

The American Association for Thoracic Surgery Consensus Guidelines: Reasons and purpose

Lars G. Svensson, MD, PhD,^a A. Marc Gillinov, MD,^a Richard D. Weisel, MD,^b Shaf Keshavjee, MD, MSc,^c Emile A. Bacha, MD,^d Marc R. Moon, MD,^e Duke E. Cameron, MD,^f David J. Sugarbaker, MD,^g David H. Adams, MD,^h J. William Gaynor, MD,ⁱ Joseph S. Coselli, MD,^j Pedro J. Del Nido, MD,^k David Jones, MD,^l Thoralf M. Sundt, MD,^m Lawrence H. Cohn, MD,ⁿ Jose L. Pomar, MD,^o Bruce W. Lytle, MD,^p and Hartzell V. Schaff, MD^q

ABSTRACT

The time interval for the doubling of medical knowledge continues to decline. Physicians, patients, administrators, government officials, and payors are struggling to keep up to date with the waves of new information and to integrate the knowledge into new patient treatment protocols, processes, and metrics. Guidelines, Consensus Guidelines, and Consensus Statements, moderated by seasoned content experts, offer one method to rapidly distribute new information in a timely manner and also guide minimal standards of treatment of clinical care pathways as they are developed as part of bundled care programs. These proposed Consensus Guidelines advance The American Association for Thoracic Surgery's mission of leading in cardiothoracic health care, education, innovation, and modeling excellence. (*J Thorac Cardiovasc Surg* 2016; ■:1-5)

LEVEL OF EVIDENCE	SIZE OF TREATMENT EFFECT			
	CLASS I Benefit > Risk Treatment is superior to placebo or standard treatment	CLASS IIa Benefit > Risk Additional studies with strong evidence confirm benefit/risk ratio if it is MAJORLY in favor of the treatment	CLASS IIb Benefit > Risk Additional studies with moderate evidence confirm benefit/risk ratio if it is MAJORLY in favor of the treatment	CLASS III Benefit = Risk Additional studies with moderate evidence confirm benefit/risk ratio if it is MAJORLY in favor of the treatment
LEVEL A High quality of evidence from multiple randomized clinical trials or meta-analyses	Recommendation that treatment should be given to patients in whom the benefit of treatment clearly outweighs the risk of treatment	Recommendation that treatment should be given to patients in whom the benefit of treatment probably outweighs the risk of treatment	Recommendation that treatment should be given to patients in whom the benefit of treatment possibly outweighs the risk of treatment	Recommendation that treatment should not be given to patients in whom the risk of treatment clearly outweighs the benefit of treatment
LEVEL B Moderate quality of evidence from randomized clinical trials or meta-analyses	Recommendation that treatment should be given to patients in whom the benefit of treatment probably outweighs the risk of treatment	Recommendation that treatment should be given to patients in whom the benefit of treatment possibly outweighs the risk of treatment	Recommendation that treatment should be given to patients in whom the benefit of treatment probably outweighs the risk of treatment	Recommendation that treatment should not be given to patients in whom the risk of treatment probably outweighs the benefit of treatment
LEVEL C Low quality of evidence from nonrandomized clinical studies or meta-analyses	Recommendation that treatment should be given to patients in whom the benefit of treatment possibly outweighs the risk of treatment	Recommendation that treatment should be given to patients in whom the benefit of treatment possibly outweighs the risk of treatment	Recommendation that treatment should be given to patients in whom the benefit of treatment possibly outweighs the risk of treatment	Recommendation that treatment should not be given to patients in whom the risk of treatment possibly outweighs the benefit of treatment
LEVEL D Very low quality of evidence from nonrandomized clinical studies or meta-analyses	Recommendation that treatment should be given to patients in whom the benefit of treatment possibly outweighs the risk of treatment	Recommendation that treatment should be given to patients in whom the benefit of treatment possibly outweighs the risk of treatment	Recommendation that treatment should be given to patients in whom the benefit of treatment possibly outweighs the risk of treatment	Recommendation that treatment should not be given to patients in whom the risk of treatment possibly outweighs the benefit of treatment

AHA/ACC classification of recommendations and level of evidence.

Central Message

The AATS Consensus Guidelines will improve care and advance our mission of leadership, education, innovation, and modeling excellence.

Perspective

The American Association for Thoracic Surgery Consensus Guidelines are intended to provide clinicians with recommendations from experts in the field that are based on the best and latest evidence available. In this way, the Consensus Guidelines will be able to respond rapidly to technologic and practice advances with expert recommendations to improve our patients' care.

From the ^aDepartment of Thoracic and Cardiovascular Surgery, Cleveland Clinic, Cleveland, Ohio; the Divisions of ^bCardiac Surgery, and ^cThoracic Surgery, Toronto General Hospital, Toronto, Ontario, Canada; the ^dDivision of Cardiac, Thoracic, and Vascular Surgery, Morgan Stanley Children's Hospital of New York, Columbia University; the ^eDivision of Cardiothoracic Surgery, Washington University School of Medicine, St Louis, Mo; the ^fDivision of Cardiac Surgery, The Johns Hopkins Hospital, Baltimore, Md; the ^gDivision of General Thoracic Surgery, Baylor College of Medicine; the ^hDepartment of Cardiovascular Surgery, Icahn School of Medicine at Mount Sinai; the ⁱDivision of Cardiothoracic Surgery, The Children's Hospital of Philadelphia, Philadelphia, Pa; the ^jDivision of Cardiothoracic Surgery, Texas Heart Institute/Baylor College of Medicine, Houston, Tex; the ^kDepartment of Cardiac Surgery, Children's Hospital Boston; the ^lDepartment of Surgery, Memorial Sloan-Kettering Cancer Center, New York, NY; the ^mDivision of Cardiac Surgery, Massachusetts General Hospital; the ⁿDivision of Cardiac

Surgery, Brigham and Women's Hospital, Harvard Medical School, Boston, Mass; the ^oDepartment of Cardiovascular Surgery, Hospital Cinco de Barcelona, Barcelona, Spain; ^pDepartment of Cardiac and Thoracic Surgery, The Heart Hospital Baylor Plano, Plano, Tex; and the ^qDivision of Cardiac Surgery, Mayo Clinic, Rochester, Minn.

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Address for reprints: Lars G. Svensson, MD, PhD, Heart and Vascular Institute, Cleveland Clinic, 9500 Euclid Ave/Desk J4-1, Cleveland, OH 44915 (E-mail: svenssl@ccf.org).

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Abbreviations and Acronyms

AATS = The American Association for Thoracic Surgery
 AHA/ACC = American College of Cardiology and American Heart Association

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By 2020, medical knowledge will double every 0.2 years.¹

EVOLUTION OF MEDICAL KNOWLEDGE

During the last century, medical publications have documented revolutionary discoveries. In the early 20th century, publications consisted of either single case reports or small series of patients treated by a new approach, either a medication such as insulin² or a surgical procedure such as repair of congenital heart defects on cardiopulmonary bypass.³ With these early discoveries, there was little doubt concerning the effectiveness of treatment. Insulin injections controlled diabetes, and heart surgery was lifesaving. With time, the literature abounded with reports of series of patients treated by senior experts expounding their personal (successful) experiences with particular treatments. Often, these series may have had conflicts of interest because of bias related to personal experience, particularly when a new device was evaluated. Review articles or book chapters by experts flourished—the latter often read but seldom quoted, although for young surgeons, these reviews continue to be an invaluable educational resource. Later, studies were based on much larger series of patients who were followed up through time, often including comparisons of matched groups.⁴ Incremental steps in statistical complexity for determining the veracity of effective treatments became the favored method of analysis and reporting.⁵⁻⁷ Concurrently, randomized trials of increasing complexity with an a priori structure and carefully planned evaluations of outcomes evolved.^{8,9} More often than not, these complex trials raised more questions than answers. Finally, sophisticated meta-analyses of previously reported series, which followed strict guidelines¹⁰ provided further insights into the validity of various treatments.

EXPLOSION OF MEDICAL INFORMATION

Today the explosion of information about medical treatments often leads to contradictory recommendations. For

the layperson, internet reviews written by medical reporters who lack insight into medical nuances have become the major source of information about medical advances. Nevertheless, these reviews rapidly disseminate knowledge of new developments. The response in the physician community has been to establish guidelines to aggregate available knowledge and distill the key messages. Guidelines have replaced expert reviews as the documents that establish recommended approaches to medical problems and clinical care pathway development.

GUIDELINES: PUTTING INFORMATION TOGETHER AND FILLING THE GAPS

During the last 30 years, the process of guideline development and the formatting for guideline display have advanced dramatically (Figure 1).¹¹ The process was initially envisioned to emanate from the collective wisdom of experts in the field, although when John Kirklin convened the first panel on coronary artery bypass operations,¹² he insisted that the process be fundamentally data driven. Through the years, criticism has mounted that guidelines are not sufficiently data driven,¹³ so much effort has been expended to critically examine the current literature and synthesize treatment recommendations according to the quality of supporting evidence, including size of treatment effects.¹⁰ These carefully constructed guideline treatises, however, frequently lack critical evidence and the seasoned clinical judgment necessary to interpret available information and recommend therapeutic choices for complex patient populations. Thoracic and cardiovascular surgeons thus must frequently look to senior experts to provide guidance on many of these complex issues. The American Association for Thoracic Surgery (AATS) Consensus Guidelines will attempt to fill this gap.

VALUE AND USE OF GUIDELINES

Previous investigations have determined that expert opinions are vital to proper interpretation of the literature and provision of recommendations, especially when the evidence is unclear. An analysis of the 3271 recommendations in 19 guideline documents issued through 2013 by the American College of Cardiology and American Heart Association (ACC/AHA) Task Force on Clinical Practice Guidelines highlights the need for a consensus among the experts.¹¹ Although approximately 50% of the recommendations were class I (strongest recommendation), some 50% were informed by a level C quality of evidence (lowest quality). Fewer than 10% were based on a level A quality of evidence. Indeed, of the class I recommendations, only 11% were based on level A evidence and 46% were informed by level C evidence. These results indicate either important gaps in evidence or a failure to find or use existing higher quality evidence,^{13,14} resulting in a need for extensive interpretation by content experts. For, as noted

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