pagepress

GLOBAL CARDIOLOGY
Global Cardiology 2025
DOI: 10.4081/cardio.2025.68

EDITORIAL

The Global Implementation Guidelines Initiative: how to optimize cardio-renal-metabolic care worldwide

Fausto J. Pinto,[1] Stefan D. Anker,[2] William T. Abraham,[3] John J. Atherton,[4] Javed Butler,[5] Vijay Chopra,[6] Andrew J.S. Coats,[7] Yann Colardelle,[8] Maria Rosa Costanzo,[9] Veronica Dean,[8] Gerasimos Filippatos,[10] Martha Gulati,[11] Julio Rosenstock,[12] John Teerlink,[13] Subodh Verma,[14] Jose Luis Zamorano,[15] Yuhui Zhang,[16] Shelley Zieroth[17]

[1]Cardiology Department, ULSSM, Cardiovascular Center of the University of Lisbon (CCUL@RISE), Faculty of Medicine, University of Lisbon, Portugal; [2]Department of Cardiology (CVK) of German Heart Center Charité; German Centre for Cardiovascular Research (DZHK) partner site Berlin, Charité Universitätsmedizin, Berlin, Germany; [3]Division of Cardiovascular Medicine, The Ohio State University College of Medicine, Columbus, OH, USA; [4]Department of Cardiology, Royal Brisbane and Women's Hospital and University of Queensland Faculty of Medicine, Brisbane, QLD, Australia; [5]Baylor Scott and White Research Institute, Dallas, TX and University of Mississippi, Jackson, MS, USA; [6]Max Super Specialty Hospital, New Delhi, India; [7]Heart Research Institute, Sydney, NSW, Australia; [8]Translational Medicine Academy, Basel, Switzerland; [9]Midwest Cardiovascular Institute, Naperville, IL, USA; [10]National and Kapodistrian University of Athens School of Medicine, Athens University Hospital Attikon, Athens, Greece; [11]Preventive Cardiology, Barbra Streisand Women's Heart Center, Preventive and Cardiac Rehabilitation Center, Smidt Heart Institute, Los Angeles, CA, USA; [12]Velocity Clinic at Medical City Dallas, Univ. of Texas Southwestern Medical Center, Dallas, TX, USA; [13]Section of Cardiology, San Francisco Veterans Affairs Medical Center and School of Medicine, University of California San Francisco, CA, USA; [14]St. Michael's Hospital, University of Toronto, Canada; [15]Department of Cardiology, University Hospital Ramón y Cajal, Madrid, Spain; [16]Peking Union Medical College, Beijing, China; [17]Section of Cardiology, Max Rady College of Medicine, University of Manitoba, Winnipeg, Manitoba, Canada

Key words: guidelines; evidence-based practice; implementation guidelines; global guidelines.

Received: 7 April 2025; Accepted: 8 April 2025.
**Correspondence to: Professor Fausto J. Pinto, Cardiology Department, ULSSM, Cardiovascular Center of the University of Lisbon (CCUL@RISE), Faculty of Medicine, University of Lisbon, Portugal. E-mail: faustopinto@medicina.ulisboa.pt*

Evidence-based practice guidelines aim to inform and support clinical decision-making, to deliver consistent and relevant healthcare practices, discourage ineffective or potentially harmful interventions, and optimize patient outcomes. The impact of guidelines and their readership has grown enormously in recent years, with the development of local, national, and international guidelines associated with professional academic societies such as the European Society of Cardiology, the American College of Cardiology, and the American Heart Association. Guidelines can enable our hospitals and medical communities to identify disease performance and evaluation measures, guide the planning of costly interventions, increase equitable care of patients, and shape public policy.[1,2] In summary, following the guidelines strongly impacts the individual patient and society.

Many clinical practice guidelines are, however, subject to biases and limitations.[2] Conflicting guideline statements exist, the quality of the scientific studies can vary, and the methodologies used to define them can be inconsistent. The writing committees can lack diversity and inclusion, and furthermore, the recommendations may need to account for global, regional, or local variations in socioeconomic level and geographical isolation, and digitization approaches are limited. This can limit implementation and can lead to criticism due to the need for more practical evidence-based recommendations that can be reasonably achieved.[3] Furthermore, the recommendations may need to account for global, regional, or local variations in socioeconomic level and geographical isolation. A comparative analysis of levels of evidence is carried out, considering the recommendations from 20+ clinical practice guidelines developed by international guidelines developers in the world of cardiology and beyond.

Barriers around guidelines persist and limit their dissemination and uptake. These include negative attitudes towards guidelines, lack of financial and management support, inadequate knowledge, and limited resources.[4-6] Consequently, the implementation of such guidelines needs to be revised. A US study of outpatients with heart failure with reduced ejection fraction demonstrated that only a small percentage of eligible patients received evidence-based therapies, and many received suboptimal doses.[7] Economic factors also affect the use of medications, with lower- and middle-income countries less likely than high-income countries to prescribe guideline-recommended treatments in patients hospitalized for acute heart failure[8] and patients without health insurance or scheduled follow-up within six months less likely to be on target doses.[7] Variations have also been reported according to sex; women are less likely to receive guideline-recommended medical therapy for acute coronary syndromes worldwide[9] or receive medications at target doses in the REPORT-HF Registry.[7] Conversely, in the Global-Congestive

Heart Failure registry, while beta blocker and sacubitril/valsartan prescription rates were lower, mineralocorticoid receptor antagonist, digoxin and diuretic prescription rates were higher in women, especially in low and low-to-middle income countries.[8] Sex-related differences in the quality of care have been noted in some studies. For example, in the recent report involving 23,340 patients with heart failure enrolled in the Global-Congestive Heart Failure registry, the use of investigations and medications were broadly similar in men and women. However, in patients with HFrEF, higher mineralocorticoid receptor antagonist, digoxin and diuretic prescription rates were noted in women (especially in LMIC/LIC). Conversely, beta blocker and sacubitril/valsartan prescription rates were lower in women, the latter only observed in LMIC/LIC possibly reflecting economic drivers.[9]

To address these failings, there is a need to focus on implementation and global approaches by synthesizing the established cardiovascular disease guidelines rather than simply developing new ones for every country. Such an approach would seek to address the conflicting guideline statements and equip clinicians with practical and concise recommendations that can be met universally, incorporate diverse and inclusive writing committees (e.g., gender, geography) during the development stage, integrate socioeconomic considerations in the recommendations, and integrate digitalization approaches.

Who are we?

The Translational Medicine Academy (TMA) is an International Academic Foundation and not-for-profit organization led by a board of trustees and supported by an international board. In 2021, the TMA expanded its mission to developing "Global Implementation Guidelines" to complement the currently available international and national quality guidelines in cardiology and focus on implementing best practice worldwide. Under the umbrella of the iCARDIO (International CARDio-Vascular Alliance to Improve Disease Outcomes) Alliance, this project aims to fill the need for implementation-focused cascade documents, particularly for its members in low-resource settings.

The final aim of a global guideline is not just to create a practical guideline that applies universally, but to also implement the guideline, improve the knowledge of clinicians, and improve the quality of life and health outcomes in patients.

The iCARDIO aims to gather leading cardiovascular societies from around the globe as partner organizations to develop consensus-based *Global Implementation Guidelines*, thus improving the quality of cardiovascular care, from prevention and diagnosis to treatment and follow-up, for all patients worldwide. Alongside educating doctors and patients about the best practices and latest advances in the field, the Alliance promotes equal access to optimal care for all patients wherever they are in the world by facilitating the uptake and implementation of guideline-directed care in cardiovascular medicine. The plan is to develop at least six *Global Implementation Guidelines*, focusing on the most prevalent cardiovascular issues including ischaemic heart disease, atrial fibrillation, diabetes and cardiovascular disease, obesity therapy in cardiovascular disease, peripheral arterial disease, myocarditis and heart failure.

How do our guidelines differ?

General principles of the Global Implementation Guidelines

The *Global Implementation Guidelines* will complement the extensive existing international guidelines and will be published as common-sense consensus summaries. They will be applicable and implementable globally for all patients in any economic context. This will be achieved through the adoption of a global cascade approach, considering resource availability on at least three economic levels:

- "evidence-based guideline" with no economic considerations
- "evidence-based guideline" with somewhat limited resources
- "evidence-based guideline" with severely limited resources.

The *Global Implementation Guidelines* will involve a collaboration with international societies *via* the iCARDIO Alliance, with worldwide representation and full transparency regarding declarations of interest. The guidelines will incorporate a public consultation phase, will be published simultaneously in at least five international and selected national journals, and will be publicly and freely available with open access. Members of the iCARDIO Alliance can use the guidelines to develop their proprietary educational initiatives, such as webinars, online activities, materials and infographics. They will also be entitled to create a dedicated app for local use and education.

Whereas current guidelines can be extremely lengthy with extensive supplements, *Global Implementation Guidelines* will aim to comprise 40 journal pages at most, and will include a final guideline that is short, practical, easily understandable and globally implementable. They will also be made available in the form of a dedicated decision-tree based app.

Organizational structure and guideline development

The iCARDIO Alliance contributes to the development of the *Global Implementation Guidelines* under the leadership of the Guideline Advisory Board (Figure 1). This partnership is administered by the TMA, which manages all organizational matters. The iCARDIO Alliance brings together experts in cardiovascular medicine and related fields, thus promoting a multidisciplinary approach. All members are committed voluntarily to helping the iCARDIO Alliance with its educational responsibilities.

The Guideline Advisory Board puts into place the Task Forces that develop the individual guideline topics. These Task Forces are led by two or three Chairs from different continents and four

to five Co-Chairs (altogether coming from at least four continents), who together form the Task Force's Executive Committee. Diversity is reflected across the Alliance, with the writing team (25 to 30 experts maximum) comprising no more than 50% of experts from Europe and North America, and including members from China, Latin America, Africa and India.

The Guideline Advisory Board selects the Chairs, Co-Chairs and Task Force Members, and each partner organization is invited to nominate a candidate for selected guideline author groups and one reviewer. The Board also appoints two or three Review Coordinators for each guideline document based on specific expertise in the field, proven integrity, and management and leadership skills. Review Coordinators establish the review panel and coordinate the review process with the support of TMA Staff. The names of the experts writing or reviewing the guideline are kept confidential from each other and from the outside world until publication.

Guideline development

The guideline documents are developed using a patient-centric framework (Figure 2). Their authors review existing international, national and regional guidelines, and summarize them with a global three-tier approach considering the accessibility, availability and affordability of local resources in their final recommendations. The recommendations account for resource availability on at least three economic levels and do not discuss recommendations for specific countries, as there may be great disparities in medical care within a country.

A survey is carried out for each topic before the publication, which aims to understand clinicians' ability to implement the specific recommendations and their perceptions of the applicability of the guideline in low- and middle-income countries. This is because the perception is that most globally intended guidelines are developed by academic medical societies and organizations based in the high-income countries by experts who practice in that same environment.[11] Thus, the products of this process are aimed at treating all patients with the best possible care no matter where they live in the world.

Disclosures of interest, funding and disclaimer

Conflicts of interest are a crucial issue in developing good, trustworthy guidelines. Trust in the endorsing Societies and the Authors is a must. Authors will be selected among reputed experts willing to serve and not trying to take personal credit or benefit. All persons involved in the writing and review processes provide an annual disclosure of interest form, published alongside the relevant guideline document. Funding for the development of the *Global Implementation Guidelines*, and all other activities of the iCARDIO Alliance, comes from the proceeds of educational or scientific initiatives organized by the TMA and covers the costs of the TMA Staff, the medical writer, the collaborative editorial platform and the electronic tools. No direct funding comes from industry. The Chairs, Co-chairs, Task Force Members, and Reviewers act as volunteers (receiving only reimbursement for travel expenses associated with the project, which are reimbursed by the TMA). They are not, therefore, compensated for their contributions.

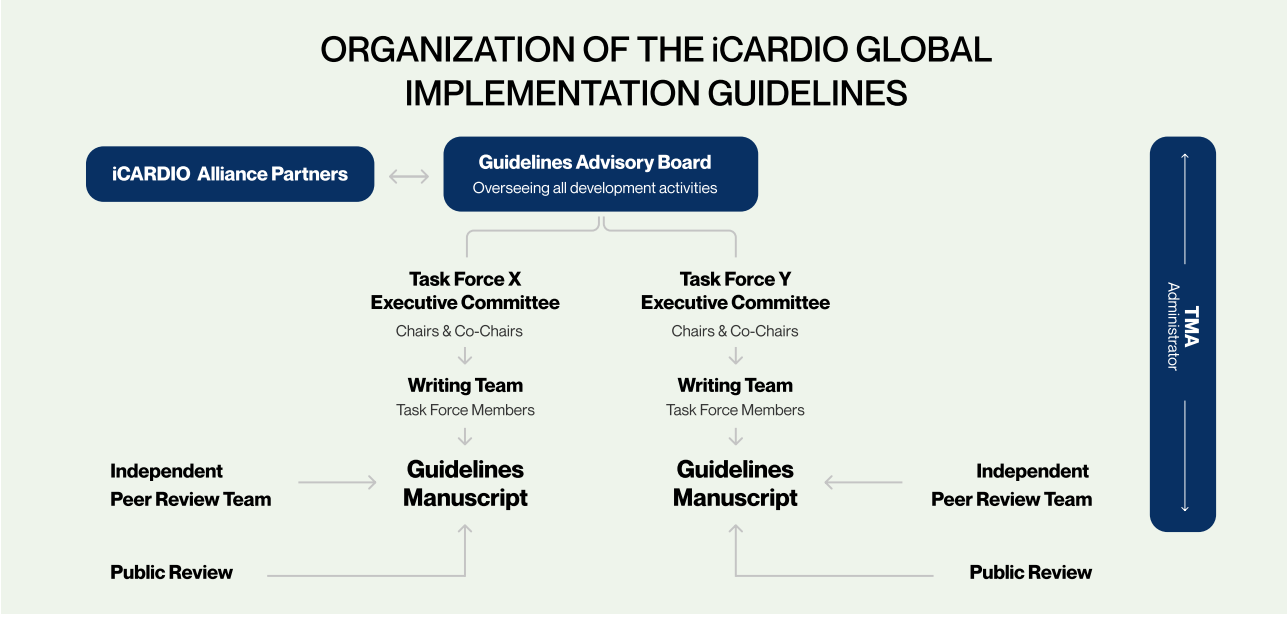

Figure 1. The iCARDIO Alliance organization chart for the *Global Implementation Guidelines*. GL, guideline; iCARDIO, International CARDio-Vascular Alliance to Improve Disease Outcomes; TF, Task Force; TMA, Translational Medicine Academy.

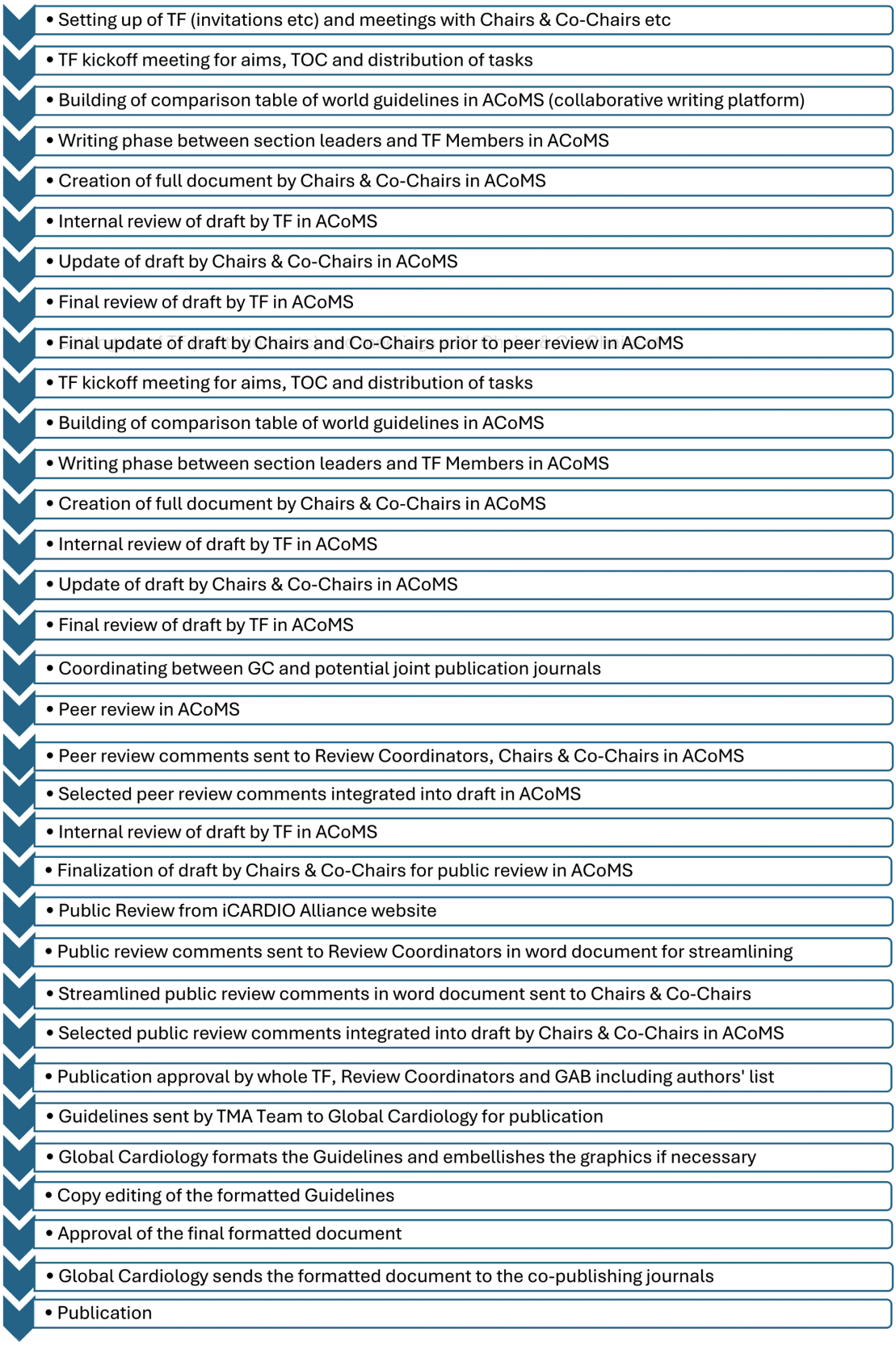

Figure 2. The iCARDIO Alliance development process for the *Global Implementation Guidelines*.

Guidelines are reference documents for health professionals and can be used as such for many years. The *Global Implementation Guidelines* provide a general guide to appropriate practice, which will be followed subject to the clinician's judgment and patient's preference in each case. The Guidelines are designed to provide information to assist decision-making and are based on the best available evidence at the time of development of their publication.

Summary

Guidelines are one of the primary tools for ensuring that healthcare professionals manage their patients according to the latest evidence-based, scientifically sound recommendations. Often the scenario of competing and or conflicting guidelines arises, and healthcare professionals are faced with trying to determine which guidelines to follow. In addition, questions of access and affordability of recommended therapies should be addressed in practice guidelines. The *Global Implementation Guidelines* Project will do this by gathering representatives of various guidelines, societies, and experts from around the world. This multidisciplinary team will review existing global, national, and regional cardiovascular guidelines, identify and analyze similarities, differences, and gaps, and consider or highlight significant inconsistencies between and among these guidelines. A cascade process will be developed to provide recommendations for the different economic scenarios, focusing on access and affordability. This will provide opportunities and recommendations to improve cardiovascular guidelines globally to create relevant, clinically helpful guideline documents that allow for all levels of resource availability to enhance patient care worldwide.

Conflict of interest

See the Appendix file.

References

1. Murad MH. Clinical practice guidelines: a primer on development and dissemination. Mayo Clin Proc 2017;92:423-33.
2. Guerra-Farfan E, Garcia-Sanchez Y, Jornet-Gibert M, et al. Clinical practice guidelines: The good, the bad, and the ugly. Injury 2023;54: S26-9.
3. Boriani G, Venturelli A, Imberti JF, et al. Comparative analysis of level of evidence and class of recommendation for 50 clinical practice guidelines released by the European Society of Cardiology from 2011 to 2022. Eur J Intern Med 2023;114:1-14.
4. Liang L, Bernhardsson S, Vernooij RW, et al. Use of theory to plan or evaluate guideline implementation among physicians: a scoping review. Implement Sci 2017;12:26.
5. Kastner M, Bhattacharyya O, Hayden L, et al. Guideline uptake is influenced by six implementability domains for creating and communicating guidelines: a realist review. J Clin Epidemiol 2015;68: 498-509.
6. Wang T, Tan JB, Liu XL, Zhao I. Barriers and enablers to implementing clinical practice guidelines in primary care: an overview of systematic reviews. BMJ Open 2023;13:e062158.
7. Greene SJ, Butler J, Albert NM, et al. Medical therapy for heart failure with reduced ejection fraction: the CHAMP-HF registry. J Am Coll Cardiol 2018;72:351-66.
8. Tromp J, Ouwerkerk W, Teng TK, et al. Global disparities in prescription of guideline-recommended drugs for heart failure with reduced ejection fraction. Eur Heart J 2022;43:2224-34.
9. Cader FA, Banerjee S, Gulati M. Sex differences in acute coronary syndromes: a global perspective. J Cardiovasc Dev Dis. 2022;9:239.
10. Prasad SB, Atherton JJ. Learning from our differences: insights from a global heart failure registry. Lancet Global Health 2024;12: E344-5.
11. Zieroth S, Saldarriaga Giraldo CI, Pinto F, et al. Applicability of heart failure clinical practice guidelines in low- and middle-income countries. Eur J Heart Fail 2025;27:435-41.