Aseptic Technique: Admixing Medications & Solutions

TXCH Global HOPE

Texas Children's Hospital
CANCER AND HEMATOLOGY CENTERS

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Objectives

By the end of this presentation, the participant should be able to:

- Demonstrate proper use of ampoules, IV bags, and IV bottles
- Recall types of IV solutions
- Describe anatomy of an IV bag
- Explain procedure for final product inspection

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Ampoule

- A small glass container enclosing sterile medication
- Colored strip and/or constriction around the neck of the ampoule indicates that the neck has been weakened to facilitate opening
- Never purchase hazardous drugs in ampoules, as this significantly increases the risk of hazardous drug exposure

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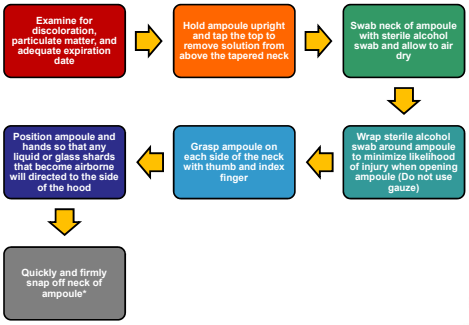
Opening an ampoule



*If neck does not snap easily rotate the ampoule to find a weaker point

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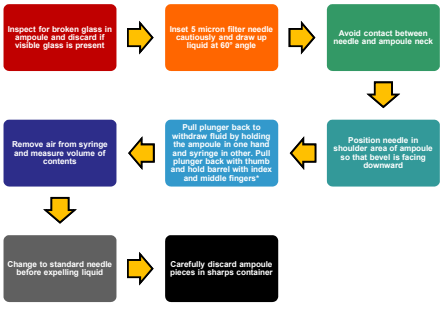
Withdrawing Fluid from an Ampoule



*= For large ampoules and syringes place ampule upright on the hood counter top and operate syringe with both hands

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Intravenous (IV) Solution Bags

- Traditionally made of polyvinyl chloride (PVC), a plastic which can be made more flexible with the addition of phthalates
- Other plastics may be used in IV bags to avoid phthalate exposure
  - Ethylene vinyl acetate (EVA)
  - Polypropylene
  - Phthalate-free (non-DEHP) PVC
- Bag typically have two port: one for medication admixture and one for administration
  - Medication port contains:
    - Protective cover which is self-sealing if punctured by a 19-22 gauge needle
    - A polyvinyl diaphragm inside the port which must be punctured to enter the bag (not self-sealing)

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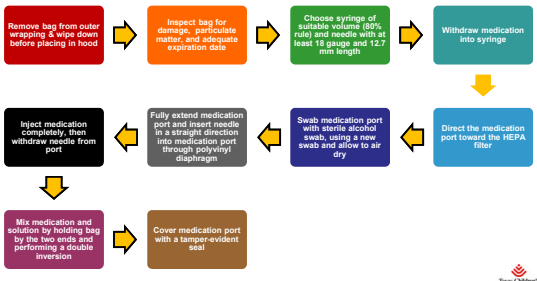
Adding Medication to an Empty IV bag



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IV bottles

- IV bottles containing solutions are packed under a vacuum and sealed by a stopper-type closure held in place by an aluminum band
  - Some closures have an air tube and consist of 2 round perforations (for medication addition) and a triangular site of less thickness
  - Some closures do not have an air tube and are made of solid rubber with a thin circular center (site of medication addition)
- Some bottles are “empty evaluated containers” designed for medication delivery
  - Contain a residual amount of fluid from sterilization process

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Use of Transfer needles

- Transfer needles may be be used to transfer the contents of one vial (with medication) to a bottle (with IV solution)
- Vacuum pressure of the accepting IV bottle allows for transfer of the drug from the vial to the IV bottle
- To transfer, insert one needle into the vial, removing the cover from the other end, then insert the other needle into IV solution bottle
- It is NOT RECOMMENDED to conduct this procedure with hazardous drugs

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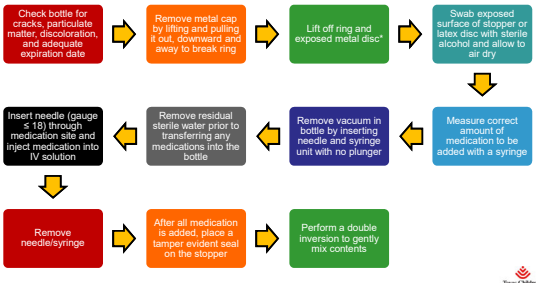
Adding Medication to an IV Bottle



*= If bottle has latex disc, check for indentation of disc over round perforations. DO NOT use if indentation is not present.

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Final Product Inspection

- Most final preparations should undergo a “double inversion” to ensure adequate mixing (without frothing or shaking the product)
- All final products should be inspected against a light and dark background to check for particulate matter, discoloration, or precipitation
- Bags should be gently squeezed to check for leaks

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What’s next?

- Watch videos
- Complete practice questions
- Review answer file

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