Understanding Food Deserts and the Factors Affecting Healthy Food Access

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What are food deserts?

And why do we care?
Ohio Food Policy Council – Healthy Food Access Task Force

• Mission = Provide those in need with greater access to fresh and nutritious foods.

• Goals
  • Identify rural and urban food deserts in Ohio by Dec. 31, 2009, and decrease these areas by 10 percent by providing access to healthy, local foods by 2015.
  • Increase the number of schools using the national farm to school program by a minimum of 50 schools by 2015.

• List of specific recommendations and progress made
  • Such as farm markets and federal assistance program
Food Access

• What is Food Access?
  • Shifted from hunger abatement to access to healthy food
    • Access is multifaceted
    • Access must recognize cultural differences

• What exacerbates problems related to healthy food access
  • Urban sprawl
  • Spatial mismatch in transportation
  • Lack of competition between outlets
  • Unhealthy foods are often cheaper (perceived or real)
Food Access - Assessment

- Identifying areas in need - Food Access Gaps
  - Physical
  - Economic
  - Healthy
  - http://cffpi.osu.edu/fooddeserts.htm
Ten-Minute Drive to Ohio Grocery Stores (by Employee Size)
One-mile Walk to Ohio Grocery Stores (in blue) with Rural Cities and Villages (in orange)
Physical Access

- A total of 5,209,819 Ohioans are living in rural areas (1,979,561 out of 4,627,893 households).

- 76% of rural Ohioan households live within a 10 minute drive to a supermarket, while 3.8% live within driving distance but do not have access to a vehicle.

- 25% of rural Ohioans live within walking distance of a food outlet while 3% live more than 1 mile from a supermarket AND do not have access to a vehicle.
Economic Access

- Economic accessibility is divided into an income and price segment since demand for food is function of both income and price.
- Income
  - Average per capita income of households with and without physical access.
- Price
  - Communities dominated by a single large supermarket (>40,000 sq feet).
Economic Access

- The median per capita income
  - Outside the 10-minute drive to the grocery store is $22,371.
  - Inside the 10-minute drive to the grocery store is $23,105.
- Under poverty line (income below $10,000 per year)
  - 9.7% of households living inside the 10-minute drive buffer.
  - 9.9% of households living outside the 10-minute drive buffer.
- Under the poverty line
  - 12.8% of households living inside the 1-mile walking buffer.
  - 8.9% of households living outside the 1-mile walking buffer.
Geography of Large Supermarket Competition

Within a 10-Min Drive of:
- Only 1 Large Supermarket
- 2 or More Large Supermarkets
Economic Access Cont’

- Only 29.5% of rural households (583,271 households) live in areas where there is some competition.
- An additional 268,333 of rural households (or 13.6%) live in areas that they can drive to the store, but that there may not be the lower prices as a result of competition.
  - 6.3% of these households (16,786 households) don’t have cars in these areas to drive to a more competitive zone.
Healthy Access

• We chose larger stores because they have more food varieties to promote healthy living.
  • Larger store include store measuring more than 40,000 sq feet.
• How many rural Ohioans are within a 10-minute drive distance from a fast food restaurant and not a 10-minute drive to a supermarket.
  • To define fast food restaurants we used the North American Industry Classification System (NAICS) definition for “Limited-Service Eating Places” (72221).
Rural Ohio Areas with Fast Food Access and not Large Supermarket Access (in green)
Healthy Access

- 43.0% or 851,604 households live in a 10-minute driving distance of a large supermarket and 57.0% or 1,127,957 households live outside this distance.
- For those households within this 10-minute driving-distance, 51,252 households (6.0%) are without a car.
- 24.6% of rural Ohioans face nutritional challenges compounded by high concentrations of nearby fast food alternatives. This is not just an urban phenomenon.
Food Access in a nutshell

Rural Ohio Households

- Total Rural Households: 1,979,561
- Lives outside 10-min. drive, any store: 475,095
- Lives outside 1-mi walk, any store: 1,484,671
- Lives outside of store competition: 1,396,290
- Lives outside 10-min. drive, large supermarket: 1,127,957
- Lives w/in food in 10-min. drive: 486,702
Conclusion

- Compared to US,
  - How many Ohioans versus US live in food desert
  - 4.4% live outside one mile buffer AND don’t own a vehicle
  - 3.0% of Ohioans are in the same situation

- Lack of larger stores (that, which larger shelf space, presumably carry a greater range of goods), lack of competitions (which suggests higher prices), and high concentrations of nearby fast food alternatives are three issues that deserve attention in rural Ohio.
Policy Recommendations

- Creating new outlets, increasing the healthiness of food offerings at existing outlets, developing new transportation opportunities, and utilizing alternative distribution methods.
- Rural areas are primarily different b/c of their lower densities.
- Because of their proportionally larger physical reach, rural food deserts present challenges to efficient public transportation solutions.
- They encompass a broader range of neighborhood types than individual urban neighborhoods.
- Rural food deserts often have access to more land, and thus possess a greater capacity for home provisioning, a possibility that would enable households to grow an indigenous solution to gaps in rural food access.
Healthy Food Access Gaps
Cuyahoga County, OH

• Assess retail food environment
• Evaluate gaps in healthy food access
• Identify other factors that influence healthy food access
• Collect qualitative data from local residents on challenges and solutions
• Develop policy recommendations
Project Partners:
Cleveland-Cuyahoga County Food Policy Coalition
Cleveland Department of Public Health
Cuyahoga County Planning Commission
Cuyahoga County Board of Health
Countryside Conservancy
Examining the Impact of Food Deserts on Public Health in Chicago (2006)

- Locate grocery stores
- Locate fast food establishments
- Examine ratio to develop “food balance score”
- Overlay demographic information and health indicators
Cuyahoga County Food Gap Analysis

GOALS:

• Identify data sources
• Test the methodology
• Preliminary identification of healthy food access gaps
• Identify potential further research
Data Sources and Measurements
Ohio Department of Health
Food Establishment Licensing

Local Boards of Health:
- Cuyahoga County
- City of Cleveland
- City of Lakewood
- City of Shaker Heights

Benefits:
- Current records
- Complete inventory
- Standard classification of providers
Data Sources and Measurements

- Retail Food Establishments:
  - Commercial Grocery (853 Total)
    - Small: < 25,000 Square Feet (798)
      - Convenient, CVS, Gas Stations
      - Food Mart, Nature’s Bin, Marc’s
    - Large: > 25,000 Square Feet (58)
      - Giant Eagle, Dave’s, Heinen’s
Data Sources and Measurements

• Food Service Operators:
  – All Restaurants:
    Subjective classification from among all types:
    • “Sit-Down” Restaurants
      – Formal dining, pizza, Chinese, etc.
    • “Fast Food” Restaurants (685)
      – McDonald’s, Subway, Al’s Deli
Distance to Grocery (Miles) Unweighted

<table>
<thead>
<tr>
<th>Grocery &gt; 25,000 S.F.</th>
<th>Avg. Dist. (Miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.03 to 1</td>
<td>Cuyahoga 1.4</td>
</tr>
<tr>
<td>1 to 1.5</td>
<td>Suburbs 1.3</td>
</tr>
<tr>
<td>1.5 or Greater</td>
<td>Cleveland 1.6</td>
</tr>
<tr>
<td>(No Population)</td>
<td></td>
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</tbody>
</table>

Map showing distribution of grocery stores by distance and city.
- Grocery > 25,000 S.F.
- Distance to Grocery (Miles)
- Weighted by Population Share

<table>
<thead>
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<td>Cuyahoga</td>
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<td>Suburbs</td>
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</tr>
<tr>
<td>Cleveland</td>
<td>1.3</td>
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<table>
<thead>
<tr>
<th>Color</th>
<th>Distance Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange</td>
<td>Grocery &gt; 25,000 S.F.</td>
</tr>
<tr>
<td>Light Pink</td>
<td>0 to 1</td>
</tr>
<tr>
<td>Purple</td>
<td>1 to 1.5</td>
</tr>
<tr>
<td>Dark Purple</td>
<td>1.5 to 99</td>
</tr>
<tr>
<td>Gray</td>
<td>(No Population)</td>
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</tbody>
</table>
Distance to Fast Food (Miles)

Unweighted

<table>
<thead>
<tr>
<th>Distance Range</th>
<th>Avg. Dist. (Miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1</td>
<td>Cuyahoga: 0.5</td>
</tr>
<tr>
<td>1 to 1.5</td>
<td>Suburbs: 0.7</td>
</tr>
<tr>
<td>1.5 to 3.3</td>
<td>Cleveland: 0.4</td>
</tr>
<tr>
<td>(No Population)</td>
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Legend:
- Fast Food

Map showing the distribution of fast food locations with different color codes indicating different distances.
Distance to Fast Food (Miles) Weighted

<table>
<thead>
<tr>
<th>Weighted</th>
<th>Avg. Dist. (Miles)</th>
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<tbody>
<tr>
<td>0 to 0.5</td>
<td>Cuyahoga 0.5</td>
</tr>
<tr>
<td>0.5 to 1</td>
<td>Suburbs 0.7</td>
</tr>
<tr>
<td>1 to 99</td>
<td>Cleveland 0.3</td>
</tr>
<tr>
<td>(No Population)</td>
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</table>
Food Balance Ratio Weighted by Population Share

- Grocery > 25,000 S.F.
- Fast Food

<table>
<thead>
<tr>
<th>Food Balance Score</th>
<th>Cuyahoga</th>
<th>Suburbs</th>
<th>Cleveland</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 to 2.5</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2.5 or More</td>
<td></td>
<td></td>
<td>4.5</td>
</tr>
<tr>
<td>(No Population)</td>
<td></td>
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Food Balance Theory

<table>
<thead>
<tr>
<th>Food Balance Scores</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Far Above: high score</td>
<td>Grocery store is 1 mile away, and a fast food restaurant is 5 miles away (5/1 = 5)</td>
</tr>
<tr>
<td>“worst outcomes” – closer to fast food, farther from grocers</td>
<td></td>
</tr>
<tr>
<td>Far Above: average score</td>
<td>Grocery store is 1 mile away, and a fast food restaurant is 1 mile away (1/1 = 1)</td>
</tr>
<tr>
<td>“average of balanced outcomes” – equal access to grocers and fast food</td>
<td></td>
</tr>
<tr>
<td>Far Below: low score</td>
<td>Grocery store is 5 miles away, and a fast food restaurant is 1 mile away (5/1 = .5)</td>
</tr>
<tr>
<td>“best outcomes” – closer to grocer, farther from fast food</td>
<td></td>
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Households Without Vehicles

Percent of Households With No Vehicle
By Suburb and Cleveland SPA

- 0.3 to 14
- 14 to 25
- 25 to 50
- 50 to 66.1

County Average = 14%
Cleveland Average = 25%
FARMERS' MARKETS AND GROCERY STORES BY INCOME

- **FARMERS' MARKET**
- **LARGE GROCERY**
- **SMALL GROCERY**

**MEDIAN INCOME BY TRACT**
- **Red**: 0 - 11350
- **Light Pink**: 11351 - 21014
- **Pink**: 21015 - 28362
- **Blue**: 28363 - 38699
- **Dark Blue**: 38700 - 60000

CLEVELAND CITY PLANNING COMMISSION
Deaths from heart disease per 100,000 population

- 451 to 859
- 401 to 450
- 301 to 400
- 52 to 300
- Cleveland

Notes: Rates are age-adjusted. Statistical Planning Areas (SPAs) in the city of Cleveland are neighborhoods grouped by census tracts.

Source: Ohio Dept. of Health
GIS Inventory of the Food Environment

- Identified areas with limited access to fresh, healthy food
- Demonstrated the food environment imbalance in urban and suburban areas
- Established target areas for community based intervention where food access, lack of transportation, and high participation rates in food assistance overlap
Community Conversations: Solutions to Healthy Food Access

• Seven focus groups with 85 residents in four diverse neighborhoods

“What about people who rely on public transportation? Most of these places are outside of the neighborhood. If you don’t have a car you don’t have access.”
- Slavic Village Resident

• Emerging themes from residents
  • Transportation
  • Shopping location
  • Quality of fresh foods
  • Lack of competition
  • Lack of fresh food in food pantries

“Most people don’t shop in their community anyway. Some do, but most people migrate towards the larger marketplaces. The small mom and pop markets just don’t have apples, oranges, bananas, and pineapples. They’re just not going to have it. You might get canned fruits and vegetables.”
- Glenville Resident
Conclusions and Next Steps

• Develop a series of maps that overlays public transit and food retail
• Create a fresh, local food guide for residents
• Increasing EBT access at farmers’ markets
• Review policies that affect mobile and temporary food retail
• Expand focus groups to additional communities
Food Deserts and Transportation

- What role does public transportation play in terms of reducing food desert?
- What role do transportation infrastructures play in terms of reducing food desert?
- Should we be looking at rural and urban food desert differently in terms of transportation?
Healthy Food Access – Other Resources

- Center for Farmland Policy Innovation
  - [http://cffpi.osu.edu/fooddeserts.htm](http://cffpi.osu.edu/fooddeserts.htm)

- Ohio Neighborhood Harvest
  - Governor Strickland’s State of the State address

- Identifying Food Deserts

- Healthy Food Retailing Toolkit
  - [http://www.policylink.org/](http://www.policylink.org/)