



Children's Hospital Colorado

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Educational Goals and Objectives for the Division of Pediatric Cardiac Surgery, Congenital Cardiac Surgery Residency Program

Children's Hospital Colorado and University of Colorado Hospital



**Division of Pediatric Cardiothoracic Surgery
Congenital Cardiac Surgery Residency
Children's Hospital Colorado
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PROGRAM GOALS AND OBJECTIVES

PATIENT CARE

Congenital Cardiac Surgical Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

1. Patient Care Learning Activities during the 1 year residency which provide experience in this competency development include:

- a. Inpatient and outpatient patient care experiences
- b. Operative patient care experiences
- c. Operative log completion and review
- d. Case review at M&M conference
- e. Case discussion at weekly resident conferences
- f. Bedside teaching
- g. Ward rounds
- h. Operating room instruction
- i. Journal Club participation

2. Residents are expected to:

- a. Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families
- b. Gather essential and accurate information about their patients
- c. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment
- d. Develop and carry out patient management plans
- e. Counsel and educate patients and their families
- f. Use information technology to support patient care decisions and patient education
- g. Perform competently all medical and invasive procedures considered essential for the area of practice
- h. Provide health care services aimed at preventing health problems or maintaining health
- i. Work with health care professionals, including those from other disciplines, to provide patient-focused care

Resident Assessment includes observation of performance in these areas:

- a. Medical Interviewing
- b. Physical Examination
- c. Procedural Skills- on patients
- d. Clinical Judgment
- e. Ongoing Care

MEDICAL KNOWLEDGE

Congenital Cardiac Surgical Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.

Medical Knowledge Learning Activities during surgical rotations which provide experience in this competency development include:

- a. Weekly resident conferences
- b. Weekly Surgical Grand Rounds
- c. Presentations at Surgical Case Conferences
- d. Educational experiences in clinic, hospital, operating room
- e. Regularly scheduled weekly/monthly conferences (departmental and/or service specialized conferences)
- f. Resident self study using appropriate congenital cardiac surgical references
- g. Journal Club
- h. Maintenance of a portfolio of academic accomplishments

Congenital Cardiac Surgical Residents are expected to:

- a. Demonstrate an investigatory and analytic thinking approach to clinical situations
- b. Know and apply the basic and clinically supportive sciences, which are appropriate to their discipline

Resident Assessment includes observation of performance in these areas:

- a. Daily Attending Rounds
- b. Written evaluation by faculty
- c. Maintenance of academic portfolio

PRACTICE-BASED LEARNING AND IMPROVEMENT

Congenital Cardiac Surgical Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.

Practice-Based Learning and Improvement Learning Activities during the one year period which provide experience in this competency development include:

- a. Case review at weekly M&M Conference
- b. Case log review during rotation and at semiannual performance reviews
- c. Case discussion at weekly resident conferences
- d. Discussions at Journal Club
- e. Presentations at weekly Surgical Case Conferences

Congenital Cardiac Surgery Residents are expected to:

- a. Analyze practice experience and perform practice-based improvement activities using a systematic methodology
- b. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems
- c. Obtain and use information about their own population of patients and the larger population from which their patients are drawn
- d. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness
- e. Use information technology to manage information, access on-line medical information; and support their own education
- f. Facilitate the learning of students and other health care professionals

Resident Assessment includes observation of performance in these areas:

- a. Appraisal of scientific evidence
- b. Presentations at Journal Club
- c. Knowledge of study designs, statistical methods
- d. Analysis of own practices-self evaluations
- e. Data gathering and feedback
- f. Use of information technology
- g. Student education

CRITERIA FOR ADVANCEMENT

Milestones for progressive authority of the ACGME accredited resident in Congenital Cardiac Surgery.

Since there is only one rotation and this is centered at one hospital (Children's Hospital Colorado), the advancement milestones will be somewhat dependant on individual faculty surgeons, but the following will be a general advancement protocol:

1. The ACGME Congenital Cardiac Surgical resident will be the surgeon for non-pump cases, such as, patent ductus arteriosus, coarctation of the thoracic aorta, vascular rings, pacemaker procedures and procurement of donor hearts.
2. At the same time, the Congenital Cardiac Surgical resident will become familiar with the cannulation techniques and will be the surgeon for atrial septal defects and ventricular septal defects (RACHS 1, 2, 3). Evaluation of the technical ability and progress of knowledge will be generally discussed by the faculty on a weekly basis.
3. When the faculty agrees that the resident has sufficient capability dealing with non-pump cases, simple cannulation techniques and simple pump cases, the resident will progress to surgeon with more complex cases (RACHS 4). RACHS categories 5 and 6 will be reserved for the last three months of training and will require significant first assistant experience prior to becoming the primary surgeon for the procedures.

An informal evaluation of the resident's technical and medical knowledge progress will be discussed with the resident on a weekly basis by the faculty and the Program Director.


Risk Adjustment for Congenital Heart Surgery (RACHS) Score Categories:

RACHS Category 1:

1. Secundum ASD
2. Aortopexy
3. PDA (> 30 days of age)
4. Coarctation (> 30 days of age)
5. PAPVR Repair

RACHS Category 2:

1. Aortic valvuloplasty (> 30 days of age)
2. SubAS resection
3. Pulmonary valvuloplasty or replacement
4. RV infundibulectomy
5. RVOT augmentation
6. Coronary fistula repair
7. ASD & VSD repair
8. Primum ASD repair
9. VSD repair
10. Tetralogy repair
11. VSD closure with PA band removal


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12. Repair of unspecified septal defect
 13. TAPVR repair (> 30 days of age)
 14. Glenn shunt
 15. Vascular ring surgery
 16. A-P window repair
 17. Coarctation repair (\leq 30 days of age)
 18. PA stenosis repair
 19. Common atrium closure
 20. LV-RA shunt repair

RACHS category 3:

1. AVR
2. Ross procedure
3. LVOT patch
4. Ventriculomyotomy
5. Aortoplasty
6. Mitral valvuloplasty or replacement
7. Tricuspid valvuloplasty or valvectomy or replacement
8. Tricuspid valve repositioning (Ebstein's) (> 30 days of age)
9. Anomalous coronary artery repair with or without intrapulmonary tunnel (Takeuchi)
10. Closure of semilunar valve (aortic or pulmonary valve)
11. RV-PA conduit
12. LV-PA conduit
13. DORV repair with or without RV obstruction
14. Fontan
15. AVSD (complete or transitional) repair with or without valve replacement
16. PA banding
17. Tetralogy with Pulmonary Atresia repair
18. Cor triatriatum repair
19. Systemic-Pulmonary artery shunt
20. Atrial switch operation
21. Arterial switch operation
22. Pulmonary artery reimplantation
23. Annuloplasty
24. Coarctation & VSD repair
25. Cardiac tumor excision

RACHS category 4:

1. Aortic valvuloplasty (\leq 30 days of age)
2. Konno procedure
3. Complex defect (Single ventricle) repair with VSD enlargement
4. TAPVR repair (\leq 30 days of age)
5. Rastelli procedure
6. Atrial switch with VSD closure
7. Atrial switch with subpulmonary stenosis repair
8. Arterial switch with PA band removal

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9. Arterial switch with VSD closure
 10. Arterial switch with subpulmonary stenosis repair
 11. Truncus repair
 12. Repair of hypoplastic or interrupted aortic arch with or without VSD closure
 13. Unifocalization for tetralogy of Fallot and pulmonary atresia
 14. Double switch

RACHS category 5:

1. Tricuspid valve repositioning for neonatal Ebstein's (≤ 30 days of age)
2. Truncus with Interrupted aortic arch repair

RACHS category 6:

1. Norwood operation
2. Damus-Kaye-Stansel procedure

INTERPERSONAL AND COMMUNICATION SKILLS

Residents must be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates.

Interpersonal and Communication Skills Learning Activities which provide experience in this competency development include:

- a. Patient care experiences in outpatient clinic and hospital
- b. National exposure at professional meetings, networking opportunities
- c. Acceptance of scientific abstracts, papers, published manuscripts following critical review of resident scholarly performance

Residents are expected to:

- a. Create and sustain a therapeutic and ethically sound relationship with patients
- b. Use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills
- c. Work effectively with others as a member or leader of a health care team or other professional group

Resident Assessment includes observation of performance in these areas:

- a. Compassion for patients and their families
- b. Counseling, education, and informed consent instructions to patients
- c. Patient inclusion in treatment decisions
- d. Listens to patients, and other members of the health care team
- e. verbal and written evaluations by nurses and mid level practitioners

PROFESSIONALISM

Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Professionalism Learning Activities which provide experience in this competency development, include:

- a. Educational programs offered through University of Colorado medical school
- b. Surgical faculty and other role modeling
- c. Personal presentations at regional and national conferences
- d. Presentation at Weekly didactic conference and Case Conferences
- e. Frequent practice through hosting resident applicants during interview activities
- f. Journal Club

Residents are expected to:

- a. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest; accountability to patients, society, and the profession; and a commitment to excellence and on-going professional development
- b. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices
- c. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities

Congenital Cardiac Surgical Resident Assessment includes observation of performance in these areas:

- a. Regard for welfare of others
- b. Adheres to a code of moral and ethical values
- c. Respectful of patients and their families
- d. Respectful of other members of the health care team
- e. Provides prompt consultations upon request
- f. Sensitive to patients' cultural backgrounds
- g. Accountable for own actions
- h. Reliable
- i. Punctual

SYSTEMS-BASED PRACTICE

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

Systems-Based Practice Learning Activities which provide experience in this competency development include:

- a. Case review at M&M Conference
- b. resident attendance at departmental meetings
- c. Journal Club
- d. Planning discharge of complicated patients using home health, nursing homes

Congenital Cardiac Surgical Residents are expected to:

- a. Understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice
- b. Know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources
- c. Practice cost-effective health care and resource allocation that does not compromise quality of care
- d. Advocate for quality patient care and assist patients in dealing with system complexities
- e. Know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance

Resident Assessment includes observation of performance in these areas:

- a. Provides cost-effective care
- b. Advocates for patients within the health care system
- c. Refers patients to appropriate practitioners and agencies
- d. Accesses assistance within the health care system for coordination and management of ongoing care
- e. Discharges patients in a timely and appropriate manner