Calculating 118th Congress Metrics for the Congressional District Health Dashboard

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Introducing the Dashboard

Introducing the Dashboard

Why the Dashboard?

Federal policy makers and advocacy organizations need access to **rigorous, non-partisan, and timely data** about the health of their congressional district (CD) constituents to inform policy and practice

- In the absence of CD-specific estimates, county and state data are frequently used, which do not adequately capture the populations living in CDs

- To our knowledge, ACS is the only national data source that directly provides estimates for CDs*

*ACS data, though, are not yet available for the current 118th Congress. A special data product of Social/ Economic/ Housing/ Demographic profiles was released from ACS in January 2023 for the 118th Congress

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Introducing the Dashboard

Dashboard Launch

To meet this need, we developed the **Congressional District Health Dashboard (CDHD)**

- Our team at NYU Langone developed the methods and website for this Dashboard in one year, building on our experiences with the City Health Dashboard

- The CDHD website was launched in January 2023 as the newly elected 118th Congress took office

- Over 35 metrics related to health and its drivers are now publicly available for the first time for the 118th Congress, including estimates derived from ACS data

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What Does the Congressional District Health Dashboard Measure?

Health Outcomes

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

Social & Economic Factors

Broadband connection
Children in poverty*
High school completion*
Income inequality
Neighborhood racial/ethnic segregation
Racial/ethnic diversity
Rent burden
Unemployment*

Health Behaviors

Binge drinking
Physical inactivity
Smoking
Teen births*

Physical Environment

Air pollution – particulate matter
Housing with potential lead risk
Lead exposure risk index
Limited supermarket proximity*
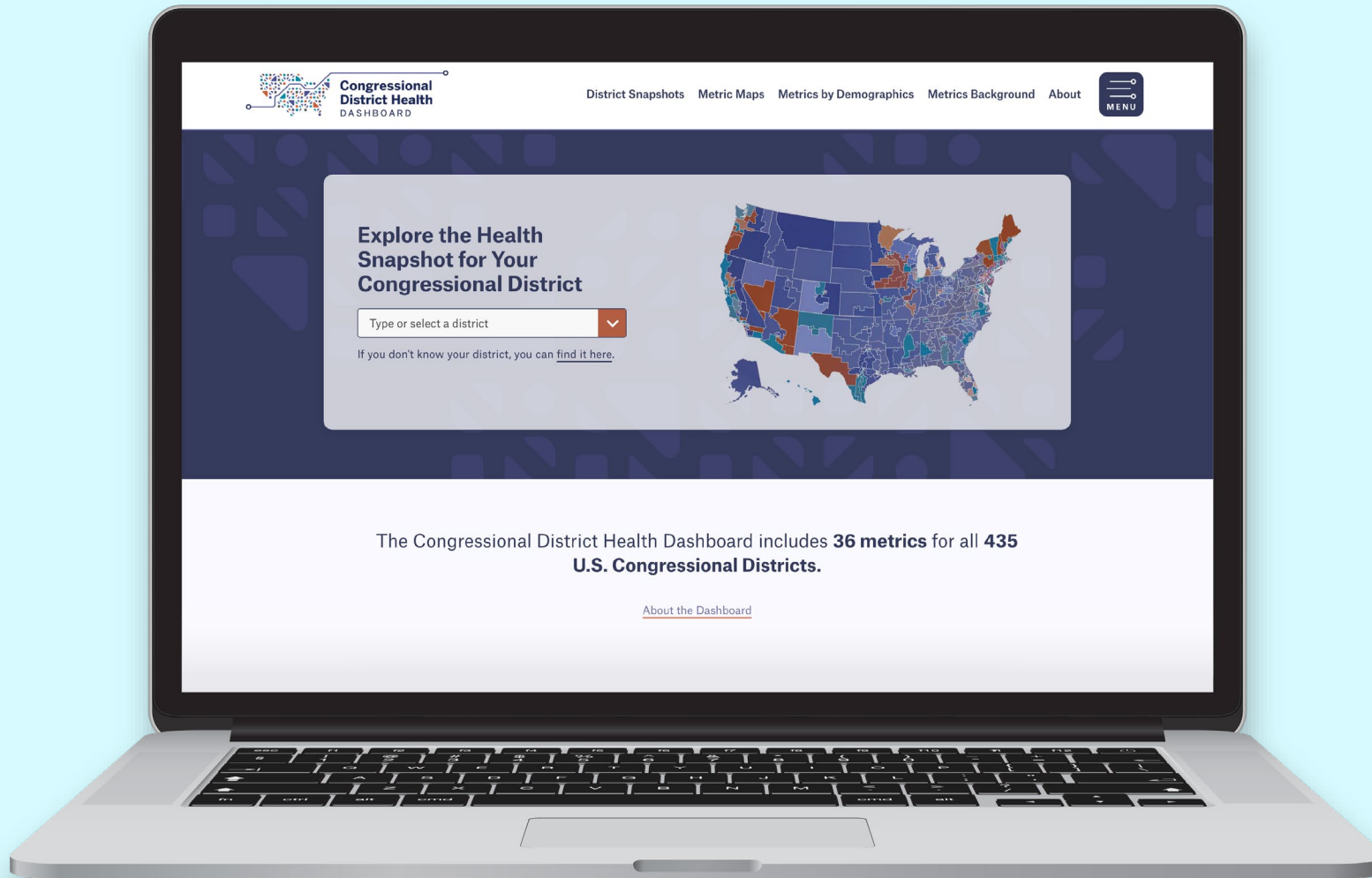
Clinical Care

Dental care
Prenatal care*
Preventative services, 65+*
Routine checkups, 18+
Uninsured*

Those shown with a * have demographic breakdowns available (pending large enough racial/ethnic groups within the district).
Those metrics shown in this color incorporate ACS data.

Explore the Health Snapshot for Your Congressional District

Type or select a district

If you don't know your district, you can find it here.

The Congressional District Health Dashboard includes **36 metrics** for all **435** U.S. Congressional Districts.

About the Dashboard

District Snapshots   Metric Maps   Metrics by Demographics   Metrics Background   About   MENU

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Center on Budget and Policy Priorities

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www.**CongressionalDistrictHealthDashboard**.org

Introducing the Dashboard

Dashboard Features Overview

- **Metrics Overview** – complete list of all metrics and how the district is doing compared to the national average

- **District Facts** – Population charts by age and race/ethnicity, plus district and state representation in Congress

- **Metric Maps -** US, state or congressional district map for all metrics with comparison to state or national values

- **Metrics by Demographics -** For select metrics, see the breakdown by racial/ethnic group, or age and sex

- **Data Access –** Download the data and technical documentation

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Snapshot of the New York 10th   Change District

Metrics Overview   District Facts

About the Metrics Overview

The Metrics Overview shows how this congressional district is doing for all the metrics available on the Dashboard. Metrics fall into 5 domains (Health Outcomes, Social and Economic Factors, Health Behaviors, Physical Environment and Clinical Care), but are listed below in alphabetical order as a single group. You can explore more about each metric, click on each metric name to head to the map, or explore District Facts.

To analyze this district for a metric in a visual way: Explore the Map

Comparison Legend   ◯ Better than the average   △ Around the average   ▢ Worse than the average

Metric	New York 10th Estimate	New York 10th Comparison ⓘ
Air Pollution - Particulate Matter ⓘ	**9.1 µg/m³** Average daily concentration (µg/m³) of fine particulate matter (PM2.5) per cubic meter of air throughout a year	△ The New York 10th is **around the U.S. average** for this metric.
Binge Drinking ⓘ	**21.5%** Percentage of adults who report binge drinking in the past 30 days	▢ The New York 10th is **worse than the U.S. average** for this metric.
Breast Cancer Deaths ⓘ	**18.5 deaths per 100,000** Deaths due to breast cancer in females per 100,000 female population	△ The New York 10th is **around the U.S. average** for this metric.

< Map of United States < Map of New York

Metric Map of the New York 10th Congressional District

Find a State or Congressional District

Type to find a state or district ⌄

METRIC

Children in Poverty ❓

Percentage of children living in households ≤100% of the federal poverty level

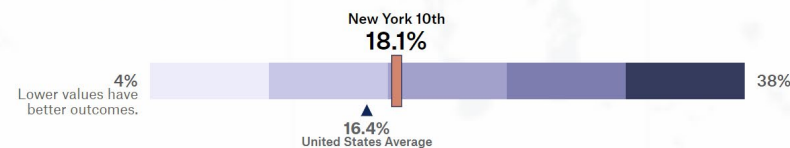**Change Metric**

METRIC YEAR

2020

SCALE BAR CONTROL

Comparison Value ❓

U.S. Average ⌄

ℹ️ **Tips & Cautions for Using the Data**

New York 10th had an estimated **18.1%** of children in poverty in **2020**, compared to the national average of **16.4%**.

New York 10th
18.1%

4%
Lower values have better outcomes.

38%

▲
16.4%
United States Average

Calculating 118th Estimates

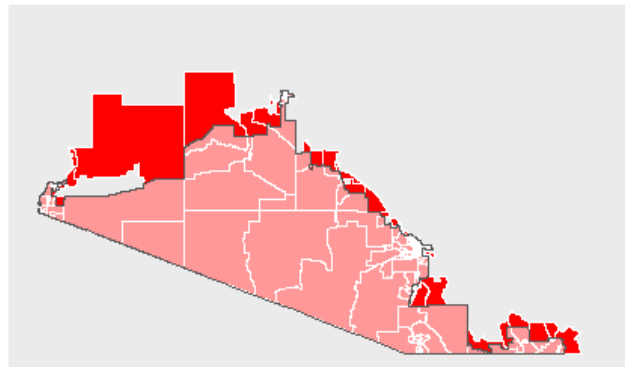# Calculating 118th Estimates

The Method Challenge

Since CD estimates are not available directly from data sources for the 118th Congress, we aggregated from tract/county estimates

- While CDs have similar population sizes, they vary greatly in their physical size due to differential population densities across urban and rural areas
  - *eg. New York 9 covers a portion of Brooklyn, NY*
  - *eg. Montana 1 covers half of the state*

- Aggregation methods must account for the differential population densities and CD sizes across the country

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Whenever possible, we use Census tract-level estimates instead of counties; imperfect county-overlap with CDs (especially in urban areas) can greatly impact estimate accuracy
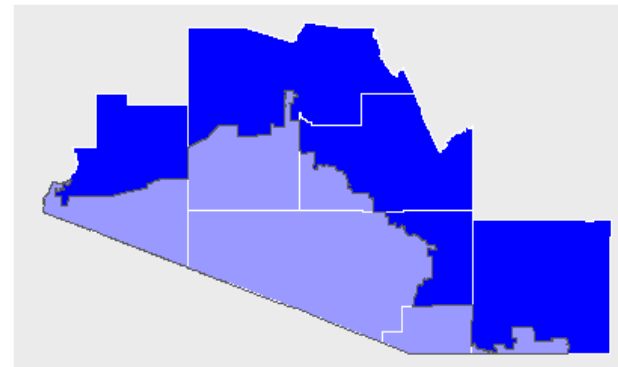

Differences in Geographic Overlap Between Congressional Districts and Either Census Tracts or Counties in Arizona 7th District

Calculating 118th Estimates

Our Method Overview

A quasi-dasymetric approach:

1. Take the original tract (or county) rate or % estimate*

   - *When combining multiple variables, calculate rate or % estimate at the tract or county-level*

2. Multiply by Census block-derived population weight

3. Sum population-weighted estimates to the CD

This method has been successfully applied to congressional districts in existing literature.[1−4]

*Method differs slightly when aggregating count estimates

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Calculating 118th Estimates

Creating Population Weights

- We acquired files from each state assigning 2020 Census blocks to 118 CDs*, then combined these with 2020 block population counts from DCS

- Population weights were created by identifying how much of each tract/county's population overlapped with associated CDs, using shared underlying blocks
  - *We created weights for multiple demographic groups, including Total population, Hispanic, White, Black, Asian, and "Other"*

- For tract/county estimates built from 2010 Census blocks, we incorporated a file from IPUMS NHGIS to re-apportion 2010 blocks into 2020 blocks.[5]

The Census did not release these files until December 2022

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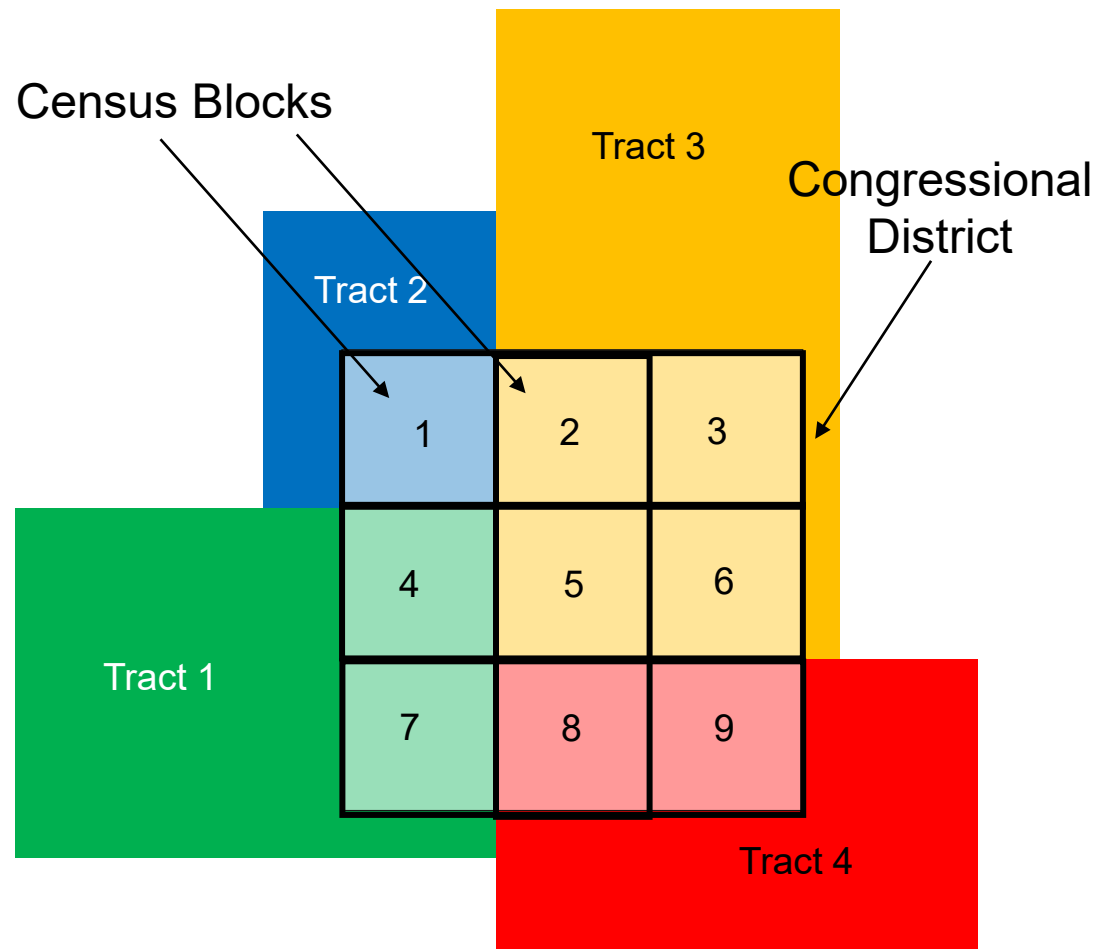
Calculating 118th Estimates

Estimate Validation

To validate our methods, we created aggregated **116 Congress estimates** and compared them to estimates calculated directly from ACS 116 data

- Mean Absolute Error values were consistently below 1 across 3 measures and all demographic breakdowns

- More error was introduced when CD estimates were missing sufficient contributing tract (>25%) or county (>10%) data; we censor these on the website

  - *Demographic subgroups that have smaller populations are most likely to be censored*

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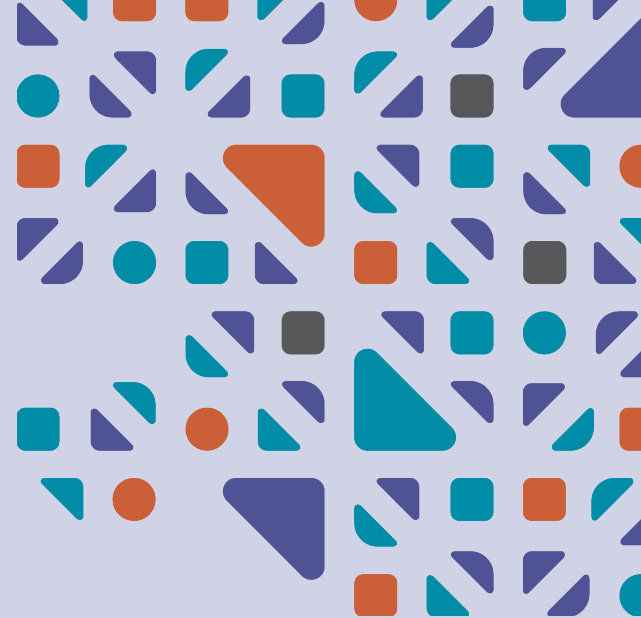DASHBOARD

Calculating 118th Estimates

R Function

We created an internal R function to accurately and quickly perform these aggregations across multiple measures + demographic subgroups

```r
output <- block_agg(start_shape = "tract",
                    end_shape = "cd",
                    df = input,
                    var = est,
                    census_yr = "2020",
                    demo = "total",
                    counts_agg = F)
```

- The interpolate_pw() function from the tidycensus package can perform identical aggregations using spatial file inputs

- Its run-time, though, is significantly slower for national files

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Next Steps

Next Steps

The Dashboard's Future

Continue getting this data into the hands of policy makers and advocacy organizations!

Early June data release:

- Multi-year data for ACS, CDC PLACES, and PM2.5 measures
- Addition of census tract estimates for identifying within-CD disparities

The future:

- New measures
- Downloadable reports
- Addition of non-voting bodies
- And more…

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3. Hao Y WE, Jemal A, Pickle LW, Thun MJ. U.S. congressional district death rates. *International Journal of Health Geography*. 2006

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