Living Longer: Historical and Projected Gains to Life Expectancy 1960-2060.

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This abstract is released to inform interested parties of ongoing research and to encourage discussion of work in progress. Any views expressed are those of the authors and not necessarily those of the U.S. Census Bureau

Short Abstract

Mortality projections provide an estimate of how population health is expected to change. As part of its population projections, the U.S. Census Bureau develops life tables to project future life expectancy. The latest projections developed nativity-specific life tables-- the first life tables published by Census that account for differences between native and foreign born. Life expectancies are calculated using mortality data from the National Center for Health Statistics (NCHS) and Census population estimates, spanning 2015 to 2060. Preliminary results show that life expectancy is projected to continue increasing in coming decades, but increases happen more slowly than in the past. Foreign born are projected to live longer than native born, and life expectancy is projected to be highest among foreign-born White and Hispanic females. This research will also explore racial and ethnic differences in projected life expectancy between native and foreign born. These projections provide vital information on population aging.

Extended Abstract

Introduction

Mortality projections provide an estimate of how population health is expected to change. In the coming decades, people are projected to live longer than ever before. The mortality projections are presented for the total population and by sex, nativity, and race. This is the first time the U.S. Census Bureau has published nativity-specific life tables and life expectancies. These projections can provide vital information on population aging, the future of public health in the United States, and impacts to health-care systems, while also helping to improve social welfare and policy planning.

The United States has long been an immigrant destination, with the proportion of the population that is foreign born increasing over time. In 1960, the foreign born accounted for only 5% of the population. This grew to 13% of the population by 2010 (U.S. Census Bureau, 2010) and is projected to be 17% of the population by 2060 (U.S. Census Bureau National Projections, 2017). Research shows health and mortality advantages for foreign-born populations living in the United States relative to the native born (Dupre et al., 2012; Elo et al., 2004; Mehta et al., 2016; Lariscy et al., 2014; Preston and Elo, 2014; Singh and Hiatt, 2006; Turra and Elo, 2008). Recent research also shows that there are similarities in life expectancy among many foreign-born subgroups that were born in different geographic and socioeconomic contexts (Mehta et al., 2016).

These established mortality and immigration patterns make it crucial to examine differences in life expectancy by nativity when the data is available. Analyzing life expectancy by nativity allows us to further examine old age mortality patterns and the foreign-born health advantage. In addition to presenting mortality patterns for the total population, depicting life

expectancy patterns separately for the foreign-born and native-born population will also provide a more accurate story of current and future population health .

Data

Data for this paper will come from the third series of national population projections based on the 2010 Census. They project the mortality patterns for the United States population as of July 1st for the years 2017 to 2060. These projections were produced at the national level only, using a cohort-component method. In this method, the components of population change are projected separately for each birth cohort (persons born in a given year) based on past trends. In its simplest form, the cohort component method is expressed as:

$$P_t = P_{t-1} + B_{t-1,t} - D_{t-1,t} + M_{t-1,t}$$

where:

P_t= population at time t;
P_{t-1}= population at time t-1;
$B_{t-1,t}$ = births in the interval from time t-1 to time t;
$D_{t-1,t}$ = deaths in the interval from time t-1 to time t; and
$M_{t-1,t}$ = net migration in the interval from time t-1 to time t

All vital statistics data comes from the National Center for Health Statistics (NCHS). Projected life expectancies at birth are calculated using mortality data from NCHS and population estimates from the Census Bureau, spanning from 2015 to 2060. Life expectancies from 1960 through 2014 are taken from life tables produced by NCHS (Arias et al., 2014). The historical and projected life expectancies are combined and analyzed over a 100 year period, from 1960 to 2060.

Projections are calculated for the total population and by sex, nativity, and race. Nativity is divided into two categories: foreign born and native born. Due to concerns about the quality of

race reporting in the death data, race is divided into three categories with similar mortality patterns: non-Hispanic White/Asian/Pacific Islander (NHW/API); non-Hispanic Black/American Indian/Alaska Native (NHB/AIAN); and Hispanic regardless of race.

Results

Differences for the Total Population. All results discussed in this abstract are preliminary. Historically, the largest gains in life expectancy were experienced between 1970 and 1980—an increase of about 3 years from 70.8 to 73.7 years. This corresponds to increases in vaccinations, continued decreases in infectious diseases and cardiovascular mortality, and changes in smoking patterns after the 1964 Surgeon General's warning (Centers for Disease Control and Prevention, 2011; Klenk et al., 2016; National Center for Chronic Disease Prevention and Health Promotion, 2014). Despite large gains to life expectancy in the latter part of the 20th century, increases in recent years have stagnated, and our preliminary results show they are projected to increase more slowly through 2060. Preliminary results show faster gains in male life expectancy that will narrow the longevity disparity between men and women, though women are still projected to continue living longer than men.

Differences by Nativity. For the first time, the Census Bureau accounted for the health advantage of the foreign born in the population projections by including nativity in the mortality components. This improvement to the population projections also allows researchers to examine projected differences in life expectancy for the native and foreign born. It also allows researchers to look at projected differences within these groups, by race and ethnicity. This is important because the foreign born are heterogeneous and may have distinctive racial or ethnic patterns in life expectancy, like the native born population. From 2017 to 2060, the foreign born are

projected to outlive the native born for all race and Hispanic origin groups. Preliminary findings show the average difference in life expectancy between the foreign and native born is projected to narrow in coming decades, a pattern corresponding to research on the foreign-born health advantage. This paper will also look in detail at the racial and ethnic differences among the foreign born by sex, and compare them with well-known trends among the native-born population.

Summary and Conclusions

Preliminary results show that life expectancy is increasing; however, this trend has happened more slowly in recent years. By 2060, foreign-born women are projected to live the longest, while native-born men may die the earliest. Once finalized, these projections can provide vital information on population aging, the future of public health in the United States, and impacts to health-care systems, while also helping to improve social welfare and policy planning.

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