

Student Name: _____

IV Infusion Dose and Flow Rate Calculations Checklist

Objective: To perform IV infusion dose and flow rate calculations accurately according to the standard of care.

- ☐ [] Avoid distractions and interruptions when preparing and administering the medication.
- ☐ [] Verify the practitioner's order for prescribed solution, dose, rate, and route.
- ☐ [] Review the order for appropriateness based on patient age, condition, and device access.
- ☐ [] Ensure medication compatibility with other infusing solutions.
- ☐ [] Reconcile the patient's medications at each care transition.
- ☐ [] Perform hand hygiene and gather necessary equipment and supplies.
- ☐ [] Compare the IV solution container label to the order in the medical record.
- ☐ [] Check for allergies or contraindications to the prescribed IV solution.
- ☐ [] Check the expiration date and visually inspect the solution for integrity (clarity/leaks).
- ☐ [] Discuss any unresolved concerns about the IV solution with the practitioner.
- ☐ [] Confirm the patient's identity using at least two patient identifiers.
- ☐ [] Teach the patient about potential adverse reactions if receiving the solution for the first time.
- ☐ [] Verify administration at the proper time, dose, and correct route.
- ☐ [] Calculate the IV infusion dose or flow rate using the appropriate method as follows:

IV Calculation Formulas

- To Calculate Flow Drip Rate (Drops/Minute) for Manual Administration:** Flow Drip Rate (gtt/min) = (Total Fluid Volume [mL] ÷ Total Infusion Time [minutes]) × Drip Factor [gtt/mL].
- To Calculate Flow Rate (mL/Hour) for Infusion Pumps:** Flow Rate (mL/hour) = Total Fluid Volume [mL] ÷ Infusion Time [hours].
- To Calculate Flow Rate (mL/Hour) When the Dose is Known:** Flow Rate (mL/hour) = Prescribed Medication Dose [mg, mcg, or units / hour] ÷ Medication Concentration [Total Medication Amount ÷ Total Fluid Volume].



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- **To Calculate Using Smart Pump Technology:** Enter patient weight, medication name, and concentration, then program the device to calculate the flow rate electronically following manufacturer instructions.
- [] Set the flow rate on the electronic infusion device and have another nurse double-check calculations if necessary.
- [] Perform hand hygiene and put on gloves.
- [] Assess the IV insertion site and scrub the needleless connector for at least 5 seconds.
- [] Flush with normal saline and aspirate for blood return to ensure patency.
- [] Use bar-code technology if available at the facility.
- [] Attach administration tubing to the catheter hub and trace the tubing from the patient to the point of origin.
- [] Label the tubing at both proximal and distal ends and mark with the date of initiation.
- [] Ensure an independent double-check is performed for High-Alert medications.
- [] Set appropriate alarm limits on the electronic infusion device.
- [] Discard used supplies in appropriate receptacles and remove PPE.
- [] Perform final hand hygiene and document the procedure in the medical record.

Evaluation & Verification

Instructor Name: _____ Signature: _____

