The COVID Local Risk Index and City Responses to COVID-19

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Learning Objectives

- Learn about and understand the Dashboard's COVID Local Risk Index, its components and uses
- Learn how the COVID Local Risk Index can help identify vulnerable neighborhoods in your city
- Explore trends in COVID risk across cities and states
- Use the Index to capture disparities in COVID risk within cities

Our goal is to help cities across the U.S. leverage the power of data to improve the health and well-being of everyone in their community.
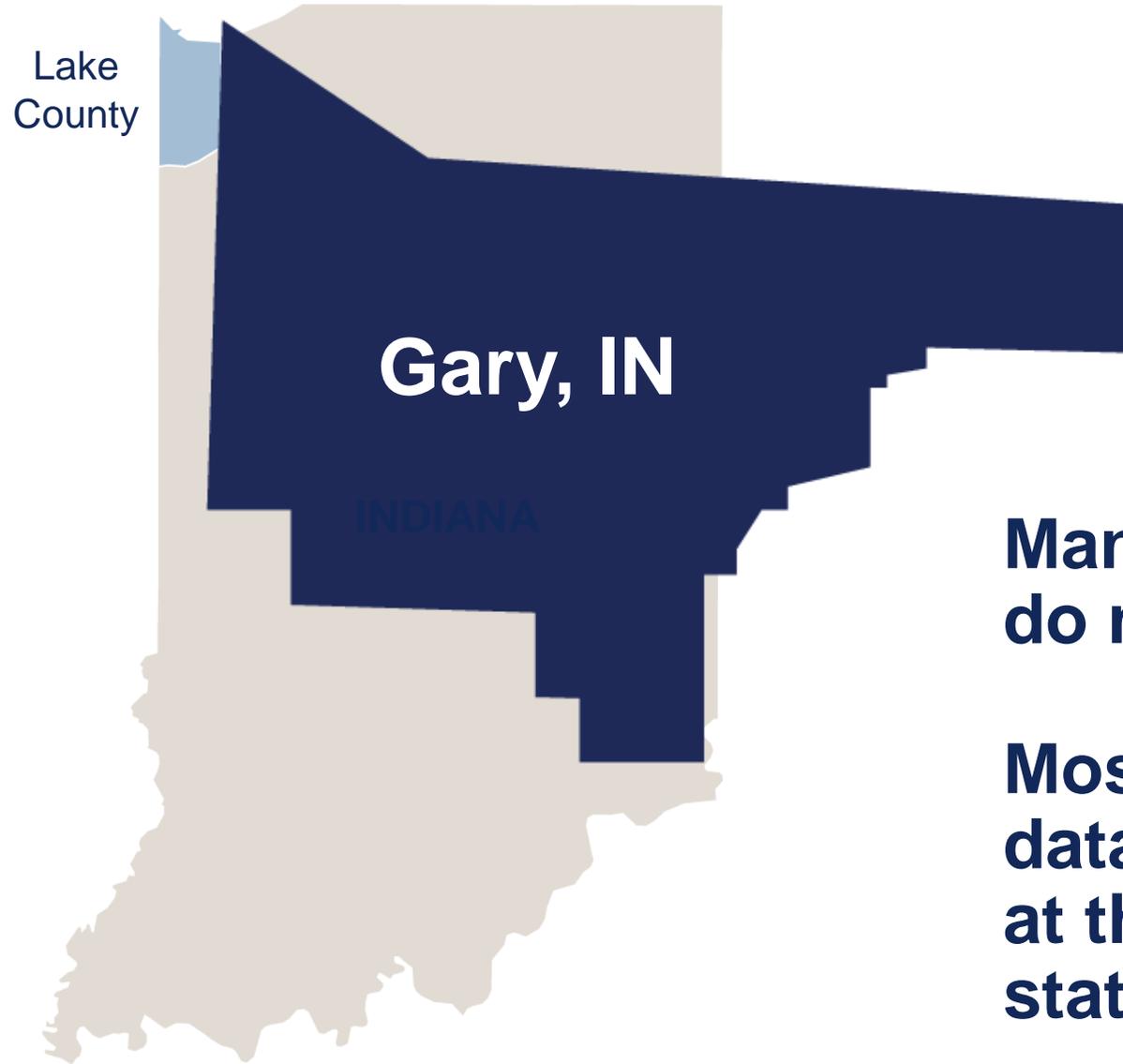
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The Challenge

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**US cities
are responsible
for many strong
influences on
health**

- Safe and affordable housing

- Smoking policies

- Access to healthy food

- Walkability

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Gary, IN

What does health look like in your city?

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Lake County

Gary, IN

INDIANA

Many cities
do not know.

Most health-related
data exists only
at the county or
state level.

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Without data cities are making decisions in the dark

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City Health Dashboard

Empowering Cities to Create Thriving Communities

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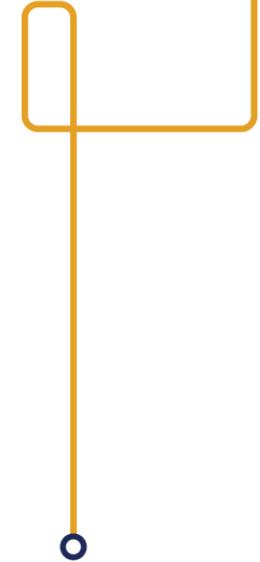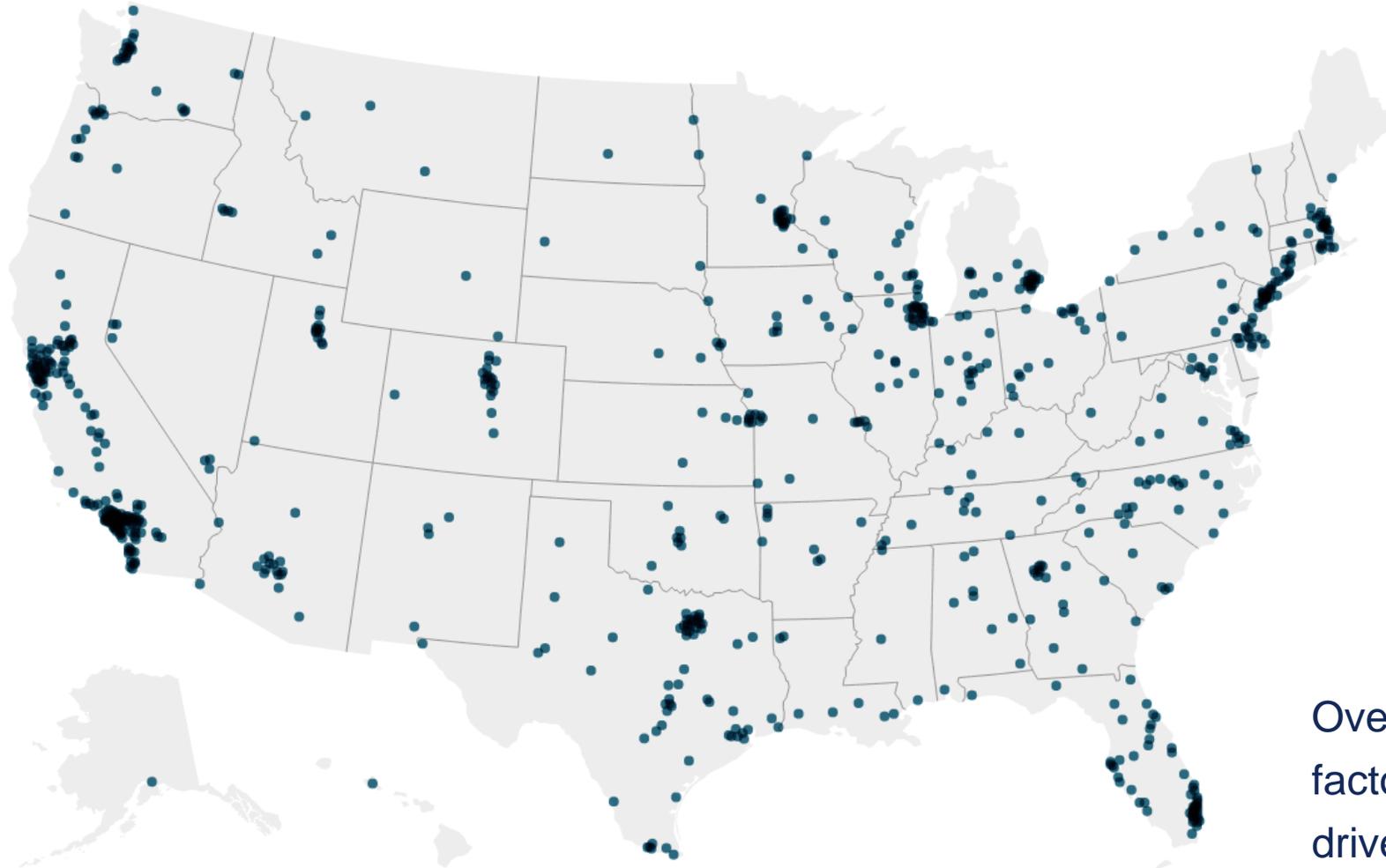
Over 35 measures of health, the factors that shape health, and the drivers of health equity to guide local solutions for 750+ U.S. cities.

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Data Enables Change

Without data cities are making decisions in the dark

Measures by Category

Clinical Care

Prenatal care	NVSS
Primary care physicians	AMA
Preventive services	500 Cities (BRFSS)
Dental care	500 Cities (BRFSS)
Uninsured	ACS

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Health Behaviors

Teen Births	NVSS
Smoking	500 Cities (BRFSS)
Binge Drinking	500 Cities (BRFSS)
Physical Inactivity	500 Cities (BRFSS)

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Physical Environment

Air pollution – particulate matter	ALA
Park access	ParkServe®
Walkability	Walk Score®
Limited access to healthy foods	USDA
Housing with potential lead risk	ACS
Lead exposure risk index	ACS

Health Outcomes

COVID Local Risk Index	City Health Dashboard	**Obesity**	500 Cities (BRFSS)
Breast cancer deaths	NVSS	**Diabetes**	500 Cities (BRFSS)
Premature deaths (all causes)	NVSS	**High blood pressure**	500 Cities (BRFSS)
Cardiovascular disease deaths	NVSS	**Frequent physical distress**	500 Cities (BRFSS)
Low birthweight	NVSS	**Frequent mental distress**	500 Cities (BRFSS)
Colorectal cancer deaths	NVSS	**Life expectancy**	USALEEP (NCHS)
Opioid overdose deaths	NVSS		

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Social and Economic Factors

Absenteeism	NCES/Civil Rights	**Neighborhood racial/ethnic segregation**	ACS
Third-grade reading proficiency	State data	**Racial/ethnic diversity**	ACS
High School Graduation	State data	**Housing cost, excessive**	ACS
Children in poverty	ACS	**Unemployment**	ACS
Income inequality	ACS	**Violent Crime**	UCR

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Measures by Category

Health Outcomes

Breast cancer deaths
Cardiovascular disease deaths
Colorectal cancer deaths
COVID Local Risk Index
Diabetes
Frequent physical distress
Frequent mental distress
High blood pressure
Life expectancy
Low birthweight
Obesity
Opioid overdose deaths
Premature deaths (all causes)

City level
Neighborhood level

Clinical Care

Dental care
Prenatal care
Preventive services
Primary care physicians
Uninsured

Physical Environment

Air pollution – particulate matter
Housing with potential lead risk
Lead exposure risk index
Limited access to healthy foods
Park access
Walkability

Health Behaviors

Binge Drinking
Physical Inactivity
Smoking
Teen Births

Social and Economic Factors

Absenteeism
Children in poverty
High School Graduation
Housing cost, excessive
Income inequality
Neighborhood racial/ethnic segregation
Racial/ethnic diversity
Third-grade reading proficiency
Unemployment
Violent Crime

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The City Health Dashboard

www.cityhealthdashboard.com

The COVID Local Risk Index

What is it, how did we create it, how can you use it?

The Need for a COVID Local Risk Index

◦ State and city policy makers need granular data to guide COVID preparation and response

◦ Other data tools exist to assess neighborhood risk but most have limitations:

  ◦ Use of state or county data

  ◦ Focus on access to health care services

  ◦ Do not incorporate clinical factors related to severity

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Purpose of the COVID Local Risk Index

◦ To provide state and city stakeholders granular information about city and neighborhood-level COVID risk

◦ To help stakeholders allocate resources to communities at greatest risk for COVID infection and poor COVID outcomes

◦ Not intended to predict case counts or mortality

   ◦ Numerous unmeasured factors affect case counts, including especially variation in COVID testing, seeding (travel patterns), and local super spreader events

   ◦ Health systems and health access affect mortality, granular data not available

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Components and weighting

- The index is comprised of three primary groups of variables:

  - Group one: CDC's Social Vulnerability Index

    - A combination of demographic and economic variables drawn from US Census data which captures tract-level susceptibility to natural disasters

    - Validated against COVID case rate data, used in other data tools[1]

  - Group two: Clinical health conditions related to severe COVID outcomes[2]

  - Group three: Two factors that merit additional weight

    - Age, percent minority

- Variables weighted according to evidence based on synthesis of high quality studies. Weighting will be reviewed periodically as evidence accrues

1 Nayak, A., Islam, S. J., Mehta, A., Ko, Y. A., Patel, S. A., Goyal, A., & Quyyumi, A. A. (2020). Impact of Social Vulnerability on COVID-19 Incidence and Outcomes in the United States. *medRxiv*

2 For clinical outcomes citations see CHDB Metric One pager at https://www.cityhealthdashboard.com/metric/1422

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Theme	Data Source	Theme Weight	Component	Component Weight
Social Vulnerability	CDC Social Vulnerability Index, calculated using American Community Survey 2018 5 Year Estimates	45%	Group 1: Socioeconomic Status • Persons below 100% of the federal poverty line • Civilian (age 16+) unemployed • Per capita income • Persons (aged 25+) with no high school diploma Group 2: Household Composition & Disability • **Persons aged 65+** • Persons aged 17 and younger • Civilian non-institutionalized population with a disability • Single parent household with children under 18 Group 3: Minority Status & Language • **Minority (all persons except white, non-Hispanic)** • Persons (age 5+) who speak English "less than well" Group 4: Housing Type & Transportation • Housing in structures with 10+ units • Mobile homes • **At household level (occupied housing units), more people than rooms** • Households with no vehicle available • Persons in institutionalized group quarters	3% per component
COVID-related Chronic Health Conditions	500 Cities Project, 2017 1 Year Modeled Estimate	45%	High blood pressure among adults aged 18+	14%
			Coronary heart disease among adults aged 18+	7%
			Diagnosed diabetes among adults aged 18+	7%
			Chronic kidney disease among adults aged 18+	7%
			Obesity among adults aged 18+.	10%
COVID-related Demographics	American Community Survey, 2018 5 Year Estimates	10%	Minority (all persons except non-Hispanic white)	3%
			Persons aged 75 to 84	2%
			Persons aged 85+	5%

What should the index be used for?

- ◦ Guide resource allocation

- ◦ Direct testing and outreach efforts

- ◦ Identify neighborhoods that have more or fewer than expected cases

- ◦ Advocate for more resources (state, local, federal)

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What should the index *not* be used for?

- ◦ Predicting case counts

- ◦ Predicting deaths

- ◦ Evaluating prevention efforts

Does it work?

◦ Difficult to validate because data are lacking

◦ "This tracks"

◦ Correlated with tract-level case rates

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Manchester city officials encourage all residents be
tested for COVID cases rise locally, statewide

Included in the recommendation, the city health department
'ID-19 test – especially those
orhoods as defined by the City

Those in elevated

By Keith Inman Sun Staff Writer   18 hrs ago

NEWS
New COVID-19 I

JONESBORO — City officials may have more than one face mask measure to consider as
the number of coronavirus cases in Arkansas continues to grow.
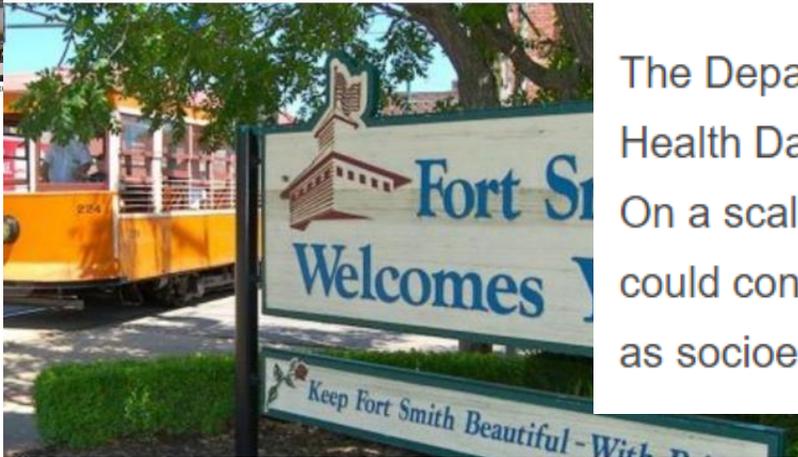
s the risk of COVID-19
above average in the

**Fort Smith highest among five Arkansas ci
COVID-19 risks**

by Talk Business & Politics | Thursday, July 9th 2020

Jonesboro has been rank
(Source: KAIT-TV)

On another front, Jonesboro is listed as a city that is at risk for serious impacts from
COVID-19 rates.

The Department of Population Health at New York University has developed a City
Health Dashboard Local Risk Index among the 500 most populous cities in the country.
On a scale of 1 to 10, Jonesboro rates a 7, because of risk levels based on factors that
could contribute to high numbers of COVID-19 cases and severe health outcomes, such
as socioeconomic status, age and underlying health conditions.

Of the five Arkansas cities in a 500-city "dashboard" that measures COVID-19 risks, Fort Smith ranks the highest in Arkansas
(Photo: Talk Business & Politics)

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Prosper Waco Collaboration

◦ Prosper Waco (Waco, TX) has used the Index to craft the city's response to COVID

Covid-19 Across Waco Neighborhoods
(Draft 7/9/20)

Introduction:
A team of researchers from New York University Langone Health reached out to Prosper Waco with information about how a measure they created for their City Health Dashboard can help deepen our

◦ Attempting to identify neighborhoods that could benefit from more testing

◦ Also trying to identify 'protective factors' that may contribute to preventing high positive test counts in high-risk neighborhoods

  ◦ "Sentinel death"

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Findings in Waco

- ◦ **Five neighborhoods are at the highest risk, scoring 10 out of 10 for local risk**

- ◦ **Risk is concentrated in two city council districts**

- ◦ **Social and demographic factors seem to be driving vulnerability**

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Impact on Progress

◦ **The index has spurred on curiosity and underscored the need for looking at case and testing data at the neighborhood level.**

◦

Places in the city with relatively high risk scores but few cases could imply a testing issue. This may be the case in at least two Waco neighborhoods.

◦

Questions we are considering moving forward:

◦

- What is the demographic makeup of our city relative to the high risk neighborhoods?
◦ - How many essential workers are within high risk neighborhoods? What industry is the major employer of a given census tract?
◦ - Are COVID-related deaths and hospitalizations connected to high risk neighborhoods?
◦ - What are the resources available in these high risk communities (testing, clinics, community health workers, meals sites, transportation, messaging)?

◦ - What observations do community organizers and residents have about these neighborhoods and their risks/protective factors that might be worth verifying?

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City and Neighborhood Findings

Cities in the news

◦ Miami

  ◦ COVID Local Risk Index: 10 Neighborhood Range: 1 - 10

◦ Jacksonville

  ◦ COVID Local Risk Index: 10 Neighborhood Range: 1 - 10

◦ Dallas

  ◦ COVID Local Risk Index: 8 Neighborhood Range: 1 - 10

◦ Phoenix

  ◦ COVID Local Risk Index: 6 Neighborhood Range: 1 - 10

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Why does range matter?

◦ COVID can take root in any neighborhood at any time

◦ Higher-risk neighborhoods may provide a foothold for the disease

◦ Should receive more resources

◦ Ethics always

◦ Almost 40% of cities (193/500) have neighborhood range of 1 – 10

COVID Index Values by Division
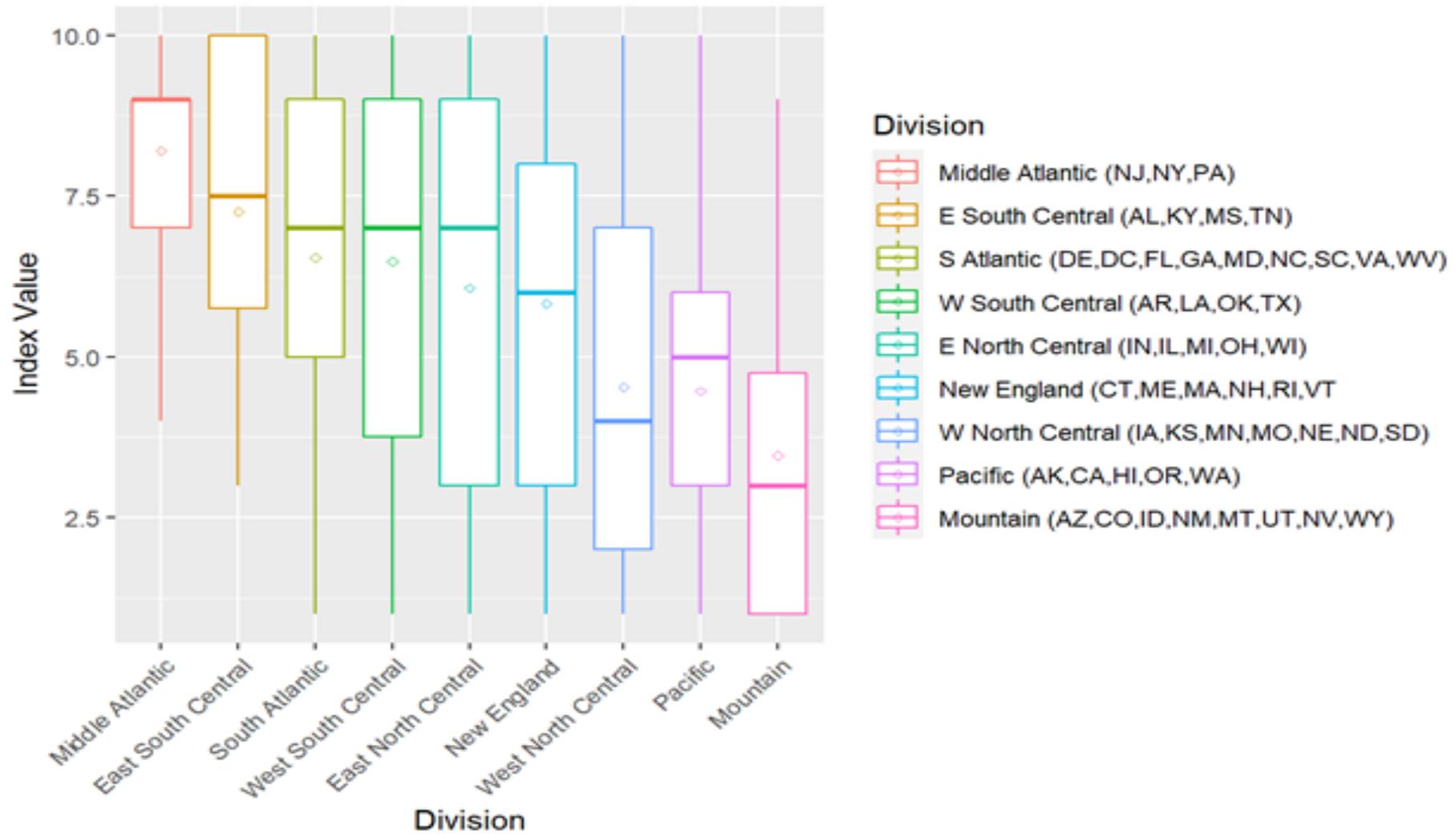
What now?

Data to Action

◦ City data available at www.cityhealthdashboard.com

◦ Email me for data files

  ◦ Benjamin.spoer2@nyulangone.org

◦ Work with us!

◦ Stay well/ get well

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Thank you!

www.cityhealthdashboard.com

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