“Mortality and Morbidity in the 21st Century”
By Anne Case and Angus Deaton

David Cutler
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One of the most important epidemiological and economic facts of our time

• Rising mortality for non-Hispanic whites
  – Especially prime age, lower SES
  – Absolute, and in relationship to other countries.

• Change has occurred over a long period of time

• Implications for Medicare, Medicaid, Social Security, DI, and other policies
  – Is now the right time to take away health insurance coverage from low income whites?
A few points

• The effect is much greater for the working age population.

• The Durkheim theory of deaths: performance relative to expectations. Hard to tell.

• The ability to translate pain into death has accelerated.
Share of People Surviving from 40 to 60
International Comparison of Life Expectancy at Age 65

Life Expectancy for Entire Population

Years of Life At Age 65

US
International Comparison of Life Expectancy at Age 65

Life Expectancy for Entire Population

Years of Life At Age 65

- France
- Canada
- Sweden
- Austria
- US
- UK
Cohort or Year Effects?

Relative Mortality by Cohort, Non-Hispanic Whites

Relative Mortality (1999=1)

1999 2001 2003 2005 2007 2009 2011 2013 2015

1.15
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.75

40-44
Cohort or Year Effects?

Relative Mortality by Cohort, Non-Hispanic Whites

Relative Mortality (1999=1)

1999 | 2001 | 2003 | 2005 | 2007 | 2009 | 2011 | 2013 | 2015

45-49

40-44
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1.75 0.80 0.85 0.90 0.95 1.00 1.05 1.10 1.15

1999 2001 2003 2005 2007 2009 2011 2013 2015

40-44 45-49 50-54 55-59
Cohort or Year Effects?

Relative Mortality by Cohort, Non-Hispanic Whites

1999 2001 2003 2005 2007 2009 2011 2013 2015

Relative Mortality (1999=1)

40-44 45-49 50-54 55-59 60-64
Cohort or Year Effects?

Relative Mortality by Cohort, Non-Hispanic Whites

Relative Mortality (1999=1)
Show it another way

- \( MR_{a,2015} / MR_{a,1999} \)

- Show by race/ethnicity and age
Change in Mortality by Ethnicity and Age, 1999-2015

- Non-Hispanic Blacks
- Hispanics
Higher mortality for prime age non-Hispanic whites.
Change in Mortality by Ethnicity and Age, 1999-2015

‘Normal’ mortality declines at younger ages

‘Normal’ mortality declines at older ages
Cohort v. Year Effects

• Telling them apart is always difficult

• But at this point, the effects for the elderly have been smaller than those for the young
Case and Deaton propose the Durkheim theory

- Suicide = f(Life Satisfaction / E(Life Satisfaction))
  - parents
  - starting job
The simple story of economic vibrancy is wrong

• Estimate life expectancy at age 40 by income and area, 2001-2014
• Look at (1) LE for people in the bottom quartile across CZs; and (2) change in LE for people in the bottom quartile across states.

Special Communication

The Association Between Income and Life Expectancy in the United States, 2001-2014

Raj Chetty, PhD; Michael Stepner, BA; Sarah Abraham, BA; Shelby Lin, MPhil; Benjamin Scuderi, BA; Nicholas Turner, PhD; Augustin Bergeron, MA; David Cutler, PhD
Race-Adjusted Expected Age at Death for 40 Year Old Women
Bottom Quartile of U.S. Income Distribution

Note: Lighter Colors Represent Areas with Higher Life Expectancy
Correlations of Expected Age at Death with Health and Social Factors
For Individuals in Bottom Quartile of Income Distribution

Health Behaviors
- Q1 Current Smokers: -0.69
- Q1 Obesity: -0.47
- Q1 Exercise Rate: 0.32

Health Care
- % Uninsured: 0.10
- Medicare $ per Enrollee: -0.09
- 30-day Hospital Mortality Rate Index: -0.31
- Index for Preventive Care: 0.05

Environmental Factors
- Income Segregation: 0.26

Inequality and Social Cohesion
- Gini Index: -0.26
- Index for Social Capital: 0.20
- % Religious: 0.12
- % Black: -0.06

Labor Market Conditions
- Unemployment Rate in 2000: 0.11
- % Change in Population, 1980-2000: 0.16
- % Change in Labor Force, 1980-2000: 0.09
Annual Change in Race-Adjusted Expected Age at Death for Women in Bottom Quartile by State

Note: Turquoise represents rising life expectancy; red represents falling life expectancy
The Other Theory

• ‘Technological change’ in ways of dealing with pain
  – Formerly, smoking and drinking
  – Now, morphine-equivalent drugs \( \rightarrow \) more addictive and harmful

• Case studies often have some pain

• This can make temporary shocks have permanent effects.
Conclusion

• Current debates about the safety net are really important.