Confronting the Rise and Fall of US Life Expectancy

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For decades US life expectancy at birth increased. Many clinicians and demographers assumed it would always be that way. However, an exhaustive, detailed long-term analysis by Woolf and Schoomaker[1] in this issue of *JAMA* strengthens reports from the National Center for Health Statistics (NCHS)[2] documenting recent declines in US life expectancy. Combined, the studies confirm that downward trends in life expectancy, which declined after 2014 for 3 successive years, represent a US health disadvantage compared with peer high-income nations, despite the United States having the highest per capita health care spending in the world.[1]

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The study by Woolf and Schoomaker[1] examined mortality rates (all-cause and cause-specific) over nearly 6 decades—nationally, as well as across 9 US Census divisions, 50 states, and rural and urban counties—and related them to life expectancy.[1] The analysis has a special focus on midlife adults (aged 25-64 years). Overall, in contrast to most peer nations (that generally had rising life expectancy), year-to-year (annual percent change [APC]) change in US life expectancy increased, stalled, and then declined (ie, reversed or "retrogressed") leading to excess deaths. Specifically, the study results show that life expectancy rose from a baseline in 1959 (69.9 years), increased fastest in the 1970s, advanced more slowly in the 1980s, peaked in 2014, and declined annually from 2014-2017 (78.9 years to 78.6).[2] Of all age groups, midlife adults experienced the largest increase in age-adjusted all-cause mortality rates from 2010- 2017, at 6%.

Woolf and Schoomaker[1] also tracked the seeds of retrogression to the 1980s and 1990s, identifying potential factors related to economic, social, and policy trends. From 1999-2017, cause-specific mortality rates for midlife adults generally increased for 3 key causes of death—drug overdoses, suicide, and alcohol-related diseases—as well as for conditions including obesity, hypertension, and renal failure. These cause-specific increases in midlife mortality, while initially more than offset by concurrent decreases in other causes of death (eg, ischemic heart disease, cancer), slowed declines in all-cause mortality. From 2010, however, all-cause mortality increased, pushing life expectancy downward from 2014. In short, declines in US life expectancy, while recent, have been years in the making.

The analysis documents a host of health disparities by geography, sex, and race. For example, life expectancy increased in the Pacific division as well as 13 states but decreased elsewhere. New England and the Ohio Valley had the highest relative increases in midlife mortality rates (2010-2017); of the top 10 states with highest excess deaths, 8 were from the industrial Midwest or Appalachia. Rural counties generally had greater increases in all-cause midlife mortality than urban "metropolitan" counties. Even though women have long had higher life expectancy than men, from 1999-2017 they had higher relative increases in midlife mortality for conditions including fatal drug overdoses, alcoholic liver disease, and suicide. Life expectancy declines (2014-2016) affected not only non-Hispanic white but also Hispanic and non-Hispanic black populations; the last group, as well as non-Hispanic American Indian and Alaska Native populations, had the highest midlife mortality rates.

The authors also consider how poverty, income inequality, unstable employment, psychological distress, and divergent state policy choices could explain these outcomes, especially for vulnerable populations. Although potential causal links need further exploration, growing research has already highlighted the importance of addressing social determinants of health. For example, the US life expectancy gap between the richest and poorest 1% of the population was estimated to exceed 14 years for men and 10 years for women.[3] A meta-analysis of 3.4 million individuals linked social isolation to a 29% increased odds of mortality.[4] Regarding environmental determinants of health, a syndemic of climate change, obesity, and undernutrition has triggered sweeping global effects.[5] Exactly how these factors, among others, influence disease and death will require collaborative investigation that stretches well beyond the traditional medical lens.

Multidisciplinary approaches can address mortality linked to the disturbing triad of alcohol-related conditions, drug overdoses, and suicide, recently proposed as "deaths of despair."[6] While researchers explore and debate the concept,[7] policies including the 2008 Mental Health Parity and Addiction Equity Act[8] have elevated conditions affecting mental and emotional well-being, long overlooked, to a level equivalent to physical well-being. Stricter enforcement of the law, a major limitation to date, will be required to realize its vision. Rising suicide rates[1] and mental health challenges, such as depression and anxiety for youth in the social-media age, signal the urgency for better ways to boost resilience, including earlier risk identification and support in schools and the workplace, an expanded clinical workforce, and strategies to reduce self-harm associated with firearm access[9] at times of emotional crisis. Addressing problem drinking entails heightened implementation of evidence-based strategies such as screening, brief intervention, and treatment referral; prevention efforts in college, the workplace and the military; as well as policy recommendations from *The Guide to Community Preventive Services*[10] that include stronger enforcement of laws prohibiting sales to minors and regulating the density of licensed establishments where alcohol is sold.

Improving outcomes related to opioid overdoses necessitates expanded access to medication-assisted treatment, harm reduction services (such as syringe service programs that help prevent transmission of HIV and hepatitis), and strengthened collaborations with criminal justice professionals to improve naloxone access and affirm that public

health, not arrest, serves as the main societal strategy. While the 2018 SUPPORT for Patients and Communities Act[11] has bolstered some resources for treatment and recovery, increasing health insurance coverage, especially Medicaid, is critical to address staggering unmet needs for behavioral health services. National efforts to reduce stigma associated with substance use disorders and mental health conditions can encourage people to seek care, move toward recovery, and begin to rebuild their lives.

Critical to future health will be redoubling efforts against the widespread, well-known, yet still poorly controlled conditions of obesity, hypertension, and tobacco use. The negative effects of obesity on life expectancy were first predicted nearly 15 years ago[12] and are linked to diabetes and prediabetes, as well as ischemic heart disease, cancer, stroke, and kidney disease, with minorities disproportionately affected.[13] Furthermore, about 80% of US adults do not meet physical activity guidelines (for both aerobic exercise and muscle strengthening).[14] Bolder system changes must support individuals and families to decrease screen time, adopt more active lifestyles, and make the healthier nutritional choice the easier choice in homes, schools and in the workplace. In addition to heightened evidence-based screening and nutritional counseling in the clinic setting, policymakers can consider an array of cost-effective options, including taxes on sugar-sweetened beverages, to prevent childhood obesity.[15] The food and beverage industry can accelerate responses to consumer pressures to produce healthier alternatives.

Treating hypertension, which affects nearly half of US adults and is mostly uncontrolled,[16] must involve, in addition to obesity prevention efforts, better systems for team-based care promoting screening, education, and medication adherence as well as strategies for reduced sodium intake and increased intake of elements such as potassium. Such efforts could especially benefit the one-third of affected US adults who are unaware of their diagnosis and non-Hispanic black populations, who have one of the highest hypertension prevalence rates in the world.[16] Meanwhile, use of combustible tobacco products has declined through clinical and policy strategies (eg, cessation counseling and medications, taxation, and clean indoor air laws), but 34 million adult cigarette smokers, many with behavioral health conditions and of lower socioeconomic status, remain at risk for premature death.[17] Resolving the crisis represented by a new unexplained pulmonary illness linked to use of noncombustible e-cigarettes[18] is an immediate priority, especially given substantial increases in the prevalence of youth vaping. Long-term strategies can harmonize robust regulation by the US Food and Drug Administration to reduce harm from both combustible and noncombustible tobacco products.

Bridging health policy, social policy, and financing debates can leverage multisectoral approaches to reverse declining life expectancy. An Institute of Medicine/National Academy of Medicine report recommended that the nation set a life expectancy goal.[19] Another report emphasized the importance of financing the integration of social care into health care, with leadership from Medicare and Medicaid to address nonclinical issues.[20] Alternative payment models, such as accountable care organizations and accountable health communities, can facilitate such integration, while groups such as Well Being Trust and Trust for America's Health urge linking clinic and community efforts to address social needs and social determinants.

The study by Woolf and Schoomaker,[1] detailing years of cumulative insults to the nation's health, represents a call to action. Further research must explore how income inequality, unstable employment, divergent state policies and other social dimensions affect disease. Recognizing the vital themes of social connection, spirituality, and community can expand understanding of proposed "leading causes of life."[21,22] Broad and committed collaboration with sectors beyond health to reverse US health disadvantage could restore well-being opportunities for millions. Otherwise, the nation risks life expectancy continuing downward in future years to become a troubling new norm.

ARTICLE INFORMATION

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Conflict of Interest Disclosures: Dr Koh reported receiving grants from the Robert Wood Johnson Foundation, outside the submitted work. No other authors reported disclosures.

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