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EDITORIAL

Measuring Healthcare Efficiency

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An article in this issue of the journal, "Health Care Reform, Efficiency of Health Insurers, and Optimal Health Insurance Markets," addresses an extremely important topic to health actuaries, health policy makers, and the nation as a whole. The author uses Data Envelopment Analysis (DEA), which is a deterministic, piecewise linear operations research approach to analyzing efficiency at the firm (or plant) level. It is limited to a small number of inputs and outputs. Here, the inputs are spending on medical expense, claims adjustment, and general administration. The outputs are physical measures of health care provided: enrollment, ambulatory encounters, and hospital patient days. The "outputs" are inputs into the production of health. The efficiency measure reflects low prices paid to providers, as well as low administrative costs. At best, this is a narrow measure of low administrative costs. This explains why the author contrasts efficiency with consumer satisfaction.

This article finds that "overall efficiency of all insurers as a whole. . .is very low but does not change much over time." The author goes on to report that healthcare reform has had "no significant effect on overall efficiency." Finally, the author concludes with a statement that will come as a surprise to most health actuaries and other observers of health care markets: "the Medicaid program is very efficient."

Some of these findings deserve more analysis and discussion by health actuaries and health economists. The first issue that we need to agree on is a definition of efficiency, and what type of efficiency we are discussing (insurer administrative efficiency or health care efficiency?).

Health actuaries generally are concerned with health care efficiency rather than insurer administrative efficiency. Measuring health care efficiency is not an easy task. Ideally one would want to measure the health status of a provider's population, and relate that to the total resources consumed by the provider to produce that health status. One would need to control for other important determinants of health, especially multiple measures of lifestyle variables. Unfortunately, observation of health status and lifestyle is not generally possible, so by default we use proxy measures of the quality of services delivered by the provider (such as the volumes of certain tests ordered or drugs prescribed) and compliance with best-practice clinical care. But these are unsatisfactory measures because of their circularity: a provider that orders more tests or prescribes more drugs will, in general, use more resources. Sometimes, as with Medicaid, prices of services (inputs) are fixed at a very low level by regulation. In this case, a particular basket of services can be delivered at lower cost under Medicaid, often by a small proportion of providers that are willing to deliver services at the low prices. This leads a Medicaid provider to appear to be an efficient provider of services and, using the author's metric, Medicaid insurers appear to be efficient insurers. But this is illusory for several reasons: 1) the price of those services is not established in a market, so they may not reflect social costs; 2) without considerable follow up, we cannot determine whether the Medicaid patient so treated is more or less healthy than his counterpart treated by a physician in a different practice; and 3) the very low prices hinder access and it is difficult to value the harm due to that poor access. One may also posit (since the author addresses the effect of federal healthcare reform) that this reform will produce *less*, not more, efficiency because of the additional regulation introduced, and the distortion of price signals (both of insurance and of health care services) from the market.

To health actuaries, the administrative efficiency of health insurers is probably of lesser importance than the productive efficiency of health care providers because the portion of the health insurance premium represented by administration is so much lower than that of medical services (and, as a result of the Affordable Care Act, now capped at 15%). At the same time, the Affordable Care Act introduces significant new regulatory requirements that will likely decrease, rather than increase, the overall efficiency

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of insurers (measured as outputs per unit of administrative input). Still, health actuaries should be interested in the efficiency of insurance and how to increase it. One way to do so, which has proven important in many other industries, is to dis-intermediate the insurer's administrative and decision-making role, transferring it those closer to the action, the insured and the provider. One only has to think of how banking has changed due to the introduction of computing, and how many banking functions are now performed by the account holder rather than personnel at the branch. Attempts to provide incentives for patients to take more responsibility for their own care and to compensate providers for collaborating in these new models have generally been curtailed by the Affordable Care Act, which limits the transfer of responsibility to the insured through models such as high deductible insurance. The ACA's highly-regulated insurance designs limit flexibility and innovation on the part of insurers, so it is hardly surprising that, as the author says, the Affordable Care Act has not led to greater efficiency.

We also have to consider that the third-party payer system in which insurers operate may itself be conducive to health care inefficiency. Because consumers do not see market prices for the services that they demand, they tend to over-consume healthcare; providers are happy to provide services that are sometimes of limited value (and which would not be demanded if the consumer faced the full cost of the service) as long as the margin on those services is positive. This is the premier example of moral hazard. For this and other reasons, health insurers have constructed administrative superstructures in an attempt to tame moral hazard by consumers and oversupply by providers. Examples are the development of preferred provider networks (which require the insurer to assess provider quality and efficiency—not a simple task, as we have seen), managed care programs, such as pre-authorization, case management, etc., and significant investment in analytics to identify high-cost providers and patients. One reason cited for the apparent relative "efficiency" of the Medicare system (as measured by its lower administrative cost per dollar of claims) is that Medicare does few of these things. But does that mean that Medicare is more efficient?

Nevertheless, efficiency of the health system, and the contribution made by the financing system to improving efficiency is an important topic for both health actuaries and health economists. Given that the bulk of the premium dollar is spent on medical care, our focus should be on assessing the efficiency of care delivery. This is a wide-open field and one in which actuaries have a chance to make significant contribution, if we can find a way to relate health outcomes to inputs.

The supreme efficiency expert Henry Ford, years ago, developed the assembly-line and significantly improved the efficiency of the prior industrial model. He also said that you could have any color Model T as long as it was black. Considering consumer heterogeneity in preferences, attitude towards financial and health risk, family status, etc., it isn't clear that Americans want their medical care delivered this way.

Discussions on this article can be submitted until July 1, 2015. The authors reserve the right to reply to any discussion. Please see the Instructions for Authors found online at http://www.tandfonline.com/uaaj for submission instructions.