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COMMENTARY

Cost-Effectiveness Analysis in the Context of US Commercial Health Insurance

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Discussions of the cost effectiveness of medical services often are couched in the framework of a global budget constraint; for example, a national health insurance system that must balance government expenditures on healthcare services against other government spending priorities. In those systems, the global budget constrains the treatment decisions of healthcare providers, and at least theoretically, there is a mechanism through which coverage of a new highly cost-effective type of service results in the reduced coverage of another type of service that is on the margin of what is deemed to be cost effective.

In the US, however, 55.7% of the population received health insurance through employment-based health plans in 2016 [1]. Health care providers in that system typically do not face a global budget constraint. They are free to provide services that range from medically ineffective or cost ineffective to care that is highly cost effective or even cost saving. If providers face any constraint, it is the threat of not being included in a health plan's preferred network. But even then, the pressure usually is to reduce total spending, not to substitute one type of service for another.

In contrast, employees face a very real budget constraint because higher health insurance costs generally result in lower wages, reduced hours, or reduced demand for labor [2]. Preference for lower cost insurance has resulted in employees accepting cost-sharing provisions, such as deductibles and copayments, and limits on the breadth and make-up of preferred provider networks.

Employee preferences also could be expressed in the exclusion of some types of health services from coverage. Here it is useful to define more clearly the two types of services at issue: those that are medically ineffective versus those that are cost ineffective by some criteria, such as services with incremental cost-effectiveness ratios (ICERs) exceeding US$150,000 per QALY. Although medically ineffective services certainly could be considered cost ineffective, they do not fit easily into the standard cost-effectiveness framework. The 'cost' part of the ICER (numerator) is positive, but the 'benefit' or health effect (denominator) is zero, and so the ICER, strictly speaking, is not defined, and medically useless care would be termed 'dominated'. Thus, the elimination of medically ineffective care would produce savings with no loss of health, whereas the savings associated with eliminating coverage of cost-ineffective care would be accompanied by a possible decrement in health, even if the probability or magnitude of that loss was very small.

The potential reduction in health insurance premiums resulting from non-payment for either medically ineffective or cost-ineffective care is difficult to estimate. Berwick and Hackbarth [3] find that wasteful medical care ranges from 21 to 47% of total spending with a mid-range estimate of 34%. However, their definition of waste includes more categories than medically ineffective or cost-ineffective services. Schwartz et al. find that only 2.7% of Medicare spending in 2009 was for "low value" services, which included services that "provide little to no clinical benefit on average, either in general or in specific clinical scenarios" [4]. The 2.7% figure is for the more sensitive measure of low value care. The corresponding figure for the more specific measure is 0.6%.

Regardless of their magnitude, we can ask how analysts should think about cost-ineffective services in the context of employment-based health insurance. While one can argue for enforced rationing of medically ineffective or cost-ineffective healthcare services in a national health insurance system, that same approach may provoke needless controversy when applied to employment-based health insurance in the US. In the latter system, there is no mechanism by which lower expenditure on cost-ineffective care results in greater expenditure on cost-effective care because there is no constraint on the supply of medically effective or cost-effective care. What employees stand to gain from a reduction in

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medically ineffective or cost-ineffective care is lower health insurance premiums and possibly increased wages. Thus, rather than framing the issue as one of rationing, a more productive approach might be to frame it in terms of consumer choice of coverage—what treatments would consumers prefer to have covered by their health insurance policies versus paid for out-of-pocket?

Suppose healthcare services were ranked by their ICERs and employers and employees were offered the option of refusing coverage of treatments that were medically ineffective or that had the highest ICERs. Employers and employees naturally would want to know how much those non-coverage decisions would reduce their premiums. This could be estimated for each covered procedure by multiplying the cost portion of the ICER times the population prevalence of the high ICER treatment and subtracting the cost of any treatment that is substituted for the high ICER treatment [5][1]. With that information in hand, employers and employees could express their preferences for coverage. Health economists have been estimating health plan choice equations for 40 years and have well developed multinomial and mixed logit models for studying those choices. Interestingly, the consumer choice approach appears to be exactly the option that the pharmacy benefit manager Caremark recently introduced for its clients [6].

Consumer income is not an inconsequential constraint on healthcare spending. One analysis predicts that average health insurance premiums for family coverage will surpass 50% of average household wage income in 2021 and total household wage income by 2033 [7]. A well researched table showing the ICERs of various healthcare services and their effects on premiums could make an important contribution to the design of affordable health insurance benefits, and non-coverage might represent a credible threat to healthcare providers, encouraging them to reduce the use of such procedures or the prices they charge. Those contributions, however, are more likely to be received favorably if they are framed as a problem of consumer choice rather than mandatory rationing.

Compliance with Ethical Standards

Conflict of interest Neither Bryan Dowd nor John Nyman have any conflicts of interest, either financial or non-financial.

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[1] Consumers would, of course, still be able to purchase the cost-ineffective services by paying for them out of their own pocket, and consumers who wanted coverage for cost-ineffective services would be able to purchase insurance policies that covered those services. Some provision would need to be made for consumers already requiring the cost-ineffective treatments at the time the new policies were offered.