Facility perception of nuclear cardiology accreditation: Results of an Intersocietal Accreditation Commission (IAC) survey

Scott D. Jerome, DO, Mary B. Farrell, MS, Tapan Godiwala, MD, Gary V. Heller, MD, Louis I. Bezold, MD, John Y. Choi, MD, Kevin M. Cockroft, MD, MSc, Heather L. Gornik, MD, Sandra L. Katanick, CAE, and Warren J. Manning, MD

a University of Maryland School of Medicine, Baltimore, MD
b Intersocietal Accreditation Commission, Ellicott City, MD
c Department of Pediatrics, University of Kentucky, Lexington, KY
d Winchester Neurological Consultants, Inc, Winchester, VA
e Penn State Milton S. Hershey Medical Center, Hershey, PA
f Cardiovascular Medicine, Cleveland Clinic Foundation, Cleveland, OH
g Departments of Medicine (Cardiovascular Division) and Radiology, Beth Israel Deaconess Medical Center and Harvard Medical School, Boston, MA

Received Jul 28, 2014; accepted Sep 23, 2014; accepted Sep 24, 2014

doi:10.1007/s12350-014-0011-5

Background. The Medicare Improvements for Patients and Providers Act requires accreditation for all non-hospital suppliers of nuclear cardiology, nuclear medicine, and positron emission tomography (PET) studies as a condition of reimbursement. The perceptions of these facilities regarding the value and impact of the accreditation process are unknown. We conducted an electronic survey to assess the value of nuclear cardiology accreditation.

Methods. A request to participate in an electronic survey was sent to the medical and technical directors (n = 5,721) of all facilities who had received Intersocietal Accreditation Commission (IAC) Nuclear/PET accreditation. Demographic information, as well as, opinions on the value of accreditation as it relates to 16 quality metrics was obtained.

Results. There were 664 (11.6%) respondents familiar with the accreditation process of which 26% were hospital-based and 74% were nonhospital-based. Of the quality metrics examined, the process was perceived as leading to improvements by a majority of all respondents for 10 (59%) metrics including report standardization, report completeness, guideline adherence, deficiency identification, report timeliness, staff knowledge, facility distinction, deficiency correction, acquisition standardization, and image quality. Overall, the global perceived improvement was greater for hospital-based facilities (63% vs 57%; P < .001). Ninety-five percent of respondents felt that accreditation was important. Hospital-based facilities were more likely to feel that accreditation demonstrates a commitment to quality (43% vs 33%, P = .029), while nonhospital-based facilities were more likely to feel accreditation is important for reimbursement (50% vs 29%, P ≤ .001).

See related editorial, doi:10.1007/s12350-014-0021-3
**INTRODUCTION**

The Intersocietal Accreditation Commission (IAC) has been accrediting nuclear cardiology, nuclear medicine, and positron emission tomography (PET) facilities since 1997. Currently, there are approximately 3,734 accredited sites in the United States. The goal of the IAC accreditation program is to ensure quality patient care through a mechanism of peer review and to improve health care through accreditation.

The IAC accreditation process is a rigorous evaluation of a facility’s daily operations. Quality of care is assessed by determining facility adherence to the guidelines published by the professional societies (e.g., American Society of Nuclear Cardiology and Society of Nuclear Medicine and Molecular Imaging) and the *Intersocietal Accreditation Commission Standards and Guidelines for Nuclear/PET Accreditation*. Following review of submitted staff qualifications, imaging protocols, radiation safety policies, case studies with interpretation reports, and quality improvement activities, the IAC grants accreditation for up to three years when a facility demonstrates compliance with the standards.

Over the past few years, nuclear cardiology imaging facilities have come under increasing pressure to attain third party accreditation as a condition of service for reimbursement. Facility accreditation became more important with the passing of The Medicare Improvements for Patients and Providers Act (MIPPA) of 2008. This federal law requires all non-hospital suppliers providing the technical component of advanced diagnostic imaging (nuclear cardiology, nuclear medicine, PET, computed tomography (CT), and magnetic resonance imaging (MR)) to be accredited by January 1, 2012 to obtain reimbursement from the Centers for Medicaid and Medicare Services (CMS). As of January 2014, there are four CMS-designated accreditation organizations, which include the American College of Radiology (ACR), The Joint Commission, RadSite, and the IAC.

The IAC accounts for approximately 44% of accredited nuclear and PET sites in the United States while the ACR accredits 55% of sites. The Joint Commission and RadSite combined specifically accredit less than 1% of nuclear and PET facilities. The IAC, ACR, and RadSite have similar accreditation requirements based on published imaging standards, while the Joint Commission focuses on whole facility accreditation.

Regardless of the accreditation organization, the process is time-consuming to complete and there is an application fee. How nuclear cardiology facilities perceive the value and impact of accreditation on quality is unknown. The goal of this study was to: (1) ascertain the impact of the accreditation process related to quality metrics; (2) investigate differential opinions between practice types; and (3) assess the importance and motivation behind obtaining accreditation.

This survey was designed and administered by three IAC senior staff along with six members of the IAC research committee, all of whom are authors on this manuscript. The survey was part of the IAC effort to obtain information regarding all IAC-accredited laboratories also including CT, MR, vascular imaging, and echocardiography. The overall response rate for all modalities was 7%. The majority of respondents were from echocardiography facilities (36%), followed by vascular imaging facilities (30%) and then nuclear cardiology facilities (23%). Both CT and MR respondents comprised a small percentage (6% and 5%, respectively).

**METHODS**

An electronic SurveyMonkey questionnaire was sent to email contacts (medical directors, technical directors, and administrators) of all current or previously accredited IAC nuclear/PET facilities. A total of 5,721 emails were sent in September 2012. One week after the initial email, a follow-up email request was sent to 4,328 contacts that did not open the first email. The survey design included four categories of questions: screening information about the respondents, demographic data, quality metrics, and importance of accreditation.

The first two questions of the survey were used to screen respondents unfamiliar with or uninvolved in the IAC accreditation process. The first question asked the respondent to rank on a scale of 1-5, their familiarity with the IAC accreditation process (1—not at all familiar, 2—not very familiar, 3—neutral, 4—somewhat familiar, and 5—very familiar). Respondents who were not at all familiar or not very familiar were eliminated from the data analysis. The second question queried respondents on the level of involvement in the accreditation process (1—primarily responsible, 2—involved in the process
but did not have primary responsibility, and 3—not involved). Respondent who were not involved in the process were also eliminated from the data analysis.

Four basic demographic questions included respondent type (physician, technologist, administrator or other), facility type (hospital-based, private practice, multi-specialty clinic, free-standing imaging center, or mobile service only), and United States Census defined region (Northeast, Midwest, South, or West). Respondents were then asked to indicate to what extent they agreed or disagreed by ranking 16 statements on a scale of 1—5 related to the impact of the accreditation process on their facility. For each statement, response options included strongly disagree, disagree, neutral, agree, strongly agree, or not applicable.

Respondents were also asked to rank the importance to their facility of maintaining accreditation (not important at all, not very important, neutral, somewhat important, or very important). They then had the opportunity to explain the rationale for this choice in free-text form. These free-text comments were categorized into reimbursement, demonstration of quality, marketing purposes, and “other.”

**Statistical Analysis**

All data are expressed as number of respondents and/or as percent of all respondents. The responses to statements regarding the impact of accreditation were combined into three groups: agree (strongly agree and agree combined), neutral, and disagree (strongly disagree and disagree). “Not applicable” responses were excluded in the analysis. For site comparison data, private practice, multi-specialty clinic, free-standing imaging center, and mobile service were combined as “non-hospital” and compared to hospital facilities. Comparison of groups was performed using a Chi-square with Yates’ correction. A P value of <.05 was considered significant.

**RESULTS**

There were 683 unique respondents (11.9%), including 664 who were familiar with and involved in the accreditation process. Data from only these 664 respondents (97.3% of respondents) were included in the subsequent analysis.

**Demographic Data**

Survey respondents were primarily technologists (83.0%) and the majority of the facilities were non-hospital based (74.0%). The South was the most represented group (39.2%) with the West the least represented (11.1%) (Table 1).

**Quality Metrics**

Respondents rated 16 statements regarding the impact of accreditation on their facility. These 16 statements were categorized into four groups: reporting (n = 3), image and technical quality (n = 7), facility marketing (n = 2), and study performance (n = 4).

Combining the responses to all 16 statements, 59% of responses agreed that the accreditation process led to improvements at the facility while 19% disagreed and 22% were neutral (P < .001). However, there were differences in the perception of improvement between the four categories: the impact of reporting (78%) and image and technical quality (63%) demonstrated a positive perceived impact for a majority of respondents, while marketing (48%) and facility performance (43%) did not.

**Reporting.** Three quality statements were evaluated in the reporting category (Figure 1). A majority of respondents agreed that the accreditation process led to improved report standardization (84%), report completeness (81%), and final report timeliness (69%).

**Image and technical quality.** A majority of respondents agreed that six out of seven (86%) of the image and technical categories were improved by the accreditation process (Figure 2). These included adherence to published guidelines (77%), standardization of study acquisition (75%), identification of facility deficiencies (69%), staff knowledge of imaging procedures (65%), correction of facility imaging deficiencies (62%), and image and technical quality (58%). There was no agreement that accreditation led to fewer suboptimal studies (38%).

**Marketing.** Nearly two-thirds (63%) of respondents agreed that IAC accreditation distinguished the

**Table 1. Survey respondent demographic data**

<table>
<thead>
<tr>
<th>Respondent type (%)</th>
<th>Facility type (%)</th>
<th>Geographic region (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>83.0% Technologist</td>
<td>57.2% Private practice</td>
<td>Northeast 25.8%</td>
</tr>
<tr>
<td>10.4% Physician</td>
<td>26.1% Hospital based</td>
<td>Midwest 23.6%</td>
</tr>
<tr>
<td>5.4% Administrator</td>
<td>9.8% Multi-specialty clinic</td>
<td>South 39.2%</td>
</tr>
<tr>
<td>1.2% Other</td>
<td>5.9% Free-standing imaging center</td>
<td>West 11.1%</td>
</tr>
<tr>
<td></td>
<td>Mobile service only</td>
<td>1.1%</td>
</tr>
</tbody>
</table>
facility as a quality provider and/or helped with marketing of imaging services. Conversely, only 34% of respondents agreed that patient satisfaction was enhanced by obtaining accreditation (Figure 3).

**Facility performance.** No facility performance accreditation metric was perceived as leading to improvement by a majority of respondents. For the four performance statements, agreement was for improved patient safety (45%), improved facility efficiency (44%), decreased inappropriate studies (43%), and improved radiation dose optimization (42%). Approximately one quarter of respondents indicated that these performance metrics were not improved by the accreditation process (Figure 4).
Importance of Accreditation

The vast majority of respondents (95%) felt that accreditation was important, including 546 (82%) who indicated that maintaining accreditation was “very important” to their facility and 83 (13%) who felt it was “important.” Forty-four percent of respondents felt that maintaining accreditation was important for reimbursement, while 35% felt accreditation was important because it demonstrated a commitment to quality.

Comparison by Facility Type (Hospital vs Non-hospital)

Private practice, multi-specialty clinic, free-standing imaging center, and mobile service were combined into the non-hospital group (74%) and compared to hospitals.

Combining the responses to all 16 statements, the perceived impact of the IAC accreditation process was more positively viewed by hospitals vs non-hospital facilities (63% vs 57%; \( P < .001 \)) (Table 2).

When comparing the two groups, there were significant differences in only 3 of the 16 metrics studied. Hospital respondents were more likely to agree that the accreditation process improved patient safety (55% vs 42%, \( P = .004 \)), increased staff knowledge of imaging procedures (71% vs 62%, \( P = .047 \)), and enhanced patient satisfaction (41% vs 32%, \( P = .044 \)).

While hospital and non-hospital respondents equally felt that accreditation was either very important...
or important (95% for both), there were significant differences in the reasons why accreditation was viewed to be important between the two facility types. Hospital-based facilities were more likely to believe accreditation was important because it demonstrated a commitment to quality (43% vs 33%, $P = .029$). Hospital-based respondents were less likely to feel that accreditation was important for reimbursement purposes (29% vs 50%, $P < .001$). A significantly greater percentage of hospital-based respondents saw value in maintaining accreditation for marketing purposes when compared to non-hospital respondents (18% vs 10%, $P = .019$).

### DISCUSSION

In an era of rising public concern regarding healthcare costs in the United States, advanced imaging providers, including nuclear cardiology facilities, have faced increased scrutiny by CMS and private insurers. These payers have focused on limiting unnecessary imaging while also seeking increased quality of patient care. To achieve these goals, these entities have emphasized accreditation as a means to promote quality health care. This survey was conducted to determine the perceived value of the accreditation process from the laboratory’s perspective. This is the first survey to address applicant views of the value of IAC accreditation. As the IAC is one of the leading accreditation organizations in the United States, this provides a unique opportunity to study what those involved in accreditation of their facilities felt about the process and its potential for improving their laboratories.

Sixteen total quality metrics, which directly addressed the value of accreditation, were evaluated in this survey. Survey respondents had a higher percentage of positive responses compared to neutral or negative responses for the majority of these statements indicating that in general respondents found the accreditation process to be valuable.

Most notably, respondents felt that accreditation improved report standardization and completeness while to a lesser extent, timeliness of reporting. This is gratifying as the IAC places considerable emphasis on accurate reporting. Reporting deficiencies are the primary reason that a delayed accreditation decision is rendered. A 2011 study published by Tilkemeier et al, evaluated compliance with 18 required reporting elements from the standards. They found that 57% of
facilities applying for accreditation generated non-compliant reports. In addition, their study demonstrated that as facilities undergo subsequent reaccreditations, report compliance significantly increases.

The survey results also demonstrated perceived improvement in adherence to published guidelines and the identification of imaging deficiencies. Again, this result was appreciated, as the IAC nuclear/PET accreditation’s standards states that imaging procedures must comply with accepted practices as published in professional society guidelines. Thus, the accreditation process may have required changes in laboratory procedure, which by the survey results suggest those involved felt this improved their site.

Of importance, a majority of respondents did not agree that some of the facility performance metrics were improved by the accreditation process. There are identifiable reasons specific to each of these metrics.

For instance, regarding radiation dose optimization, facilities are required to comply with professional society guidelines, which include prescribed radiation dose. A recent study by the IAC demonstrated most facilities comply with dosing guidelines. A close correlation between the doses prescribed by the ASNC Imaging Guidelines and those used in clinical practice for myocardial perfusion imaging was observed, with doses being slightly lower (mean $-0.9 \pm -2.09, P < .0001$). This may explain why facilities do not perceive a significant improvement in radiation dose optimization due to the accreditation process. The IAC strongly recommends that imaging protocols use the lowest radiation dose necessary to acquire diagnostic-quality images, and requires doses that do not exceed the ranges prescribed in guidelines.

As the task of applying and maintaining accreditation is often delegated to technologists; therefore, it is not surprising that the majority of survey respondents were technologists, as opposed to physicians or administrators. This may explain some of the negative results of this survey. Technologists may not believe that the quality of their studies and their own performance could be improved by the accreditation process.

Ninety-five percent of respondents felt that maintaining accreditation was very important (82%) or somewhat important (13%). Of those respondents, 44% felt that maintaining accreditation was important for reimbursement purposes. From 2010 to 2011, the IAC saw a 37% increase in the number of accredited facilities that it attributes to facilities seeking accreditation to meet the MIPPA requirements for reimbursement. However, what is gratifying is that 35% found that it improved quality along with reimbursement.

The IAC accreditation process was more positively viewed by hospitals when compared non-hospital facilities. There are multiple possible explanations for this difference. MIPPA mandates non-hospital facilities to attain accreditation, therefore those respondents may not be as positively inclined toward IAC accreditation as hospital respondents for whom accreditation is not required as a condition of reimbursement. When evaluating reasons for maintaining accreditation, non-hospital respondents were, expectedly, more likely to maintain accreditation for reimbursement, whereas hospital respondents chose to maintain accreditation for quality purposes. Despite these differences, an overwhelming majority of respondents felt that maintaining IAC accreditation was important.

**LIMITATIONS**

Our study had several limitations. First, the response rate to our survey was only 11%, though similar to other electronic survey responses that did not provide financial incentives. The response rate may have biased results in favor of accreditation, as those who are positively inclined toward accreditation may have been more likely to respond. There may also have been a bias as more respondents were from non-hospital facilities where accreditation is required for reimbursement. The majority of respondents were not physicians. Thus, the perception of physicians regarding accreditation may be under-represented. Finally, the results of this study may not be generalizable to facilities accredited by other organizations as the accreditation process and requirements vary significantly among accreditation organizations.

**NEW KNOWLEDGE GAINED**

The accreditation process assesses many aspects of a facility’s daily operations against published standards and professional guidelines, but the accreditation process is also time-consuming and has a finite cost (e.g., fees, time for application preparation). The perception of nuclear cardiology facilities regarding the value and impact of accreditation on laboratory quality is unknown and was the focus of our prospective electronic survey study.

**CONCLUSION**

The accreditation process has become an integral part of maintaining a successful nuclear cardiology facility. While the process is time-consuming and involves financial resources, this survey indicates that the process is perceived positively. Respondents agreed that the IAC accreditation process improved many metrics of patient care and laboratory/facility quality,
especially reporting metrics and image and technical quality metrics. The primary motivational factors behind seeking accreditation include reimbursement and demonstration of quality. There was a greater perception of a positive impact of the accreditation process for hospital-based facilities as compared to non-hospital. Overall, these survey results show that facilities find value in the IAC accreditation process.

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