

## The Innovation Imperative

### What Adam Smith can tell us about health

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The Competitive Enterprise Institute recently celebrated its 40th anniversary in Edinburgh, Scotland. Edinburgh was chosen because the city was celebrating the 300th anniversary of the birth of Adam Smith. Smith, of course, was a central figure of the Scottish Enlightenment which was centered in Edinburgh. He was born near the city, delivered an influential series of lectures there as a young man, and returned to spend the final 13 years of his life, dying in Edinburgh in 1790.

Edinburgh was also an appropriate setting to conduct my panel discussion of what Adam Smith can tell us about health as the city has been a center for medical teaching and innovation for hundreds of years. Edinburgh's medical school was established in 1726, making it the oldest medical school in the UK. The city is known for:

- Pioneering studies of anatomy that were performed in the 18th century (aided no doubt by enterprising grave robbers operating in a free, albeit illegal, market for bodies);
- The first use of chloroform in anesthesia in 1847 by Dr. James Simpson;
- The first hypodermic syringe in 1853 used by Dr. Alexander Wood to inject morphine; and
- In 1996, Dolly the sheep, the first mammal to be cloned from an adult cell, was created and born at the University of Edinburgh.

Smith was a key intellectual forebear of CEI in that he recognized the importance of the freedom to innovate, unrestricted by government interference and controls, as the soundest foundation for human flourishing.

For Smith, innovation meant changes in manufacturing — specialization and the division of labor — that greatly improved productivity. He began his 1776 *An Inquiry into the Nature and Causes of the Wealth of Nations* by describing the making of metal textile pins, then used widely to shred and comb fibers used in sewing, stitching, and tailoring.<sup>1</sup> One man could barely make 20 pins in a single day by himself. But dividing the manufacture into 18 distinct steps would enable 10 men, each specializing in discrete tasks, to make more than 48,000 pins per day, or more than 4,800 per man. Division of labor and specialization allowed workers to become far more efficient and productive in doing their tasks.

Smith's special insight was that workers and entrepreneurs would, without prodding, try to find ways to perform their jobs more efficiently, leading to innovation that would help everyone. He understood that the best driver of innovation is the free market



<sup>1</sup> Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (Wordsworth Editions, 2012).

driven by self-interest. After all, Smith's butcher, brewer, and baker were motivated to figure out more efficient, more productive, more innovative ways to produce their respective products, not because they were altruists "but," as Smith phrased it, "from their regard to their own interest."

A central thesis for Smith's *Wealth of Nations* was that an individual who acts to promote his own self-interest and well-being will unintentionally help the good of society. He will be "led by an invisible hand to promote an end which was no part of his intention," the public interest.

Smith went even further, positing that acting in one's own self-interest is the *most effective* means of increasing the general welfare. Smith wrote that, "By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good."

Innovation that improves productivity and the effectiveness of products is key to improving welfare. And that innovation comes, most often, from individual self-interest working in free, private markets, not from government efforts undertaken for "the public good." Indeed, government interventions often make matters worse.

Smith's lesson has proven to be particularly persuasive for health. Self-interested innovation, not government efforts, have been the most potent way to improve health. Innovation reduces the price of health over time by improving existing treatments and providing previously unavailable treatments.

## Innovation in medicine

Unfortunately, health care — including a wide range of activities such as the research, development, and approval of new drugs and medical devices, insurance provision and regulation, and professional licensing — is probably the most heavily regulated sector of our economy. This impedes the workings of the innovative, invisible hand.

Smith would have recognized the importance of health which is a prerequisite for enjoying life's many activities and leads to increased productivity and economic growth. In Smith's time, smallpox killed hundreds of thousands annually. Simple accidents were often lethal. Cancers nearly always led to painful deaths. But medical care consisted primarily of bloodletting, leeches, and for my surgical forebears (I practiced general surgery and

surgical oncology for 30 years) bar room amputations. At best, physicians of Smith's day could alleviate suffering. At worst, their treatments hastened death.

Smith likely could not have imagined the medical advances and technologies we enjoy today. But he undoubtedly *would* have imagined that human ingenuity and drive would lead to innovations to improve health care and health.

While some complain that new treatments and technologies are expensive and increase health care spending, it is important to distinguish the price of health care from the price of health. Some new treatments have high initial prices, but they bring down the price of health over time. Many innovations have been amazingly cheap.

Those innovations resulted in US life expectancy at birth jumping over the course of the 20th century from 49.3 years in 1900 to 77.5 years in 2003.<sup>2</sup> Gains in longevity in the first half of the 20th century largely resulted from a scientific breakthrough in the late 19th century, the germ theory of disease, which led to the control of numerous infectious killers. Innovations included the adoption of hand washing, the widespread pasteurization of milk in the 1920s, protecting food from flies, isolating sick children, improving ventilation, safeguarding water supplies, and improving sewage disposal.<sup>3</sup> The adoption of sterile techniques in the operating room, including inexpensive sterile surgical gloves, made surgery far safer and saved countless lives.

Antibiotics that first became widely available in the 1940s and 1950s, due to innovations that made mass production possible, reduced the toll of infectious diseases that had afflicted humanity for millennia. Innovations continued in the latter half of the century. These increased average life expectancy by seven years between 1960 to 2000, at a cost \$19,900 (after adjusting for inflation) for each year of increased life expectancy — a good deal by any reckoning.<sup>4</sup>

Economists David Cutler and Mark McClellan conducted an analysis of technological change at the disease level for five common medical conditions. They found that the benefits in four of the five conditions studied (heart attacks, low-birthweight infants, depression, and cataracts) were greater than the costs. For example, in 1984 nearly 90% of heart attack patients were managed medically; by 1998, more than half of patients received surgical treatments. New technology increased Medicare spending on heart attack patients by \$10,000 per case. But the new technology increased the average heart attack patient's life expectancy by one year. In other words, a bargain.

<sup>2</sup> Laura B. Shrestha, *Life Expectancy in the United States*, Congressional Research Service, RL32792, Updated August 16, 2006. <https://crsreports.congress.gov/product/pdf/RL/RL32792>.

<sup>3</sup> Shrestha, *Life Expectancy*, p. 3.

<sup>4</sup> David M. Cutler, Allison B. Rosen, and Sandeep Vijan, "The Value of Medical Spending in the United States, 1960-2000," *The New England Journal of Medicine*, 355(9) (August 31, 2006): 920-927.

For the fifth disease, breast cancer, costs and benefits were about equal in Cutler and McClellan's study. But later studies with a longer time horizon suggest that in breast cancer innovation has been beneficial as well. Between 1975 and 2019 there was a 58% reduction in US breast cancer mortality (deaths per 100,000 women) mostly due to improved treatment in the form of new drugs.<sup>5</sup>

Recent examples of life — saving innovations abound:

- New HIV drugs that turned a uniformly fatal illness (AIDS) affecting millions into a chronic disease<sup>6</sup>;
- New Hepatitis C drugs that turned a chronic, often fatal illness with poor but expensive treatments into a curable disease;
- Targeted cancer medicines that have extended lives and cured many previously fatal malignancies; and
- New obesity medicines, which may ameliorate the large and growing problem of obesity that directly and indirectly decreases our health.

While many recent innovations have been expensive drugs, initial, patent-protected prices fall as competing brands, and eventually generic products, come to market. And these new drugs do not just have direct health benefits. Some drugs, such as those that treat cardiovascular conditions and the conditions such as hypertension, high cholesterol, and diabetes that are associated with increased cardiovascular risk, reduce spending on services provided by hospitals and physicians.<sup>7</sup> Preserving the revenues and return to capital that make the development of these innovative, life-saving drugs possible is critical.<sup>8</sup>

## Failures of government's visible hand

Unfortunately, as Smith would have predicted, government interventions have done little to improve innovation and health and, at times, actually decreased them.

Most government efforts to improve health have focused on increasing health insurance coverage. This was the goal of Medicare insurance for the elderly and disabled

and Medicaid for the poor in the 1960s. This was also the primary goal of the Affordable Care Act (ACA). But government provided insurance has performed poorly. It increased the amount of medical care used and spending, but improved health less than is commonly believed.

Finkelstein and McKnight found that in the first 10 years after passage in 1965, Medicare had no discernible impact on seniors' mortality.<sup>9</sup>

A careful review of studies purporting to find that health insurance did improve health outcomes found that most did not establish a causal relationship. Nearly all were observational studies that are notoriously prone to bias and confounding. They did not adequately address the problem of the endogeneity of health insurance — that observed differences in health outcomes resulted from unobserved differences between the insured and the uninsured. The authors concluded that insurance increased medical care consumption and modestly improved self-reported health, but that outside of a few vulnerable population subgroups (e.g., children), there is little evidence that insurance significantly improves the health of most people.<sup>10</sup>

A 20-year observational study attempted to counteract the deficiencies of earlier short-term observational studies by using a more complete set of covariates. It found that insured people use more health care services but there was no significant effect of insurance on health and mortality.<sup>11</sup>

In science, the best way to establish a causal relationship is via randomized trials. The best evidence of the limited effect of insurance on health comes from the randomized Oregon Medicaid experiment.<sup>12</sup> Oregon had money to insure more people, but more people were interested than it could afford. People were randomly selected from a list of uninsured, interested people to receive Medicaid coverage. They were compared with a control group of those on the list who were not selected. After two years the covered group increased their use of medical care of all kinds. Yet, other than improved depression outcomes — reflected in lower rates of depression diagnoses — the group gaining coverage did not show improvement in measurable health outcomes. Medicaid coverage had

<sup>5</sup> Jennifer L. Caswell-Jin, et al., "Analysis of Breast Cancer Mortality in the US—1975 to 2019," *JAMA*, 2024; 331(3):233–241, <https://jamanetwork.com/journals/jama/article-abstract/2813878>.

<sup>6</sup> HIV medicines include: Nucleoside reverse transcriptase inhibitors (AZT- developed and marketed by Burroughs Wellcome); Protease inhibitors (saquinavir- Roche; indinavir-Merck); Non-nucleoside reverse transcriptase inhibitors (nevirapine); highly active antiretroviral therapy (HAART)- combination of different drugs (1996); new classes and new drugs keep coming out (more than 30 available today).

<sup>7</sup> See David M. Cutler, et al., "Explaining the Slowdown in Medical Spending Growth Among the Elderly, 1999–2012," *Health Affairs*, Vol. 38, No. 2 (February 2019), pp. 222-229, [www.healthaffairs.org/doi/10.1377/hlthaff.2018.05372](http://www.healthaffairs.org/doi/10.1377/hlthaff.2018.05372).

<sup>8</sup> Joel Zinberg, "A Solution in Search of a Problem," *City Journal*, March 13, 2024, <https://www.city-journal.org/article/a-solution-in-search-of-a-problem>.

<sup>9</sup> A. Finkelstein, R. McKnight, "What did Medicare do? The initial impact of Medicare on mortality and out of pocket medical spending," *Journal of Public Economics*, 2008; 92:1644-68.

<sup>10</sup> H. Levy, D. Meltzer, "The Impact of Health Insurance on Health," *Annual Review of Public Health*, 2008; 29:399-409.

<sup>11</sup> Bernard S. Black et al., "The Long-Term Effect of Health Insurance on Near-Elderly Health and Mortality," *American Journal of Health Economics*, Vol. 3, No. 3, (2017) 281-311.

<sup>12</sup> K. Baicker et al., "The Oregon experiment—effects of Medicaid on clinical outcomes." *New England Journal of Medicine*, May 2, 2013; 368(18):1713-22.

no effect on blood pressure, cholesterol levels, diabetes control, or mortality.

The covered group did receive an important benefit, improved financial security — reflected in lower medical debt, decreased borrowing and fewer skipped payments — which is the primary purpose of most kinds of insurance. This likely impacted their sense of psychological well-being but did not otherwise impact health outcomes.

As many expected, the ACA insurance expansion covered far fewer additional people than anticipated and most of them gained coverage through Medicaid which provides limited access to care and at most modest health benefits. It resulted in higher insurance premiums, utilization, and spending, but little or no hard evidence of improved health outcomes.<sup>13</sup>

Other government health mandates and care delivery programs outside of insurance expansions have fared no better. They generally, as health economist Mark Pauly described in his 2022 book, *Seemed Like a Good Idea*, “rely on hope or conjecture, not rigorous evidence of effectiveness.”<sup>14</sup> And when those programs fail, as they usually do, government policymakers often persist in supporting them.<sup>15</sup>

One federal effort that seemed like a good idea at the time was the government requirement that health care providers utilize Electronic Medical Records by a particular date.<sup>16</sup> The result was a lot of money wasted on systems that were not ready for prime time and health care consolidation that decreased competition and raised prices as smaller providers who could not afford the required expenditures for EMRs were absorbed into larger providers who could.

The ACA’s attempt to transform the American health care system from a fee-for-service model to one based on “value” by promoting the formation of accountable-care organizations or ACOs, was another example. ACOs — groups of health care providers that assume responsibility and financial risk for the quality and costs of care for a defined group of patients — would presumably yield superior care coordination, enhanced quality, and ultimately lower costs.

Earlier attempts to use this model had failed. Undeterred, the federal government’s Medicare program promoted ACOs through the Centers for Medicare and Medicaid Services (CMS) under two parallel tracks: the Center for Medicare and Medicaid Innovation (CMMI) to test “innovative payment and service delivery models” and the Medicare Shared Savings Program (MSSP). Neither worked. The Congressional Budget Office found<sup>17</sup> that that, instead of saving money, as it earlier had predicted, “CMMI’s activities increased direct spending by \$5.4 billion... between 2011 and 2020” and when properly compared with counterfactual control groups, the MSSP appears to save little or no money. Nevertheless, CMS officials remain committed to plans that would move all Medicare fee-for-service beneficiaries into accountable-care plans.<sup>18</sup>

### What medicine can learn from Adam Smith

Adam Smith would have predicted these government failures. If he were here today he would likely ask why government needs to provide or mandate health insurance and specific types of health delivery. If insurance or ACOs are good ideas, people will seek them and private companies will compete to provide them at the lowest cost. If EMRs were helpful and money saving, the market would have adopted them without government mandates. And there would have been adequate time for competition to reveal which EMRs were best, instead of a pell-mell rush to buy whatever product was available.

Smith would likely ask why government is imposing mandates that unnecessarily restrain the invisible hand and life-saving innovations. Market participants will innovate without government prompting, and their ideas and improvements will surpass anything bureaucrats can dream up.

Improvements in health have not come from increased health insurance coverage or even increased health care consumption and certainly not from government interventions. As Smith predicted, improvements in health have come from innovation, resulting from individuals acting “from their regard to their own interest” to benefit all.

<sup>13</sup> Charles Courtemanche et al., “Effects of the Affordable Care Act on Health Care Access and Self-Assessed Health After 3 Years,” *Inquiry*, Jan-Dec, 2018. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6146333/>.

<sup>14</sup> Mark Pauly et. al., *Seemed Like a Good Idea: Alchemy versus Evidence-Based Approaches to Healthcare Management Innovation* (Cambridge University Press, July 2022).

<sup>15</sup> Joel Zinberg, “Not-So-Affordable Care,” *City Journal*, Nov. 27, 2023. <https://www.city-journal.org/article/not-so-affordable-care>.

<sup>16</sup> Contained in the Health Information Technology for Economic and Clinical Health Act, aka the HITECH Act, signed into law by President Obama in 2009 as part of a larger economic stimulus package that provided about \$35 billion in incentives for hospitals that made “meaningful use” of EHRs.

<sup>17</sup> Congressional Budget Office, *Federal Budgetary Effects of the Activities of the Center for Medicare & Medicaid Innovation*, September 2023, <https://www.cbo.gov/publication/59612>.

<sup>18</sup> Zinberg, “Not-so-Affordable Care.”

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