



Cardiac Surgery, Cardiology, Cardiovascular Disorders, News Articles

Radiation safety in children with heart disease: New campaign, statement address care

by Alyson Sulaski Wyckoff, Associate Editor

The Academy has joined an advocacy campaign and endorsed a statement to promote the appropriate use of medical imaging in children with heart disease.

The Image Gently Alliance, the American College of Cardiology and others have launched the Have-A-Heart campaign. In addition, Image Gently endorsed *Radiation Safety in Children With Congenital and Acquired Heart Disease: A Scientific Position Statement on Multimodality Dose Optimization*.

Image Gently is an alliance of more than 100 organizations that advocate to improve safe and effective imaging care of children worldwide.

Available at <http://www.imaging.onlinejacc.org/content/early/2017/05/02/j.jcmg.2017.04.003>, the statement is the first on this topic with such widespread endorsement by so many medical societies, according to Timothy C. Slesnick, M.D., FAAP, a member of the AAP Section on Cardiology and Cardiac Surgery and AAP representative on the statement's writing panel.

Children with heart disease often get more imaging tests and more medical care than other children. The Have-A-Heart campaign seeks to help providers ensure ordering patterns for imaging procedures comply with evidence-based medical guidelines, and it provides tools and resources for parents as well as imaging professionals (see below).

The overriding message of the coalition is that "medical imaging saves lives, and it is incumbent upon all of us to perform this imaging in the best way that we can," Dr. Slesnick said.

"Kids with heart disease need specialized care. Imaging for these children makes a huge difference and saves lives, and so we have to be cognizant of how we provide that imaging for them," he said.

Statement offers strategies

About 1 million U.S. children are living with congenital heart disease, and cardiomyopathies and other types of acquired heart disease impact another one of every 100,000 children and teens each year, according to the statement.

The statement discusses ionizing radiation and associated risks, the concepts of optimization and justification when it comes to medical imaging dose management, and dose metrics. In addition, optimization strategies are presented for cardiac computed tomography, nuclear cardiac imaging and fluoroscopically guided procedures. Instituting a dose monitoring program, research needs and future directions also are addressed.

"One of the things we're hoping that general pediatricians take away from this statement, since the care of these kids is a joint effort by the pediatrician and pediatric cardiologist, is we want them to understand why we're recommending certain tests over others," Dr. Slesnick said. "Often, while we're not necessarily calling upon pediatricians to make the decision between, for example, heart catheterization and an echocardiogram, we do want them to have an understanding of why we might select one test over another.

"Radiation dose plays a factor for many of these decisions," he added. "Some tests require radiation exposure, and when that is the best medical test for the child, we need to make sure we are minimizing the radiation dose by optimizing the test technique."



Cardiac Surgery, Cardiology, Cardiovascular Disorders, News Articles

The statement encourages a patient-centered approach, aiming to improve patient-provider communications.

"We really feel that the best way to take care of these kids is by having a team-based approach - the family, patient, pediatrician, cardiologist and the cardiac imager - all on the same page, communicating together," Dr. Slesnick said.

Have-A-Heart campaign

The AAP-endorsed Have-A-Heart campaign offers the following suggestions for physicians, parents and imaging providers.

Physicians are encouraged to help families make informed decisions when their children need imaging related to heart disease treatment, including:

- when an imaging test is necessary;
- why a CT scan, fluoroscopy or nuclear medicine exam is or is not the right choice;
- the benefits and risks of the scan; and
- "child-sizing" the imaging radiation dose when necessary and possible.

Parents are urged to be their child's advocate when a cardiac imaging exam is prescribed. They should ask about benefits and risks; how the exam will improve care; what a child's experience will be like; whether there are alternatives that don't use radiation; and whether the radiation dose will be child-sized.

Imaging providers are reminded to:

- choose heart ultrasound, MRI or another exam that doesn't use radiation, when appropriate;
- use child-size CT, fluoroscopy and nuclear medicine exams;
- during catheterization, lower the frame rate; manage dose settings; increase image receptor field of view (reduce electronic magnification); lower the image receptor to the patient; and reduce the size of the X-ray field (collimate).

Resources

- [Kevin Hill, M.D., lead author of the endorsed statement, presented a free webinar "Radiation exposure in children with congenital and acquired heart disease."](#)
- [Image Gently](#)