**Supplementary Figure 1: Case Scenario Assessment**

**Instructions:** This assessment is designed to evaluate your knowledge of pediatric cardiology patients prior to your simulation experience. It will not count toward your overall evaluation for this rotation and is solely to help us best understand how to teach pediatric residents about cardiology. Answer every question to the best of your ability and please do not use any resources outside your baseline knowledge.

**Gender:** Man | Woman | Non-Binary | Prefer not to answer

**Pediatric Cardiology Background:**

*Have you rotated on a pediatric cardiology service before?*

Yes No

*Are you interested in pediatric cardiology as a career option?*

Yes No

**Questions**

1. You are in the newborn nursery preparing Baby Boy JJ for discharge. He is a 3day old 3kg infant born via C-section to a healthy mother. His mother reports that he seems a bit more tired with feedings today. The lactation consultant finds you and tells you he has been struggling to feed today. He has to take breaks, has been sweating, and breathing deeper. His vitals are as follows heart rate 150bpm, RR-30, BP-60/25. What is your next best step?
2. Obtain CBC w/ differential, CRP, and blood culture
3. Obtain 4 extremity blood pressures
4. Obtain saturations on the left arm and leg
5. **Obtain a point of care glucose**
6. A point of care glucose was obtained and showed a result of 70mg/dL. What is your next best step?
7. Obtain CBC w/ differential, CRP, and blood culture
8. Obtain 4 extremity blood pressures
9. Obtain saturations on the left arm and leg
10. **A and B**
11. A, B, and C
12. Laboratory tests are sent and pending. Baby JJ has a right upper extremity blood pressure of 80/35 with a left lower extremity blood pressure of 60/30. Explain in two sentences or less what diagnoses do you most suspect and what steps you will take to help this patient.

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1. Imagine JJ's blood pressures were 60/35 in the right upper extremity and 57/28 in the lower extremity. Laboratory results are still pending. Explain your mental model and what steps you will take to help this patient.

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1. You are in the emergency department seeing a 5 month old girl with unrepaired Tetralogy of Fallot who came in via ambulance with hypoxia. Her initial vital signs are HR- 165, BP-70/35, SpO2- 45% and on exam the infant is agitated, with no murmur. What is your next best step?
   1. Calm the infant
   2. Obtain IV access
   3. Administer morphine
   4. Administer a fluid bolus
   5. A, B and C
   6. **All of the above**
2. You get the infant calm after placing an IV and administering morphine, a bolus and placing the infant in her father’s arm. Her saturations are now 78%. What happened to this patient and what would you do next?

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1. You see a 5 day old infant in urgent care with chief complain of discoloration. She was well appearing at home until today when her mother noted she looked a bit blue and pale. She passed her CCHD screen in the newborn nursery. Her vital signs are HR- 155, BP-70/35, SpO2- 60% and on exam the infant is calm. What is your next best step?

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1. Explain what do you think this infant may have and how to initiate treatment.

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**Supplementary Figure 2: Retrospective pre/post survey**

**Instructions:** This survey serves as a tool to evaluate residents’ level of knowledge related to caring for children having cardiac emergencies. This tool is designed to assess your perceived knowledge before and after this curriculum. Please answer as completely and honestly as possible. Thank you.

For each of the topics listed below, please check the box under the number correlated to your level of knowledge before and after completing this simulation curriculum:

1= Novice, had no knowledge of the content

2= Advanced beginner, know little about the content

3= Competent, have some basic knowledge but more to learn

4= Proficient, consider myself very knowledgeable

5= Expert- can teach and supervise others

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **How do you rate your knowledge about the following topics** | **Knowledge Before Simulation Curriculum** | | | | | **Knowledge After**  **Simulation Curriculum** | | | | |
| ***Ratings*** | **1** | **2** | **3** | **4** | **5** | **1** | **2** | **3** | **4** | **5** |
| Recognizing a patient with critical coarctation of the aorta |  |  |  |  |  |  |  |  |  |  |
| Recognizing a patient with critical pulmonary stenosis |  |  |  |  |  |  |  |  |  |  |
| Recognizing the differences between a patient presenting with septic versus cardiogenic shock |  |  |  |  |  |  |  |  |  |  |
| Treatment of a critically ill neonate with critical pulmonary stenosis |  |  |  |  |  |  |  |  |  |  |
| Treatment of a patient with a suspected ductal-dependent lesion |  |  |  |  |  |  |  |  |  |  |
| Prostaglandin dosage and side effect profile |  |  |  |  |  |  |  |  |  |  |

**Supplementary Figure 3: Simulation checklists**

***Critically Ill Neonate Checklist (To be used for coarctation of the aorta and HLHS simulation)***

***Critical Items \****

* Recognize distress and place patient cardiac monitors
* Conduct a focused physical exam (listen to heart, lungs, stomach, palpate pulses)
* Verbalizes evidence of decreased pulses
* Ask for 4 extremity blood pressures \*
* Obtain pre and post ductal saturations \*
  + Can specify where they should be obtained right arm and leg
* Ask for access to be obtained
* Calls for cardiology consult\*
* Asks to start prostaglandin \*
* Starts prostaglandin at 0.05 mcg/kg/min
* Ask for EKG
* Ask for chest x-ray
* Recognizes apnea from prostaglandin and ask for respiratory support (nasal cannula, high flow, intubation)

***Unexplained cyanosis Checklist (Critical Pulmonary Stenosis)***

***Critical Items \****

* Recognizes cyanosis and place patient cardiac monitors
* Conduct a focused physical exam (listen to heart, lungs, stomach, palpate pulses)
* Takes note of low saturation
* Verbalizes physical exam findings
* Ask for EKG
* Ask for 4 extremity blood pressures\*
* Obtain pre and post ductal saturations \*
  + Can specify where they should be obtained right arm and leg
* Ask for chest x-ray
* Ask for access to be obtained
* Consider prostaglandin administration\*
* Calls for cardiology consult\*