

Criteria Define Appropriate Use of Cardiac Imaging

BY KERRI WACHTER
Senior Writer

To help physicians keep up with ever-changing imaging technology, the American College of Cardiology Foundation and key specialty societies have released appropriateness criteria for the use of cardiac CT and MR.

These are rapidly emerging technologies that have both primary care physicians and cardiologists looking for guidance on how to fit these tools into their practices, said Dr. Robert C. Hendel, who chaired the Appropriateness Criteria for Cardiac Computed Tomography and Cardiac Magnetic Resonance Imaging writing group.

In light of this need, the writing group is taking a somewhat novel approach, planning to revise the criteria every 12-18

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months to keep up with new technology and evidence, said Dr. Hendel, a nuclear cardiologist with Midwest Heart Specialists in Fox River Grove, Ill. The first set of appropriateness criteria for imaging, released last October, was for

SPECT myocardial perfusion imaging.

The criteria aren't intended as hard and fast guidelines but instead represent the current expert thinking on when cardiac CT and MR should and should not be used. "Appropriateness criteria, in other words, are not substitutes for sound clinical judgment and practice experience with each patient and clinical presentation," the authors said.

Imaging technology changes rapidly, meaning that there can be a big lag between peer-reviewed research and clinical practice. "I think that's one of the things that this document is intended to address because if you wait for the literature to catch up, it's never going to happen," said Dr. Geoffrey D. Rubin, the American College of Radiology's representative on the technical panel.

The technical panel rated 39 cardiac computed tomography (CCT) and 33 cardiac magnetic resonance (CMR) indications representing common patient presentations such as symptoms suggestive of ischemia, multiple cardiac risk factors in an asymptomatic individual, and specific scenarios with high clinical suspicion that are further stratified on the basis of on factors such as clinical risk, prior test results, and the interval since prior testing.

Indications were scored 1-9, with appropriate indications scored 7-9, uncertain indications scored 4-6, and inappropriate indications scored 1-3. An imaging study was considered to be appropriate for an indication if the additional information, in combination with clinical judgment, exceeded negative consequences. Negative consequences include

the risks of the procedure (that is, radiation or contrast exposure) and the downstream effects of poor test performance (that is, delays in diagnosis or inappropriate diagnosis).

In all, 13 CCT and 17 CMR indications were found to be appropriate and 14 CCT and 9 CMR indications were found to be inappropriate.

For example, CMR was deemed inappropriate (score of 1) for detection of coronary artery disease patients with

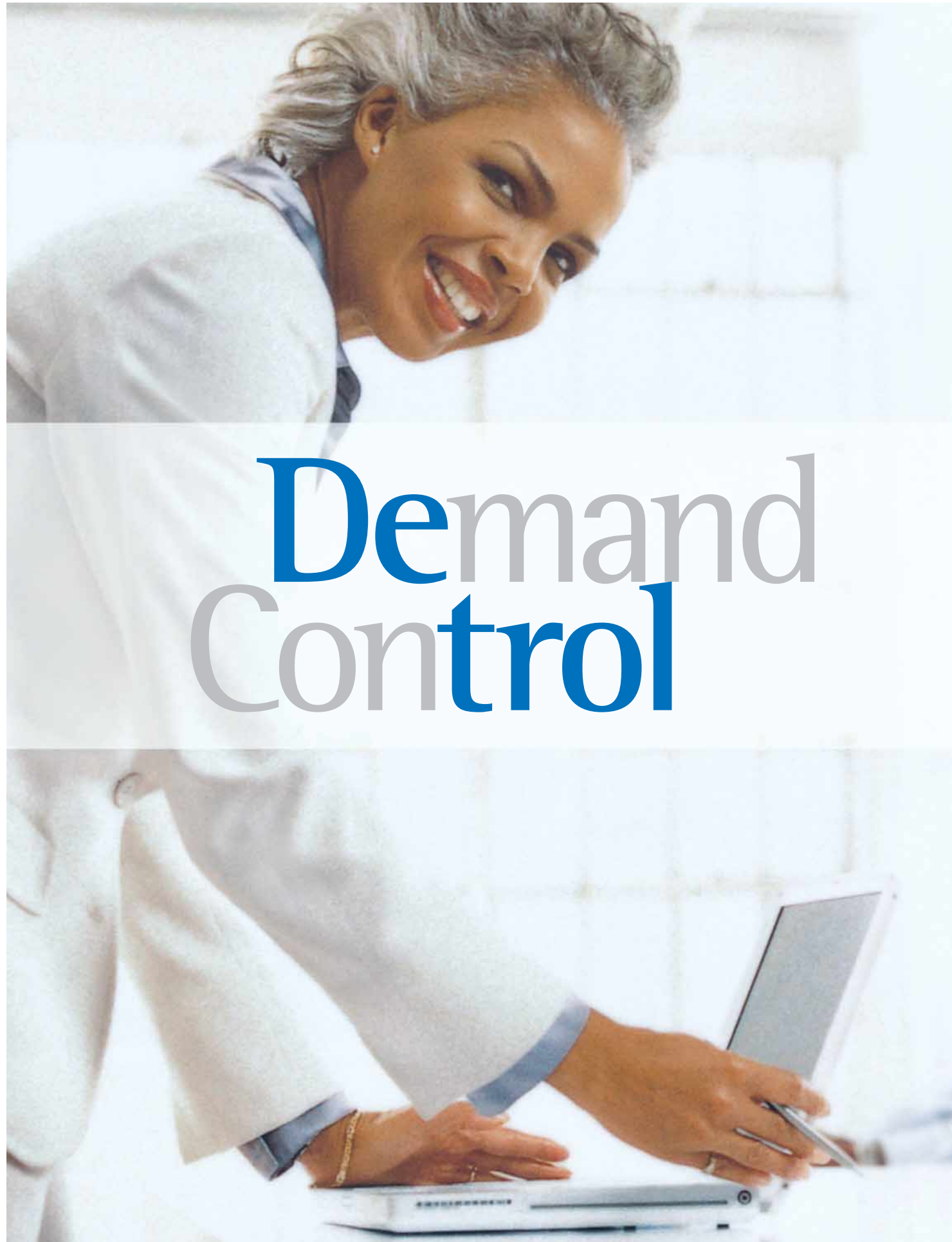
chest pain with a high pretest probability of CAD.

Although CCT was considered appropriate for several scenarios beyond assessments of structure and function, more than 40% of the indications were in this area. Two-thirds of the appropriate and uncertain indications for CMR were related to assessment of structure and function. "These results support the strengths of CMR as a tool for defining the etiology of complex patient presentations

where the clinical suspicion is high," the authors said.

In addition, 12 CCT and 7 CMR indications were found to be uncertain. Indications were considered uncertain because either critical data were lacking or significant differences of opinion existed among panel members regarding the value of the method for that particular indication.

"Uncertain is an area that for the most part simply means that we just don't know enough yet," said Dr. Rubin.



It is striking that the criteria were developed with buy-in from the American College of Radiology, the Society of Cardiovascular Computed Tomography, the Society for Cardiovascular Magnetic Resonance, the American Society of Nuclear Cardiology, the North American Society for Cardiac Imaging, the Society for Cardiovascular Angiography and Interventions, and the Society of Interventional Radiology.

It has been a matter of heated contention among cardiologists, radiologists, and interventionalists as to whom should be performing cardiac imaging in general. However, the technical panel included

representatives from as many specialty and subspecialty organizations as possible and "we're very proud of this," said Dr. Hendel, adding that the group hopes the criteria serve as an endorsement for a more collaborative approach to cardiac imaging.

On the flip side though, "it's usually not a problem when you can bring people together in a nonconfrontational environment where the issue of who should do what is not on the table," said Dr. Rubin, who is chief of the cardiovascular imaging at Stanford (Calif.) University.

The document is also intended to serve as a template for better reimbursement for these tests.

Currently, cardiac MR studies are reimbursed for the most part, said Dr. James C. Carr, director of cardiovascular imaging at Northwestern Memorial Hospital in Chicago. Dr. Carr served on the technical panel, representing the Society of Interventional Radiology.

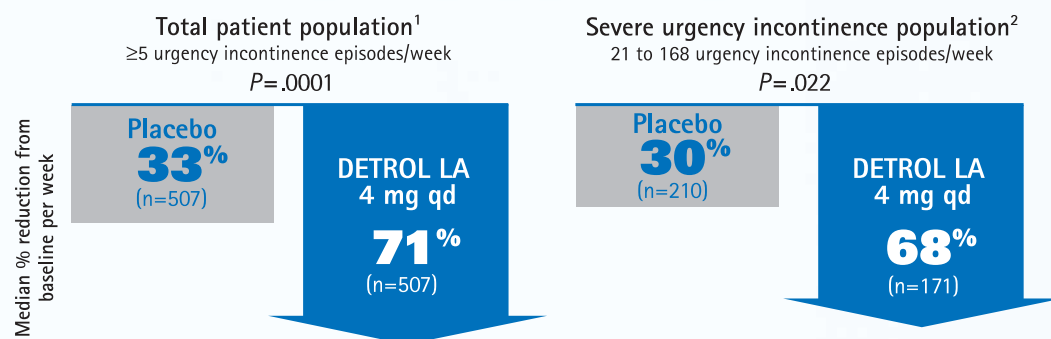
Cardiac CT studies are not consistently reimbursed now though. "One of the problems is that the indications have not been clearly established for insurance companies," he said. "Hopefully, this document will convince them that there are many situations where [cardiac CT] is indicated and hopefully they will consider reimbursement for these indications." ■

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Van Kerrebroeck et al. *Urology*. 2001;57:414-421.¹
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Landis et al. *J Urol*. 2004;171:752-756.²
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