By Katherine Baicker, Mark Shepard, and Jonathan Skinner

Public Financing Of The Medicare Program Will Make Its Uniform Structure Increasingly Costly To Sustain

Katherine Baicker (Kbaicker@
hsph.harvard.edu) is a
professor of health economics
in the Department of Health
Policy and Management at the
Harvard School of Public
Health, in Boston,
Massachusetts.

Mark Shepard is a doctoral
student in economics at
Harvard.

Jonathan Skinner is the
James O. Freedman Professor
in the Department of
Economics at Dartmouth and
a professor at the Institute
for Health Policy and Clinical
Practice, Geisel School of
Medicine at Dartmouth, in
Hanover, New Hampshire.

ABSTRACT The US Medicare program consumes an ever-rising share of the federal budget. Although this public spending can produce health and social benefits, raising taxes to finance it comes at the cost of slower economic growth. In this article we describe a model incorporating the benefits of public programs and the cost of tax financing. The model implies that the "one-size-fits-all" Medicare program, with everyone covered by the same insurance policy, will be increasingly difficult to sustain. We show that a Medicare program with guaranteed basic benefits and the option to purchase additional coverage could lead to more unequal health spending but slower growth in taxation, greater overall well-being, and more rapid growth of gross domestic product. Our framework highlights the key trade-offs between Medicare spending and economic prosperity.

U S health care spending exceeds that of any other country and is on track to account for more than one-third of the nation's gross domestic product (GDP) in fifty years.[1] Different observers often hold conflicting views about the impact of this trend. The first view is that this rapid spending growth constitutes a fiscal time bomb. The Congressional Budget Office (CBO) projects that federal health care spending alone will rise from 5.5 percent of GDP today to more than 15 percent of GDP in fifty years.[1] Historically, the entire federal budget has averaged 20 percent of GDP.[2] Funding this rise in federal health spending would thus require enormous pain elsewhere, in the form of reduced spending in other areas or dramatic increases in taxes.

The second view is that rising health spending has been associated with improved health and is money well spent. David Cutler observes that steadily improving health over the twentieth century yielded enormous benefits, including increases in lifespan, with some estimates valuing these benefits at as much as half of total GDP.[3–5] Robert Hall and Charles Jones present a key point underlying this argument: As income rises, health spending becomes increasingly valuable, relative to nonhealth spending, because it extends the time and ability to enjoy the higher standard of living that greater income affords.[6] Thus, they argue that in the United States, health care spending should optimally grow much faster than income.

In this article we attempt to reconcile these seemingly divergent views of the effects of rising health care spending. The continued development of health care technology holds the promise for life-saving innovations. However, most studies gauging the effects of rising spending do not account for two key aspects of the US system.

First, government-financed health care spending involves a sizable degree of tax-financed redistribution—primarily to poor, disabled, and elderly people—which can entail large efficiency costs in the form of reduced economic growth.[7–13] Second, public insurance programs generally

provide a uniform benefit to enrollees—a "one-size-fits-all" approach to coverage. These features are motivated by the egalitarian ideal that all people should have access to life-saving health care, regardless of income. But as the menu of health care innovations—and accompanying costs—has expanded, this relatively egalitarian structure has become increasingly expensive to sustain.

The US health care system is unusual in providing a government Medicare program, covering primarily those over age sixty-five and representing more than 40 percent of public health care spending,[14–17] that pays providers relatively well for nearly any treatment, regardless of cost-effectiveness.

Medicare is also increasingly different from private managed care plans in that nearly any health care provider is qualified to receive Medicare funding without regard to contracting or utilization review. This unrestricted or "gold-plated" insurance design may represent what an upper-income American would wish to purchase even if faced with its full cost. But it might not reflect what the majority of Americans would choose if they had to pay the full cost of such a package.

As Uwe Reinhardt writes: "Americans are fond of the idea that individuals and families should be self-reliant. But a question confronting the American public and their political representatives is how they imagine households with money income of, say, $30,000 to $50,000 will tolerate the ever-larger bites the healthcare Pacman seeks to take out of their budgets."[18] Reinhardt foresees a "fork in the road" at which the United States either maintains the relatively egalitarian structure of Medicare but sharply restricts expenditure growth—presumably through cuts in coverage or reimbursement rates; or allows benefits to vary by income, with high-income people who choose more generous plans required to pay for the additional coverage out of their own income.

In this article we address these choices in a framework that reflects the costs and benefits of large public insurance programs for a population with diverse health needs and income levels.[19] We first use our framework to explain why health care spending in the United States since 1980 has diverged from that of other developed countries.[20] We then address the question of whether the fiscal Armageddon predicted by the CBO can be sidestepped by moving toward a system in which the Medicare program guarantees only basic coverage but high-income enrollees can pay for more generous coverage themselves.

More modest growth in Medicare would also allow for greater redistribution of resources through nonhealth channels, such as food stamps or housing assistance. We thus attempt to quantify the trade-off for low-income recipients between the generosity of health insurance coverage and the value of other nonmedical redistribution programs.

Although identifying the value of care ex ante is far from straightforward, we illustrate the effect of using this imperfectly measured criterion to inform benefit design.[21] That is, would low-income Medicare recipients be better off with a program that covered proton beam therapy for prostate cancer—costing at least $25,000 more than conventional treatment but with little evidence of better outcomes—or with equivalent financial assistance to buy food or pay the mortgage?

Empirical Evidence On Spending Growth

The United States spends more on health care than any other country, but it was not always such an outlier. For instance, in 1980 there were three European countries with similar levels of total health care spending relative to GDP, albeit with very different systems: West Germany (8.4 percent), Denmark (8.9 percent), and Sweden (8.9 percent)—just below the US level at the time (9.0 percent).[22] Exhibit 1 shows the subsequent growth since 1980 in total health care spending for these developed countries.

By 2008, prior to the US recession, health care spending in Germany, Denmark, and Sweden had increased by an average of about 1.1 percentage points of GDP. In contrast, US health care spending had risen by 7.0 percentage points, to 16.0 percent of GDP.[20]

Less well known is the fact that even the public portion of health care spending in the United States accounts for large fraction of GDP relative to other countries. Because US health care spending overall is much higher, even though the public share of US spending is smaller, public spending on health care as a share of GDP rivals that of many publicly financed systems elsewhere. US government spending on health care as a share of GDP now equals that in Germany, Denmark, and Sweden and is projected to grow more rapidly than in any other developed country. The United States, Germany, Denmark, and Sweden all spend under 10 percent of GDP on public health programs now. However, that share is predicted to double for the United States by 2050, while for the other three countries that share is expected to remain relatively flat.[23]

Why has the United States diverged so dramatically from its counterparts? This diver-

EXHIBIT 1

Health Care Spending As A Percentage Of Gross Domestic Product (GDP) In Four Countries And The OECD Average, 1980–2010
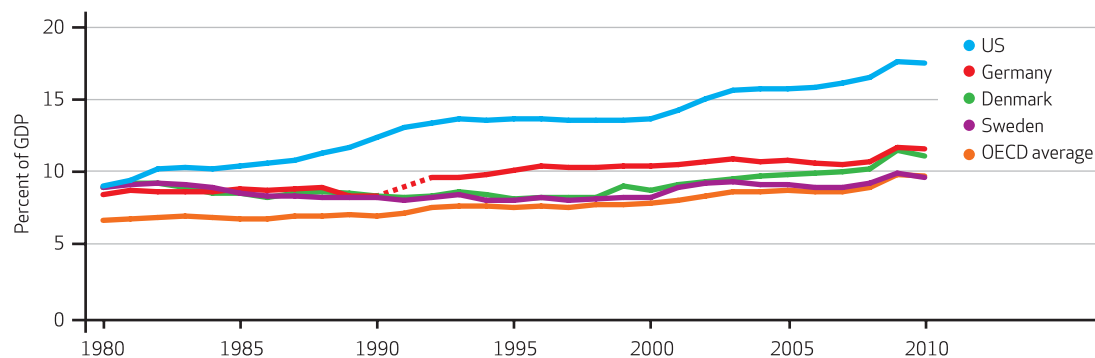
SOURCE Organization for Economic Cooperation and Development. OECD health data 2012. Paris: OECD, 2012. **NOTE** Data for Germany for 1991 are missing.

gence is probably not explained by commonly cited factors such as administrative costs—already high by the 1980s—or physician salaries, which have stagnated over the past decade.[24,25] Nor can the divergence be attributed to differential income growth, because annual income growth in the comparator countries has lagged that in the United States by just a few tenths of a percentage point.[20]

In this article we describe a new framework[19] that explains these international differences in health spending growth rates and sheds light on the likelihood that government-subsidized health spending in the United States will continue to gallop along the path it is on now.

Study Data And Methods

FRAMEWORK We developed a framework to evaluate both current and future health care system structures and expenditures under different redistribution and insurance programs. Although the model simplifies the complexities of the US economy and health care system, we have calibrated it roughly to match past US health care expenditures.

The advantage of such a stylized model is that it can be used to make assessments about how health policies affect well-being and health outcomes across a broad distribution of income groups for several decades into the future. The disadvantage is that the predictions are only as good as the model and the inputs we used, although we can see whether our model is more consistent with observed patterns than alternative models.

Thus, we view this exercise not as a way to forecast the costs of specific proposals, but as illustrative of the relative costs and benefits of

government programs in a world outside the range of our current empirical evidence. Our framework builds on the work of Hall and Jones[6] and of Kevin Murphy and Robert Topel.[4] We describe the framework more fully in a more technical working paper.[19]

We assume that there are different income groups and that individuals make choices about how much to work and how much to consume in health care versus other goods. When people fall ill, their probability of survival depends in part on how much health care they obtain. Over time, the technology of health care improves, but at a point in time, there are diminishing returns to spending more.

Our model includes a government that provides both traditional public goods like national defense and transfer programs that progressively redistribute resources and reduce poverty. These transfer programs take the form of either cash benefits—for example, Social Security and Temporary Assistance for Needy Families—or in-kind health insurance benefits—for example, Medicare and Medicaid.[26] Health insurance may be provided either as a uniform benefit for all income groups, as in the current traditional Medicare program,[27] or as a guaranteed minimum benefit that some people may supplement by purchasing more generous plans.

In the absence of government transfers, we would not be surprised to find segmentation of health care, where higher-income people can and do purchase better care, leading in turn to disparities in health and longevity across income groups. But there are at least two reasons that governments may act to reduce this inequality.

First, society may care about the welfare of lower-income people overall. Second, society may care in particular about the health outcomes

of those lower-income groups. This second force creates a rationale for in-kind transfers, rather than just cash transfers.[28–30] There may thus be substantial cash and in-kind transfers from rich to poor and from healthy to sick.

With programs that provide health benefits in kind, the poor can obtain expensive health care beyond what they would purchase even if they had the cash equivalent. But the existence of such programs creates a tension: Greater health care benefits for the poor come at the expense of a general decline in non–health care redistribution—gold-plated health care but a less generous food stamp program.

The "generosity" of health insurance can be characterized along several dimensions, from deductibles and coinsurance to limitations on services covered. Our analysis focuses primarily on the latter: which treatments are covered for which specific disease categories, with increasingly generous (and expensive) plans working their way up the cost-effectiveness curve—in other words, representing higher and higher outlays needed for every incremental life-year obtained. Recall that the National Institute for Health and Care Excellence in England restrains costs not through higher copays, but by recommending that the English National Health Service pay only for cost-effective treatments up to, for example, £30,000 (approximately US$45,000) per life-year.[31]

We compare the one-size-fits-all uniform "gold" Medicare plan to a less comprehensive public plan that would offer coverage of basic services with sufficiently high cost-effectiveness to everyone but would require premium contributions from anyone choosing a more generous plan that covered additional, less cost-effective, services.

LIMITATIONS There are several limitations to our analysis. First, our simulation model simplifies the otherwise intractable complexity of modeling health care systems over decades. There are probably many reasons for the rapid growth in Medicare spending related to fee-for-service payment, entrepreneurial physicians, and other factors that our model does not capture.

Second, we characterize "the" US health care system based on the type of benefit offered by Medicare. However, Medicare is only one part of a complex system. Private insurance policies provide a full range of deductibles and copayments. That said, the Medicare program has systemwide ramifications. Private insurance coverage decisions tend to follow those in Medicare, in part because private insurance plans fear accusations of stinting if they do not cover care approved for Medicare enrollees.

Third, we do not address the structure of Medicaid, which is also growing over time and is slated to grow further with the implementation of the Affordable Care Act. State Medicaid programs have also gone further than Medicare in limiting reimbursement rates and coverage.

Study Results

We first illustrate the model's implications for optimal health care spending growth between 1980 and 2010 in a hypothetical world with two "countries." These countries are the United States, with just under half of health care publicly financed, and a representative counterpart—a composite based on Germany, Sweden, and Denmark—with all health care publicly financed. By "optimal" health care spending we mean the level of such spending (and the associated tax rate) leading to the highest level of well-being, given the constraints of the insurance program, the effectiveness of health care spending in improving health, and the impact of taxes on the macroeconomy.

The key difference between the United States and its composite European counterpart is the initial overall tax burden generated by the taxes used to finance nonhealth programs. In 1979 the tax-to-GDP ratio across the three European countries averaged nearly 50 percent, compared to roughly 30 percent in the United States.

It is a fundamental principle of economics that taxes create economic distortions called "deadweight loss."[13] By moving resources away from activities that would have generated the most economic activity, redistributive taxes can improve equity—but at the cost of reduced efficiency and economic growth.[7–12] Because deadweight loss is proportional to the square of the tax rate, raising an additional dollar in taxes to fund increased health care expenditures creates more inefficiency in countries starting with higher tax rates.[32]

The implied health care spending growth rates for the United States and its counterpart are shown in Exhibit 2. The initial tax difference alone drives substantial differences in the evolution of publicly financed health care spending—and both trajectories match the patterns seen in Exhibit 1. This result is consistent with earlier empirical findings suggesting that limits on raising revenues, rather than health needs, seemed to best predict patterns in health care spending growth across countries.[33]

This interplay among health spending, taxes, and the economy generates implications for future spending and economic growth, which we illustrate with two different policy scenarios. The first is public provision of a "uniform" Medicare-like insurance plan that provides the same ben-

**Simulated Growth In Health Care Expenditures For Low-Tax And High-Tax Countries, 1980–2010**
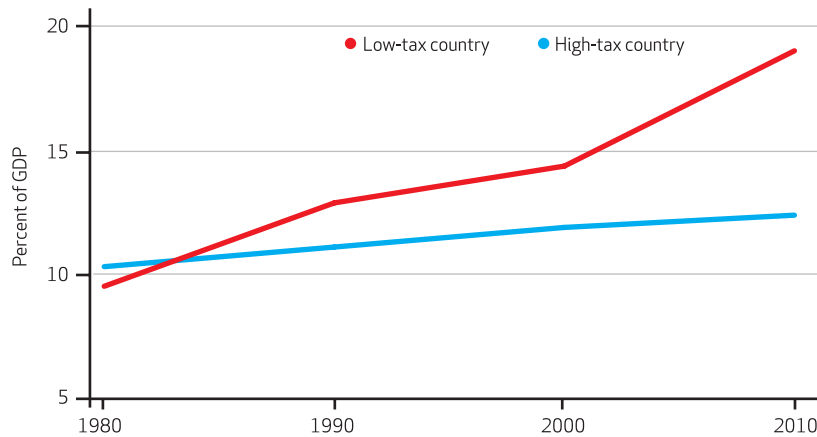
SOURCE Shepard et al. (Note 19 in text). NOTES Based on initial (1979) total tax rates. "High-tax country" represents a composite (similar to Germany, Sweden, and Denmark); "low-tax country" represents the United States.

efits to all enrollees, potentially including care with low cost-effectiveness but without allowing the private purchase of plans that cover additional services. The second is public provision of a "basic" insurance plan that covers only care that meets an effectiveness threshold and allows households to "top up" this coverage using their own money.

Simulated Ratio Of Health Spending To Gross Domestic Product (GDP) With Uniform Public Versus Basic Insurance, 1980–2050
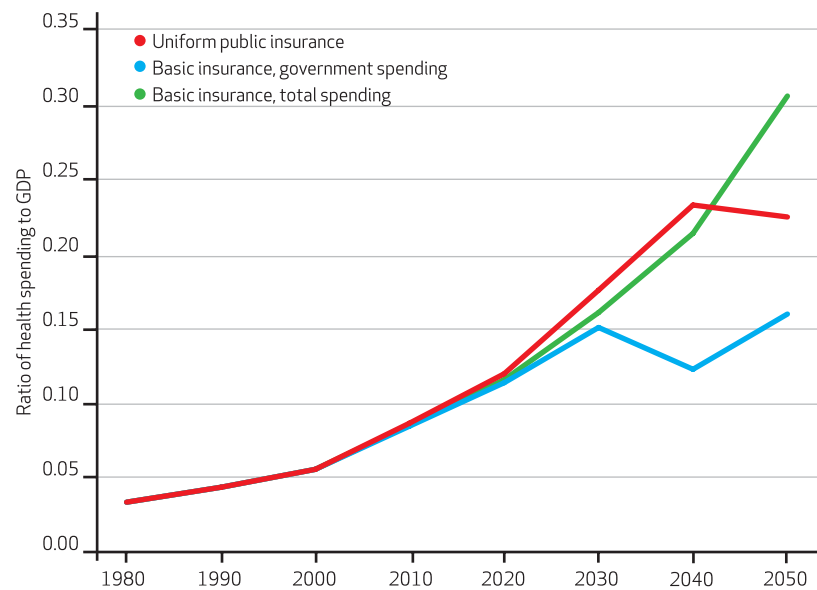
SOURCE Shepard et al. (Note 19 in text). NOTES This exhibit simulates spending on the publicly insured predicted by the model under different designs of public insurance. "Uniform" and "basic" insurance models are explained in the text.

In our model, the uniform and basic coverage levels are nearly identical up to 2010 (Exhibit 3). This relationship reflects the desire for egalitarianism as long as the costs to the economy, in terms of the effects of taxes on growth, are not too high. After 2010, however, they diverge substantially. There is considerably lower government spending on health care in the scenario with basic coverage only (and the option for people to pay out of pocket to purchase additional coverage): in 2050, 16.5 percent of GDP compared to 22.5 percent under the uniform program.[34]

Overall health care spending ultimately slows in the next 30 years under the uniform plan scenario for two reasons. First, the inefficiency and distortions generated by the high taxes necessary to support that plan lead the government to place more restrictions on what is covered. Second, the higher taxes lead to lower GDP growth, further reducing per capita health care spending. This second effect is not visible in Exhibit 3, which shows health care spending relative to GDP.

As shown in Exhibit 4, under basic coverage the average tax-to-GDP ratio rises from 35.5 percent to 39 percent of GDP. In contrast—and in part because of the more sluggish GDP growth—the tax-to-GDP ratio under the status quo uniform Medicare program rises to nearly 50 percent of GDP.

Overall societal well-being is higher under the basic plan, because the benefits hew more closely to the allocation that unconstrained low-income recipients would choose. High-income recipients end up spending more on health care under the basic plan than they do under the uniform plan—only they pay for the coverage of incremental services out of pocket, rather than through potentially distortionary taxes. This outcome does not, however, mean that everyone is better off: Low-income enrollees who prefer coverage of intensive treatments most likely will not be able to afford them.

Policy Implications

Rising health care costs have created tremendous budgetary pressures for the United States and other countries. In the United States there is an inherent conflict between the desire to avoid restrictions on Medicare spending and a reluctance to raise taxes.

In this article we have described a framework for navigating these difficult waters. Our framework shows that even in a world with a fundamental social commitment to improving health and reducing poverty for all citizens, there is a rationale for a public policy in which

low-income residents have less generous health insurance coverage.

The provision of a non-means-tested basic public benefit effectively leads to a segmentation of insurance policies in which a "gold" plan that pays for any new innovation, however cost-ineffective, might be preferred by wealthier residents—but is paid for on the margin with private, rather than tax-financed public, resources.

The implications of our model are not dissimilar to the idea of voucher-type premium support suggested over the years by Ezekiel Emanuel and Victor Fuchs,[35] Henry Aaron and Robert Reischauer,[36] and Rep. Paul Ryan (R-WI).[37] Indeed, it may appear that this plan most closely resembles a Ryan-style premium support plan. There are clearly similarities to such proposals to replace the current comprehensive Medicare plan with a less expensive voucher designed to cover pared-back services.

There are two important differences, however. First, our model does not imply a smaller role for government redistribution overall. Rather, the composition of the redistribution changes—away from comprehensive health insurance and toward non–health care benefits such as housing, food, or transportation assistance that might prove to be of greater value to the lowest-income households.[38]

Second, our "basic" plan does not correspond so much to a high-deductible or higher-cost-sharing plan, but rather to one that covers a more limited set of treatments or providers. Unlike high-deductible plans, the basic plan need not expose poorer households to the risk of substantial cost sharing. Instead, it is designed to limit coverage to treatments with proven effectiveness at a reasonable cost. So the basic plan would pay for standard treatments for prostate cancer but not, given current evidence, proton beam therapy.

Of course, identifying which treatments are of high value—and for which patients—poses substantial challenges. There is increasing experimentation with coverage that varies based on the value of care, or "value-based insurance design," in the private sector, in coverage of preventive care without copayments, and in systems such as that in the United Kingdom.[39,40] There are, however, current legal and political restrictions on the wider use of insurance policies that restrict coverage of treatments without proven cost-effective benefits.[20,21,41–45]

Perhaps the greatest challenge to offering this kind of plan choice more widely in Medicare is that it would require setting aside the egalitarian goals enshrined in the Medicare legislation of 1965. Publicly providing only basic coverage would implicitly recognize that higher-income

Simulated Ratio Of Tax Revenue To Gross Domestic Product (GDP) With Uniform Versus Basic Insurance, 1980–2050
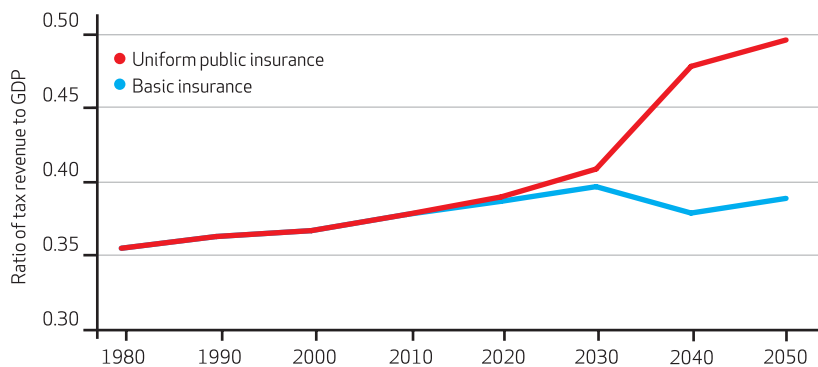
SOURCE Shepard et al. (Note 19 in text). **NOTES** This exhibit simulates spending on the publicly insured predicted by the model under different designs of public insurance. "Uniform" and "basic" insurance models are explained in the text.

households would probably elect to procure more generous coverage—and, ultimately, to obtain more health care and possibly better health outcomes. Such a system might thus raise ethical concerns about widening health disparities between high- and low-income enrollees.[46] Providers might object on ethical or practical grounds to providing more intensive services to those with topped-up coverage than they would to those with basic coverage.

However, this bifurcation is already implicitly accepted in Medicaid versus private insurance. Related mechanisms are also already seen in Medicare drug coverage, in which beneficiaries choose plans based on premium bids and must pay the incremental costs of more generous coverage. Similarly, Medicare's managed care option, Medicare Advantage, is designed so that beneficiaries who enroll in plans with premiums above a benchmark must pay the additional cost.[36]

The idea of providing or mandating basic insurance but allowing people to top up that coverage at their own expense is also common in European countries. The Netherlands, for example, mandates only basic coverage, but most citizens buy supplemental coverage.[47] Finally, as Reinhardt notes, the alternatives are not entirely free of distributional implications, either, if Congress turns to cutting Medicare reimbursement rates and other nonhealth redistributive programs to preserve Medicare's "one-size-fits-all" structure.[18]

Conclusion

Providing a uniform public insurance program holds widespread appeal, and different countries

have taken different approaches toward this end. But as the public benefit grows, the ever higher taxes required to finance the program impose an increasing economic burden that eventually constrains program growth and necessitates benefit limits of one form or another. Setting the level and form of the benefit therefore involves a trade-off between the government's goal of providing health care benefits for the poor and the economic cost of taxation, analogous to the traditional efficiency-equity trade-off. Our model provides a framework for evaluating these trade-offs.

Despite the limitations discussed earlier, our framework highlights key features of our health care system for the evaluation of potential Medicare reforms. Distortionary costs rise as Medicare must cover an increasing array of treatments with higher and higher price tags for the improvements in health and longevity they buy. Very high-income enrollees might choose to spend their own resources on such treatments, but the median-income household might not. Lower-income Medicare enrollees might not benefit from coverage of expensive treatments with uncertain benefits as much as they would from being able to devote that cash to nonmedical needs. Public spending on health care is a key driver of aggregate public spending growth, and the taxes needed to finance it generate increasing fiscal strain and dampening of economic growth.

Our model thus helps explain the rapid growth in US health care expenditures relative to other countries. More important, the model highlights the trade-offs in different approaches to reining in public spending—from the current approach of providing a uniform benefit that increasingly crowds out other programs, to a less egalitarian model that guarantees only a basic benefit and redirects some redistribution toward other programs.

Our analysis suggests that the policy of providing a uniform benefit to all—rather than a basic benefit that higher-income residents can augment—may be increasingly untenable if health care expenditures continue to rise. ■

NOTES

1 Congressional Budget Office. The long-term outlook for health care spending. Washington (DC): CBO; 2007 Nov.
2 Congressional Budget Office. Historical budget data—January 2012 baseline. Washington (DC): CBO; 2012 Jan.
3 Cutler D. Your money or your life: strong medicine for America's healthcare system. New York (NY): Oxford University Press; 2004.
4 Murphy KM, Topel RH. The value of health and longevity. J Polit Econ. 2006;114(5):871–904.
5 Nordhaus W. The health of nations: the contributions of improved health to living standards. Cambridge (MA): National Bureau of Economic Research; 2002. (NBER Working Paper No. 8828).
6 Hall RE, Jones CI. The value of life and the rise of health spending. Q J Econ. 2007;122(1):39–72.
7 Raising taxes can distort economic choices, ultimately lowering overall welfare—a fundamental principle of public finance economics. See, for example, Browning EK, Johnson WR. The distribution of the tax burden. Washington (DC): American Enterprise Institute; 1979.
8 Gruber J. Public finance and public policy. New York (NY): Worth Publishers; 2007.
9 Stiglitz JE. Economics of the public sector. 3rd ed. New York (NY): W.W. Norton; 2000.
10 Mankiw NG. Principles of economics. 6th ed. Mason (OH): South-Western Cengage Learning; 2011.
11 Fullerton D. Reconciling recent estimates of the marginal welfare costs of taxation. J Polit Econ. 1991;81:302–8.
12 Kaplow L. The theory of taxation and public economics. Princeton (NJ): Princeton University Press; 2008.
13 This efficiency cost, or "deadweight loss," rises with the square of the tax rate—meaning that the additional deadweight loss generated by raising marginal tax rates from 20 percent to 25 percent is much higher than the additional deadweight loss generated by raising them from 10 percent to 15 percent. Thus, financing a public health care system generates more deadweight loss when it is layered onto an existing set of public expenditures than it would in isolation. This is also the reason that many tax reform proposals focus on broadening the tax base (limiting exclusions and tax expenditures) while lowering marginal tax rates to reduce deadweight loss and improve the efficiency of the tax system.
14 Total health care spending is almost 18 percent of GDP, with 8.2 percent of GDP (or 46 percent of health spending) publicly funded. Medicare spending represents 3.6 percent of GDP, or 43.7 percent of public health care spending. See, for example, Keehan SP, Sisko AM, Truffer CJ, Poisal JA, Cuckler GA, Madison AJ, et al. National health spending projections through 2020: economic recovery and reform drive faster spending growth. Health Aff (Millwood). 2011;30(8):1594–605.
15 Medicare is financed by a combination of dedicated payroll taxes (currently 39 percent), beneficiary premium contributions, taxes on benefits and state transfers (currently 17 percent), and general revenues (currently 44 percent, and forecast to grow rapidly). See, for example, Baicker K, Chernew ME. The economics of financing Medicare. N Engl J Med. 2011;

365(e7):1–3.

16 Department of Health and Human Services. Annual report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. Washington (DC): Government Printing Office; 2011.

17 Both the payroll taxes and general revenues raised from income taxes contribute to the deadweight loss generated by redistributive public insurance programs. As noted above, financing social insurance programs through such taxes generates distortions in behavior that reduce overall well-being, and the size of that distortion is related to the overall marginal tax rate.

18 Reinhardt U. A fork in the road for health care. New York Times. 2012 May 25.

19 Results based on a modified version of model from Shepard M, Baicker K, Skinner JS. Optimal health care spending with redistributive financing [Internet]. Hanover (NH): Dartmouth Institute; 2013 May [cited 2013 May 7]. Available from: http://www.dartmouthatlas.org/downloads/papers/Shepard BaickerSkinner_OptimalHealth Spending.pdf

20 Chandra A, Skinner JS. Technology growth and expenditure growth in health care. J Econ Lit. 2012; 50(3):645–80.

21 Baicker K, Chandra A, Skinner JS. Saving money or just saving lives? Improving the productivity of U.S. health care spending. Annu Rev Econom. 2012;4:33–56.

22 Of course, these countries have very different health care systems. Each is largely publicly funded. Sweden's system is about 80 percent publicly funded through taxes, with subnational governments responsible for provision of services, and the Swedish economy's growth lagged that of the rest of the Organization for Economic Cooperation and Development (OECD) in the 1980s and 1990s. Denmark, similarly, has tax-funded universal coverage with subnational governments providing care, and economic growth has followed a similar trajectory. Germany has universal coverage that is publicly financed but privately delivered, and its economic growth was particularly strong in the 1980s, slowing since. These countries' universal systems thus also cover the whole population, unlike US public programs that focus on particular demographic groups, such as the elderly, children, the poor, and the disabled.

23 Clements B, Coady D, Gupta S. The economics of public health care reform in advanced and emerging economies. Washington (DC): International Monetary Fund; 2012.

24 Himmelstein DU, Woolhandler S. Cost without benefit: administrative waste in US health care. N Engl J Med. 1986;11(7):441–5.

25 Seabury SA, Jena AB, Chandra A. Trends in the earnings of health care professionals in the United States, 1987–2010. JAMA. 2012;308(20): 2083–5.

26 This is a simplified description of the breakdown of public spending. Eligibility for many programs is interdependent and related to health; for example, disability status may trigger both health care and income benefits.

27 Optional Medigap policies cover co-payments or services not covered by the traditional basic benefit. More than 90 percent of beneficiaries have (implicitly publicly subsidized) supplemental coverage, either through a retiree wrap-around plan or through an independently purchased Medigap policy, largely filling in the copayments included in the traditional Medicare benefit. Medicare Payment Advisory Commission. Health care spending and the Medicare program. Washington (DC): MedPAC; 2012 Jun.

28 See, for example, Currie J, Gahvari F. Transfers in cash and in-kind: theory meets the data. J Econ Lit. 2008; 46(2):333–83.

29 An alternative rationale for in-kind transfers is adverse selection: Healthier people (those with lower probability of needing expensive care) may purchase incomplete insurance in order to avoid pooling with sicker people who fully insure. See, for example, Rothschild M, Stiglitz J. Equilibrium in competitive insurance markets: an essay on the economics of imperfect information. Q J Econ. 1976;90(4):629–49.

30 Generous insurance may not be offered at a reasonable price for fear of a "death spiral" in which healthier enrollees are chased out by the higher costs of the sick people who do sign up. See Cutler DM, Reber SJ. Paying for health insurance: the trade-off between competition and adverse selection. Q J Econ. 1998; 113(2):433–66.

31 Steinbrook R. Saying no isn't NICE: the travails of Britain's National Institute for Health and Clinical Excellence. N Engl J. Med. 2008;359:1977–81.

32 Baicker K, Skinner JS. Health care spending growth and the future of U.S. tax rates. In: Brown J, editor. Tax policy and the economy. Chicago (IL): University of Chicago Press; 2011. p. 39–67.

33 Getzen TE. Population aging and the growth of health expenditures. J Gerontol. 1992;17:S98–104.

34 The model is calibrated to match CBO forecasts of total public spending on health under current policy, with total (state and federal) public spending of about 22 percent of GDP in 2050 and federal spending on Medicare, Medicaid, and exchange subsidies of 15 percent. See Note 2.

35 Emanuel EJ, Fuchs V. Health care vouchers—a proposal for universal coverage. N Engl J Med. 2005; 352(12):1255–60.

36 Aaron HJ, Reischauer RD. The Medicare reform debate: what is the next step? Health Aff (Millwood). 1995;14(4):8–30.

37 Ryan P. The path to prosperity: a blueprint for American renewal. Washington (DC): US House of Representatives; 2012. (Fiscal Year 2013 Budget Resolution).

38 Alternatively, lower-income elderly people might be given a voucher for health insurance that is sufficiently large to allow them to purchase the high-cost plan and keep the cash difference if they choose to purchase a lower-cost plan. This differs from the current Medicare Advantage setup in that beneficiaries are not given the option of a cash refund if they choose a lower-cost plan. Instead, plans that are more efficient can increase benefits or reduce co-payments. See Medicare Payment Advisory Commission. Benefit design and cost-sharing in Medicare Advantage plans: report to the Congress. Washington (DC): MedPAC; 2002 Dec.

39 Fendrick AM, Chernew ME. Value based insurance design: maintaining a focus on health in an era of cost containment. Am J Manag Care. 2009;15(6):338–43.

40 Gibson TB, Wang S, Kelly E, Brown C, Turner C, Frech-Tamas F, et al. A value-based insurance design program at a large company boosted medication adherence for employees with chronic illnesses. Health Aff (Millwood). 2011;30(1):109–17.

41 An additional challenge is that different health care systems appear to exhibit varying degrees of efficiency in providing care to their patients. See, for example, Fisher ES, Wennberg DE, Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. The implications of regional variation in Medicare spending. Part 1: the content, quality, and accessibility of care. Ann Intern Med. 2003;138(4): 273–87.

42 Fisher ES, Wennberg DE, Stukel TA, Gottlieb DJ, Lucas FL, Pinder EL. The implications of regional variation in Medicare spending. Part 2: health outcomes and satisfaction with care. Ann Intern Med. 2003;138(4): 288–98.

43 Baicker K, Chandra A. Medicare spending, the physician workforce, and beneficiaries' quality of care. Health Aff (Millwood). 2004;23: w4-184–97. DOI: 10.1377/ hlthaff.w4.184.

44 Skinner JS. Causes and consequences of geographic variation in

health care. In: Pauly MV, McGuire TG, Barros PP, editors. Handbook of health economics. New York (NY): North Holland; 2012. p. 45–94.

45 It is not clear how health insurance reform would affect physician practice in high-cost regions. The goal of integrated health care systems (or accountable care organizations) is to

develop a competitive advantage in providing coverage by avoiding overuse. Oregon also experimented with such value-based coverage for Medicaid, with limited success. Bodenheimer T. The Oregon health plan—lessons for the nation. N Engl J Med. 1997;337:651–5, 720–3.

46 Sandel M. What money can't buy: the

moral limits of markets. New York (NY): Farrar Straus and Giroux; 2012.

47 Van de Ven WPMM, Schut FT. Universal mandatory health insurance in the Netherlands: a model for the United States? Health Aff (Millwood). 2008;27(3):771–81.

ABOUT THE AUTHORS: KATHERINE BAICKER, MARK SHEPARD & JONATHAN SKINNER

Katherine Baicker is a professor of health economics at the Harvard School of Public Health.

In this month's *Health Affairs*, Katherine Baicker and coauthors describe a model they created that incorporates the benefits of public programs such as Medicare and the economic costs of tax financing, providing a lens for evaluating potential Medicare reforms. The model implies that today's "one-size-fits-all" Medicare program, with everyone covered by the same insurance policy, will be increasingly difficult to sustain. In contrast, a Medicare program that guaranteed basic benefits and the option to purchase additional coverage could lead to more unequal health spending but slower growth in taxation, greater overall well-being, and more rapid growth of gross domestic product. The authors conclude that their framework highlights key trade-offs

between Medicare spending and economic prosperity.

Baicker is a professor of health economics in the Department of Health Policy and Management at the Harvard School of Public Health and a research associate in the Health Care and Public Economics Programs at the National Bureau of Economic Research. Her research interests include health economics, public economics, and labor economics. Baicker received a doctorate in economics from Harvard.

Mark Shepard is a doctoral student in economics at Harvard.

Mark Shepard is a doctoral student in economics at Harvard. He is also participating in a National Bureau of Economic Research fellowship in aging and health. His research focuses on health economics, economics of

aging, public economics, and industrial organization.

Jonathan Skinner is the James O. Freedman Professor in the Department of Economics at Dartmouth.

Jonathan Skinner is the James O. Freedman Professor in the Department of Economics at Dartmouth and a professor at the Institute for Health Policy and Clinical Practice, Geisel School of Medicine at Dartmouth. He is also a research associate with the National Bureau of Economic Research and a former editor-in-chief of the *Journal of Human Resources*. His research interests include the economics of government transfer programs, technology growth and disparities in health care, and the savings behavior of aging baby boomers. Skinner received a doctorate in economics from the University of California, Los Angeles.