Print the clinical skills checklist for all the skills listed in lab one on the reading list from the clinical skills companion CD and attach to this booklet.

1. **INTERMITTENT IV MEDS (IVPB) ADMINISTRATION**

**IVPB Solution and Sample Medication Added Label**

*Medication is added to a base solution*

<table>
<thead>
<tr>
<th>MEDICATION ADDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATIENT</td>
</tr>
<tr>
<td>DRUG</td>
</tr>
<tr>
<td>AMOUNT</td>
</tr>
<tr>
<td>ADDED BY</td>
</tr>
<tr>
<td>DATE</td>
</tr>
<tr>
<td>EXP DATE</td>
</tr>
</tbody>
</table>

Intravenous solution set used for IVPB

IV medication label used for Intravenous Solution Set

**IVPB SOLUTION WITH ADMIXTURE ATTACHED**

*Medication is attached to base solution and mixed just prior to administration*

What additional equipment would be required?

- Type of infusion set?
- If the client has an IV in progress?
- If the client has a peripheral saline lock?
Review of Formulas to calculate rate of intermittent infusions

To calculate gtt/min: \[ \frac{\text{Volume}}{\text{Time in minutes}} \times \text{gtt factor} \]

To calculate ml/hr: \[ \frac{\text{Volume}}{\text{Time in minutes}} \times 60 \]

Review of Preparation to Administer An IVPB to Avoid Medication Errors

- Use your Davis drug guide as a reference and check the implementation section for the example IVPB medication orders.
- Review the sample table below and note the information required to prepare to administer an IVPB:
  - Correctly interpret physician orders:
    - Note that the physician does not prescribe the volume or rate in the physician order
  - Identify the type and volume of solution to dilute the medication
  - Determine the rate in which to administer the intermittent medication
    - This differs from the frequency of administration. The intermittent medication is administered at the frequency prescribed over the number of minutes recommended according to the drug guide
  - Calculate the gtt/minute or ml/hr based on the use of an IV administration set and/or electronic IV pump, if applicable.
    - When a range of times are provided, select the number of minutes you would prefer to use based on the client’s status and calculate the drip rate accordingly. For example:
      - 15 – 30 minutes 100 gtt/min over 15 minutes
      - Note: the example medication must be administered on an IV pump due to the risk of accidental rapid infusion.

Example dosage calculation and drug guide review problem for IVPB medication administration:

Physician order:

Potassium Chloride 10 mEq IVPB stat and q 4 hours X 2 doses

<table>
<thead>
<tr>
<th>Type(s) of base solution for dilution of medication</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dextrose, saline, ringers, or LR, dextrose/saline, dextrose/LR</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volume of solution for dilution</th>
<th>100 ml for a concentration of 0.1 mEq/ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of administration in minutes/hours</td>
<td>60 minutes</td>
</tr>
<tr>
<td>Number of gtt/min if using a 15 gtt/ml secondary set</td>
<td>Must be administered on a pump</td>
</tr>
<tr>
<td>Number of ml/hr if using an electronic delivery pump</td>
<td>100 ml/hr</td>
</tr>
</tbody>
</table>

The completed medication label on the IVPB bag for the above order would read:
Record your assigned drug for IVPB testing in the space labeled “physician order”. Look up assigned drug for IVPB testing and complete a drug card for lab 4. Complete the table below for lab # 2.

**Physician orders: (to be entered on lab # 1)**

<table>
<thead>
<tr>
<th>Type(s) of base solution for dilution of medication</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume of solution for dilution</td>
<td></td>
</tr>
<tr>
<td>Rate of administration in minutes/hours</td>
<td></td>
</tr>
<tr>
<td>Number of gtts/min if using a 15 gtts/ml secondary set</td>
<td></td>
</tr>
<tr>
<td>Number of ml/hr if using an electronic delivery pump</td>
<td></td>
</tr>
</tbody>
</table>

How would the medication label be completed for your assigned medication?

Which of the following statements are true regarding administration of intravenous piggyback medications (IVPB)? *(circle all that apply)*

a. IVPB’s are indicated when a client requires medication that can not be given by any other route.

b. IVPB’s can be administered in place of other routes at the nurse’s discretion.

c. The complications of IVPB’s include all the complications of IV therapy and the medication that is being administered.

d. The medication added to the IV solution set is usually added by the pharmacist but may be added by the nurse if agency protocol permits.
e. The medication is checked against both the medication administration record and physician order only when initiated.
f. The time an order is placed is the same thing as the time an order is transcribed.
g. The nurse selects the rate of infusion for the IVPB based on the recommendations in the drug guide for intermittent infusion and selects the rate appropriate in the range for the client’s condition.
h. The port selected for attachment on the primary IV set is the port closest to the patient.
i. The secondary set is hung at a height above the primary IV bag and the secondary set roller clamp remains wide open so that it may infuse.
j. The nurse selects the roller clamp of the primary IV infusion bag to regulate IV flow.
k. If a pump is used, the nurse calculates ml/hr.
l. If a roller clamp is used, the nurse calculates gtts/min.
m. When administering an IVPB to a Normal Saline lock the nurse flush the NSL with 20 cc of NS.
n. When preparing to administer an IVPB to a NSL the nurse selects secondary set tubing that is 40 inches long.
o. The acronym for infusing through a NSL is S-A-S.
p. If the nurse administers medication IV push the nurse must look up the infusion rate direct IV in the drug guide.
q. When administering IV push medications, the nurse selects the port closest to the drip chamber.
r. If incompatibility exists between the primary IV and the IVP medication, the nurse flushes before and after the medication with normal saline.
s. It is appropriate to flush with normal saline following medication administration IVP.
t. If the secondary set does not infuse, the nurse should check to see if the roller clamp of the secondary set is closed.
u. If the IVPB is not infusing into the NSL the nurse should check the IV site and reposition the extremity.

2. **IV PUSH MEDS (DIRECT IV ROUTE) (INTRAVENOUS BOLUS)**
   Concentrated dose of a drug injected directly into systemic circulation directly into a vein or into an existing IV line through injection port closest to patient or through a saline lock.

IV bolus is the most dangerous method for IV drug administration as there is no time to correct errors and the medication may cause direct irritation to the lining of blood vessels.

- Check agency IV push policy. STUDENTS MAY NOT GIVE IV PUSH MEDS. RNs must be certified to push IV meds and med/surg units may only push approved meds.

- Medications must be injected over the recommended number of minutes. Refer to Drug reference for time period.

**Example**
Look up Heparin – direct IV

What is the recommended time period for administering 5000 units?
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Print the clinical skills checklist for administer an IV bolus and attach to this booklet.