

Introduction to Pediatric Intravenous (IV) Bolus Medication Administration Curriculum



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About the Author



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This curriculum and accompanying manikin will help students learn about IV bolus medication administration.

Curriculum Structure

The *Introduction to Pediatric IV Bolus Medication Administration* curriculum is composed of the following parts. Approximate times are included.

Lesson	Title	Approximate Time
One	FOCUS: Part 1 – Developing Awareness of Patient-Focused Care	10 minutes
One	FOCUS: Part 2 – Safety	10 minutes
One	LEARN: Introduction to Pediatric IV Bolus Medication Administration Slide Presentation	20 minutes
One	REVIEW: Practice and Assessment of Pediatric IV Bolus Medication Administration	30 minutes
	Total	1-1½ hours

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives, and a Lesson at a Glance table which lists the lesson activities, materials required, suggested preparation steps, and approximate class time.

Lesson Sections

The actual lesson follows the overview, which will contain some of the sections described below.

FOCUS

Every lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, a game, a review of previous lesson information, or a demonstration. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity, or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points.

Lesson One – Introduction to Pediatric IV Bolus Medication Administration

Lesson Overview

In this lesson, students will learn about medication administration using an IV bolus.

Lesson Objectives

After completing this lesson, participants will be able to:

- Identify guidelines for safe medication administration
- Discuss indications for IV boluses
- Demonstrate proper IV bolus technique
- Explain how to document an IV bolus

Pre-Lesson Knowledge

- Basic IV infusion practice
- Dosage calculation
- Safe medication administration practices

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS: Part 1	• <i>Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy)</i> worksheet • <i>Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy)</i> Instructor Resource	1. Print/photocopy <i>Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy)</i> worksheet (one per participant)	10 minutes
FOCUS: Part 2	• <i>Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety)</i> worksheet • <i>Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety)</i> Instructor Resource	1. Print/photocopy <i>Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety)</i> worksheet (one per participant)	10 minutes
LEARN	• <i>Introduction to Pediatric IV Bolus Medication Administration</i> slide presentation	1. Prepare <i>Introduction to Pediatric IV Bolus Medication Administration</i> slide presentation for viewing	20 minutes
REVIEW	• <i>Introduction to Pediatric IV Bolus Medication Administration Check-Off (Instructor Resource)</i> • <i>Introduction to Pediatric IV Bolus Medication Administration Check-Off (Sample Medication Administration Record)</i> • <i>Introduction to Pediatric IV Bolus Medication Administration Check-Off (Sample Provider's Orders)</i> • <i>Introduction to Pediatric IV Bolus Medication Administration Check-Off</i> worksheet • <i>Introduction to Pediatric IV Bolus Medication Administration Check-Off (Medication Administration Record)</i> worksheet	1. Print/photocopy (one per participant): • <i>Introduction to Pediatric IV Bolus Medication Administration Check-Off (Sample Provider's Orders)</i> • <i>Introduction to Pediatric IV Bolus Medication Administration Check-Off</i> worksheet • <i>Introduction to Pediatric IV Bolus Medication Administration Check-Off (Medication Administration Record)</i> worksheet • <i>Introduction to Pediatric IV Bolus Medication Administration Quiz</i> 2. Get the supplies ready for the lesson	30 minutes

Introduction to Pediatric IV Bolus

	• <i>Introduction to Pediatric IV Bolus Medication Administration Quiz</i> • <i>Introduction to Pediatric IV Bolus Medication Administration Quiz - Answer Key</i> Supplies: • Med cart or mock med cart • Mock/demo vial of ketorolac (Toradol) 10mg/mL • IV manikin or simulator with a saline lock • 3cc syringes with needles • Alcohol swab • Normal saline flush solution • Hand sanitizer or access to a sink • Watch or access to a clock • Clean gloves • Sharps container		
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Instructor Note: For FOCUS and REVIEW activities, the instructor may choose to have students complete both or one of the two activities. FOCUS activities may also be completed prior to class.

Lesson One – Introduction to Pediatric IV Bolus Medication Administration

FOCUS: Part 1 – Developing Awareness of Patient-Focused Care

10 minutes

Purpose:

To help students develop awareness of patient-focused care.

Materials:

- *Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy) worksheet*
- *Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy) Instructor Resource*

Facilitation Steps:

1. Distribute the *Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy) worksheets* prior to or at the start of the class.
2. Have the *Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy) Instructor Resource* available.
3. Have students read through the information and complete the worksheet.
4. Have students pair up upon completion and share answers.

Name: _____ Class: _____

Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy)

READ the following:

Most IV bolus medications are given for pain. Imagine that your pediatric patient is crying out in pain after surgery, saying, “It hurts so bad.” You check the medication administration record and realize that the child is overdue for pain medication. You go back to the nurse’s station to retrieve the medication and then back to the child’s room, where you find the patient curled up, wincing, and screaming, “Help me!” However, medication administration is not a speedy process, as many steps need to be carefully followed. It is imperative that great care be taken when administering IV bolus medications.

REFLECT on the situation:

Imagine you are the child. What would you believe is the reason they are taking so long?

What can you say to this child when time is important?

SHARE your thoughts with a peer.

Introduction to Pediatric IV Bolus Medication Administration (Focus on Empathy) Instructor Resource

READ the following:

Most IV bolus medications are given for pain. Imagine that your pediatric patient is crying out in pain after surgery, saying, “It hurts so bad.” You check the medication administration record and realize that the child is overdue for pain medication. You go back to the nurse’s station to retrieve the medication and then back to the child’s room, where you find the patient curled up, wincing, and screaming, “Help me!” However, medication administration is not a speedy process, as many steps need to be carefully followed. It is imperative that great care be taken when administering IV bolus medications.

REFLECT on the situation:

Imagine you are the child. What would you believe is the reason they are taking so long?

Some patients think they have been forgotten about or that the nurse does not care about their pain. Other patients understand that nurses are busy, and perhaps the nurse is trying their best.

What can you say to this child when time is important?

Reassurance and communication are key. Explain to the patient that you need to get the medication and tell them roughly how long it will take you. If you give a patient a time frame, it is important that you abide by it. Acknowledge the patient’s pain.

SHARE your thoughts with a peer.

Lesson One – Introduction to Pediatric IV Bolus Medication Administration

FOCUS: Part 2 – Safety

10 minutes

Purpose:

To help students learn to identify safety concerns related to IV bolus medications.

Materials:

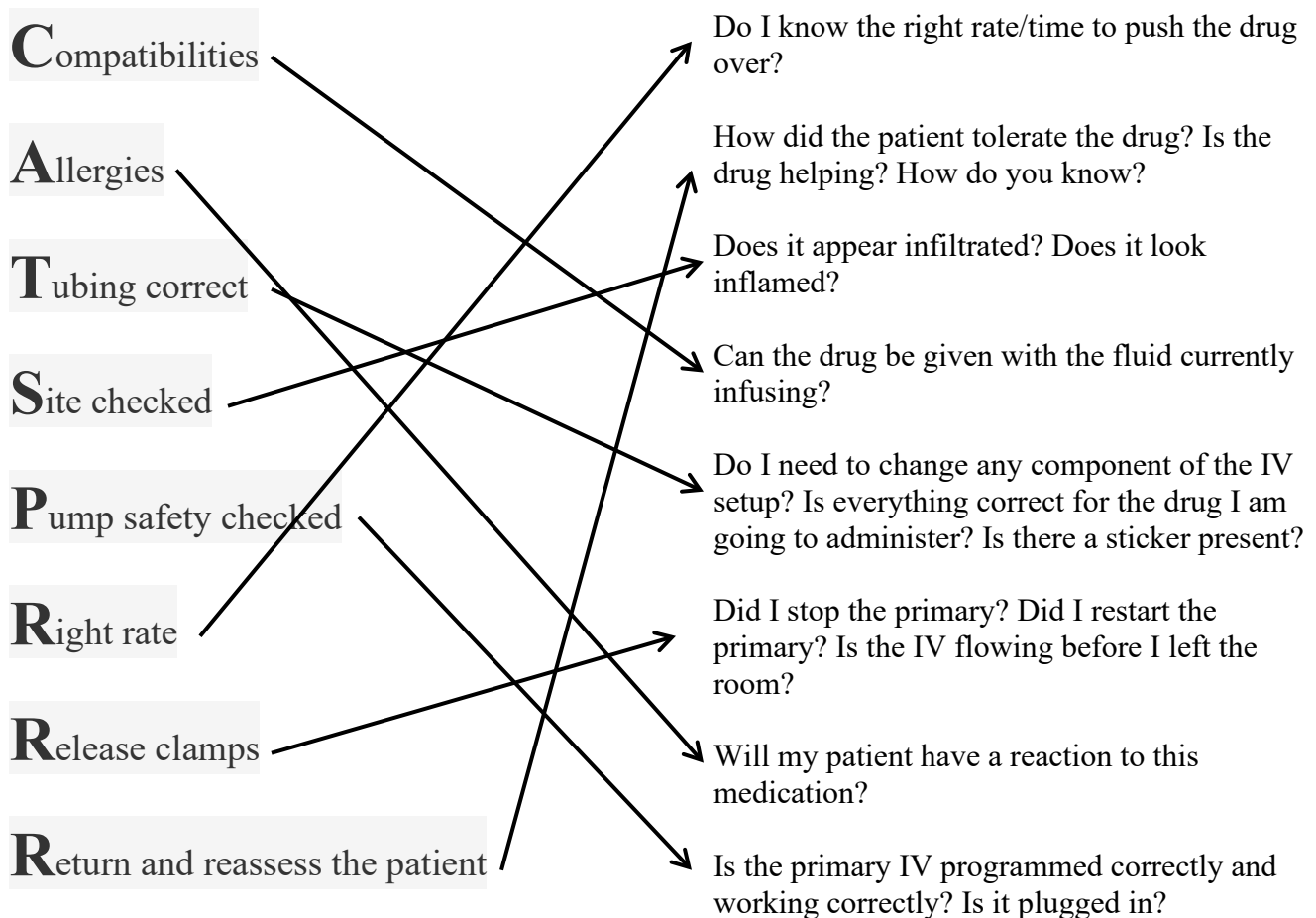
- *Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety) Instructor Resource*
- *Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety) worksheet*

Facilitation Steps:

1. Distribute the *Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety)* worksheets prior to or at the start of the class.
2. Have the *Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety) Instructor Resource* available.
3. Have students read through the information and complete the worksheet.
4. Have students pair up upon completion and share answers.

Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety) Instructor Resource

The mnemonic CATS PRRR (compatibilities, allergies, tubing correct, site checked, pump safety checked, right rate, release clamps, and return and reassess the patient) can help staff remember safety checks for administering IV medications. Use your knowledge of basic IV to try and match the word to the correct description of the safety concern below.



Billings, D, Kowalski, K. (2005) Do your CATS PRRR? A mnemonic device to teach safety checks for administering intravenous medications. *Journal of Continuing Education in Nursing*. 36(3), 104.

Name: _____ Class: _____

Introduction to Pediatric IV Bolus Medication Administration (Focus on Safety)

The mnemonic CATS PRRR (compatibilities, allergies, tubing correct, site checked, pump safety checked, right rate, release clamps, and return and reassess the patient) can help staff remember safety checks for administering IV medications. Use your knowledge of basic IV to try and match the word to the correct description of the safety concern below.

Compatibilities

Do I know the right rate/time to push the drug over?

Allergies

How did the patient tolerate the drug? Is the drug helping? How do you know?

Tubing correct

Does it appear infiltrated? Does it look inflamed?

Site checked

Can the drug be given with the fluid currently infusing?

Pump safety checked

Do I need to change any component of the IV setup? Is everything correct for the drug I am going to administer? Is there a sticker present?

Right rate

Did I stop the primary? Did I restart the primary? Is the IV flowing before I left the room?

Release clamps

Will my patient have a reaction to this medication?

Return and reassess the patient

Is the primary IV programmed correctly and working correctly? Is it plugged in?

Lesson One – Introduction to Pediatric IV Bolus Medication Administration

LEARN: Introduction to Pediatric IV Bolus Medication Administration Slide Presentation

20 minutes

Purpose:

Participants will receive a thorough introduction to pediatric IV bolus medication administration as well as proper procedure and documentation surrounding it.

Materials:

- *Introduction to Pediatric IV Bolus Medication Administration* slide presentation

Facilitation Steps:

1. Share the following information with students as you show the slide presentation.

Slide 1: Introduction Slide.

Slide 2: IV boluses are commonly practiced in acute care settings. It requires a small volume of medication administered via an existing IV access, such as a saline lock or primary IV.

Show students the manikin and what a saline lock looks like

Boluses are also called IV Push medications or IVP. However, according to the Institute for Safe Medication Practices, the term “push” or “bolus” should not be used with medications that need to be administered for over 1 minute or longer. Use more descriptive terms, such as IV over 5 minutes.

Boluses are used in emergencies or when fast-acting medication is needed. Facilities have policies that identify which medications are to be given in this manner. IV bolus is a dangerous method of administering medication, since there is no time to correct errors. The medication goes directly into the bloodstream.

Slide 3: *Review the FOCUS: Part 2 - Safety Activity*

The C stands for compatibility and reminds nurses to assess whether the IV drug to be administered is compatible with the other ordered IV components currently infusing.

The A stands for Allergies. Check with the patient regarding allergies and, if an allergy is present, make sure to apply an allergy band.

The T stands for tubing and reminds nurses to assess whether it is time to change the tubing, to ensure that the correct tubing is being used, to ensure that there are no kinks or other problems with the tubing, and to ensure that a designated sticker is on the tubing.

The S stands for site. Determine whether the site is safe to use and check for infiltration (swelling, pain) or signs of phlebitis (warmth or redness on the vein). A site cannot be used if not patent.

The P stands for pump safety and is important when administering a bolus with a primary IV running. Is it programmed correctly, pumping, and plugged in?

The first R stands for rate and reminds nurses to know the correct rate for giving an IV push medication

The second R stands for releasing the clamp on the IV tubing (if it was clamped).

The last R reminds nurses to return and reassess the patient to see how well the medication was tolerated, and to assess whether the medication was effective. Remember to document!

Slide 4: Verify the rate of administration of IV push medication using pharmacy or an IV medication reference manual.

Review the amount of medication that a patient will receive each minute, the concentration, and the rate of administration.

Recognize the medication being given and any potential adverse reactions related to the rate and route of administration.

Some IV medications can only be given safely if a patient is continuously monitored for dysrhythmias, blood pressure changes, or other adverse effects. Some medications can only be administered in specific areas within a health care agency (critical care unit, emergency room). Confirm guidelines regarding requirements for special monitoring.

Slide 5: *Demonstrate how to calculate IV rate times. If available, students (or the instructor) could look Lasix up in drug book and discuss other information, such as Y-site compatibilities and adult rates.*

Answer: The dosage range is 15.5-62mg and 1.6 -6.2 mL. Example of dividing doses: If the dose is 3.1 mL, one could divide the dose into 1.5 ml/min and 1.6 ml/min. Give 0.3-0.4 mL every 15 seconds.

Slide 6: Many medication errors are associated with IV boluses being administered too quickly. A study performed in the United Kingdom in 2003 uncovered errors in 49% of all IV medications. The study noted that 79% of these errors occurred during the administration of drugs given an IV push; 95% of the IV push drugs were reported as having been given too fast. This can result in speed shock and possibly even death.

If your patient develops a reaction to the medication – stop the IV bolus!

If the site looks reddened or starts to swell – stop the IV bolus!

Slide 7: Some facilities provide pre-drawn saline flushes. If the facility does not, you will have to draw up 2-3mL of saline in two syringes for the flush.

The needle is only used to draw up the medication unless it comes pre-filled. Saline locks and ports are needleless.

Show the students the supplies.

Slide 8: Prior to administering any medication, it is important to review the medication administration record and provider's order. It is

essential to review general information about the medication as well, including the rate and incompatibilities.

Make sure the medication is appropriate for your patient.

Show MAR provided. Note that this is a PRN medication, so pain level would need to be assessed/documented before and after.

Slide 9: *Demonstrate swabbing of vial, adding air, removing the needle cap in one smooth motion to prevent a rebound needle stick and drawing of medication.*

Depending on the dose, it may be necessary to add air equal to the dose into the vial prior to removing the medication. This equalizes the pressure in the vial. Remove air bubbles.

One-handed scoop method: Place the cap on a flat surface and hold the syringe in one hand. Keep the other hand by your side. Slide the needle into the cap, then lift it up and snap it on securely using only one hand.

Finish completing the rights of administration once the dose is drawn. This may be done at a medication cart or at bedside depending on the facility. Most facilities require a second person to check high-alert medication dosages.

Slide 10: Review the proper identifiers (name, date of birth, medical record number, photograph in MAR)

Ask students how they would explain an IV bolus medication administration to a child. Emphasize that the medication goes through the tube. Some medications may be felt in the veins and cause discomfort.

Slide 11: Apply clean gloves and assist the patient to a comfortable position, exposing the port needed. Swab the port with alcohol and allow to dry, as this is what sanitizes the port. Hold onto the port so it stays clean.

Slide 12: *Demonstrate flush*

Since the medication goes directly into the vein, it is important to expel any air from the syringes. When connecting the syringe to the port, make sure the Luer lock end and port do not become contaminated.

Pull gently and look for a flash of blood in the syringe. This indicates patency. With smaller gauge IVs, it is possible not to get a blood return.

Flushing clears the port and tubing of blood. It should flush without difficulty and there should be no signs of infiltration.

Slide 13: *Demonstrate IV bolus administration*

Once again, clean the port and remove the capped needle from the med syringe. Expel any air bubbles without losing medication. When connecting the syringe to the port, make sure the Luer lock end and port do not become contaminated.

Take your time administering the medication and watch your patient for reactions!

Slide 14: Flushing IV line with saline prevents obstruction of the IV port and confirms that all medication is delivered.

Flushing IV site at same rate as medication ensures that any medication remaining within the IV needle is delivered at the correct rate.

Have students reflect back to the Lasix problem. How long would this medication administration take? (Lasix was over 2 minutes; flush is over 2 minutes.)

Slide 15: Most IV medications require a follow-up assessment. Some medications, such as pain medications, can be followed up in minutes. Also, look for any adverse reactions to the procedure before leaving the room.

Slide 16: Every MAR is different depending on the facility. Some facilities will also require an IV site assessment.

Demonstrate documentation of IV bolus.

Lesson One – Introduction to Pediatric IV Bolus Medication Administration

REVIEW: Practice and Assessment of Pediatric IV Bolus Medication Administration

30 minutes

Purpose:

Participants will practice pediatric IV bolus medication administration on manikins and then complete a quiz to assess mastery.

Materials:

- *Introduction to Pediatric IV Bolus Medication Administration Check-Off (Instructor Resource)*
- *Introduction to Pediatric IV Bolus Medication Administration Check-Off (Sample Medication Administration Record)*
- *Introduction to Pediatric IV Bolus Medication Administration Check-Off (Sample Provider's Orders)*
- *Introduction to Pediatric IV Bolus Medication Administration Check-Off* worksheet
- *Introduction to Pediatric IV Bolus Medication Administration Check-Off (Medication Administration Record)* worksheet
- *Introduction to Pediatric IV Bolus Medication Administration Quiz*
- *Introduction to Pediatric IV Bolus Medication Administration Quiz - Answer Key*
- Injection pad, manikin or simulator

Supplies:

- Med cart or mock med cart
- Mock/demo vial of ketorolac (Toradol) 10mg/ml
- IV injection pad manikin or simulator with saline lock
- 3cc syringes with needles
- Alcohol swab
- Normal saline flush solution
- Hand sanitizer or access to a sink
- Watch or access to clock
- Clean gloves
- Sharps container

Facilitation Steps:

1. Give students the following handouts: *Introduction to Pediatric IV Bolus Medication Administration Check-Off (Sample Medication Administration Record)*, *Check-Off (Sample Provider's Orders)*, worksheet, and *Check-Off (Medication Administration Record)* worksheet
2. Access the *Introduction to Pediatric IV Bolus Medication Administration Check-Off (Instructor Resource)*. Following the steps on the check-off page, demonstrate a pediatric IV Bolus medication administration on the injection pad, manikin, or simulator.
3. Have students review the *Sample Medication Administration Record* and *Sample Provider's Orders*. Answer any questions students may have on using these.
4. Following the steps on their *Introduction to Pediatric IV Bolus Medication Administration* worksheet, have students practice pediatric IV bolus medication administration on the injection pad, manikin, or simulator available.
5. Students should properly document their injection on the *Introduction to Pediatric IV Bolus Medication Administration Record* worksheet.
6. Hand out the *Introduction to Pediatric IV Bolus Medication Administration Quiz* to students. Give them a couple of minutes to complete it.
7. Have students self-check or peer check their answers as you share them from the *Pediatric IV Bolus Medication Administration Quiz - Answer Key*.

Introduction to Pediatric IV Bolus Medication Administration Check-Off (Instructor Resource)

PREPARATION:

Supplies:

- Provider Order
- MAR
- Med cart or mock med cart
- Mock/demo vial of ketorolac (Toradol) 10mg/ml
- IV injection pad, manikin or simulator with saline lock
- 3cc syringes with needles
- Alcohol swab
- Normal saline flush solution
- Hand sanitizer or access to soap and water
- Watch or access to clock
- Clean gloves
- Sharps container

After demonstration, have students practice pediatric IV bolus medication administration on the IV injection pad, manikin, or simulator using the following steps:

Optional: Evaluate the student's ability to administer an IV bolus medication using the following steps. You may score via points or satisfactory/unsatisfactory. See sample completed MAR for proper documentation.

1.	Verify MAR with written order from provider.	
2.	Review medication reference information (proper dosage, side effects, compatibility, rate, etc.).	
3.	Gather supplies needed for preparing and administering medication.	
4.	Wash your hands with sanitizer or soap and water.	
5.	Compare MAR with medication; complete the Rights of Administration.	
6.	Wash your hands with sanitizer or soap and water.	
7.	Gather supplies, lock medication cart, and ensure no patient information is visible per HIPAA.	
8.	Knock, enter room, and provide for privacy.	
9.	Identify yourself with name and title (student nurse, medical assistant, etc.).	

Introduction to Pediatric IV Bolus

10.	Wash your hands with sanitizer or soap and water.	
11.	Identify patient by asking name and date of birth. Verify this information with the MAR.	
12.	Explain procedure to patient and ask if they have any questions. Verify allergies with MAR.	
13.	If not completed at the cart, draw up correct dose and complete Rights of Administration.	
14.	Apply clean gloves.	
15.	Assist patient to comfortable position and inspect IV site.	
16.	Hold onto port closest to patient and clean port with alcohol swab; allow to dry.	
17.	Remove cap from saline flush, expel air, and connect to port.	
18.	Pull back gently on plunger of syringe to aspirate for blood return.	
19.	Flush with 2-3mL of saline and remove syringe. Keep holding port or clean again with new swab.	
20.	Remove needle from medication syringe, expel air, and attach syringe to port.	
21.	Administer medication at the correct rate.	
22.	Remove syringe. Attach saline flush. Keep Luer lock sterile and port clean or swab again.	
23.	Flush with 2-3mL of saline at same rate as medication was administered. Remove syringe.	
24.	Dispose of needle in sharps container.	
25.	Ask your patient if they are comfortable and if they have any questions. Observe for any reactions.	
26.	Remove gloves and wash your hands with sanitizer or soap and water.	
27.	Document medication administration on the MAR.	
	Score	

Introduction to Pediatric IV Bolus Medication Administration Check-Off

(Sample Medication Administration Record)

Patient	Grant, Thomas H.	MRN	6985477
Date of Birth	01/08/XXXX	Provider	Benson
Age	4 years	Allergies	NKDA
Weight	31 lbs		

PRN Medications		Mon	Tues	Wed	Thurs	Fri	Sat	Sun
ketorolac (Toradol) 0.5mg/kg PRN IV every 6-8 hours for pain greater than 7/10	Time	0700						
	Initials	JS						
	Dose	0.7mL						
	IV Site	Left hand						

Initials	Signature/Title	Initials	Signature/Title
JS	Jamie Smith, RN		

Introduction to Pediatric IV Bolus Medication Administration Check-Off (Sample Provider's Orders)

Date	Time	Orders
<i>Today</i>	<i>0700</i>	<i>Admit to medical floor post op</i>
		<i>ketorolac (Toradol) 0.5mg/kg PRN IV every 6-8 hours for pain greater than 7/10. Not to exceed five days.</i>
		<i>If pain persists, call provider</i>
		<i>Dr. Robert Benson</i>

Grant, Thomas H.
MRN: 6985477
Age: 4 years
Date of Birth: 01/08/XXXX

Introduction to Pediatric IV Bolus Medication Administration Check-Off

PART ONE: Practice pediatric IV bolus administration on the manikin using the following steps:

Verify MAR with written order from provider.
Review medication reference information (proper dosage, side effects, compatibility, rate, etc.).
Gather supplies needed for preparing and administering medication.
Wash your hands with sanitizer or soap and water.
Compare MAR with medication; complete the Rights of Administration.
Wash your hands with sanitizer or soap and water.
Gather supplies, lock medication cart, and ensure no patient information is visible per HIPAA.
Knock, enter room, and provide for privacy.
Identify yourself with name and title (student nurse, medical assistant, etc.).
Wash your hands with sanitizer or soap and water.
Identify patient by asking name and date of birth. Verify this information with the MAR.
Explain procedure to patient and ask if they have any questions. Verify allergies with MAR.
If not completed at the cart, draw up correct dose and complete Rights of Administration.
Apply clean gloves.
Assist patient to comfortable position and inspect IV site.
Hold onto port closest to patient and clean port with alcohol swab; allow to dry.
Remove cap from saline flush, expel air, and connect to port.
Pull back gently on plunger of syringe to aspirate for blood return.
Flush with 2-3mL of saline and remove syringe. Keep holding port or clean again with new swab.
Remove needle from medication syringe, expel air, and attach syringe to port.
Administer medication at the correct rate.
Remove syringe. Attach saline flush. Keep Luer lock sterile and port clean or swab again.
Flush with 2-3mL of saline at same rate as medication was administered. Remove syringe.
Dispose of needle in sharps container.
Ask your patient if they are comfortable and if they have any questions. Observe for any reactions.
Remove gloves and wash your hands with sanitizer or soap and water.
Document medication administration on the MAR.

Introduction to Pediatric IV Bolus Medication Administration Check-Off (Medication Administration Record)

Patient	Grant, Thomas H.	MRN	6985477
Date of Birth	01/08/XXXX	Provider	Benson
Age	4 years	Allergies	NKDA

PRN Medications		Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Dilaudid (hydromorphone hydrochloride 1mg in 1mL) 0.5mL to 1mL PRN IV over 3 minutes every 2-3 hours for pain greater than 7/10	Time							
	Initials							
	Dose							
	IV Site							

Initials	Signature/Title	Initials	Signature/Title

Name: _____ Class: _____

Introduction to Pediatric IV Bolus Medication Administration Quiz

Select the best answer to the following multiple-choice questions:

1. Why is the IV bolus considered one of the most dangerous routes?
 - a. The medications go through the arteries
 - b. There is no time to correct errors once administered
 - c. It is not done with a pump
 - d. All bolus doses need to be calculated by the nurse
2. Which of the following is a potential complication of an IV bolus?
 - a. Speed shock
 - b. Pain
 - c. Allergic reaction
 - d. All of the above
3. Why is saline used to flush before and after the medication?
 - a. Patients are not allergic to saline
 - b. Saline reduces the pain of the medication
 - c. It is used to ensure patency of the lock
 - d. It helps the medication be absorbed
4. When flushing an IV prior to medication administration, what should the nurse do if swelling occurs at the site?
 - a. Continue to flush as this is normal
 - b. Apply ice
 - c. Stop flushing and inspect for infiltration
 - d. Wait 2 minutes and flush slowly
5. It is important to teach patients that effects of IV bolus medications occur over what time period?
 - a. Almost immediately
 - b. From 5-10 minutes
 - c. About 15 minutes
 - d. In 30 minutes

Introduction to Pediatric IV Bolus Medication Administration Quiz - Answer Key

1. Why is the IV bolus considered one of the most dangerous routes?
 - a. The medications go through the arteries
 - b. There is no time to correct errors once administered**
 - c. It is not done with a pump
 - d. All bolus doses need to be calculated by the nurse
The medication is directly delivered into the veins and then circulated by the heart. Boluses are via IV push and not all doses are calculated by nurses.
2. Which of the following is a potential complication of an IV bolus?
 - a. Speed shock
 - b. Pain
 - c. Allergic reaction
 - d. All of the above**
Speed shock, pain and allergic reactions are all potential complications.
3. Why is saline used to flush before and after the medication?
 - a. Patients are not allergic to saline
 - b. Saline reduces the pain of the medication
 - c. It is used to ensure patency of the lock**
 - d. It helps the medication be absorbed
Saline is used prior to the medication to verify patency and after to ensure the medication is not within the lock.
4. When flushing an IV prior to medication administration, what should the nurse do if swelling occurs at the site?
 - a. Continue to flush as this is normal
 - b. Apply ice
 - c. Stop flushing and inspect for infiltration**
 - d. Wait 2 minutes and flush slowly
Swelling indicates that the fluid is entering the tissue and not the vein. Flushing should be stopped and if infiltrated, the IV should be replaced.
5. It is important to teach patients that effects of IV bolus medications occur over what time period?
 - a. Almost immediately**
 - b. From 5-10 minutes
 - c. About 15 minutes
 - d. In 30 minutes
Since the medication is delivered directly into the bloodstream, effects are faster than other routes.

Sources

Billings, D, Kowalski, K. (2005) Do your CATS PRRR? A mnemonic device to teach safety checks for administering intravenous medications. *Journal of Continuing Education in Nursing*. 36(3), 104.

Furosemide (2017). *Merck Manual Professional Version*. Retrieved from <http://www.merckmanuals.com/professional/>

Ketorolac (2017). *Merck Manual Professional Version*. Retrieved from <http://www.merckmanuals.com/professional/>

Institute for Safe Medication Practices (ISMP): *Acute care guidelines for timely administration of scheduled medications*. Retrieved from <http://www.ismp.org/Tools/guidelines/acutecare/tasm.pdf>

Perry, A., Potter, P., & Ostendorf, W. (2014). *Clinical Nursing Skills and Techniques*. 8th Edition. Publisher: Mosby, Inc.

Taxis, B., & Barber, N. (2003). Ethnographic study of incidence and severity of intravenous drug errors. *British Medical Journal*, 326, 684.