Transitioning to a Post-Pandemic Pacific Webinar Series

Medical Waste Management During a Pandemic

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Why the focus on medical waste?

- Many types of additional medical wastes are generated
  - Infected masks, gloves, gowns, and other PPE.
- Higher volume of non-infected waste items
- Possible mixing of medical waste with household wastes
- Possible spread of infection
Key steps to managing medical waste in pandemics

- Clear demarcation of responsibilities over medical waste
- Allocation of additional resources to medical institutions
- Designing effective medical waste management plans
Effective medical waste management plans

• An officer to be appointed to develop a waste management plan and to have overall responsibility for its day-to-day implementation and monitoring.

• Plans to address:
  – Location and organization of collection and storage facilities
  – Design specifications
  – Required material and human resources
  – Responsibilities
  – Waste Management Procedures
  – Monitoring and training
  – Minimization of wastes through enabling purchasing policies
Basic elements of a medical waste management plan

1. Segregation at source
2. Interim storage
3. Central storage
4. Onsite treatment
5. Offsite disposal

Transport:
- On-site transport
- Off-site transport
Segregation

- Must be carried out as close as possible to place of generation
- Poorly segregated waste should not be re-sorted. If hazardous wastes is accidently mixed with non-hazardous, it must be treated as hazardous waste.
- Colour coding makes it easier for medical staff and hospital workers to put items into correct containers and to maintain segregation of waste during transport, storage and disposal.
- Containers must not be allowed to accumulate in places accessible to unauthorised personnel or the public
- Containers and bags should be filled no more than three quarters of their capacity and then sealed
- Containers and bags should be labelled with the type of waste, point of generation, date and where possible, weight.
- Segregated waste should be regularly removed and safely stored to reduce the risk of transmission of pathogens and improve general hygiene and cleanliness
Storage

• Interim storage in medical departments
  – Where possible, hazardous waste generated in medical areas should be stored in locked utility rooms
  – If no utility room, wastes can be stored at designated locked location near medical area but away from patients and public
  – Closed containers stationed indoors close to medical areas can also be used for interim storage. Must be clearly labelled and locked

• Central storage
  – Areas where different types of waste are brought for safe retention until collection for transport off-site or until disposal
  – Must be impermeable, well drained hard standing floor, easy to clean and disinfect
  – Readily available water supply for cleaning and washing
  – Lockable to prevent access by unauthorised persons
  – Secure from entry by animals and free from insect and rodent infestation
  – Well-lit, ventilated and shaded from the sun
  – Sited away from food preparation areas and general storage
  – Have spillage and containment equipment
Storage

- **Infectious and pathological waste**
  - Must be stored separately from other hazardous waste at a temperature no higher than 8°C to prevent putrefaction
  - If refrigerated storage is not available, storage times should not exceed 24 or 48 hours
  - Floors and walls must be disinfected as soon wastes are removed
  - Area must be identified using the biohazard sign.

- **Chemical waste**
  - Storage place must be an enclosed area and separated from other waste storage areas
  - To avoid dangerous chemical reactions, must have separate storage for
    - Explosive, corrosive acid, corrosive alkali, toxic, flammable, oxidative, halogenated solvents, and non-halogenated solvents.
  - Cytotoxic waste must be stored separately
  - Mercury waste should be kept segregated
  - Pharmaceutical wastes with non-hazardous can be stored in non-hazardous storage area

- **Low-level radioactive waste**
  - Store for decay in shielded container. Should be identified with radiation warning symbol (trefoil)
Sample outline of chemical storage room

- Photochemicals
- Water pollutants and toxic waste
- Reactive waste (e.g. acids)
- Flammable
- Corrosive bases
- Spillage kit, PPE
Transport

- **On-site transport**
  - Should take place during less busy times and using set routes to prevent the exposure of staff and patients
  - Routes must be from “clean to dirty” i.e: most hygienically sensitive medical areas to other areas.
  - Hazardous and non-hazardous waste should be transported separately; infectious waste should not be transported with other hazardous waste
  - Transport equipment must be able to contain leaks and easy to clean and drain
  - Never transport waste by hand!
  - Transport personnel must wear appropriate PPE: heavy duty gloves, safety shoes, industrial aprons, overalls and face masks

- **Off-site transport**
  - Must be carried out by a licensed, permitted or authorised carrier, in a vehicle used exclusively to transport medical waste
  - Vehicle should be fully enclosed with an internal finish for disinfection.
  - If the service is provided by a contractor, all information on safe working procedures must be shared.
  - Vehicle must carry plastic bags, PPE, cleaning equipment and disinfectant and spill kits.
Treatment

- Treatment technology should be carefully selected based on the characteristics, technological capability and requirements, environmental and safety factors, and costs.
- Treatment methods/technology include:
  - Incineration using BAT
  - Chemical disinfection
  - Autoclave
  - Microwave
  - Encapsulation
  - Specially engineered landfills
  - Discharge to sewer
<table>
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<th>Waste category</th>
<th>Incineration using BAT</th>
<th>Chemical disinfection</th>
<th>Autoclave</th>
<th>Microwave</th>
<th>Encapsulation</th>
<th>Specially designed landfill</th>
<th>Discharge to sewer</th>
<th>Others</th>
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<td></td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<td>Low-level radioactive waste</td>
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End of presentation

Questions can be directed to:

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