treating depression are available, but patient choice of treatment is often dictated by access, insurance coverage, and cost. A substantial number of patients do not have a response to the first treatment chosen, and having many options for intervention, including pharmacologic treatment, is essential.

Current data from studies that explicitly address confounding by indication should reassure women and their families, clinicians, and regulators that treatment with SSRIs carries little or no risk for the most serious adverse outcomes. We believe the FDA must adhere to its commitment to evidence-based recommendations and communicate this conclusion and the nuanced evidence supporting it.

Disclosure forms provided by the authors are available at NEJM.org.

[1]Division of Pharmacoepidemiology and Pharmacoeconomics, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston; [2]Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston; [3]Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University School of Medicine, Stanford, CA.

This article was published on November 22, 2025, at NEJM.org.

1. Louik C, Lin AE, Werler MM, Hernández-Díaz S, Mitchell AA. First-trimester use of selective serotonin-reuptake inhibitors and the risk of birth defects. N Engl J Med 2007;356:2675-83.
2. Alwan S, Reefhuis J, Rasmussen SA, Olney RS, Friedman JM. Use of selective serotonin-reuptake inhibitors in pregnancy and the risk of birth defects. N Engl J Med 2007;356:2684-92.
3. Huybrechts KF, Palmsten K, Avorn J, et al. Antidepressant use in pregnancy and the risk of cardiac defects. N Engl J Med 2014;370:2397-407.
4. Anderson KN, Lind JN, Simeone RM, et al. Maternal use of specific antidepressant medications during early pregnancy and the risk of selected birth defects. JAMA Psychiatry 2020;77:1246-55.
5. Suarez EA, Bateman BT, Hernández-Díaz S, et al. Association of antidepressant use during pregnancy with risk of neurodevelopmental disorders in children. JAMA Intern Med 2022;182:1149-60.

DOI: 10.1056/NEJMp2511434

Restoring Confidence in Public Health

Peter Marks, M.D., Ph.D.[1]

The field of public health was defined in a 1920 article by Charles-Edward Amory Winslow as the "science and the art of preventing disease, prolonging life, and promoting physical health through organized community efforts."[1] Its foundations had developed over hundreds of years, but it began to flourish in the 19th and 20th centuries. During that time, the implementation of hygienic and sanitary measures, health codes, vaccination programs, and harm-reduction policies led to advances, including notable reductions in morbidity and mortality — though they were sometimes accompanied by tension between an individual person's rights and protection of the health of populations.[2]

Unfortunately, past progress in public health is now at risk in the United States. The current crisis has resulted from a confluence of interrelated factors, which can be understood by reference to what I might call the six "coms" ("com" aptly meaning "with" or "together"): complacency, commitment, commercialism, complexity, communication, and comportment.

One major obstacle to progress in public health is *complacency*, born of many Americans' lack of direct exposure to major health threats that have been overcome thanks to public health advances. People who haven't experienced the childhood illnesses of the past may not understand the potential dangers from the spread of infectious disease and its long-term consequences, such as post-viral sequelae. In addition, because the benefits of preventive measures, for either an individual person or a population, may be difficult to perceive, it's easy to focus instead on their potential risks.

Second, beliefs in the United States about what kind of *commitment* humans owe to one another have changed radically over time. Divides between the primary interests of all sorts of societal groups — such as the gap between the concerns of rural and urban populations — have continued to grow. In addition, some groups have exploited educational and economic inequities affecting public health to advance political objectives at the expense of the overall population's well-being. As a result, there seems to be greater tension than ever between individual choice and the collective welfare, which has been an issue since the implementation of such major public health initiatives as vaccine mandates. This loss of mutual commitment impedes society's ability to advance public health, as evidenced by increased morbidity and mortality from diseases such as measles, which have arisen from declining vaccination rates.[3]

Third, *commercialism* and promises of easy cures have convinced some people that treatments for conditions including infectious diseases are readily at hand and obtainable for the right price, undermining acceptance of appropriately developed public health interventions. Purveyors of such treatments provide easy access to products that lack demonstrated efficacy in what is essentially a "cash and carry" business. This unethical commercialism has proliferated to the extent that products such as unproven stem-cell therapies purporting to treat everything from arthritis to memory loss can be obtained easily throughout the United States. The false hope offered by many of these ineffective and occasionally dangerous products violates the fundamental tenets of medical practice and public health.

Fourth, the explosion of medical knowledge over recent decades has created *complexity* that is extremely challenging to navigate. During the 20th century, the rate of public health advances increased exponentially with the identification of determinants of disease, including the interplay of hereditary, environmental, and social factors. But even as the causation of diseases has become clearer, such complexity has become more difficult for public health professionals to understand and translate into concepts that can be communicated effectively to laypeople along with clear descriptions of residual uncertainty.

Fifth, *communication* is now so rapid and voluminous that it has become difficult to sort through the body of work relevant to public health. Since the Covid-19 pandemic, the Internet has increasingly been used to post research findings, and unrefereed manuscripts posted online are easily mistaken for appropriately peer-reviewed publications. It can thus be challenging to distinguish high-quality research and reproducible public health advances from all the noise. The proliferation of unvetted content on social media platforms generates further complications, as people who lack understanding of statistical methods reach broad audiences with stories of personal experiences that may not be reflective of population health problems or their solutions. False information communicated by individual people may also spread more rapidly than truthful information, owing to what Daniel Goleman has called "amygdala hijack," whereby the brain's rational capacity is overridden by a fear response, resulting in impulsive actions (such as immediately reposting information before taking the time to think through whether the information is even plausible).[4] And currently social media platforms provide no check on the spread of false information.

Sixth, there is a crisis in *comportment*, or behavior, of public health leaders. Simply put, U.S. public health officials are no longer trusted by many Americans, in part because elected officials of both parties have sometimes spread untruths about public health as a tool for pursuing purely political agendas. The effect of such deception has been erosion of trust in impartial public health experts who are committed to improving human health by communicating facts as well as uncertainties.

Without intervention, the current crisis could have quite disturbing consequences. The loss of confidence in childhood vaccination's ability to protect against diseases could lead to an even greater resurgence in vaccine-preventable illnesses in the United States, and the crisis of confidence in vaccination programs for influenza, Covid-19, and respiratory syncytial virus could markedly increase mortality among both children and adults. Americans' economic well-being and national security could also suffer, since the U.S. response to a future pandemic may be delayed if effective surveillance is not ongoing and nimble technologies are not trusted. Finally, the American public may miss out on the tremendous advances in well-being made possible by developments in molecular medicine, whose benefits will accrue only to societies that are willing to work to understand and embrace scientific advances. Together, these consequences would amount to a reversal of centuries of progress in public health, triggered in significant part by our collective inability to navigate through a sea of falsehoods to meaningful truths.

Given the magnitude of the problem, there is no surefire solution. But some long-term changes will be necessary, and some essential interventions can be implemented immediately.

Over the longer term, Americans will need to start preparing early, with improved and refocused scientific education in grade school. All citizens need, and will continue to need, a basic level of scientific literacy that will enable them both to appreciate public health efforts and to make informed individual health care choices. As part of this education — and in ensuring that the broader population is well informed — experts, public health officials, and educators will need to emphasize the benefits of in-

vestment in public health measures for both individual people and society overall. Simultaneously, community leaders, religious leaders, and even politicians will need to work together toward renewal of the social contract ensuring that health benefits are disseminated to everyone.

In the near term, everyone involved in public health can act to make a difference. On a daily basis, we need to redouble our efforts to convey complex concepts clearly and accompany our explanations with concise descriptions of the relevant uncertainty. We also must take the time to have extended dialogues with people who have questions about public health topics and to work through their preconceived notions and concerns. Even if such exchanges don't change minds, patient and respectful dialogue can help restore trust among people along the entire socioeconomic spectrum. In addition, if this effort is to succeed in today's environment, everyone involved in public health and particularly public health leaders will need to recognize the importance of the powerful and prolific communication of accurate information through multiple widely accessible platforms.

Finally, every single person involved, from frontline workers to national public health leaders, will need to commit wholeheartedly to the truthfulness, shared exchange, and mutual respect that are essential to advancing public health. The current situation, in which public health has been woefully undermined, must change; that will happen only if we all individually do something about it. As former U.S. Surgeon General C. Everett Koop noted, "Health care is vital to all of us some of the time, but public health is vital to all of us all of the time."[5] Because public health is critical for sustaining human well-being, all of us must have the courage to take on its current challenges.

Disclosure forms provided by the author are available at NEJM.org.

[1]Washington, DC.

This article was published on October 8, 2025, at NEJM.org.

1. Winslow CE. The untilled fields of public health. Science 1920;51:23-33.
2. Gostin LO, Wiley LF. Public health ethics and law. Hastings Center for Bioethics. September 23, 2015 (https://www.thehastingscenter.org/briefingbook/public-health/).
3. Hulland EN, Charpignon M-L, Berkane T, Majumder MS. Underimmunisation during the 2025 Texas measles outbreak. Lancet Infect Dis 2025;25:607-9.
4. Goleman D. Emotional intelligence: why it can matter more than IQ. New York: Bantam Books, 1995.
5. Koop CE. Health and health care for the 21st century: for all the people. Am J Public Health 2006;96:2090-2.

DOI: 10.1056/NEJMp2511772

Venture Capital Investments by U.S. Academic Medical Centers

Nishant Uppal, M.D., M.B.A.,[1] and Zirui Song, M.D., Ph.D.[1-3]

In this new era of uncertainty about traditional sources of revenue — particularly federal research funding and public insurance programs — U.S. academic medical centers (AMCs) may become increasingly reliant on alternative revenue sources. One emerging source, as demonstrated by financial data on leading AMCs, may be returns from venture capital investments.

In recent years, AMCs have increasingly developed their own venture capital divisions. Venture capital funds invest in startup companies, with targets including basic-science discoveries that may lead to new therapeutics, digital technologies for managing chronic diseases, and other emerging technologies for diagnosing illness or delivering care. AMCs use venture capital to generate revenue both by commercializing their own discoveries and by investing in other promising areas.

Venture capital differs from private equity, another form of investment. Whereas private equity firms typically acquire majority or full ownership stakes in established businesses, venture capitalists buy small, minority shares of new companies, often without ownership control, enabling the entrepreneur to continue leading. And whereas private equity firms typically sell investments several years after acquisition, with fairly assured returns on investment, venture capitalists often hold investments for longer periods, looking for more pronounced, though less certain, returns.

Over the past 15 years, venture capital investment by hospitals or health systems affiliated with a university or medical school has grown rapidly. Since 2010, the venture capital funds affiliated with 10 leading U.S. AMCs collectively participated in at least 453 investment deals, with a cumulative deal size of approximately $12.1 billion and an average deal size of $26.8 million (see graph).