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Quality Standards in Paediatric Echocardiography: How to Cultivate Leadership and Teamwork



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Echocardiographic imaging has evolved into the key diagnostic modality in paediatric cardiac care. Its role has expanded beyond that of initial diagnosis; intracardiac echo is now used during interventional cases in the cardiac catheterisation laboratory, transthoracic echo is the preand post-operative modality, and transesophageal echo is utilised in the operating room (see table 1). In this article, we elaborate the new, adapted management strategies that the echo lab must adopt to achieve effective use of these diverse imaging tools.

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Role of the Paediatric Echo Laboratory Manager

It is vital that the echo lab manager have an accurate understanding of the field of echocardiography. A manager who has experience as a sonographer can best understand the needs and challenges of the bedside sonographer. It is critical that the manager is engaged in day-to-day operations; this will yield a laboratory where decisions are made which correlate with effective operations. This will also increase the likelihood of a healthy relationship between manager and sonographer, thus reducing turnover and enhancing job satisfaction. Finding skilled sonographers can be challenging enough, but retaining them in a healthy work environment is yet another matter.

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Creating a culture in which teamwork is a theme is crucial in optimising employee engagement. Appointing an echo laboratory manager focused on directing the sonographer's energies towards the desired result by allowing the employees to problem- solve and divide responsibilities among themselves will empower them to work as team. The manager can then step back and develop novel methods of supporting the staff. Our hospital has gone to great lengths to ensure that management has the tools and resources to create a healthy network of team-building. For example, we arranged hour-long workshops over the lunch hour on two consecutive days to create an "Echo Lab Purpose Statement", as follows:

Echo Lab Purpose Statement

"As an integral part of the heart centre team, we strive to provide our patients with highquality echocardiograms in a compassionate, family-centred environment."

As mentioned, the echo laboratory spans most aspects of paediatric cardiac practice. We have assigned sonographers to develop special skills in a specific area where they have expressed interest. Again, half the battle is to ensure employee satisfaction and encourage their growth. We direct sonographers to specialise in a particular aspect of paediatric cardiology including transplant evaluation, transesophageal imaging in the operating room, cardiac imaging of the foetus, and dobutamine stress echocardiography.

Other guidelines set by our institution oblige us to demonstrate "ART full" behaviours (Accountability, Respect and Team - work). This is included in our work content description to emphasise this as a job requirement and a part of our yearly evaluation. Each new employee is told about these expectations from their first day of employment. Each month the hospital recognises the ARTIST of the Month – one who demonstrates the highest standards as judged by their peers – an excellent way to reward those who can set an example for the rest of us.

Education in the Paediatric Echo Laboratory

Our leadership team uses diverse methods to educate staff, measure quality, and provide feedback. The echo laboratory manager and physician leader work together to develop internal education initiatives for the sonographers, such as a standardised lecture series occurring at a time of the day when as many staff as possible can attend.

These lectures are attended by sonographers, cardiology trainees and echo lab physicians.

Weekly case conferences discuss complex as well as straightforward cases. We encourage our paediatric sonographers to attend these conferences. We also organise one-on-one sessions between an individual sonographer and an echo laboratory physician so that each sonographer's individualised needs can be determined. We provide these types of one-on-one interaction informally whenever a specific patient-focused question arises, but also in a more standardised setting for each of our 12 sonographers numerous times throughout the year.

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As part of our sonographer's RDCS recertification, CME credits are required. Our goal is to allow each sonographer to attend a national meeting every other year. This allows for CME credit accrual, and also provides a mechanism for the sonographers to stay up-to-date via interactions with nationally-recognised experts in the echocardiographic assessment of paediatric heart disease.

Quality Assurance Models

Quality assurance in the echo laboratory occurs in a variety of ways. There is the internal group review of studies for imaging accuracy as well as interpretation of the data via correlation of images to information found in the study report, and quarterly assignment of studies by the echo laboratory manager such that sonographers are responsible for individually (but anonymously) critiquing each others work.

In addition, the members of the echo laboratory participate in more global heart centre- wide quality initiatives. These morbidity and mortality conferences are often meant to address system issues, and to this end correlation of different imaging modalities often occurs (for example comparing data obtained and conclusions developed from echo studies versus cardiac catheterisation, cardiac magnetic resonance, and cardiac computerised tomography). Our goal is to ensure the highest level of accuracy and quality in an educational setting which is nurturing and respectful of the sonographer and echo lab physician.

Laboratory Accreditation

The Intersocietal Commission for the Accreditation of Echocardiography Laboratories (ICAEL) serves as the accreditation mechanism for both general and paediatric echo laboratories. Accreditation requires submission of case based studies, data regarding the quality assurance mechanisms for the particular laboratory, data regarding standardisation of study methodology, study volumes for interpreting physician and performing sonographer, information regarding study scheduling and ordering, and criteria regarding equipment maintenance.

After initial accreditation, renewal is required every three years. While there are only a handful of insurers who have as yet adopted echocardiography reimbursement directives (including ICAEL certification), it is very likely that this will increase. This will apply not only to the technical aspect of billing, but also to reimbursement for professional fees.

Summary

The paediatric echo laboratory is unique in regards to staff-patient interactions and the skills to make these interactions successful, the methodologies by which studies are performed, the training of the sonographer performing the paediatric echocardiogram, laboratory accreditation, and the methods of study reporting. This results in the need to organise and manage the paediatric echo laboratory differently than the general laboratory.

The interaction between the laboratory, the members of the cardiac team, and the other paediatric providers results in the echo laboratory serving in many ways as the focal point of paediatric cardiac care. Without effective strategies in place to develop sustainable standards of quality, outcomes associated with paediatric cardiac care would most certainly be compromised.

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