

Challenge # 1: Medication & Administration Matching

Match each medication on the left with the special consideration for administration on the right.

1 Amiodarone

2 Cellcept

3 Nitroglycerin

4 Propofol

5 Lipids

A  Non-DEHP tubing

B  1.2 Micron in line filter

C  Circle Priming

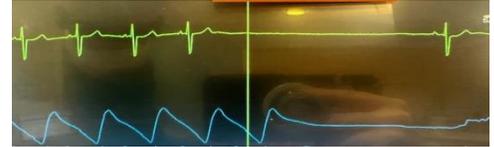
D  0.2 Micron in line filter

E  Change tubing Q12 hours

Challenge # 2: Case Study

You are caring for a 20 year old (55kg) with a history of trisomy 21 and complete AV canal repair in infancy. He is 2 days post-op from a mitral valve replacement. He is extubated, on 2L NC, has 2 Blake drains and is working with PT/OT. You notice in your assessment after a recent transfer from the chair back to bed that the Allvyn and tape holding the epicardial pacing wires is no longer intact on his abdomen. Upon further assessment, the A-wires are found to be completely dislodged and out of the skin. You notify the team and continue to monitor, as has not been pacing in the past 24 hrs.

Later in your shift, your monitor alarms for bradycardia and this is what you see:



- Which of the following would be the most appropriate immediate nursing actions (select all that apply):
 - Check the central monitor to review & print
 - Assess the patient's mental status
 - Feel a pulse/ assess perfusion
 - Cycle a blood pressure cuff
 - Call the charge RN and the physician
 - Continue to monitor while charting

Your care team confirms that the patient is having significant sinus pauses. He is now becoming diaphoretic and said he feels 'light headed.' Your fellow orders an Isoproterenol continuous infusion. You nod in agreement (but have never started this drip before--- so you run to the drug formulary).

- Given the sinus pauses with loss of atrial pacing, which of the following mechanisms of action are intended for Isoproterenol to help your patient?
 - Stimulates beta₁- and beta₂-receptors
 - Vasoconstriction of peripheral vasculature
 - Direct suppression of AV node
 - Stimulates alpha- adrenergic receptors
- The patient's parents ask what the medication is used for. Which explanation avoids medical jargon but remains accurate?
 - Increases systemic vascular resistance
 - Suppresses ventricular arrhythmias
 - Increases heart rate and supports cardiac output
 - Treats hypotension caused by hypovolemia

You remember that Kayla's recent email (12/29 titled January Cardiac Education) identified a change in the dosing of Isoproterenol for adult patients (>50kg).

How would you expect Isoproterenol to be dosed for your patient based on the recent transition to adult dosing standards?

- mcg/kg/min
- mg/hr
- mcg/min
- mg/kg/hr

****Please note that with the upcoming pharmacy changes on January 14th there will be concentration changes and non-weight based dosing options for patients >50 kg. Alaris pumps will need to be turned off and restarted to receive the update labeled 'CHP January 2026.'**

Challenge # 3: Cardiac Medications Crossword

Across	Down
4. The 'I' in the NOW GIVE process stands for _____, ensuring that the reason we are giving the medication makes sense for the patient.	1. Sodium bicarbonate should be _____ with sterile water prior to administration in neonates, especially perterm, to decrease the risk of IVH.
7. This beta adrenergic blocker is commonly administered as a continuous infusion to treat tachycardic arrhythmias.	2. This type of order might be placed for continuous vasopressor infusions that are frequently changed based on a patient's hemodynamics.
8. This medication might be ordered for its respiratory stimulant effects for neonates suffering adverse effects of Prostaglandin administration. (two words)	3. This medication has multiple uses in the cardiac population including analgesia, local anesthetic, or antiarrhythmic.
10. Excessive secretions may occur with administration of this anesthetic. The patient should be monitored closely, and suction should be readily available.	5. Ketorolac should be avoided in immediately post-operative patients due to the risk of _____.
13. This device should be attached to your syringe for intranasal administration of medications, for example intranasal Midazolam.	6. Each square centimeter of a lidocaine patch contains _____ mg of lidocaine.
15. This antiplatelet agent may be used to avoid shunt thrombosis.	9. Hypoparathyroidism associated with DiGeorge Syndrome might lead a patient to require more frequent replacements of this electrolyte.
16. A medication that increases contractility is referred to as an _____.	11. The enteral liquid of this medication should be diluted in a glass or plastic cup with an equal amount of water, orange juice, or feeds (minimum 3ml). The dilution cup should be rinsed with equivalent dilution volume as above and immediately administered via tube.
17. 15% Dextrose IVFs must be administered through a _____ line.	12. Before administering Digoxin, check the patient's _____ and confirm it's within appropriate parameters. (two words)
	13. _____ has a very short half-life; therefore, it should be administered in an IV close to the heart.
	14. Fentanyl can cause chest wall _____ and, therefore, should be administered IV over 3-5 minutes with close monitoring of the patient

Challenge # 4: True or False Questions

1. TPN, Intralipids, Milrinone and Heparin are compatible to infuse into the same CVL lumen. True or False
2. Amiodarone should always be pushed as fast as possible. True or False
3. 10% Dextrose IVFs administered to treat hypoglycemia can be administered through a peripheral line or central line. True or False
4. Management of a 'Tet' spell might include administration of morphine or a sedative. True or False
5. Common dosing of an Epi 'Spritzer' used for hypotension in our patients is 1 mcg/kg. True or False
6. Calcium Chloride is currently available in the top drawer of our emergency carts on the unit. True or False
7. Adenosine should be administered with a med line. True or False
8. The 'W' in the NOW GIVE process stands for why. True or False
9. Esmolol is commonly used as a continuous infusion to treat bradycardia. True or False
10. An Amiodarone dilution of 6mg/ml is recommended to run peripherally. True or False
11. Epinephrine 'code' doses and Epinephrine 'spritizers' are the same concentration. True or False
12. Atropine can be used to treat bradycardia and can be found in the Omnicell or the emergency carts on the unit. True or False
13. Excretion precautions should be followed for 72 hrs. after the last dose of Ganciclovir. True or False
14. Milrinone, Hydrocortisone and Furosemide are compatible to infuse into the same CVL lumen. True or False
15. Beginning a new continuous infusion, changing continuous infusion syringes/bags, or adjusting the dose of a continuous infusion requires an independent double check from a second RN. True or False

Resources:

American Pharmacists Association (2023). *Lexicomp® pediatric & neonatal dosage handbook* (30th Ed.) Wolters Kluwer.

Pediatric Cardiac Intensive Care Society. (2025). *Nursing resources. In Education & Nursing resources*. Retrieved January 1, 2026, from PCICS website: <https://pcics.org/education/nursing-resources/>

UPMC (2025). *UPMC policy and procedure manual: Safety precautions related to hazardous drugs*. Retrieved January 1, 2026, from: [Systemwide policy: Safety Precautions Related to Antineoplastic Drugs and Biological Response Modifiers BRMs \(HS-ONC0003\)](#)

UPMC (2025). *UPMC Health System List of Hazardous Drugs*. Retrieved January 1, 2026, from: [UPMC Health System Hazardous Drug Chart.pdf](#)

UPMC (2025). *UPMC Children's Hospital of Pittsburgh IV Compatibility*. Retrieved January 1, 2026, from: [IV Compatibility Tool - Drug Compatibility Matrix](#)