

## **Cardiology Education in the Pediatrics Residency: A Needs Assessment**

**Background:** Congenital heart disease (CHD) is the most diagnosed congenital disorder in newborns, occurring in around 1% of all live births. In addition to structural defects, infants and children can suffer from arrhythmias and cardiomyopathies. Given the significant incidence of these diseases, it is imperative that pediatricians have a fundamental understanding of cardiology and feel comfortable caring for these patients. Despite the frequency of cardiac disease in infant and children, not all pediatric residents are required to rotate with cardiology during residency. Decreased cardiology exposure ultimately leads to diminished comfort in diagnosing and managing these conditions. However, after training, a variety of pediatric specialists and outpatient pediatricians will care for these patients. Therefore, comprehensive curriculum for pediatric cardiology is needed to achieve competency in this area to ensure appropriate patient care.

**Objective:** To assess the educational needs for a pediatric cardiology curriculum using a needs assessment survey including current and former pediatric residents at the University of Colorado.

**Methods:** We conducted a survey of current residents and the previous 10 years of graduates of the pediatric residency program at the University of Colorado. Using a likert scale, our survey evaluated perceived clinical competency and reported self-efficacy in pediatric cardiology as identified by the American Board of Pediatrics general pediatrics cardiology content specifications. Respondents were asked about their level of training, specialty (or planned specialty), and past cardiology experience. Graduates were asked which cardiology topics they think are most important to be covered. Finally, current and past residents' satisfaction with the cardiology education they received in training was assessed, as well as preferred methods of learning.

**Results:** Of 138 completed responses, 54 (39%) were current residents and 84 (61%) were residency graduates. The most common specialty or planned specialty was outpatient pediatrics (26%). Ninety (65%) had completed a cardiology rotation, while 25 (18%) were planning to do so. Of the 32 cardiology competencies questioned regarding self-efficacy, only 8 competencies had >50% of responses of "fairly" or "extremely confident." 38% reported feeling "somewhat" or "very satisfied" with their cardiology education and 76% have needed to supplement their cardiology knowledge outside of residency cardiology learning activities. 91% thought completing a cardiology rotation during residency was "fairly" or "extremely important." Graduates selected evaluation of chest pain, ECG interpretation, murmur auscultation, hypertension and dyslipidemia, evaluation of cyanosis in the newborn, and categories and presentation of CHD as the 6 most important topics to cover in residency training. The top 3 requests for material presentation were: small group case-based learning, informal bedside rounds, and a pediatric cardiology handbook.

**Conclusions:** Almost all residents and graduates identify the importance of cardiology training, but few are satisfied with their cardiology education, and most have needed to supplement their education either during residency or following. This assessment highlights the need for an updated and practical curriculum for cardiology in the pediatric residency. The information gathered will help create an objective driven curriculum with effective teaching strategies. Once implemented, the effect of the new curriculum on pediatric resident knowledge, self-efficacy, and rotation satisfaction will be evaluated.