

## EFFECTIVE HEALTH CARE WASTE MANAGEMENT PROCESSES AND ACTIONS FOR COVID-19 RESPONSE

Managing infectious health care waste is critical before, during and after an outbreak of epidemic and more importantly the COVID-19 pandemic period. Generally, the COVID-19 pandemic in Ghana is contributing to an increase in the volume of infectious health care waste generated by facilities where patient care is provided, laboratory tests are done and suspected persons are quarantined.

It is important therefore to consciously plan for safe containment, storage, collection, transportation, treatment and disposal of the COVID-19 related waste just like for infectious waste in a business as usual scenario.

It is critical to follow best practices for the safe management of health care waste from this pandemic, thus, make sure contaminated waste from health care facilities doesn't pose any harm to health workers, patients and the general public. Generally, the National COVID-19 team must ensure the availability of adequate human and material resources to manage such waste safely.

The Standard Operating Procedures (SOPs) for handling infectious waste such as sharp waste and other hazardous waste which was developed under the GEF health care waste management project must be followed with emphasis on containment and treatment before disposal. Facilities without treatment systems for infectious waste must use approved treatment method that does not create secondary hazards in the environment.

### Available Infectious Waste Treatment Facilities

There are best treatment facilities across the country that could be used for treatment of the infectious waste. These include:

- Greater Accra Regional Hospital – Autoclave treatment system
- Zoompak Services Ltd at Teshie Accra – Autoclave system (private service provider)
- Eastern Regional Hospital – Autoclave treatment System
- Central Regional Hospital, Winneba – Hydroclave treatment system
- Cape Coast Teaching Hospital – Autoclave treatment system
- Tarkwa Government Hospital – Autoclave System
- Komfo Anokye Teaching Hospital – Incineration System
- Tamale teaching Hospital – Incineration and Autoclave system
- Upper Wes Regional Hospital – Autoclave Treatment system

**In promoting effective health care waste management during the pandemic response, the following actions are being recommended:**

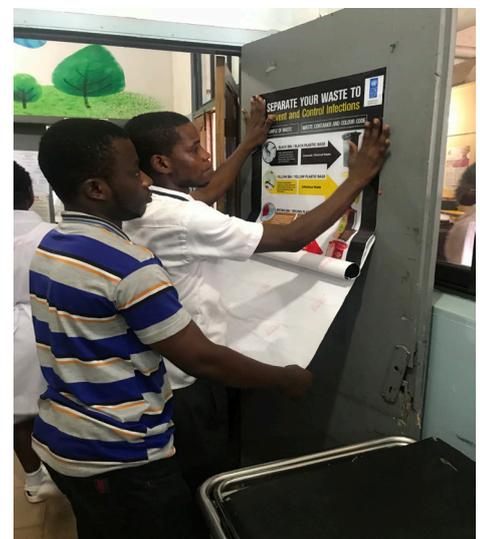
**1. Provision of logistics for safe containment and storage of infectious waste at the point of generation.**

- Providing appropriately labelled waste storage (internal and external) containers (yellow bins and with foot paddle).
- Providing puncture proof safety boxes at the point of generation for safe containment of sharp waste or other WHO approved sharp containers.
- Providing WHO approved colour coded waste liners (yellow liners that can be autoclaved in situations where treatment will be done by autoclaving); and yellow bins for infectious waste.
- Providing general waste bins (black) for patients and frontline staff to use.
- Providing WHO approved PPEs for frontline health workers, cleaners and waste handlers (long-sleeved gowns, gloves, boots, masks, and goggles or a face shield).



**2. Training of staff on HCW segregation, collection, transportation, treatment and disposal (through online platforms or other acceptable media).**

- All frontline workers and supporting staff should be trained on proper hand washing techniques.
- Correct use of PPEs.
- Clinical staff should be trained on HCW classification, segregation, colour codes, labelling and storage. They may be familiar with Infection Prevention and Control (IPC) but the training may emphasis that as a reminder.
- Cleaning staff should be trained on HCW classification, segregation, colour codes, labelling, storage, collection, cleaning and management of spill, including safety and IPC.
- Facility managers or operators managing quarantined patients (confirmed and suspected) should be trained on HCW classification, segregation, colour codes, labelling, storage, collection, transportation and treatment before disposal. This category shall also benefit from IPC, and health and safety training.



### 3. Adopt best environmental practices and use of best available techniques for waste collection, transportation and treatment before disposal.

- Ensure that waste generated at facilities and other places hosting confirmed and suspected cases are properly and safely segregated for collection and transportation within the facility.
- Ensure that infectious waste is not mixed during collection and transportation to enhance safety.
- Ensure that waste is treated onsite (in facility) (incineration above 850 °C in a double chamber or autoclave between 121°C to 134°C). If treatment facilities are not available, an accredited and licenced health care waste treatment service provider should be engaged for the transportation and treatment of COVID-19 waste.
- Facilities with on-site treatment facility shall ensure that waste collectors and treatment operators adhere to the use of WHO approved PPEs and personal hygiene during their operations.
- Managing excreta (faeces and urine) safely, thus ensuring that no one comes into contact with it as well as treating and disposing it correctly.



### 4. Implementing regular cleaning and disinfection practices.

- Laundry should be done and surfaces in all environments in which COVID-19 patients receive care (treatment units, community care centres). Surfaces should be cleaned at least three times a day.
- Cleaning of waste storage area by cleaners at least once a day should be done in line with best environmental practices.
- Ensure that WHO's recommended disinfectants for COVID-19 virus are used:
  - ◇ 70% ethyl alcohol to disinfect small areas between usage as well as reusable dedicated equipment (for example, thermometers);
  - ◇ sodium hypochlorite at 0.5% (equivalent to 5000 ppm) for disinfecting surfaces.
- Follow WHO recommendations to clean utility or heavy-duty gloves, reusable plastic aprons with soap and water and then decontaminate them with 0.5% sodium hypochlorite solution after each use.



**In performing the actions described above, it is imperative that the following SOPs are followed. These derive from Ghana's Guidelines on HCWM that were updated in 2019. Training material was developed in collaboration with Accra School of Hygiene to adequately explain these processes.**

### **SOP for sharps waste management**

- Mount the plastic sharps container or puncture proof safety box correctly prior to use at the designated point of usage at a height for easy access (for assembling, follow the instruction provided, and ensure the lid is secured). If the sharp is to be used while patient is in quarantine, the sharp box or container should be mounted on a working trolley for easy access.
- Clinical staff shall place used sharps into the sharp container or safety box, ensure that all contents actually go through the flap into the container.
- If a sharp container is provided with a strip-off device to separate needles from the syringe, this should be done carefully using the strip-off and place the syringe in the infectious waste bin. NEVER touch the needle by hand! If it is not possible to remove the needle, dispose needle and syringe together into the container.
- Do not leave the sharps container at the patients or visitors areas (every effort should be made to prevent access to sharp container by patients or visitors).
- The sharps container must be replaced, treated and disposed when it is three-quarter (3/4) full.
- Prior to collection for treatment and disposal of the sharp containers, ensure the lid is locked (using the permanent lid closure provided on the box or container).
- Transport safety boxes separately to treatment/waste management area.
- Autoclave the sharps at 120°C at 1.5 atm or Incinerate at 1,100°C and dispose of the ash into a lined ash pit.

### **SOP for storage of infectious waste**

- Mount a rigid leak-proof waste bin (yellow colour and foot paddle) with yellow liner fitted to receive waste. The waste bin must be labelled with the biohazard symbol fixed to warn users and other players.
- Clinical staff shall place ONLY infectious waste into the bin. If used needles were decoupled from the syringe, the syringe should be placed in the infectious waste bin.
- Place the infectious waste bin in an area that could be easily accessed by clinical staff and patients (patient may drop tissue papers used for cleaning sputum and other body fluids which are potentially infectious).
- The waste bin at the working areas shall be emptied into 240 litre bins when it is three-quarter (3/4) full as per the ward's protocols. The liner should be sealed or closed tightly before removing it.
- A new yellow liner shall be used to line the bin for use as per the ward's protocol.
- Waste should not be stored at the operational areas (Case management Areas, Laboratory sampling, testing and result, Containment and quarantine and permanent quarantined areas) for more than 24 hours (one day).

## SOP for waste collection

- Follow the time schedule for waste collection as scheduled by the designated personnel for waste management.
- Take empty bags from the store/ responsible office (yellow, brown and black as the case may be).
- Remove the waste bags once they are 3/4 full and close them tightly, collect waste at least once per shift.
- Hazardous waste bags or containers must be labelled with the basic information: Name of department, type of waste, date, special remarks, volume.
- After taking the waste bag out of the bin, replace it with a new bag.
- Transport the waste safely to the central collection point (dirty store) for pick up or treatment area where the waste is treated in the facility.
- Put the waste in the correct storage container following the colour code for segregation.
- Clean the waste bins with soap and bleach, and wash your hands with soap under running water.

## SOP for internal transport of waste

- Follow the time-schedule for the waste transportation from the units to the central or treatment area, especially for facilities with permanent schedule for waste collection.
- Transportation of waste should be done at least once per day from the collection points to the central storage or treatment area.
- Collect only waste bags which are correctly labelled and tightly closed or sealed.
- Transport the waste to the central storage, follow the fixed routes.
- Do not transport the waste by hand, use a trolley (For example 240 litre waste bin with a wheels).
- If during transportation any spillage occurs, clean up accordingly.
- Hand the waste over to the waste storage or treatment operator.
- Check the trolley for cleanliness; at the end of the shift, clean and disinfect the trolley.
- After the disinfection of the trolley, wash your hands with soap under running water.

## SOP for external transport for treatment and disposal

- Follow the time-schedule (day) for the waste transportation from the central storage area, especially for facilities with permanent schedule for waste collection. Infectious waste should be transported within 24 hours warm conditions if treatment is external and 48 hours cold conditions if treatment is external.
- Weigh in the presence of facility representative and transport waste to treatment plant.
- Collect only waste bags which are correctly labelled and tightly closed or sealed.
- Transport the waste to the central storage following the fixed routes.
- Weigh the amount of waste to be collected by the waste transporter and record in the manifest (waste form).
- Sign and keep copy of the tracking form (manifest) for accountability.

## SOP for waste disposal

- Do not dump untreated waste in the open dumps and water bodies.
- Dispose treated waste at municipal dumpsite if autoclaved (and preferably shredded).
- Dispose waste at designated or approved place at the landfill within the MMDA.

## SOP for infectious waste treatment

- Check that the treatment plant (incinerator operating above 850°C or autoclave operating at 120°C) is fully operational and that all needed operation media (e.g. water, electricity, steam, fuel, etc.) are available.
- Do not autoclave chemical waste and pathological waste. Chemical waste may be best treated by incineration; pathological waste may be treated by using placenta pit /bio-digester or incineration.
- Take the waste from the storage; ensure that the removal is recorded in the log-book.
- Start the treatment process. strictly follow the procedure, do not modify or shorten the treatment process.
- After treatment, take out all residues and dispose these adequately: (a) Autoclaved waste should be added to domestic waste container for transport to disposal site after shredding or in whole; and (b) Incineration ash should be properly bagged and sent to the disposal facility.
- At the end of the waste treatment, clean and decontaminate the plant and the area. Take remaining hazardous waste back to the storage area after the days operation.
- Remove your safety gear and wash your hands with soap under running water.
- Carry out all preventive maintenance for the treatment, regular testing and monitoring of the treatment plant as required.

## SOP for disinfection of waste management equipment

- Regularly clean and disinfect all equipment which comes into contact with waste. First disinfect the equipment, afterwards clean it.
- For the disinfection of the equipment, prepare an adequate disinfectant such as 0,5% sodium hypochlorite solution (e.g. use 5% bleach and mix 1:10) for plastic waste bins or use a ready made disinfectant.
- Carry out a full surface disinfection of the equipment, ensure that all surfaces are fully wetted.
- Wait for 10 minutes to ensure that disinfection is completed.
- Clean all surfaces of the equipment (inside and outside), ensure that dirt as well as all disinfectant is removed.
- If required, carry out corrective maintenance.

## SOP for managing infectious waste spill areas

- Cover the spill with paper towels and cordon off the area.
- Take the spillage kit for infectious liquids such as: infectious waste plastic bag; non-sterile latex gloves, a mask and goggles; disinfectant (1 % sodium hypochlorite); sufficient amount of paper towels.
- Put on your PPE and carefully wipe up the spill, taking care not to splash any of the fluid on your body.
- Cover the spill area with more paper towels.
- Pour the hypochlorite / sodium hypochlorite solution onto the paper towels and leave to stand for 10 minutes.
- Wipe up the area and discard paper towels and gloves into an infectious waste bag and dispose of as infectious waste.
- Wash your hand with soap under running water.



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