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## Group Sets Action Plan to Improve Quality in Cardiovascular Imaging

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It is hoped that implementing the plan would not only improve patient health outcomes but also improve patients' quality of life, reduce the expenses they incur and increase their overall satisfaction with their treatment, the panel said.

The panel, which was composed of officials from professional societies of imaging specialists, companies that develop imaging technology, government regulatory agencies and insurance companies, published its recommendations in the Nov. 14, 2006, issue of the *Journal of the American College of Cardiology*.

Officially called the American College of Cardiology-Duke University Medical Center Think Tank on Quality in Cardiovascular Imaging, the panel met in Washington DC in January 2006. The meeting was supported by unrestricted grants from a number of health-care and medical-imaging companies [see list below].

In diagnosing heart disease, physicians often rely on one or more imaging technologies to provide pictures of the heart and the arteries that supply it. Among the technologies are "noninvasive" tests such as ultrasound, CT scans and magnetic resonance imaging, as well as more invasive tests such as angiography, where a dye is injected into the bloodstream and x-rays are used to illuminate areas where blood vessels may be blocked.

"Imaging has transformed our ability to prevent, diagnose and manage cardiovascular disease," said Pamela Douglas, M.D., chief of cardiovascular medicine at Duke, past president of the American College of Cardiology and first author of the journal report. "Cardiovascular imaging has enjoyed both rapid technological advances and sustained growth, yet less attention has been focused on quality than in other areas of cardiovascular medicine.

"We are in the midst of a national debate on the rising use and costs of these technologies," Douglas continued. "We believe there is good reason to change the debate from how to cut costs to how to provide the best value to patients. So we assembled a group of experts who have a stake in the appropriate use of imaging technologies to come up with consensus definitions of quality and then develop strategies to measure and achieve these goals."

The group's proposed action plan represents a first step, Douglas said. Working in conjunction with the American College of Cardiology and the professional societies representing the different imaging specialties, the group plans to develop and disseminate more detailed quality guidelines within the next 18 months, she added.

Douglas said that while drugs or medical devices must be rigorously tested for safety and effectiveness in clinical trials before receiving government approval for use, imaging technologies tend not to be as rigorously studied, since most tests pose few immediate risks to patients. "Imaging technologies, since they are diagnostic, are rarely associated with specific patient outcomes, yet the results of imaging studies form the basis of more than 80 percent of the treatment decisions made by physicians," she said. "While imaging can provide abundant information for a diagnosis, few randomized clinical trials have examined imaging's effect on clinical decision-making or patient outcomes."

In their analysis, the experts looked at four broad aspects of how imaging technologies are used in evaluating heart patients: matching patients with the best imaging technique, acquiring the best images, correctly interpreting the images and communicating the results of the tests to the patients' physicians.

Using the most appropriate technique for each individual's circumstance is essential, Douglas said.

"To put it simply, quality in patient selection entails referring the right patient for the right test at the right time," she said. "Our goal is to identify which patients would benefit the most from each technique while minimizing inappropriate testing."

Panel members agreed that more studies are needed to collect data on which techniques are used for specific medical circumstances and then to correlate that information with patient outcomes, Douglas said. As a first step, the panel recommended that the American College of Cardiology work with professional imaging societies to develop standardized methods for collecting and analyzing data and for communicating the findings back to referring physicians.

The panel also agreed that standard protocols and procedures need to be developed and followed to ensure that whenever a patient has a test performed, there is high confidence that the resulting images will be of high quality. Also, the experts said that whenever possible, the technicians who perform the tests should receive advanced training or certification in their areas.

Once an image has been generated, correct interpretation is essential to a proper diagnosis, the panel said. At a minimum, physicians who read and interpret the images must be certified by their respective credentialing societies. But the panel concluded that certification alone is not enough: independent groups should be established to conduct regular reviews of physicians' interpretations to determine if the correct interpretation was made. Comparative studies using databases of standardized images also could help ensure that the correct interpretation was made.

"Regardless of the approach taken, it is critical that some form of ongoing measurement of accuracy and reproducibility be performed routinely and that reasonable standards for both should be established," Douglas said.

Once an accurate image has been made and appropriately interpreted, the findings must be communicated effectively to the referring physician in a timely fashion, the panel said. The experts called for development of standardized language and forms so that referring physicians can easily and quickly understand the results of the test and act on them.

The group's activities were supported by unrestricted grants from Aetna Inc., Anthem, Astellas Pharma U.S. Inc., AstraZeneca Pharmaceuticals, Blue Cross Blue Shield, Bristol-Myers Squibb Medical Imaging, General Electric Health Care, Pfizer Inc., Point Biomedical Corp., Siemens Medical Solutions Inc., Toshiba America Medical Systems, United Healthcare Services and Wellpoint Inc.

