ASNC ImageGuide™: Cardiovascular imaging data registry

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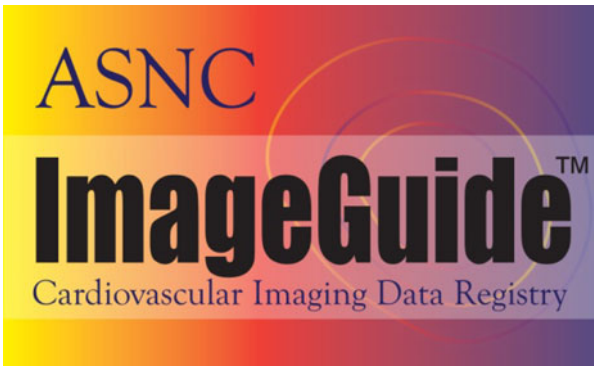

Many important milestones have been achieved in the field of nuclear cardiology starting with the initial clinical use of thallium 40 years ago. This was followed by the introduction of SPECT perfusion imaging and technetium-based radiopharmaceuticals. Another major event was the founding of the American Society of Nuclear Cardiology (ASNC) in 1993. With the founding of the Society came the formalization of nuclear cardiology guidelines and practice statements, as well as an increased understanding of the practice of nuclear cardiology globally. Over the next 20 years, there were significant technological advancements with the introduction of gated SPECT imaging, attenuation correction and high efficiency cameras. During this same time period, the significant growth in nuclear cardiology necessitated the development of the first set of appropriate use criteria.[1] We will soon be achieving yet another major milestone: ImageGuide™, a registry for cardiovascular imaging, will become a reality in the very near future.

The registry is well on its way toward clinical implementation. Less than a year ago, ASNC secured funding, and began to evaluate potential partners to assist with the programmatic development of ImageGuide™. In the early spring of 2013, work commenced when Duke Clinical Research Institute (DCRI) was selected as the partner of choice. ASNC and DCRI leadership met with nuclear cardiology interpretive software vendors in an all-day session at the end of May to outline timelines, common goals, and proposed operations for ImageGuide™. One important outcome of this meeting was the decision to embrace Health Level-7 (HL7) clinical data architecture as the foundation for data collection in this registry; a cutting-edge decision in this current era of electronic health data. Since then, innumerable hours of work have resulted in a final set of data elements and definitions, predicated on previously developed and accepted standards.[2,3] These initial data elements were released to interpretative software vendors at the end of August.

The HL7 clinical data architecture will allow flexibility for ImageGuide™ to harmonize with other clinical data sources, such as electronic health records and claims data, in the future. These unprecedented accomplishments, in less than 6 months, demonstrate the exceptional level of commitment and expertise of the ImageGuide™ team members and further establishes ASNC's pledge to support this registry and its positive contribution to the field of cardiology. We expect the next major milestone, initial data submission by a clinical laboratory to ImageGuide™, to occur in early 2014. This landmark achievement will only be possible through the collaboration of a large number of vendors, partners and, most importantly, physician and technologist leadership at clinical sites.

As discussed in the prior two articles in this series, the development and implementation of ImageGuide™ is essential to so many aspects of nuclear cardiology, particularly clinical care and regulatory issues.[4,5] ImageGuide™ will allow nuclear cardiologists and technologists to assess both the process of care, patient management decisions and outcome quality measures. Process measures, such as dosimetry and timeliness of reporting, are essential to the field of nuclear cardiology, and will be targeted for analysis as soon as possible after ImageGuide™ is launched. Later phases will focus on appropriateness, clinical outcomes, and the potential to interface with other clinical data sources to strengthen the value statement for cardiovascular imaging. For

J Nucl Cardiol
1071-3581/$34.00

doi:10.1007/s12350-013-9789-9

Published online: 29 October 2013

example, interfacing with other data sources will permit assessment of compliance with guidelines, appropriate use criteria, and programs such as ABIM's ''Choosing Wisely'' campaign.[6] Alignment of the practice of nuclear cardiology with these important clinical guidelines will be essential if our field is going to continue to grow and flourish.

As practicing nuclear cardiologists, we understand the current daily pressures that we experience such as preauthorization, radiology benefits managers, concerns over radiation exposure, and the potential for test substitution. We strongly believe that the implementation and participation by all nuclear cardiology laboratories in the ImageGuide™ registry will be the key to furthering the role of nuclear cardiology in clinical practice. The inaugural sites participating in ImageGuide™ will be thoughtfully selected to broadly represent the varied practice settings of nuclear cardiology ranging from academic institutions to freestanding office sites. As the registry matures and evolves, we anticipate that ImageGuide™ participants will include the majority of nuclear cardiology laboratories in the US. Once we have an adequate number of participating sites, ImageGuide™ will start reporting practice specific benchmarked metrics to participating laboratories. Through our anticipated broad representation of nuclear cardiology practices, we will be able to truly accomplish the overarching goal of the registry: to understand and critically evaluate the practice patterns of nuclear cardiology and to leverage these data to improve practice and patient outcomes. We anticipate that the registry will satisfy many regulatory needs as well as clinical ones. Future versions of the registry will include using it as a platform to satisfy requirements for laboratory accreditation, physician certification, maintenance of certification, maintenance of licensure, continuing education for both the physician and the technologist, and an imprimatur of quality for the site in the setting of accountable-care organizations and patient choice. On a larger basis, as noted by Dr. Williams, ImageGuide™ will provide much-needed global aggregate information to the regulatory bodies (government and private insurers) that decide payment and clinical utilization of imaging studies.[5] If ImageGuide™ is going to meet all of these needs, it will be essential that all practicing nuclear cardiology laboratories participate and contribute to this effort. We anticipate that many laboratories will be eligible to participate in ImageGuide™ by 2015; our goal over time is that all laboratories will participate. Although it seems distant, it is only a little over 12 months away!

ImageGuide™ will also serve a critical role for the industry of nuclear cardiology. Through data gleaned from the registry, we will be able to follow the adoption of new technology (hardware, software, and new isotopes) into clinical practice and help discern the drivers of early vs late adoption. Critical evaluation of these data additionally helps to guide the development of reimbursement policies for new technology.

The efforts to date on ImageGuide™ are built on the work and contributions of many along its path to clinical release and implementation. The future success of ImageGuide™ and the field of nuclear cardiology rest with all of us currently involved in the practice of nuclear cardiology, including clinicians and technologists, our industry partners and health plans. It is through this broad-based constituency actively participating in ImageGuide™ that we will be able to ensure the future evolution of the field and to celebrate new milestones to come.

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