

Predictors of Delayed Accreditation of Echocardiography Laboratories: An Analysis of the Intersocietal Accreditation Commission Database

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Background: Intersocietal Accreditation Commission Echocardiography accreditation involves a broad-based evaluation of a given echocardiography facility's daily operation. An in-depth analysis of the most frequent noncompliant accreditation items provides learning opportunities for improvement of echocardiographic practice and facilities.

Methods: Data from 3,260 facilities applying for accreditation from 2011 to 2013 were analyzed to assess five key elements, each including multiple variables. The key elements included staff qualifications, imaging protocols, image quality, reporting, and documentation of quality improvement activities. Site characteristics for each facility were also analyzed.

Results: Sixty-two percent of facilities ($n = 2,020$) demonstrated deficiencies resulting in delayed accreditation. Deficiencies were less frequently observed at hospital-based facilities, facilities applying for reaccreditation, and facilities with credentialed sonographers. The most frequent deficiencies were related to reports (48%), followed by staff qualifications (46%), quality improvement (45%), image quality (44%), and protocols (43%). Both reports and image quality had the highest average numbers of deficiencies per facility, with 2.0 ± 1.0 and 1.83 ± 0.82 , respectively. The most common deficient variables were lack of documented continuing medical education (25%), incomplete protocols (36%), incomplete interrogation of aortic stenosis from multiple views (34%), incomplete reports (36%), and insufficient annual summary of quality improvement activities (45%).

Conclusions: Accreditation is delayed for a majority of facilities seeking Intersocietal Accreditation Commission Echocardiography accreditation because of major deficiencies or noncompliance. By focusing on staff continuing medical education, adoption and implementation of standard imaging protocols, ensuring acceptable image quality, using standards in reporting, and implementing quality improvement programs, echocardiography facility performance and quality as compared with the Intersocietal Accreditation Commission Echocardiography standards may be improved. (*J Am Soc Echocardiogr* 2015;28:1062-9.)

Keywords: Accreditation, Quality, Echocardiography

The Intersocietal Accreditation Commission (IAC) has been accrediting echocardiography facilities since 1996. The mission and motto of the IAC are "Improving Health Care Through Accreditation."¹ Accreditation is an important part of monitoring and improving quality patient care, as the Centers for Medicare and Medicaid

Services and private payers increasingly tie echocardiographic examination reimbursement to sonographer credentials and/or laboratory accreditation. Currently there are 5,354 adult transthoracic accredited facilities in the United States, Canada, and Puerto Rico.

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No funding was received related to this research. Drs Nagueh, Dunsiger, and Tilkemeier have no conflicts of interest. Ms Farrell and Ms Gorman are employees of the Intersocietal Accreditation Commission. Ms Bremer is on the Intersocietal

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Michael H. Picard, MD, FASE, served as guest editor for this report.

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0894-7317/\$36.00

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<http://dx.doi.org/10.1016/j.echo.2015.05.003>

Abbreviations
CME = Continuing medical education
IAC = Intersocietal Accreditation Commission
NBE = National Board of Echocardiography
TTE = Transthoracic echocardiographic

Via an online portal, the accreditation process requires facilities to submit electronic documentation of demographic data, sonographer and physician staff qualifications, imaging protocols, and quality improvement efforts. Also required is submission of self-selected case studies and corresponding reports demonstrating a facility's best work. Transthoracic cases must represent

as many staff members as possible (maximum, 12 cases) with 50% of cases demonstrating left ventricular wall motion abnormalities due to coronary artery disease or myocardial infarction and 50% of cases demonstrating aortic stenosis. The total number of medical and technical staff members determines the number of cases submitted.

Each facility is evaluated for compliance with the IAC standards and guidelines for echocardiography,² which define the minimal level of quality expected for facility operation in each of the areas noted above. Accreditation is either granted, indicating that no significant deficiencies are identified and the facility is compliant with the standards, or delayed because of significant deficiencies or noncompliance. Delayed facilities are subsequently granted accreditation when items of noncompliance are remedied. Although rare, accreditation may be denied to facilities that do not rectify items of noncompliance within 1 year of application submission or facilities with egregious deficiencies related to safety. Accreditation is granted for a 3-year term.³ At the conclusion of the 3-year term, the facility must apply for reaccreditation using the standards that are in force at the time of reaccreditation.

An in-depth analysis of the most frequent noncompliant or deficient accreditation items may provide learning opportunities for improvement of echocardiography facilities in general. Thus, we used the IAC Echocardiography accreditation database of facilities applying for IAC transthoracic echocardiographic (TTE) imaging accreditation to identify potential areas for improvement.

METHODS

This was a retrospective study evaluating compliance with the IAC Standards and Guidelines for Adult Echocardiography for 3,260 facilities applying for IAC accreditation in TTE imaging between January 1, 2011, and December 31, 2013. Five key elements that are examined as part of the usual facility assessment were extracted and evaluated. Each element included multiple variables as defined by the standards (Appendix 1). These include medical and technical staff qualifications, imaging protocols, image quality of submitted case studies, reporting for submitted case studies, and documentation of quality improvement (Table 1). Twenty-five variables within the five key elements were evaluated as separate deficiencies and tabulated.

Evaluation of site characteristics for each facility included cycle of accreditation application, geographic region of the United States where the facility is located,⁴ type of facility, annual volume of TTE studies, number of medical staff members, number of National Board of Echocardiography (NBE)-certified physicians, number of technical staff members (sonographers), number of credentialed sonographers, and TTE imaging accreditation decision.

Facility compliance with IAC Echocardiography standards was determined through application review and evaluation of a minimum

Table 1 Five key elements and variables	Protocols ²		Image quality ⁷		Reports ⁸		Quality improvement ¹	
	Medical director not qualified	Incomplete protocol	Incomplete study	Poor endocardial definition	Incomplete report	Incomplete demographics	Insufficient annual summary	
CME medical director	Insufficient time per study		Poor endocardial definition		Incomplete demographics			
CME medical staff			Apical images foreshortened		Internal report inconsistency			
Technical director not qualified			TR sought from only one view		Any typographical errors present			
CME technical director			Inaccurate Doppler LVOT measurement		Measurements not reported			
CME technical staff			Interrogation of AS incomplete		Report handwritten			
			Poor Doppler technique		Report discrepancy			
					Omission of positive findings			
					Sonographer preliminary reports			

AS, Aortic stenosis; LVOT, left ventricular outflow tract; TR, tricuspid regurgitation.

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