

RESEARCH SUMMARY

Death by Regulation: How Regulations Can Increase Mortality Risk

Regulations frequently aim to reduce mortality risk, and many of them may succeed to varying degrees. But regulations can also increase mortality risk in various ways owing to unintended consequences.

Regulations reduce people's expenditures on health, in part because compliance costs reduce personal income. This counterproductive effect on private risk-reducing expenditures is the focus of health-health analysis (HHA), which evaluates whether public policies increase or decrease mortality risk on balance. It does this by comparing the expected lives saved because of a regulation with the expected lives lost because of reductions in private health-related expenditures.

In "Death by Regulation: How Regulations Can Increase Mortality Risk," James Broughel and W. Kip Viscusi demonstrate that regulations costing more than \$99.3 million per life saved can be expected to increase mortality risk. A cost-per-life-saved cutoff of approximately \$100 million is a threshold cost-effectiveness level beyond which life-saving regulations will be counterproductive—where rules are likely to cause more expected fatalities than they prevent.

KEY FINDINGS

- A regulation is likely to result in more people dying than it saves if its cost-per-life-saved falls above the range between \$75.4 million and \$123.2 million (the midpoint of which is \$99.3 million).
- The cutoff value also enables policymakers to quantify the number of expected fatalities induced by policies, because it establishes the rate at which regulatory expenditures lead to expected deaths.

LINK BETWEEN INCOME AND MORTALITY

Evidence suggests that increases in health-related expenditures reduce mortality risk. For example, studies looking at the effects of expanding health insurance to uninsured populations find reductions in mortality, which are likely due to increases in health-related expenditures as people gain insurance.

A different body of literature examines the effect of income shocks on health more generally. While the effect of income on health is complex and occurs over the course of time, there are two mechanisms by which income changes appear especially important to health:

- *Income affects mental health.* Psychological stress following income shocks can result in behavioral and physiological responses that affect health.

- *The socioeconomic status of children affects their health.* Parental income influences children's health, as well as their adult educational attainment and lifetime earnings. All these factors have important long-run health implications.

POLICY IMPLICATIONS

Mortality risk tests can be applied to any life-saving policies for which estimates of cost-effectiveness are available.

- Several state expansions of the Medicaid public insurance program in the first few years of the 21st century are estimated to have saved lives at a cost of \$327,000 to \$867,000 per life saved, thus passing a mortality risk test.
- According to one back-of-the-envelope estimate, President Trump's January executive order that severely restricted refugee admissions into the United States is estimated to cost more than \$500 million per life saved. (The estimate relied on data from previous refugee-related terrorist attacks on US soil.) The order fails a mortality risk test based on this estimate.
- Nine air pollution regulations issued by the Environmental Protection Agency have highly uncertain benefits. While the expected benefits and costs pass the mortality risk test, there is a possibility that these rules fail a mortality risk test, which is within reasonable bounds of uncertainty.

CONCLUSION

Regulators should use mortality risk tests based on the cost-per-life-saved cutoff and health-health analysis to screen out particularly ineffective regulations. They should also produce estimates of expected fatalities from regulations in order to calculate the net risk reduction from regulations. These changes are in line with agencies' statutory mandates, and they conform to the commonsense notion that regulations whose primary aim is to save lives should not cause more deaths than they prevent.