

# New study shows immense impact of public health on life expectancy

## Trump-Kennedy spending cuts threaten a century of gains

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The current landscape of public health in the United States is marked by a far-reaching attack on foundational scientific principles and institutions, threatening decades of progress in combating preventable diseases. Recent actions by the Trump administration, such as the abrupt dismissal of the Advisory Committee on Immunization Practices (ACIP) members and the appointment of individuals who have publicly expressed skepticism about established vaccine science, have generated profound concerns in the medical and public health communities.

Health and Human Services Secretary Robert F. Kennedy Jr. has publicly questioned vaccine safety, notably by halting US funding to Gavi, the global vaccine alliance, accusing it of “ignoring the science,” without significant evidence, a move experts describe as “stunning and calamitous” and potentially costing “hundreds of thousands of children’s lives a year.” This politicization of public health measures, coupled with the spread of misinformation, risks eroding public trust and undermining critical immunization programs.

Amidst this contentious environment, a recent study published in *JAMA Network Open* titled “All-Cause Mortality and Life Expectancy by Birth Cohort Across US States,” by Holford et al. (2025), which analyzed 179 million deaths in the US across states and birth cohorts over more than a century, offers important insights into the social value of sustained public health investments.

This study emphasizes the utility of analyzing cohort life expectancy, a measure that more accurately reflects the “lived experiences of populations” by tracking how early-life exposures and risk factors shape health outcomes as a group ages. The cohort perspective highlights how public health interventions’ impacts can follow individuals throughout their lives.

The study, alongside other sources, underscores a period of “large gains in life expectancy” and an “unprecedented decline in mortality” in the United States during the 20th century. Between 1900 and 1950, every US state experienced a substantial increase in life expectancy. These gains continued into the 1970s. This remarkable achievement was not accidental but resulted from a combination of deliberate public health actions and medical innovations:

- **Public health improvements:** Significant strides were made in public health infrastructure, including improvements in sanitation and the provision of clean water.
- **Medical advances:** The introduction of life-saving medical treatments, such as antibiotics like sulfa drugs and penicillin, dramatically reduced deaths from infectious diseases.
- **Vaccine programs:** The widespread implementation of vaccination

programs played a pivotal role.

These benefits spread globally as well, with a time lag, as poorer countries sought to catch up. Measles vaccination alone accounted for 93.7 million lives saved—over 60 percent of the total 154 million lives saved by vaccination between 1974 and 2024. DTP-containing vaccines saved an estimated 40 million lives globally over the past 50 years.

In the US, routine childhood vaccinations for children born between 1994 and 2023 are estimated to have prevented 1.1 million deaths, 32 million hospitalizations, and 508 million illnesses, resulting in nearly \$3.7 trillion in societal cost savings. The eradication of smallpox through vaccines is highlighted as a monumental achievement. These factors essentially ended the childhood mortality gap. In 1900, a newborn could expect to live to 48 years of age, but if they survived childhood, life expectancy dramatically increased to 61. By 1980, life expectancy at birth and after childhood were equal.

However, other critical factors in the broader public health initiatives include behavioral changes, such as the decline in cigarette smoking, that have further contributed to improved health outcomes for older adults. This included broader access to healthcare, which further supported these gains.

Despite these historical successes, the Holford et al. study reveals a troubling setback in more recent cohorts. While mortality rates generally declined from 1969 to 2020, there are “wide disparities” across states and birth cohorts. Critically, some states have experienced little to no improvement in life expectancy from the 1950 to 2000 birth cohorts. States where some modicum of funding and public health services remained saw life expectancy continue to rise, while in poorer states with chronic underfunding, life expectancy remained stagnant, if not declining.

This stagnation and, in many cases, reversal of progress is evident, particularly after 2010 for those without a four-year college degree, according to Anne Case and Angus Deaton. The “mortality gap” between Americans with and without a college degree has widened considerably, reaching an 8.5-year difference in adult life expectancy by the end of 2021.

College education is closely linked to economic factors affecting health, as shown by a 2016 study titled “The Changing Landscape of American Life Expectancy” by Schanzenbach, Nunn and Bauer, which provided crucial insights into the socioeconomic factors that have led to significant life expectancy disparities between the richest and poorest Americans. This report, alongside the rigorous research by Case and Deaton, underscores how socioeconomic status,

particularly educational attainment, has become a primary determinant of longevity, often eclipsing traditional racial gaps in recent decades.

The “Changing Landscape” report clearly illustrates the widening chasm in life expectancy based on income. It notes that individuals with higher incomes have substantially longer life expectancies than those with lower incomes. For instance, a stark difference is observed among 40-year-old men: those in the bottom 1 percent of income can expect to live 15 years less than those in the top 1 percent. Similarly, women in the top 1 percent of household income are expected to live a decade longer than women in the bottom 1 percent. The report highlights that high-income individuals have experienced robust gains in life expectancy over recent decades, while their lower-income counterparts have seen stagnant or even declining life expectancies.

This divergence is attributed to several factors. The report suggests that medical advancements, safer technologies (like cars), and behavioral changes (such as smoking cessation) are often adopted first by higher-income individuals before spreading to the broader population. However, the benefits of “inexpensive medical innovations like vaccines and mass-produced antibiotics, as well as public goods like clean water and sanitation” were eventually extended broadly, indicating the historic role of public health infrastructure in universal gains. The report also links the increase in mortality among less-educated white non-Hispanics to rising rates of drug and alcohol abuse, mental illness and suicide. Specifically, illegal drug use (excluding marijuana) became more common among low-income men, while high-income men experienced smaller increases.

Furthermore, the report draws a connection between labor market changes and the decline in life expectancy for lower-income groups. It points to the stagnation of real wages for lower-income workers and increasing real wages for higher-income workers, suggesting that a bleak economic outlook for less-educated individuals may contribute to problems related to mental health, alcohol abuse and drug abuse, thereby depressing longevity. The report also notes that job displacement can increase mortality, with the largest impact seen on those experiencing the largest earnings losses. It explicitly mentions that increased educational attainment is causally related to longer life expectancy.

Building on this, in another study by Case and Deaton, particularly their work cited from Brookings Papers on Economic Activity and Proceedings of the National Academy of Sciences, provides compelling evidence of a profound shift in mortality disparities. They demonstrate that while racial gaps in life expectancy have significantly narrowed, socioeconomic divides, largely proxied by educational attainment, have dramatically widened.

In stark contrast to this widening educational divide, Case and Deaton documented that racial divides in expected years lived between ages 25 and 75 narrowed by 70 percent for both black and white people between 1990 and 2018. Their research indicates that “by 2018, intra-racial college divides were larger than interracial divides conditional on college.” This means that individuals with a college degree, regardless of their race, are now more alike in terms of life expectancy than they are to people of their own race who do not possess a college degree. These findings fundamentally corroborate the axiom that the underlying health disparities are a by-product of socioeconomic factors in decaying capitalism despite the promotion of race and identity.

As stated before, the US public health system has been plagued by “chronic underfunding for decades,” severely limiting its capacity to address complex health challenges and emergency preparedness. This

was never more evident than during the COVID pandemic, where a study of 3,050 US counties showed higher pre-pandemic public health expenditures correlated with a 13 to 22 percent lower COVID-19 incidence and 7 to 18 percent lower mortality.

Providing concrete economic context, the study notes that for every \$10 per capita increase in local health spending, deaths during COVID-19 peaks were reduced by 1.2 per 100,000 during COVID-19 peaks. And despite the ruse promoted by reactionary right-wing COVID contrarians—NIH director Jay Bhattacharya and ACIP chair Martin Kulldorff—that the lockdowns led to unnecessary deaths from the economic downturn, the limited lockdown response to the pandemic from March to August 2020 led to an estimated saving of 860,000 to 1.7 million lives.

Notwithstanding Long COVID and its broader impact on long-term population health, chronic diseases are major drivers of the US’s \$4.5 trillion in annual healthcare expenditure, where six in 10 American adults suffer from some ailment. Stroke and heart disease alone have led to over \$100 billion in lost job productivity annually. The JAMA study’s findings, highlighting persistent disparities and a reversal of life expectancy gains for certain cohorts, serve as a critical reminder of the indispensable role of robust public health investment.

Perhaps most disturbing is the frontal attack by Kennedy and his ideologically aligned appointees and acolytes on the entire vaccination program, both domestically and internationally, which threatens the immense societal gains achieved through vaccination. Routine childhood vaccinations for children born between 1994 and 2023 in the US prevented an estimated 1.1 million deaths, 32 million hospitalizations, and 508 million illnesses. This resulted in \$780 billion in direct medical costs saved and \$2.9 trillion in overall societal costs.

Globally, vaccines are estimated to have averted 154 million deaths since 1974, with every \$1 spent on immunization returning up to \$52 in low-income countries. These benefits extend beyond healthcare, as vaccinated children are more likely to attend school and enter the workforce, and parents miss fewer workdays; these productivity gains alone account for an estimated 70 percent of the \$2.9 trillion societal savings in the US. Indeed, the Yale University report on life expectancy over the century is not simply an epidemiological analysis. It is an objective and concrete measure of the immense social harm, particularly to the working class, caused by crisis-ridden capitalism.

Kennedy and Trump are not just mere deranged and demented personalities. They are the political manifestation of the terminal decline of capitalism as a world system, which is turning to authoritarian and anti-democratic forms of rule while turning its back on more than a century of the achievements of science and public health. The choice, as Rosa Luxemburg said more than a century ago, is indeed, socialism or barbarism.



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