Knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution.

—Albert Einstein

Medical Progress

Unintended Consequences

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Writing in 1780 to his friend Joseph Priestly, the British scientist, Benjamin Franklin said that with an increase in the "power of man over matter, . . . All diseases may be prevented or cured, not excepting that of old age." The great American Revolutionary War physician, Benjamin Rush, was no less utopian in prophesying that there will someday be a "knowledge of antidotes to those diseases that are thought to be incurable."

A powerful faith in science as a basic human value, matched by an equally strong belief in medical progress, has been a central feature of American culture from the start. Although medical research was slow in gaining momentum, by the second half of the nineteenth century it was well under way, and it moved forward thereafter at a rapid pace. The establishment of the National Institutes of Health just before World War II, and its steady growth since then, has been a testimony to an unprecedented congressional bipartisanship and public enthusiasm. Some 80 percent of Americans say they support medical research as a high-priority national goal, and the NIH's $28 billion annual budget shows it.

The pursuit of progress in health care has led to an unsustainable rise in costs without a corresponding increase in benefits.

The fruits of medical progress—and its first cousin, technological innovation—are not hard to discern. From the near-conquest of infectious diseases by means of vaccines, antibiotics, and antivirals, to a reduction of deaths from heart disease and many other lethal diseases and a resulting increase in life expectancy for almost everyone, it is a faith that has been well rewarded. We are as a nation healthier and more prosperous because of it.

Yet it has been, as a value, remarkably little explored, as if its patent benefits put it beyond all inquiry. Any ethical interest has focused almost exclusively on byproducts of the drive for progress, such as human subject protection in clinical trials and, lately, the use of embryos for research purposes. Given the massive role of research as part of our economic, medical, and political life, there is a good deal more that can be said about the value of progress as a whole, and a number of issues worth some intense inquiry. Five that have policy implications have caught my eye.

There is, first, the role of research and technological innovation as a main driver of health care costs. Any number of economic studies and the Congressional Budget Office have identified either new technologies or the intensified use of older ones as responsible for about 50 percent of annual cost increases, now averaging an unsustainable 7 percent a year. Our technological benefit is

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turning into our economic bane. Though only a minority of medical technologies have been assessed for efficacy and a good cost-benefit ratio, they are the front line of American health care: doctors are trained and well paid to use them, industry makes billions of dollars selling them (and resists any cost controls), and the public loves and expects them. There is, moreover, a profound ambivalence among many economists about technology. They recognize it as the leading economic problem for American health care, but they are fearful of any moves that might harm technological innovation.

There is, second, the comparative role of medical care and background social conditions in improving health. Any number of technical estimates over the years trace some 60 percent of improvements in health status to socioeconomic factors, particularly education and income. Medical care, then, accounts for no more than 40 percent in general—though the health status of the elderly is an exception, and medical technology in particular accounts for their improved health in recent decades. One could make a good case that improvements in education and job creation could be a better use of limited funds than better medical care. Social and economic progress may be the kind we most need, and that kind of progress would have double and even triple benefits beyond improved health; a good education, for example, improves both individual health and the economic well-being of society.

Third, if throwing technology at illness in the name of progress is an increasingly expensive and economically destructive way to go, what might a more sensible idea of progress be? My vote would be to aim for a better balance between cure-oriented and care-oriented medicine. The emergence of chronic disease as the most difficult and expensive kind to manage is demonstrating the failure of cure-oriented medicine to do away with the nation's major killers, which are heart disease and cancer. Patients must now learn, with medical help, how to live with and probably die with their condition. By "care-oriented medicine," I mean not just good palliative care, but well-coordinated medical assistance to manage disease, further coordinated with social and family help.

Fourth, much has been made for years of the power of disease prevention as the best way to save money, to save lives, and to improve our health. Those are at best half-truths. In the end, sickness and death can be forestalled but not conquered, the costs deferred but not eliminated. The only likely way to assure a good outcome for prevention programs is to make clear to the public that high-cost technologies will be severely limited when the final illness arrives. The carrot is that prevention will give us a longer life with a higher quality. The stick will be the message that you should take care of yourself and not expect medicine to save you when your time runs out—that is no longer an option.

Fifth, Americans already live, on average, a long life of seventy-seven years. There is no need to go out of our way to chase life extension, or the denial of death, as the sine qua non of medical progress. We need progress in removing the health disparities that keep millions from reaching seventy-seven, in reducing the social and economic burden of disease, and in coping with newly emergent conditions (like obesity and asthma in children) and medical threats (such as antibiotic resistance). The NIH has always given priority to the most lethal diseases, with heart disease at the top of the list. Increasingly, I would argue, our priority should be the (now) slow way those diseases kill us, as well as the diseases and conditions that don't kill us (or not quickly) but make life a misery. Poor mental health, severe arthritis, frailty in the old, deafness and vision impairment, and Parkinson's and Alzheimer's disease fall into that latter category.

I mention, finally, two other places where progress is needed. One of them is to change the ratio of primary care physicians to subspecialists. Our ratio is now sliding below 20 percent for the former and rising to close to 80 percent for the latter. A failure to change that ratio (it is 50/50 in Europe) will make it almost impossible to pursue the new goals I have identified. The other is to bring the drug and device industries under greater economic and medical control. Their idea of progress is an expensive pill or device that will meet medical needs, and—via the route of medicalizing every seen and unseen ache, pain, and travail—turn all desires for surcease into insistent needs.

★ Policy Implications ★

The pursuit of progress in health care has led to an unsustainable rise in health care costs without a corresponding or equitable increase in health benefits. Reexamining its effects should lead to a realignment in the way progress is valued and to accompanying shifts in policy. We should adopt policies that promote care-oriented rather than cure-oriented medicine; changing the ratio of primary care physicians to subspecialists is one important step we could take in this direction. Further, we should address social and economic issues, both as an alternative way of promoting health throughout the lifespan and to achieve broader personal and societal well-being.

Serious progress would mean turning back the clock: learning to take care of ourselves, to tolerate some degree of discomfort, to accept the reality of aging and death (not to mention the near-death experience of erectile dysfunction), and to see our personal doctor as someone as likely to talk with us as to have us scanned. That cluster of backward-looking ideas is what I think of as common-sense, affordable progress. ★