- a lit review on what is known about time trends in relative US mortality, with a focus on cohorts, period effects (such as unemployment), external causes, age patterns etc.

- what data exist about causes of death for different countries by age group over time

- what data exist about unemployment rates and whatever else we can think of across countries over time (maybe from the Luxembourg Income study)?

- repeat the analyses conducted so far simply contrasting the US with Canada, or maybe with the set of other countries for which data are available.

Health, Austerity and Economic Crisis: Assessing the Short-term Impact in OECD countries

<https://www.oecd-ilibrary.org/docserver/5jxx71lt1zg6-en.pdf?expires=1569513464&id=id&accname=guest&checksum=1F79B451B52A4D1BF8E2C717E05A1AE5>

* Recession is associated with mental health deterioraition and increase in communicable deseases but there are less deaths from car accidents and cardio diseases
* 3 mechanisms; stress, effect budgeting, and frustration aggression
* Mixed effects on the relationship between crisis and health; Individual studies find that downturns are linked to worse mortality: risk of dying is higher for unemployed and for men
* Aggregate studies show the opposite; downturns are associated with lower mortality

**U.S. Health in International Perspective: Shorter Lives, Poorer Health.**

<https://www.ncbi.nlm.nih.gov/books/NBK154489/>

* They use vital statistics
* Death rates from noncommunicable diseases have declined everywhere but less so in the US.
* Death rates from transportation related accidents is the highest in the US among peer countries.
  + Similar to noncommunicable diseases, the decline in other countries has vastly outpaced the decline in the US; in 1975 the US had a lower fatality rate per kilometer driven but by 2005 the US had a higher rate.
* Firearm deaths is uniquely American
* HIV/AIDS is the highest incidence relative to rich countries
* Obesity epidemic, diabetes and obesity has 2x prevalence of the oecd average
* Women have higher prevalence of hypertension, heart attack, angina, and stroke; large for old and young people, English were advantaged even when we restrict it to healthy insured people
* Americans tend to highly self rate their health though

Unemployment and Mortality: A Comparative Study of Germany and the United States

<https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2011.300475>

* They followed two cohorts in Germany and the US; found that there is a higher risk of dying for minimum and medium skilled unemployed Americans but no association among similarly skilled Germans.

Mortality, Income, and Income Inequality over Time in GB and America

<https://www.nber.org/chapters/c10345.pdf>

* Their analysis do not suggest any simple relationship between income growth and mortality decline nor income inequality and mortality rates
* Over time declines in mortality are driven by technological advances or the emergences of new infectious diseases.

## Is the US Old‐Age Mortality Advantage Vanishing?

<https://onlinelibrary.wiley.com/doi/full/10.1111/j.1728-4457.2016.00157.x>

* Crossover age has been rising linearly; by 2008-2010 there is but a very small advantage for females over 75 and no advantage for males.
* This observation holds when examining both the human mortality database and medicare datasets
* Between 1955-2010, there is no consistent US superiority in surivival at older ages

US Mortality in an International Context: Age Variations

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3140845/>

* They notice a pattern: between 40-75 the US has the poorest all cause mortality rates but improves dramatically post 75.
* They examine 4 possible explainations: access to healthcare, international differences in smoking, age patterns of health care system performance, and selection processes
  + They find that health insurance and smoking are not plausible explainations
  + Cant rule out selection
  + Present suggestive evidence that unusually vigorous deployment of life saving technology at very old ages contributes to the age pattern

# Does unemployment increase suicide rates? The OECD panel evidence

<https://www.sciencedirect.com/science/article/pii/S0167487009000361>

* Examines the relationship between unemployment and suicide but also controls for the interaction between unemployment and income using cross-country panel fixed effects
  + Higher income is associated with higher suicide rates; for lower income levels there is a negative impact of unemployment on suicides
* Relative income is what makes people happier; not so much absolute income
* CO2 emissions can be a proxy for average public health level
* First, unemployment rates are positively and significantly related to overall, male and female suicide rates if we do not include an interaction term in the estimation. However, if we run the regression with the interaction, the estimated coefficients associated with the unemployment (βˆ1) on overall and male suicide rates are negative and statistically significant, while the coefficient of interaction term (βˆ12) is significantly positive
* Posititive and significant relationship between per capita gdp and suicide rates; inverse relationship with economic growth; negative relationship between fertility and suicide
* Positive relationship between female labor participation and suicide; strong association between proportion of elderly population and suicide rates, as well as between dependency ratio and suicide rates;
* However, the two attributes, PCGDPi,t and UNEMPi,t×PCGDPi,t, do not modify the direction of the individual income effect on suicide rates since both have significantly positive coefficients (i.e., βˆ2>0 and βˆ12>0). Therefore, we support that higher income is associated with higher suicide rates, but higher unemployment is associated with lower suicide rates provided that income levels are low enough.[10](https://www.sciencedirect.com/science/article/pii/S0167487009000361" \l "fn10) The intuition here is as follows. If everybody is poor, loosing a job for a while is not as much of a stigma as loosing a job where everybody else is very successful. This seems to fit the results of the happiness literature, where happiness is affected more by one’s sense of relative income than by absolute income (e.g., [Easterlin, 1995](https://www.sciencedirect.com/science/article/pii/S0167487009000361" \l "bib6), [Easterlin, 2001](https://www.sciencedirect.com/science/article/pii/S0167487009000361" \l "bib7), [Stutzer, 2004](https://www.sciencedirect.com/science/article/pii/S0167487009000361" \l "bib16)).



# **Mortality Under Age 50 Accounts For Much Of The Fact That US Life Expectancy Lags That Of Other High-Income Countries**

<https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2012.0574?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub%3Dpubmed>

* Mortality differences below age 50 account for 2/3 of the life expectancy gap at birth between US males and rich countries, 2/5 for females
* Major causes of death for under 50s are unintentional injuries, especially drug OD, noncommunicable diseases, and homicide

Mortality and Morbidity in the 21st Century

<https://www.brookings.edu/wp-content/uploads/2017/08/casetextsp17bpea.pdf>

* Least educated are getting hit the hardest when it comes to premature mortality; US is bifurcated into two Americas; college educated and not college educated
* Cummulative disadvantage from one birth cohort to the next is triggered by progressively worsening labor market opportunities

Child Mortality in the US and 19 OECD comparator nations; A 50 year time trend analysis

<https://www.healthaffairs.org/doi/10.1377/hlthaff.2017.0767>

* Examines mortality trends for children 0-19 from 1961-2010 using data from HMD
* Examines mortality trends from specific causes using data from the WHO database
* All cause mortality has declined for everyone but declined faster for the OECD19 than the US.
  + Partially driven by higher rates of child poverty
* Childhood mortality gap in intentional injuries rose dramatically from the 60s to 1993, driven almost exclusively by US males
* Childhood mortality gap in unintentional injuries started out much higher and ended higher;
* Two leading causes of death in US for infants were extreme immaturity and SIDS. US/OECD19 of 3 and 2.3 respectively
* Two leading causes for 15-19 YOs are motor vehicle accidents and getting shot; 82x more likely to die from getting shot in US
* There is not a single category where the OECD19 had higher rates of mortality

# Commentary: Economic growth is the basis of mortality rate decline in the 20th century—experience of the United States 1901–2000

<https://academic.oup.com/ije/article/34/6/1214/707388>

* In the short term (months); economic growth actually increases mortality rates

J. Gay, V. Paris, M. Devaux, M. de Looper **Mortality amenable to health care in 31 OECD countries: estimates and methodological issues** OECD, Paris (2011)

* This paper presents and compares two sets of estimates for amenable mortality for OECD countries, based on the lists developed by Nolte and McKee (2008) and Tobias and Yeh (2009). In the absence of international consensus on a unique list of causes for amenable mortality, this paper assesses the sensitivity of the indicator to the list of selected causes.
* Based on the Nolte and McKee’s list, annual changes from 1997 to 2007 ranged from -1.8% in the United States to -5.5% in Ireland. Countries with relatively low decline (below 3%) can be clustered in two groups: in the United States, Mexico, the Slovak Republic, Hungary and Poland, amenable mortality was (and still is) relatively high, suggesting that more progress could be achieved. In Japan, Luxembourg, Greece, Spain and France, by contrast, amenable mortality was already comparatively low in 1997.
* US declined quite little from 97-07 compared to OECD countries

Quantifying the impact of economic crises on infant mortality in advanced economies

<https://www.socsci.uci.edu/~harding1/resources/Harding_CrisesAndInfantMortality.pdf>

* They use a quantile regression
* Define economic crisis as an annual recession; require output to fall as measured in annual national accounts
  + Data from OECD statistical database
* The impact of an economic crisis seems to be increasing in the quantiles of the mortality distribution. The results indicate that for a country at the median of the distribution of mortality, a crisis corresponding to a 1% annual recession corresponds to 2.04% higher infant mortality (p = 0.025), while a country at the 90th percentile of the distribution of mortality experiences a 3.4% higher mortality rate ( p = 0.007).
* This indicates that while the government can use spending on health to mitigate some of the negative effects of an economic crisis, spending alone, keeping everything else equal, is insufficient and the effect of an economic crisis will likely dominate and cost lives
* even under conservative estimates the impact of an economic crisis on infant mortality is more than double the size of the economic recession.

WHY HAS U.S. LIFE EXPECTANCY FALLEN BELOW OTHER COUNTRIES?

<https://crr.bc.edu/wp-content/uploads/2017/11/IB_17-22.pdf>

* Compares US life expectancy for men and women with 9 other OECD countries; focusing on life expectancy at age 65
* Major source of US shortfall is women
* US healthcare system is probably *not* responsible for the difference
* Diseases associated with smoking and obesity are probably most responsible
* If US smoking and obesity matched the rest of the rich world, we would be above average until very recently

The Effect of Education on Health and Mortality: A Review of Experimental and Quasi-Experimental Evidence

<https://www.nber.org/papers/w24225.pdf>

* Few RCTs have been done and the ones that have been done (Perry preschool and Abcederian programs) use samples that are not really generalizable; mostly poor and low IQ folks
  + However, these studies do provide strong evidence of a causal effect of early childhood education; specifically people were less likely to be obese or smoke
* Twin studies have found large effects of education on mortality for both men and women, though Danish studies are less conclusive
* Compulsory schooling legistlation has very low power, often there is no detectible effect
  + An analysis of british compulsory schooling legilstaiton reform found that despite an increase in years of education, there is no decrease in mortality
* Effect of education leads to lower morality in men but is only true for certain times and places; findings for women are much less robust
* Effect of education on smoking prevalence is either inconclusive or education reduces smoking; evidence is consistent with RCT, it affects smoking if it changes one’s peers but not otherwise

- what data exist about unemployment rates and whatever else we can think of across countries over time (maybe from the Luxembourg Income study)?

* OECD seems to collect quite a bit of data on employment rate as well as employment rate broken down by certain groups such as education, age group, etc
* OECD also collects information on inequality such as GINI, size of transfers, etc
* Most comprehensive database on inequality: <https://www.wider.unu.edu/project/wiid-world-income-inequality-database> UNUWIDER
* Tradingeconomics (<https://tradingeconomics.com/indicators>) has information on many countries and indicators such as minimum wage, FDI, capital flows, GDP growth,
* Luxembourg income/wealth study seems to be very individual/household focused; I’m not sure how we could connect the data there to mortality data, especially since we cant download the information and need to send them do files and get the results sent back

- what data exist about causes of death for different countries by age group over time

* IHME has their global burden of disease project which contains cause of death information for quite a few countries from 1990 to 2017. They can break down the information by age category as well.
* <https://ourworldindata.org/causes-of-death>
* WHO GHO has rate rates from various causes by age groups from 2000-2016
* Survey of Health Aging and Retirement in Europe (SHARE) and Health and Reitrement Survey (HRS)
* CDC wonder has quite detailed data on the US from 1999 to present