Worlds Further Apart

The Widening Gap in Life Expectancy Among Communities of the Indianapolis Metropolitan Area

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Everyone deserves a fair opportunity for a long and healthy life.

What will we do today?

- Take a fresh look at life expectancy among communities of the Indianapolis metro area as it was in “normal” times, prior to COVID-19 (2014-2018);
- Compare these more recent life expectancy results with prior results (2009-2013) to see what change occurred and which places experienced gain or loss;
- Explore patterns of life expectancy (remaining years of life) at other ages across the life span besides birth;
- Identify community-level social factors that are linked with life expectancy and which best predict life expectancy at the ZIP Code level in metro Indianapolis;
- Briefly frame strategies for action to close the life expectancy gap.

Why now?

Why now?

- Though rare in the history of the U.S., we have now lost life expectancy twice in the past decade.
- Deaths from COVID since 2020, along with a rise in “deaths of despair” (suicide, drug & alcohol-related deaths) brought underlying social fractures into sharp focus.
- Differences in the conditions of everyday life increased Black and Hispanic persons’ exposure to COVID– and resulted in a loss of life expectancy in 2020 that was 2.5 times the loss among white persons.

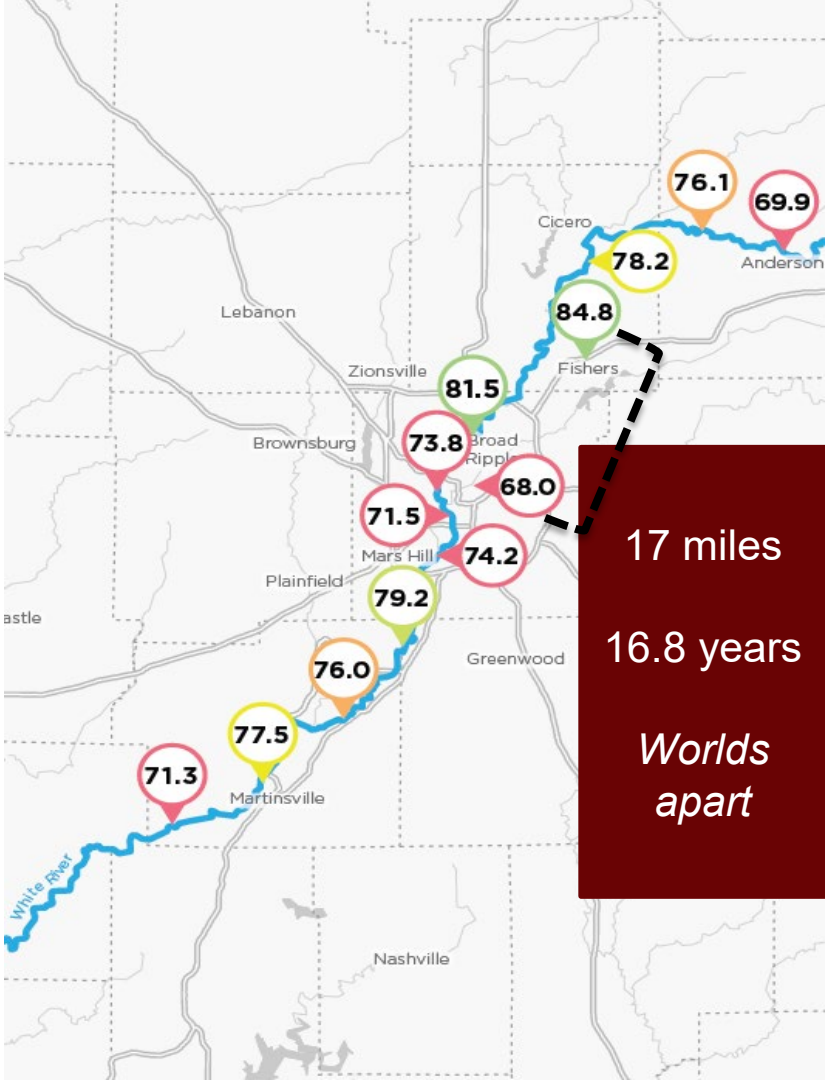
Why now?

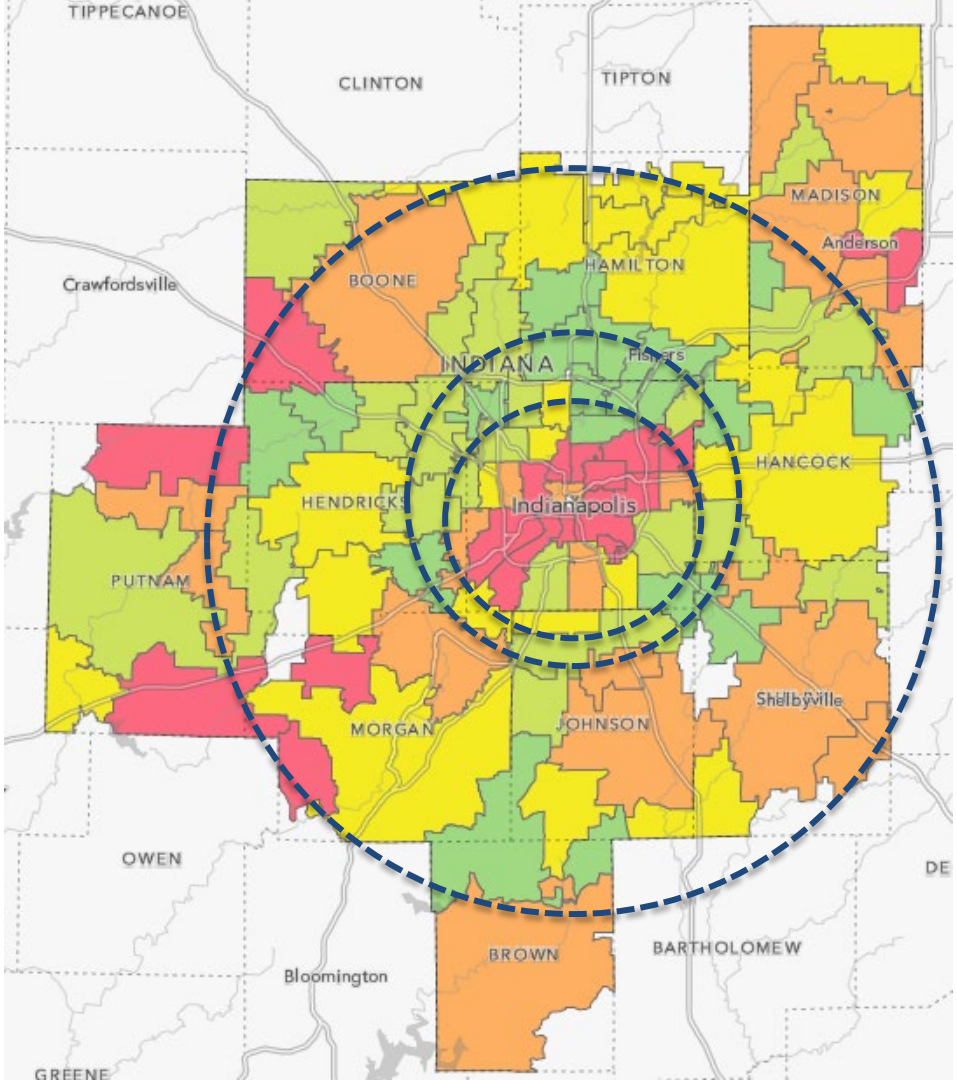
The same underlying social vulnerabilities that shortened lives *during* COVID were already shortening lives in the decades *before* COVID, and will continue to shorten lives *in the future* unless we take action.

How wide is the gap in life expectancy?

The gap

- Following the White River, we see a pattern in life expectancy that plays out throughout the metro area.
- Though separated by a short distances, life expectancy can be *worlds apart*.
- This gap widened by 3.2 years (23.5%) over the 2013 gap.

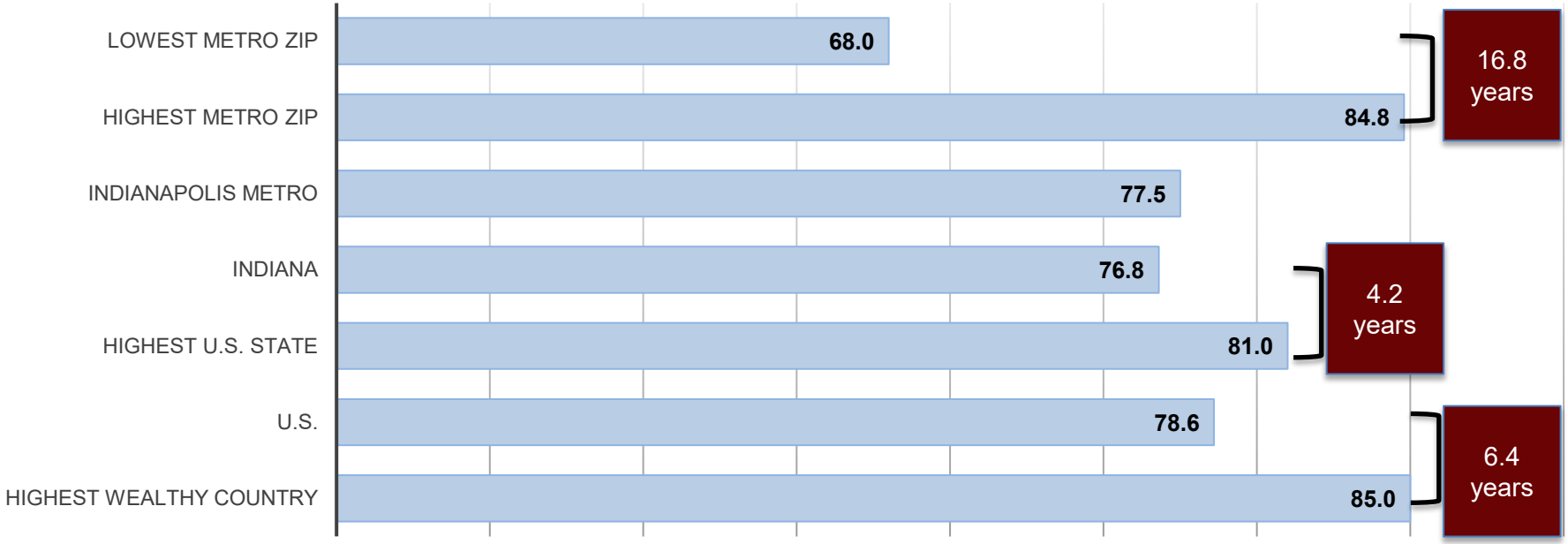




In 2018, a child born in these ZIP Codes could expect to live...

- 75.1 years or lower
- 75.2-76.5
- 76.6-78.5
- 78.6-80.1
- 80.2 or higher

Life Expectancy in Geographic Context (2018*)

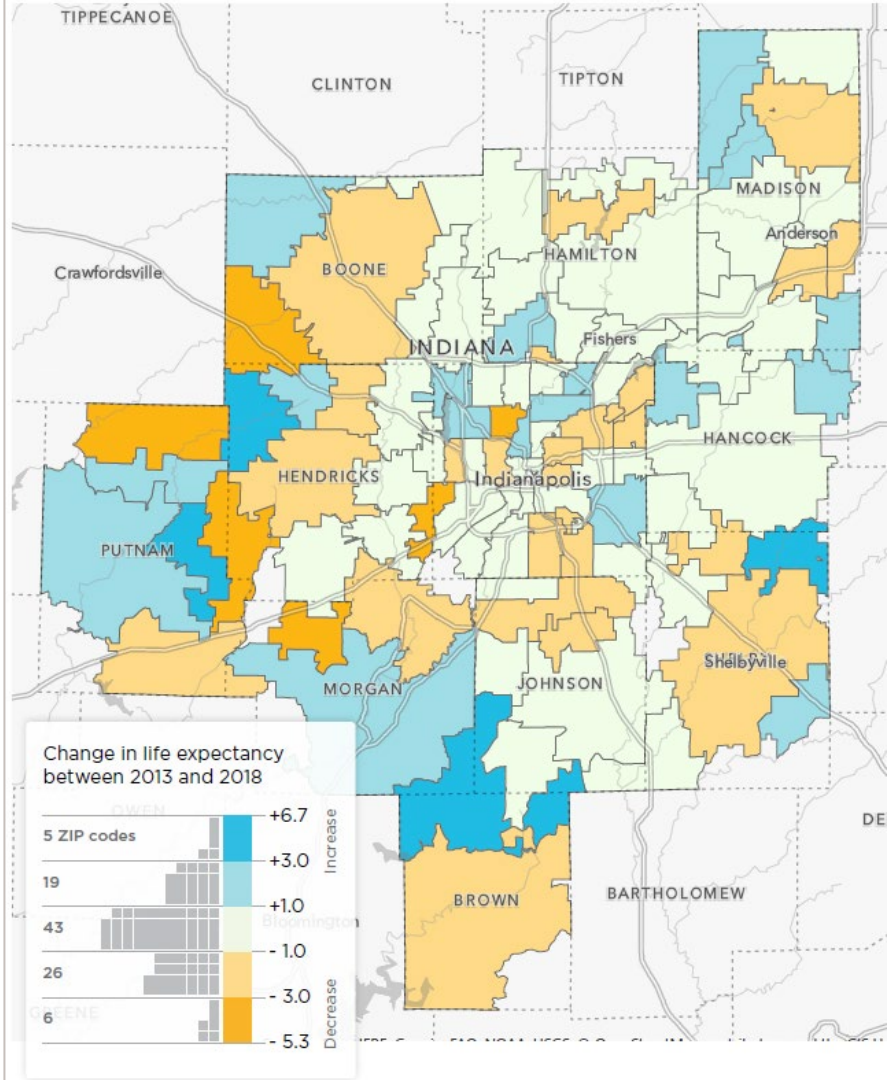


*For ZIP Codes, life expectancy is based on 2014-2018; for states and countries, it is the year 2018.

What places gained and lost life expectancy?

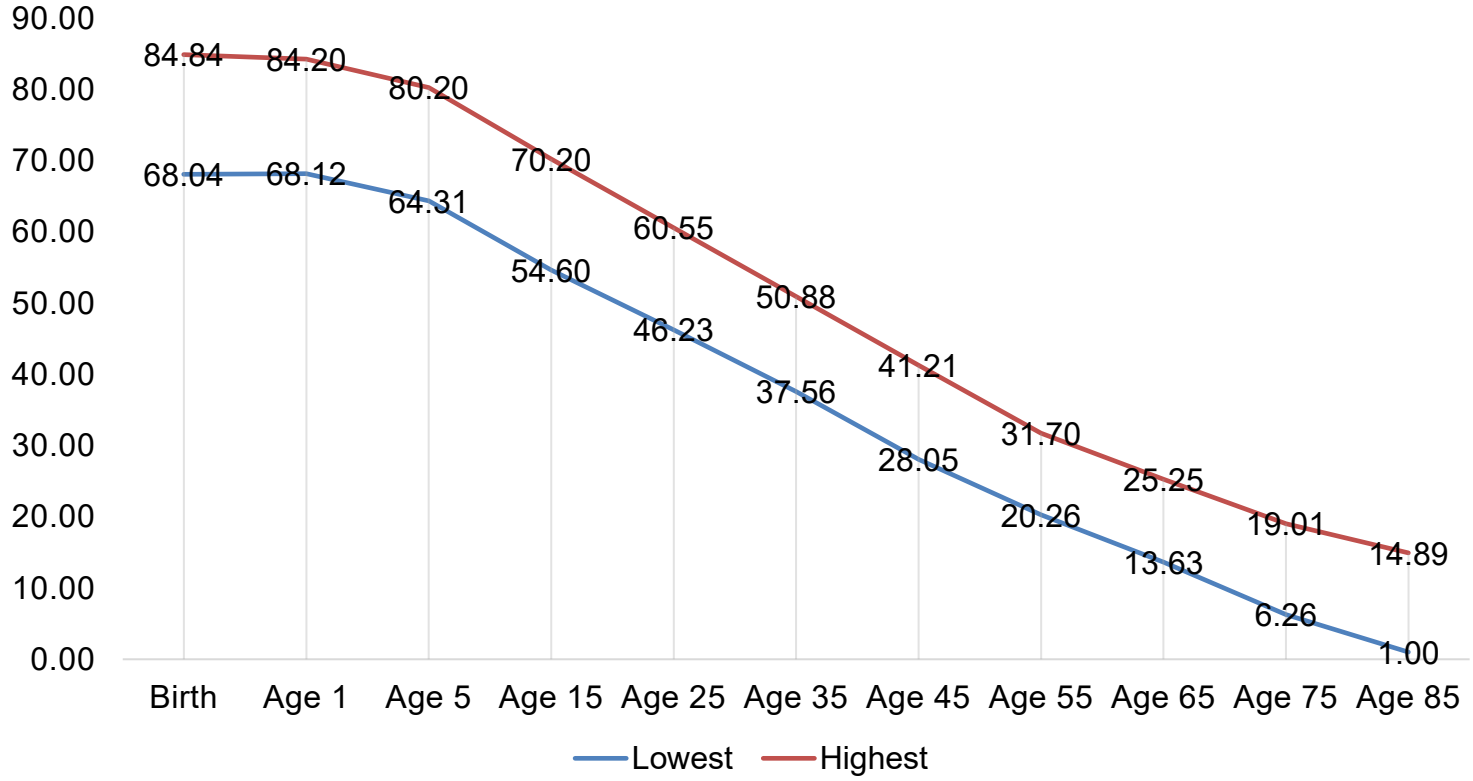
Gains and losses

- Between the periods (2009-2013, 2014-2018), residents of 41 ZIP Codes gained lifespan (up to 6.7 years), while 60 lost (up to 5.3 years).
- The largest changes, both gains (blue) and losses (orange) appear mostly west of the metro center.



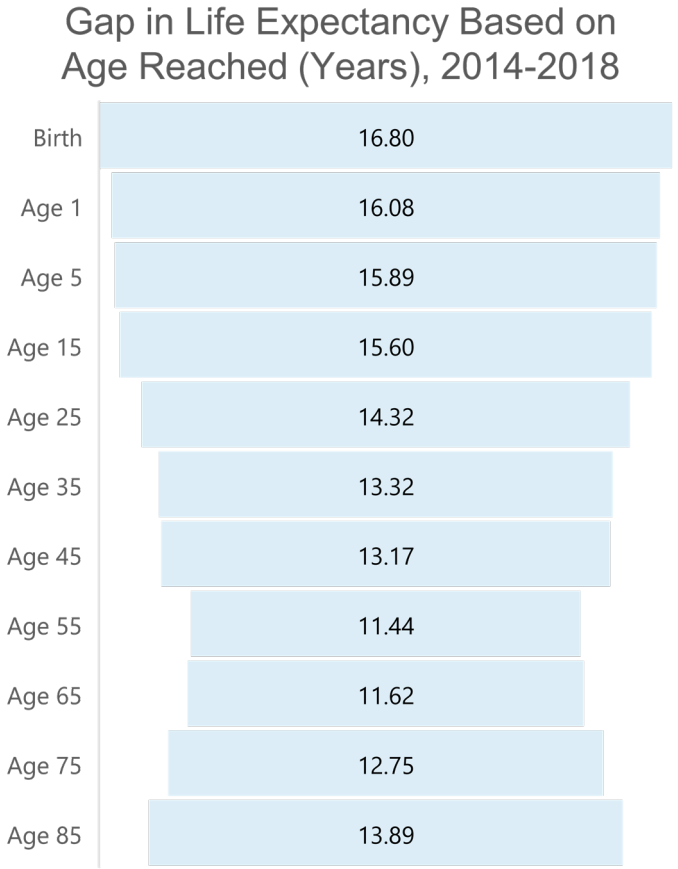
How does the gap change by age?

Highest and Lowest Life Expectancy among Metro ZIP Codes by Age (2014-2018)



A persistent gap

- The gap is remarkably persistent, never narrowing below 11.4 years (age 55).
- The spatial patterns also demonstrate the persistent effect of “place” for people of different ages.
  - (See maps of life expectancy at birth, age 25, 45, and 65 in the online report).



What are the upstream social drivers of the life expectancy gap?

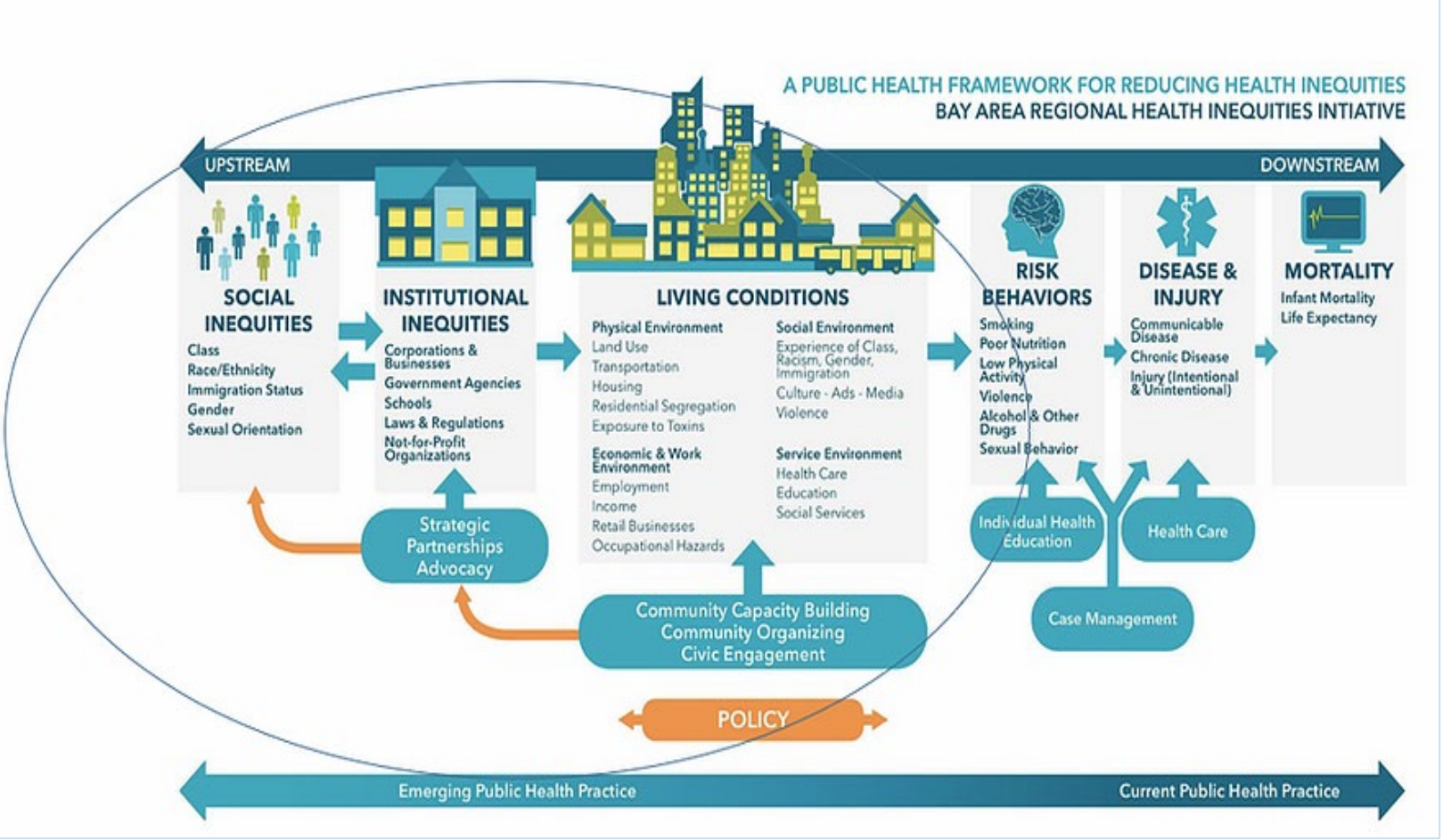


Image Source: Bay Area Regional Health Inequities Initiative, https://www.barhii.org/enlarged-framework

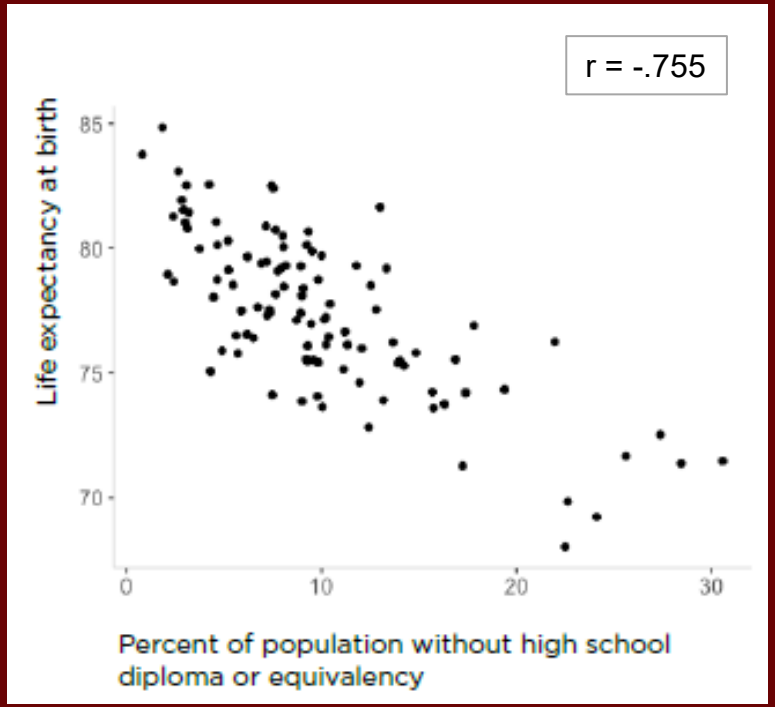
Social causes of death

- Low education
- Racial residential segregation
- Low social support
- Poverty
- Income inequality

Galea S, Tracy M, Hoggatt KJ, DiMaggio C, Karpati A. Estimated Deaths Attributable to Social Factors in the United States. *American Journal of Public Health*. 2011;101(8):1456-1465. doi:10.2105/AJPH.2010.300086

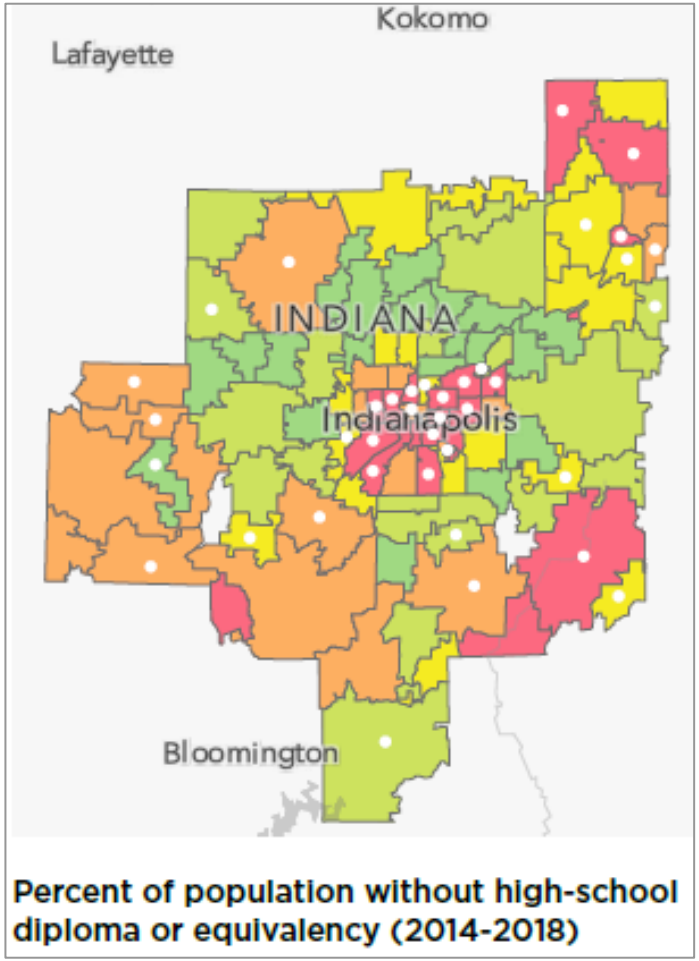
Education

- Across the U.S., the quality of one's health rises in step with education level.
- Within metro ZIP Codes, the percentage of residents lacking a high school diploma is strongly correlated with life expectancy. As this percent rises in a ZIP, life expectancy falls.
- Opportunities to obtain a quality education are not equitably available to all, as demonstrated by the *Child Opportunity Index* (diversitydatakids.org). The life expectancy gap between areas of low and high opportunity is worse in our metro than most of the 100 largest cities of the U.S.[22] (See Appendix G of report).



Education

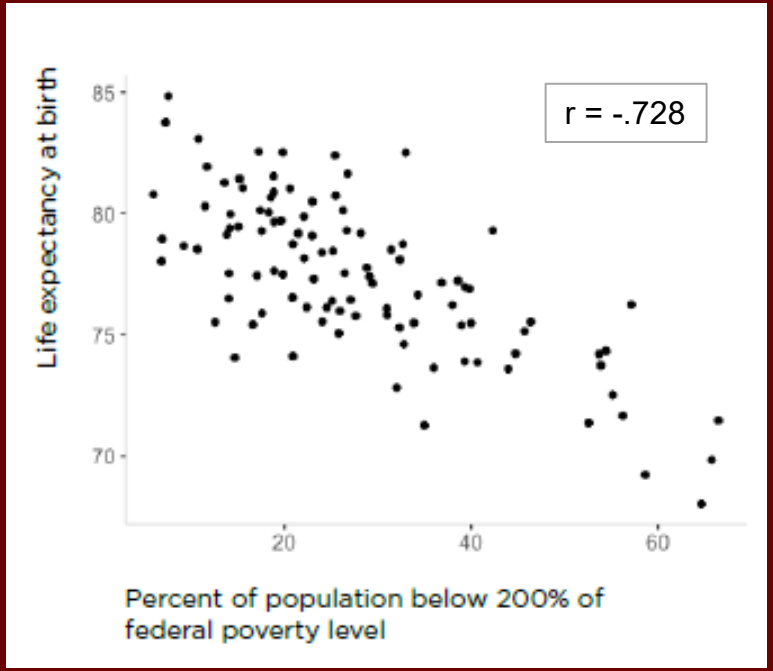
- Across ZIP Codes, the percentage of residents without a high school diploma varies from <1% up to 31%.
- The proportion of residents without a high school diploma alone explains **57%** of the life expectancy gap across metro ZIP Codes.
- The map demonstrates the spatial overlap between education and life expectancy.
- Red and orange areas (worst areas for lack of H.S. diploma) **with** a white dot (worst areas for life expectancy) identify communities with poor measures on each.



Percent of population without high-school diploma or equivalency (2014-2018)

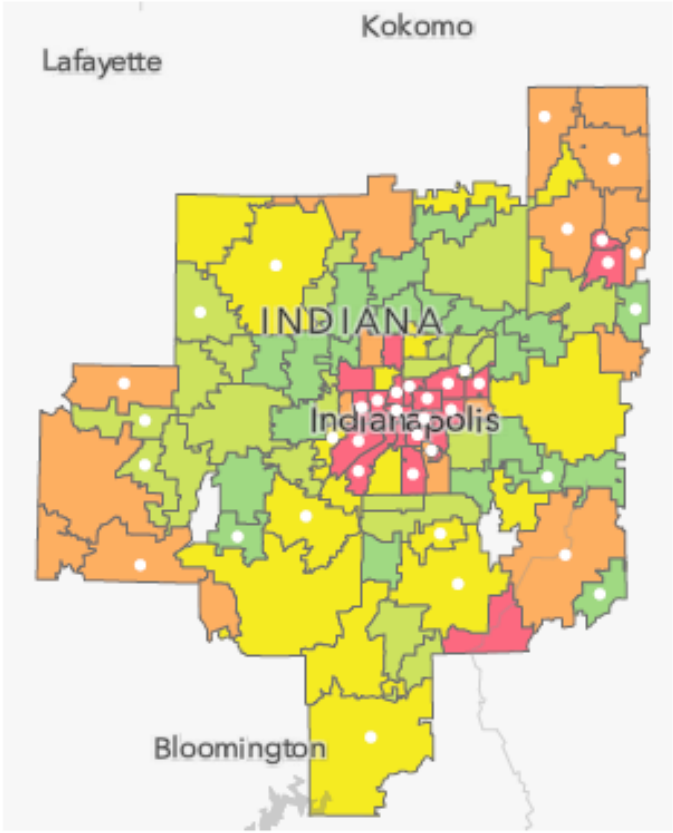
Income

- Multiple studies show that as income increases the likelihood of disease and premature death decrease.
- Among the 100 largest metro areas of the U.S., Indianapolis ranked among the 10 cities where being poor shortens life the most, for both men and women (Chetty, et al, 2016).
- Within metro ZIP Codes, the percentage of residents living below 200% of FPL is strongly correlated with life expectancy. As the percentage living at/near poverty increases, life expectancy falls.



Income

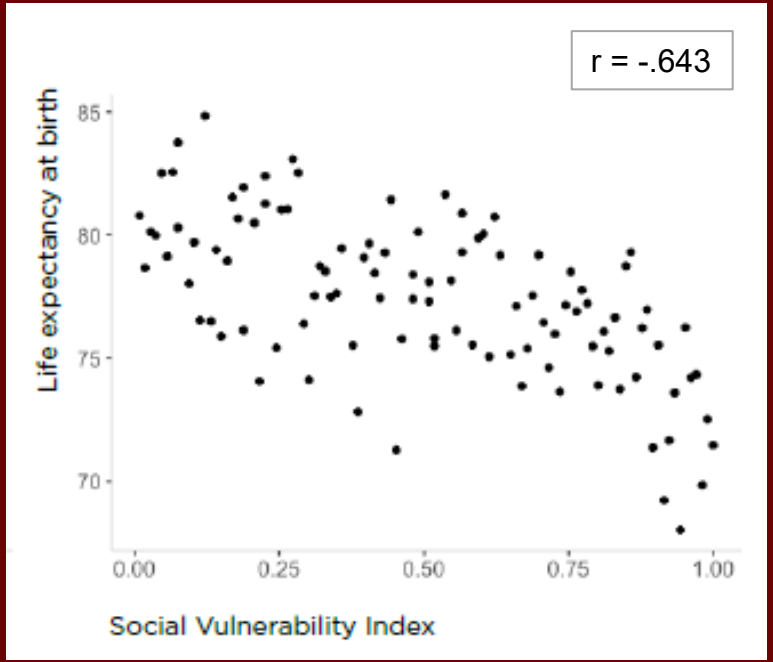
- Across ZIP Codes, the percentage of residents living below 200% of FPL varies widely from 6% up to 66%.
- The percentage of residents in a ZIP Code living below 200% poverty level alone explains **53%** of the variation in life expectancy across metro Indianapolis.
- The map demonstrates the spatial overlap between income and life expectancy.
- Red and orange areas (worst areas for income) **with** a white dot (worst areas for life expectancy) identify communities with poor measures on each.



Percent of population below 200% of federal poverty level (2014-2018)

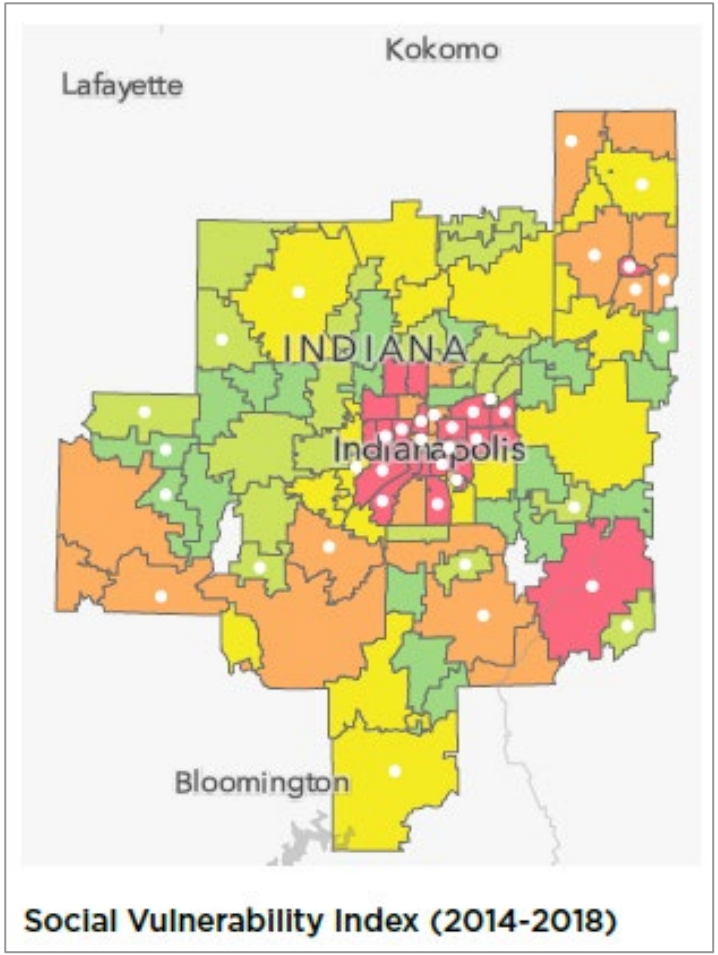
Social vulnerability

- This is based on an index of 15 factors in four categories: Socioeconomic Status, Household Composition & Disability, Housing & Transportation, and Minority Status & Language
- As an area's overall level of social vulnerability increases, life expectancy falls.
- The overall Social Vulnerability Index (SVI) is strongly correlated with life expectancy.



Social vulnerability index

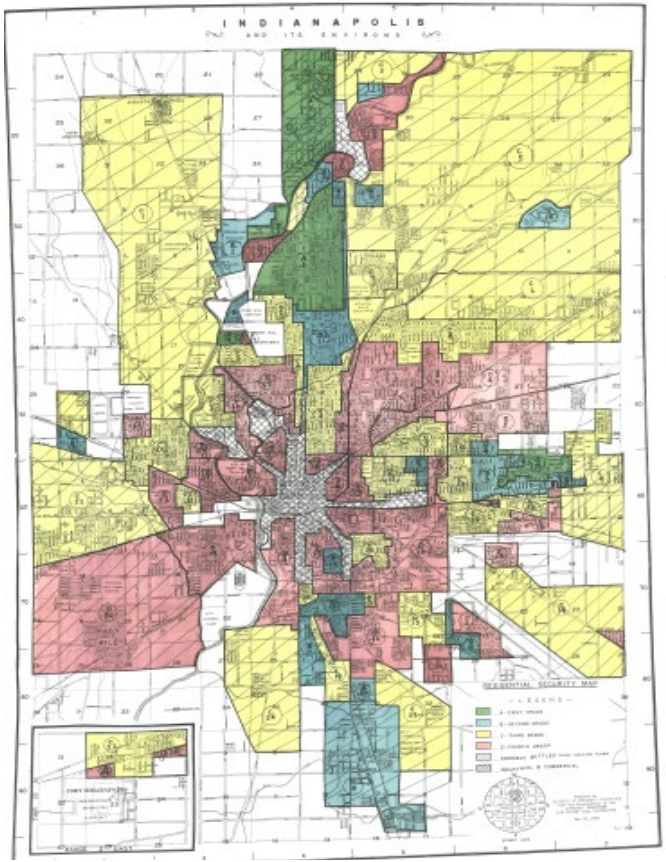
- Among ZIP Codes, the SVI explains **49.5%** of the variation in life expectancy across metro Indianapolis.
- Though a more comprehensive picture of social vulnerability, it does not predict life expectancy as well as either low education or low income variables alone do.
- The map demonstrates the spatial overlap between the SVI and life expectancy.
- Red and orange areas (worst areas for social vulnerability) **with** a white dot (worst areas for life expectancy) identify communities with poor measures on each.



Social Vulnerability Index (2014-2018)

Racism & residential segregation

- Racism affects health through many mechanisms. A particularly formidable one is the history of redlining and the continuing impact of racial residential segregation.[30,31]
- Studies elsewhere report that residents of former red-lined areas have shorter life spans than those of green-lined areas.
- Life expectancy is higher across the U.S. in places where there is greater racial/ethnic diversity.



Source: Mapping Inequality[34]

Racism and residential segregation

- In a national study of the 500 largest cities, Indianapolis was among the most segregated group and the group with the widest life expectancy gap.[38] [39]
- In that same study, Fishers was identified as the city with the lowest segregation and smallest life expectancy gap.
- Here again, we see how places within the metro area are worlds apart.

BEST OF NPR VIDEO

VIDEO: Housing Segregation In Everything

April 11, 2018 · 12:57 PM ET

MARIA PAZ GUTIERREZ | GENE DEMBY | KARA FRAME

Want to learn more about how housing segregation continues to affect communities today? This 6 minute video is highly recommended!

https://youtu.be/O5FBJyqfoLM

Segregation's impact on health of African Americans

- "Every 7 minutes, a Black person dies prematurely. That's more than 200 Black people a day who would not die if the health of blacks and whites were equal." [37]
- "Racial residential segregation is the number one factor driving the poor health outcomes of African Americans today." [29]

- Dr. David Williams, Harvard T.H. Chan School of Public Health

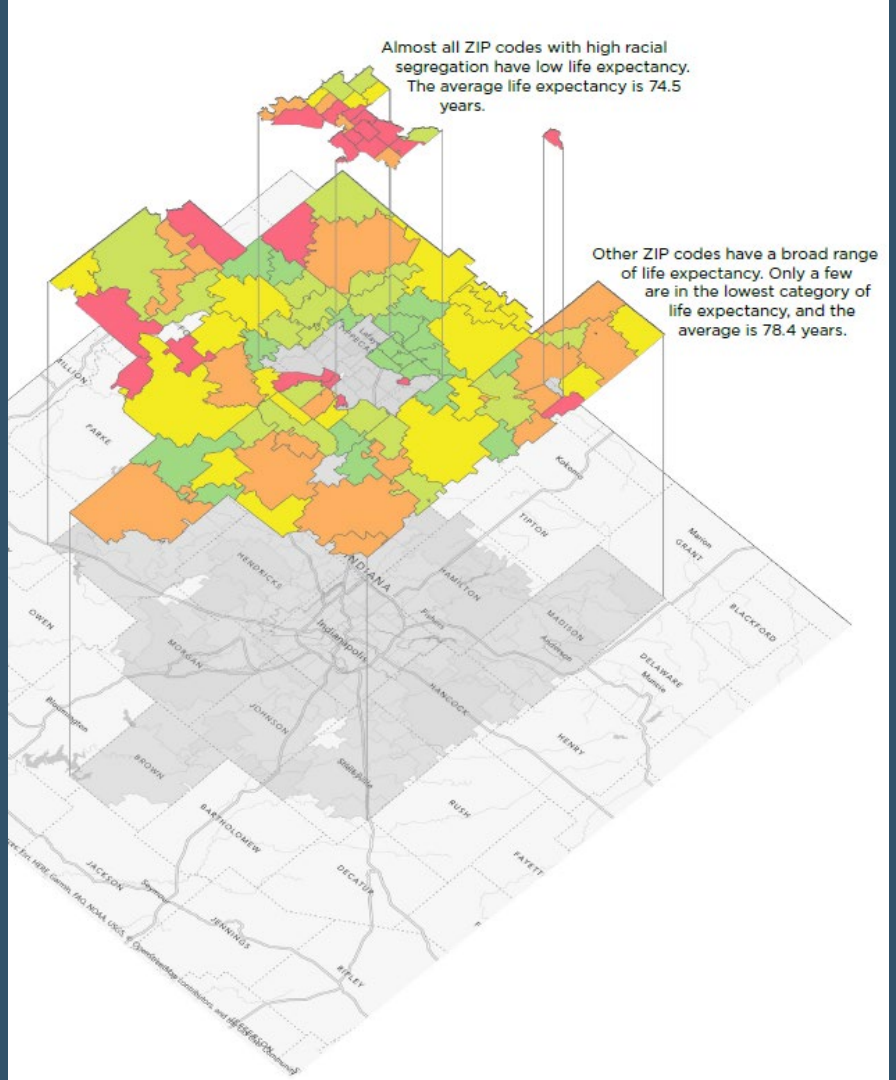
Residential segregation

- Measuring racial segregation is complex, as there are a number of dimensions of the construct to attempt to capture. The size of “place” matters too – and ZIP Codes are likely too large.
- Nonetheless, we tested three measures of residential segregation, and two were *moderately* correlated with life expectancy: the Entropy Index (r=.348) and the Black/White Isolation Index (r= -.359).
- However, we took other steps to examine the effect of segregation.

Residential segregation

- Using the Black/White Isolation Index, we identified the one-fourth of metro ZIP Codes with the highest segregation (i.e. 75th percentile).
  - 77.2% of Black, non-Hispanic residents live in the 21 most segregated ZIP Codes of the metro
  - 22.8% of Black, non-Hispanic residents live in the remaining 65 ZIP Codes of the metro
  - [18 ZIP Codes of the metro area have no Black residents of record and were excluded from this analysis.]

- **The average life expectancy at birth among residents of the highest segregated ZIP Codes was 3.9 years shorter than the lesser-segregated ZIP Code areas.**


Almost all ZIP codes with high racial segregation have low life expectancy. The average life expectancy is 74.5 years.
Other ZIP codes have a broad range of life expectancy. Only a few are in the lowest category of life expectancy, and the average is 78.4 years.
INDIANA
Indianapolis
HENDRICKS
HAMILTON
MADISON
TIPTON
Marion
GRANT
BLACKFORD
DELAWARE
HENRY
HANCOCK
JOHNSON
MORGAN
OWEN
BROWN
BARTHOLOMEW
RUSH
DECATUR
JENNINGS
JACKSON
RILEY
FULTON
PARKE

Social Variable	Most segregated ZIP Codes (75th percentile) (n=21)	Lesser-segregated ZIP Codes (<75th percentile) (n=65)	Difference for Segregated ZIP Codes
Average life expectancy at birth	**74.5 years**	**78.4 years**	**3.9 years less***
Average percent population living below 200% poverty level	**46.4%**	**8.3%**	**5.6 X higher**
Average percent without high school diploma	**16.5%**	**8.3%**	**2 x Higher**
Average per capita income	**$24,609**	**$34,272**	**$9,663 less per person**

What social factors are associated with life expectancy by ZIP Code?

- Educational attainment, especially the percentage lacking a H.S. diploma
- Income, especially the percentage living below 200% of Federal Poverty Level
- Social Vulnerability Index, especially the Socioeconomic Status Category
- Residential Segregation, using the Black/White Isolation Index

How do we close the gap?

Strategies to close the gap

- We must take aim at the upstream drivers with a focus on equity.
- The World Health Organization's over-arching recommendations to close similar gaps between countries (2008) were to:
  1. Improve daily living conditions.
  2. Tackle the inequitable distribution of power, money, and resources.
  3. Measure and understand the problem, and assess the impact of action.
- These are short statements, yet big tasks.

Effective approaches exist

- There is no reason to believe the gap should be this wide, and there is evidence that we can do better because other places are/have done better.
- Our report provides a few examples of effective programs that have been tested and recommended nationally, as well as local initiatives that are active and promising.
- This work takes all us.

Let’s build communities where we all can thrive.