

Study examines variation in cardiology practice guidelines over time

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An analysis of more than 600 class I (procedure/treatment should be performed/administered) American College of Cardiology/American Heart Association guideline recommendations published or revised since 1998 finds that about 80 percent were retained at the time of the next guideline revision, and that recommendations not supported by multiple randomized studies were more likely to be downgraded, reversed, or

omitted, according to a study in the May 28 issue of *JAMA*.

As adherence to recommended [clinical practice guidelines](#) increasingly is used to measure performance, guidelines play a major role in policy efforts to improve the quality and cost-effectiveness of care. Past research has established the importance of revising guidelines over time to address advances in research and population-level changes in health risks. Nonetheless, unwarranted variability across guidelines can reduce trust in guideline processes and complicate efforts to promote consistent use of evidence-based practices. Moreover, policies based on recommendations that prematurely endorse practices subsequently found to be ineffective can lead to waste and potential harm. Little is known regarding the degree to which individual [guideline recommendations](#) endure or change over time, according to background information in the article.

Mark D. Neuman, M.D., M.Sc., of the Perelman School of Medicine at the University of Pennsylvania, Philadelphia, and colleagues analyzed variations in class I American College of Cardiology/American Heart Association (ACC/AHA) guidelines (n = 11) published between 1998 and 2007 and revised between 2006 and 2013. The researchers reviewed and recorded all class I recommendations from the first of the 2 most recent versions of each guideline and identified corresponding recommendations in the subsequent version. Recommendations replaced by less determinate or contrary recommendations were classified as having been downgraded or reversed; recommendations for which no corresponding item could be identified were classified as having been omitted.

Out of 619 index recommendations, 495 (80.0 percent) were retained in the subsequent version; 8.9 percent were downgraded, 0.3 percent were reversed, and 10.8 percent were omitted. The percentage of recommendations retained varied across guidelines from 15.4 percent to

94.1 percent.

Among recommendations with available information on level of evidence, 90.5 percent of recommendations supported by multiple randomized studies were retained, vs 81.0 percent of recommendations supported by 1 randomized trial or observational data and 73.7 percent of recommendations supported by opinion. After accounting for guideline-level factors, the odds of a downgrade, reversal, or omission were more than 3 times greater for recommendations based on a single trial, observational data, consensus opinion, or standard of care than for recommendations based on multiple randomized trials.

"... our results may have important implications for health policy and medical practice. The categorization of medical evidence, through guidelines, into stronger and weaker recommendations, influences definitions of good medical practice and informs efforts to measure the quality of care on a large scale. Our findings stress the need for frequent re-evaluation of practices and policies based on guideline recommendations, particularly in cases where such recommendations rely primarily on expert opinion or limited clinical evidence," the authors write.

"Moreover, our results suggest that the effectiveness of clinical practice guidelines as a mechanism for quality improvement may be aided by systematically identifying and reducing unwarranted variability in recommendations. Finally, our work emphasizes the importance of greater efforts on the part of guideline-producing organizations to communicate the reasons that specific recommendations are downgraded, reversed, or omitted over time."

In an accompanying editorial, Paul G. Shekelle, M.D., Ph.D., of the VA West Los Angeles Medical Center, Los Angeles, and RAND Corporation, Santa Monica, discusses the importance of keeping clinical

practice guideline [recommendations](#) up-to-date.

"The need for surveillance and updating of practice guidelines is increasingly gaining attention. To meet the need, guideline development organizations need to change their focus. This change is not easy. It is not just a matter of resources, although guideline organizations are going to have to devote more resources to active surveillance and maintenance of their guidelines than most probably do at present. It also has to be a change to the mindset, recognizing that keeping existing [guidelines](#) up-to-date in a timely way is an important goal for good patient care."

More information: [DOI: 10.1001/jama.2014.4949](https://doi.org/10.1001/jama.2014.4949)
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