How Do Noninvasive Imaging Facilities Perceive the Accreditation Process? Results of an Intersocietal Accreditation Commission Survey

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ABSTRACT

The Intersocietal Accreditation Commission (IAC) accredits vascular, echocardiography, nuclear medicine, computed tomography, and magnetic resonance imaging laboratories. How facilities involved in the accreditation process view accreditation is unknown. The objective of this study was to examine the perception of laboratory accreditation from those who had undergone the process. An electronic survey request was sent to all facilities that had received IAC accreditation at least once. Demographic information, as well as opinions on the perceived value of accreditation as it relates to 15 quality metrics was acquired. Responses were obtained from 2782 facilities. Of the 15 quality metrics examined, the process was perceived as leading to improvements by a majority of respondents for 10 (67%) metrics including: report standardization, adherence to guidelines, test standardization, report completeness, identification of deficiencies, improved staff knowledge, report timeliness, distinguished facility, correction of deficiencies, and image quality. Overall, the perceived improvement was greater for hospital-based facilities (global 66% vs 59%; $P < 0.001$). Survey data demonstrate that the accreditation process has a positive perceived impact on the majority of examined metrics. These findings suggest that those undergoing the process find value in accreditation.

Introduction

With increasing frequency, facility or procedure accreditation by a recognized independent organization is required for payment from insurance companies or the Centers

for Medicare and Medicaid Services (CMS). As of January 1, 2012, the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA) required accreditation of all nonhospital suppliers of the technical component of advanced diagnostic imaging, including nuclear medicine/positron emission tomography (PET), magnetic resonance imaging (MRI), and computed tomography (CT) as a condition for CMS reimbursement.¹ Four organizations have been approved by CMS for accrediting appropriate laboratories: the American College of Radiology, The Joint Commission, RadSite, and the Intersocietal Accreditation Commission (IAC).

The IAC (Ellicott City, MD) has been accrediting diagnostic imaging facilities since 1990.² Its accreditation programs include vascular testing (since 1990), echocardiography (since 1996), nuclear medicine/PET (nuclear/PET since 1997), MRI (since 2000), and CT imaging (since 2007). Currently there are 13 479 IAC-accredited facilities in the

This survey was designed and administered by 3 Intersocietal Accreditation Commission (IAC) senior staff along with 6 members of the IAC Research Committee, all of whom are authors on this article. The survey was part of the IAC effort to obtain information regarding all IAC-accredited laboratories including computed tomography, magnetic resonance imaging, vascular imaging, and echocardiography.

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United States and Canada, making the IAC one of the largest accrediting bodies in the United States.

The IAC accreditation process assesses many aspects of a facility's daily operations that impact quality of care. Applicant facilities submit documentation of technical and professional staff qualifications, imaging protocols, quality control, policies and procedures, quality improvement activities, and case studies for review. After submission, each facility is evaluated by the specific accreditation standards defined by their respective IAC division. These standards are based on the published guidelines from independent professional societies, and they represent the minimum level of quality expected for the operation of the facility.³

Regardless of the accrediting body (IAC, American College of Radiology, The Joint Commission, RadSite), the accreditation process is time-consuming and has a finite cost (eg, fees, time for application preparation) to an individual facility. The perception of these accredited facilities regarding the value and ultimately the impact of the accreditation process is unknown. We sought to examine the perception of IAC accreditation from the perspective of the facility through an electronic survey process.

Methods

An Internet survey (SurveyMonkey; SurveyMonkey, LLC, Palo Alto, CA) was constructed to assess key descriptors of laboratory quality and the impact of the accreditation process (Table 1). An electronic mail (email) invitation to participate was sent to the email contacts of medical directors (usually physicians), technical directors (usually technologists/sonographers), and administrators of all current or previously accredited IAC facilities. A total of 25 598 emails were sent in September 2012. One week later, a follow-up email request was sent to 19 841 contacts who did not open the first email.

The survey design included 4 categories of questions (Table 1): (1) respondent (designed to identify knowledgeable respondents and to eliminate respondents unfamiliar with the IAC accreditation) and facility demographics, (2) quality metrics, (3) importance of accreditation to the facility, and (4) suggestions for accreditation improvement.

To evaluate the quality metrics, respondents were asked to rate 15 statements regarding the impact of the accreditation process on their facility by indicating the degree to which they "strongly agreed," "agreed," "neutral," "disagreed," "strongly disagreed," or "not applicable." Responses were combined into 3 groups: agree (strongly agreed and agreed), neutral, and disagree (strongly disagreed and disagreed). Individual not applicable or absent responses were not included in the analysis. Individual statements were categorized by reporting, image quality, facility marketing, and performance metrics (Table 1).

Respondents were also asked to rank the importance of maintaining accreditation to their facility (not important at all, not very important, neutral, somewhat important, or very important) and to explain why accreditation is not/is important to them (free text). These explanations were later categorized into 4 common themes: reimbursement, demonstration of quality, marketing, or other.

Table 1. Survey Questions and Response Options

Question	Response
Screening questions	
How familiar are you with the IAC accreditation process?	1. Not at all familiar
	2. Not very familiar
	3. Neutral
	4. Somewhat familiar
	5. Very familiar
How were you involved in the IAC accreditation process?	1. Primarily responsible for the process
	2. Involved in the process but did not have primary responsibility
	3. Not involved in the process
Demographic questions	
Are you a _____?	Physician
	Technologist/sonographer
	Administrator
	Other
What best describes your type of facility?	Hospital based
	Private practice
	Multispecialty clinic
	Free-standing imaging center
	Mobile service only
In which region is your facility located?	Northeast
	Midwest
	South
	West
	Puerto Rico
	Canada
Current IAC accreditation	Vascular testing
	Echocardiography
	Nuclear/PET
	MRI
	CT
Quality metrics	
Please indicate the degree to which you agree or disagree with each statement.	1. Strongly agree
	2. Agree

Table 1. Continued

Question	Response
	3. Neutral
	4. Disagree
	5. Strongly disagree
	Not applicable
Reporting	
1. Improved standardization of study reporting	
2. Improved report completeness	
3. Improved final report timeliness	
Image quality	
1. Increased adherence to published guidelines	
2. Increased staff knowledge of imaging procedures	
3. Improved standardization of study acquisition	
4. Improved image quality	
5. Decreased the percentage of suboptimal studies	
6. Helped identify facility/laboratory imaging deficiencies	
7. Aided in correction of facility/laboratory imaging deficiencies	
Facility marketing	
1. Enhanced patient satisfaction	
2. Distinguished facility/laboratory as a quality provider in your geographic region and/or helped with marketing your imaging services	
Facility performance	
1. Decreased inappropriate studies (utilization of appropriate use criteria, if available)	
2. Improved patient safety	
3. Improved facility/laboratory efficiency	
Importance of accreditation	
How important is maintaining accreditation to your facility?	1. Not important at all
	2. Not very important
	3. Neutral
	4. Somewhat important
	5. Very important
Why?	Free text
Accreditation improvement	
Are there other ways in which accreditation could improve the way your facility/laboratory operates?	Free text

Abbreviations: CT, computed tomography; IAC, Intersocietal Accreditation Commission; MRI, magnetic resonance imaging; PET, positron emission tomography.

Statistical Evaluation

All data are expressed as the number of respondents and as the percent of all respondents for an individual query. For comparisons of respondent type, technologist/sonographer, administrator, and other were combined as “nonphysician.” For facility comparison data, private practice, multispecialty clinic, freestanding imaging center, and mobile service were combined as “nonhospital.” Facilities located in Canada and Puerto Rico were excluded from the comparison by region. For comparison of mandatory accreditation (MIPPA) vs voluntary accreditation (non-MIPPA), the results from nuclear/PET, MRI, and CT were combined for MIPPA, whereas echocardiographic and vascular laboratory respondents were combined for non-MIPPA. Comparison of groups was performed using a χ^2 with Yates’ correction. A *P* value of ≤ 0.05 was considered significant.

Results

Of 25 598 emails sent in September 2012, there were 1858 (7%) unique respondents, including 1579 (85%) who were familiar with and involved in the IAC accreditation process. Data from these respondents were used for the subsequent analysis

Demographics

The majority of respondents were technologists/sonographers (1263 [80%]), with a smaller number of physician respondents (189 [12%]). Facility type included 700 (44%) private practice sites and 657 (42%) hospital-based facilities, with the remainder multispecialty clinics, freestanding imaging centers, and mobile services. The vast majority (98%) of respondents were from the United States and included 562 (36%) respondents from the South and 397 (25%) from the Midwest (Figure 1). Laboratory modality demographics were similar in distribution to the absolute number of accredited laboratories by modalities, with a predominance of echocardiography (36%), vascular (30%), and nuclear/PET (23%) facilities.

Quality Metrics

Respondents rated 15 statements regarding the impact of accreditation on their facility. These 15 statements were combined into 4 groups (Table 1): reporting (*n* = 3), image quality (*n* = 7), facility marketing (*n* = 2), and study performance (*n* = 3). The overall and individual group summaries are illustrated in Figure 2.

Overall, a majority (62%) of respondents indicated that the accreditation process led to improvements at their facility, whereas 21% were neutral and 17% disagreed. However, there were differences in the perception of improvement among the 4 categories, with the impact of accreditation on study reporting demonstrating the most frequent (76%) positive perceived impact, and facility performance demonstrating the least frequent (45%) perceived positive impact (Figure 2).

Reporting: Three quality statements were evaluated in the reporting category. For all 3 statements, a majority of respondents agreed that the accreditation process led to improvements. This included improved study report

Figure 1. Survey respondent facility geographic region based on US Census classification.

Figure 2. Perception of facility improvement. Respondent perception of impact of accreditation on quality statements from 4 categories (reporting, image quality, facility marketing, and study performance) as well as overall facility improvement.

standardization (82%), improved report completeness (78%), and to a lesser extent improved final report timeliness (67%).

Image Quality: There were 7 image-quality survey questions. A majority of respondents indicated accreditation led to improvements in 6 of 7 image-quality statements. These included increased adherence to published guidelines (80%), improved standardization of study acquisition (79%), helped identify facility deficiencies (70%), increased staff knowledge of imaging procedures (69%), aided in correction of facility imaging deficiency (64%), and improved image quality (62%). A minority of respondents felt the accreditation process led to a reduction of suboptimal studies (42%).

Marketing: Two questions were asked regarding facility marketing. The majority of respondents felt the accreditation process did not impact patient satisfaction (agree 36%), but 65% felt that accreditation distinguished their facility as a quality provider in their geographic region and/or helped with their marketing of imaging services.

Study Performance: Three quality statements addressed the study performance category. With regard to affecting appropriate referral of studies, the majority of respondents

felt accreditation did not lead to fewer inappropriate studies. Only 50% perceived that accreditation improved patient safety, and a minority felt there was improved facility efficiency.

Comparison by Facility Type, Geographic Region, Respondent Type, and Mandatory Accreditation Requirements

Facility Type: The responses of the participants were categorized by whether the facility was hospital or non-hospital based (Table 2). Although both hospital- and office-based respondents agreed that the impact of accreditation was positive, a greater percentage of hospital respondents agreed that the process led to improvements including adherence to guidelines ($P = 0.004$), standardization of study acquisition ($P < 0.001$), report completeness ($P = 0.024$), identification of laboratory deficiencies ($P < 0.001$), increased staff knowledge ($P < 0.001$), correction of deficiencies ($P = 0.002$), facility distinction ($P = 0.029$), image quality ($P < 0.001$), patient safety ($P < 0.001$), and enhanced patient satisfaction ($P < 0.05$). Overall, the perceived improvement was significantly higher for hospital-based facilities ($P < 0.001$).

Geographic Region: Comparison by region of the United States (Northeast, Midwest, South, and West) demonstrated similar overall favorable views of accreditation with the Midwest highest (64.2%), followed by the South (61.9%), Northeast (60.9%), and West (60.7%).

Respondent Type: Respondents were classified as physician or nonphysician, and comparisons were made for the 15 quality metrics. Although a majority of both groups viewed the value of accreditation favorably, the overall physicians favorable perception for every metric was less than nonphysicians (overall 53% vs 63%, $P < 0.0001$).

Mandatory Accreditation Requirement: Mandatory/MIPPA (MRI, CT, nuclear/PET) and nonmandatory/non-MIPPA (echocardiography, vascular) imaging data are presented in Table 3. A significant difference in response between these modalities was noted for 7 metrics, with the reported overall perceived improvement of accreditation slightly lower for the MIPPA accreditation-required group ($P < 0.001$). Individual question analysis demonstrated a slightly smaller percentage of MIPPA respondents agreed that the accreditation process led to improvements in laboratory adherence to guidelines ($P = 0.003$), improved standardization of study acquisition ($P < 0.001$), identification of lab deficiencies ($P = 0.012$), increased staff knowledge ($P < 0.001$), correction of deficiencies ($P = 0.008$), image quality ($P < 0.001$), and decreased number of suboptimal studies ($P < 0.05$).

Importance of Accreditation

Responders were queried as to whether they thought accreditation was of value. The vast majority of respondents felt that accreditation was important, including 1259 (80%) who indicated that maintaining accreditation was "very important" to their facility, and an additional 199 (12%) who felt it was "important." The reported reasons for maintaining accreditation were categorized into 4 common themes: (1)

Table 2. Hospital vs Nonhospital Percent Agree or Strongly Agree Regarding Improvement Impact of Accreditation Process

		Category	All	Hospital	Non-hospital	P Value
Reporting						
Report completeness	R		78%	81%	76%	0.024
Report timeliness	R		67%	69%	65%	0.099
Report standardization	R		82%	84%	81%	0.101
Image quality						
Staff knowledge	Q		69%	75%	65%	< 0.001
Image quality	Q		62%	68%	58%	< 0.001
Standardized acquisition	Q		79%	85%	75%	< 0.001
Identify lab deficiencies	Q		70%	75%	66%	< 0.001
Correction of deficiencies	Q		64%	69%	61%	0.002
Adherence to guidelines	Q		80%	84%	78%	0.004
Suboptimal studies	Q		42%	45%	40%	0.054
Marketing						
Facility distinction	M		65%	69%	63%	0.029
Patient satisfaction	M		36%	39%	34%	0.046
Facility performance						
Patient safety	P		50%	57%	45%	< 0.001
Inappropriate studies	P		39%	37%	41%	0.11
Lab efficiency	P		46%	48%	45%	0.263
Global			62%	66%	59%	< 0.001

Abbreviations: M, marketing; P, performance; Q, quality; R, report.

quality, (2) reimbursement, (3) marketing, and (4) other. A large minority (45%) of respondents stated that maintaining accreditation was important, because it demonstrated a commitment to quality, whereas 35% of respondents felt that it was important for reimbursement, and 15% felt it improved marketing of their facility to referring physicians and patients.

Discussion

The IAC was established, among other goals, to improve laboratory quality by establishing standards for accreditation set by professional societies. In this Internet/SurveyMonkey study of IAC accredited facilities, we found that overall, the accreditation process was perceived as positive, providing the first data regarding the impact of accreditation from the laboratory's perspective. The majority of assessed quality metrics were perceived as beneficial, including report standardization, adherence to guidelines, test standardization, report completeness, identification of deficiencies, improved staff knowledge, report timeliness, correction of deficiencies, distinguished facility, and image quality.

Table 3. MIPPA vs Non-MIPPA Percent Agree or Strongly Agree Regarding Improvement Impact of Accreditation Process

		Category	All	MIPPA	Non-MIPPA	P Value
Reporting						
Report completeness	R		78%	82%	81%	0.38
Report timeliness	R		67%	66%	70%	0.094
Report standardization	R		82%	81%	84%	0.122
Image quality						
Image quality	Q		62%	57%	66%	< 0.001
Staff knowledge	Q		69%	64%	72%	< 0.001
Standardized acquisition	Q		79%	73%	82%	< 0.001
Correction of deficiencies	Q		64%	61%	67%	0.008
Identify lab deficiencies	P		70%	67%	73%	0.012
Adherence to guidelines	Q		80%	77%	82%	0.003
Decrease suboptimal studies	Q		42%	38%	43%	0.049
Marketing						
Facility distinction	M		65%	63%	68%	0.064
Enhanced patient satisfaction	M		36%	35%	37%	0.33
Facility performance						
Patient safety	P		50%	30%	34%	0.064
Lab efficiency	P		46%	44%	46%	0.363
Inappropriate studies	P		39%	42%	40%	0.616
Global				60%	64%	< 0.001

Abbreviations: M, marketing; MIPPA, Medicare Improvements for Patients and Providers Act of 2008; P, performance; Q, quality; R, report;

MIPPA includes nuclear/computed tomography, magnetic resonance imaging, and computed tomography. Non-MIPPA includes include vascular and echocardiography.

To our knowledge, there are no comparable data related to facility perception of the value of accreditation for diagnostic imaging services by other accrediting organizations. However, there are data demonstrating the attitude of healthcare professional toward accreditation that is generally supportive.⁴ An Australian study examined the usefulness of accreditation in assisting movement toward best practices, and found that a large majority of physicians agreed that the accreditation process had been of significant benefit to their organization.⁵ Two perceived benefits included improved communication and commitment to best practice—data similar to our results.

Imaging laboratory accreditation by the IAC, American College of Radiology, and The Joint Commission preceded insurance and CMS requirements, though a likely stimulus for accreditation was the 2012 MIPPA requirements for accreditation of all nonhospital suppliers of the technical

component of advanced diagnostic imaging, including nuclear medicine/PET, MRI, and CT as a condition for reimbursement. Our finding of greater perceived accreditation benefit for hospital-based facilities and slightly lower for MIPPA imaging sites may reflect a bias of those who voluntarily chose to achieve accreditation rather than sites who were dependent on accreditation for reimbursement.

Overall, issues related to reporting were the most consistent area of perceived value of accreditation. Timely, accurate, and comprehensive reporting of the test results is considered of primary importance, because the report communicates test results to the referring healthcare provider, allowing the provider to administer meaningful care. Each IAC division sets reporting standards, and the most common reason that sites do not gain IAC accreditation is for reporting deficiencies.^{6,7} As a result, we had expected to find a negative response to reporting, but instead found that reporting was the most important perceived value by the respondents.

The perception of impact of accreditation on image quality was another major aspect of the survey. The IAC views protocol standardization as a very important part of accreditation to improve image quality. Survey respondents were quite positive on the opinion that their laboratory procedures were improved with accreditation by adherence to national guidelines as well as standardization of protocols, and identifying and aiding in protocol deficiency correction. Of note, the responders did not find that the accreditation measures decreased the percentage of suboptimal studies or improve laboratory efficiency. This may be due to issues that are independent of protocol/scan standardization.

Accreditation was not viewed by a majority of respondents as having a positive impact on reducing the number of inappropriate studies or improving patient safety. Recently, national organizations have given considerable effort toward defining the appropriateness of imaging studies.^{8–10} At the time of this survey, the IAC accreditation process did not focus on this aspect of quality. Currently the IAC is gathering data on imaging appropriateness as part of the accreditation process.

It is not surprising that only a minority felt that laboratory efficiency was improved with accreditation, as the standards imposed may have required longer acquisition times than the laboratory was previously performing.

Of importance, the accreditation process was perceived more valuable for hospitals and for non-MIPPA respondents. This may have been because facilities that chose to pursue accreditation voluntarily had a different agenda than facilities that were required to receive accreditation for reimbursement. The latter may perceive accreditation as an additional burden, whereas the former may look to accreditation as a mechanism to standardize their laboratories at a national level of expertise. The value of accreditation was surprisingly similar across geographic regions.

Limitations

Our study has several limitations. Though we sampled >25 000 individuals involved in the accreditation process,

our data reflect the 7% who responded. Although a low percentage, our responses were similar to other electronic survey responses¹¹ that did not provide a financial incentive. Those who responded may have been more likely to perceive a positive impact of accreditation. The results are only applicable to IAC accreditation, because the accreditation process of other organizations (eg, American College of Radiology) varies both in testing content and in requirement. Due to the nature of the study, we were unable to distinguish perceived value based on a specific modality.

Conclusion

Survey data demonstrate that the IAC accreditation process has a positive perceived impact in the majority of examined metrics, with the largest impact on report standardization and adherence to standards, and the least impact on patient satisfaction and inappropriate referrals. A positive perceived impact was greater for hospital-based facilities and non-MIPPA imaging laboratories, and was similar across geographic regions. These results suggest that those undergoing the process find value in accreditation.

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