Demographic and Geographic Data for Population Health Research

Sarah Ehresman
Kentucky State Data Center
Agenda

• Census Geography
• Data Sources
• Accessing Data
Geography
Census Tracts

• Statistical unit with around 1,200 to 8,000 people, optimum size of 4,000
• Generally follow identifiable features
• Boundaries often change every 10 years
• Often used to represent neighborhoods
• Named with a numeric ID, up to 6 digits
Census Tracts

There are currently 191 Census tracts in Jefferson County.

2010 KY Tract Maps
ZIP Codes

- ZIP codes define delivery routes, not polygons
- Census Bureau created ZIP Code Tabulation Areas (ZCTAs) in 2000 due to user demand
  - Do not easily conform to other statistical/administrative units
  - May be discontinuous
  - More heterogeneous than Census tracts
  - PO Boxes and rural routes may be poorly identified
Zip Code Tabulation Areas (ZCTA) within Jefferson County
Places

- A place is a concentration of population
- Must have a name, be locally recognized, and not be part of any other place
- Incorporated place
- Census Designated Place (CDP)
Jefferson County includes 83 semi-independent municipalities.
Data Sources

• U.S. Census Bureau
  – Decennial Census
  – American Community Survey
  – Population Estimates

• National Center for Health Statistics
  – Population Estimates
  – Vital Statistics
Decennial Census

• Mandated by Article 1, Section 2 of the U.S. Constitution
• Counts the population every 10 years
• Used for apportionment and redistricting
Census 2000

• During the 2000 Census and previous census years two forms were used:
  1. Short form
     • Basic demographics – age, sex, race, household size
  2. Long form
     • Characteristics of population – income, education, martial status, language spoken, lots more
• All persons receive the short form
• Sample of population receive long form
Census 2010

• Only used the short form
  – Basic demographics: age, sex, race, household size, housing units-owned, rented, vacant

• Focus on counting the population

• Characteristics of the population no longer collected with the decennial Census
American Community Survey

• Began collecting data in all areas in 2005
• Published first estimates for all areas in 2010
• Updates every year
• Available for small geographic areas and areas with small population
• Smaller sample size than Census Long Form
Census 2010 and ACS

• 2010 Census counts the population
• ACS produces estimates on characteristics of population and housing
• The purpose of the ACS is not to count the population but to provide data showing how people live and the needs of the community
Characteristics of the Population

- **Social**
  - Ancestry
  - Citizenship Status
  - Disability
  - Educational Attainment
  - Fertility
  - Grandparents
  - Language
  - Marital status and history
  - Migration
  - School enrollment
  - Veteran Status

- **Economic**
  - Employment and work status
  - Health insurance
  - Income and earnings
  - Industry and occupation
  - Commuting
  - Poverty
  - SNAP

- **Demographic**
  - Age and sex
  - Race and Hispanic origin
Characteristics of Housing

• Financial
  – Housing costs
    • Utilities
    • Insurance
    • Condo fee
    • Taxes
    • Mortgage
    • Rent
  – Tenure
  – Property value

• Physical
  – Heating fuel
  – Kitchen facilities
  – Plumbing facilities
  – Telephone available
  – Rooms and bedrooms
  – Units in structure
  – Vehicles available
  – Year moved in
  – Year structure built
A Dynamic Survey

• 2008
  – Marital history
  – Health insurance coverage
  – VA service-connected disability status and rating
  – Disability
• 2009
  – Bachelor’s degree field of study
• 2013
  – Computer ownership (including smart phones)
  – Internet access
A Continuous Survey

- ACS collects survey data throughout the year
- Estimates produced are period estimates
- Reflects a period of time, not a point in time
- Different from the decennial Census which asks respondents to answer questions as of April 1
Period Estimates

• 1-year estimates
  – Produced for areas with at least 65,000 people

• 3-year estimates
  – Produced for areas with at least 20,000 people

• 5-year estimates
  – Produced for all areas
Which Period Estimates?

- Availability
- Comparisons
- Currency vs. Precision
Limitations

• American Community SURVEY
• Margins of error reported for 90% confidence levels
• Test for reliability
  – Standard error = Margin of Error / 1.645
  – Coefficient of Variation = (Standard Error / Estimate) * 100
• Census says use caution when CV > 15%
Census Population Estimates

• Demographic data published between decennial Census years
• Annual updates and revisions
  – Most current vintage will include data for previous years
• Derived from mathematical models
  – Components of population change
Census Population Estimates

• Age, Sex, Race, Ethnicity
  – 5-year age groups at county level
  – 6 racial categories, including multiple races
• Nation, state, counties, incorporated places
• Often used as the denominator in rate calculations
NCHS Population Estimates

• Modification of the Census Population Estimates
• Age, Sex, Race, Ethnicity
• Bridged-Race Estimates
  – 4 categories for race
• Single year of age at county level
NCHS Population Estimates

• Primary reason for NCHS to develop distinct population estimates are for the bridged-race categories
• Network of vital statistics (at the state level) use the racial categories consistent with NCHS population estimates
• Important for race-specific rates
NCHS Population Estimates

• Also useful for special age groups that do not conform to the 5-year age groups
  – Children under 18 years
  – Infants under 1 year
• Internally consistent with Census Population Estimates
NCHS Vital Statistics

- Mortality data for state and counties
- Natality data for state and counties with at least 100,000 population
- Any data with less than 10 cases is suppressed
- Any rates produced from less than 20 cases is flagged as unreliable
American Fact Finder

http://factfinder2.census.gov

- Decennial Census
- American Community Survey
- Census Population Estimates
CDC WONDER

1. Organize table layout:
2. Select location:
3. Select years and demographics:
4. Select cause of death:
5. Select rate options:
6. Other options:
   - Export Results
   - Show Totals
   - Show Zero Values
   - Show Suppressed Values
   - Precision
   - Data Access Timeout

Browse the list by opening and closing items.
Use Ctrl+Click to multiple select, Shift+Click for a range.
<table>
<thead>
<tr>
<th>Five-Year Age Groups</th>
<th>Deaths</th>
<th>Population</th>
<th>Crude Rate Per 100,000</th>
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</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>68</td>
<td>10,198</td>
<td>666.8</td>
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<tr>
<td>1-4 years</td>
<td>17</td>
<td>39,032</td>
<td>Unreliable</td>
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<tr>
<td>5-9 years</td>
<td>Suppressed</td>
<td>47,006</td>
<td>Suppressed</td>
</tr>
<tr>
<td>10-14 years</td>
<td>Suppressed</td>
<td>47,648</td>
<td>Suppressed</td>
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<tr>
<td>15-19 years</td>
<td>35</td>
<td>45,837</td>
<td>76.4</td>
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<tr>
<td>20-24 years</td>
<td>61</td>
<td>49,900</td>
<td>122.2</td>
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<tr>
<td>25-29 years</td>
<td>64</td>
<td>53,960</td>
<td>118.6</td>
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<tr>
<td>30-34 years</td>
<td>80</td>
<td>52,047</td>
<td>153.7</td>
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<tr>
<td>35-39 years</td>
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<td>46,881</td>
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<td>40-44 years</td>
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<td>201.9</td>
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<tr>
<td>45-49 years</td>
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<td>50-54 years</td>
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<td>55-59 years</td>
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<td>60-64 years</td>
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<td>65-69 years</td>
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<td>70-74 years</td>
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<td>75-79 years</td>
<td>750</td>
<td>18,500</td>
<td>4,054.1</td>
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<td>80-84 years</td>
<td>1,081</td>
<td>15,443</td>
<td>6,999.9</td>
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<td>85-89 years</td>
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<td>Not Applicable</td>
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<tr>
<td>90-94 years</td>
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<td>Not Applicable</td>
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<tr>
<td>95-99 years</td>
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<td>Not Applicable</td>
</tr>
<tr>
<td>100+ years</td>
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<td>Not Applicable</td>
</tr>
<tr>
<td>Not Stated</td>
<td>Suppressed</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
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<tr>
<td><strong>Total</strong></td>
<td>7,196</td>
<td>746,906</td>
<td>963.4</td>
</tr>
</tbody>
</table>
Additional Data Sources

• **Kids Count Data Center**
  – Data related to children’s well-being
  – Socioeconomics, education, health, safety

• **Kentucky Health Facts**
  – Social and behavioral indicators, health outcomes, access to care, maternal and child health

• **County Health Rankings**
  – Health outcomes, health behaviors, clinical care, socioeconomics, physical environment
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Sarah Ehresman
Kentucky State Data Center
sarah.ehresman@louisville.edu
502.852.7990