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# 12. SPECIAL TOPIC: MEDICAL WASTE

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GLOBAL ENVIRONMENTAL  
MANAGEMENT SUPPORT

# SPECIAL TOPIC: MEDICAL WASTE

## Learning Outcomes

1. Review the different types of medical waste
2. Sensitize to the risks of improper disposal
3. Understand medical waste management procedures
4. Discuss environmental compliance and safeguards for effective waste management



# TWO MAJOR TYPES OF MEDICAL WASTE

- General solid waste
  - Similar to domestic waste
  - Includes paper, plastic, packaging, food prep
  - No patient contact
  - 75 – 90% of healthcare facility waste is hazardous
- Hazardous waste



# HAZARDOUS WASTE

- Hazardous Waste includes:
  - Infectious waste (except sharps and waste from patients with highly infectious diseases)
  - Small quantities of chemicals and pharmaceuticals
  - Non-recyclable pressurized containers
- Highly Hazardous waste is a separate category



# HIGHLY HAZARDOUS WASTE

- Highly Hazardous includes:
  - Sharps
  - Highly infectious non-sharp waste
  - Stools from cholera patients
  - Bodily fluids of patients with highly infectious diseases
  - Large quantities of expired or unwanted pharmaceuticals and hazardous chemicals and radioactive wastes
  - Genotoxic wastes (affecting genetic composition and multiple generations)
  - Teratogenic wastes (affecting development of the exposed individual)



## WHAT ARE THE RISKS?

- Physical injury
  - Cuts, punctures (e.g., from sharps)
- Disease transmission
  - Greatest and most immediate threat
  - HIV/AIDS, hepatitis B & C
- Water supply contamination
  - Infectious stools or bodily fluids
- Chemical and toxic
  - Pharmaceuticals
  - Heavy metals (mercury, cadmium)



# MANDATORY ENVIRONMENTAL REVIEW

- Reg. 216 applies!
  - Establishment or rehabilitation of health centers or clinics
  - Training or technical assistance to health care providers or institutions—”health system strengthening”
- Environmental analysis (EA or IEE) prepared to determine nature and extent of risks
- EA/IEE conditions specify mitigation and monitoring criteria for medical waste management
  - Segregation and disposal
  - Use of personal protective equipment (PPE); training



# EFFECTIVE MEDICAL WASTE MANAGEMENT

- Segregation & Disposal: Non-hazardous solid waste
  - Treat same as “domestic waste”
  - Reduces waste quantity, cost, risk from and to scavengers and workers
  - Manage as close to point of generation as possible
  - Disposal options include landfilling, incineration
  - Do not incinerate plastic, PVC or packaging—incineration produces dioxins, furans etc.





# EFFECTIVE MEDICAL WASTE MANAGEMENT

- Segregation & Disposal: Sharps
  - Use rigid, puncture- and leak-proof containers; ideally red
  - Marked as sharps
  - Monitored
  - Treatment and disposal options include:
    - Autoclaved/ sterilized/ encapsulated /incinerated (with no plastic products)
    - Properly disposed landfill, encapsulation



# EFFECTIVE MEDICAL WASTE MANAGEMENT

- Segregation & Disposal:
  - Infectious Waste
    - Double bagged
    - Hard exterior container (can, plastic bucket) with a lid
    - Marked
    - Yellow/red packaging if possible



## WASTES AND APPROPRIATE RECEPTACLES

Waste		Receptacle		
Category	Description	Type	Markings/features	Disposal
Hazardous	Non sharps infectious waste	Container, plastic bag or holder	Yellow/red <b>Leak proof</b>	
Highly hazardous	Body parts, contaminated gauze, feces	Container, plastic bag	Yellow/red, marked highly infectious <b>Leak proof</b> Suitable for autoclaving	Autoclaving Encapsulation Incineration Sterilization
Sharps	Sharps, needles, lancets	Sealable container	<b>Puncture proof</b> Marked Sharps <b>Leak proof</b>	Reuse Sterilization Autoclaving

# TRAINING AND PLANNING

- Proper training of medical personnel and staff
  - Use of personal protective equipment (PPE); gloves, masks, gumboots, etc.
  - Waste management requirements and procedures
- Medical Waste Management Plan
- Budgets and resources
  - Appropriate management and disposal techniques and costs
  - Transportation needs?
  - Human capacity
  - Environmental monitoring and reporting



# RESOURCES: SECTOR ENVIRONMENTAL GUIDELINES

- Provides “plain-language” guidance for sound design and management
- Identifies typical risks and impacts and recommends mitigation and monitoring approaches

