Where We Live:
Assessing Health Disparities in Oklahoma’s Two Largest Metro Areas

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PROBLEMS OF THE PRESENT?
What are the negative impacts of our new urban form?

- Lack of physical activity
  - Leads to higher rates of obesity, diabetes, ADHD, etc.

- Food deserts
  - Diet-related illnesses, malnutrition, diabetes, etc.

- Social isolation
  - Lack of community cohesion, political disenfranchisement, stress, depression, etc.
How do we evaluate health?

- How long someone lives
- Causes of death
- New cases of diseases

But what about the environmental factors that a person experiences every day?
Research shows that your ZIP code is more important to your health than your genetic code.
Health and Wellness Index

• One score to evaluate the overall health of an area
  • Combined data for health, socioeconomic status and the built environment

• Comparable across jurisdictions

Collaboration:
• Oklahoma City-County Health Department
• Tulsa Health Department
• City of Oklahoma City
CATEGORIES

1. Educational attainment
2. Poverty
3. Infant mortality
4. Suicide mortality
5. Life expectancy
6. Emergency department visits
7. Gun-related mortality
8. Infectious disease rates
   • Respiratory illness
   • Flu hospitalizations
   • Diarrheal illness
   • Bloodborne illness
   • Mosquito-borne illness
   • Sexually-transmitted infections
9. Built environment

- **Positive land use proximity**
  - Supermarkets, Parks, Trails, Schools

- **Negative land use proximity**
  - Industrial, O&G, Highways

- **Transportation security**
  - Vehicle Access, Transit Access

- **Housing security**
  - Income Spent, VAB
POSITIVE LAND USE PROXIMITY

1. Population within 1 mile of a supermarket
2. Population within ½ mile of a park
3. Population within ½ mile of a trail access point
4. Population within ½ mile of a school
POSITIVE LAND USE – FOOD ACCESS
• *Food deserts* have emerged as a critical public health issue

• healthy diet is linked to reduced risk of heart disease, stroke, hypertension, type 2 diabetes, and certain cancers.
PROXIMITY EVALUATION
POSITIVE LAND USE – FOOD ACCESS

**Top and Bottom 10 Access to Supermarkets**
Oklahoma City-County | 2013-2015

<table>
<thead>
<tr>
<th>Percentage within 1 Mile of a Supermarket (Top 5)</th>
<th>Oklahoma City</th>
<th>Tulsa</th>
</tr>
</thead>
<tbody>
<tr>
<td>73109</td>
<td>89.8%</td>
<td>74129</td>
</tr>
<tr>
<td>73119</td>
<td>86.8%</td>
<td>74146</td>
</tr>
<tr>
<td>73106</td>
<td>84.4%</td>
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<td>74105</td>
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<tr>
<td>73107</td>
<td>79.9%</td>
<td>74145</td>
</tr>
</tbody>
</table>
POSITIVE LAND USE – FOOD ACCESS

Top and Bottom 10 Access to Supermarkets
Oklahoma City-County | 2013-2015

Supermarket Access
- Top 10 ZIP Codes
- Bottom 10 ZIP Codes
- Supermarket Location
- 1-Mile Buffer
NEGATIVE LAND USE PROXIMITY

1. Population within ½ mile of an industrial land use
2. Population within ½ mile of a highway
3. Population within ½ mile of an oil/gas site
NEGATIVE LAND USE – HIGHWAYS
NEGATIVE LAND USE — HIGHWAYS

• Smog contains **nitrogen oxide** and **carbon monoxide**
  • Impaired lung function, particularly amongst children and those with respiratory problems.

• **Sensitive uses:**
  Schools, Outdoor Recreation, Residential
NEGATIVE LAND USE – HIGHWAYS

% Within 1/4-Mile of a Highway
Oklahoma City-County | 2013-2015

Built Environment Rank
- 1 (Most) - 8
- 9 - 17
- 18 - 25
- 26 - 34
- 35 - 43 (Least)
NEGATIVE LAND USE – HIGHWAYS

Top and Bottom 10 Proximity to Highway
Oklahoma City-County | 2013-2015

Top and Bottom 10 Proximity to a Highway
Tulsa County | 2013-2015

Percentage within ¼-Mile of a Highway (Top 5)

<table>
<thead>
<tr>
<th></th>
<th>Oklahoma City</th>
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<tbody>
<tr>
<td>73104</td>
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<td>73149</td>
<td>37.1%</td>
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</table>
TRANSPORTATION SECURITY

1. Population with no vehicle access
2. Population within ¼ mile of a transit stop
TRANSPORTATION SECURITY
TRANSPORTATION SECURITY

• 4 possible situations:
  – Access to a Vehicle AND Access to Public Transit
    • 100% Security
  – Access to a Vehicle Only
    • 75% Security
  – Access to Public Transit Only
    • 25% Security
  – No Access
    • 0% Security
TRANSPORTATION SECURITY

Top and Bottom 10 Transportation Security
Oklahoma City-County | 2013-2015

<table>
<thead>
<tr>
<th>Zip Code</th>
<th>Rank</th>
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<th>Tulsa</th>
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<tr>
<td>73102</td>
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<td>81.5%</td>
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Top and Bottom 10 Transportation Security
Tulsa County | 2013-2015

Built Environment Rank
Top Ten ZIP Codes
Bottom Ten ZIP Codes
Housing Security

1. % spending > 30% of income on housing (owners)
2. % spending > 30% of income on housing (renters)
3. % of buildings that are vacant or abandoned
Housing Security

Lack of affordable housing
- Displacement (gentrification)
- Decreased access to opportunity
- Lack of money for healthful choices

Vacant and abandoned buildings
- Higher risk of fire and crime
- Lead contamination
- Depressed property values
Housing Security

Rank Average Housing Security
Oklahoma City-County | 2013-2015

Built Environment Rank
1 (Most) - 8
9 - 17
18 - 25
26 - 34
35 - 43 (Least)

Housing Security
Tulsa County | 2013-2015

Built Environment Rank
1 (Most) - 8
9 - 17
18 - 25
26 - 34
35 - 43 (Least)
Housing Security

Top and Bottom 10 Housing Security
Oklahoma City-County | 2013-2015

Built Environment Rank
- Top Ten ZIP Codes
- Bottom Ten ZIP Codes

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<th>Housing Security (Top 5)</th>
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Top and Bottom 10 Housing Security
Tulsa County | 2013-2015

Built Environment Rank
- Top Ten ZIP Codes
- Bottom Ten ZIP Codes

- Top Ten ZIP Codes
- Bottom Ten ZIP Codes
Methodology

• Data by zip code for 2013 – 2015

• Indicators based on County Health Rankings and previous published Health Profiles/Wellness Scores
  
  • Some data is a proxy based on what is available

• Calculations based on Urban Hardship methodology
METHODOLOGY

• Standardizes each of the category variables so that they are all given equal weight in the composite index
  • Compares each zip code indicator to maximum and minimum values
• Index score is calculated by averaging all ratios
• A higher score indicates worse outcomes
**FORMULA**

\[ X = \frac{(Y - Y_{\text{min}})}{(Y_{\text{max}} - Y_{\text{min}})} \times 100 \]

\( X \) = Standardized value of category variable (for each ZIP to be computed)

\( Y \) = Unstandardized value of category variable for each zip

\( Y_{\text{min}} \) = Minimum value for \( Y \) across all zips

\( Y_{\text{max}} \) = Maximum value for \( Y \) across all zips

\( Y_{\text{min}} \) and \( Y_{\text{max}} \) were reversed for variables where a higher number indicates a more positive outcome (i.e., life expectancy).
DATA SOURCES

- Oklahoma State Department of Health: Center for Health Information (Vital Statistics)
- American Community Survey
- Oklahoma Health Care Authority
- OSDH: Acute Disease Services and HIV/STD Services
- Reference USA/Info USA
- School district websites
- Metropolitan Planning Organization
- Parks Department
- City Planning Departments
- County assessor
- ODOT
- Transit agencies
OVERALL HEALTH AND WELLNESS SCORES

OKC-COUNTY HEALTH INDEX

Highest Ranking

Lowest Ranking
## Built Environment Comparison

<table>
<thead>
<tr>
<th>Overall Built Environment Score Comparison</th>
<th>Best five zip codes</th>
<th>Worst five zip codes</th>
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<tbody>
<tr>
<td></td>
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<td>74050</td>
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*OKC* = Oklahoma City; *Tulsa*
Next Steps
QUESTIONS?

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