Community, Economic, and Health Development Outcomes Related to Food Security

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Existing Databases with Health Development Outcomes

Databases that provide information on health behaviors, health outcomes, and health care utilization across states and regions related to food insecurity.

Examples
• Behavioral Risk Factor Surveillance System (CDC)
• Youth Risk Behavioral Surveillance System (CDC)
• County Health Rankings (Population Health Institute, University of Wisconsin) (linkages to multiple databases)
• National Collaborative on Childhood Obesity Research (linkages to multiple databases)
• Federally qualified health centers (EMR, quality varies by site)
• Office of Research and Statistics (SC)
Office of Research and Statistics

- Linking of varied datasets
- Organized portal for accessing data from multiple agencies
- Data warehouse provides de-identified excerpts of data or they run analyses for you
- Fee for service; available to people across US
- Example: Children aging out of foster care lost to follow up; waiver signed at 18 years of age that they could be tracked through system to find last known address
South Carolina’s Integrated Data System

LEGEND

- Legal/Safety Services
- Social Services
- Claims Systems
- All Payer Health Care Databases
- Health Professions
- Behavioral Health
- Health Department
- Education
- Disease Registries
- Other State Support Agencies
Existing Databases with Economic Development Outcomes

Databases that provide information on economic landscape of communities, food subsidy and agricultural economy.

Examples

• Decennial Census, Current Population Survey (Census Bureau)

• Census of Agriculture (USDA)

• Supplemental Nutrition Assistance Program (SNAP) Data System

• Minimum wage rates by state (US Department of Labor)*
Existing Databases with Community Development Outcomes

Databases that provide information on sociodemographics, community food environments, partnerships and coalitions.

Examples

• Food Environment Atlas (USDA)

• Community-based farmers’ markets (SC Department of Agriculture)*

• Eat Smart Move Move South Carolina (list of local chapters)*
Federal rate: $7.25

Source: U.S. Department of Labor
Strengths of Existing Databases

• Proxy data available for a variety of health, economic, and community development outcomes related to food security/food justice
  - Provide snapshot of broader context

• Inclusion of mapping function in many databases

• Central portals for integrating a variety of outcome data

• Open access

• Relatively easy to use for research and/or community activism
Weaknesses of Existing Databases

• Time lag in availability

• Cross sectional; difficult to establish causality related to interventions
  - Need to assess mediators and moderators
Right Choice Fresh Start Farmers' Market Receipt (Form 02)

Type of Customer- Pick One:  
- FHC Staff
- FHC Patient
- Community Member (from Orangeburg area)
- Other, specify: 

All Produce that can be purchased individually (e.g. apples, tomatoes, watermelons, etc.) can all be recorded as 1. All produce sold in a group (e.g. eggs, grapes, peaches, green beans, etc.) can be recorded as a small basket or large basket. If other unit is used (e.g. pound, pt, etc.) mark other and record and specify the unit.

<table>
<thead>
<tr>
<th>PROD Code</th>
<th>PROD_CODE</th>
<th>UNIT USED IN THIS SALE</th>
<th>OTHER UNITS, SPEC.</th>
<th># UNITS</th>
<th>PRICE/UNIT (for calculations only)</th>
<th>COST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 Balanced Small Basket</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Balanced Large Basket</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Balanced Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 Balanced Small Basket</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Cost $ 

Please turn page over

Right Choice Fresh Start Farmers' Market Pilot Study, PI: Freedman
Food Subsidy Usage At Farmers’ Market Before and After Food Subsidy Matching Intervention

12 weeks before (2011) and 12 weeks after (2012)
Weaknesses of Existing Databases

• Time lag in availability

• Cross sectional; difficult to establish causality related to interventions
  - Need to assess mediators and moderators

• Quality of measures (e.g., diet, food environment)
Measuring Diet
McCormack et al., 2010. Review of the nutritional implications of farmers’ markets and community gardens: A call for evaluation and research efforts.

“conclusions need to be drawn with caution as many of the studies included in this review assessed dietary intake using tools with numerous limitations. ...Few studies used well-established measures of dietary assessment, such as 24-hour dietary recalls and validated FFQs or fruit and vegetable screeners.”
Table 4. Odds ratios (ORs) and 95% confidence intervals (CIs) of improvements in fruit and vegetable consumption among diabetics frequenting a FQHC-based farmers’ market.

<table>
<thead>
<tr>
<th>Variables</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-reported BMI at T1</td>
<td>1.04</td>
<td>0.92-1.18</td>
</tr>
<tr>
<td>Payment type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study voucher only</td>
<td>36.53*</td>
<td>3.27-407.95</td>
</tr>
<tr>
<td>Study voucher + other form of payment</td>
<td>1.00</td>
<td>Referent</td>
</tr>
<tr>
<td>Number of farmers’ market visits</td>
<td>2.13**</td>
<td>1.10-4.14</td>
</tr>
<tr>
<td>Total amount of money spent at the farmers’ market</td>
<td>1.01</td>
<td>0.94-1.09</td>
</tr>
<tr>
<td>Receipt of food assistance in the past year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0.37</td>
<td>0.07-2.00</td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>Referent</td>
</tr>
</tbody>
</table>

* \( p < 0.01 \)

** \( p < 0.05 \)
Inaccuracies in food environment measurement based on ground-truthing

<table>
<thead>
<tr>
<th>Data Source and Type of Food Outlet</th>
<th>No. of Outlets Listed</th>
<th>Disposition, %</th>
<th>No. of Outlets Found but Not Listed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Located and Open</td>
<td>Closed</td>
<td>Not Found</td>
</tr>
<tr>
<td>South Carolina Department of Health and Environmental Control</td>
<td>1,694</td>
<td>89.2</td>
<td>4.2</td>
</tr>
<tr>
<td>All food outlets</td>
<td>417</td>
<td>92.6</td>
<td>1.9</td>
</tr>
<tr>
<td>Stores</td>
<td>122</td>
<td>95.9</td>
<td>1.6</td>
</tr>
<tr>
<td>Supermarket and grocery</td>
<td>271</td>
<td>91.1</td>
<td>1.5</td>
</tr>
<tr>
<td>Convenience</td>
<td>6</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Dollar and variety</td>
<td>0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Drug and pharmacy</td>
<td>18</td>
<td>88.9</td>
<td>11.1</td>
</tr>
<tr>
<td>Specialty</td>
<td>1,277</td>
<td>88.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Restaurants</td>
<td>653</td>
<td>85.3</td>
<td>5.5</td>
</tr>
<tr>
<td>Full-service</td>
<td>291</td>
<td>95.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Franchised limited-service</td>
<td>333</td>
<td>87.4</td>
<td>6.6</td>
</tr>
<tr>
<td>Nonfranchised limited-service</td>
<td>1,573</td>
<td>77.7</td>
<td>7.6</td>
</tr>
<tr>
<td>All food outlets</td>
<td>751</td>
<td>75.8</td>
<td>5.3</td>
</tr>
<tr>
<td>Stores</td>
<td>157</td>
<td>77.7</td>
<td>7.0</td>
</tr>
<tr>
<td>Supermarket and grocery</td>
<td>383</td>
<td>74.9</td>
<td>5.7</td>
</tr>
<tr>
<td>Convenience</td>
<td>99</td>
<td>82.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Dollar and variety</td>
<td>96</td>
<td>66.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Drug and pharmacy</td>
<td>822</td>
<td>79.6</td>
<td>9.6</td>
</tr>
<tr>
<td>Specialty</td>
<td>389</td>
<td>75.8</td>
<td>11.0</td>
</tr>
<tr>
<td>Restaurants</td>
<td>212</td>
<td>93.4</td>
<td>1.9</td>
</tr>
<tr>
<td>Full-service</td>
<td>221</td>
<td>72.8</td>
<td>14.5</td>
</tr>
<tr>
<td>Franchised limited-service</td>
<td>InfoUSA, Inc.</td>
<td>1,657</td>
<td>86.5</td>
</tr>
<tr>
<td>All food outlets</td>
<td>672</td>
<td>81.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Stores</td>
<td>136</td>
<td>84.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Supermarket and grocery</td>
<td>426</td>
<td>82.4</td>
<td>3.0</td>
</tr>
<tr>
<td>Convenience</td>
<td>7</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Dollar and variety</td>
<td>88</td>
<td>71.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Drug and pharmacy</td>
<td>15</td>
<td>93.3</td>
<td>6.7</td>
</tr>
<tr>
<td>Specialty</td>
<td>985</td>
<td>89.7</td>
<td>3.7</td>
</tr>
<tr>
<td>Restaurants</td>
<td>481</td>
<td>87.3</td>
<td>5.2</td>
</tr>
<tr>
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<td>94.4</td>
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<td></td>
<td></td>
<td></td>
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</tbody>
</table>
Kershaw and Richland Counties in central South Carolina shown with food outlet densities per square kilometer (GIS-based and ground-truthed)

Does **NOT** measure: Costs, Quality, Variety, Social Climate, Display

Van Meter et al., 2011
Weaknesses of Existing Databases

- Time lag in availability
- Cross sectional; difficult to establish causality related to interventions
  - Need to assess mediators and moderators
- Quality of measures (e.g., diet, food environment)
- Boundaries of data don’t always relate to boundaries of intervention
  - E.g., grocery store added to edge of county
- Limited measures of community-organizational factors related to food security
Organizational ties related to information-seeking among food systems stakeholders before and after the formation of a food security coalition (Community Food Advocates)

Limited data on organizational actors influencing food systems change and very little or no data on connections among actors.

Freedman & Bess, 2010
## Community Readiness for Food Environment Interventions

Table 2: Dimensions of readiness for establishing an environmental intervention at a health center

<table>
<thead>
<tr>
<th>Indicator of readiness</th>
<th>Definition</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>Ability to mobilize health center and community resources to implement and sustain the environmental intervention.</td>
<td>Institutional support, History of programming to increase access to healthy foods or improve diet</td>
</tr>
<tr>
<td>Social capital</td>
<td>Ties and connections available that may be leveraged to mobilize environmental interventions at the health center.</td>
<td>Partnerships and collaborations, Collective efficacy, Public image</td>
</tr>
<tr>
<td>Awareness of health problems and solutions</td>
<td>Understanding of community health concerns and needs and related solutions.</td>
<td>Ecological perspective of health problems, Community-informed understanding of health concerns</td>
</tr>
<tr>
<td>Logistical factors</td>
<td>Resources needed to implement and support an onsite farmers’ market.</td>
<td>Awareness of barriers to accessing and eating healthy foods, Vision that farmers’ market will serve as the solution to community health problems</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Resources needed to sustain the intervention.</td>
<td>Physical location, Patient volume, Access to local farms and farmers</td>
</tr>
</tbody>
</table>

Freedman et al., 2012
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  - E.g., grocery store added to edge of county

• Limited measures of community-organizational factors related to food security

• No qualitative data

• Further data-driven but sometimes theory-limited actions
Grounded Theory of Food Access

Freedman et al., under review
Using Framing Theory to Understand Child Hunger

Why does child hunger exist?

• Symptom of overall insecurity
  - Poverty, stress, limited community resources, limited family resources, limited program resources

• Lack of awareness of the problem

• Lack of coordination of resources
  - In communities, across sectors, silo-effect

• Politics
  - Politicians out of touch, divisiveness and partisanship, ending hunger not a priority
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Midlands Family Study, PI: Jones
Conclusions

• Increasingly good options for documenting health, economic, and community outcomes related to food insecurity

• However, more data are needed...
  - Longitudinal
  - Better measures
  - Qualitative
  - Community-organizational level
  - Community-engaged
What additional data, if any, do we need to communicate with policy makers and other power brokers and stakeholders to improve food security?

Is data (or lack thereof) our problem?
“...patterned, persistent inequalities are due primarily to failed political struggles and power imbalances...”

Richard Hofrichter, 2003, p. 1
Thank you!