Editorials

Evidence to Avoid Overtesting and Overuse in Diabetes Mellitus and Other Diseases

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Overuse is the use of medical interventions for which the potential harms exceed the potential benefits; this is in contrast to care that is truly necessary, supported by evidence, and likely to provide a net benefit to the patient.[1] Various initiatives attempt to help physicians avoid overuse, for example, Choosing Wisely (https://www.choosingwisely.org), the American College of Physicians High Value Care initiative (https://www.acponline.org/clinical-information/high-value-care), and the Right Care Alliance Councils (https://rightcarealliance.org/actions/join-a-council). These campaigns provide excellent guidance and focus on avoiding overuse as a cost-saving measure, but overuse is not merely a financial problem. The real importance of avoiding overuse is reducing unnecessary risk to patients.[1]

Overuse can occur at several levels of care. Screening—identifying a disorder in the absence of symptoms—is valuable only if several criteria are met.[2] The disease must be common, associated with significant morbidity and mortality, and treatable. The test itself should be affordable, and outcomes must improve as a result of the screening. Screening should be performed only if early identification in the asymptomatic period allows for earlier treatment with greater benefits compared with waiting for symptoms to appear. For example, early identification of a variety of inborn illnesses and acquired infections through newborn screening has clear benefits.[3]

Screening asymptomatic patients for prediabetes is an example of overuse. Studies have shown that A1C and glucose screening tests are inaccurate, leading to high levels of false-positives and false-negatives. The Diabetes Prevention Program Outcomes Study (https://repository.niddk.nih.gov/studies/dppos/), which has provided ongoing data since 2002, has shown statistically significant, although not clinically significant, improvements from early screening but no demonstrated difference in macrovascular complications, microvascular complications, or premature mortality compared with waiting until symptoms develop. Thus, early identification leads to increased health care costs and patient anxiety without corresponding benefit.[4-7]

Overuse can also occur when tests performed to monitor progression of disease are not associated with optimized patient-oriented treatment outcomes. Except in patients taking insulin, home glucose monitoring does not decrease the likelihood of serious hypoglycemia; improve patient adherence, glucose control, or patient outcomes; or affect treatment decisions.[8,9] Similarly, continuous glucose monitoring has no role in patients not taking insulin. Despite claims to the contrary, continuous glucose monitoring has not been shown to improve any of the aforementioned outcomes; however, it increases cost and patient discomfort.[10,11]

The third area of possible overuse is treatment choice, including whether to treat and selection of treatment. Treatment decisions should be based on the careful consideration of relative safety, tolerability, effectiveness, price, and simplicity (STEPS; https://www.aafp.org/afp/steps) of treatment options. The decision of when to prescribe insulin, and which type of insulin, is an example of treatment choice that has potential for overuse. The pharmaceutical industry has positioned expensive, newer insulins as the go-to options over less-expensive NPH insulins. However, these newer insulin analogues are not safer or more tolerable (e.g., no reduction in episodes of hypoglycemia), are not easier to use, and are not more effective (no difference in blood glucose control or morbidity and mortality) to justify their 10-fold additional cost.[12,13]

Overuse is often attributed to time constraints, fear of patient dissatisfaction or liability, or a bias toward a more-is-better reactivity that is inherent in medicine. Much overuse, though, may be governed by good intentions. We want to help patients, but extraneous forces can push us toward overuse.[14] Pharmaceutical, device, and diagnostic test companies can also drive overuse through consumer and medical advertising.

What can physicians do to avoid overuse? Start by asking the right questions. Will this screening test result in better patient outcomes beyond

simply adding new diagnoses? What will I do with the results of the monitoring test I am about to order—is it really necessary or am I just checking a box? For treatment, does one choice outweigh others because of superiority using the STEPS framework, or am I selecting a treatment because it is trendy and new?[14] To answer these questions and to stay updated on quickly changing medical information, physicians should use secondary sources, such as evidence-based summaries.[14,15] Examples include Patient-Oriented Evidence that Matters (POEMs; https://www.aafp.org/journals/afp/authors/ebm-toolkit/resources/top-poems.html) and *American Family Physician*'s Lown Right Care department (https://www.aafp.org/afp/rightcare).

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