

Colorectal Cancer Screening in the 21st Century: Where Do We Go From Here?

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Our approach to colorectal cancer (CRC) screening is undergoing a much-needed paradigm shift. The evidence that screening “works” and is of high value is indisputable, yet uptake of screening remains suboptimal at a population level. Indeed, the most recent data from the Behavioral Risk Factor Surveillance System indicates that only 65% of individuals are up-to-date for CRC screening—clear evidence of screening underuse.¹ In contrast, other data suggest overuse of screening, particularly in elderly individuals with comorbid medical conditions who have limited life expectancy, and in individuals with prior negative screening who are at low risk for CRC.² Traditional population-oriented efforts to promote screening utilization have not only failed to adequately address underuse, they have simultaneously promoted overuse of screening in selected groups of patients.³ Clearly, new approaches are needed if we are to deliver the right care to the right patient at the right time.

In this issue of *The American Journal of Managed Care*, 2 papers highlight novel efforts to address both underuse and overuse of screening. First, Fitch and colleagues present an economic analysis aimed at quantifying the cost-effectiveness of colonoscopy for CRC screening. Cost-effectiveness analyses of CRC screening are myriad, but the current analysis is timely in that it focuses on cost from the perspective of commercial insurers. Cost sharing is a mechanism commonly used by insurers to limit utilization of services. The cost that is borne by the patient is typically proportional to the total cost of the service. For preventive services that are costly but high-value, such as screening colonoscopy, cost sharing has the potential to markedly limit uptake, thereby promoting underuse. As Fitch and colleagues discuss, only 62.4% of the commercially insured health maintenance organization population and 54.6% of the commercially insured preferred provider organization population had been appropriately screened as of 2011—rates lower than those seen in the

ABSTRACT

Our approach to colorectal cancer screening is undergoing a much-needed paradigm shift. The evidence that screening “works” and is of high value is indisputable, yet screening remains underused at a population level. In contrast, other data suggest overuse of screening. Traditional population-oriented efforts to promote screening utilization have not only failed to adequately address underuse, they have simultaneously promoted overuse of screening in selected groups of patients. Clearly, new approaches are needed if we are to deliver the right care to the right patients at the right time. By shifting our focus from populations to patients, we can aim to achieve the goal set by Healthy People 2020 of ensuring that 70% of the appropriate US population is up-to-date with colorectal cancer screening.

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overall US population.⁴ Fortunately, the Affordable Care Act contains a provision to eliminate cost sharing for high-value preventive services including screening colonoscopy, an approach that is likely to increase screening uptake.⁵ However, reports indicate that despite these provisions, some patients are facing unexpected co-payments after receiving a screening colonoscopy.⁶ As a result, legislators have taken action to address this issue with 2 recent bills, one of which is aptly titled the “Removing Barriers to Colorectal Cancer Screening Act.”

In their defense, insurers may have legitimate concerns about what amounts to an unfunded mandate for screening colonoscopy—a preventive service that has a payoff time of roughly a decade (by which time many screened patients have moved on to Medicare).⁷ The analysis by Fitch and colleagues seeks to address this concern by examining the economic impact of the screening colonoscopy from the perspective of a private insurer. Clinical and economic outcomes for commercially insured individuals aged 50 to 64 years were obtained from Truven Health MarketScan claims data. The use of actual claims data as opposed to Medicare reimbursement rates is unique compared with most prior economic analyses of CRC screening. Using these data and a simple mathematical model, the authors determined that screening colonoscopy with a 50% adherence rate was cost-effective, with an incremental cost-effectiveness ratio of \$11,562 per life-year saved.

While the study provides interesting and somewhat provocative results, it also has several limitations that are worth highlighting. First, the assumed cost of cancer treatment was substantially higher than that used in other studies—an assumption that could have biased the results in favor of screening⁸—and the presentation of results also lacked calibration data to confirm model validity. Furthermore, the authors made a number of simplifying structural assumptions that may have biased the results (eg, individuals undergo screening colonoscopy at age 50 and 60 years). Nonetheless, the conclusions are in line with those of prior economic analyses. Most notably, even from the perspective of a commercial insurer with a limited time horizon, screening was highly cost-effective. These results should serve to reassure commercial insurers—some of whom clearly see screening as an unfunded obligation that they would rather not cover—that screening colonoscopy is of high value even when the time horizon is relatively short.

While changes in cost-sharing structure can be used to address underuse of screening, this approach is unlikely to be embraced in addressing overuse.^{9,10} Overuse of screening is a complex phenomenon, but multiple

studies have shown that provider recommendation is a powerful factor in determining whether an individual receives a CRC screening test.¹¹ Thus, to address overuse, approaches at the provider level warrant further study. The paper by Schwartz and colleagues¹² presents data from a pilot study of a physician-oriented intervention to address screening overuse in screen-eligible patients with comorbid medical conditions. Building from their prior work on screening “payoff time,” the authors tested an electronic medical record-based decision support tool to individualize CRC screening recommendations according to estimated life expectancy.^{12,13}

Though this was a small pilot study at a single center ($n = 24$), investigators were able to demonstrate feasibility and acceptability to busy primary care providers. Specifically, they showed that primary care providers were receptive to using payoff time calculations when determining whether or not to screen patients for CRC. Whether providers in usual practice would adopt such approaches, particularly when existing screening performance measures fail to consider life expectancy, remains unclear. Additionally, life expectancy is only one of several factors that determine screening benefit; in fact, prior screening history may be a more important factor than life expectancy.⁸ Furthermore, many patients are reluctant to discontinue cancer screening regardless of their health status.

It is also important to note that this study focused exclusively on colonoscopy, which is only one of several available screening modalities. In some instances, colonoscopy may be inappropriate, but fecal occult blood testing or sigmoidoscopy may still be reasonable options.⁸ Nonetheless, as a proof of concept, this study demonstrates the feasibility of using an individualized decision support tool to address the overuse of CRC screening.

In summary, these 2 novel studies highlight current problems and potential solutions in both underuse and overuse of CRC screening. Our current approach to screening requires a paradigm shift if we are to move beyond simple “one size fits all” approaches that will inevitably result in overscreening some patients and underscreening others. By shifting our focus from populations to patients, we can aim to achieve the goal set by Healthy People 2020 of ensuring that 70% of the appropriate US population is up-to-date with CRC screening.

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