MOVING UPSTREAM:
ECONOMIC HARDSHIP AND LIFE
EXPECTANCY IN SHELBY COUNTY

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- Predominant races → Black and White (52% B, 41%W, 6% other)
- 217 Census Tracts in Shelby County
- 33 Zip Codes in Shelby County
- Deaths → ~8,000 (2016)
Number of deaths in Shelby County TN by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>7581</td>
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<tr>
<td>2008</td>
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<td>2013</td>
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<td>2014</td>
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<tr>
<td>2015</td>
<td>8103</td>
</tr>
<tr>
<td>2016</td>
<td>8114</td>
</tr>
</tbody>
</table>
Zip Code Level
Economic Hardship Index

EHI focuses on 6 key social determinants that are critical for one’s health. These include:

- **Unemployment:**
  - The percent of the civilian population over the age of 16 who were unemployed

- **Dependency:**
  - The percentage of the population that are under the age of 18 or over the age of 64

- **Education:**
  - The percentage of the population over the age of 25 who have less than a high school education

- **Income Level:**
  - The per capita income

- **Crowded Housing:**
  - The percent of occupied housing units with more than one person per room

- **Poverty:**
  - The percent of people living below the federal poverty level.
Why EHI?

- Uses multiple social determinants indicators to determine EHI
- Gives a comprehensive look on Economic Hardship
- Allows easy comparison with Mortality and Morbidity Rates.
- Data easily available through American Community Survey.
EHI Calculations

- For the calculation of all variables except for income.
  - \( X = \frac{(Y - Y_{\text{min}})}{(Y_{\text{max}} - Y_{\text{min}})} \times 100 \)
  - where: \( X \) = standardized value of component variable (for example, unemployment rate) for each area to be computed.

- \( Y = \) unstandardized value of component variable for each city.
  - \( Y_{\text{min}} = \) the minimum value for \( Y \) across all area
  - \( Y_{\text{max}} = \) the maximum value for \( Y \) across all area

- For the calculation of Income:
  - \( X = \frac{(Y - Y_{\text{max}})}{(Y_{\text{min}} - Y_{\text{max}})} \times 100 \)

Note: The Index represents the average of the standardized ratios of all six component variables. Higher value indicating higher hardship.
EHI Drivers in Select Shelby County zip codes 2015

38106+38126
- Unemployment EHI: 17%
- Dependency EHI: 16%
- Education EHI: 17%
- Income EHI: 16%
- Crowded Housing EHI: 17%
- Poverty EHI: 17%

38112+38122
- Unemployment EHI: 16%
- Dependency EHI: 19%
- Education EHI: 19%
- Income EHI: 19%
- Crowded Housing EHI: 19%
- Poverty EHI: 8%

38107+38108
- Unemployment EHI: 16%
- Dependency EHI: 20%
- Education EHI: 17%
- Income EHI: 19%
- Crowded Housing EHI: 17%
- Poverty EHI: 11%

38103+38104+38105
- Unemployment EHI: 27%
- Dependency EHI: 13%
- Education EHI: 4%
- Income EHI: 19%
- Crowded Housing EHI: 21%
- Poverty EHI: 16%
CORRELATION BETWEEN EHI AND LE IN SHELBY COUNTY TN ZIP CODES 2015

Map by Office of Epidemiology and Infectious Diseases - Ogari
Data source - Vital statistics, Death Data TDH and American Community Survey 5-year Estimates
CORRELATION BETWEEN EHI AND LE IN SHELBY COUNTY TN ZIP CODES 2015

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Data source - Vital statistics, Death Data TDH and American Community Survey 5-year Estimates
Correlation between EHI and ED visits due to heart condition 2015

P = 0.627
Correlation between EHI and Mortality rate due to heart condition

P = 0.459

Map By Office of Epidemiology and Infectious Diseases-Ogari
Data Source: ACS and Vital Statistics
Census Tract Level
Hot Spot Map for Death Rates in Shelby County TN 2012-2016

Data source: Vital Statistics Data, Death Certificate Data Tennessee Department of Health
Map by office of Epidemiology and Infectious Diseases- Ogari
Life Expectancy at Birth in Shelby County TN Census Tracts 2012-2016

Data source: Vital Statistics Data, Death Certificate Data Tennessee Department of Health
Map by office of Epidemiology and Infectious Diseases- Ogari
EHI in Shelby County TN Census Tracts 2012-2016
Analysis of EHI data for Shelby County. With 9,000 randomizations, higher than expected EHI is represented in red color and lower than expected EHI is in blue color.
Cancer Death Rates in Shelby County TN Census Tracts 2012-2016

Data source: Vital Statistics Data, Death Certificate Data Tennessee Department of Health
Map by: office of Epidemiology and Infectious Diseases - Ogari
Heart Disease Death Rates in Shelby County TN Census Tracts 2012-2016

Data source: Vital Statistics Data, Death Certificate Data Tennessee Department of Health
Map by: Office of Epidemiology and Infectious Diseases - Ogari
Contact Information

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