**Descriptive Title:** Injection Safety

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| --- | --- | --- |
| **Method** | **Rationale** | **Data Sources** |
| Procedural Task Analysis | Steps and sub-steps with subsequent simple decisions, tips, cautions and notes for success, best represent this task.  | Observation of medical assistants delivering immunizations |
| OSHA Blood Borne Pathogens regulations |
| Interview with Clinical Nurse Manager |

**Task Characteristics:**

**Where is this task performed?**

Medical Assistants, Nurses and Medical Providers (a.k.a. “clinical staff”) perform injections in a health care clinic or similar environment.

**What is required to perform this task?**

|  |  |  |
| --- | --- | --- |
| Patient Appointment/Chart | Secure/Clean environment with appropriate seating | Vaccines or medications |
| Needles and syringes of various sizes | Biohazard sharps disposal container | Soap, water and a sink to wash hands and/or sanitizer |
| Non-latex gloves | Non-sterile gauze | Alcohol prep |
| Information Sheets |  |  |

**Task Goals**

Medical Assistants, Nurses and Medical Providers must perform safe injections on a daily basis. Performing safe injections protects the patient and the medical providers by reducing the incidence of needle-stick injury.

**Situational Cues**

The following situational cues are evident when a patient is in need of an injection:

1. The patient is attending an immunization clinic.

2. The patient is responding to a request to maintain vaccinations.

3. The Medical Provider is ordering an injection within the Electronic Health Record software.

4. The patient informs the medical professional of their desire to receive an injection.

**Task Standard**

The following criteria should be evident of a medical professional when preparing, administering and disposing of materials for injections. These standards are accepted by advanced clinical personnel as best practices for:

* Patient communication techniques
* Initiating the conversation
* Safety for patient
* Safety for medical professional
* Safety for others in the room
* Gaining consent: actual or implied
* Needle handling
* Safety best practices when preparing,
* Needle and other potentially infected material disposal
* Patient restraint
* Restraint of infants
* Restraint of toddlers
* Restraint of juvenile

**How often is this task performed?**

The frequency of task completion depends on the individual clinic, patient demographics and seasonal factors. Pediatric clinics perform this task with high frequency, multiple times each day. Family health and senior clinics perform vaccinations and other injections far less frequently. Their frequency increases during seasonal periods, for example, the start of the school year, or leading up to winter months.

**Assumptions about Prerequisite Skills and Knowledge:**

1. Learners utilize safety precautions as taught in Blood Borne Pathogens training.
2. Learners use standard medical health and safety practices from their training medical assisting and nursing.
3. Learners use existing knowledge about providing injections.

**Symbols**

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| C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MC900434816[1].png | Hot Tip: Hints or advice about performing the task |
| C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MP900439244[1].jpg | Caution: Use for safety or potential mistakes |
| C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\ONK9UEF2\MP900430958[1].jpg | Note: Additional Information  |
|  | Critical Skills to be Taught |
|  | Job Aids Provided |
|  | Existing Skill – Will not be taught |

**Summary of Major Tasks**

1. Equipment Selection and Preparation
	1. Vaccine Selection
	2. Needle and Syringe Selection
	3. PPE Selection
2. Patient Preparation
	1. Vaccine/Injection Safety and Risk Communication
	2. Atraumatic Care
	3. Positioning and Comforting Restraint
3. Injection Administration
4. Sharps Disposal

**Procedure Analysis**

1. **Preparation and Selection of Equipment**
	1. **Vaccine Selection**
		1. Locate vaccine or medication vial in refrigerator.
			1. Select appropriate vaccine or medication based on insurance.

|  |  |
| --- | --- |
| If  | Then  |
| * patient is eligible for VFC stock
 | * Select VFC labeled vaccine
 |
| * patient is not eligible for VFC stock
 | * Select unlabeled vaccine
 |

* + 1. Inspect vaccine
			1. Hold vial at eye level.
			2. Estimate the volume of liquid in vial.
			3. Confirm that liquid is not cloudy.
			4. Confirm that liquid is not frozen.
			5. Confirm the expiration date has not passed.
				1. Locate expiration date on side of vial, expressed in MM/YYYY format.

|  |  |
| --- | --- |
| **If** | **Then**  |
| * Child = 0.25 ml
 | * Discard if less
 |
| * Adult = 0.5 ml
 | * Keep for child dose
 |
| * Cloudy
 | * Discard
 |
| * Frozen
 | * Discard
 |
| * Expired
 | * Discard
 |

* + - 1. Discard unacceptable liquids in a biohazard container.
			2. Notify the Immunization Coordinator of waste.
				1. Complete the Waste Form.
				2. Send completed form to Immunization Coordinator.

![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\ONK9UEF2\MP900430958[1].jpg]()Note: Disposing of vaccine vial in biohazard container helps prevent accidental exposure or sharps injuries from broken glass.

![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MC900434816[1].png]()Hot Tip: Walk from the refrigeration area to the nurse’s station to continue preparation.

* 1. **Put on Personal Protective Equipment**
		1. Select gloves.
			1. Put on gloves

![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MC900434816[1].png]()Hot Tip: Gloves come in three sizes (S, M and L) and are on the wall adjacent to the nurses’ station. You need to wear gloves to reduce the potential of contamination. **Syringe and Needle Selection**

* + 1. Select appropriate syringe and needle.

|  |  |
| --- | --- |
| If:  | Then use:  |
| * Giving child dose
 | * 1 ml syringe and 23-25 gauge needle
 |
| * Giving adult dose
 | * 3 ml syringe and 23-25 gauge needle
 |

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Caution: Never use a 3 ml syringe to provide a child dose as the dosage will not be accurate.![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MC900434816[1].png]()

Hot Tip: Needles and syringes are in the supply cupboard at nurse’s station.

* 1. **Vial Preparation**
		1. Open cap on vial.
			1. Push cap up with thumb or fingernail until removed.
			2. Clean foil top with alcohol swab to remove any debris that might cause contamination.
			3. Agitate vial to mix solution.
			4. Set vial aside to dry.
			5. Discard cap and alcohol swab in trash.
	2. **Prepare Needle**
		1. Examine syringe casing for obvious holes, tears or perforations.
		2. Remove sterile cover from syringe and needle.
			1. Discard wrapper in trash.
		3. Fill syringe with vaccine.
			1. Remove cap from needle.
				1. Hold cap firmly between pinched fingers.
				2. Pull cap directly back.
				3. Place cap on counter.

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**![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MP900439244[1].jpg]()**

Caution: Never change hands once the needle is exposed. Changing hands may result in needle-stick injury.

* 1. **Fill Syringe**
		1. Firmly grasp the vial in available hand for stability.
		2. Carefully place the needlepoint at the center of the foil on the vial.
		3. Push needle into the vial until it stops.
		4. Invert the vial and needle.
			1. Pivot the needle.
		5. Reposition hand to hold the syringe and vial with one hand.
			1. Pivot needle so the plunger is at a 45% angle from the starting position.
		6. Draw back on the plunger to fill the syringe with the appropriate volume of liquid.
		7. Invert the needle and vial.
		8. Withdraw the needle.
		9. ![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MP900439244[1].jpg]()Place vial on the table.

Caution: Do not switch hands with the needle and do not put the needle down.



* 1. **Engage Needle Safety Device**

|  |  |
| --- | --- |
| If:  | Then:  |
| * If using BD syringe w/ Integra system
 | * Engage safety device and discard needle in sharps container and replace Leur Lok system
 |
| * If using BD Luer Lok
 | * Recap the needle, remove and discard in sharps container. Replace needle.
 |

* + 1. Engage Integra Safety Glide.
			1. Rotate the device until thumb reaches the foot of the safety.
			2. Push the safety device with thumb until the needle is secure.
			3. Remove the engaged safety device and needle.
				1. Grip the safety device where the needle and syringe connect.
				2. Twist the safety device clockwise.
				3. Remove the disconnected needle.
				4. Discard in sharps container.
				5. Set syringe on tray.
		2. Recap Leur Lok Needle
			1. Hold the tip of the needle cap on a firm surface in a pinching manner.
			2. Carefully scoop the needle cap with the needle.
			3. Raise the needle to allow the cap to glide onto the sharp.
			4. Push cap firmly to secure in place.
			5. Remove the needle.
				1. Grip the needle over the cap.
				2. Twist the needle clockwise.
				3. Remove the disconnected needle.
				4. Discard in sharps container.
				5. Set syringe on tray.
	1. ![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MC900434816[1].png]()**Replace Needle**

 Hot Tip: Replacing the needle ensures a clean, sharp point for injection.

* + 1. Select replacement needle according to syringe.

|  |  |
| --- | --- |
| If  | Then use |
| * BD 1 ml Luer-Lok Tip Syringe
 | * BD Retractable Needle
 |
| * BD Integra 3 ml syringe
 | * BD Safety Glide
 |

* + - 1. Inspect package for signs of damage.
			2. Open needle package.
			3. Connect needle.
				1. Turn needle counter clockwise to secure.
	1. **Prepare incidentals.**
		1. Set alcohol swabs on tray.
		2. Set sterile gauze on tray.
		3. Set sticky bandages on tray.
	2. Remove PPE.
		1. Dispose of PPE in trash.

* 1. Confirm with Medical Provider that it is safe to administer injections to patient.

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Hot Tip: Proceed to the examination room, carrying tray containing injections

1. **Prepare the Patient for Injection**
	1. **Confirm patient agreement to receive injection**
		1. Confirm patient name and/or date of birth.
		2. Ask patient to confirm the injection they are receiving.
		3. Inform the patient of the injection site.
		4. Confirm the absence of contraindications for medications.
			1. Review drug and other allergies in patient's chart.
	2. **Communicate expectations with patient.**
		1. ![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\ONK9UEF2\MP900430958[1].jpg]()Give patient Vaccine Information Sheet (VIS) or Vaccine Preventable Disease (VDS) Sheet to review.

Note: Information Sheets details the reasons for the injection, potential side effects and what to do to alleviate these side effects.

* + 1. ![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MC900434816[1].png]()Explain to patient and others what will be happening.

Hot Tip: To make the process of receiving injections easier, the following strategies are useful: display a positive attitude through facial expressions, body language and comments; Use a soft, calm tone of voice; make eye contact, even with small children; explain why the injection is required; be honest and explain what to expect.

* + - 1. Discuss restraint.
				1. Assess the age of patient to determine if restraint is necessary
				2. Request permission to begin the discussion about restraint

Explain to parent and child the reasons why restraint is important

Gauge reaction.

![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MC900434816[1].png]()If parent is appears motivated, ask for consent to touch child.

Hot Tip: Consent can be actual or implied. Actual consent would be the patient or parent expressing their willingness to participate verbally. Implied would be derived from body language, like a head nod.

If parent appears reluctant, ask a colleague for assistance

![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\ONK9UEF2\MP900430958[1].jpg]()Note: Parents/Guardians should be encouraged to hold children during injection administration. This participation increases child comfort. The parent/guardian should receive instruction on how to help the child stay still for injection safety.

* + - 1. Determine if the patient requires restraint.
				1. Determine the most appropriate method of restraint.
				2. Assist parent/guardian with restraint.

|  |  |
| --- | --- |
| If the patient is a/an | Then |
| * Infant/Toddler receiving injection in the leg
 | * Hold infant/toddler on lap
* Place child’s arms under one arm and around back
* Use free arm to secure the child’s other arm.
* Anchor child’s legs between their thighs.
* Wait for the MA to indicate that it is safe to release patient.
 |
| * Older child receiving injection in the arm
 | * Hold child on lap OR have child stand in front of seated parent.
* Embrace the child during the process by covering both arms
* Anchor the child’s legs between thighs
* Wait for the MA to indicate that it is safe to release patient.
 |
| * Adult
 | * If patient is displaying behaviors that might cause concern request assistance.
 |

* + 1. Discuss safety protocols.
			1. Wait for the Medical Assistant to indicate the procedure is complete before moving.
			2. Explain risks of injury if the patient or others present invade the work space
		2. Prepare the site for injection.
			1. Put on Personal Protective Equipment.
			2. Use alcohol swab to clean injection site.
				1. ![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MP900439244[1].jpg]()Allow site to air dry.

Caution: Do not use towels or blow air on the site to dry. This action will contaminate the injection site.

1. **Administer Injection.**
	1. Site preparation.
		1. Using a large grip, pinch muscle into a mound.
	2. Insert needle into site.
		1. Depress plunger to inject vaccine or medication into site.
	3. Remove needle from site.
	4. Engage needle safety device.

![C:\Users\Nathan\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\D3VJR5ZD\MC900434816[1].png]()Caution: Once the needle is exposed, do not change hands.

|  |  |
| --- | --- |
| If using | Then  |
| * BD Luer-Lok device
 | * Do not switch hands
* Rotate device in hand until thumb can reach foot of the safety device
* Push the safety forward to engage safety device
* Discard needle appropriately.
 |
| * BD Integra retractable device
 | * Do not switch hands
* Depress plunger into the syringe as though you’re administering injection
* Continue pressing until the device makes a clicking sound.
* Discard needle appropriately.
 |

1. **Discard used needle and syringe in sharps container.**
	* 1. Without changing hands, move to sharps container.
		2. Place needle on sharps container lid.
		3. Turn lid to deposit sharps.
	1. Apply sticky bandage to injection site.
		1. Wipe excess blood from injection site with gauze.
			1. Dispose of gauze in biohazard container.
		2. Apply sticky bandage to site.
	2. Remove PPE.
		1. Discard into biohazard container.
2. **Inform patient that procedure is complete**.