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## Needlesticks

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### Introduction

Needlestick injuries can occur when injecting pigs with animal health products. If the pig suddenly jumps or moves, a worker could accidentally be stuck by the needle. Needlestick injuries have also occurred when workers have carried syringes loaded with medication in their pockets. Needlestick injuries should be considered serious as their effect on humans can vary greatly depending on the type of drug injected.

### OSHA Rule(s)

The Occupational Safety and Health Act (OSH Act) requires employers to comply with hazard-specific safety and health standards. In addition, pursuant to Section 5(a)(1) of the OSH Act, often referred to as the General Duty Clause, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm.

OSHA has previously used the General Duty Clause to cite employers when employees experienced cuts, punctures, and injections due to poor handling practices of needles and scalpels when processing piglets and administering treatments to pigs.

Other violations of the General Duty Clause related to needlesticks include repeated straightening of 1.5" x 16 gauge needles in a pump syringe gun; carrying multiple needles, new and recapped, in overall pockets of uniforms; and employer failure to educate on safe sharps handling practices such as avoiding the recapping of sharps and proper disposal of sharps.

### Hazard

Needlestick injuries can be very serious. Certain antibiotics and other medications designed for animals can result in severe medical reactions, or even death, if they are injected into a person. Needlestick injuries can result in several types of injuries (from *Agricultural Medicine*, by Donham and Thelin, 2006). They include:

### **Infection from a contaminated needle**

- When injecting pigs, needles are often used multiple times. These needles can become contaminated with skin organisms or fecal organisms which may cause an infection if injected accidentally into a human.

### **Infection from the product injected**

- Some vaccines (for example, a live Erysipelas vaccine) could cause a local infection if accidentally injected into a human. This infection is typically mild.

### **Inflammation from the product injected**

- Some vaccines are made with agents designed to enhance the immune response, called adjuvants. Adjuvant containing vaccines, typically known as “killed vaccines,” are very irritating and can cause inflammation when accidentally injected into a human.

### **Hyperimmune response due to the product injected**

- If a human has been previously exposed to an infectious agent, and he or she is then exposed to the same agent via a needlestick, a hyperimmune response can result. Often, this response will consist of excessive swelling in the area of the needlestick, but serious disease affecting the whole body can occur.

There are specific dangers faced by women who come into contact with reproductive hormones by needlestick or absorption. These drugs can disrupt the menstrual cycle and cause future reproductive issues and can also disrupt the normal cycle of pregnancy (cause miscarriage or prolong pregnancy). Lutalyse, Prostamate, or Estrumate are administered by injection and are used to induce farrowing in sows. If absorbed by a pregnant employee it can cause her pregnancy to be aborted.

Although PG600 and oxytocin do not have any specific warning for female workers on their MSDS label (occupational exposures have not been fully investigated for oxytocin) they are still reproductive hormones and may be a risk to female workers. Oxytocin and prostaglandins, when injected into women, have resulted in miscarriages.

If a female worker does not feel comfortable handling a reproductive hormone due to its effects, she should not be required to perform tasks that require handling the hormone.  
more efficient.

## **Prevention and Control**

Your employer should always direct you to the Material Safety Data Sheet (MSDS) for any drug or vaccine used in your facility. This will inform you of any other risks or treatments associated with that drug. If you have questions about your safety after reading the MSDS for any compound used in your facility, you should consult with a physician to assess any specific health risks that you may have.

To ensure you understand the safety concerns related to compounds used in your facility and that you are confident in your ability to work with them, your employer will have you sign a Hazardous Chemical Disclosure Form. This form will be specific to the chemicals used in the facility. Women who do not feel comfortable working with hormones do not have to sign the form nor are they obligated to perform the specific task.

Make copies of the MSDSs and have them available in various locations throughout the facility (e.g. near the phone, in areas where they are used, and at supervisor stations). In case of emergency, you will want to be able to provide the MSDS to emergency providers.

Because a potential risk exists for the transmission of diseases from animals to humans and because the OSHA standard does not cover all exposures to animal blood, it may be important to employers and employees working in facilities with animals to practice the principles of general industrial hygiene, including the institution of a hierarchy of controls. Standard precautions, good work practices, the implementation of engineering controls (e.g., sharps disposal containers, self-sheathing needles) and the use of personal protective equipment are means to prevent occupational exposures to animal blood and other potentially

infectious materials. The American Veterinary Medical Association (AVMA) recommends voluntary compliance with OSHA's bloodborne pathogens standard in order to best protect employees working in veterinary or other animal settings. See February 1994 journal article (JAVMA, Vol. 204, No. 3).

Employers are responsible for the safety of their employees and should have guidelines and training for sharps safety and to prevent needle stick injuries.

Develop a sharps handling plan. See Model Infection Control Plan for Veterinary Practices, 2006. (<http://safety.cfans.umn.edu/pigs/>).

**Needle stick Injury Prevention from the National and State Public Health Veterinarians** (<http://www.nasphv.org/Documents/VeterinaryPrecautions.pdf>):

- Never remove needle caps by using your mouth.
- Do not recap needles except in rare instances when required as part of a medical procedure or protocol. Recapping causes more injuries than it prevents. When it is absolutely necessary to recap needles as part of a medical procedure or protocol, or if a puncture-proof, leak-resistant sharps container is not available, a mechanical device such as forceps can be used to replace the cap on the needle or the one-handed "scoop" technique may be employed. This technique involves holding the syringe with the attached needle or the needle hub alone (when unattached) and scooping or sliding the cap, which is lying on a horizontal surface, onto the needle's sharp end. Once the point of the needle is covered, the cap is tightened by pushing it against an object, or by pulling the base of the needle cap onto the hub of the needle with the same hand holding the syringe.
- Dispose of all sharps in designated puncture-proof sharps containers.
- Dispose of the used syringe with attached needle in the sharps container when injecting live vaccines or aspirating body fluids. For most other veterinary procedures, use the needle removal device on the sharps container and dispose of the syringe in the regular trash.
- Sharps containers should be located in every area of the workplace where sharps are used.
- Do not transfer sharps from one container to another.
- Devices that cut needles prior to disposal should not be used because they increase the potential for aerosolization of the contents.
- Never dispose of sharps in the regular trash.
- Document the periodic evaluation of safe needle devices that may prevent recapping action.
- Develop, communicate and enforce standard operating procedures for safe sharps handling. Implement satellite locations of sharps containers to make immediate disposal of used sharps more convenient for employee practice.

**Suggested methods to prevent accidental injection of medications or vaccines.**

- Make sure employees are trained on hazards of handling drugs, hormones, vaccines, etc.
- Develop a training plan that includes information delivery in written and verbal formats relevant to the MSDS and demonstration of the safety information and assessment for understanding.
- Consider developing a policy for reporting and documentation of each needle stick injury.
- Develop and implement a protocol to ensure medical evaluation of all needle stick injuries

**Note:** Workers whose duties involve giving shots to animals – or administering medication at any time – should be instructed to immediately report any accidental injections of antibiotics or medications to their supervisor. In case of accidental injection, the employee should immediately wash the area with soap and water and report the incident to their supervisor. If the medication can cause serious reactions to humans, it will also be important to see a doctor. Deaths and severe medical reactions have been reported after accidental injections by humans of certain medications meant for animals. If an employee is accidentally injected with a medication and has a seizure, stops breathing, or has another severe reaction, immediately call 911 for professional emergency medical help.

## Summary

Understand how to safely administer medications to pigs and what to do in case of accidental needlesticks.

### DO:

- Read the package insert, label, and MSDS for any medications administered to the pigs, and use the product only as directed on the package or as directed by your veterinarian.
- Immediately report all accidental needlesticks to your supervisor.
- Use the product only as directed.
- Work with your veterinarian to determine how often you should change needles.

### DON'T:

- Place your hands between a pig and the side of the stall when injecting drugs.
- Carry a syringe and needle in your pocket.
- Use damaged or bent needles.

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