Demystifying Imaging Laboratory Accreditation

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It is self-evident that patients expect high quality of the services they receive. For this reason, procedural-based medical (therapeutic) services have long been subject to some form of quality assessment. In the same vein, it is also appropriate that similar expectations have recently come about for cardiovascular (CV) imaging (diagnostic) services. In this report, we provide the background of CV laboratory accreditation and explore what the future holds in assessing quality in CV imaging.

BACKGROUND AND THE FORMATION OF THE INTERSOCIETAL ACCREDITATION COMMISSION

The performance of high-quality CV imaging, like procedural-based work, requires professionals who: 1) are well trained; 2) have access to the right technologies; 3) use protocols that ensure the thoroughness of image data gathering; and 4) then synthesize and transform those data into clinically meaningful information that advances care. This is the so-called imaging chain. Unlike procedural-based work, however, clinical benefit or harm is less discernible with CV imaging. Precisely how do we measure the impact of false-positive stress test results? Or account for the cascade of events that arise from overestimating the degree of valvular regurgitation or carotid stenosis? In contrast to deploying a stent or implanting a pacemaker, how to analyze the direct clinical impact of CV imaging—its quality—has remained elusive.

This difficulty has long been recognized within the imaging community. Because determining clinical effectiveness has been problematic, attention instead has focused on evaluating the discrete individual elements of the CV imaging chain. Performance measures for each step are aggregated to serve as a proxy for overall quality. On the basis of the classic Donabedian model for quality assessment, 3 distinct domains within CV imaging lend themselves to such analysis: structure, process, and outcome. The principles of this approach are straightforward. To perform well in a reliable manner, a laboratory must have a basic underlying structure, in terms of its equipment, facility, and personnel resources. Next, there needs to be some common processes for applying the technical resources and reporting the clinical information. Last, results need to be monitored and compared with an external reference source to inform and improve the laboratory’s performance.

In 1990, leaders in the field of vascular imaging formed an organization to develop standards for vascular imaging along these lines. This organization became known as the Intersocietal Commission for the Accreditation of Vascular Laboratories (ICAVL). The group determined specific elements of laboratory structure, outlining expectations for the education and certification of medical and technical staff members. Essential equipment was defined. The group drafted imaging protocols encompassing necessary views and report elements. They required efforts to correlate a laboratory’s results with clinical information derived from other modalities. Sponsoring societies embraced this approach and encouraged vascular laboratories to submit applications for evaluation by ICAVL. Receipt of accreditation from ICAVL conferred upon a laboratory an acknowledgement of its quality by an external referee.

What was different about ICAVL, compared with licensing or certification agencies, was that the standards were developed and updated by imaging peers within the practicing community. Moreover, the process of submitting an accreditation application in and of itself was designed to be a quality improvement initiative for a laboratory. A structured approach to self-examination coupled with external validation and feedback provided a clear path toward
a laboratory’s improvement. Rather than receiving a pass/fail outcome, as one might expect when taking a board examination, laboratories that initially did not meet the bar were given very specific direction as to how they could improve. Laboratories that performed at an overall level that merited accreditation also received feedback as to how they could perform even better in the future.

This idea of accreditation as a peer-driven pathway to quality improvement began to take hold within other imaging disciplines. Echocardiography followed in 1996, and nuclear cardiology in 1997. Magnetic resonance and computed tomographic imaging followed after 2000 and 2007, respectively. Although each laboratory functioned as an independent business unit, all were based on the same principles: peers authoring standards, and peers evaluating a laboratory’s conformance with those standards. In 2008, to achieve economies of scale and streamline operations, these individual accrediting entities merged into 1 organization, the Intersocietal Accreditation Commission (IAC).

CURRENT STATE OF LABORATORY ACCREDITATION

As more practitioners seek accreditation for their CV imaging laboratories, payers have taken notice. In some areas of the United States, accreditation is no longer a badge of distinction marking a laboratory’s quality but instead a prerequisite for payment. The adoption of accreditation requirements by some local Medicare carriers and private payers has driven application volumes (Fig. 1) and sparked dialogue as to how stringent accreditation requirements should be. Congress officially weighed in on this issue by passing the Medicare Improvements for Patients and Providers Act of 2008. With this law, the Centers for Medicare and Medicaid Services were mandated to link reimbursement with accreditation for advanced imaging services offered outside of the hospital setting. Three accrediting organizations were recognized: the American College of Radiology, The Joint Commission, and IAC. With the passage of this legislation, accreditation morphed from an accolade that signified quality work to a necessary hurdle to overcome in order to practice.

So where does IAC stand today, and where is it headed? At present, across 5 imaging modalities and 2 therapeutic divisions, IAC has accredited 8,372 laboratories, conducting operations at a total of 13,239 sites. There are some 35 professional societies that serve as sponsoring organizations for the various accreditation divisions. IAC is itself accredited, having achieved certification by the International Organization for Standardization for quality management and information security management systems. Thus, as an organization that renders judgments on quality within imaging, IAC has practiced what it preaches by going through the rigorous process of internal analysis and external review.

Divisional boards of IAC meet at least twice annually, and the parent IAC board meets quarterly to develop and enact initiatives aimed not only to improve operations but also reduce the work of those who submit applications. Some examples are as follows: To simplify the accreditation process, IAC has adopted a common online application, so that data submitted for accreditation in one modality can be easily transferred to applications in other modalities. Further efforts to simplify an institution’s multimodality application are being developed. The ability to submit images online in a secure manner compliant with the Health Insurance Portability and Accountability Act is also being developed. Common quality improvement guidelines are being authored, so that improvement can be gauged in standard fashion within each modality. The incorporation of appropriate use criteria in laboratories’ operations has now become part of each modality’s standards. But perhaps the broadest effort of IAC over the past 2 years has been the creation of an internally funded research program, the mission of which is to demonstrate the value of accreditation on improving the quality of CV imaging. It is through a program of research that we hope to get beyond today’s baseline of expert consensus to a more informed and validated approach that links laboratory performance and

Figure 1. Intersocietal Accreditation Commission Application Receipt by Year and the Influence of Payment Policies
The practice of medicine in the United States is undergoing dramatic change, from a system whose economic underpinning has been based on the volume of services to one instead based on the value of those services rendered. Ongoing research will help us better understand the specific relationship of laboratory accreditation to the provision of quality and value of CV imaging. In the meantime, payers have not only begun to accept accreditation as a surrogate for quality but also to expect it as a condition for payment.

Recently, IAC held a forum in Washington, DC, inviting various stakeholders from the payer community, government, patient advocacy groups, practicing physicians, technical staff, and sponsoring societies to provide feedback as to how to strengthen accreditation and how to make it more meaningful. Before the open “listening” phase of the meeting, IAC communicated the following without equivocation: IAC is a certification agency, not a regulatory agency. IAC is not the imaging police. The divisional board members of each IAC modality are imaging experts tapped from the academic and private practice communities. They author standards that encompass their best efforts in capturing elements deemed both essential yet practical in providing high-quality CV imaging.

At the forum, stakeholders expressed that for some, IAC standards are too lax. For others, they are too rigid. For most, the accreditation process is too time-consuming and expensive. The IAC boards will process this feedback and work on action plans in response and to further the IAC mission: improving health care through accreditation.

In summary, laboratory accreditation in CV imaging is now well established for vascular, echocardiographic, nuclear, computed tomographic, and magnetic resonance imaging and is a recognized endorsement of the quality of imaging provided by a laboratory. Further research linking accreditation, outcomes, and value, along with ongoing feedback from stakeholders, will help continue to refine the process and meet the medical community’s needs.