

CORRESPONDENCE

A Call for Standardization of Abbreviation Usage Among Cardiology and Cardiac Imaging Society Guidelines



To the Editor:

Language matters: a set of commonly accepted nomenclature is the cornerstone of safe and effective clinical communication. The fields of cardiology and echocardiography have seen an exponential growth of abbreviation use in recent decades, with great variation from study to study.^{1,2} Fred and Chong³ noted that the acronym “HEART” could represent at least 16 different cardiology-related clinical trials. Motivated to investigate the extent and degree of such variation, we embarked on a project that catalogued and characterized abbreviation use by major cardiology and cardiac imaging societies within the past few years. We hereby write to communicate preliminary findings.

We first identified seven national and international societies representing general cardiology and cardiac imaging (Table 1). We then retrieved each society’s clinical and scientific guidelines, published between 2018 and 2023. For each guideline, we extracted the list of abbreviations either by transferring the list already published or by manually compiling abbreviations found within the body of the guideline. For each unique abbreviation, we counted the number of “senses” (the number of different corresponding full phrases) and tallied which societies differed from one another in a matrix fashion. We finally applied linguistic coding⁴ to each abbreviation on the basis of the following categories: acronym (initial letters forming an abbreviation that is pronounced as a whole word, e.g., “SAM” [saml = “systolic anterior motion”), initialism (initial letters forming an abbreviation that is pronounced letter-by-letter, e.g., “GLS” [gee-ell-ess = “global longitudinal strain”), and other categories such as hybrid (e.g., “LVAD” [left-vadl = “left ventricular assist device”).

In total, we examined 114 guidelines from seven societies in the 6-year time span, totaling 5,394 entries (e.g., “CAD” = “coronary artery disease” as one entry), among which there were 1,782 unique strings (e.g., “CAD” as one unique string). Among the unique strings, 227 (12.7%) had more than one corresponding sense (e.g., “FVR” had a sense count of three: “paravalvular regurgitation,” “pulmonary valve replacement,” and “pulmonary vascular resistance”). Across the seven societies, the European Society of Cardiology (ESC) exhibited the

highest frequency in using abbreviations with divergent meanings (Table 1): 14.5% of all divergent abbreviations occurred among ESC guidelines, followed by 8.4% between the ESC and the American College of Cardiology guidelines and 8.2% between the ESC and the American Heart Association guidelines. With respect to abbreviation formation, the majority of the abbreviations were initialisms (69.1%), followed by acronyms (17.4%), then hybrids (10.5%), lexicalized abbreviations (2.7%), and truncations (0.3%).

Inconsistent terminologies pose challenges to current and future practices of medicine. Our project has shown that there is a high degree of variability in the creation, use, and coordination of abbreviations within and across the most influential cardiology and cardiac imaging societies. Furthermore, the burgeoning future of machine learning and big data in echocardiography also calls for better coordination and standardization.⁵ Our hope is to not only illustrate the linguistic basis of abbreviations but also pave the way for future work in unifying abbreviation use in guideline writing.

CONFLICTS OF INTEREST

None.

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Table 1 Incidence and percentage of abbreviations with divergent meanings across seven cardiology and cardiac imaging societies (internal vs external) from respective society guidelines published between 2018 and 2023

Professional societies	ACC	AHA	ASE	ASNC	ESC	SCCT	SCMR
ACC	17 (2.0%)	18 (2.1%)	34 (4.0%)	7 (0.8%)	72 (8.4%)	25 (2.9%)	25 (2.9%)
AHA		15 (1.7%)	34 (4.0%)	6 (0.7%)	70 (8.2%)	24 (2.8%)	25 (2.9%)
ASE			29 (3.4%)	9 (1.0%)	61 (7.1%)	34 (4.0%)	32 (3.7%)
ASNC				3 (0.3%)	16 (1.9%)	6 (0.9%)	7 (0.8%)
ESC					124 (14.5%)	56 (6.5%)	46 (5.4%)
SCCT						22 (2.6%)	23 (2.9%)
SCMR							14 (1.6%)

ACC, American College of Cardiology; AHA, American Heart Association; ASE, American Society of Echocardiography; ASNC, American Society of Nuclear Cardiology; ESC, European Society of Cardiology; SCCT, Society of Cardiovascular Computed Tomography; SCMR, Society for Cardiovascular Magnetic Resonance.

How To Report Improper Abbreviation Usage

Ensheng Dong



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