

continuances to gather information. The pleadings occur during the first 2-3 months and begin with a summons and complaint, followed by an answer from the defendant. Factual discovery follows during the next 6-12 months; both sides provide written evidence, depositions, and motion practice. Expert discovery occurs during the last 1-3 months before going to trial. Trial can occur 1-2 years after filing and can last from 1-3 weeks. An appeal can occur as late as 1-3 years.

Most sonographers feel protected by knowing their organizations provide them with coverage against medical malpractice. Sonographers should be aware that there may be serious gaps in employee coverage and it is worth investigating their exact policy coverage. Sonographers often moonlight off-hours, take calls at other institutions, or work in consulting positions where their institutional coverage may not extend protection. Many organizations, including the ASE, and health care providers offer personal professional liability insurance. This additional insurance coverage may be necessary if you work outside of your institution or if your institution's coverage is not adequate to protect you and your credentials.

Malpractice litigation is generated by bad outcomes and significant damages to people. Cases are built by identifying poor patient care, bad charting and documentation, bad testimony, and inflammatory issues. The main sources of evidence are the medical record, policies, protocols, guidelines, and training materials. Medical malpractice is charged in many different types of patient care situations including neglect to properly treat the patient, failure to inform the patient of risk of a procedure or medication, unprofessional conduct, patient abuse, inadequate record keeping, over medication, and practicing medicine without a license. Sonographers may find themselves cited, especially if they provide a preliminary report to anyone other than the interpreting physician.

There is a scope of practice, a code of ethics, and practice standards for the profession of diagnostic sonography to use as tools in reducing the risk of liability.^{3,9,10} These documents have been endorsed by the ASE and other sonography-related professional organizations. All sonographers should be familiar with and in compliance with these documents. Understand the scope of practice and know your limitations as a sonographer; practice without bias and be culturally competent and sensitive to others.⁹ Lab accreditation through the Intersocietal Accreditation Commission (IAC) can provide further protection against liability by setting in place the necessary policies, protocols, and procedures to assure proper compliance with regulations.¹¹ The best strategy to reduce risk seems to be to provide quality patient

care, present factual and timely documentation in the medical record, understand your institution's policies and procedures, and maintain compliance with lab policy.^{4,8,11}

The testimonial of a vascular sonographer involved in a medical malpractice lawsuit is enlightening reading and can be found at the following link: <http://www.intersocietal.org/ic/news/newsletter%20archive/2009/icavl/documentation.htm>.

After 10 years the final decision in the case came down to proper documentation by the sonographer.¹¹

As the current medical environment continues to change it is likely that ultrasound exams will continue to grow in demand, increasing the possibility that legal issues will arise. Sonographers should be aware of this possibility, and lab policy and quality assurance programs should address it.

REFERENCES

1. Kisslo J, Millman DS, Adams DB, Weiss JL. Legislative, legal, and regulatory issues, interpretation of echocardiographic data: are physicians and sonographers violating the law? *J Am Echocardiogr* 1988;1:95-99.
2. McDonald RW, Rice MJ, Reller MD, Silberbach GM, Imus RL, Marcella CP, et al. Academic physicians' opinions on preliminary reporting of echocardiographic data. *J Am Echocardiogr* 1993;6:77-82.
3. SDMS Position: Scope of Practice for the Diagnostic Medical Professional. Available at <http://www.sdms.org/positions/scope.asp>. Accessed.
4. Gill K. Legal liability and sonography: an update. *J Diagn Med Sonogr* 1992;8:93.
5. Sanders RC. Changing patterns of ultrasound-related litigation, a historical survey. *J Ultrasound Med* 2003;22:1009-1015.
6. Pinto A, Pinto F, Faggian A, Rubini G, Caranci F, Macarini L, et al. Sources of error in emergency ultrasonography. *Crit Ultrasound J* 2013;5(Suppl 1):S1.
7. Tucker Ellis and West LLP. Lessons Learned from Litigation, Northern Ohio Vascular Association, 2008 Spring Symposium, live presentation, notes of Margaret M Park.
8. Mavroforou A, Mavroforos D, Koumantakis E, Michalodimitrakis E. Liability in prenatal ultrasound screening. *Ultrasound ObstetGynecol* 2003;21:525-528.
9. Code of Ethics for the Profession of Diagnostic Medical Sonography, an SDMS position statement. Available at <http://www.sdms.org/about/codeofethics.asp>. Accessed.
10. SDMS Position: Diagnostic Medical Sonographer Clinical Practice Standards. Available at <http://www.sdms.org/positions/clinicalpractice.asp>. Accessed.
11. IAC. Improving Healthcare through Accreditation, Documentation saves the Vascular Technologist. Available at www.intersocietal.org/ic/news/newsletter%20archive/2009/icavl/documentation.htm. Accessed.

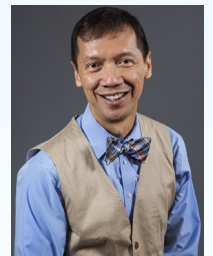
COUNCIL FOR PEDIATRIC AND CONGENITAL COMMUNICATION

Pediatric and Congenital Echocardiography: Looking into the Future

The ASE Council on Pediatric and Congenital Heart Disease (PCHD) Board of Directors held a retreat on March 28, 2014, in Washington, DC, to identify issues and challenges affecting the pediatric and congenital echocardiography community in the current era. In attendance were current leaders in the field. In an effort to align the PCHD Council objectives with the ASE Strategic Goals for 2014, the Board identified four areas for discussion as they relate to pediatric and congenital echocardiography: research, training, quality, and education.

Research has flourished significantly over the past several decades, though it is still not as well developed as research involving cardiovas-

cular ultrasound in the adult population. In 2013, the ASE published a special report on the results of a recent Cardiovascular Technology and Research Summit, which established a "roadmap" for research activities from the present time to 2020.¹ Because the document focused primarily on issues affecting adult patients, several council board members surveyed leaders in pediatric and congenital echocardiography regarding knowledge gaps and research



Leo Lopez, MD, FASE

priorities within our community. The most popular topics included valve dysfunction in children and timing for intervention; universally applicable normal values for established and newer methodologies; correlation between echocardiographic quantification and clinical outcomes; early detection of left and right ventricular dysfunction; and description of normal single ventricular function. A preliminary gap analysis then identified the most important topics on which research initiatives will be focused over the next few years: valve function, ventricular function and pediatric heart disease, and new technologies. With this in mind, the PCHD Council Board will draft a report discussing these priorities, outlining specific medium and long-term goals, and establishing the infrastructure (such as image transfer and storage, data anonymization, legal issues, and funding) for future research initiatives in pediatric and congenital echocardiography.

Standards for training in our subspecialty have evolved over the past decade. Although recommendations for training in pediatric noninvasive cardiac imaging have been published in the past,² advances in imaging technology and management of pediatric and congenital heart diseases have necessitated revision of these recommendations, and members of the PCHD Council Board are actively involved in establishing the new guidelines for core training and advanced 4th year training in noninvasive imaging. Although the elements of core training can be readily identified, remaining challenges include standardized assessment of competency at all levels and availability of noninvasive imaging jobs after training. In addition, standardization of training requirements during an advanced imaging fellowship is further complicated by the fact that some centers focus on different modalities (such as cardiac magnetic resonance imaging, fetal echocardiography, transesophageal echocardiography) during this 4th year of training, resulting in heterogeneous curricula and expertise among the different institutions that provide advanced training. One initiative that the council plans to implement is a mentorship program for fellows, and a pilot program will pair PCHD Council travel grant applicants as well as fellows presenting oral abstracts at ASE 2014 with established mentors.

Quality in health care delivery has become a priority in the present day, and quality metrics are being developed in all fields of medicine to help quantify quality improvement initiatives that are safe, effective, patient-centered, timely, efficient, and equitable.³ The American College of Cardiology (ACC) and American Heart Association have jointly developed a methodology for developing quality metrics in cardiology,⁴ and the ACC Adult Congenital and Pediatric Cardiology Council Quality Metric Working Group is currently developing six metrics in noninvasive imaging in coordination with members of the PCHD Council. These metrics include critical results reporting, sedation adverse events, echo quantification variability, diagnostic accuracy, comprehensive study, and echo image quality. In an effort to promote excellence and quality in pediatric and adult echocardiography laboratories, the ASE has recently published a statement supporting accreditation as an established method to achieve these goals, and the PCHD Council Board is actively involved in refining the guidelines and standards in pedi-

atric accreditation so that they are feasible, effective, and meaningful for our community.

Lastly, the retreat focused on challenges in education for pediatric and congenital echocardiographers, particularly in terms of increasing the availability of continuing medical education (CME) activities. Initiatives such as establishing an online PCHD University with a specific pediatric and congenital echocardiography curriculum and utilizing articles from *JASE* as CME activities have been proposed and are being explored. The council will continue to develop pediatric and congenital guidelines and standards documents to follow recent publications such as the guidelines for multimodality imaging of the patient after tetralogy of Fallot repair,⁵ echocardiography in the neonatal intensive care unit,⁶ and quantification methods during a pediatric echocardiogram.⁷

REFERENCES

1. Pellikka PA, Douglas PS, Miller JG, Abraham TP, Baumann R, Buxton DB, et al. American Society of Echocardiography Cardiovascular Technology and Research Summit: a roadmap for 2020. *J Am Soc Echocardiogr* 2013;26:325-338.
2. Sanders SP, Colan SD, Cordes TM, Donofrio MT, Ensing GJ, Geva T, et al. ACCF/AHA/AAP recommendations for training in pediatric cardiology. Task force 2: pediatric training guidelines for noninvasive cardiac imaging endorsed by the American Society of Echocardiography and the Society of Pediatric Echocardiography. *J Am Coll Cardiol* 2005;46:1384-1388.
3. IOM. Crossing the Quality Chasm: A New Health System for the 21st Century. Institute of Medicine Website: 2001.
4. Bonow RO, Carabello BA, Chatterjee K, de Leon AC Jr, Faxon DP, Freed MD, et al. ACC/AHA 2006 guidelines for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (writing Committee to Revise the 1998 guidelines for the management of patients with valvular heart disease) developed in collaboration with the Society of Cardiovascular Anesthesiologists endorsed by the Society for Cardiovascular Angiography and Interventions and the Society of Thoracic Surgeons. *J Am Coll Cardiol* 2006;48:e1-148.
5. Valente AM, Cook S, Festa P, Ko HH, Krishnamurthy R, Taylor AM, et al. Multimodality imaging guidelines for patients with repaired tetralogy of fallot: a report from the american society of echocardiography: developed in collaboration with the society for cardiovascular magnetic resonance and the society for pediatric radiology. *J Am Soc Echocardiogr* 2014;27:111-141.
6. Mertens L, Seri I, Marek J, Arlettaz R, Barker P, McNamara P, et al. Targeted Neonatal Echocardiography in the Neonatal Intensive Care Unit: practice guidelines and recommendations for training. Writing Group of the American Society of Echocardiography (ASE) in collaboration with the European Association of Echocardiography (EAE) and the Association for European Pediatric Cardiologists (AEPC). *J Am Soc Echocardiogr* 2011;24:1057-1078.
7. Lopez L, Colan SD, Frommelt PC, Ensing GJ, Kendall K, Younoszai AK, et al. Recommendations for quantification methods during the performance of a pediatric echocardiogram: a report from the Pediatric Measurements Writing Group of the American Society of Echocardiography Pediatric and Congenital Heart Disease Council. *J Am Soc Echocardiogr* 2010;23:465-495. 576-7.