



Changes in Health Care Financing & Organization (HCFO)

# findings brief

## key findings

- Through the *Choosing Wisely* initiative, medical specialty societies identified non-indicated cardiac testing in low-risk patients and short-interval dual-energy X-ray absorptiometry (DXA) or bone density testing as low-value care.
- Nationally, 13 percent of low-risk Medicare beneficiaries received non-indicated cardiac tests, and 10 percent of DXAs reimbursed by Medicare were administered at inappropriately short intervals. There is significant geographic variation in the provision of these services.
- Carefully designed policy and payment changes will likely prove most effective in reducing low-value care.

## How Prevalent and Costly are Choosing Wisely Low-Value Services? Evidence from Medicare Beneficiaries

### Overview

In 2012, the ABIM Foundation announced the *Choosing Wisely*<sup>®</sup> initiative, which encourages physicians, patients, and other health care stakeholders to engage in conversations about medical tests and procedures that may be unnecessary and, in some instances, cause harm. Under the initiative, specialty societies developed lists of five evidence-based recommendations of tests and treatments that physicians and patients should question. The goal of the initiative is to encourage physicians to be responsible stewards of finite health care resources and to reduce low-value care. Drawing on HCFO-funded work, Carrie H. Colla, Ph.D., The Dartmouth Institute for Health Policy and Clinical Practice, and colleagues examined the prevalence, geographic variation, and Medicare spending associated with tests identified as low-value by select specialty societies. In particular, they examined the use of non-indicated cardiac testing in low-risk patients<sup>1</sup> and short-interval bone density testing<sup>2</sup> to quantify the use and spending associated with these low-value services.

### Methods

The researchers used Medicare administrative data on fee-for-service beneficiaries from 2006 through 2011 to examine the use of non-indicated cardiac testing in low-risk patients and short-interval dual-energy X-ray absorptiometry (DXA) or bone density testing. To examine the proportion of low-risk Medicare beneficiaries receiving non-invasive cardiac screening tests, the researchers created six annual enrollment cohorts and assigned a cardiovascular disease risk status (low or high) to each beneficiary. Beneficiaries were categorized as low-risk if they had no evidence of significant cardiovascular disease or a testing event related to cardiac disease or related symptoms in the calendar year. The researchers also identified all female beneficiaries over age 66 who underwent a DXA test in each calendar year; they excluded men from the short-interval bone density analyses. While recommendations call for all women over age 65 to undergo a DXA scan, there is no age of universally recommended bone density testing for men. Short-interval bone density tests (more than one every two years)



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are considered low-value because changes in bone density over a short period are generally smaller than the measurement error inherent in the tests themselves. For bone density testing analyses, the researchers conservatively excluded beneficiaries who were (1) diagnosed with cancer (except nonmelanoma skin cancer) or (2) diagnosed with fragility fracture in the 23 months before the DXA test.

## Results

### Non-indicated cardiac testing

Each year, low-risk beneficiaries accounted for 42 to 46 percent of total observation time for cardiac testing. Patients in the high-risk cohort, compared with the low-risk cohort, were more likely to be black, Hispanic, Medicaid-eligible, and male. Prevalence of non-indicated cardiac tests in a given calendar year was relatively constant from 2006 through 2011, with low-risk testing ranging from 11.7 to 12.8 percent and high-risk testing from 18.9 to 20.2 percent. Low-value testing in the low-risk cohort was the least common in the central and north-western United States, and testing prevalence exhibited strong geographic variation. Non-indicated cardiac screening was positively correlated with the regional number of cardiologists per capita, and testing rates were primarily driven by use of ECGs. The estimated 2011 Medicare payments for potentially non-indicated cardiac tests among low-risk, fee-for-service beneficiaries, age 66 through 80 years, totaled approximately \$9.4 million.

### Short-interval bone density testing

The proportion of short-interval DXA testing varied modestly from year to year and changed in response to changes in Medicare reimbursement. As Medicare reimbursement for DXA increased, short-interval DXA testing likewise increased. Overall DXA use rate ranged from 6.3 to 23.0 per 100 female beneficiaries, and inappropriate, short-interval DXA use was highest in the southern and southwestern United States. The estimated 2011 Medicare spending associated with short-interval DXA use among female beneficiaries over age 66 was \$16 million.

## Limitations

The claims-based analyses did not include clinical data. As such, the researchers were not able to determine the documented clinical impact from non-indicated cardiac testing in low-risk patients or short-interval bone density testing. However, the researchers were conservative in their exclusion criteria for the identification of low-risk cardiovascular patients, and they limited their focus on DXA testing to those individuals for whom short-interval tests were most likely to be clinically meaningless. In addition, regional physician practice patterns likely affect the amount of testing in different regions of the United States. Given such variation, some low-risk patients may have been misclassified as high-risk in areas with heightened cardiac testing. As such, unnecessary cardiac testing estimates in areas with more intense practice patterns are likely to be conservative.

## Discussion and Policy Implications

The assessment of both non-indicated cardiac testing in low-risk patients and short-interval bone density testing demonstrated that the national prevalence of the tests is 13 and 10 percent, respectively. These selected *Choosing Wisely* recommendations represent tests with longstanding agreement on their low value. The regional analysis demonstrated the extent to which testing varies across the nation, and the researchers found evidence that some physicians use more cardiac tests regardless of clinical scenario or patient risk status. The geographic variation in testing rates reveals the broad range of practice pattern change needed to achieve the best use of cardiac and bone density testing suggested by the *Choosing Wisely* campaign.

As evidenced by the responsiveness of short-interval bone density testing to changes in reimbursement, policy and payment changes may be effective in promoting the appropriate use of tests and other treatments, but such changes must be developed with caution. For example, assigning a minimum-interval policy (e.g., DXAs reimbursed after a 24-month interval between tests) could be misinterpreted

as the recommended testing interval and result in more tests performed at intervals only slightly longer than the approved minimum, thereby adding little clinical value. These findings highlight the challenges inherent in identifying and defining low-value care as well as in designing effective policies and enforcement mechanisms to promote appropriate use. The *Choosing Wisely* initiative has the weight of physician specialty societies behind the identification of low-value services, yet the value of the initiative could be heightened with higher-impact recommendations.

## Conclusion

Identifying low-value services is complex and important, and the *Choosing Wisely* initiative has made initial strides to reduce low-value care. Yet, as the study findings demonstrate, some of the resulting recommendations are limited in terms of prevalence and associated spending. While non-indicated cardiac testing in low-risk patients and short-interval bone density testing are not highly prevalent across the nation, these analyses demonstrate significant geographic variation in their use and therefore suggest opportunities for improving quality and achieving savings. Carefully designed policy and payment changes will likely prove most effective in reducing low-value care provision.

## For More Information

For more information, contact Carrie H. Colla, Ph.D., at [carrie.h.colla@dartmouth.edu](mailto:carrie.h.colla@dartmouth.edu).

## About the Author

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## Endnotes

1. For complete findings, see Colla CH, Sequist TD, Rosenthal MB, et al. Use of non-indicated cardiac testing in low-risk patients: Choosing Wisely. *BMJ Qual Saf*, 2014;1-5.
2. For complete findings, see Morden ND, Schpero WL, Zaha R, Sequist TD, and Colla CH. Overuse of short-interval bone densitometry: assessing rates of low-value care. *Osteoporos Int*. 2014;25: 2307-11.