BNURS506 Quiz Answering

Term: Spring 2025
Module 3: Cardiovascular & Pulmonary Systems
Name: Student P

#:	Your Answer	Feedback from Grader	Score
1	**You assist Ethan with controlled breathing, notify the parents, and advise they bring his inhaler immediately. You also initiate a referral for follow-up care with his pediatrician to assess his asthma action plan and determine the need for long-term control medication.** ● **What steps should a school nurse take when a child presents with exercise-induced asthma symptoms during physical activity?** ● **What are key indicators that the asthma is not well-controlled in this child?** You mention most of the steps in your assessment already. When a child experiences an exercise induced asthma exacerbation, the nurse should do immediate assessment such as check respiration rate, work of breathing, any use of accessary muscles, assess ability to speak full sentence vs. phrase, listen to lungs for wheezing and restrictive airways and also measure the oxygen saturation, at the same time keep the child calm and position the child in an upright position, encourage the child to slow and controlled breathing, stay with the child to lessens his anxiety. Most of time school nurses have the rescue inhaler (albuterol), help administer it per the doctors' order (usually 2 puffs, spaced 1 min apart), if the inhaler is not available, notify the family member to bring it immediately and prepare for emergency care if needed. Continue to monitor the child for improvement or worsening, document all findings, interventions and communications. Follow your emergency protocol if the symptoms worsen or do not improve within15-20 min or if Oxygen drops below 92%, call 911 per protocol. It is best to have an Asthma action plan. 2. several signs in Ethan's case suggest that his asthma may not be well-controlled: wheezing and shortness of breath after getting the dose at	Great job with answering the question, you manage to answer completely for the first question. For the second part, there were a few indicators missing like family hx. etc.	9/ 10

	home, frequent needs of inhaler, poor asthma self-management since he left his inhaler at home, symptoms interfering with his normal activity. References: Yansong, L.Ju, X. Zhu M.,& Qing, Z (2025). The effect of asthma education program on disease management in children with asthma: retrospective analysis. *British Journal of Hospital Medicine*, *86*(3), 1–12. https://doi.org.offcampus.lib.washington.edu/10.12968/hmed.2024.0764 *Treatment and Action Plan	NHLBI, NIH*. (2024, April 17). NHLBI, NIH. https://www.nhlbi.nih.gov/health/asthma/treatment-action-plan Feedback: It was a well-organized and thoughtful question. It is not only reinforced my existing knowledge but also made my awareness of exercise induced asthmas more . Exercise induced asthma is common and chronic conditions in school aged children. When I did my rotation in an elementary school for my bachelor's degree, we had almost 20 students with asthma and some of them did not have a valid prescription. I believe parents often need more education than the children about asthma emergencies and understanding the importance of having an up to do asthma action plan.		
3	pH = 7.12 : Acidosis (normal range 7.35-7.45) PaCO2 = 62 mmHg Respiratory acidosis (35-45 mmHg) PaO2 = 54 mmHg severe hypoxemia (80-100 mmHg) HCO3 = 14 mEq/L metabolic acidosis (22-26mEq/L) SaO2 = 88% Hypoxia (95%-100%) Lactate = 6.1 mmol/L Lactic acidosis (less than 2.0 mmol/L) Interpret this ABG and calculate the P/F ratio.	Great job answering this question! Your ABG interpretation and P/F ratio are correct and I really liked your concise rationale. You were very close on the select all question, but the correct answer is A, C, & D. Suctioning the endotracheal tube should always be performed when it is clinically indicated, and not on a routine schedule. While she may	9.5 / 10

	Mixed respiratory and metabolic acidosis with sever hypoxemia and elevated lactate. Patient is critically ill showing signs of impending respiratory failure and shock. P/F ratio: P/F= 54/1.0=54 severe ARDS per my friend from respiratory. The provider likely intubates Laura because of several life-threatening findings such as hypoxemia, high work of breathing, exhaustion, mixed acidosis and ARDS, hypoperfusion and impending septic shock. These finding needs mechanical ventilation to support oxygenation, reduce work of breathing and correct acidosis. Correct answer to multiple choice : all the above options are appropriate and expected interventions in an indicated ARDS patient. References: Matthay, M. A., Zemans, R. L., Zimmerman, G. A., Arabi, Y. M., Beitler, J. R., Mercat, A., Herridge, M., Randolph, A. G., & Calfee, C. S. (2019). Acute respiratory distress syndrome. *Nature reviews. Disease primers*, *5*(1), 18. Feedback: A challenging question but very well-organized and thought out. I am not an ICU nurse, but this question is tempting me to go to ICU now. I struggled with ABGs and calculating P/F which I never used since nursing school. It really expanded my knowledge about ABGs and P/F. We do have patient with cardiogenic shock and septic shock which we transfer them to ICU. I really enjoyed the struggle answering the question. I hope the answer to multiple question is the right one.	require a lot of suction after proning as her secretions mobilize, it's important to assess for need (coughing, certain ventilator alarms, agitation. Suctioning too much can cause trauma to the airway and bleeding. I deducted 0.5 points for this (0.5 pts for each correct selection). Overall, great work and I hope to see you in the ICU!	
5	**After the huddle, your orienting nurse asks you several questions:** 1. **What is an LMA?** Laryngeal Mask Airway is supraglottic airway device used to keep the airway open during anesthesia. It sits above the vocal cords, forming a seal around the laryngeal inlet, allowing the patient to breathe or	Thank you for your work and feedback! You answered every portion of the question correctly and with clear and concise detail, nice job! I especially appreciate your detail about where the LMA sits in the airway once placed. My only	9.5 / 10

	ventilated without the need for a more invasive endotracheal tube (ET). LMA are generally easier and quicker to place, cause less throat irritation, and are often used in shorter, less invasive surgeries where deep muscle relaxation or full airway protection is not required. **2. The anesthesia provider is using an LMA for two cases but an ET tube for the third. Why doesn't she use an LMA for all three cases?** The choice between LMA and ET tube depends on several patient and surgical factors such as risk of aspiration: if a patient is at risk of vomiting or has a full stomach, an ET tube provides a better seal and airway protection against aspiration. Example: GERD or emergency surgeries. 2. Surgical procedure type and duration: if the surgery is longer or more invasive and those involving the abdomen or chest often require controlled ventilation which is better managed with ET tube. 3. Patient's positioning or airway anatomy: some positions like prone or lateral or obese and sleep apnea patient require more secure airway which is better managed with ET due to reduce lung compliance and increased aspiration risks. **Hint for #2: You don't need to know the specifics of the patient. Please identify 3 parameters that would guide the anesthesia provider's decision for selecting an appropriate device for establishing and maintaining the airway during surgery and provide one example of a patient condition that would dictate this choice.** ***BONUS: As the nurse assisting the anesthesia provider with establishing an airway prior to surgery, identify 2 things you could assess to confirm the airway device is placed correctly.** as a nurse, you can support the anesthesiologist by assessing the airways (chest rise and breath sounds) and monitoring the End-tidal CO2. **References:**	feedback is to recommend in-text citations to follow APA format.	

	Dosemeci, L., Yilmaz, M., Gürpinar, F., & Ramazanoglu, A. (2002). The use of the laryngeal mask airway as an alternative to the endotracheal tube during percutaneous dilatational tracheostomy. *Intensive care medicine*, *28*(1), 63–67. https://doi-org.offcampus.lib.washington.edu/10.1007/s00134-001-1161-x Simon, L. V., & Torp, K. D. (2023, July 11). *Laryngeal Mask Airway*. StatPearls – NCBI Bookshelf. https://www.ncbi.nlm.nih.gov/books/NBK482184 Feedback: I was able to use my existing knowledge about ET to answer your question. LMA are mostly used for a quick and noninvasive procedure. The question was well written and organized.		
7	**Based on the patient history and assessment findings, which cardiac arrhythmia so you suspect? After 30 minutes in the ED, Ivan's blood pressure drops to 78/52, and he has decreased level of consciousness. What pharmacological intervention do you anticipate? What administration considerations do you have for this medication?** Based on Ivan's symptoms and presentation, vital signs, he is in SVT (supraventricular tachycardia) . A common arrhythmia that can be triggered by exercise or stress. It's characterized by rapid heart rate often more than 180 bpm. It originated above the ventricles. The rhythm is usually regular and narrow complex on EKG. After 30 min, Ivan's BP drops and his LOC changes, this means that he is becoming unstable and need immediate intervention. If a patient is stable and conscious, SVT managed by performing vasovagal maneuver first then if that does not work, we jump to the SVT algorithm. In Ivan's case, immediate synchronized cardioversion is appropriate.	Nice work! Seems like you work in the ED!! Ivan is showing signs and symptoms of Supraventricular Tachycardia (SVT) (4 points). SVT is the most common arrhythmia in children, most of whom have structurally normal hearts (Dubin, 2023) (4/4) There are some non-pharmacological interventions that can be used for patients with SVT who are hemodynamically stable, that typically evoke a vagal response (ie. Blowing through a	10 / 10

	Mostly we use adenosine after notifying the hospitalist or cardiologist in some cases. If adenosine is given: first dose is 0.1 mg/kg IV push, second dose is 0.2 mg/kg IV push. Give it rapidly over 1-2 seconds and make sure your patient has large bore IV, preferably in their AC. Immediately flush with 10-20 ml of NS to push the drug into the circulation. Make sure you patient is on cardiac monitor to see the conversion of the rhythm, and adenosine can cause a brief period of asystole. If adenosine is not effective, then amiodarone 150mg iv over 10 minutes or procainamide 20-50 mg/min IV is given for stable SVT. Have emergency equipment at bedside like crash cart in case of adverse reactions or need for cardioversion. If he is still not converted to normal sinus rhythm, then prepare for cardioversion for unstable SVT. It depends on QRS narrow or wide and regular/irregular. Starts with 120 j and goes up to 200 joules. References: ACLS Medical Training. (2024, August 26). *SVT ACLS Training | Advanced Cardiac Life Support*. https://www.aclsmedicaltraining.com/acls-tachycardia-algorithm Feedback: Thank you for a very straight question. I was able to apply my ACLS knowledge to answer your question. Joules depends on if the QRS is narrow or wide and regular or irregular.	straw, icepack to the face). Since Ivan is demonstrating hemodynamic instability, I would anticipate an order for Adenosine (3 points) (3/3). This should be administered via rapid IV push through a large proximal vein, as close to central circulation as possible, followed by a rapid saline flush using a three-way stopcock. (3 points) (Lewis et al. 2017). (3/3) Bonus info: Cardioversion is the definitive treatment for SVT for children who are hemodynamically unstable. Technically, it should not be delayed for non-pharmacological interventions or the administration of adenosine, though those interventions are often done before cardioversion as they are less invasive and usually not difficult administer (depending on hemodynamic status) (Dubin, 2023).	
9	Suspected diagnosis given the presence of a ventricular septal defect and an overriding aorta, is Tetralogy of Fallot. It is common congenital heart defect with four characteristic features: ventricular septal defect, pulmonary stenosis, overriding aorta and right ventricular hypertrophy. Mostly physicians ask for fetal ECHO (fetal Echocardiogram) to perform to get detailed ultrasound to confirm the diagnosis and severity of it. Genetic testing may also be considered to detect the DiGeorge syndrome (22q11.2 deletion syndrome), testing done by amniocentesis with chromosomal microarray or FISH).	Great answer, you touched on all the components I was looking for. So far you are the only one that suggested genetic testing. I think it's great. Many genetic anomalies also come with cardiac conditions.	10/ 10

	Once baby is born, clinical signs of ToF may include cyanosis especially during crying or feeding, "Tet Spells" episodes of deepening cyanosis, irritability and difficulty breathing, especially when stressed. Systolic murmur, poor feeding and weight gain, clubbing of fingers/toes and boot shaped heart on chest x-ray. Anticipated therapies for the newborn include Prostaglandin E1 infusion , management of Tet spells, surgical interventions to correct the cardiac defects: complete surgical repair for closure of the VSD, temporary shunt surgery and possible future intervention later in life for pulmonary valve replacement. References: van der Ven, J. P. G., van den Bosch, E., Bogers, A. J. C. C., & Helbing, W. A. (2019). Current outcomes and treatment of tetralogy of Fallot. *F1000Research*, *8*, F1000 Faculty Rev-1530. https://doi-org.offcampus.lib.washington.edu/10.12688/f1000research.17174.1 Apitz, C., Webb, G. D., & Redington, A. N. (2009). Tetralogy of Fallot. *Lancet (London, England)*, *374*(9699), 1462–1471. https://doi-org.offcampus.lib.washington.edu/10.1016/S0140-6736(09)60657-7 Feedback: Thank you for this question. The scenario and questions were well thought out and organized. I was able to learn more about the Tetralogy of Fallot. It's such an important congenital condition to understand, especially in perinatal and pediatric care. The questions were straight forward, and resources were easy to find.		
11	Your patient is in Afib with RVR given the heart rate inconsistently jumping between 110-150's. no chest pain or palpitations or dizziness. History of converting into this rhythm. It is also common in sepsis and post infection states as well. IV Metoprolol tartrate a short acting beta 1 selective blocker is	You did a good job answering this question and went as far as to tell me the exact medication dosing that	10/ 10

	given at low dose at 2.5 mg IV push over 2 minutes or sometime 5 mg IV push. Patient education in inpatient setting: This medication is given to help the heartbeat more regular and prevent complications from having a heart rate that's too fast. Educating them on the mechanism of action. What to expect, it may make them feel a little more tired at first which is expected as the heart rate slows. Getting up from bed to the standing positioning slowly. At-Home education: heart rate monitor at home. Having a smartwatch or home BP cuff that shows pulse trends. Medication adherence and triggers at home such as taking the medication as prescribed even when they feel fine and avoiding excess caffeine , alcohol or decongestants which can trigger episodes. Managing stress and getting enough rest to help reduce the flare-ups. References: Sagris, M., Vardas, E. P., Theofilis, P., Antonopoulos, A. S., Oikonomou, E., & Tousoulis, D. (2021). Atrial Fibrillation: Pathogenesis, Predisposing Factors, and Genetics. *International journal of molecular sciences*, *23*(1), 6. https://doi-org.offcampus.lib.washington.edu/10.3390/ijms23010006 Feedback: Excellent question about afib management. I liked how you address the need for At-home afib management. I wish everyone can afford the smartphones to track the arrythmias. Patient education is very important in this condition and importance of medication adherence.	may also be given to this patient. Though I didn't think about how patients could use a smart watch to help them monitor their heart rate, that is an excellent idea given our current access to technology. Thank you for your feedback!	
13	Pt is showing signs and symptoms of cardiac tamponade which is a serious medical emergency. Classic sign for Cardiac tamponade: tachycardia, hypertension, JVD, muffled heart sounds and echo showing fluid around the heart. Cardiac tamponade happens when too much fluid builds up around the heart. This puts pressure on the heart, making it hard for it to fill properly and pump blood which lowers the amount of blood the body gets. References: Appleton, C., Gillam, L., & Koulogiannis, K. (2017). Cardiac Tamponade. *Cardiology clinics*, *35*(4), 525–537. https://doi-org.offcampus.lib.washington.edu/10.1016/j.ccl.2017.07.006	Correct! My intention with this question was to keep it simple while encouraging you to focus on the assessment, including your auscultation skills to detect a potential cardiac tamponade. Since you recently experienced a pt with cardiac tamponade, I imagine this question was a piece of cake for you!	10/ 10

	Feedback: I liked the scenario and multiple-choice answer. We recently had a patient; he ended up getting a pericardial drain in the ICU.		
15	Based on the pic and symptoms, child is suffering from Kawasaki disease. It is a vasculitis of medium-sized arteries that primarily affects children under 5 years old. Patient has fever lasting for five days, bilateral non-exudative conjunctivitis, mucosal changes of the oropharynx (strawberry tongue), diffuse red rash on back, swollen hands and other supporting signs: irritability, poor appetite, prolonged fever unresponsive to antipyretics. Treatment includes: IVIG (intravenous immunoglobin) given once within the first 10 days to reduce risk of coronary artery aneurysms. 2. Aspirin, initially high dose as an anti-inflammatory effect during acute phase then low dose as an antiplatelet to prevent thrombosis in coronary arteries. Family education: monitor for cardiac complications such as follow up with a pediatric cardiologist and echo to assess for coronary artery aneurysms. Monitor for signs like chest pain, shortness of breath and palpitations in the weeks/months following illness References: Sundel R. P. (2015). Kawasaki disease. *Rheumatic diseases clinics of North America*, *41*(1), 63–viii. Feedback: Thank you for providing good case study. I heard about strawberry tongue but forgot about the disease that causes it. By this case study, I learnt about Kawasaki disease and treatment. Well organized questions.	Correct diagnosis with rationale: 2.5 of 3 points Correct identification of treatment of choice: 3 points At least 2 accurate and relevant educational points: 3 points Providing references: 1 point For the diagnosis, I was hoping to see the mention of the diagnostic criteria used to diagnose Kawasaki Disease established by Tomisaku Kawasaki in 1967 (Son, 2024) and is included in the American Academy of Pediatrics (AAP) Committee on Infectious Diseases report on diagnosis of Kawasaki Disease (Committee on Infectious Diseases, AAP, 2024). Thank you for the feedback!	9.5/ 10
17	Patient's symptoms are concerning for a carotid artery dissection which a potentially life threating condition that can lead to ischemic stroke. Her recent chiropractic manipulation, persistent neck and jaw pain, throbbing unilateral	Great, strong answer, with added pathophysiological detail. You really showed great understanding of the	10/ 10

	headache, vertigo-like symptoms and diplopia are concerning. She may be experiencing left internal carotid artery dissection which can occur spontaneously or after trauma including neck manipulation. It means the inner lining of the artery tears, and blood gets between the layers of the artery wall. This can make the artery narrow, block it or cause clots to form and travel to the brain which can lead to stroke. Assessments includes neuro checks such as cranial nerves, motor strength and sensation, Romberg test, speech and language and visual fields and acuity assessment. Check for bruit over carotid arteries, neck tenderness, stiffness and range of motion, vital signs and NIH stroke scale. CTA of head and neck to rule out stroke and arterial dissection. MRI of brain and neck for further detail especially infarcts. She is at extreme risk for ischemic stroke, subarachnoid hemorrhage and permanent neurological deficits if not treated . she should manage her blood pressure diligently and medication adherence. References: Lanzino, G., & D'Urso, P. I. (2011). Carotid dissections. *Journal of neurosurgery*, *115*(1), 89–90. Feedback: Great questions and scenario. I was able to use my current knowledge of carotid dissections. We get patient with similar presentation. Usually, the neurologist rules out stroke but later after the ultrasound and MRI, it turns out to be carotid dissections. Because the symptoms are like the ischemic stroke. I have not seen any different treatment plan for carotid dissections.	situation and subject matter here. Your assessment piece was fantastic. You hit all the points I was looking for. Thank you for your work on this!	
19	Ronald is mostly experiencing from Peripheral artery disease, specifically intermittent claudication. Classic symptoms of PVD: cramping pain in the calf with walking that improves with rest. Risk factors include smoking, diabetes, hypertension, hyperlipidemia and coronary artery disease. Assessment findings: right leg is cooler and paler than the left which means reduced blood flow to that limb. Focused physical assessment include Ankle-brachial index which is a non-invasive test that compares the blood pressure in the ankle to the blood pressure in the arm. Normal ABI is 1.0-1.4. PAD= <0.9. the lower the number	1. Your answer correctly identified that Ronald likely has Peripheral Artery Disease. Symptoms of PAD include limb pain that occurs during usage (claudication) due to lack of blood flow to musculature. Ronald has signs of early PAD	10 / 10

	more severe the disease. Other assessments are checking for capillary refill, skin temperature, hair loss or shiny skin on the lower legs. Patient education is very important if PAD is confirmed. It includes lifestyle changes (quit smoking, diet changes, blood sugar control. Medication adherence to control blood pressure and cholesterol to prevent further vascular damage and reduce risk of stroke or heart attack. References: Firnhaber, J. M., & Powell, C. S. (2019). Lower Extremity Peripheral Artery Disease: Diagnosis and Treatment. *American family physician*, *99*(6), 362–369. Feedback: Great questions. I used my knowledge about PAD and PVD. I believe patient education is more important to manage this disease. Many patients are noncompliance with medication regimen and then they get admits for stroke in the hospital. I have seen a lot of cases where patient does not take their medication as prescribed and does not change their lifestyle, still smoking.	but later signs include ulcers from wounds that fail to heal due to insufficient blood flow. Hypertension, hyperlipidemia, diabetes, and cardiovascular disease increase the risk for PAD. Your rationale connected his symptoms and history to his diagnosis. 4/4 points 2. Your answer correctly identified one nursing physical assessment, ABI and skin assessments. Another nursing assessment would be to assess pulses and compare limbs. You provided an accurate description of how you would do the physical assessment. 3/3 points 3. Your answer provided 2 pieces of education that manage PAD and prevent further complications. 3/3 points.	