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Efforts to Measure Value in Health Care: Greater Balance is Needed

In a 2017 *Health Affairs* Blog, Baumgardner and Neumann (B&N) note that the application of cost-effectiveness analysis (CEA) across different types of health care interventions disproportionately addresses pharmaceuticals. B&N note that 46 percent of recent CEAs evaluated pharmaceuticals, while only 22 percent of recent CEAs address medical and surgical interventions. Yet non-drug spending for hospital care and physician and clinical services represents roughly half of total health care spending, while less than 15 percent of spending is devoted to prescription drugs. While analyses to measure the value of pharmaceuticals are clearly useful, the effect of this imbalance is a gap in understanding of value of non-drug interventions, which can lead to inefficiencies in the allocation of health care dollars. (B&N note that) B&N hypothesize reasons for this imbalance that in part involve data availability and methodological issues, both of which are related partially to the greater prevalence of randomized clinical trials for drugs than for other types of interventions. Other issues include the strong incentives for pharmaceutical companies to fund and conduct CEAs to showcase the value of their products. They suggest policy changes such as government subsidies or payer encouragement for CEAs of medical or surgical procedures that might help achieve greater balance. In this blog, we update some of the data presented by B&N, provide additional context on the use of CEAs of pharmaceuticals, compare this use with that of other initiatives to measure value, and make a plea for greater balance.

Figure 1 shows the history of the cumulative percent of CEAs in the Tufts Medical Center Cost-Effectiveness Analysis Registry that are devoted to drugs (solid line). The CEA percent grew slowly since 2000, peaking at 47.4 percent in 2009 and then dropping gradually to 43.4 percent through 2017, suggesting a slight shift in emphasis of CEAs away from pharmaceuticals in recent years. However, Roehrig (2019) estimates that only 13.8 percent of national health expenditures (NHE) was devoted to prescription drugs in 2017 (dashed line), confirming B&N's observation that CEAs of pharmaceuticals are overrepresented. In fact, the percent of CEAs of pharmaceuticals at the end of 2017 exceeded the percent of NHE devoted to drugs by a factor of 3.2 to 1.

For a comparison, Figure 2 shows the history of cumulative percent of CEAs that address medical devices (solid line) and the percent of NHE devoted to durable medical equipment (DME) in 2017. While DME expenditures constitute a much lower percent of NHE than prescription drugs, the relative patterns of CEAs and expenditures are similar to those of drugs: There is a slight recent decline in medical device CEAs to 7.0 percent of the total through 2017. However, 2017 NHE on DME represented 1.6 percent of total spending, suggesting that CEAs of devices are overrepresented by a factor of 4.5 when compared with DME spending, possibly for some of the same reasons hypothesized by B&N for the overrepresentation of drug CEAs. This comparison, though, requires the caveat that the definitions of durable medical equipment used in the NHEA and that of medical devices in the CEA Registry differ.

Figure 1: Cumulative CEA Percentage vs 2017 NHE Percentage for Pharmaceuticals

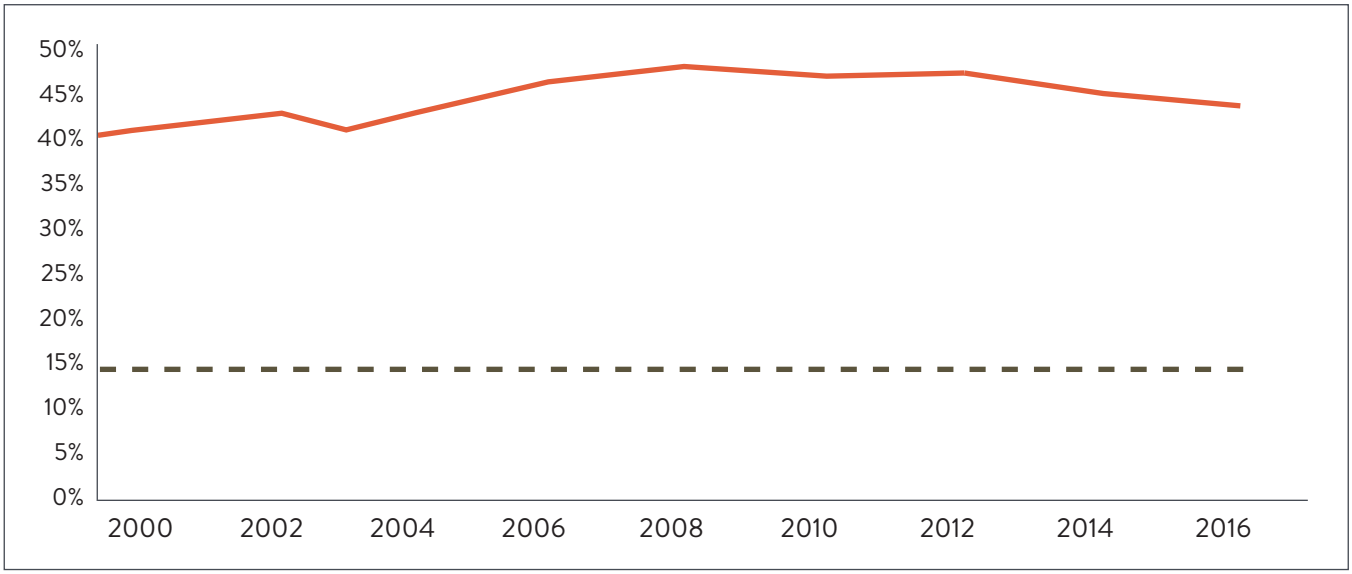
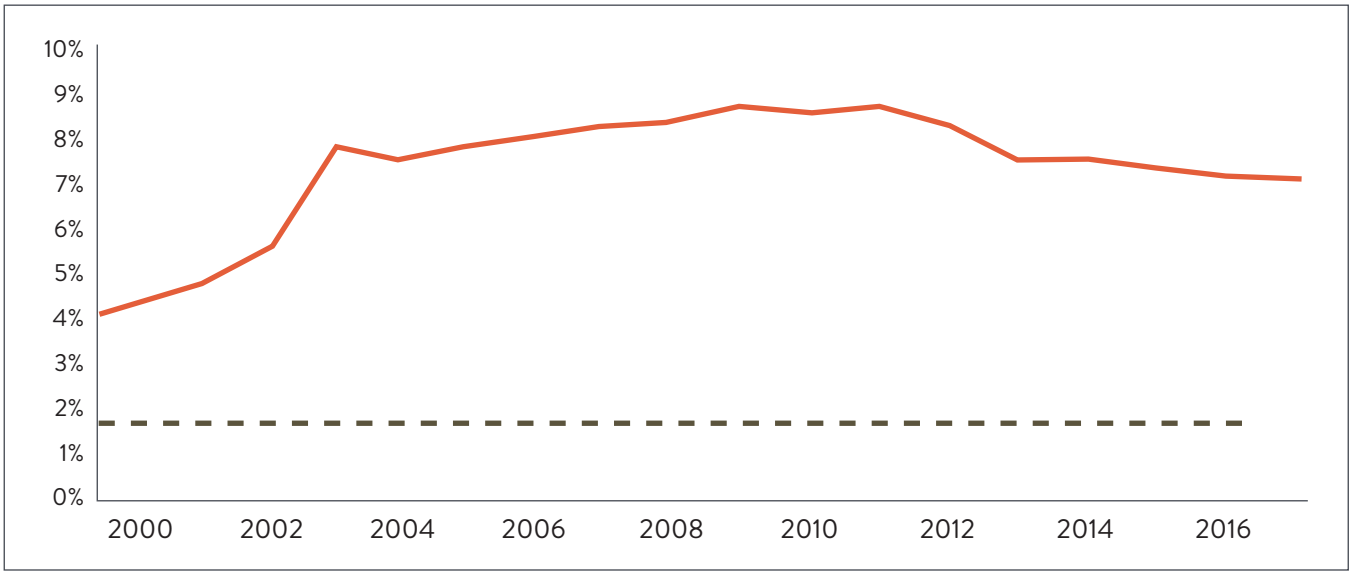


Figure 2: Cumulative CEA Percentage vs 2017 NHE Percentage for Devices



Beyond the use of formal CEAs, there have been initiatives in recent years to identify the extent to which clinical services have little or no value. Under some clinical circumstances, some services seem to have no value (e.g., Vitamin D screenings for most people without specific conditions), or the harms outweigh the benefits (e.g., PSA-screenings for men over 70), or an identical but cheaper treatment is available (e.g., the use of a branded drug when a chemically identical generic is available). Using inputs from representatives of various national organizations of medical specialists, the Choosing Wisely campaign has developed more than 550 recommendations for "things providers and patients should question" when considering clinical services to be pursued. Because each organization has identified only a few clinical services with potentially low value, a disproportionate number of services within a specific type of care (such as drugs) would suggest a possible overemphasis in

that area. To date, 18.3 percent of these recommendations address prescription drugs, which also exceeds the 13.8 percent spent on drugs in 2017 by a factor of 1.3, indicating that the Choosing Wisely recommendations involving drugs are only slightly disproportionately higher than drug spending. However, 6 percent of Choosing Wisely recommendations address medical devices, exceeding the percent of NHE devoted to DME by a factor of 3.9.

Conclusion

More than half of CEAs in the Tufts Medical Center CEA Registry address medical products. This over-emphasis of CEAs on pharmaceuticals and medical devices, though declining slightly in recent years, means that other clinical services, such as medical and surgical interventions, continue to be relatively neglected in comparison. While a similar issue does not seem to exist for drugs in the Choosing Wisely recommendations, there may be an over-emphasis of these recommendations on medical devices. Understanding where value lies in health care is an essential step in improving the efficiency and effectiveness in health care delivery. Different approaches to measuring value, such as through CEAs and the Choosing Wisely initiative, provide useful alternative perspectives regarding where to focus these improvements. But a disproportionate emphasis of such approaches on one type of clinical service can result in an incomplete picture of where the best opportunity to provide value in health care system lies. Future attempts to measure and improve value in health care delivery should recognize the need to ensure balance in addressing all aspects of medical care.

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