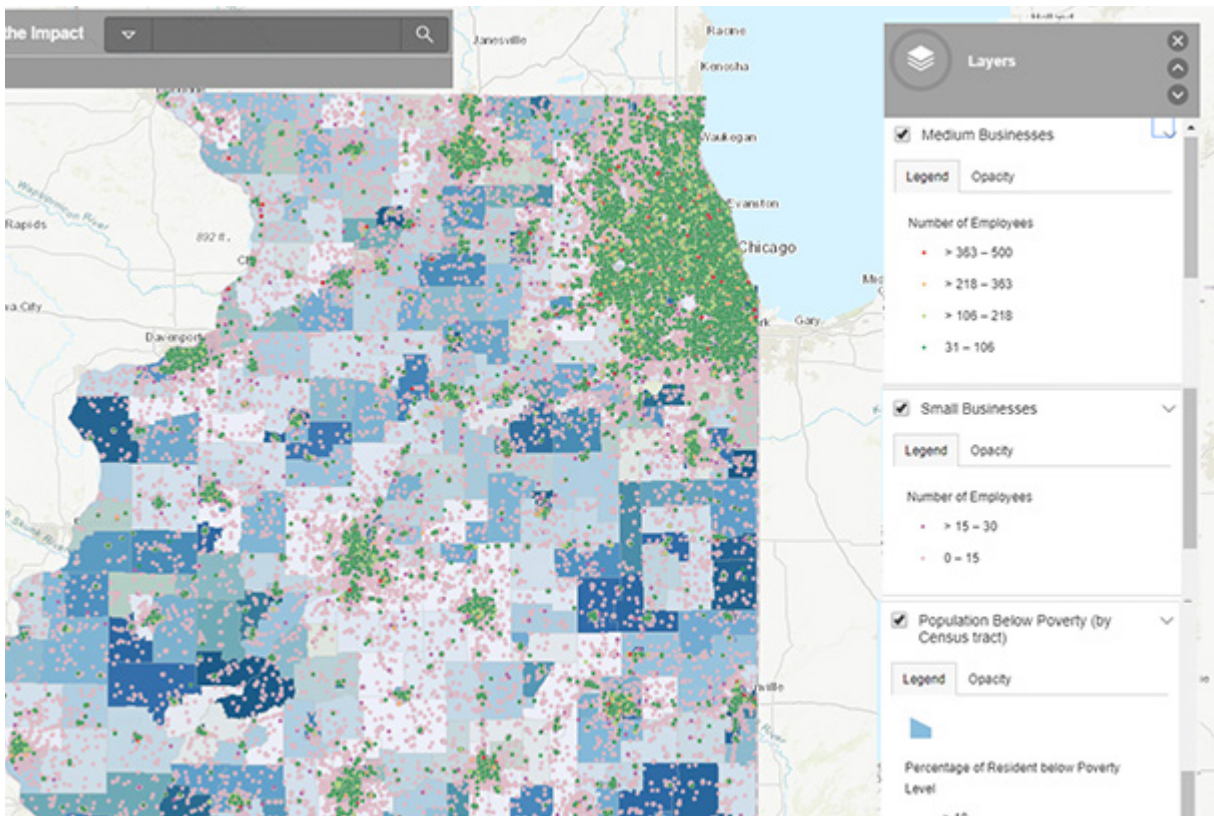
We seek to raise awareness of the factors that contribute to these vulnerabilities, to anticipate needs and guide policy decisions that effectively address them and help the state adapt to the pandemic shock. Our visualizations can be found here: <https://udv.lab.uic.edu/news-stories/covid-19-vulnerability-map/>.<sup>3</sup> These maps will be updated with more informative and comprehensive measures of social vulnerability and the location of COVID-19 cases.

Visualizing individuals' and communities' overlapping vulnerabilities to the pandemic lays bare a central moral consideration: those with the least should not disproportionately bear the brunt of the pandemic. For example, the map below shows the vulnerable population in terms of age (% older than 65 years old) and location of assisted living and nursing facilities. It also shows their geographic distribution relative to the location of health facilities. The pop-up windows allow users to examine more details of specific locations.



The map below (page 4) examines the vulnerability to the economic disruption caused by the pandemic, in terms of poverty (% of residents living below the poverty line), unemployment, and the concentration of small businesses and facilities that house vulnerable populations (e.g., homeless shelters). All maps are informed with data from the American Community Survey 2018 5-Year Estimates (demographics), and the Infogroup database of establishments updated in 2018.

Special attention should be paid to vulnerable groups such as low-income individuals and those in poor health and efforts must be made to distribute resources more evenly where possible, and to mitigate harm where it is not. Further, where two next steps are equally plausible, we should favor the step that does not risk widening inequality or concentrating costs on people who came to the pandemic fragile. These maps focus our collective attention on this crucial guardrail around our collective decisions.



Not all harm that flows from a given decision can be avoided. Not all of our collective pain can be shared equally. But a clear understanding of the burdens borne by Illinoisans must be the foundation for restoring the lives damaged by the pandemic. These maps help us start this important work.

## Conclusion

Developing a wholistic understanding of the pandemic’s human toll and visualizing vulnerabilities of persons and communities is crucial to minimizing the pandemic’s *total* harm, while helping fragile persons and populations to emerge as unscathed as possible.

Like so much of the pandemic thus far, what comes next will affect different populations and different economic sectors in different ways. Our next steps will shape the life chances of every person in our state. It is important to proceed justly, making all of Illinois better off while striving to insulate those who have the least. Understanding the human toll and existing vulnerabilities is vital to this endeavor.

## ENDNOTES:

- 1 Office of Governor, “Gov. Pritzker Outlines Efforts to Expand Access and Eligibility to Unemployment Insurance,” Illinois.gov. April 13, 2020 <https://www2.illinois.gov/Pages/news-item.aspx?ReleaseID=21385>
- 2 “Coronavirus Shutdowns idle 29% of U.S. Economy,” MarketWatch.com, April 5, 2020, <https://perma.cc/XV48-XL8T>
- 3 University of Illinois. Maps, Vulnerability to the Disease, UIC Urban Data Visualization Laboratory. <https://udv.lab.uic.edu/news-stories/covid-19-vulnerability-map/>