

GLOBAL HEALTHCARE WASTE PROJECT

MODULE 6: Occupational Health and Safety





Module Overview

- Discuss principles of workplace health and safety
- Describe how the hierarchy of controls reduce or eliminate risk
- Describe components of an effective occupational health
 and safety program
- Discuss training
- Discuss personal hygiene, use of personal protective equipment (PPE), and immunization
- Discuss incident and post-incident response



Learning Objectives

- Identify workplace hazards and who is at risk
- Discuss how exposure can be prevented/limited
- Demonstrate proper hand hygiene
- Discuss use and limitations of personal protective equipment
- Demonstrate the proper donning and removal of personal protective equipment
- Discuss the functions of an occupational health and safety committee



Principles of Worker Health and Safety

- The production, segregation, transportation, treatment, and disposal of healthcare wastes involve the handling of potentially hazardous material.
- Protection against personal injury is essential for all workers.
- Healthcare waste management policies should include provision for the continuous monitoring and enhancement of workers' health and safety.



Principles of Worker Health and Safety

11 functions integral to worker health and safety

- Identifying and assessing risk
- Surveilling workplace hazard
- Designing safe workplaces
- Developing programs to improve work practices and evaluating new equipment
- Advising on occupational health, safety and hygiene
- Surveilling workers' health
- Promoting adaptation of work to the worker
- Managing vocational rehabilitation
- Organizing training and education
- Organizing first aid and emergency treatment
- Analyzing adverse conditions that lead to injury and illness

Who is at risk?

- Staff \rightarrow nurses, physicians, ward staff, cleaners, waste handlers
 - Needle-sticks, blood spatter, pathogenic aerosols, spills, ergonomic issues
 - Lack of awareness, unsafe work practices
- Patients
 - Improperly discarded sharps found in linens
 - Exposure to accidental spills



Sources of Infection

- Personnel
- Patients
- Environment







Most Effective

Less Effective

Hierarchy of Controls

Elimination of hazard

- Most preferred method, should be used whenever possible
- Remove hazards completely from the work area if possible
- Avoid unnecessary injections
- Reduce usage of hazardous chemicals

Substitution

- Substitute hazardous chemicals with less harmful materials
- Jet injectors may substitute syringes and needles
- Engineering Controls
 - Puncture-resistant containers to isolate sharps
 - Retractable needle syringes
- Administrative Controls
 - Resources on PPE, exposure control plan, medical surveillance program, immunizations, PEP, training
- Work Practice Controls

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- Good work practices, no recapping of needles
- Personal Protective Equipment (PPE)

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Occupational Health Program

- Occupational Health and Safety (OHS) Committee
 - Group consisting of employee and management representatives
- The OHS committee tracks
 - Incident Reporting
 - Training
 - Medical Surveillance
 - Post Exposure Prophylaxis (PEP)
 - Personal Protective Equipment (PPE)
 - Medical immunizations
 - Emergency Response





Training

- Worker health and safety training program
 - When staff are hired (orientation to hazards and plan)
 - Periodic refreshers
- Specialized trained personnel
 - Should be available and used where circumstances are needed
 - Should have up-to-date training and certifications
 - Should be trained on each specific area of focus



Training

- Educate all healthcare workers and healthcare waste workers
- Increase awareness about hazards at the workplace
- Outline all emergency, spill and injury response procedures
- Educate on safe work practices
- Provide training on PPE use
- Provide annual refresher training





Examples of Specific Training

- Handling sharps containers
- Handling contaminated linen
- Handling cytotoxic or radioactive waste
- Response to injuries
- Personal hygiene including hand hygiene
- Donning, removing and cleaning PPE
- Initial and annual refresher



Handling Sharps Containers

- When 3/4th full, close and remove container.
- Check all sides for any holes or protruding needles before lifting container.
- If there are holes in the container, carefully place the container inside a larger puncture-resistant container.
- Some of this training can be done when staff are working





Handling Contaminated Linen

- Check contaminated linens for any sharps
- Handle all used linen using gloves, arm sleeves, and coveralls
- When removing soiled linen, gather the linen so that the contaminated area is on the inside
- Wash contaminated linen in hot water (at least 88°C) for at least 20 minutes



Handling of Cytotoxic Waste

- Written procedures for safe working methods for each drug
 - Handling, use, storage, disposal
 - Signs and symptoms of exposure
 - Decontamination procedures
 - Who to contact
 - Medical surveillance
- Establish an emergency response procedure



Handling of Cytotoxic Waste

- Separate collection in leak-proof containers and labeling
- Return of outdated drugs to supplier
 Designate a person in charge
- Safe storage
 - Maintain an inventory
- Disposal methods, decontamination of reusable equipment, and treatment of spillage
- Treatment of infectious cytotoxic waste



Personal Hygiene

- Convenient washing facilities (with warm water and soap) should be available to all, including cleaning staff and waste workers.
- Personnel should be trained on personal hygiene issues that reduce the risks from handling hazardous waste.
- Wear appropriate PPE to reduce exposures.
- Cover cuts/abrasions with waterproof dressing to help reduce exposure of the affected area.



Personal Hygiene

Wash Hands

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- Immediately after arriving for work
- Always after handling healthcare waste
- After removing gloves and/or coveralls
- After using the toilet or before eating
- After cleaning up a spill
- Before leaving work





Personal Hygiene

- Steps in hand washing
 - Wet hands and apply soap
 - Work up lather on palms, back of hands, sides of fingers, and under fingernails
 - Scrub vigorously with soap for at least 20 seconds
 - Rinse well

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 Dry with a <u>clean</u> towel or allow to air dry



Hand Hygiene Technique with Soap and Water **Recommended Duration: 40-60 seconds**







Apply enough soap to cover all hand surfaces:



Rub hands palm to palm;

2



Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked:



Rotational rubbing of left thumb clasped in right palm and vice versa;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Rinse hands with water:



Dry hands thoroughly with a single use towel;







Use towel to turn off faucet:

Your hands are now safe.

Hand Hygiene Technique with Alcohol-Based Formulation Recommended Duration: 20-30 seconds



Apply a palmful of the product in a cupped hand, covering all surfaces;



Rub hands palm to palm;



Right palm over left dorsum with interlaced fingers and vice versa;



Palm to palm with fingers interlaced;



Backs of fingers to opposing palms with fingers interlocked;



Rotational rubbing of left thumb clasped in right palm and vice versa;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



Once dry, your hands are safe.

Personal Protective Equipment (PPE)

- Face masks
- Eye protectors (safety goggles)
- Overalls (coveralls)
- Industrial aprons
- Leg protectors and/or industrial boots
- Disposable gloves (medical staff) or heavy-duty gloves (waste workers)
- Arm covers





Gloves

- Select gloves that are resistant to cuts and abrasions
- Select gloves that allow a good grip
- Gloves should fit well and not hinder tasks



 Use heavy-duty gloves for handling healthcare waste drums or transporting healthcare waste containers

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 Use heat-resistant gloves for anyone working with hot equipment (e.g., autoclaves)

Gloves

- Provides a barrier against germs in blood, body fluids, tissues, and other healthcare waste
- Prevents spread of diseases to others
- Replace gloves immediately if a punctured or tear occurs
- Check for allergies to latex gloves
- Use gloves to seal bags or containers and when chemicals may contact human skin
 - Always wash hands after removing gloves







Safety Glasses, Goggles and Face Shields

- Safety glasses (with side shields)
 - Help prevent being struck in the eyes or impacts to the eyes (not for chemicals or splashes)
- Goggles or face shields

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 Help prevent blood splashes (e.g., when pouring body fluids down the sluice) and chemicals from entering the eye area or the whole face







Coveralls and Aprons

 Help prevent against splashes of blood, body fluids or chemicals to the skin and body





Respirators

- Use of respirators depends on the type of exposure, job, and duration of exposure
- Positive pressure vs. negative pressure
- Full-face vs. half-face
- Single use vs. reusable (cartridge-type)
- Different filters are used for particulates, gases, or vapors,
- Reusable respirators are maintained under a monitoring program.







Shoes

Closed shoes with thick soles and good traction

- Provides protection from sharp objects such as needles and from hot surfaces, helps prevent slipping during spills or cleaning
- Closed shoes or rubber boots
 - Protects feet and toes from splashes of blood or body fluids; rubber protects from some but not all chemicals
- Safety shoes or steel-toe shoes
 - Provides protection from objects that may crush or penetrate the foot or toes during heavy lifting and waste transport



Sequence of Donning PPE

- 1. Hand hygiene
- 2. Gown (if applicable)
- 3. Mask
- 4. Eyewear or eye protection
- 5. Gloves



Sequence of Removing PPE

- . Gloves (assume outside of glove is contaminated)
- Gown (assume gown/apron front and sleeves are contaminated)
- 3. Goggles or face shield (assume outside is contaminated)
- 4. Mask (assume front is contaminated)
- 5. Perform hand hygiene

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Immunization is recommended against Viral Hepatitis B infections for healthcare personnel and waste handlers, and immunization against Tetanus for all personnel handling waste.



Response to Injuries

- Provide immediate first aid measures
- Immediate reporting
- Identify source of injury
- Obtain additional medical information
- Maintain medical surveillance
- Conduct blood tests if needed
- Investigate the causes
- Implement prevention measures for similar incidents



Post-Exposure Prophylaxis

- Required by WHO
- Ensure all staff have access to post-exposure information, education, and communication
- Provide support and counseling to those exposed
- Initiate PEP as soon as possible within first few hours of exposure and no later than 72 hours after exposure
- Analyze reported cases of exposure to improved practices



Incident Reporting

- All incidents including near misses (no injuries) should be reported to the OHS committee or a specific representative
- A report should be filed and kept on record

 Review reports to make work place or
 practice changes





Incident Report

- Name(s)
- Date
- Time
- Where
- Type of injury
- How

- Any witnesses
- Contributing factors
- Medical treatment provided
- Contact information
- Recommendations



Medical Surveillance

- Mercury exposure
- Needle-stick injuries (NSI)
- Bloodborne pathogens
- TB surveillance
 - MDR TB
- Noise
 - May be an issue with loud equipment
- Radiation
- Chemical

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- Formaldehyde, glutaraldehyde, ethylene oxide



Fire Safety

- Establish procedures in case of fire
- Identify potential fire hazards
- Install, test and maintain fire protection systems
- Establish procedures for the safe use and storage of oxygen, flammable and non-flammable gases such as anesthetics
- Maintain electrical equipment to prevent fires
- □ Store combustible materials safely
- □ Train staff in fire safety procedures
- Create and enforce smoking policies
- Comply with fire safety codes or regulations



Importance of an OHS committee

- Promotes a culture of safety and good work practices
- Works to reduce injuries, illnesses, and incidents which can translate to cost savings
 - Savings in medical bills, workers compensation, etc.
 - Avoiding costs of hiring new employee, training new employee, cost of damaged equipment/material in incident, etc.



Discussion

- What are some common workplace safety hazards that you see in your facility? Who do you think is at risk from healthcare wastes?
- Do you know of any worker health and safety policies found in your specific country or region?
- What do consider the most important elements of good personal hygiene when working in a healthcare facility? Do you think good hygiene habits are readily practiced in your facility?
- Does your facility offer worker health and safety training programs, or other opportunities for specific training about healthcare wastes and hazards? Do you know of other outside training programs (aside from this one)?
- What kinds of personal protective equipment, if any, do you regularly wear/use in your job at the healthcare facility?
- Do you have a responsibility in incident reporting? Are PEP procedures set up in the facility?

