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Overuse: when less is more... more or less

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There is widespread agreement that ‘more’ is not always better in health care. Doing ‘more’ can harm patients, generate excess costs, and defy patient preferences. All are major threats to the delivery of high quality health care. Reflecting this notion, the Institute of Medicine (IOM) National Roundtable on Health Care Quality coined the term ‘overuse’ in 1998,¹ adapting the definition of an ‘inappropriate’ service developed for the RAND Appropriateness Method in the 1980s.² Overuse was defined as “a health care service [that] is provided under circumstances in which its potential for harm exceeds the possible benefit.”¹

Initiatives to address overuse of medical services³ will be crucial in reducing total health care spending and iatrogenic harms.⁴ But recent initiatives also illustrate a potential obstacle – what is meant by overuse may be conceptually vague. In 2008, the National Priorities Partnership identified eliminating overuse as a national priority, describing it as “unscientific,” “redundant,” and “excessive” care.³ The American College of Physicians identified examples of overused screening and diagnostic tests that “clinicians often use in a manner that does not reflect high-value, cost-conscious care and does not adhere to currently available clinical guidelines.”⁵

The American Board of Internal Medicine Foundation’s Choosing Wisely campaign provides yet another description of overuse and helps to demonstrate the potential consequences of this ambiguity. The campaign is intended to help physicians and patients choose care that is “supported by evidence, not duplicative of other tests or procedures already received, free from harm [to patients], [and] truly necessary.”⁶ But the diversity of scenarios identified is substantially broader than this description.

Three scenarios in Choosing Wisely differ strikingly in their underlying premise of what constitutes overuse: ‘do not repeat colorectal cancer screening for 10 years after a high-quality colonoscopy is negative in average-risk individuals,’ ‘don’t use DEXA screening for osteoporosis in women younger than 65 or men younger than 70 with no risk factors,’ and ‘don’t initiate chronic dialysis without ensuring a shared decision-making process between patients, their families, and their physicians.’⁶ For too frequent colorectal cancer screening, potential for harm (e.g., perforation of the colon) outweighs the benefit. Although in theory any health care intervention can cause ‘harm,’ DEXA screening for low-risk groups would not have a measureable effect on quality of life or mortality. Rather, the low likelihood of meaningful benefit is associated with the high costs of DEXA screening (estimated \$70 per

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scan, totaling \$527 million per year in the United States for women under age 65⁷). The reasons not to initiate chronic dialysis without shared decision-making are more complex than merely avoiding the initiation of a service expected to do more harm than good. Rather, integrating individual preferences and goals into clinical decisions can help to avoid the provision of undesired care.⁸

Among these and other examples, no clear conceptual pattern emerges. Rather, the lists are a loose collection of services joined only by the broad notion that they should not be delivered, at least in some contexts. In our view, this lack of conceptual backbone will impede the acceptance of these initiatives by physicians. Absent a clearer conceptual framework, it will be difficult to answer key questions. For example, what types of services should next be included on a list? How should a potential area of overuse be identified *a priori*? How should a culture that encourages overuse or fails to discourage it be mended?

A conceptual framework contemplating different dimensions of overuse might help. The framework we propose has three categories: the tradeoff between benefits and harms, the tradeoff between benefits and costs, and consideration of patient preferences. Examples of overuse can be found in each category. Making the categories explicit can help clarify the reasons to diminish a service's use, and help those who develop and use the recommendations to make sense of seemingly disjointed issues within and across initiatives.

Benefit/harm tradeoff

This category includes services where the expectation is that the potential harms exceed the potential benefits and therefore the services should not be delivered. Reducing unnecessary colorectal cancer screening for average-risk individuals falls into this category. Another example of this type from the Choosing Wisely initiative is avoidance of futile chemotherapy in terminally ill patients. On balance, avoiding these services should improve population-level health and quality of life by reducing net harm (i.e., when harms exceed benefits).

Benefit/cost tradeoff

This category encompasses services where the magnitude of potential benefits is small relative to the costs. DEXA scans for groups at low risk of osteoporosis is an example. A service can exceed cost-effectiveness thresholds even if it causes no harm or provides net health benefit (but at very high cost). Thresholds are not well defined in the United States but are in other countries. In the United Kingdom, the National Health Service does not include bevacizumab treatment in their covered drugs for patients with metastatic colorectal cancer because the magnitude of benefit was determined not to be worth the cost. Although the evidence reviewed suggested an average 1.4 month survival benefit compared to standard chemotherapy and a placebo, the cost per quality-adjusted life year gained was estimated to be £70,000 (~\$111,000), which is higher than the typically accepted threshold of £30,000 (~\$48,000).⁹ In the United States, in contrast, Medicare covers bevacizumab for patients with metastatic colorectal cancer.

Consideration of patient preference

Some situations in clinical medicine involve tradeoffs between outcomes such as survival and quality of life. The shared decision making field focuses on helping patients navigate these tradeoffs and uncertainties involved in these tradeoffs.⁸ This category reflects services where the provider's view may not be consistent with the patient's, or would not be if the patient fully understood the implications of receiving a treatment or other medical service. The initiation of dialysis illustrates this tension, as this decision may involve survival and

quality of life tradeoffs. For some patients, avoiding such services may shorten their life but respect their values and preferences, thereby improving the patient centeredness of care.

This framework provides a starting point for defining what constitutes overuse of medical care and why. Where there are no benefits, overuse is clear. But where there may be benefits, conceptual challenges remain. Determining thresholds for cost-benefit and harm-benefit tradeoffs is one example. It is also important to be clear about what is meant by such terms as ‘meaningful’ harms, benefits, costs, and patient preferences, considering the type of service and the patient’s situation when the service is delivered. For example, there is a marked difference between potential harms associated with overuse of the emergency room for a terminally ill patient and the overuse of diagnostic testing for a patient who is generally healthy.

Our framework can also help to focus initiatives to reduce overuse. For the Good Stewardship Working Group, the pilot effort for Choosing Wisely, Kale and colleagues examined the potential cost savings from reducing overused services.⁷ Similarly, our framework highlights differences in the rationale for initiatives intended to reduce inefficient spending and other initiatives intended to reduce net harm or to increase adherence to patient preferences. Reducing services where harms outweigh benefits may include clinical decision support tools, guidelines, and quality measures. Limiting services with some potential benefit and high cost would require acknowledgement that some services may not be worth the cost and agreement about what constitutes effective but cost ineffective care. Addressing services that counter patient preferences might require systematic use of patient decision aids and linking treatment decisions to those aids.

Tackling overuse is a common goal. But a shared conceptualization of the problem is needed to set collective objectives and to help move this agenda forward. As long as we do not infringe on services that should be delivered, addressing different dimensions highlighted by our framework can help cut costs, maximize resources, and, most importantly, improve the quality of patient care. Addressing overuse will be a key step towards achieving more with less.

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