

Visualization of Changes in the Leading Causes of Premature Death using Histomaps: Georgia 1994 and 2016

Gordon R. Freymann, MPH and Yueqin (Kim) Zhou, MA, MS

Office of Health Indicators for Planning (OHIP), Epidemiology Program, Georgia Department of Public Health

OBJECTIVES

- Understand what YPLL is and its advantages.
- Interpret a Histomap.
- Describe the age distribution of leading causes of premature mortality and changes over time.

BACKGROUND

The reduction of premature mortality is a primary Public Health goal. **Years of Potential Life Lost (YPLL)** is a measure of premature death that sums years of life lost **before age 75**. A death at age 65 therefore would be 10 YPLL. Compared with leading causes of death, YPLL directs focus on causes that occur at younger ages. In doing so, **YPLL highlights causes that are more likely to be attributable to preventable causes and therefore subject to prevention and intervention.**

A YPLL analysis provides useful descriptive information for community health priorities. A Histomap approach is presented as a means of communicating information from a YPLL analysis.

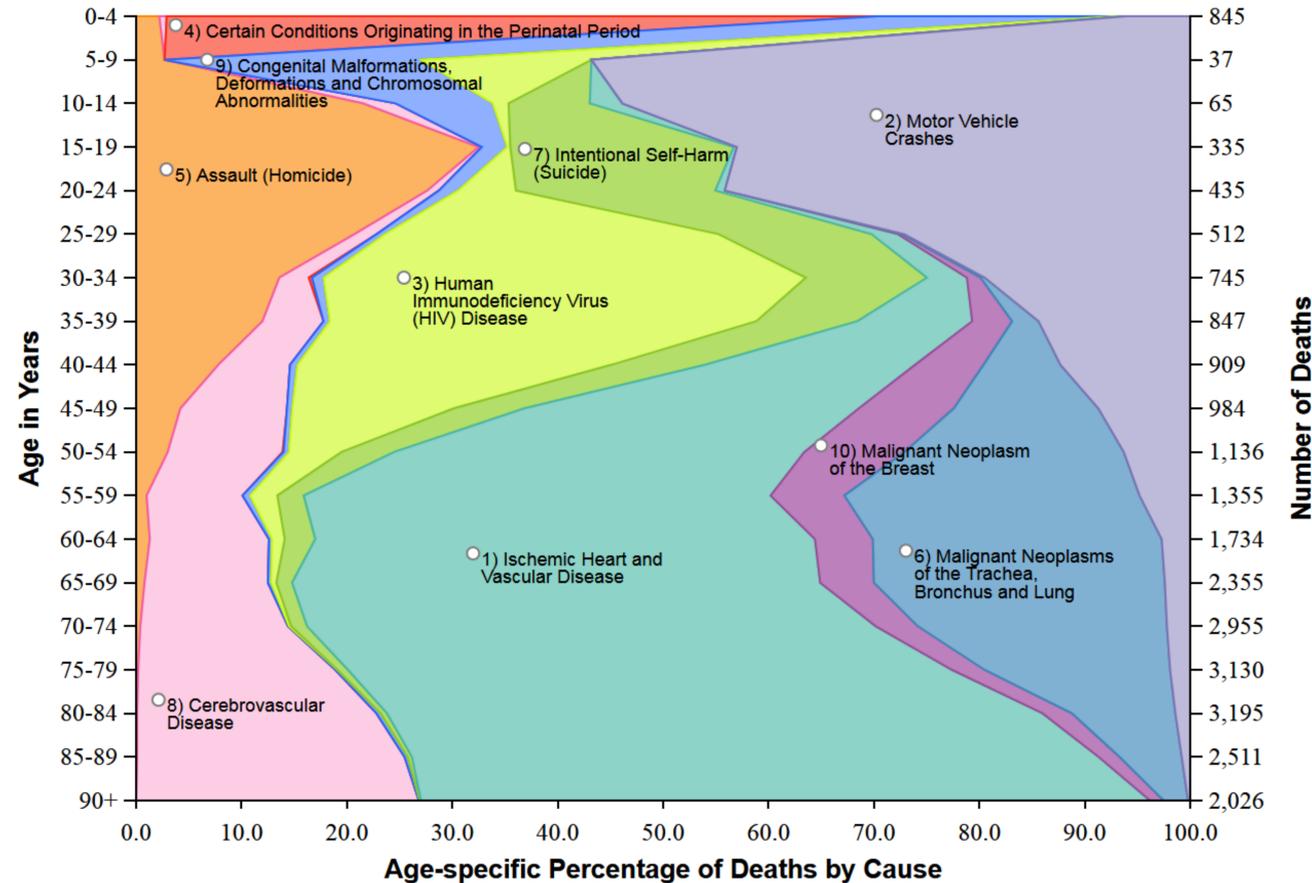
METHODS

The top 10 causes of YPLL in Georgia were determined for 1994 and 2016. The number of deaths from any of the top 10 causes were shown by age group (y-axis). The age-specific percentage of the number of deaths from each cause are shown using a histomap (x-axis). Example (Fig. 1): In 1994 there were 65 deaths from any of the top 10 causes of YPLL in 10-14 year olds, and 35 of those deaths were due to car crashes: The value of 54% is shown for car crashes on the histomap for 10-14 year olds.

OBSERVATIONS

- If compared with overall leading causes of death (not shown), heart disease remains #1. **However other causes rise to the top when using YPLL** (Cause & 2016 rank): Motor Vehicle Crashes (2nd), Suicide (3rd), Poisoning (4th), and Infant Mortality (5th) (Fig. 2).
- Compared with 1994, the most striking change in leading causes of YPLL in 2016 was the replacement of HIV/AIDS (3rd leading cause in '94) with Poisoning (4th leading in '16), largely attributable to the Opioid epidemic (Fig. 1 & Fig. 2).
- Motor Vehicle Crashes remained the 2nd leading cause in both '94 and '16 (Fig. 1 & Fig. 2).

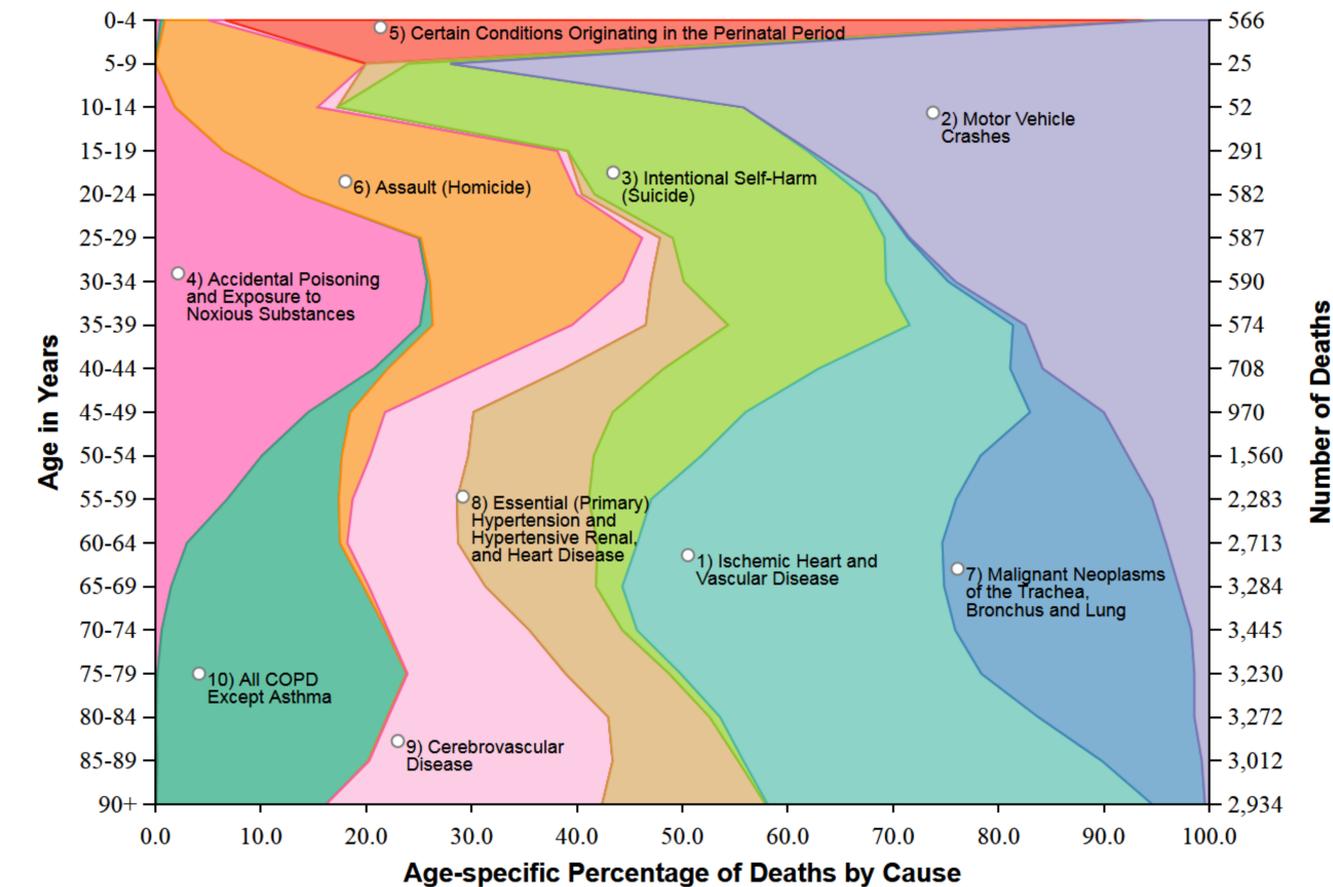
Fig. 1: Mortality Histomap of the Top 10 Causes of YPLL, Georgia, 1994



DISCUSSION

- YPLL is a more sensitive and specific metric of health status than is Leading Causes of Death; and more quickly reflects Public Health impact on population health.
- A Histomap conveys amongst which ages the leading causes of premature mortality occur, making assessment of priority areas evident.
- We do not imply that using YPLL precludes monitoring of mortality in those 75 years and greater; YPLL allows prioritization of limited resources.

Fig. 2: Mortality Histomap of the Top 10 Causes of YPLL, Georgia, 2016



LIMITATIONS

- Only the top 10 causes of YPLL were chosen for inclusion; an arbitrary number. The point of inflection in a scree plot of cause-specific mortality could be used to determine how many causes to include.
- YPLL is based solely on mortality data; a more comprehensive approach could look at the burden of premature morbidity as well.
- The age-specific number of deaths from any of the top 10 causes of YPLL represents between 25.0% and 67.1% of ALL deaths in a given age group (<75 years of age) in 2016. Therefore some key cause groups in select age categories may be excluded.

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