Pediatric Medication Administration

Bowden & Greenberg
Oral Medications

- GI tract provides a vast absorption area for meds.

**Problem:** Infant / child may cry and refuse to take the medication or spit it out.
Nursing Intervention

- Infant:
  - Place in small amount of apple sauce or cereal
  - Put in nipple without formula
  - Give by oral syringe or dropper
  - Have parent help
    - Never leave medication in room for parent to give later.
    - Stay in room while parent gives the po medication
Nursing Interventions

- Toddler:
  - Use simple terms to explain while they are getting medication
  - Be firm, don’t offer to may choices
  - Use distraction
  - Band-Aid if injection / distraction
  - Stickers / rewards
Nursing Intervention

- Preschool:
  - Offer choices
  - Band-Aid after injection
  - Assistance for IM injection
  - Praise / reward / stickers
Nursing Intervention

- School-age
  - Concrete explanations
  - Choices
  - Interact with child whenever possible
  - Give choices
  - Medical play
Nursing Interventions

- Adolescent
  - Use more abstract rationale for medication
  - Include in decision making especially for long term medication administration
For liquid medications, an oral syringe or medication cup should be used to ensure accurate dosage measurement. Use of a household teaspoon or tablespoon may result in dosage error because they are inaccurate.

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Oral Medication Administration

Note child’s hands are held by the nurse and child is held securely against the nurse’s body.
Oral Medications

- Hold child / infant hands away from face
- Infant give in syringe or nipple
- DO NOT ADD TO FORMULA
- Small child: mix with small amount of juice or fruit
- Offer syringe or medicine cup
- Parent may give if you are standing in the room
Oral Medication: older child

- TIP: Tell the child to drink juice or milk after distasteful medication. Older child can such the medication from a syringe, pinch their nose, or drink through a straw to decrease the input of smell, which adds to the unpleasantness of oral medications.
Intramuscular Medications

- Rarely used in the acute setting.
- Immunizations
- Antibiotics
- Use emla
IM Injection: interventions

- **TIP:** Tell the child it is all right to make noise or cry out during the injection. His or her job is to try not to move the extremity.
IM Injection

Secure child before giving IM injection.
Nursing Alert

- Rocephin is often given in the ER.
- Hold order for IV antibiotic once admitted.
- Physician order may indicate to delay IV antibiotic administration for 12 to 24 hours.
- Potential medication administration error.
IM Injection Sites

- Vastus Lateralis
- Deltoid
- Dorsogluteal
Vastus Lateralis:

Largest muscle in infants / small child.

- 0.5 ml in infant
- 1 ml in toddler
- 2 ml in pre-school

Use 5/8 to 1 inch needle
Deltoid

- Use ½ to 1 inch needle
- 0.5 to 1 ml injection volumes
- More rapid absorption than gluteal regions.

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Dorsogluteal

- Should not be used in Children under 5 years.
- ½ to 1 ½ inch needle
- 1.5 to 2 ml of injectate volume.

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Eye Drops

Eye:
- Pull the lower lid down
- Rest hand holding the dropper with the medication on the child’s forehead to reduce risk of trauma to the eye.
Eye Drops

Pull the lower lid down

Rest hand holding the dropper with the medication on the child’s forehead to reduce risk of trauma to the eye.

Whaley & Wong
Ear Drops

Whaley & Wong
Ear Drops

- In children younger than age 3 years the pinna is pulled down and back to straighten the ear canal.

- In the child older than 3 years, the pinna is pulled up and back.
Nose Drops

Position child with the head hyper extended to prevent strangling sensation caused by medication trickling into the throat.

Whaley & Wong
Intravenous Medications

- IV route provides direct access into the vascular system.

- Adverse effects of IV medication administration:
  - Extravasation of drug into surrounding tissue
  - Immediate reaction to drug
Check you institution's policy on which drugs must be administered by the physician and which must be verified for accuracy by another nurse.

All IV medications administered during your pediatric rotation must be administered under direct supervision of your clinical instructor.
IV Medication Administration

- Check for compatibilities with IV solution and other IV medications.
- Flush well between administration of incompatible drugs.
- IV medications are usually diluted.
Nursing Alert

The extra fluid given to administer IV medications and flush the tubing must be included in the calculation of the child’s total fluid intake, particularly in the young children or those with unstable fluid balance.

Bowden & Greenberg
IV Medications

- **IV push** = directly into the tubing
- **Syringe pump** = continuous administration
- **Buretrol** = used to further dilute drug
IV Push

- Morphine
- Solu-medrol
- Lasix

Drug that can safely be administered over 3 to 5 minutes.

Bowden & Greenberg
IV push

- Medication given in a portal down the tubing – meds that can be given over a 1-3 minute period of time.
  - Lasix: diuretic
  - Morphine sulfate: pain
  - Demerol: pain
  - Solu-medrol: asthmatic
IV Pump

Bowden & Greenberg
Syringe pump

- Accurate delivery system for administering very small volumes
  - ICU
  - NICU
IV Buretrol

Bowden & Greenberg
IV Buretrol

- Buretrol acts as a second chamber
  - Useful when controlling amounts of fluid to be infused
  - Useful for administering IV antibiotics / medications that need to be diluted in order to administer safely
Intravenous Therapy

FIG. 22-24. Preferred sites for venous access in infants. (From Smith DP and others, editors: Comprehensive child and family nursing skills, St Louis, 1991, Mosby.)
Central Venous Line

Whaley & Wong
Central Venous Line

- A large bore catheter that are inserted either percutaneously or by cut down and advanced into the superior or inferior vena cava

- Umbilical line may be used in the neonate
  - Used for long term administration of meds
  - Used for chemotherapy
  - Total parental nutrition
Child With Central Venous Line

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Type of fluid

- Glucose and electrolytes
  - Maintenance
  - Potassium added
- Crystalloid: Normal Saline or lactated ringers
  - Fluid resuscitation
  - Acute volume expander
- Colloid: albumin / plasma / frozen plasma
Complications

- Infiltration
- Catheter occlusion
- Air embolism
- Phlebitis
- Infection
Infiltration

- Infiltration: fluid leaks into the subcutaneous tissue
- Signs and symptoms:
  - Fluid leaking around catheter site
  - Site cool to touch
  - Solution rate slows are pump alarm registers down-stream-occlusion
  - Tenderness or pain: infant is restless or crying
Catheter Occlusion

- Fluid will not infuse or unable to flush
- Frequent pump alarm
  - Flush line
  - Check line for kinks
Air embolism

- The IV pump will alarm when there is air in the tubing
  - Look to see that there is fluid in the IV bag or buretrol
  - Slow IV rate
  - Remove air from tubing with syringe
Phlebitis

- Often due to chemical irritation
- When medications are given by direct intravenous injection, or by bolus (directly into the line) it is important to give them at the prescribed rate.
- Always check the site for infiltrate before giving an IV medication
Signs and symptoms: phlebitis

- Erythema at site
- Pain or burning at the site
- Warmth over the site
- Slowed infusion rate / pump alarm goes off
Reason for pump alarm

- Needs to have volume re-set
- Needs more IV solution in bag or buretrol
- Kinked tubing at infusion site
- Child lying on tubing
- Air in tubing
- Infiltrated at site of infusion
Clinical Pearls

- If alarm states upward occlusion
  - Look at IV bag
  - Look at fluid level in buretrol
  - Look to see if ball in drip chamber is floating

- If alarm states downward occlusion
  - Look to see that all clamps are open
  - Look to see if line is kinked
  - Irrigate with normal saline or heparin