

Building For Health: The Built Environment As A Determinant of Health *On Good Days and Bad*

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Overview

- Some definitions
 - Health
 - Measures of health
 - Determinants of health
 - Built environment
- Health trends
- Examples of what these trends mean for a healthy built environment

What is *Health*?

- "State of complete physical, mental, and social well being, and not merely the absence of disease or infirmity."

– Preamble to the Constitution of the WHO, 1948

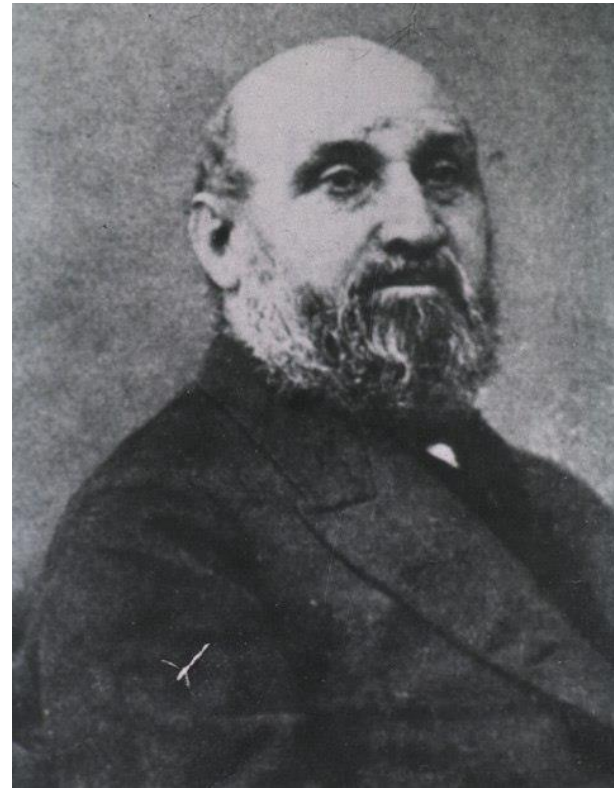


Measures of Health

- Mortality
 - Number/rates of death
 - Causes of death
 - Premature Death:
 - Infant mortality
 - Years of potential life lost (YPLL)
 - Life expectancy
- Morbidity
 - Incidence and prevalence of specific illnesses and injuries
 - Level of function/disability
 - Health care and prevention services utilization
- Quality of life
 - Physically and mentally unhealthy days
 - Self-assessed health status
 - Healthy life expectancy: Disability-Adjusted Life Years (DALY) lost: YPLL plus years of disability

"Death is a fact. All else is inference."

William Farr
(1807–1883)



Social Determinants of Health Defined in the 21st Century

“...the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are mostly responsible for health inequities...”

World Health Organization

Built Environment

CDC: “...all the of the physical parts of where we live and work (e.g., homes, buildings, streets, open spaces, and infrastructure)”

<https://www.cdc.gov/nceh/publications/factsheets/impactofthebuiltenvironmentonhealth.pdf>

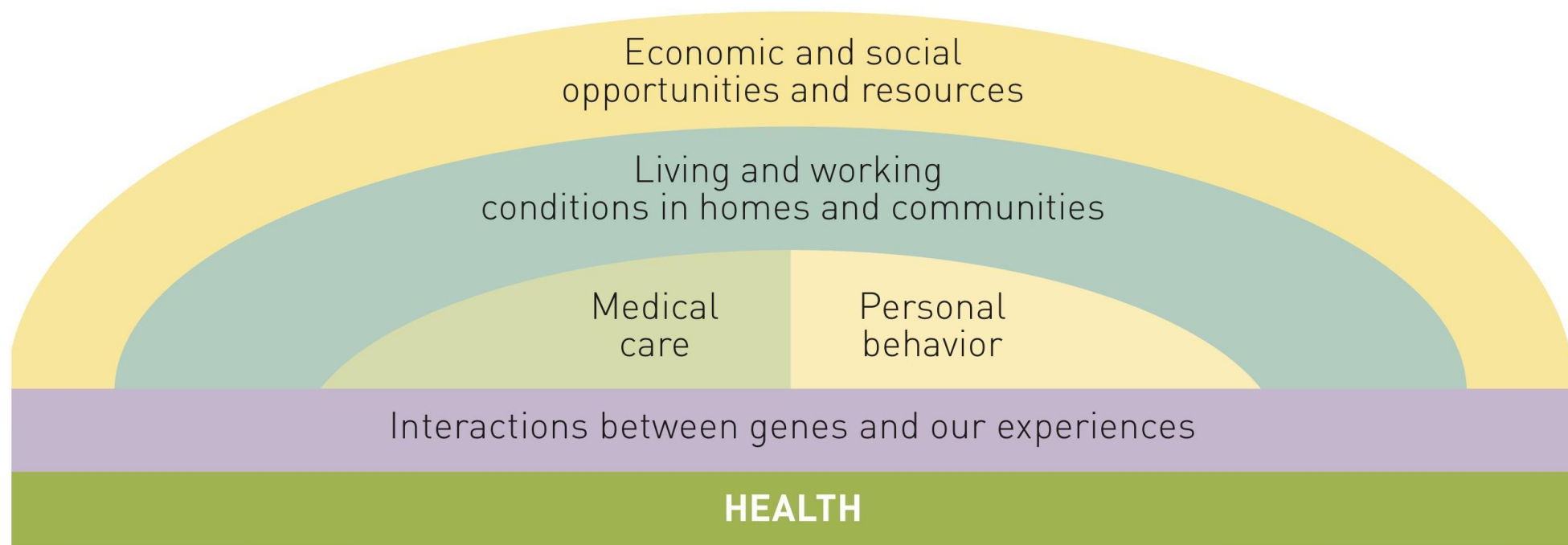
“The human-made **places** and spaces in which people live, work, and recreate...”

Karen Roof, Ngozi Oleru

J Environ Health 2008;71:24-27

Living and Working Conditions in Homes and Communities Influence Health

Factors influencing health



Source: Robert Wood Johnson Foundation.

Place As a Determinant of Health



ZIP CODE
90002
LIFE EXPECTANCY
73

ZIP CODE
92661
LIFE EXPECTANCY
88

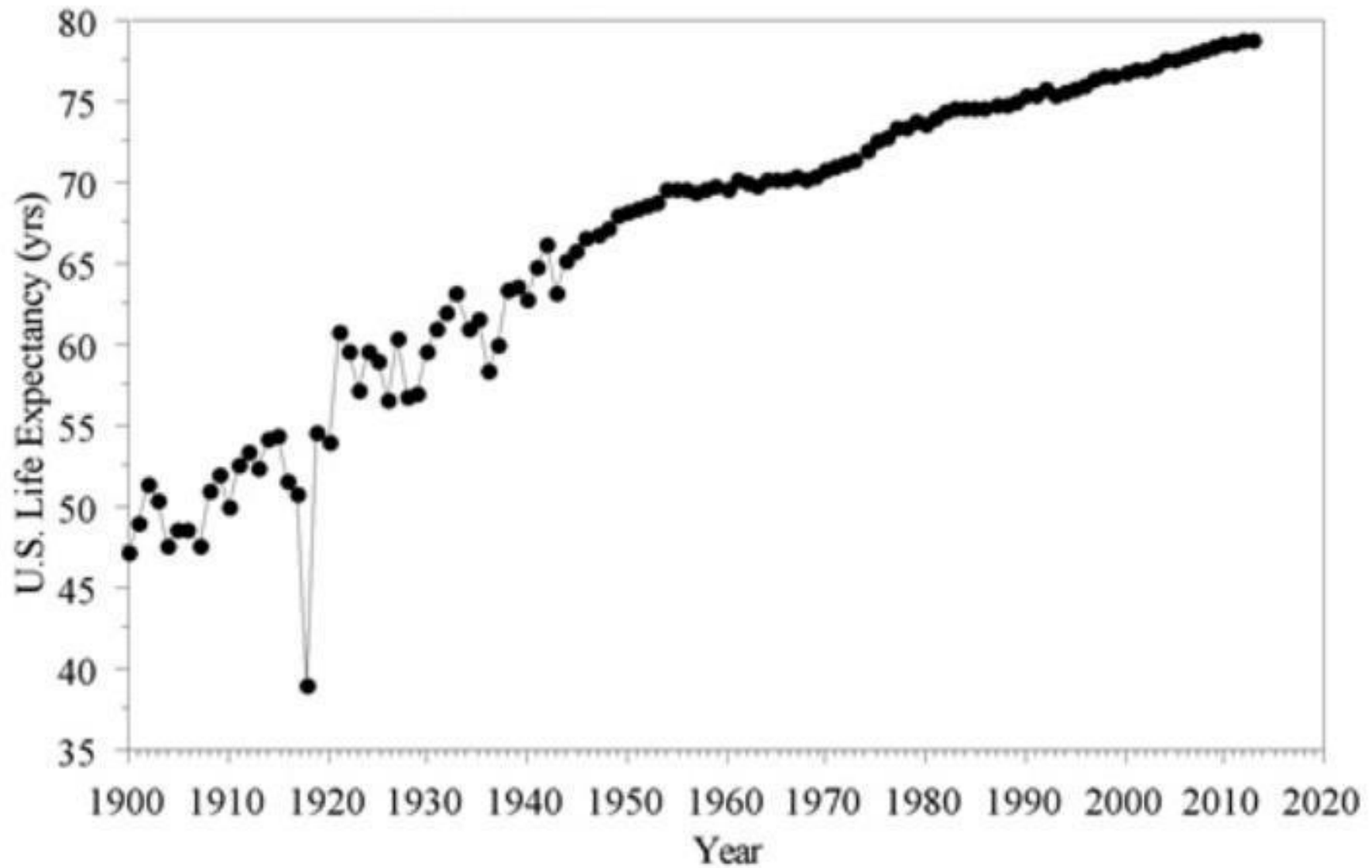
Your **ZIP Code** shouldn't
predict **how long you'll live.**

California Endowment

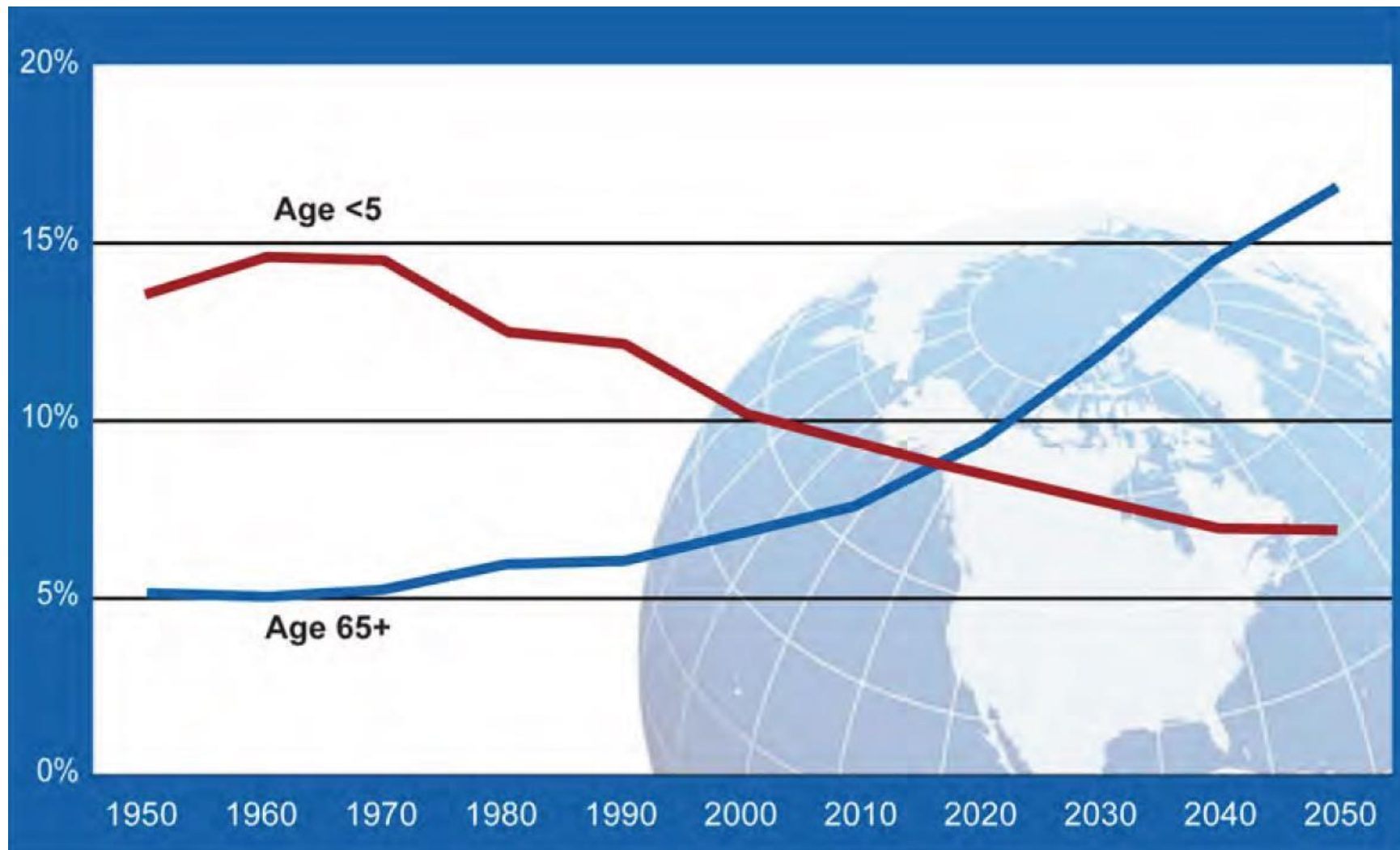
Health Trends

- Aging population
- Shift from acute infectious diseases to chronic diseases
- Mental health
- Urbanization

Life Expectancy, US, 1900-2018



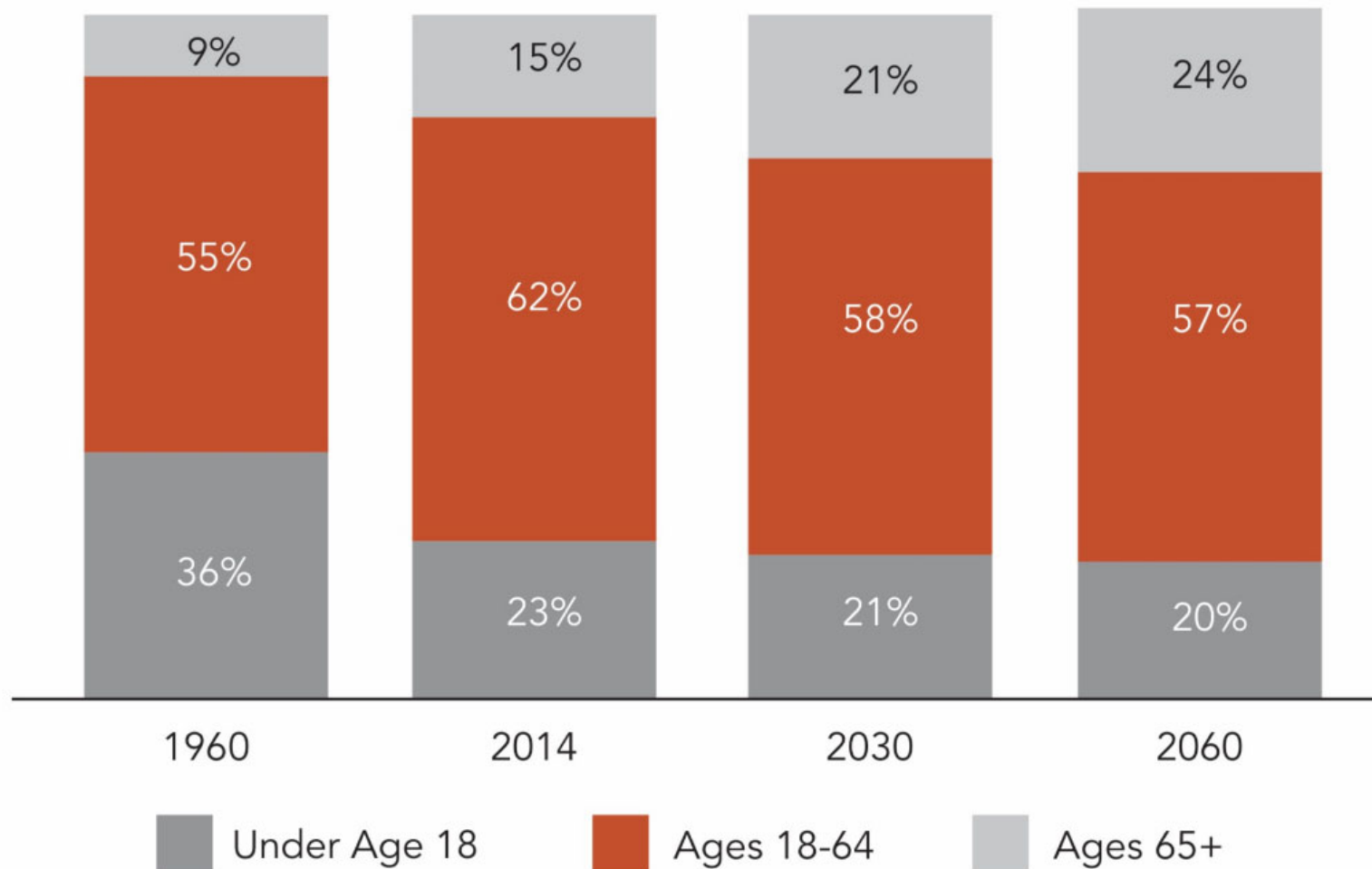
Proportion of the Global Population Aged < 5 Years and ≥65 Years



Source: United Nations. *World Population Prospects: The 2010 Revision*.
Available at: <http://esa.un.org/unpd/wpp>

By 2060, Nearly One-Quarter of Americans Will Be Ages 65 and Older.

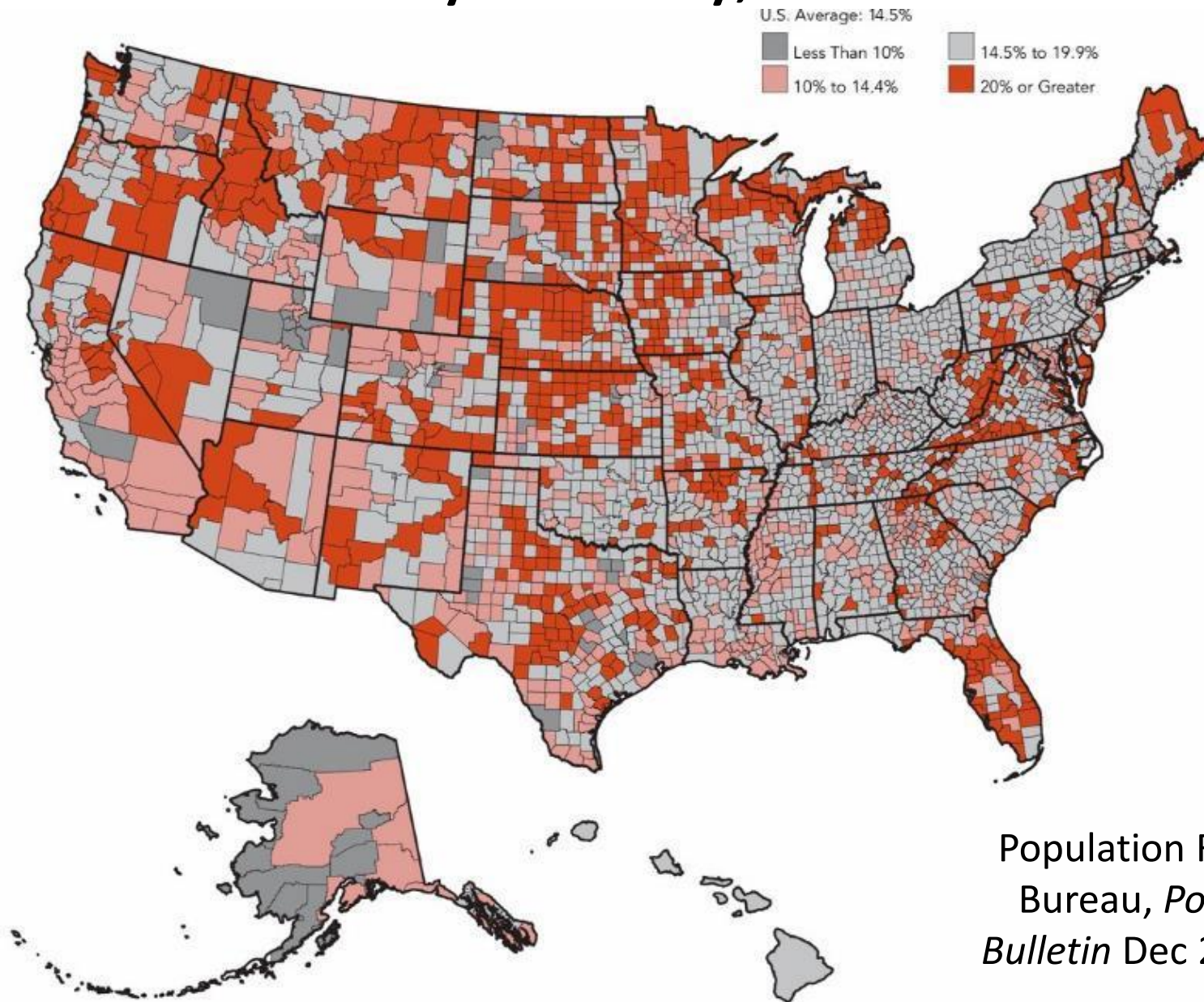
Percent of U.S. Population in Selected Age Groups, 1960 to 2060



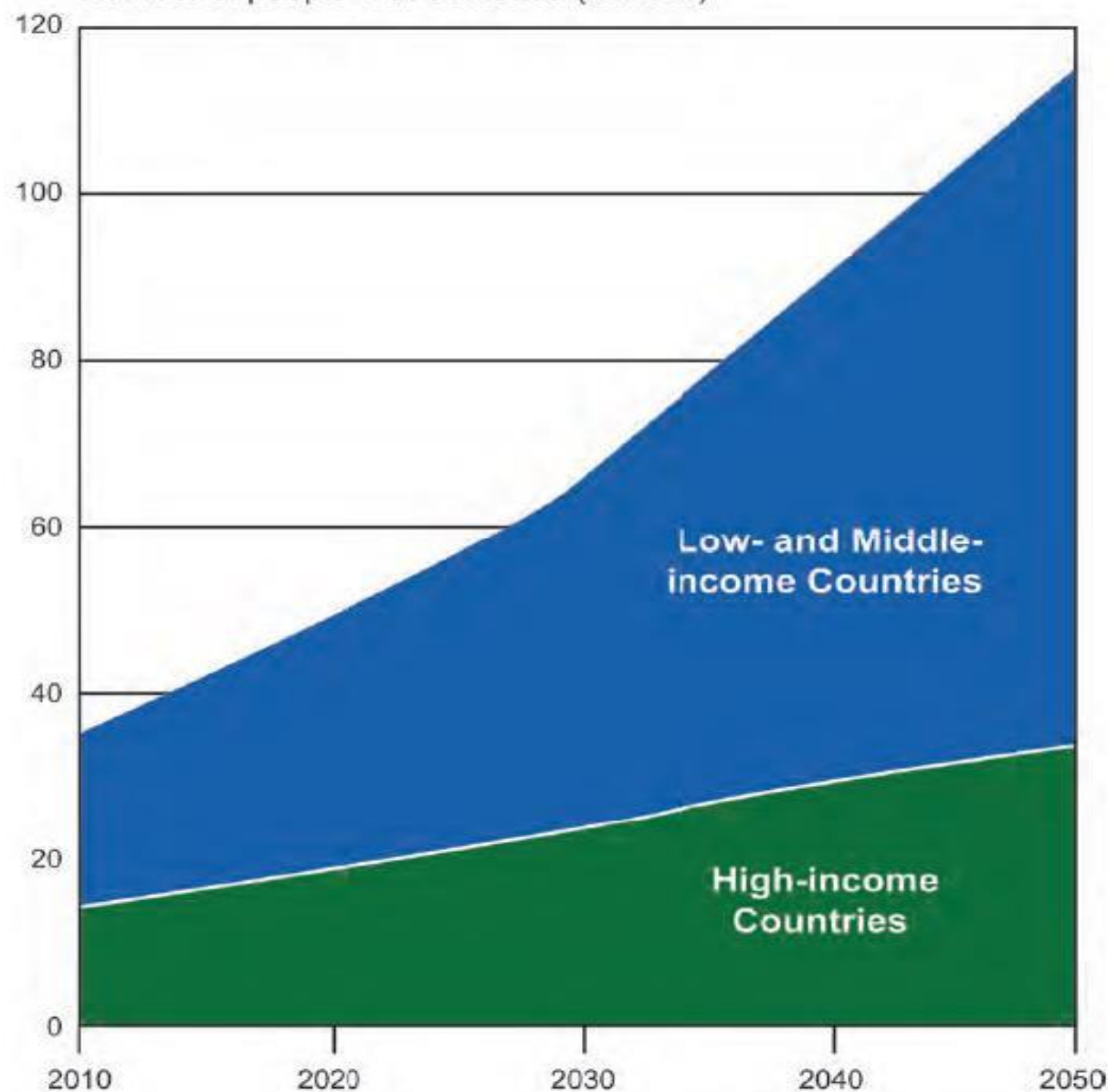
Note: Numbers may not sum to 100 due to rounding.

Source: PRB analysis of data from the U.S. Census Bureau.

Proportion of Population Aged ≥ 65 Years, US by County, 2014

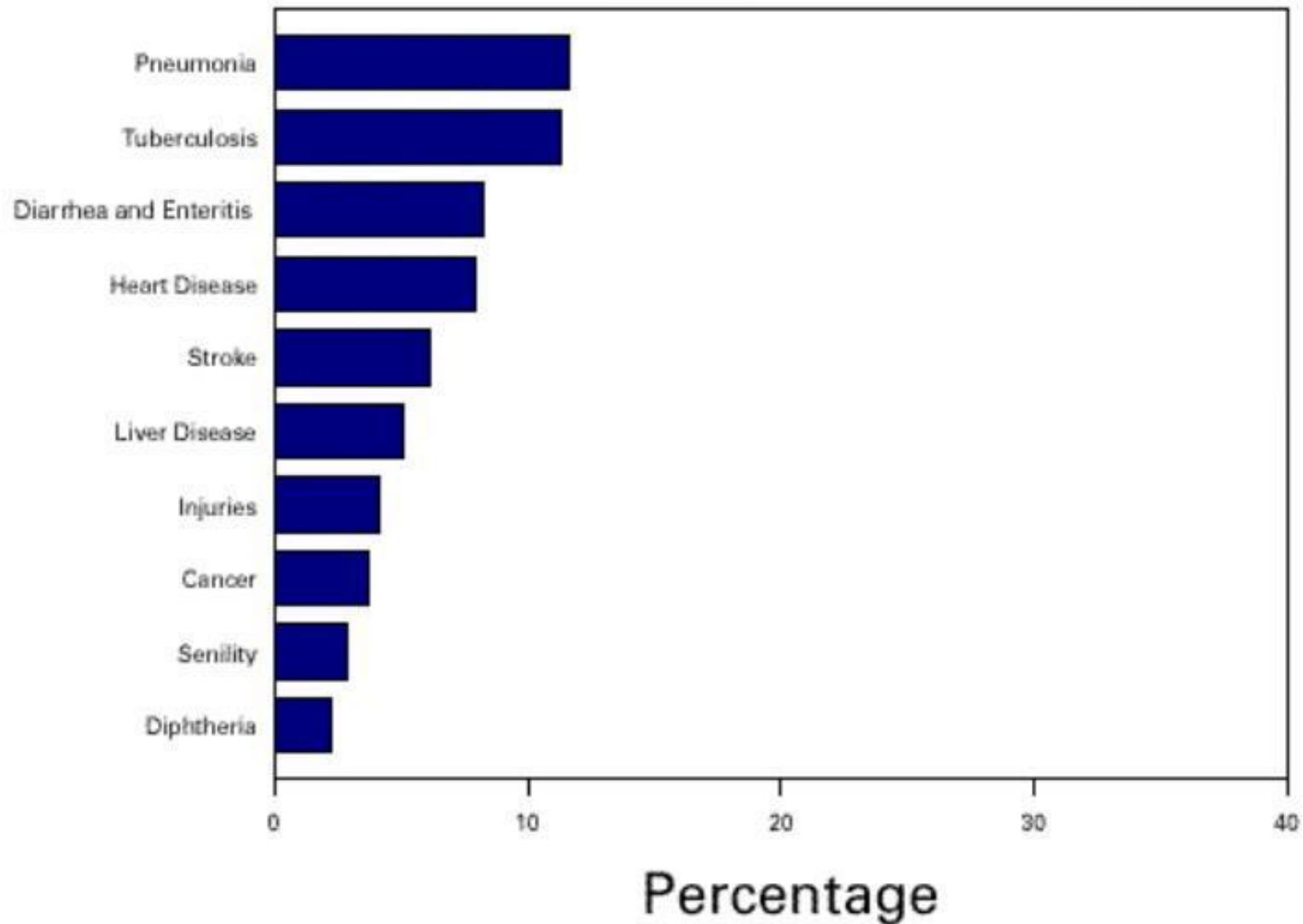


Projected Global Population With Dementia, 2010-2050

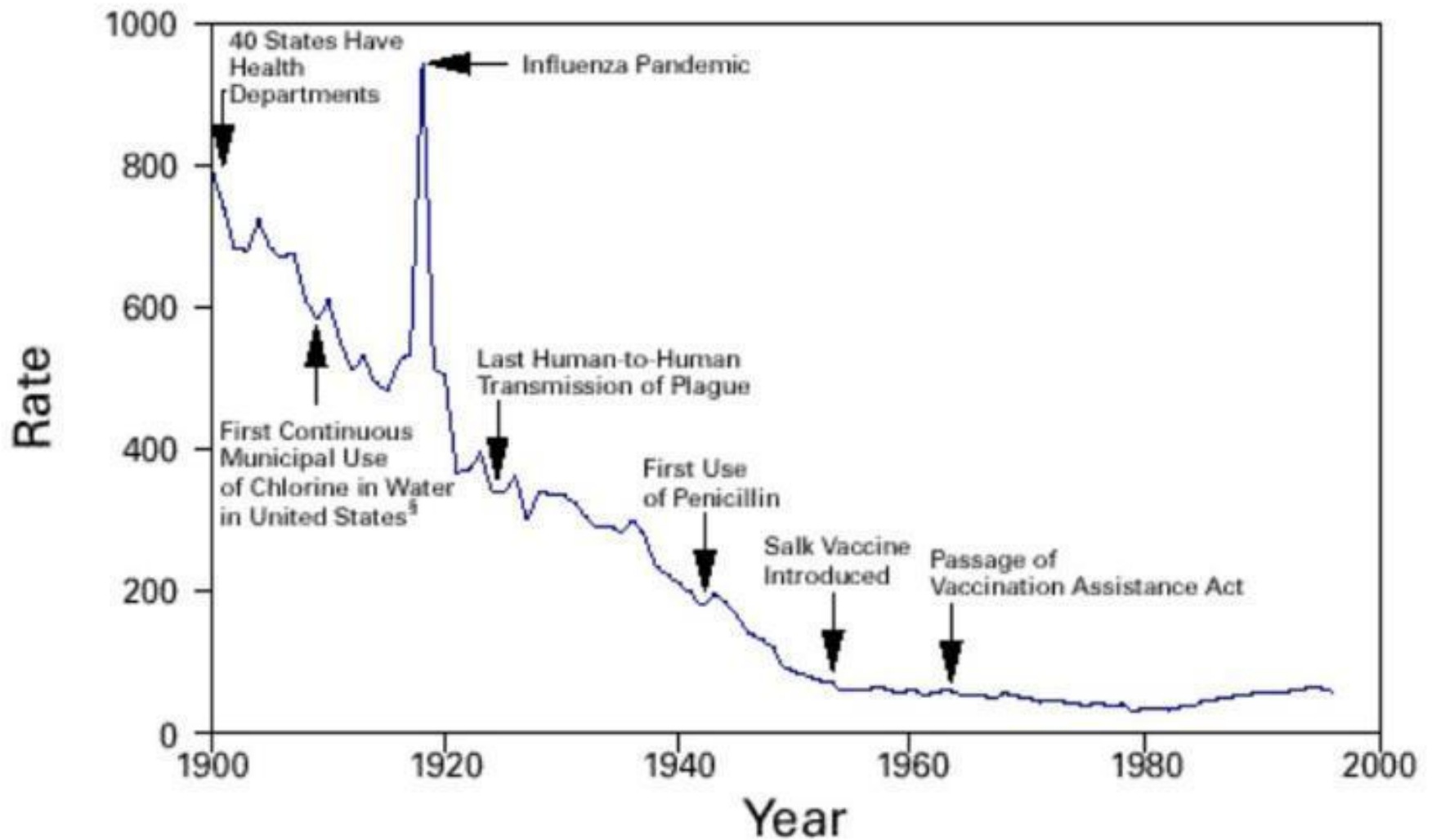


Source:
Alzheimer's
Disease
International,
*World Alzheimer
Report, 2010.*

10 Leading Causes of Death, US, 1900

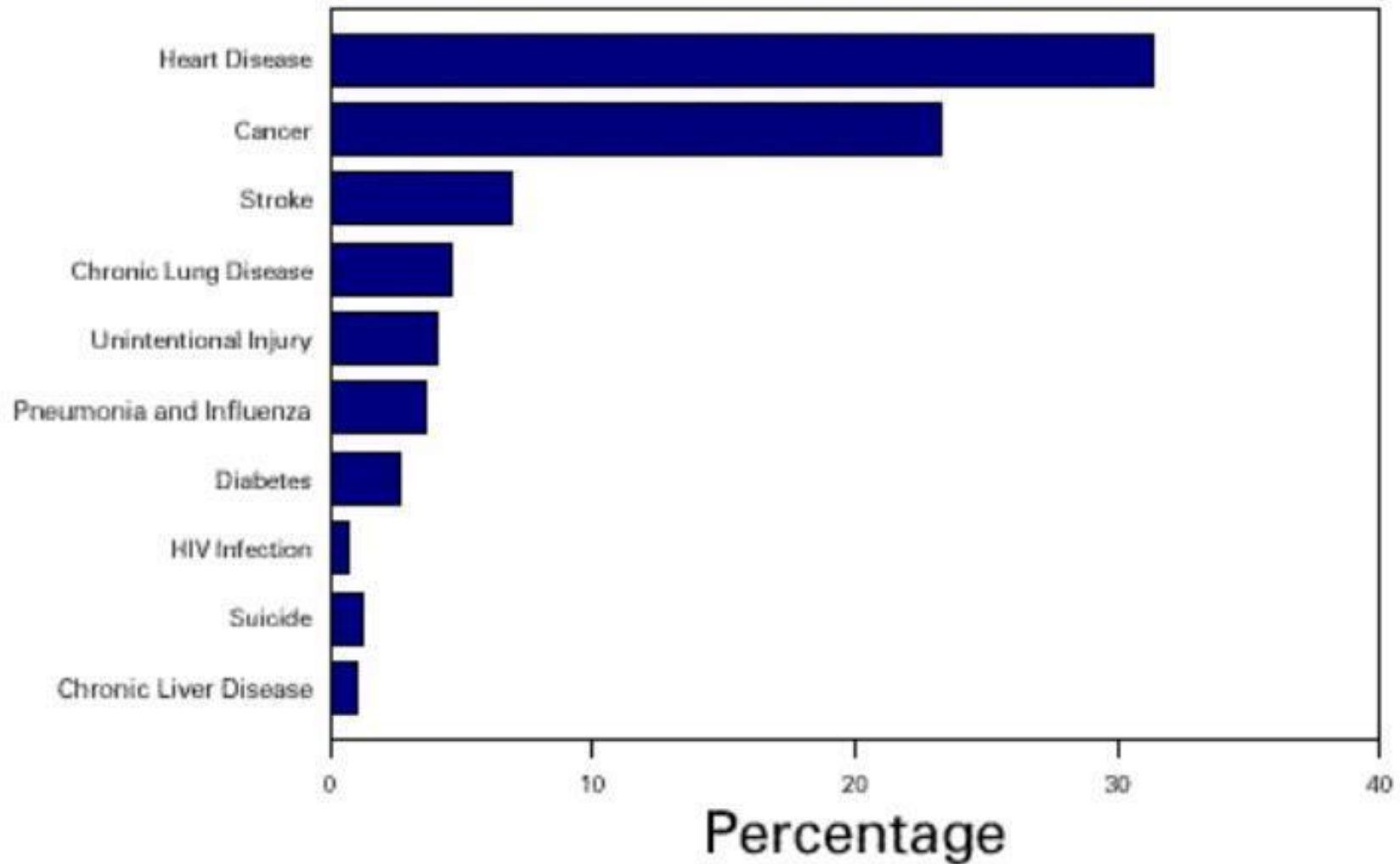


Death Rate for Infectious Diseases, US, 1900-1996



*Per 100,000 population per year.

10 Leading Causes of Death, US, 1997

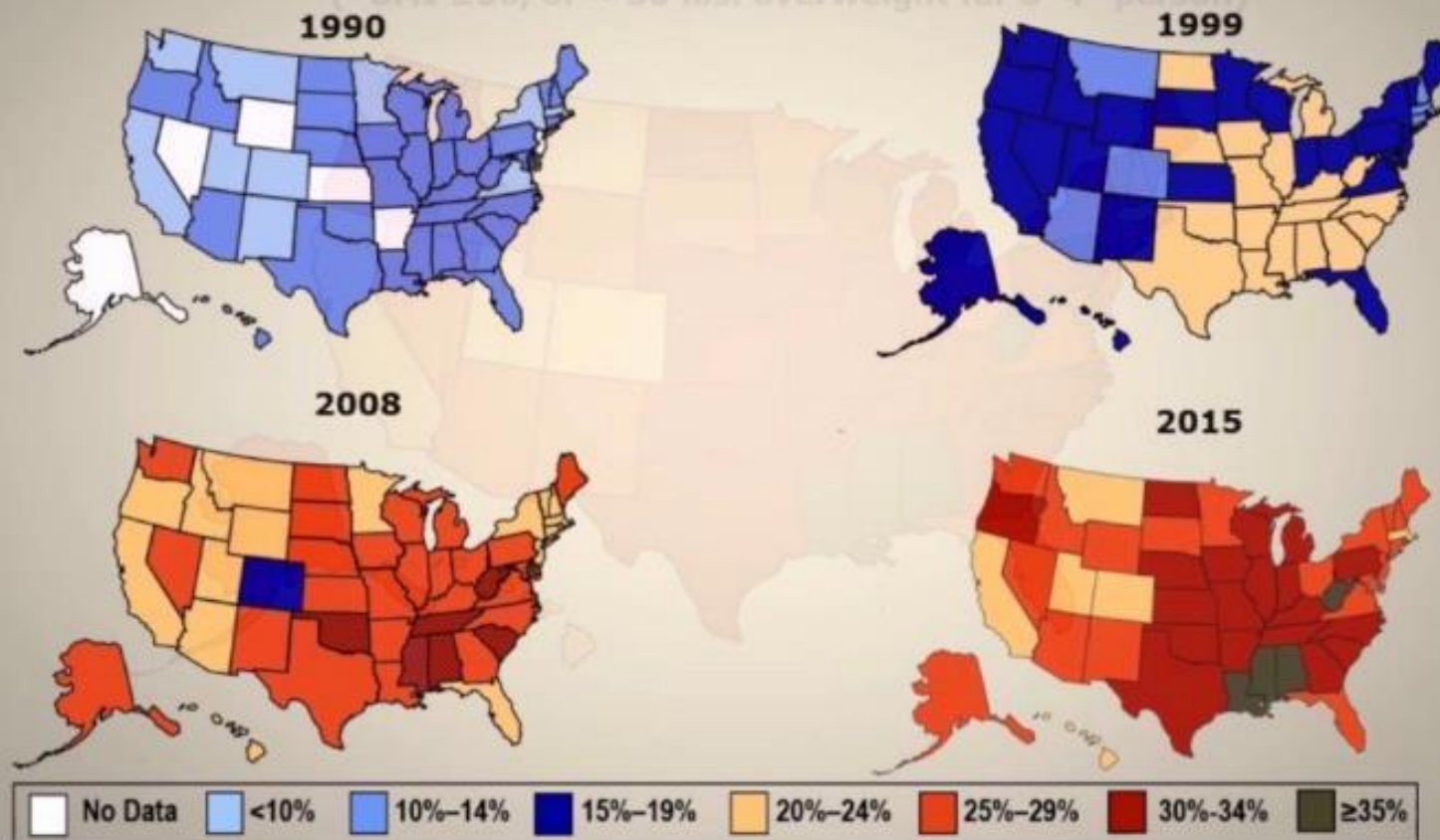


CDC, *MMWR* 1999;48(29):621-629

Obesity Trends* Among U.S. Adults

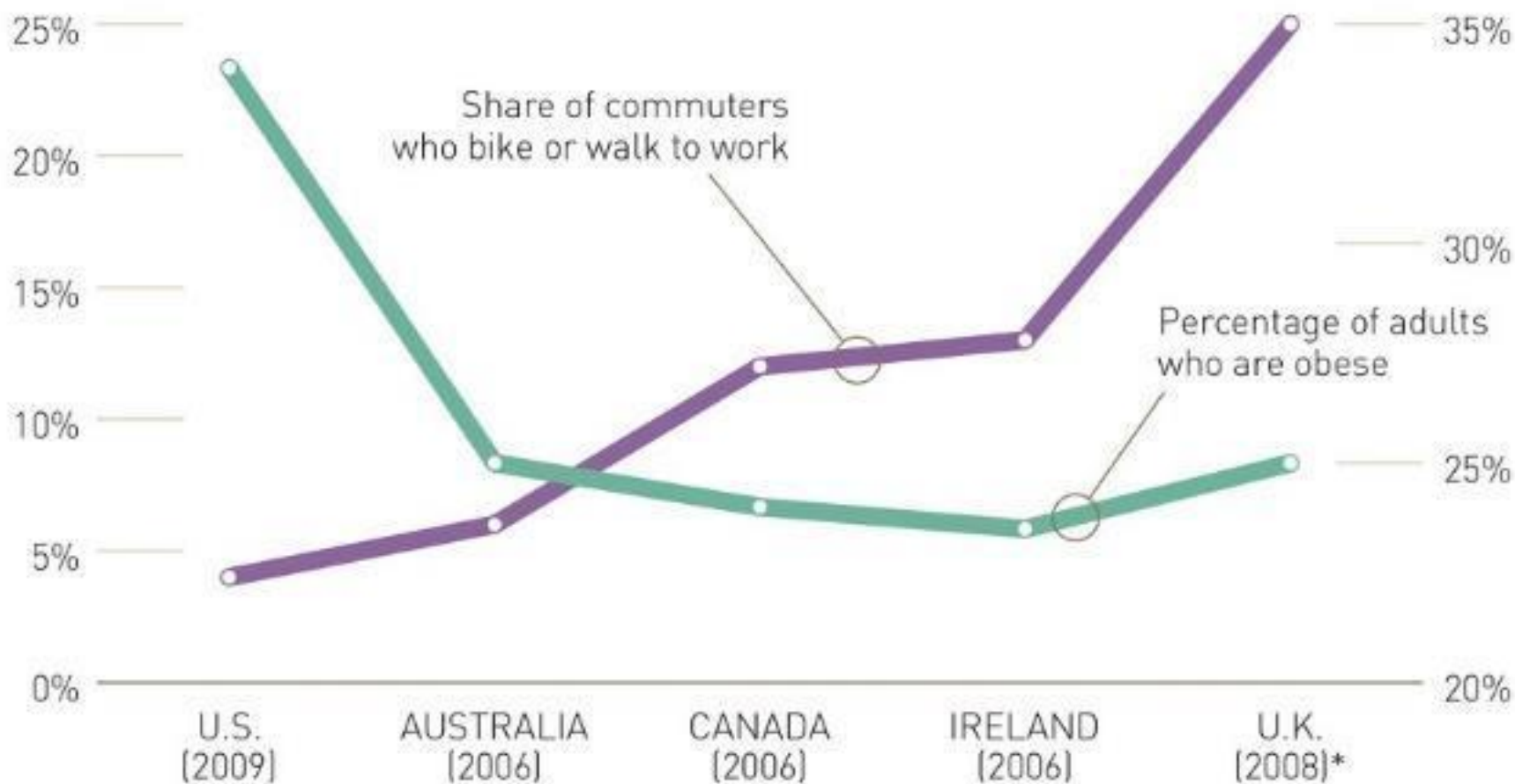
BRFSS, 1990, 1999, 2008, 2015

(*BMI ≥ 30 , or about 30 lbs. overweight for 5'4" person)



Obesity Rates Are Lower in Countries Where Lots of People Bike and Walk to Work

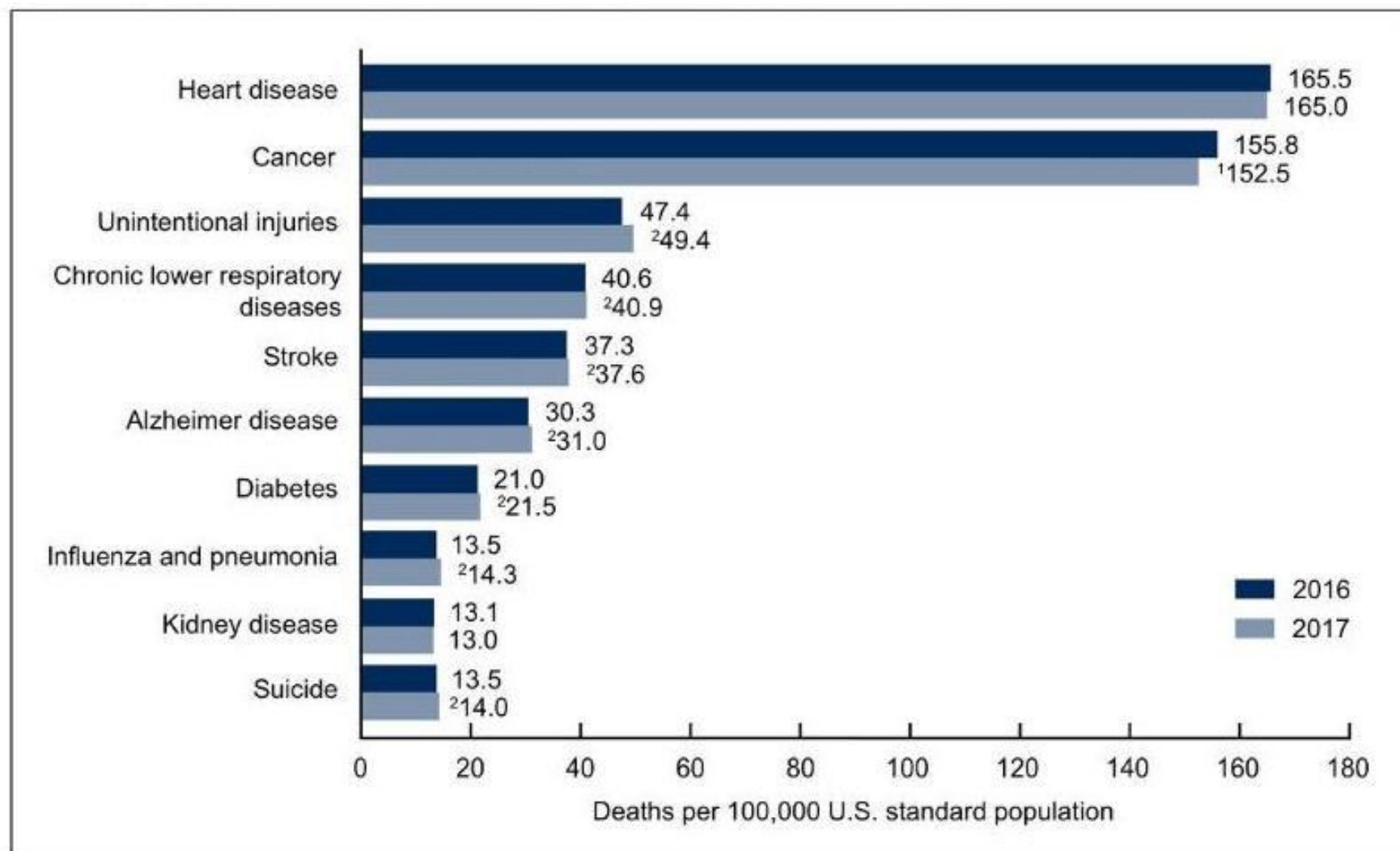
Levels of bicycling and walking to work versus measured obesity levels for selected countries



Sources: *Built Environment* journal; the Organization for Economic Cooperation and Development.

*U.K. data are for all trips, not just work trips.

Age-Adjusted Death Rates for 10 Leading Causes of Death, US, 2016 and 2017



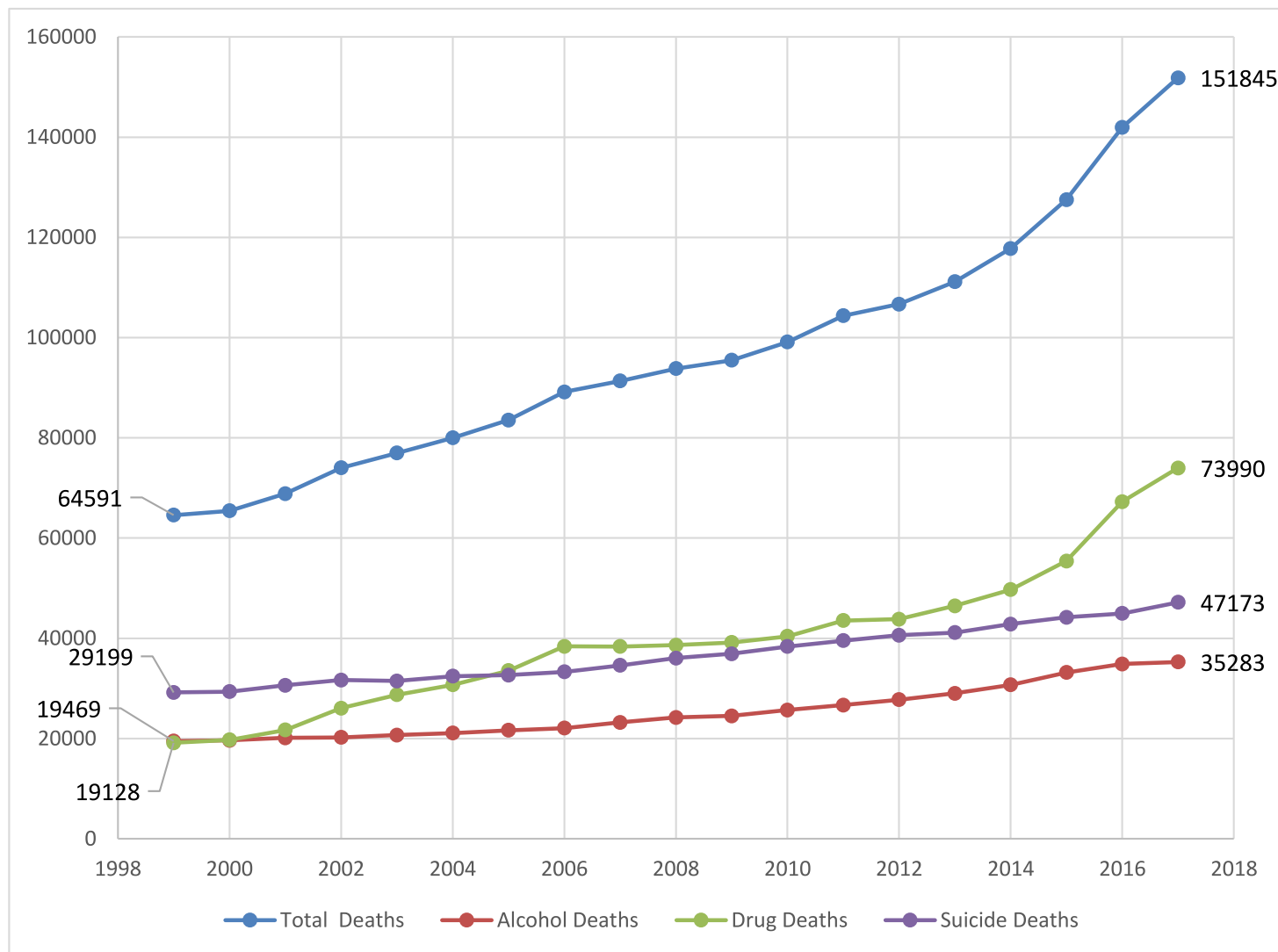
¹Statistically significant decrease in age-adjusted death rate from 2016 to 2017 ($p < 0.05$).

²Statistically significant increase in age-adjusted death rate from 2016 to 2017 ($p < 0.05$).

NOTES: A total of 2,813,503 resident deaths were registered in the United States in 2017. The 10 leading causes accounted for 74.0% of all deaths in the United States in 2017. Causes of death are ranked according to number of deaths. Rankings for 2016 data are not shown. Data table for Figure 4 includes the number of deaths for leading causes. Access data table for Figure 4 at: https://www.cdc.gov/nchs/data/databriefs/db328_tables-508.pdf#4.

SOURCE: NCHS, National Vital Statistics System, Mortality.

Deaths Due to Alcohol-Related Diseases, Drug Overdose, and Suicide, US, 1999-2017

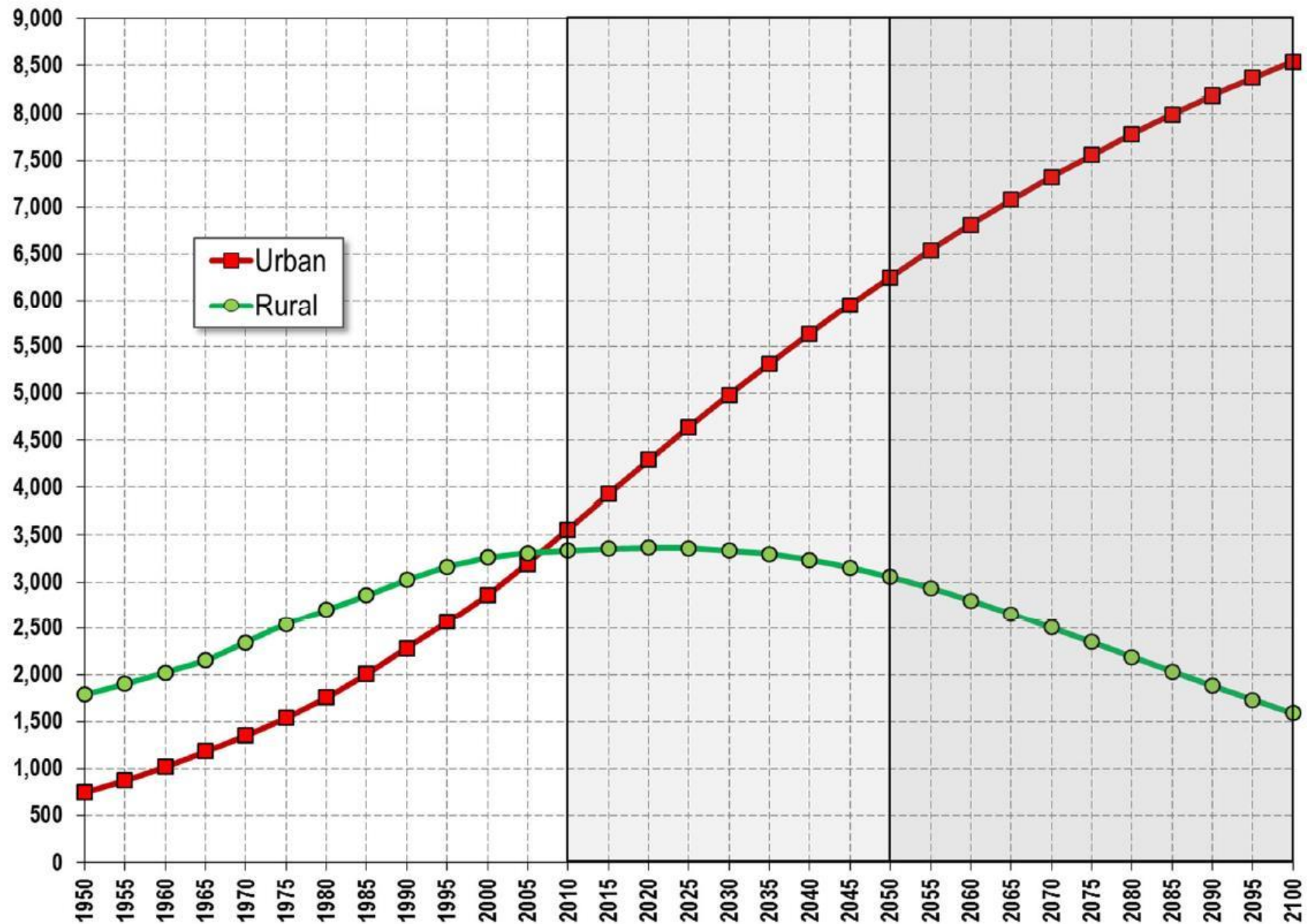


Data source: National Center for Health Statistics, CDC



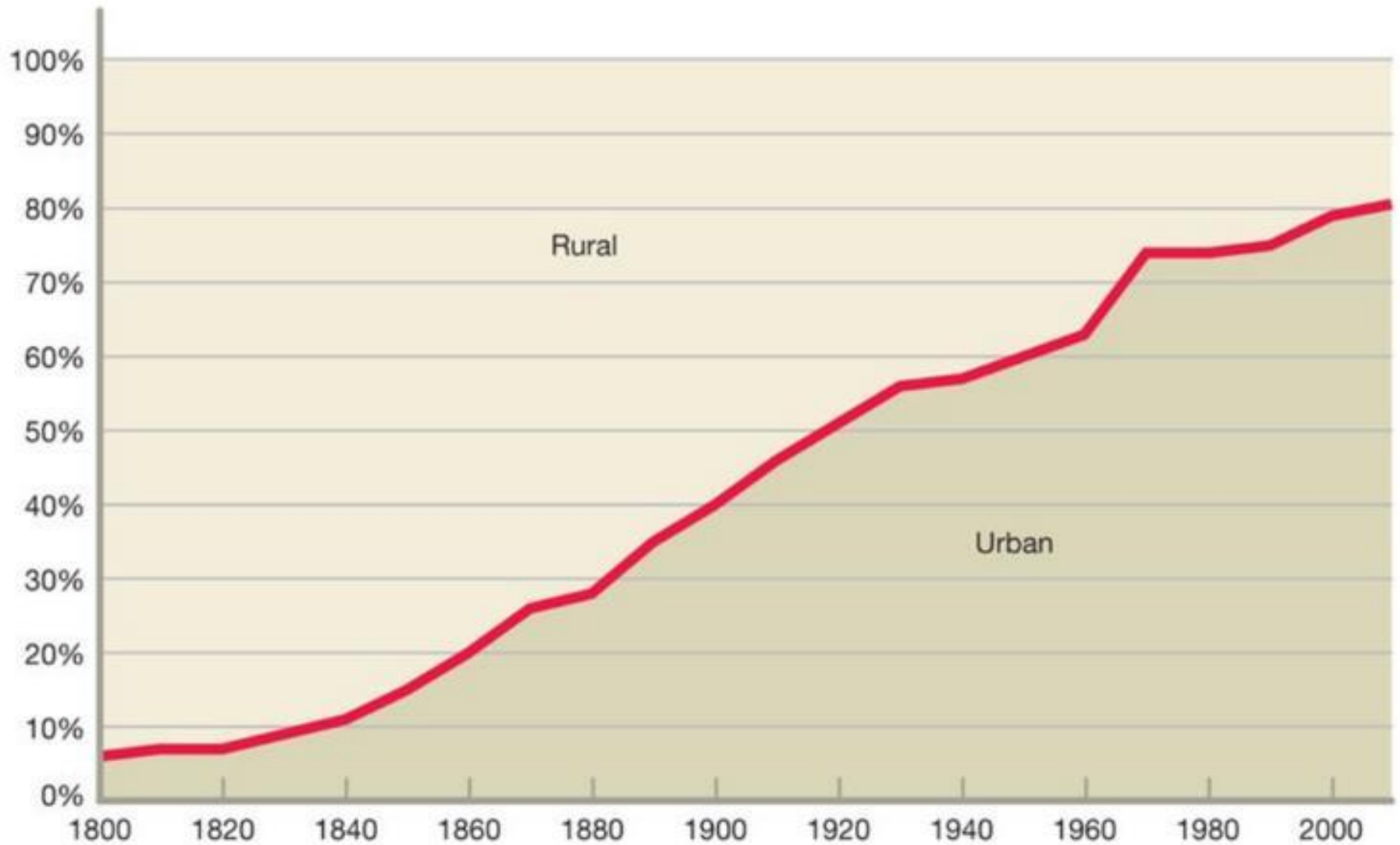
World: **Urban** and **rural** Population: 2010-2100

United Nations Department of Economic and Social Affairs – Population Division



Source: United Nations, Department of Economic and Social Affairs, Population Division (2012): World Urbanization Prospects, the 2011 Revision. New York

Urban and Rural Percentage of Population, US, 1800-2010



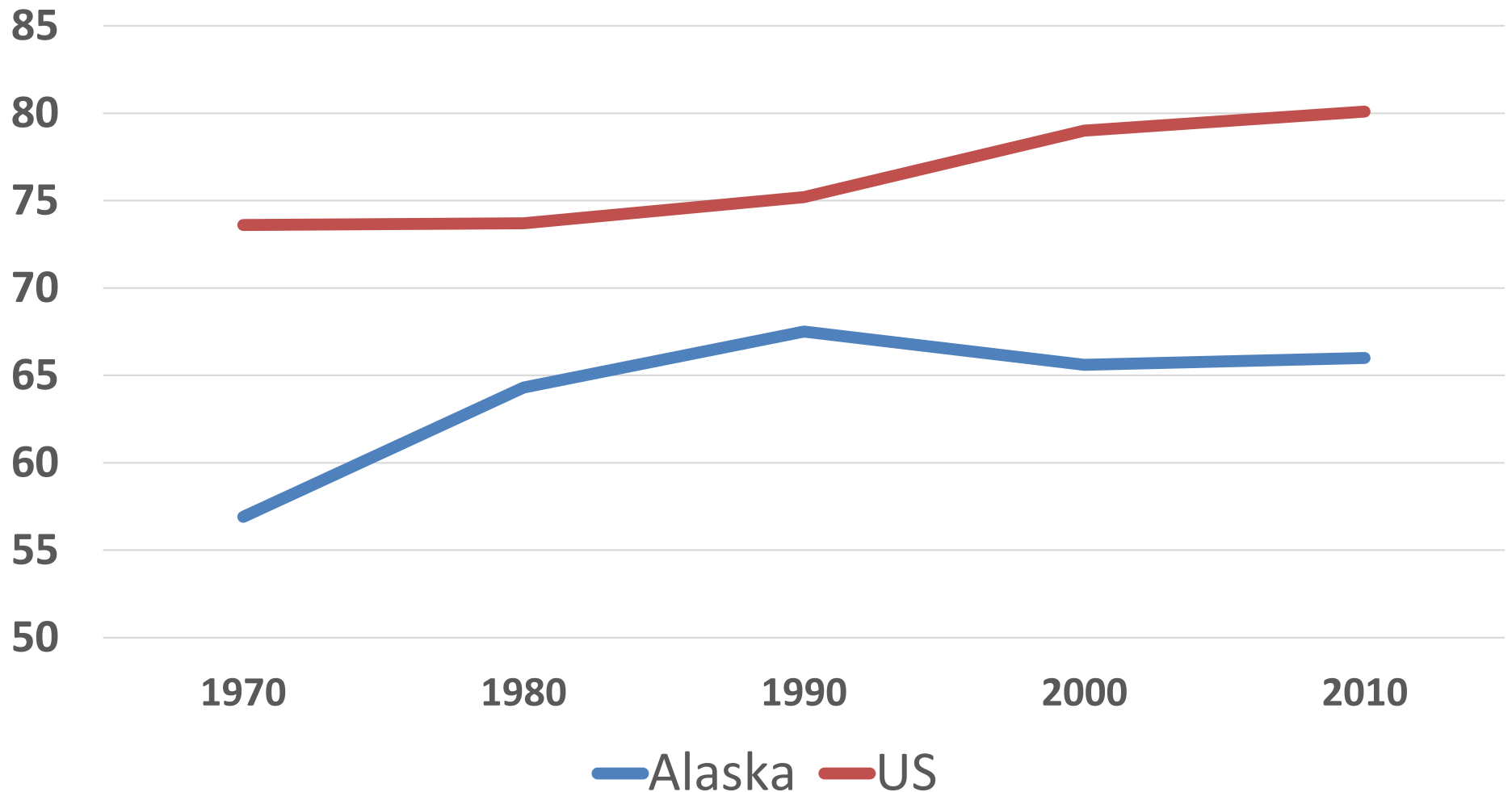
Eleven “Megaregions” of the US, 2014



They host
75% of America's
population and employment.

Urban Land Institute

Urban Percentage of Population, US and Alaska, 1970-2010



Data Source: Iowa State University

Effects of Urbanization on Health

- Opportunities

- Telecommunications
- Employment
- Education
- Health services
- Entertainment

- Challenges

- Air and water quality
- Crowding
- Land use impact
- Microclimate
- Housing
- Traffic/transportation
- Enculturation



Examples of What These Trends Mean For a Healthy Built Environment

1. The build environment needs to promote active transportation indoors...



Examples of What These Trends Mean For a Healthy Built Environment

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Examples of What These Trends Mean For a Healthy Built Environment

1. The build environment needs to promote active transportation indoors and out

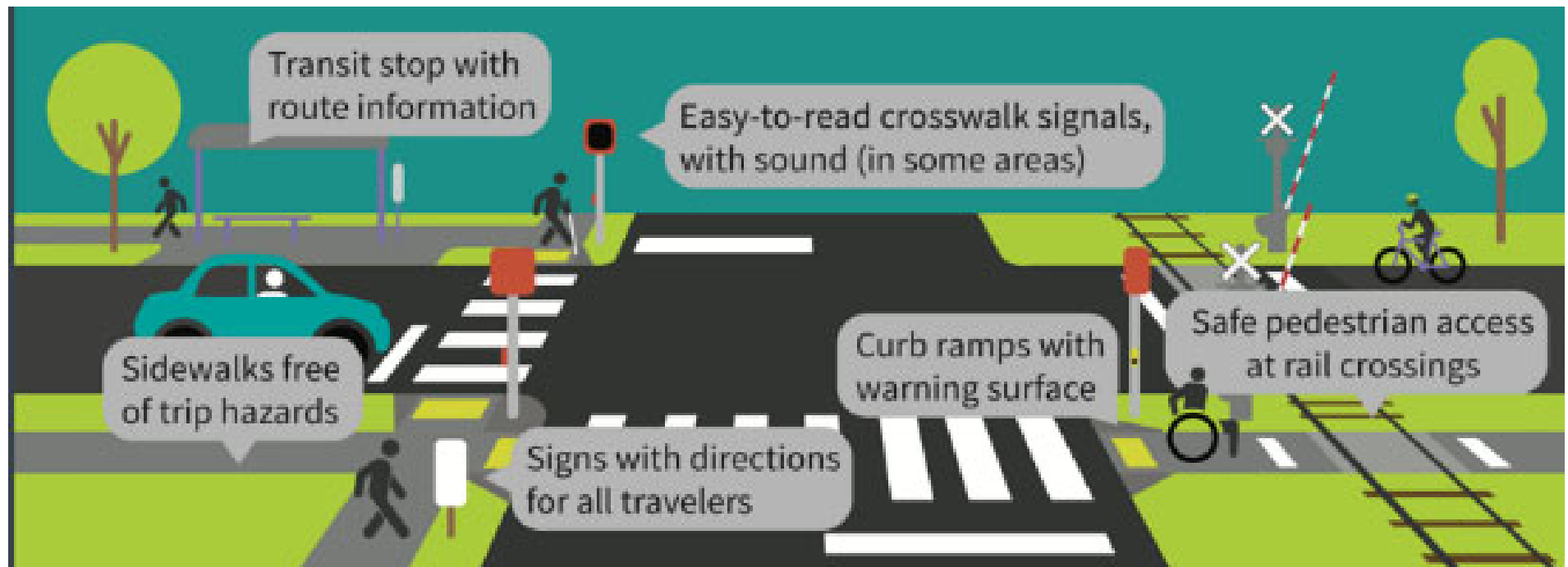




- Short-term bike storage for at least 5% of building occupants and at least 2.5% of regular visitors
- At least 1 on-site shower and changing facility for the first 100 regular building occupants and at least 1 for each additional 150

Examples of What These Trends Mean For a Healthy Built Environment

1. The build environment needs to promote active transportation indoors and out





Examples of What These Trends Mean For a Healthy Built Environment

2. The built environment needs to provide access for all



Examples of What These Trends Mean For a Healthy Built Environment

2. The built environment needs to provide access for all





Beach Streets Assessment – Long Beach

Conducting a review and audit of Beach Streets, Long Beach, California's Open Streets Program....



Open Streets Thunder Bay

8 80 Cities supported the development of an Open Streets program in Thunder Bay to promote walking, and cycling as methods of tran...

Examples of What These Trends Mean For a Healthy Built Environment

3. The built environment needs create resilient infrastructure and communities



DATE	PLACE	MAGNITUDE	DEATHS
10-29-08	PAKISTAN	6.4	300
4-06-09	ITALY	6.3	309
1-12-10	HAITI	7.0	230,000
4-14-10	CHINA	6.9	400
2-22-11	NEW ZELAND	6.3	160
8-11-12	IRAN	6.3	300
2-20-13	CHINA	6.6	160
8-3-14	CHINA	6.1	600
8-24-16	ITALY	6.0	298
8-5-18	INDONESIA	6.9	460
11-30-18	ALASKA	7.0	0





Damage on Vine Road following the 7.0 magnitude quake. Photo courtesy of Ivan Fonova.

UPDATE: Gov. Dunleavy requests disaster relief for Nov. 30 earthquake damage

ONE 

GENERAL
PRACTICE

Heart Of Eagle River
**MEDICAL CLINIC
& URGENT CARE**
MEDICARE / MEDICAID ACCEPTED



Resilient Infrastructure: Telecommunications



A Mobile Phone Tower Destroyed in Sa'ada, July 2018.







EMBASSY OF AUSTRALIA



What Defines A “Healthy Place”?

- Safe and affordable housing
- Comfortable and convenient transportation sources
- Access to healthy foods and the natural environment
- Use of health-sustaining methods and materials
- Design that makes “the healthy choice the easy choice”
- An environment that is resilient on “bad days”

**"Plans are of little
importance but
planning is essential"**

--Winston Churchill

