

ADULT CONGENITAL HEART DISEASE/PAEDIATRIC CARDIOLOGY

CARDIOLOGY RESIDENCY PROGRAM

McMASTER UNIVERSITY

ROTATION SUPERVISOR: DR. ELAINE GORDON

OVERVIEW

The Paediatric Cardiology/Adult Congenital Heart Disease rotation is largely a clinic-based rotation where trainees are exposed to congenital heart disease from the pediatric and adult perspective. Residents attend 2.5 days of adult congenital clinics with three different staff cardiologists, as well as an additional half-day clinic devoted to the management of pregnant women with heart disease. Trainees will also attend 1.5 to 2 days of pediatric clinics with an exposure to fetal echocardiography and neonatology. Residents also round with the pediatric cardiologist on their in-patient service at least once a week and are "on call" to see new babies that are transported to MUMC with newly diagnosed, complex congenital lesions.

The rotation also offers exposure to case presentation and discussion by teleconference with Toronto General Hospital and Sick Kids hospital twice a week, with a once weekly didactic session covering a curriculum in CHD as well as various topics and research presentations by speakers throughout the year. The residents are required to present once in the 2-block period at paediatric cardiology rounds, usually involving a case or topic that has come up in their clinic time. We also have a monthly journal club where residents and staff will review and discuss recent and relevant publications.

This is a rotation with a fair amount of flexibility built into it, and allows a motivated resident with good organizational skills the opportunity to maximize his/her learning in the areas of congenital heart disease and pregnancy and heart disease.

GOALS AND OBJECTIVES

The goals and objectives for the rotation have been formulated to guide cardiology residents in identifying and acquiring the key competencies required to succeed as a consultant cardiologist and are based on the CanMEDS 2015 framework of the Royal College of Physicians and Surgeons of Canada. These key competencies include: medical expert, communicator, collaborator, leader, health advocate, scholar and professional. The rotation provides graded responsibility in achieving these objectives based on the resident's level of training and previous experience.

PGY4/5:

The resident is able to:

- Take a detailed history including history of presentation at birth from the patient's parents if present, family history of congenital heart disease and genetic syndromes, response to various medical and surgical interventions in infancy and childhood. All of this will require the presence of the patient's family or guardian. This will also include taking a history from a patient that is non-communicative or developmentally delayed (eg: Down syndrome, other forms of autism and learning disability).
- Perform a detailed physical examination eliciting all pertinent cardiac physical findings in a comprehensive systematic way. This is a population that has a lot of physical findings, some of which are virtually never seen in the general cardiac population, and the ability to anticipate this, demonstrate the findings and explain their significance will be emphasized in Block 1.
- Communicate effectively in both verbal and written forms, with oral presentation of the case in a professional manner at the time of review in clinic (including systematic review of physical findings, pertinent negatives, and appreciation of clinical skills that are required in this setting, and often not required in others such as taking BP in both arms and the leg, listening for murmurs over the back, looking for surgical scars other than sternotomy scars etc.) and dictation of comprehensive letters that are detailed and will serve as a template for future communication about a given patient as they come back for ongoing follow up in the ADULT CONGENITAL CARDIAC CLINIC.

PGY6:

The resident builds on the previous skill set and is also able to:

- Assess severity of various cardiac lesions and determine need for further investigations and intervention.
- Be knowledgeable of interventions and surgical options for various congenital lesions (eg: stenting of residual or recurrent coarctation of the aorta, arterial switch repair for TGA, options for management of single ventricle syndromes etc.).
- Assess need for further investigation and management of high-risk lesions (eg: Tetralogy of Fallot with severe PI,

Marfan syndrome, bicuspid aortic valve with aortopathy, need for prompt anticoagulation and cardioversion of patients with single ventricle and atrial arrhythmias, etc.).

CANMEDS COMPETENCIES

A MEDICAL EXPERT

Global Objective: To acquire the medical knowledge and clinical skills necessary to provide high quality and safe patient-centered care.

1. Understand the common cardiovascular malformations and be able to recognize these clinically.
2. Understand the implications of the malformation on growth, development, education and employment and know the indications for re-operation/re-intervention.
3. Understand the implications of the more severe cardiac lesions and when to refer to the adult congenital heart center.
4. Understand the impact of pregnancy on cardiac physiology and the interaction between cardiac pathology and the hemodynamic changes of pregnancy.
5. Understand the risk of pregnancy in various cardiac conditions, and begin to understand management issues to prevent major complications such as heart failure, arrhythmias, aortic dissection etc., in the mother, as well as minimizing risk to the fetus.

B COMMUNICATOR

Global Objective: To develop relationships with patients, families, and health professionals which facilitate the gathering and sharing of information essential for effective health care

1. Show effective communication with patients, who may be non-verbal or developmentally delayed, and their families in order to obtain the appropriate clinical information.
2. Demonstrate effective verbal and written case presentations to the congenital heart clinic cardiologist.
3. Actively participate in case conferences and regional case review.

C COLLABORATOR

Global Objective: To work effectively with other healthcare professionals to provide safe, high quality, patient-centered care

1. Participate in the follow-up care of children in collaboration with the regional congenital heart clinic.
2. Collaborate with pediatric cardiologists as well as nurse practitioners, social workers, and family physicians involved in the care of complex congenital cardiac patients.

D LEADER

Global Objective: To develop a vision of a high quality health care system and take responsibility for effecting change to move the system toward the achievement of that vision

1. Organize common ancillary investigations when appropriate and understand the value, limitations and cost of these tests.

E HEALTH ADVOCATE

Global Objective: To develop a partnership with patients, their families, and support agencies to influence health

determinants

1. Recognize cardiovascular issues which impact on lifestyle, schooling, employment, insurability, pregnancy etc., and respond to these appropriately.
2. Understand the importance of fastidious dental hygiene in prevention of endocarditis in patients with complex congenital heart disease who are at high risk of endocarditis.

F SCHOLAR

Global Objective: To demonstrate a lifelong commitment to excellence in practice through continuous learning, the teaching of others, the evaluation of evidence, and contributions to scholarship

1. Engage in CME through self-directed learning around the cases seen in the clinics and on the wards by the development and implementation of a personal learning plan to enhance professional practice.
2. Attend and contributes to rounds, seminars and other learning opportunities.
3. Demonstrate ability to critically appraise the medical literature and integrate best available evidence into practice. This includes active participation in monthly Journal Club where recent literature is reviewed with the Congenital Heart Team.

G PROFESSIONAL

Global Objective: To demonstrate ethical practice, high personal standards of behavior, dedication to the profession and maintenance of personal health

- 1 Exhibit appropriate professional behaviors and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality.
- 2 Demonstrate awareness of personal limitations and ability to seek assistance or consultation when appropriate.
- 3 Understand the nature of professional interpersonal relationships and boundaries with patients, junior learners and allied health staff.
- 4 Understand and apply basic principles of medical ethics including: informed consent, advanced directives, research ethics, patient autonomy and justice to a pediatric and adolescent population.



PG ITER - Cardiology/Internal Medicine

Rotation: Adult Congenital Heart Disease, Pediatric Cardiology
Level: PGY4, PGY5

Legend:

N/A - Non Applicable

- 1 - **Unsatisfactory**: Performs significantly lower than level of training
- 2 - **Provisional Satisfactory**: Performs lower than level of training
- 3 - **Satisfactory**: Meets expectations at level of training
- 4 - **Very Good**: Exceeds expectations for level of training
- 5 - **Outstanding**: Significantly exceeds expectations for level of training

NOTE: If the learner functions at their training level, then the learner should obtain a score of Satisfactory.

Medical Expert

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Demonstrates competence in taking a detailed history including history of presentation at birth from the patient's parents if present, family history of congenital heart disease and genetic syndromes response to various medical and surgical interventions in infancy and childhood.	0	0	0	0	0	0
Demonstrates competence in taking a history from a patient that is non-communicative or developmentally delayed (eg: Down syndrome, other forms of autism and learning disabilities).	0	0	0	0	0	0
Demonstrates competence in performing a detailed physical examination and eliciting all pertinent cardiac physical findings in a comprehensive and systematic way.	0	0	0	0	0	0
Demonstrates competence in explaining the significance of physical exam findings.	0	0	0	0	0	0
Understands the common cardiovascular malformations and is able to recognize these clinically.	0	0	0	0	0	0
Understands the impact of pregnancy on cardiac pathology and the interaction between the cardiac pathology and the hemodynamic changes of pregnancy.	0	0	0	0	0	0

Communicator

	Unsatisfactory	Provisional Satisfactory	Satisfactory	Very Good	Outstanding	N/A
	1	2	3	4	5	
Demonstrates effective communication with patients, who may be non-verbal or developmentally delayed, and their families in order to obtain the appropriate clinical information.	0	0	0	0	0	0
Demonstrates effective and verbal written case presentations to the congenital heart clinic cardiologist.	0	0	0	0	0	0
Actively participates in case conferences and regional case review.	0	0	0	0	0	0

Collaborator

	Unsatisfactory	Provisional Satisfactory	Satisfactory	Very Good	Outstanding	N/A
	1	2	3	4	5	
Participates in the follow-up care of children in collaboration with the regional congenital heart clinic.	0	0	0	0	0	0
Collaborates with pediatric cardiologists as well as nurse practitioners, social workers, and family physicians involved in the care of complex congenital cardiac patients.	0	0	0	0	0	0

Leader

	Unsatisfactory	Provisional Satisfactory	Satisfactory	Very Good	Outstanding	N/A
	1	2	3	4	5	
Arrange common ancillary investigations when appropriate and understand the value, limitations, and cost of these tests.	0	0	0	0	0	0

Health Advocate

	Unsatisfactory	Provisional Satisfactory	Satisfactory	Very Good	Outstanding	N/A
	1	2	3	4	5	
Recognizes cardiovascular issues which impact on lifestyle, schooling, employment, insurability, pregnancy etc., and responds to these appropriately.	0	0	0	0	0	0
Understands the importance of fastidious dental hygiene in prevention of endocarditis in patients with complex congenital heart disease who are at the high risk of endocarditis.	0	0	0	0	0	0

Scholar

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Demonstrates appropriate self-directed learning around the cases seen in the clinics and on the wards by the development and implementation of a personal learning plan to enhance professional practice.	0	0	0	0	0	0
Demonstrates the ability to critically appraise the medical literature and integrate the best available evidence into practice. This includes active participation in monthly Journal Club where recent literature is reviewed with the Congenital Heart Team.	0	0	0	0	0	0

Professional

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Exhibits appropriate professional behaviours and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality.	0	0	0	0	0	0
Understands and applies the basic principles of medical ethics including: informed consent, advanced directives, research ethics, patient autonomy, and justice to a pediatric and adolescent population.	0	0	0	0	0	0

OVERALL COMPETENCE (FOR LEVEL OF TRAINING)

	Incomplete 1	Unsatisfactory 2	Provisional Satisfactory 3	Satisfactory 4
Please check the appropriate box for the overall competency of this learner's training level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was input sought from other faculty, allied health professionals, or patients and their family members? (If yes, please please specify in the comment box provided immediately below)				<input type="radio"/> Yes <input type="radio"/> No
Comments				

Summative Comments

(Any item evaluated above or below a 3, must include comments and examples to justify the rating)

Formative Comments

(Please provide 1-2 items for the resident to improve upon in order to progress along the competency continuum)



PG ITER - Cardiology/Internal Medicine

Rotation: Adult Congenital Heart Disease, Pediatric Cardiology
Level: PGY6

Legend:

N/A - Non Applicable

- 1 - **Unsatisfactory**: Performs significantly lower than level of training
- 2 - **Provisional Satisfactory**: Performs lower than level of training
- 3 - **Satisfactory**: Meets expectations at level of training
- 4 - **Very Good**: Exceeds expectations for level of training
- 5 - **Outstanding**: Significantly exceeds expectations for level of training

NOTE: If the learner functions at their training level, then the learner should obtain a score of Satisfactory.

Medical Expert

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Demonstrates competence in the assessment of the severity of various cardiac lesions and determines the need for further investigations and interventions.	0	0	0	0	0	0
Understand the implications of various malformations on growth, development, education and employment and knows the indications for re-operation/re-intervention.	0	0	0	0	0	0
Understands the interventions and surgical options for various congenital lesions (eg: Stenting of residual or recurrent coarctation of the aorta, arterial switch repair for TGA, options for management of single ventricle syndromes etc.).	0	0	0	0	0	0
Demonstrates competence in the assessment of the need for further investigation and management of high-risk lesions (eg: Tetralogy of Fallot with severe PI, Marfan syndrome, bicuspid aortic valve with aortopathy, need for prompt anticoagulation and cardioversion of patients with single ventricle and atrial arrhythmias, etc.)	0	0	0	0	0	0
Understands the risk of pregnancy to the mother in various cardiac conditions and can initiate management to prevent the major complications such as heart failure, arrhythmias, aortic dissection etc., in the mother.	0	0	0	0	0	0

Understands the risk of pregnancy to the fetus in various cardiac conditions and can describe management issues in minimizing the risk to the fetus.

0 0 0 0 0 0

Communicator

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Demonstrates effective communication with patients, who may be non-verbal or developmentally delayed, and their families in order to obtain the appropriate clinical information.	0	0	0	0	0	0
Demonstrates effective and verbal written case presentations to the congenital heart clinic cardiologist.	0	0	0	0	0	0
Actively participates in case conferences and regional case review.	0	0	0	0	0	0

Collaborator

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Participates in the follow-up care of children in collaboration with the regional congenital heart clinic.	0	0	0	0	0	0
Collaborates with pediatric cardiologists as well as nurse practitioners, social workers, and family physicians involved in the care of complex congenital cardiac patients.	0	0	0	0	0	0

Leader

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Arrange common ancillary investigations when appropriate and understand the value, limitations, and cost of these tests.	0	0	0	0	0	0

Health Advocate

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Recognizes cardiovascular issues which impact on lifestyle, schooling, employment, insurability, pregnancy etc., and responds to these appropriately.	0	0	0	0	0	0

Understands the importance of fastidious dental hygiene in prevention of endocarditis in patients with complex congenital heart disease who are at the high risk of endocarditis.	0	0	0	0	0	0
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Scholar

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Demonstrates appropriate self-directed learning around the cases seen in the clinics and on the wards by the development and implementation of a personal learning plan to enhance professional practice.	0	0	0	0	0	0
Demonstrates the ability to critically appraise the medical literature and integrate the best available evidence into practice. This includes active participation in monthly Journal Club where recent literature is reviewed with the Congenital Heart Team.	0	0	0	0	0	0

Professional

	Unsatisfactory 1	Provisional Satisfactory 2	Satisfactory 3	Very Good 4	Outstanding 5	N/A
Exhibits appropriate professional behaviours and relationships in all aspects of practice, demonstrating honesty, integrity, humility, commitment, compassion, respect, altruism, respect for diversity, and maintenance of confidentiality.	0	0	0	0	0	0
Understands and applies the basic principles of medical ethics including: informed consent, advanced directives, research ethics, patient autonomy, and justice to a pediatric and adolescent population.	0	0	0	0	0	0

OVERALL COMPETENCE (FOR LEVEL OF TRAINING)

	Incomplete 1	Unsatisfactory 2	Provisional Satisfactory 3	Satisfactory 4
Please check the appropriate box for the overall competency of this learner's training level	0	0	0	0
Was input sought from other faculty, allied health professionals, or patients and their family members? (If yes, please please specify in the comment box provided immediately below)	<input type="radio"/> Yes <input type="radio"/> No			

Comments

Summative Comments

(Any item evaluated above or below a 3, must include comments and examples to justify the rating)

Formative Comments

(Please provide 1-2 items for the resident to improve upon in order to progress along the competency continuum)