Report: Life Expectancy Dipped a Bit for White Women in US

NEW YORK — Life expectancy for white women has fallen a little, according to a new government report.

White women lost about five weeks from their predicted lifespan in 2014, compared to 2013, the Centers for Disease Control and Prevention reported Wednesday.

Life expectancy held steady for black women and white men, and increased for black men, Hispanic men and Hispanic women.

The CDC previously reported that the life expectancy for all Americans born in 2014 was 78 years and 9½ months—the same prediction made for the previous two years.
Calculating Life Expectancy using data at the census tract Level

Geocode Death Data to Census Tract

Deaths
- Age, sex & street address
- Health Department

Population
- Tract, age, sex, group quarters
- 2010 Census Data or local data source

Tract Boundaries
- 2010 Census

Geocode Death Data to Census Tract

Data Geocoded?

Yes

Aggregate Deaths
- 19 age groups, by sex & tract

No

Aggregate Population
- 19 age groups, by sex & tract
- If using a single year of population counts then multiply by number of years of risk

Merge Death & population data by Tract

Delete Tracts
- With no population or where >=50% population live in group quarters

Calculate Life Expectancy & Standard Error
- SEPHO Excel Tool

Geographic Aggregation
- To provide more stable estimates

Review Results
- Concern about unstable LE estimates?

Yes

Map Results
- LE, uncertainty & statistical significance from state mean

No

Flag or Suppress areas with unstable LE?

Yes

No

May require Data Sharing Agreements & IRB Approval

Access to data

T. Talbot
2008-2012 Death Certificate Data
NY State excluding NY City

1. State Vital Statistics Office (approximately 450,000 deaths)

2. Geocoded 99.97 % geocoded to the 2010 Census Tract
How we geocoded 99.97% of deaths to census tracts

1. Batch Geocoding using ArcGIS and the NYS Geocoding Service

2. Match death certificates to hospitals records to obtain more complete or accurate address information

3. If ZIP code is completely contained in a track assign tract.
4. If street is completely contained in a track assign tract.

5. Interactive geocoding for remaining addresses.

6. Geographic Imputation based on race, age, ethnicity, ZIP and town

Geocoding Results (geocoded=445,808 ungeocoded=137)

For more information:
Poster Presentation: Monday 3:30-4:00
Geocoding New York State Mortality Data to Census Tracts
Douglas Done, Gwen LaSelva, Tabassum Insaf & Thomas Talbot
What Census Tract Boundaries to Use?

Generalized Census Tract Boundary Files Advantages
- Use for thematic maps for large areas.
- Files take up less disk space.
- Files take less time to render on screen.

Fine scale Census Tract Boundary Files Advantages
- Use for thematic maps of small areas.
- Use for geographic analysis
- Geocoding addresses.
- Determining precise geographic area relationships.
Use the appropriate scale census tract boundary files for geocoding and displaying results.
Download Census Tract Boundaries (.shp files) from US Census Website

https://www.census.gov/geo/maps-data/data/tiger-line.html

High resolution census tract boundaries

Clip tract boundaries at the edge of major water bodies.
2010 TIGER/Line® Shapefiles: Census Tracts

Census Tract (2000)
Select a State: --SELECT STATE--

Census Tract (2010)
Select a State: New York

Download state file

Select a County: --SELECT COUNTY--

Source: US Census Bureau, Geography Division
Challenges with Calculating LE in Areas with Group Quarters

US Census assigns people living in group quarters to the location of the facility.

Deaths in these facilities maybe recorded as living elsewhere.
College Students are Invincible

Population = 5,737
0 Deaths recorded in tract over 5 years

University of Buffalo
Census Tract 91.10, Erie County NY
Prisoners Escape Death

Population=2,774  0 Deaths recorded in tract over 5 years

T. Talbot
The US Census Provides Population Data for:

Nursing Facilities
Correctional Facilities for Adults
College/University Student Housing
Juvenile Facilities
Other Health Care Facilities
Military Quarters
Shelters
Excluded Tracts

- 15 tracts with no land area (only water)
- 52 tracts $\geq 50\%$ population living in group quarters. Mostly prisons, jails, colleges
- 2 tracts on a military base
- 2 airport tracts with no population
- 1 tract on an unpopulated island
How much did we Exclude?

- 2.6% of tracts excluded
- 1.5% of population excluded (n=167,262)
- 0.5% of the deaths excluded
- 0.3% of the land area excluded
Population Data - US Census 2010 – SF1
<table>
<thead>
<tr>
<th>Age Categories used to calculate Life Expectancy</th>
<th>Age Categories US Census</th>
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<td>80 - 84</td>
<td>80 - 84</td>
</tr>
<tr>
<td>85 +</td>
<td>85 +</td>
</tr>
</tbody>
</table>

US Census provides data for 36 six age categories for both males and females.

The Census age categories are combined into 19 age categories.
SEPHO Technical Report: Calculating Life Expectancies in Small areas

Published by SEPHO, November 2005
Ted Williams, Hywell Dinsdale, Daniel Eayres, Farhang Tahzib

Benefits of SEPHO Tool

• User friendly
• Well documented
• No programming required
• Uses the adjusted Chiang method
• What-if analysis using Excel
• Does not require expensive software
Data preparation: Death Counts

Sort all death counts by geographic area into 19 age categories

<table>
<thead>
<tr>
<th>GeoID</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>...</th>
<th>70-74</th>
<th>75-79</th>
<th>80-84</th>
<th>85+</th>
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<tr>
<td>G01</td>
<td>32</td>
<td>39</td>
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<td>3</td>
<td>11</td>
<td>13</td>
<td>22</td>
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<tr>
<td>G02</td>
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<td>13</td>
<td>6</td>
<td>6</td>
<td>18</td>
<td>31</td>
<td>43</td>
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<td>27</td>
<td>32</td>
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<td>2</td>
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<td>2</td>
<td>16</td>
<td>...</td>
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<td>...</td>
<td>196</td>
<td>261</td>
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Data preparation: Population from US Census

Sort by geographic area into 19 age categories

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<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
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<td>3666</td>
<td>3801</td>
<td>1998</td>
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</tbody>
</table>
Data preparation: Years at Risk

Multiply population counts by 5 if using 5 years of death data.

<table>
<thead>
<tr>
<th>GeoID</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>...</th>
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<th>75-79</th>
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<th>85+</th>
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</tbody>
</table>
Life expectancy calculator: LA and ward level

This calculator enables users with death and population data for small areas to calculate life expectancy figures. The template is for an abridged life table using 5-year age intervals with a final age interval of 85+. For the methodology used in this spreadsheet, along with a review of the available options for life expectancy calculation for small areas, see: Eayres DP, Williams ES, Evaluation of methodologies for small area life expectancy estimation, J Epidemiol Community Health 2004;58:243-249.

URL/File  LE calculator_V1.xls [267K] - Downloaded 3213 times. Last downloaded 01 Jun 2015 09:05.
Format     MS Excel File (.xls)
Home Location SEPHO
National or Regional Regional
Rights © South East Public Health Observatory (SEPHO)

Publishing
Publication date  20 Sep 2004
Creator(s)        Daniel Eayres

Relationships
Is part of       • Life expectancy collection
• Mortality and Morbidity Collection
• Small Area Data Collection
Is related to    • Life Expectancy At Birth: LAs and wards in the South East

You might also be interested in...
Life expectancy calculator with 95% confidence intervals
Life Expectancy Data for LA Deciles
Life Expectancy Data for LA Deciles
Life expectancy and healthy life expectancy
Methods for life expectancy and healthy life expectancy uncertainty analysis

Subject
Life expectancy calculator: LA and ward level

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You might also be interested in...
- Life expectancy calculator with 95% confidence intervals
- Life Expectancy Data for LA Deciles
- Life Expectancy Data for LA Deciles
- Life expectancy and healthy life expectancy
- Methods for life expectancy and healthy life expectancy uncertainty analysis
Enter the number of small areas (e.g. electoral wards) you require in your calculator
Enter the number of small areas (e.g. electoral wards) you require in your calculator

1000
LIFE EXPECTANCY TEMPLATE
INSTRUCTIONS

This file contains two templates for calculating life expectancy.

The first consists of one worksheet and demonstrates a life table for a single area (Life Table - Single Area). The second consists of multiple worksheets which apply the life table methodology to producing life expectancies for multiple areas (Life Table - Multiple Areas).

Use the links on the left to jump to each worksheet and follow the instructions to add your own data to the areas shaded in light blue on sheets 'Deaths' and 'Pops' for multiple areas and to the 'LifeTable' sheet for calculation of a single area.

The final life expectancy figures produced using the multiple areas template can be found on the sheet 'Summary'. On this sheet it is possible to select life expectancy figures for birth rates or at different age intervals.

Notes:

The calculator will automatically prompt the user to insert additional rows to enable figures to be calculated for multiple small areas. This will occur whenever the spreadsheet is opened with macros enabled and with only one small area row.

This process can be bypassed by disabling macros on opening the spreadsheet, and will not occur for spreadsheets which have been saved with more than one small area row.

It is possible to insert small areas manually - select all 17 sheets from 'Deaths' to 'Summary', copy the entire row 15 and paste it down to rows 16 onwards to provide the necessary number of rows.

Making changes to cells other than those where data must be entered (marked in light blue), could result in errors in the figures produced.
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The final life expectancy figures produced using the multiple areas template can be found on the sheet ‘Summary’. On this sheet it is possible to select life expectancy figures either at birth, or at different age intervals.

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Technical Notes

Life Table - Single Area

Life Table - Multiple Areas
  Deaths
  Population Years At Risk
  Death Rate In Interval
  Interval Width
  Fraction of Last Age Interval Of Life
  Probability Of Dying In Interval
  Probability Of Surviving Interval
  Number Alive At Start Of Interval
  Number Dying In Interval
  Number Of Years Lived in Interval
  Total Number Of Years Lived
  Life Expectancy At Start Of Interval
  Variance Of Proportion Surviving In Interval
  Weighted Variance Of Proportion Surviving
  Variance Of Total Number Of Years Lived
  Variance of Life Expectancy
  Summary
Technical Notes

Life Table - Single Area

Life Table - Multiple Areas

Deaths
Population Years At Risk
Death Rate In Interval
Interval Width
Fraction of Last Age Interval Of Life
Probability Of Dying In Interval
Probability Of Surviving Interval
Number Alive At Start Of Interval
Number Dying In Interval
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Summary
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Life Table - Single Area

Life Table - Multiple Areas

Deaths

Population Years At Risk
Death Rate In Interval
Interval Width
Fraction of Last Age Interval Of Life
Probability Of Dying In Interval
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Variance Of Proportion Surviving In Interval
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Variance of Life Expectancy
Summary
### Technical Notes

**Life Table - Single Area**

**Deaths**

- Population Years At Risk
- Death Rate In Interval
- Interval Width
- Fraction of Last Age Interval Of Life
- Probability Of Dying In Interval
- Probability Of Surviving Interval
- Number Alive At Start Of Interval
- Number Dying In Interval
- Number Of Years Lived in Interval
- Total Number Of Years Lived
- Life Expectancy At Start Of Interval
- Variance Of Proportion Surviving In Interval
- Weighted Variance Of Proportion Surviving
- Variance Of Total Number Of Years Lived
- Variance of Life Expectancy
- Summary

### LIFE EXPECTANCY TEMPLATE

#### OBSERVED DEATHS

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<thead>
<tr>
<th>Area Code</th>
<th>Area Name</th>
<th>Under 1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-19</th>
<th>20-24</th>
<th>25-29</th>
<th>30-34</th>
<th>35-39</th>
<th>40+</th>
</tr>
</thead>
<tbody>
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<td>0</td>
<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

#### Instructions

Enter the observed number of deaths, plus area codes and names.

At present the standard area deaths are automatically calculated. To use another standard area, paste the number of deaths into the table.

#### Notes

- **Deaths**
- **Life Table**
- **Single Area**
- **Multiple Areas**
- **Population Years At Risk**
- **Death Rate In Interval**
- **Interval Width**
- **Fraction of Last Age Interval Of Life**
- **Probability Of Dying In Interval**
- **Probability Of Surviving Interval**
- **Number Alive At Start Of Interval**
- **Number Dying In Interval**
- **Number Of Years Lived in Interval**
- **Total Number Of Years Lived**
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- **Variance Of Proportion Surviving In Interval**
- **Weighted Variance Of Proportion Surviving**
- **Variance Of Total Number Of Years Lived**
- **Variance of Life Expectancy**
- **Summary**
Copy death data from your spread sheet into the SEPHO Tool

<table>
<thead>
<tr>
<th>Area Code</th>
<th>Area Name</th>
<th>Age Group</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td>1-4</td>
</tr>
<tr>
<td>Code</td>
<td>Standard/National Area</td>
<td>168</td>
<td>120</td>
</tr>
<tr>
<td>10000</td>
<td>Small area</td>
<td>32</td>
<td>39</td>
</tr>
<tr>
<td>10001</td>
<td>Small area</td>
<td>41</td>
<td>13</td>
</tr>
<tr>
<td>10002</td>
<td>Small area</td>
<td>27</td>
<td>32</td>
</tr>
<tr>
<td>10003</td>
<td>Small area</td>
<td>39</td>
<td>63</td>
</tr>
<tr>
<td>10004</td>
<td>Small area</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>10005</td>
<td>Small area</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10006</td>
<td>Small area</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10007</td>
<td>Small area</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10008</td>
<td>Small area</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10009</td>
<td>Small area</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10010</td>
<td>Small area</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>10011</td>
<td>Small area</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10012</td>
<td>Small area</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Technical Notes

Life Table - Single Area

Life Table - Multiple Areas
- Deaths
- Population Years At Risk
- Death Rate In Interval
- Interval Width
- Fraction of Last Age Interval Of Life
- Probability Of Dying In Interval
- Probability Of Surviving Interval
- Number Alive At Start Of Interval
- Number Dying In Interval
- Number Of Years Lived in Interval
- Total Number Of Years Lived
- Life Expectancy At Start Of Interval
- Variance Of Proportion Surviving In Interval
- Weighted Variance Of Proportion Surviving
- Variance Of Total Number Of Years Lived
- Variance of Life Expectancy
- Summary

Make sure to multiply population counts by 5 if you use 5 years of death data

Then paste the data into SEPHO Tool
### Technical Notes

**Life Table - Single Area**

**Life Table - Multiple Areas**

- Deaths
- Population Years At Risk
- Death Rate In Interval
- Interval Width
- Fraction of Last Age Interval Of Life
- Probability Of Dying In Interval
- Probability Of Surviving Interval
- Number Alive At Start Of Interval
- Number Dying In Interval
- Number Of Years Lived in Interval
- Total Number Of Years Lived
- Life Expectancy At Start Of Interval
- Variance Of Proportion Surviving In Interval
- Weighted Variance Of Proportion Surviving
- Variance Of Total Number Of Years Lived
- Variance Of Life Expectancy

### Summary

#### SUMMARY TABLE OF LIFE EXPECTANCY AT

**Instructions**

**Technical Notes**

#### Life Expectancy At Birth

<table>
<thead>
<tr>
<th>Area Code</th>
<th>Area Name</th>
<th>Life Expectancy</th>
<th>Standard Error</th>
<th>95% Confidence Interval Lower</th>
<th>95% Confidence Interval Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard/National Area</td>
<td>84.4</td>
<td>0.1</td>
<td>84.1</td>
<td>84.6</td>
</tr>
<tr>
<td>10000</td>
<td>Small area</td>
<td>85.4</td>
<td>0.4</td>
<td>84.6</td>
<td>86.1</td>
</tr>
<tr>
<td>10001</td>
<td>Small area</td>
<td>82.2</td>
<td>0.3</td>
<td>81.6</td>
<td>82.9</td>
</tr>
<tr>
<td>10002</td>
<td>Small area</td>
<td>86.5</td>
<td>0.4</td>
<td>85.7</td>
<td>87.4</td>
</tr>
<tr>
<td>10003</td>
<td>Small area</td>
<td>83.6</td>
<td>0.3</td>
<td>83.0</td>
<td>84.2</td>
</tr>
<tr>
<td>10004</td>
<td>Small area</td>
<td>82.8</td>
<td>0.3</td>
<td>82.2</td>
<td>83.4</td>
</tr>
<tr>
<td>10005</td>
<td>Small area</td>
<td>82.3</td>
<td>0.9</td>
<td>80.6</td>
<td>84.1</td>
</tr>
<tr>
<td>10006</td>
<td>Small area</td>
<td>84.0</td>
<td>1.3</td>
<td>81.5</td>
<td>86.4</td>
</tr>
<tr>
<td>10007</td>
<td>Small area</td>
<td>81.0</td>
<td>0.7</td>
<td>79.6</td>
<td>82.5</td>
</tr>
<tr>
<td>10008</td>
<td>Small area</td>
<td>84.0</td>
<td>0.9</td>
<td>82.1</td>
<td>85.8</td>
</tr>
<tr>
<td>10009</td>
<td>Small area</td>
<td>82.5</td>
<td>0.8</td>
<td>80.8</td>
<td>84.1</td>
</tr>
<tr>
<td>10010</td>
<td>Small area</td>
<td>79.2</td>
<td>1.6</td>
<td>76.1</td>
<td>82.4</td>
</tr>
<tr>
<td>10011</td>
<td>Small area</td>
<td>86.7</td>
<td>0.8</td>
<td>85.0</td>
<td>88.3</td>
</tr>
<tr>
<td>10012</td>
<td>Small area</td>
<td>88.6</td>
<td>0.9</td>
<td>86.8</td>
<td>90.3</td>
</tr>
</tbody>
</table>
### Life Expectancy At Age 85 Years

<table>
<thead>
<tr>
<th>Area Code</th>
<th>Area Name</th>
<th>Life Expectancy</th>
<th>Confidence Interval Lower</th>
<th>Confidence Interval Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000</td>
<td>Small area</td>
<td>9.9</td>
<td>7.0 - 8.0</td>
<td></td>
</tr>
<tr>
<td>10001</td>
<td>Small area</td>
<td>10.3</td>
<td>8.9 - 10.4</td>
<td></td>
</tr>
<tr>
<td>10002</td>
<td>Small area</td>
<td>9.5</td>
<td>7.0 - 8.0</td>
<td></td>
</tr>
<tr>
<td>10003</td>
<td>Small area</td>
<td>9.6</td>
<td>7.0 - 8.0</td>
<td></td>
</tr>
<tr>
<td>10004</td>
<td>Small area</td>
<td>8.9</td>
<td>6.9 - 10.3</td>
<td></td>
</tr>
<tr>
<td>10005</td>
<td>Small area</td>
<td>7.5</td>
<td>5.9 - 7.1</td>
<td></td>
</tr>
<tr>
<td>10006</td>
<td>Small area</td>
<td>6.9</td>
<td>5.7 - 8.2</td>
<td></td>
</tr>
</tbody>
</table>

**Instructions**

**Technical Notes**
Eayres DP, Williams ES, Evaluation of methodologies for small area life expectancy estimation J Epidemiol Community Health 2004; 58:243-249

Theory and methods

Evaluation of methodologies for small area life expectancy estimation

D Eayres¹, E S Williams²

Correspondence to: Mr D P Eayres National Centre for Health Outcome Development, London School of Hygiene and Tropical Medicine, 99 Gower Street, London WC1E 7HT, UK: daniel.eayres@lshtm.ac.uk
Results showed a number of tracts with life expectancy estimates well over 100 years and large standard errors.
11% of tracts did not have adequate numbers to provide reliable estimates for total life expectancy (males & females combined).

i.e. at least 60 total deaths or a standard error<2 years.

If we tried to calculate LE for males and females separately about ½ of the tracts would have inadequate numbers.
Problems with Census Tracts

Populations or number of deaths are often too small so data is suppressed to protect confidentiality or life expectancy estimates are unstable due to chance.

Some tract boundaries do change with each decennial census.

100% Census is only done every 10 years.
Need for an Aggregation

• Merge small areas with neighboring areas to provide more stable LE estimates.

  – Aggregation can be done manually.
  – Previous automated aggregation tools were difficult to use or did not fulfill requirements.
NYSDOH Geographic Aggregation Tool

Requirements

• Aggregate small areas into larger ones.

• User decides how much aggregation is needed.
  – Based on cases and/or underlying population
  – Example 60 deaths and a SE of 2 years.

• Works with various levels of geography.
  – Census tracts, towns, ZIP codes etc.
  – Can nest one level of geography in another
    • Example: Census tracts are aggregated. Aggregated areas do not cross
ten town or county boundaries

• Uses open source free software (R).

• Outputs results for use in mapping programs.
Table of Contents

Contact Information:

Introduction

Environmental Health Surveillance Section
New York State Department of Health
Troy, NY

February 25, 2013

Geographic Aggregation Tool
R Version 1.2

Developed by Thomas O. Talbot and Gwen D. LaSelva.
Geographic Aggregation Tool, Version 1.2, New York State Health Department, Albany NY
GAT has a GUI Interface with an easy to use guide

Selecting the Aggregation Variable

Next, another window will pop up asking for the aggregation variable. This is the first variable for which you wish to have some minimum value in all of the output regions. For example, if you wish all of the output regions to have a population of at least 20,000, select the variable which represents the population. Click “Next”. If there is only one possible aggregation variable to choose, a different style window will appear.

Selecting an Additional Aggregation Variable

Another window will appear which allows you to optionally select a second variable for aggregation. If you do not wish to select a second variable, select “NONE”, otherwise, select the variable of interest. Click “Next”.

Waiting for the minimum value(s) to aggregate to

Another window will appear, asking for the minimum value of the variable you just selected. The default value will be the largest value in your map.

Enter the minimum value desired and select “Next”. If you have selected a second aggregation variable, you will be prompted to enter a second minimum value. Enter the minimum value desired and select “Next.”
### Geographic Aggregation Tool

**Original Tract Data †**

<table>
<thead>
<tr>
<th>Tracts</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1223001</td>
<td>44</td>
</tr>
<tr>
<td>1223002</td>
<td>27</td>
</tr>
<tr>
<td>1225005</td>
<td>15</td>
</tr>
<tr>
<td>1234002</td>
<td>11</td>
</tr>
<tr>
<td>1234003</td>
<td>0</td>
</tr>
<tr>
<td>1234004</td>
<td>10</td>
</tr>
<tr>
<td>1234006</td>
<td>30</td>
</tr>
<tr>
<td>1234007</td>
<td>31</td>
</tr>
<tr>
<td>1234009</td>
<td>29</td>
</tr>
</tbody>
</table>

**Regions**

<table>
<thead>
<tr>
<th>Tracts</th>
<th>Deaths</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>1223001</td>
<td>44</td>
<td>A</td>
</tr>
<tr>
<td>1223002</td>
<td>27</td>
<td>A</td>
</tr>
<tr>
<td>1223005</td>
<td>15</td>
<td>B</td>
</tr>
<tr>
<td>1234002</td>
<td>11</td>
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<td>B</td>
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<td>1234006</td>
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<td>31</td>
<td>C</td>
</tr>
<tr>
<td>1234009</td>
<td>29</td>
<td>C</td>
</tr>
</tbody>
</table>

† Simulated data

Talbot & LaSelva, Geographic Aggregation Tool R Version 1.33
http://www.albany.edu/faculty/ttalbot/GAT/
Merged tracts into regions so each region had at least 60 deaths and a life expectancy standard error of less than 2 years.

New regions do not cross boundaries of cities which had more than 25,000 people. In rural areas merged areas do not cross county boundaries.
How many areas did we start with and how many areas did we end up with?

<table>
<thead>
<tr>
<th>Description</th>
<th>Number of Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Tracts</td>
<td>2,751</td>
</tr>
<tr>
<td>After Exclusions</td>
<td>2,679</td>
</tr>
<tr>
<td>After merging tracts together &gt;=60 deaths</td>
<td>2,535</td>
</tr>
<tr>
<td>After merging areas SE&lt;2 years</td>
<td>2,415</td>
</tr>
</tbody>
</table>
Border Issues

Areas with the highest life expectancy are originally found in border areas. Later we obtained death certificate data from the neighboring jurisdictions.
Don’t always trust the census numbers for small areas

According to the Census no one lives in this census tract. We know from health records and other sources of data that people live, got sick and even died in this area.
Displaying the Data

Static Thematic Maps
Interactive Maps on Internet
Graphs
Tables
To understand the distribution of LE Estimates it is useful to group census tracts based on sociodemographic determinants of health rather than spatial proximity.
Life Expectancy by Educational Attainment by sub-county Region

Life Expectancy (years)

Less than High school Diploma

0-5% 5-10% 10-20% 20-30% 30-40% 50+ %

T. Talbot
Life Expectancy by Health Insurance Coverage by sub-county region

- 0 - 5%
- 5 - 10%
- 10 - 15%
- 15 - 20%
- 20+%

Life expectancy (years)

Percent No Health Insurance Coverage
Life Expectancy by USDA Rural-Urban-Commuting Areas

- Metropolitan: 80.9
- Micropolitan: 78.7
- Small Town: 78.3
- Rural: 79.7
## Life Expectancy by Race and Poverty Status

New York State Excluding New York City

<table>
<thead>
<tr>
<th>Percent African-American</th>
<th>0-2%</th>
<th>2-10%</th>
<th>10-25%</th>
<th>&gt;=25%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2%</td>
<td>83</td>
<td>82</td>
<td>79</td>
<td>79</td>
<td>81</td>
</tr>
<tr>
<td>2-10%</td>
<td>84</td>
<td>82</td>
<td>79</td>
<td>78</td>
<td>81</td>
</tr>
<tr>
<td>10-25%</td>
<td>83</td>
<td>81</td>
<td>80</td>
<td>75</td>
<td>79</td>
</tr>
<tr>
<td>25-50%</td>
<td>*</td>
<td>83</td>
<td>79</td>
<td>76</td>
<td>78</td>
</tr>
<tr>
<td>&gt;=50%</td>
<td>*</td>
<td>82</td>
<td>79</td>
<td>74</td>
<td>77</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>83</td>
<td>82</td>
<td>79</td>
<td>76</td>
<td>81</td>
</tr>
</tbody>
</table>

* Less than 80 deaths

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**Data Sources**
- 2010 US Census
- 2008-2012 American Community Survey
- NYS Vital Statistics Unit

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T. Talbot
The End

thmstalbot@gmail.com