

Department Nursing Services' Standards Assessment Checklist for I.V. Pumps

Criteria 1: Hand washing / Hand rub as required.

Students need to perform the six steps of aseptic hand washing with soap and water. If their hands are clinically clean they can use alcohol based gel as long as they follow the six steps of hand hygiene.

[F] Criteria 2: Checked patient's name with wrist tag and treatment chart.

[F] Criteria 3: Enquired for any allergies associated with drug.

In criteria 2 and 3, students are expected to check with the treatment chart, or patient's notes, or patient (if conscious), and patient's ID tag.

[F] Criteria 4: Checked drug with treatment chart.

Students need to demonstrate knowledge of the five 'rights'.

- [F] (i) Check the dose prepared with treatment chart.**
- [F] (ii) Counter check of drug name and dose prepared with treatment chart**
- [F] (iii) Check the drug/s and disposal equipment for expiry dates and signs of contamination**

Criteria 5: Counter checked patient's identity with treatment chart.

Students are allowed to double check with assessor (in simulation tests) and with qualified nurses (in the clinical environment) or at least demonstrate knowledge of such criteria.

Criteria 6: Demonstrates an awareness of the importance of knowledge of drugs in/compatibility.

Students should demonstrate that they know where to check for such criteria – BNF/drug insert/Pharmacy.

Criteria 7: States at least one side effect from the particular drug to the given scenario whereby student is allowed to check with BNF [Literature/Pharmacy].

Students should explain such effects and if they have no knowledge about the drug, they should refer to the available information (BNF etc

[F] Criteria 8: Medication mixed & diluted accurately:

Final solution: _____ mg / _____ ml.

In the case of an ampoule with drug already in solution:

Students are expected to draw the exact volume according to the concentration indicated on the ampoule.

Eg.: Scenario requires students to prepare Dopamine 200mg in a total of 50ml 5% Dextrose and the ampoule states 40mg/ml. Students need to draw exactly 5ml to make up exactly 200mg of dopamine. This should be drawn up in a separate 5ml syringe. Next the student is expected to fill a 50ml syringe with 5% Dextrose (using the aseptic technique as per criteria No. 9) up to the 45ml mark and then the student injects the drug from the 5 ml syringe into the 50ml syringe to make up the exact solution.

In the case of a vial with drug in powder state:

Students need to reconstitute the drug with the recommended volume and withdraw according to the dose required.

Eg.: Scenario requires students to reconstitute a Dobutamine 250mg vial with 15ml sterile distilled water and need to mix it with 5% Dextrose up to the 50ml mark of the 50cc syringe. To prepare the full dose, students need to withdraw all the contents of the vial irrespective whether the final volume is less than 15ml (if there was a contraction) or more than 15ml (if there was an expansion), in a separate 20ml syringe. Next the student is expected to fill a 50ml syringe with 5% Dextrose (using the aseptic technique as per criteria No. 9) up to the mark where it will make a total of 50ml when the students inject the drug from the 20ml syringe to the 50ml syringe. Hence if, for example, the final volume in the 20ml syringe was 17ml (due to expansion), students are expected to fill the 50ml syringe up to the 33ml mark with the 5% dextrose so that when the drug is injected in the 50ml syringe, the total volume will be exactly 50ml (17ml + 33ml) as required in the scenario.

[F] Criteria 9: Aseptic technique followed while preparing the drug.

This criteria is considered a crucial one in the sense that if any contamination of equipment during the process of preparation and administration of the drug is observed, students get a straight fail.

N.B. If the scenario necessitates students preparing the drug in the treatment room, it can be done this way as long as the prepared drug is sufficiently covered and protected until it reaches the patient. In such case students need to get verbal consent and check the cannula prior the preparation of the actual drug.

Needle Recapping

Infection control policy stipulates that under no circumstances should needle recapping be practiced. However this addresses mainly used (contaminated) needles. In the case of IV drug preparations, since the needle is still sterile, safe recapping is allowed as long as students do not contaminate the needle.

If the needle is then used on the patient, it definitely should not be recapped but disposed of in the sharps container.

[F] Criteria 10: Correctly labels solution additive.

Students should be observed preparing the additive label and fill in the necessary details as indicated on the label itself. It is important that the label is endorsed by both preparer and checker. In simulated tests students are at least expected to demonstrate such knowledge. However in the clinical environment students need the signatures of two qualified nurses.

Criteria 11: Communication.

Students need to demonstrate effective communication through informed consent. The following are the criteria on which students will be assessed:

- (i) Introducing self
- (ii) Explaining procedure
- (iii) Providing clear instructions
- (iv) Making use of non-verbals

[F] Criteria 12: Prepares IV tubing maintaining sterility of connecting points.

In the case of syringe pump drivers:

Students are expected to correctly prepare the IV extension tube maintaining full sterility while purging the air out of the tube and while attaching the female end of the tube to the nozzle of the syringe.

In the case of volumetric pumps:

Students are expected to correctly prepare the dedicated IV tubing set maintaining full sterility while piercing the spike in the solution bag and while attaching the set to the end of the IV cannula or 3-way tap.

Criteria 13: Correctly loads the syringe or the IV tubing on the syringe pump driver or the volumetric pump and attaches it to the appropriate port.

Criteria 14: I.V. cannula checked for patency and any signs of phlebitis, infiltrations, and/or swelling around the cannula.

Students should be observed doing so and also asking patients if they are experiencing any pain on and around the cannula insertion site. Checking for patency can be done by injecting a small amount of flush solution (preferably 5ml to 10ml N/Saline or distilled water) prior to connecting the extension tube or IVI set to the cannula port while observing if patient is complaining or demonstrating any signs of pain or whether the flush being injected is infiltrating into the surrounding tissues.

In the case that an IV cannula has already attached with it an IV infusion pump (syringe or volumetric) and the scenario prompts students to just change the syringe or infusion bag but not the connecting tube or IV set, then there is no need for students to check for patency of the cannula by flushing it, but they still are expected to observe the site for any signs of phlebitis, infiltrations, and/or swelling around the cannula.

[F] Criteria 15: Correctly sets the pump according to the scenario, (i.e. hourly rate in both type of pumps and ‘Volume to be infused’ in the case of volumetric pumps).

[F] Criteria 16: Correctly documents the drug given.

(i) Counter signature requested for documentation

Students are expected to document the drug on the prescription sheet accurately, that is, enter the date (if necessary) and sign in the space against the time of the drug was due. Students need to demonstrate that a counter signature is necessary by the person who double checked with them.

Criteria 17: Indicates the need to monitor the patient for the drug's effect / side effect / reaction according to the given scenario.

Students are expected to give a rationale why they need to stay near the patient for a while especially if they suspect that the patient is having a reaction. They should at least know the cardinal signs and symptoms of anaphylactic shock or reaction and what action to take.

Criteria 18: All injecting materials disposed off correctly according to infection control policies.

Students are expected to know what should be disposed in the different containers and should be awarded marks according to the following criteria:

In the sharps container: Needles and sharp glass ampoules.

In the domestic bag: Plastic syringes, rubber capped glass vials, syringe wrappers, needle caps, and alcohol swabs.

P.S.: Even if a syringe is lightly soiled with blood, it still should be disposed of in the domestic bag.

Pass mark: 75% or better

[F] = Failing Point

N.B. Criteria preceded with an '[F]' indicate that if students fail **any one** of such criteria they get a straight 'FAIL' irrespective of the final mark they achieve.