

Inequality and Health

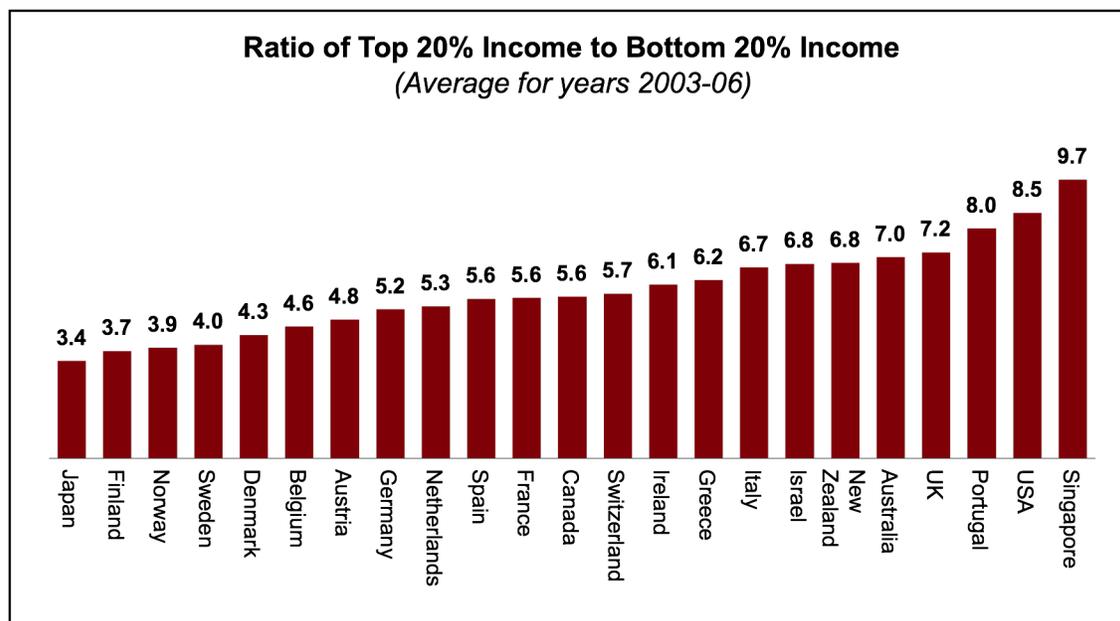
Increasing evidence from scientists the world over indicates that many health outcomes — everything from life expectancy to infant mortality and obesity — can be linked to the level of economic inequality within a given population. Greater economic inequality appears to lead to worse health outcomes.

By greater inequality, epidemiologists — the scientists who study the health of populations — don't just mean poverty. Poor health and poverty do go hand-in-hand. But high levels of inequality, the epidemiological research shows, negatively affect the health of even the affluent, mainly because, researchers contend, inequality reduces social cohesion, which leads to more stress, fear, and insecurity for everyone.

Cross-National Comparisons

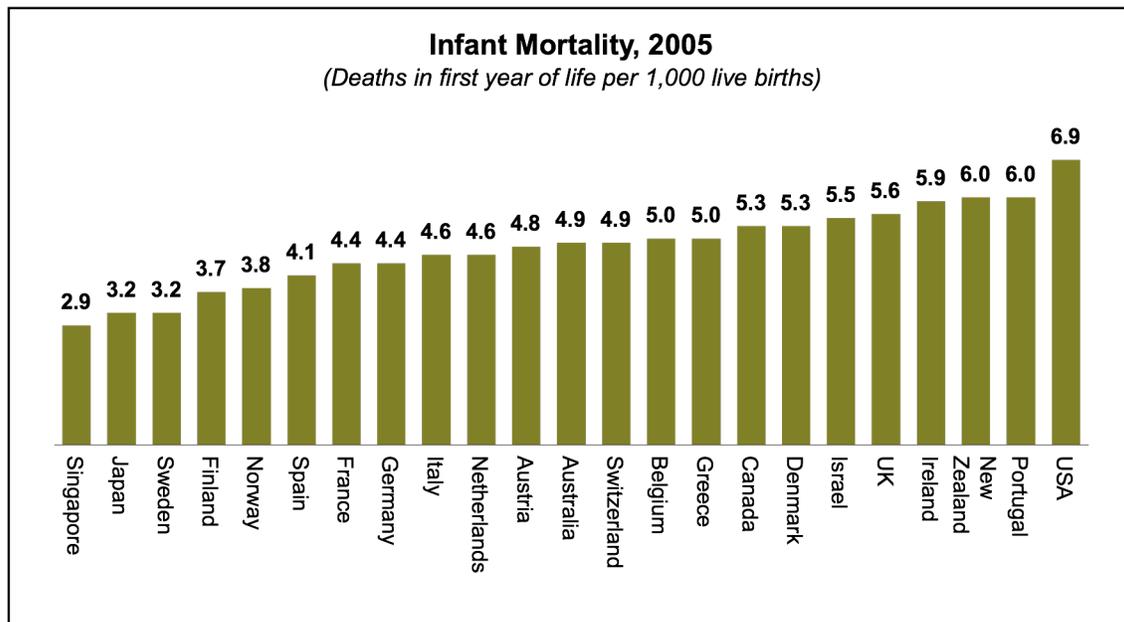
To measure the effect of economic inequality on health, analysts frequently compare different nations. [The Equality Trust](#), an organization based in the United Kingdom, has been compiling these comparisons for 22 rich, developed nations.

This chart tracks the ratio between the average incomes of the top and bottom fifths of families in these nations. A higher number indicates a country with greater income inequality.



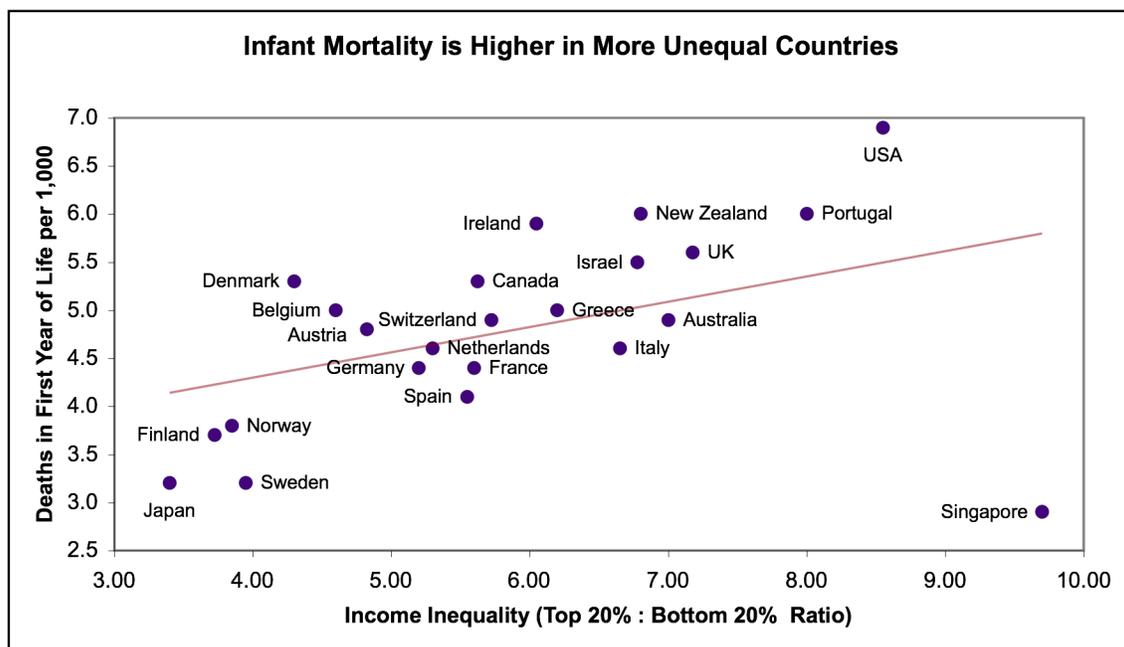
Source: [The Equality Trust](#), citing U.N. Development Program Human Development Indicators, 2003-6.

Here we compare these same countries on infant mortality:



Source: [The Equality Trust](#), citing OECD.

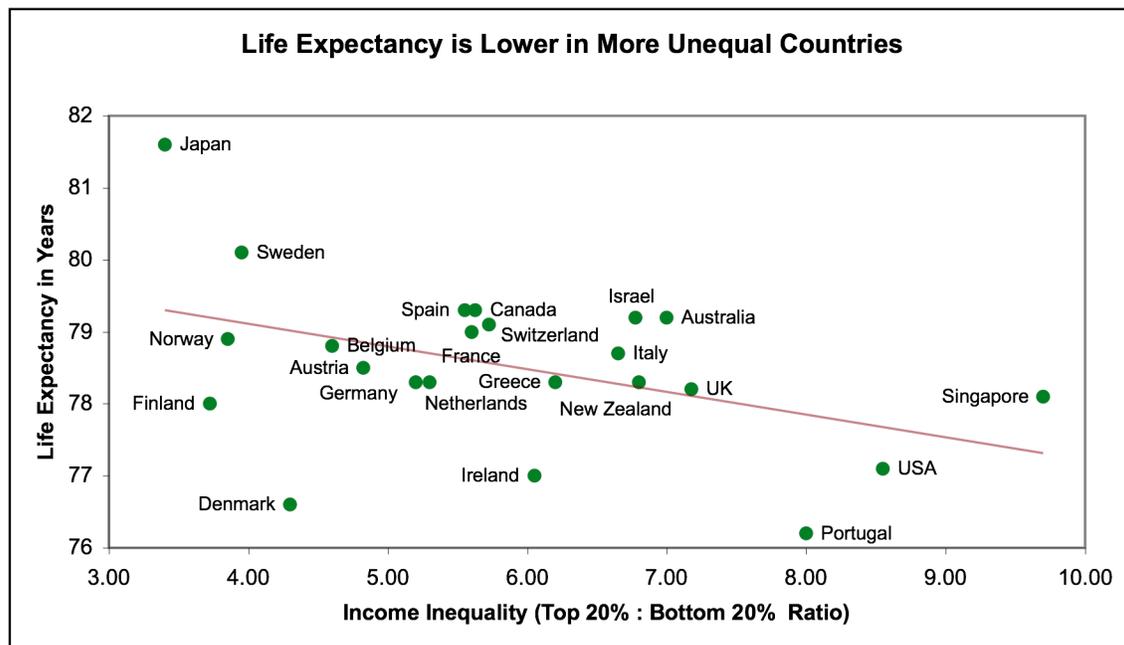
To make it easier to see if there is a relationship between these two indicators, we can create a scatterplot chart, with income inequality on the horizontal or x-axis and infant mortality on the vertical or y-axis. Each nation can then be represented by a point indicating where its inequality and infant mortality numbers intersect. If there is a strong correlation between the two variables, the individual points will cluster along an imaginary line that is sloping either up or down:



Source: [The Equality Trust](#).

Except for Singapore, which exhibits both high inequality and low infant mortality, there is a fairly clear upward-slope to the points, with Japan at the low end of both inequality and infant mortality and the United States at the high end of both measures, a slope that supports the presence of a link between inequality and infant mortality.

This scatterplot compares inequality and life expectancy.



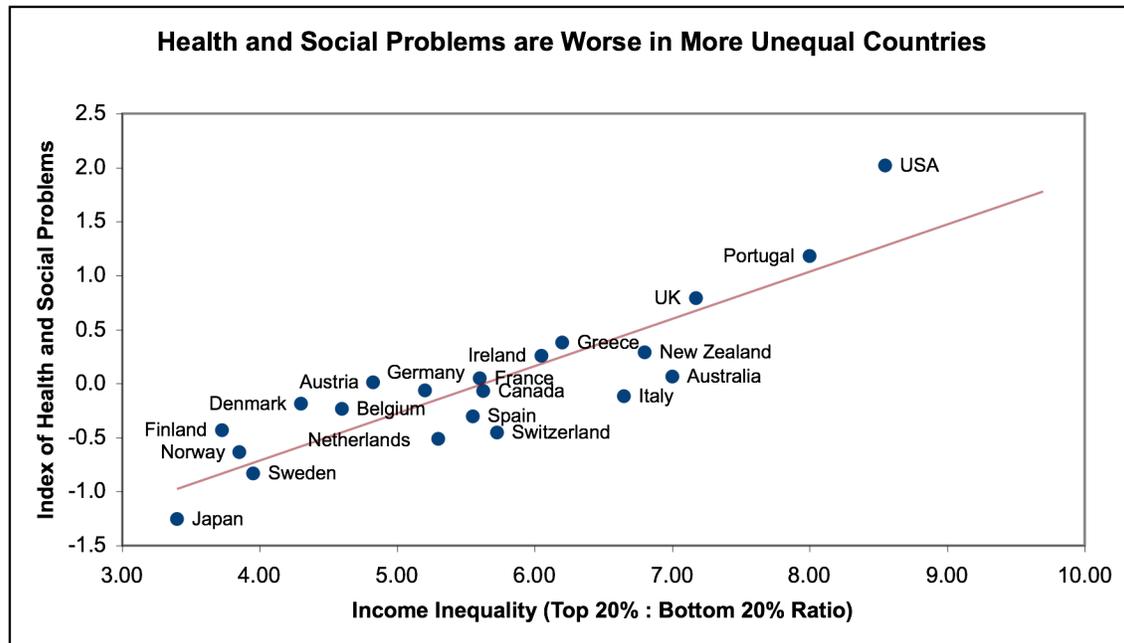
Source: [The Equality Trust](#).

In this case, the general pattern of the points is downward-sloping, indicating a relationship between higher inequality and lower life expectancy.

The Equality Trust has also created an Index of Health and Social Problems to combine several indicators into a single variable that can be used to make describe the overall “health” of a society. The 10 indicators that make up the Index of Health and Social Problems are:

- Life expectancy
- Math proficiency and literacy
- Infant mortality
- Homicides
- Imprisonment
- Teenage births
- Trust
- Obesity
- Mental illness, including drug and alcohol addiction
- Social mobility

This scatterplot compares the Index of Health and Social Problems with income inequality in various nations:



Source: [The Equality Trust](#).

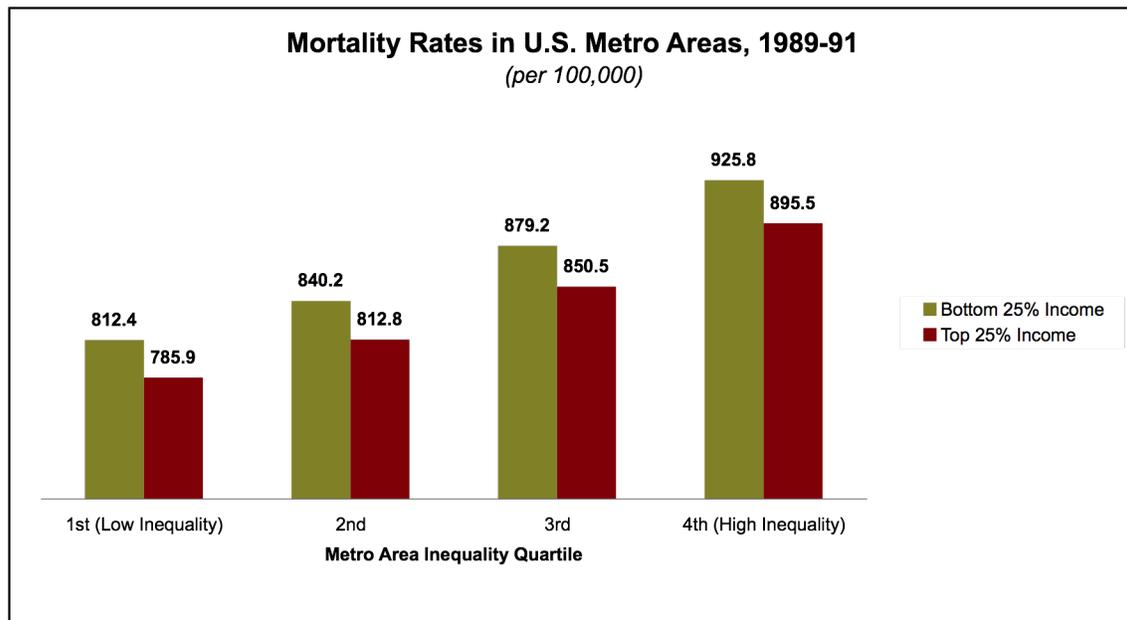
Inequality and Health in the United States

The same association between high economic inequality and poor health can be observed within the United States.

A 2001 [study](#) (Lochner et. al) found that individuals living in states with a high level of income inequality were at a 12 percent increased risk of mortality. Meanwhile, a 2000 [study](#) (Kahn et. al) found that in states with high levels of income inequality, low-income women were 60 percent more likely to report depressive symptoms and 80 percent more likely to report fair or poor health as compared to low-income women in low-income-inequality states.

A 1998 study of 283 U.S. metropolitan areas found that mortality rates climbed in tandem with the level of economic inequality. The highest mortality rates were found in the most unequal metropolitan areas and the lowest mortality rates were found in the most equal metropolitan areas.

This association affected everyone, rich and poor alike, in a given metropolitan area. The relationship between inequality and poor health was so strong that the low-income population living in a low-inequality area had a significantly lower mortality rate (812.4) than that of the high-income population living in a high-inequality area (895.5):



Source: John W. Lynch, et al., "[Income Inequality and Mortality in Metropolitan Areas of the United States](#)," *American Journal of Public Health*, July 1998, pp. 1074-80.

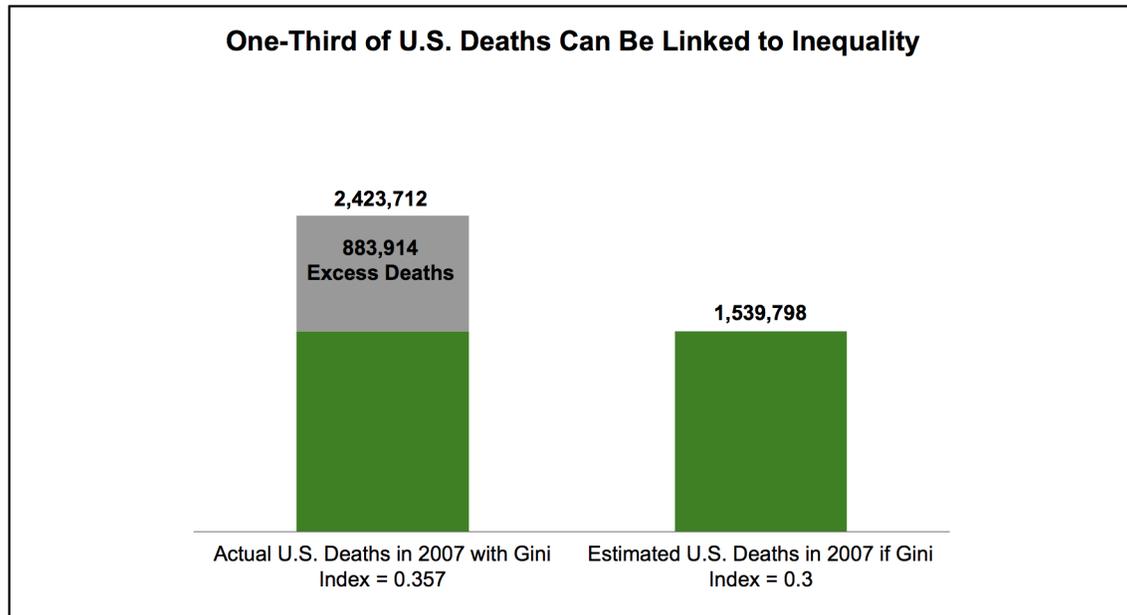
Excess Deaths Due to Inequality

A 2009 study in the *British Medical Journal* attempted to quantify the number of deaths that could be attributed to economic inequality among the 30 rich countries that make up the Organization of Economic Cooperation and Development (OECD). The researchers found an association between greater inequality and a higher overall death rate in countries where inequality runs relatively high.

What constitutes "relatively high" inequality? To answer this question, the researchers ranked the 30 OECD countries in order of their "Gini index," a standard metric that economists use to describe the level of inequality in a population. Ginis can run from 0.0 to 1.0, with higher numbers indicating greater inequality.

The most equal country in the OECD, Denmark, has a Gini of 0.225. The United States ranks as the fourth-most unequal country, with a Gini of 0.357, following only Mexico, Turkey, and Poland. The median Gini among OECD nations, 0.3, became the reference point against which researchers compared countries and their death rates.

The study concluded that almost 884,000 excess deaths per year in the United States could be attributed to the high level of income inequality in the U.S. In other words, if the Gini in the United States were 0.3 instead of 0.357, we would see nearly 884,000 fewer deaths per year.



Source: Naoki Kondo et al., "Income Inequality, Mortality, and Self-rated Health: Meta-analysis of Multi-level Studies," *British Medical Journal*, 2009.

Acknowledgement

[Stephen A. Bezruchka](#) of the University of Washington School of Public Health provided valuable guidance in the preparation of this chartpack.

References

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Lochner, Kim, et al., "State-Level Income Inequality and Individual Mortality Risk: A Prospective, Multilevel Study," *American Journal of Public Health*, March 2001, pp. 385-91.