



Health Reform and the Future of Medical Innovation

Jeffrey Clemens, University of California-San Diego

The advance of medical technologies has two implications: people can expect to live longer, and they will also face higher medical bills than their parents and grandparents. Of course, advances in health care are highly valued. Few would want to give up the advanced treatments available today to return to 1950s medicine at mid-twentieth-century prices.

Because advances in health care are at once so costly and so valuable, it is important to understand how the course of innovation may be influenced by new public policies – like the ongoing rollout of the 2010 Affordable Care Act. To understand what is at stake, I have looked at the Great Society reforms of 1965, which introduced Medicare coverage for the elderly and Medicaid coverage for the poor. My research shows that sustained increases in medical innovations followed these reforms. U.S. patents for medical equipment innovations increased by 40 percent, compared both to other U.S. patents and to foreign medical patents. Advances continued apace as Medicaid and private insurance became increasingly comprehensive during the 1970s and 1980s. But to decipher whether the Affordable Care Act is likely to have similar effects, we must dig more deeply into the processes by which medical innovations happen.

The Roots of Medical Innovation

As Edward Roberts of the Massachusetts Institute of Technology pointed out years ago, people asked to describe medical innovation usually conjure up images of laboratory scientists doing basic research. While this accurately describes pharmaceutical breakthroughs, improvements in medical equipment and devices are more connected with day-to-day medical practice. Through their experiences and frustrations in helping patients, physicians themselves often identify technological needs and develop ideas for improvements.

This perspective suggests that the Great Society reforms could have spurred innovation in two ways. First, Medicare and Medicaid gave millions access to previously unaffordable treatments; second, they paid physicians generously to provide these treatments. Well-paid physicians with large numbers of well-insured patients are precisely the source from which we would expect medical innovations to flow – and the historical record confirms the hypothesis. After Medicare and Medicaid went into place, patenting in medical equipment and devices increased most dramatically in U.S. states with two features: they experienced the most dramatic expansions of the ranks of the insured, and they had large numbers of physicians on hand to adopt and develop innovative treatments and technologies.

How Payment Systems Influence Innovation

Because physicians themselves are central to medical innovation, the way we pay them is important. Skill and idea development stem from experience. Not surprisingly, physicians become most experienced at providing the services for which they are generously reimbursed.

Historically, most U.S. physicians were paid through fee-for-service contracts. This means they are paid for each individual service they provide to covered patients. Many private insurers followed Medicare's lead in basing these payments on the average cost of providing a service. Paying based on average cost means not adjusting payments according to a treatment's actual health benefits. As a result, costly treatments generate higher payments, even when patients might benefit more from more basic services.

Overall, America's system for reimbursing physicians has encouraged much provision of highly specialized services, which are also the most expensive. Under this payment model, as spurred by Medicare and Medicaid, it should come as no surprise that advanced technologies have flourished. Although new technologies have usually proven valuable, they are also significant drivers of high and rising health care costs.

How Might the Affordable Care Act Affect Medical Improvements?

Understanding the roots of medical innovation allows us to think through the effects the Affordable Care Act might have as it moves toward full implementation. Like the introduction of Medicare and Medicaid, the Affordable Care Act expands insurance to previously uncovered segments of the U.S. population. On the consumer side, the effects of all insurance expansions tend to be similar. By allowing more people to get health care without paying full prices, insurance expansions increase demand for high end treatments. That, in turn, expands the economic rewards for those who discover and market new technologies.

But parts of the Affordable Care Act could push in the opposite direction. As one of many mechanisms intended to help pay for expanded health insurance, the law includes a new tax on medical device manufacturers. This has been the source of much controversy, with opponents arguing that this tax will trim the rewards for medical innovations.

Perhaps more important, but far less certain, are the Affordable Care Act's possible effects on payments to physicians. Newly insured patients will come primarily through expanded state Medicaid programs and private plans sold on state exchanges. Many plans sold on the exchanges are likely to involve managed care arrangements. These plans also appear likely to reimburse physicians less generously than current employer health plans. Many state-run Medicaid systems already rely on managed care to control costs, and they certainly pay less for care than Medicare.

The Affordable Care Act is therefore likely to shift patients toward Accountable Care Organizations and other managed care arrangements. Providers will increasingly receive a payment for each beneficiary they oversee rather than getting a fee for every treatment they administer. Managed care organizations, and the physicians they employ, do well financially when they provide cost-conscious care that is valued by their beneficiaries. Their growth should, in turn, encourage medical innovations that facilitate the delivery of quality care at lower cost.

The potential impact of the Affordable Care Act on future medical improvements could thus be salutary. In a U.S. health care system beleaguered by high costs, fresh streams of cost-saving innovations would be welcome. Paying physicians and health care delivery organizations for value rather than volume *could* generate innovations of precisely this form. Time will tell.

Read more in Jeffrey Clemens, "The Effect of U.S. Health Insurance Expansions on Medical Innovation," National Bureau of Economic Research, December 2013.

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