



# THE UNIVERSITY OF BRITISH COLUMBIA

## Pediatric Critical Care Medicine Postgraduate Training Program

### ELECTIVE SPECIFIC OBJECTIVES AND COMPETENCIES FOR:

#### Cardiac Anesthesia

##### *Terminal competencies:*

The competent pediatric critical care resident/fellow will demonstrate knowledge or performance of:

1. The preoperative anesthetic considerations for surgery on patients with congenital heart disease.
2. Basic and advanced airway maneuvers.
3. The anatomy, hemodynamic consequences of bypass, heart-lung interactions and electrophysiology of intraoperative and immediately postoperative patients undergoing congenital heart surgery.
4. Central line and arterial line placement.

##### *Enabling competencies:*

1. Attend cardiac surgical conference to understand preoperative data such as ECG, Echocardiography and Cath data related to operative cases.

2. Discuss an anesthetic plan related to congenital heart cases.
3. Ability to assess airway patency and recognize signs of partial airway obstruction.
4. Recognize important differences between adolescent, pediatric and neonatal airways - and different approaches to their management.
5. Perform interventions (eg patient position, oxygen delivery, airway adjuncts) appropriate to the situation to maintain airway patency.
6. Perform assisted and controlled ventilation with bag - valve mask, and JR circuit.
7. Describe indications, contraindications and complications of airway intervention.
8. Discuss equipment and appropriate sizes required for the intubation of pediatric patients.
9. Perform oro-tracheal intubations.
10. Perform naso-tracheal intubations – know the indications and contraindications for choosing this method of intubation.
11. Perform rapid sequence induction with appropriate preparatory steps and medications.
12. Discuss anesthetic agents of choice in the hemodynamically unstable patient.
13. Describe variations of rapid sequence induction in patients with congenital heart disease.

14. Describe the optimal timing and method of intervention in emergency situations relating to congenital heart disease.
15. Describe manoeuvres to confirm proper endotracheal tube placement.
16. Describe the steps of anesthesia management when placing a patient on bypass.
17. Describe hemodynamic considerations when removing a patient from bypass (invasive monitoring interpretation, ventilation and hemodynamic stability).
18. Perform rhythm interpretation and initiation of appropriate pacing post-operatively.
19. Perform placement of jugular venous access with ultrasound guidance.
20. Perform placement of both peripheral and central arterial access both with and without ultrasound guidance.
21. Describe indications of extubation readiness within the operating room.