Published in final edited form as:

JAMA. 2011 October 5; 306(13): 1481–1482. doi:10.1001/jama.2011.1418.

Quality Indicators for Older Adults: Preventing Unintended Harms

Sei J. Lee, MD, MAS¹ and Louise C. Walter, MD¹

¹San Francisco VA Medical Center and University of California, San Francisco, Division of Geriatrics

Keywords

Quality Indicators; Aging

They are often based on clinical practice guidelines and are designed to encourage effective, evidence-based interventions.(1) Quality indicators are becoming increasingly important, with Medicare, the Department of Veterans Affairs (VA) and commercial HMO plans implementing pay-for-performance programs that tie reimbursement to these indicators. However, for medically complex older patients, many authors have raised concerns that closer adherence to current quality indicators may lead to unintended harms.(1-3)

In 2002, adults over age 65 comprised 13% of the US population and accounted for 36% of healthcare expenditures. By 2030, adults over 65 are projected to comprise 20% of the US population and account for 50% of healthcare expenditures.(4) Thus, older adults represent the “average” patient in many healthcare settings and quality indicators must improve care for these patients if they are to improve overall healthcare quality.

We will highlight 2 ways that current indicators may lead to unintended harms and propose ways to improve quality indicators by minimizing or preventing those harms.

Unbalanced Quality Indicators Encourage More Care, Not More Appropriate Care

Current quality indicators are unbalanced, with many indicators encouraging more appropriate care but few indicators discouraging inappropriate care. For example, the 2011 Healthcare Effectiveness Data and Information Set (HEDIS) quality indicators for blood pressure control reports the percentage of patients with hypertension with blood pressure reading <140/90, seeking to encourage more appropriate treatment. However, there are no quality indicators measuring the rates syncope or orthostatic hypotension that would discourage overly aggressive treatment. The Assessing Care of Vulnerable Elders (ACOVE) project addressed this issue by proposing a quality indicator that would measure the rates of orthostatic blood pressure measurements for patients experiencing dizziness or syncope.(5) We propose balancing the current measure (that encourages more aggressive treatment) with a second measure that discourages overly aggressive treatment would more effectively incentivize providers to target treatment to those patients most likely to benefit.

Corresponding author: Sei J. Lee, MD MAS 8 4150 Clement Street Bldg 1, Rm 211A San Francisco, CA 94121 415-221-4810 x4543 415-750-6641 (fax) Sei.lee@ucsf.edu.

Conflicts of Interest Authors have no conflicts of interest to disclose.

Glycemic control and cancer screening provide additional examples of how balanced quality indicators may incentivize higher quality care. For glycemic control, an indicator reporting the rates of hypoglycemia along with rates of good glycemic control would encourage providers to target intensive glycemic control to those patients at low risk for hypoglycemia. For breast cancer screening, an indicator reporting the rates of inappropriate screening mammography (e.g. in patients with preexisting advanced cancer or dementia who are unlikely to benefit (6)) would encourage targeting screening to healthier women who are most likely to benefit.

This imbalance in quality indicators is especially problematic for older adults. Older adults are at higher absolute risk for most diseases, increasing the magnitude of benefit with treatment. Yet, older adults are also at higher risk for adverse medication effects and procedural complications. Because the magnitude of risks and benefits vary widely across the spectrum of health status in older adults, it is especially important to target interventions to those elders most likely to benefit. Current unbalanced quality indicators do not encourage such targeting; rather, they create an incentive for more care for all elders within a certain age and ignore patients outside that age range.

Quality Indicators Ignore Life Expectancy and Lagtime-to-Benefit for Preventive Interventions

Although clinical practice guidelines generally acknowledge the importance of juxtaposing life expectancy and the lagtime-to-benefit for preventive interventions, quality indicators encourage preventive interventions for all patients within a certain age range. For example, the US Preventative Services Task Force (USPSTF) colorectal cancer (CRC) screening guideline recommends discontinuing screening for patients with a limited life expectancy. However, the HEDIS quality indicator encourages screening in all adults aged 50–75 years. Thus, the current HEDIS CRC quality indicator would encourage screening for a 70-year-old patient whose oxygen-dependent lung disease limits his life expectancy and makes it unlikely that he would benefit. Paradoxically, the current HEDIS CRC quality indicator would ignore screening in an 80-year-old woman with only mild hypertension, even though she has an extended life expectancy and is more likely to benefit from screening. Because the heterogeneity of life expectancy increases with increasing age,(7) the problem of age-based indicators is greatest among older adults.

The ACOVE project addressed this issue by identifying quality indicators that would be inappropriate for patients with limited life expectancy.(8) We propose a more nuanced approach with prevention quality indicators explicitly accounting for life expectancy and encouraging prevention only in those patients whose predicted life expectancy exceeds the intervention's lagtime-to-benefit. For example, since the lagtime-to-benefit for colorectal cancer screening is estimated to be 7 years,(9) a life expectancy-based CRC screening quality indicator would only consider those patients who have a life expectancy >7 years to be appropriate candidates for screening. Although estimates of life expectancy are imperfect, combining readily available data such as gender and comorbidities with age would allow more accurate predictions of life expectancy. Similar to how estimated glomerular filtration rate is now routinely calculated and presented to clinicians, age, gender and comorbidity data could be used to calculate an estimated life expectancy.

Depending on the electronic medical record (EMR) system that is available in a given clinical setting, life expectancy-based quality indicators would require differing implementation strategies. In settings with robust EMR systems such as the VA, life expectancy could be calculated for every patient using the rich clinical data within the EMR (i.e. comorbidities and laboratory values). This life expectancy calculation could be used to

determine whether a patient is appropriate for a preventive intervention such as CRC screening, leading to the display or suppression of a clinical reminder. In clinical settings without robust EMR, providers could estimate life expectancy explicitly using a variety of published calculators or implicitly using clinical intuition. At the administrative level where quality indicators are calculated, available data including age, gender and comorbidities could be used to determine life expectancy. This calculated life expectancy can then be used to determine whether each patient is an appropriate candidate for the quality indicator.

For many patients, the estimated life expectancy and the lagtime-to-benefit for the intervention may be similar, suggesting that the net benefits are small or uncertain. In these situations, the intervention is discretionary and highly dependent on factors such as patient preference.⁽¹⁰⁾ The 2008 USPSTF CRC guidelines foreshadows this concept of discretionary care by suggesting that screening for patients age 75-85 years is optional, while recommending screening for patients who are younger (age 50-75) and discouraging screening for patients who are older (age ≥ 85).⁽⁹⁾ We propose that quality indicators omit patients where the benefits are small or uncertain, so that neither intervention nor the lack of intervention can be viewed as poor quality care.

Conclusion

Healthcare quality indicators are powerful tools that can change provider behavior and improve patient care. However, current indicators are unbalanced and ignore the lagtime-to-benefit for preventive interventions, leading to unintended harms. Because older adults are the largest consumers of healthcare, they have the most to gain from improving quality indicators.⁽¹⁾ A first step to realize those gains is to carefully examine how current indicators may lead to unintended harms for older adults, so that quality indicators can be refined and improved to drive real quality improvement for the entire healthcare system.

Acknowledgments

1) Funding Support Dr. Lee's effort was supported by NIH/NCRR/OD UCSF-CTSI Grant Number KL2 RR024130, Hartford Geriatrics Health Outcomes Research Scholars Award and the Hellman Family Award for Early Career Faculty at UCSF.

Dr. Walter's effort on this manuscript was supported by grant 1R01CA134425 from the National Cancer Institute.

The contents of the manuscript are solely the responsibility of the authors and do not represent the views of any of the funders.

2) Prior Presentations: None

References

1. Reuben DB, Shekelle PG, Wenger NS. Quality of care for older persons at the dawn of the third millennium. *J Am Geriatr Soc.* Jul; 2003 51(7 Suppl):S346–350. [PubMed: 12823666]
2. Boyd CM, Darer J, Boulton C, Fried LP, Boulton L, Wu AW. Clinical practice guidelines and quality of care for older patients with multiple comorbid diseases: implications for pay for performance. *JAMA.* Aug 10; 2005 294(6):716–724. [PubMed: 16091574]
3. Walter LC, Davidowitz NP, Heineken PA, Covinsky KE. Pitfalls of converting practice guidelines into quality measures: lessons learned from a VA performance measure. *JAMA.* May 26; 2004 291(20):2466–2470. [PubMed: 15161897]
4. Stanton, MW.; Rutherford, MK. *Quality AfHRA*. Rockville (MD): 2005. The High Concentration of US Healthcare Expenditures.
5. Min LC, Mehrotra R, Fung CH. Quality indicators for the care of hypertension in vulnerable elders. *J Am Geriatr Soc.* Oct; 2007 55(Suppl 2):S359–365. [PubMed: 17910558]

6. Sima CS, Panageas KS, Schrag D. Cancer screening among patients with advanced cancer. *JAMA*. Oct 13; 2010 304(14):1584–1591. [PubMed: 20940384]
7. Walter LC, Covinsky KE. Cancer screening in elderly patients: a framework for individualized decision making. *JAMA*. Jun 6; 2001 285(21):2750–2756. [PubMed: 11386931]
8. Wenger NS, Solomon DH, Amin A, et al. Application of assessing care of vulnerable elders-3 quality indicators to patients with advanced dementia and poor prognosis. *J Am Geriatr Soc*. Oct; 2007 55(Suppl 2):S457–463. [PubMed: 17910571]
9. Screening for colorectal cancer: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med*. Nov 4; 2008 149(9):627–637. [PubMed: 18838716]
10. Quanstrum KH, Hayward RA. Lessons from the mammography wars. *N Engl J Med*. Sep 9; 2010 363(11):1076–1079. [PubMed: 20825322]