

Healthy Chicago Data Brief

Social Vulnerability Index

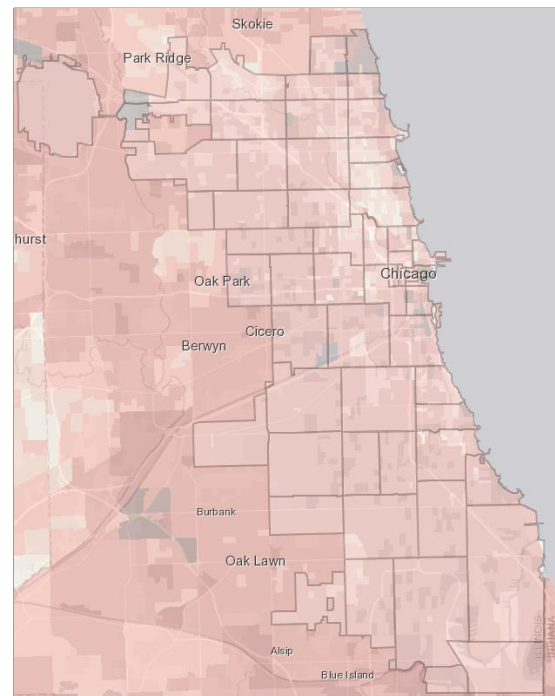


The **Social Vulnerability Index (SVI)** refers to the “resilience of communities when confronted by external stresses on human health, such as natural or human-caused disasters, or disease outbreaks. Reducing social vulnerabilities can decrease both human suffering and economic loss.”¹

The SVI is derived from U.S. Census data at the tract level consisting of 16 different measures grouped into four (4) major themes: Socioeconomic Status, Household Composition, Race / Ethnicity / Language, and Housing / Transportation. The Bureau of Public Health Preparedness and Emergency Response also utilizes Centers for Medicare and Medicaid Services (CMS) emPOWER data.

From the perspective of planning for responses, the information may be best leveraged to anticipate the needs of the affected population; to include integrating vulnerability-specific mitigation and operational strategies into planning; and to advocate for and to prioritize beforehand unaccounted unique impacts of vulnerable populations during response and recovery.

Because who is “vulnerable,” or “more vulnerable,” is dependent on the nature of the hazard, for preparedness and response planning, distinct categories are more useful than an aggregated numeric index. For example, in a flooding scenario, individuals in electric beds, wheel chairs, and motorized scooters present as “more vulnerable” due to lack of mobility and inability to self-evacuate.



ZIP	Medicare Recipients Addresses	Number of Beneficiary Addresses	End Stage Renal Disease In Facility Dialysis	Oxygen Services	Home Health	Total Electrical Devices	Total (Right)	Cardiac Devices	Ventilator	BIPAP	Oxygen Concentrator	Enteral Feeding	IV Infusion Pump	Suction Devices	End Stage Renal Devices At Home Dialysis	Mobility Devices Scooters / Wheelchairs	Electric Bed
60626	5,102	4,305	52	36	247	112	162	0	11	11	69	11	11	11	11	11	16

Example: emPOWER Data

ZIP	Total Population	Below Poverty	Unemployed	No High School Diploma	Age 65 or Older	Age 17 or Younger	Disability	Single Parent	Minority	Limited English	Multi-Unit Housing	Mobile Home	Crowded Household	No Vehicle	Group Quarters	Uninsured
60626	81557	23%	4280	8349	7469	15247	7851	2539	47322	7052	20383	86	2161	11042	5716	17986

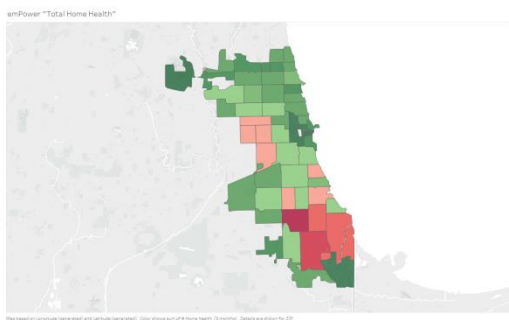
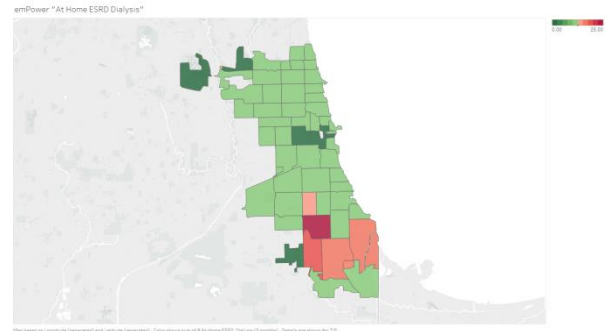
Example: ATSDR SVI Data

¹ Agency for Toxic Substances and Disease Registry. The Social Vulnerability Index (SVI). <https://svi.cdc.gov>

How do we leverage SVI and emPOWER data?

While it is difficult to prove definitive correlations between social vulnerabilities and disparity of impacts from specific hazards / threats, we can infer “likely outcomes” from empirical and experiential knowledge as well as draw from other disciplines.

For example, Hansen, et al., described the increase in hospital admissions of dialysis patients during significant heat events.² We can use this information to design messaging and outreach before, response priorities during, and recovery activities after major heat events specific to those receiving services for dialysis. Using the map to the right, the highest numbers of dialysis patients are in the southern community areas and as such, we may target those communities with preparedness, response, and recovery efforts.



A second example is to map the location of designated Medical Countermeasure Points of Dispensing (POD) against that of varying vulnerabilities to determine the likelihood of that POD needing additional support. A POD within a neighborhood with high numbers of residents receiving home health care may benefit from additional clinical staff who can address health complications.

Contributing to Health Equity

The Chicago Department of Public Health is committed to achieving health equity, ensuring every resident has the opportunity and resources they need to get and stay healthy.

The Preparedness Program focuses on post-disaster response activities with the emphasis on preserving health and designed to serve the entire population. Our preparation is premised on “total population” as the types of disasters often have impacted and likely to impact whole populations.

We incorporate health equity concepts into thoughtful and purposeful planning and response by integrating social vulnerabilities into the planning process, identifying the hazard and vulnerability specific impacts, and developing specific activities to ensure equitable response and recovery.

² Hansen, AL, Peng, B, Ryan, P, Nitschke, M, Pisaniello, D, and Tucker, G. “The effect of heat waves on hospital admissions for renal disease in a temperate city of Australia” International Journal of Epidemiology, Volume 37, Issue 6, 1 December 2008, Pages 1359–1365, <https://doi.org/10.1093/ije/dyn165>