GUIDELINES FOR ‘HANDLING, TREATMENT, AND DISPOSAL OF WASTE GENERATED DURING TREATMENT /DIAGNOSIS/QUARANTINE OF COVID-19 PATIENTS

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**BACKGROUND**

- Biomedical Waste generated from Healthcare Facilities required to be treated & disposed off as per provisions laid under BMWM Rules, 2016 notified under E (P) Act, 1986.

- Biomedical waste generated from the COVID hospitals, quarantine centers, home cares etc. involved in treatment and diagnosis of COVID-19 patients also needs to be disposed off as per said Rules.

- CPCB initiated to give guidance for management of biomedical waste generated during COVID-19 Pandemic.


- As per the situation requirement, said guidelines were revised four times incorporating additional provisions to be followed for ensuring scientific disposal of biomedical waste.
APPLICABILITY

(a) COVID-19 Isolation wards at Healthcare Facilities, Railways, etc.
(b) Sample Collection Centers and Laboratories for COVID-19 suspected patients
(c) Quarantine Centers/Camps/Home Quarantine or Home-Care facilities
(d) Common Biomedical Waste Treatment Facility (CBWTF)
(e) SPCBs/PCCs
(f) Urban Local Bodies
OPTIONS FOR MANAGEMENT OF COVID-19 BMW

Disposal options for Waste Generators

COVID-19 Isolation Wards / Hospitals
- Segregate BMW and Solid Waste
  - Handover to BMW to CBWTF. Else disposal by captive incineration or deep burial
  - Handover Solid waste to ULBs waste collector for disposal as per SWM Rules, 2016

Quarantine Camps
- Segregate BMW and Solid Waste
  - Handover to BMW to CBWTF.

Sample Collection Centers / Laboratories
- Send BMW to CBWTF for disposal
  - If CBWTF not available dispose in captive facility

Homecare
- Segregate BMW and Solid Waste
  - Handover Segregate bags containing BMW and Solid Waste to authorized waste collector engaged by ULB

Home Quarantine
- Segregate BMW & Solid Waste
  - Handover Segregate bags containing BMW and Solid Waste to authorized waste collector engaged by ULB
Biomedical waste generation during treatment of patient

Generated BMW should be segregated as per BMWM Rules, 2016

Temporary storage area for BMW waste generated in HCFs

Treatment of BMW in CBWTF

BMW received by CBWTF from different generators

Flow chart of COVID-19 BMW management from generation to disposal

Transportation of BMW from point of generation to CBWTF
COVID-19 Isolation wards

Biomedical Waste Management:
- Segregation as per BMWM Rules, 2016.
- Segregate biomedical waste and general solid waste separately, as per their respective prevailing Rules.
- Keep separate color coded bins in wards.
- Collect used PPEs such as goggles, face-shield, splash proof apron, Plastic Coverall, Hazmat suit, nitrile gloves into Red bag.
- Collect used mask (including Triple layer mask, N95 mask etc.), head cover/cap, shoe-cover, disposable linen Gown, non-plastic or semi-plastic coverall in Yellow bags.
- Used masks, tissues and toiletries, of COVID-19 patient shall become biomedical waste and shall be segregated in yellow bag.
- Use double layered bags for collection of waste from ward to ensure no leakage.
- Label the COVID-19 biomedical waste bags as ‘COVID-19 Waste’.
- Use dedicated trolley for transportation of COVID waste.
- Disinfect the bags with 1% sodium hypochlorite solution.
- Separate records for generation, collection and storage.
- Provide training to staff.
WHAT TO DO??

COVID-19 Isolation wards

For Solid Waste:

- General solid waste comprising of wrappers of medicines/syringes, fruit peel offs, empty juice bottles or tetra packs, used wafer bottles, discarded papers, carton boxes of medicines, empty bottles of disinfectants, left-over food, disposable food plates etc., should be collected separately as per SWM Rules, 2016.

- In order to minimize waste generation, as far as possible, non-disposable items must be used for serving food.

- If use of disposable items is inevitable, use bio-degradable cutlery.

- The wet and dry solid waste bags to be tied securely in leak-proof bags, sprayed with sodium hypo-chlorite solution and hand over to authorized waste collector of ULB’s on daily basis.

- Yellow colored bags should not be used for collecting general solid waste.

Wastewater Management:

- HCFs and the agencies operating Sewage Treatment Plants should continue to ensure disinfection of treated wastewater as per prevailing practices to inactivate corona viruses.

- Operators of ETPs/STPs attached with discharge from Healthcare Facilities and isolation wards should adopt standard operational practices, practice basic hygiene precautions, and wear personal protective equipment (PPE) prescribed for operation of STPs. PPEs should include Goggles, face mask, liquid repellant coveralls, waterproof gloves and Rubber boots.
MANAGEMENT OF COVID-19 BMW BY QUARANTINE CENTERS/CAMPS, HOME CARE AND HOME QUARANTINE

- Identify and designate the person responsible for management of COVID-19 waste.
- Segregate the biomedical waste like used mask, gloves, tissues etc. in yellow bag.
- Agreement with CBWTF operator for collection of biomedical waste.
- In case of Home care or home quarantine, ULBs shall be responsible for collection of waste. Waste may be deposit at waste deposition centers identified by ULBs.
- General waste should comprise of waste generated from kitchen, packaging material, waste food material, waste papers, waste plastics, floor cleaning dust, etc. including left-over food, disposable utensils, water bottles, tetra packs.
- Masks or gloves used by person other than COVID-19 patient shall be stored separately for min. 72 hrs and after cutting or shredding dispose the same alongwith solid waste.
ROLE OF COMMON BIOMEDICAL WASTE TREATMENT FACILITIES

- Report to SPCB/PCC regarding receipt of COVID-19 biomedical waste at their facility.
- Ensure:
  - Sanitization of workers
  - Give adequate PPEs to workers
  - Shall not allow any worker with symptom to work
- Use dedicated vehicle for collection of COVID waste.
- Disinfection of vehicle and bins/container after every trip
- Maintain record for waste treatment & disposal
- Usage of COVID19BWM tracking App. for daily data feeding
- Provide regular training to workers.
DUTIES OF STATE BOARDS

- Overall management of COVID-19 biomedical waste as per BMWM Rules, 2016.
- Ensure implementation of CPCB guidelines for scientific disposal of waste.
- Maintain records for COVID-19 Biomedical Waste Management for their State/UT.
- Allow extra operational hours to CBWTF, if required.
- Allow disposal of COVID waste through captive treatment facilities where there is no access of CBWTFs.
- Permit hazardous waste incinerators or industrial incinerators for treatment & disposal of COVID waste.
- Coordination with ULBs for collection of waste from quarantine centers/camps, home care or home quarantines.
- Reporting daily data through COVID19BWM app and ensure usage of same by waste generators and CBWTFs.
DUTIES OF URBAN LOCAL BODIES

- Provide updated list of quarantine centers, home care and home quarantines to concerned State Board.
- Collection of biomedical waste and general waste separately.
- ULBs should ensure that left-over food and general solid waste is not collected in yellow bags.
- In quarantine camps, ensure that biomedical waste is collected directly by CBWTFs identified by ULB.
- Provide necessary support, security including authorisation to staff of CBWTFs.
- Dedicate separate team for door to door collection of waste from home care & home quarantines.
- Provide yellow colour bags for storage of biomedical waste.
- Provide adequate PPEs to workers involved in collection or handling of COVID waste.
- Use dedicated trolley/cart/vehicles for transportation of waste and shall disinfect the same with 1% sodium hypochlorite solution.
- Establish waste deposition centers.
- Create awareness among citizens for segregation of general solid waste and biomedical waste.
- Dedicate nodal officer to maintain records for COVID waste management and feeding daily data on COVID19BWM app.
- General solid waste may be disposed as per SWM Rules, 2016, which may include disposal in landfills, waste to energy plants, depending on available infrastructure.
MANAGEMENT OF USED PERSONAL PROTECTIVE EQUIPMENT

- Used masks and gloves at other households, commercial centers, offices etc. shall be kept separately for min 72 hrs to dispose the same as general solid waste after cutting or shredding.

- At Material Recovery Facilities (MRFs), discarded PPEs containing plastic should be shredded and sent to SPCB authorised plastic waste recyclers, or may be converted into refuse derived fuel (RDF) for co-processing or energy recovery (in Waste to Energy Plants) or for road making.

- Shredded PPEs may be disposed at landfill only in case the requisite infrastructure as required under SWM Rules is not available in the State.

- PPEs doffed by healthcare workers accompanying diseased body of COVID-19 patient to crematorium / graveyard should be treated as biomedical waste and disposed as per provisions under SWM Rules, 2016 and BMW Management Rules, 2016.

- Crematoriums/graveyards may opt for disposal of such PPEs is given below;
  - Should be collected in separate bin with yellow-bag and handed over to authorized waste picker engaged by of ULBs for disposal through CBWTFs. OR
  - Dispose as domestic hazardous waste (biomedical waste) and may be deposited at designated deposition centers identified by ULBs for pick-up by CBWTFs. Or
  - May ask healthcare staff to take-back the PPEs after collecting it in red and yellow bags/bins provided in the hospital ambulance itself. Or
  - May ask the healthcare workers to doff the PPEs at the hospital or healthcare unit from where they collected the corpse.
COVID19BWM App developed by CPCB

- The application is for tracking of COVID-19 biomedical waste generated at different sources from point of generation to its disposal.

- Generators should register in App and report waste generated in the mobile App for daily.

- Waste handler should be registered by corresponding CBWTF operator and accept the waste from generator through the App during its collection.

- CBWTF operator should use mobile App for accepting the waste received from vehicles and also use its web version and approve the data.

- SPCB/PCC should use web version of App and approve daily data of BMW in their respective State/UT.
Web version of COVID19BWM Application
## COVID-19 WASTE MANAGEMENT – DO’S & DON'TS
(Quarantine Camp/Centre or Home-care)

<table>
<thead>
<tr>
<th>Do's</th>
<th>Don'ts</th>
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<tbody>
<tr>
<td>Care takers of COVID-19 patients under home-care shall store the biomedical waste in yellow coloured bag provided by Urban Local Body.</td>
<td>Home-care taker shall never mix general waste with biomedical waste such as used syringes, date expired or discarded medicines, used masks/gloves etc.</td>
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<tr>
<td>Person taking care of suspected or confirmed (asymptomatic and mild symptomatic) COVID-19 patient at home-care shall handover the yellow bag to authorized waste collector from urban local body or common biomedical waste treatment facility operator.</td>
<td>Never dispose off used masks of suspected or confirmed (mild symptomatic or asymptomatic) COVID-19 patients in bags other than yellow bag.</td>
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<td>Home-care care-taker may also deposit the yellow bag at designated deposition center of ULB.</td>
<td>Positive or suspected COVID-19 patient shall never use fabric mask home-made masks, if any.</td>
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<td>General waste from home care or quarantine center or quarantine camp shall be handed over as solid waste to authorized waste collector of Urban Local Body (ULB - Municipal Corporation / Municipality).</td>
<td>Do not leave your used mask within the reach of others.</td>
</tr>
<tr>
<td>Home quarantine or other households shall store used masks &amp; gloves immediately in paper bag for minimum of 72 hours prior to handing over the same to waste collector of ULB as general solid waste.</td>
<td>Do not re-use surgical masks or gloves.</td>
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<tr>
<td>Used masks &amp; gloves from Home quarantine or other households after keeping aside in paper bag for 72 hours may be cut into pieces prior to disposal to prevent re-use.</td>
<td>Quarantine center or camp or homecare shall never store biomedical waste for more than 48 hrs.</td>
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<td>Person operating quarantine camp or quarantine center shall contact the CBWTF operator for lifting of biomedical waste as and when generated.</td>
<td>Dedicated waste collector of ULB cannot delay collection of waste from quarantine center / quarantine camp / home-care.</td>
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<td>Persons operating quarantine camp or quarantine center or care-takers of homecare may contact ULB in case of any difficulty in getting the service.</td>
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<tr>
<td>Arrange collection of biomedical waste from every quarantine centers/camps, home quarantine and home-care.</td>
<td>Never mix general solid waste with biomedical waste at quarantine centre / quarantine home / home-care.</td>
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<td>Provide yellow coloured bags to the persons operating Quarantine Camp and to care takers of home-care.</td>
<td>Workers of ULBs shall never deny collection of waste from quarantine center / quarantine home / home-care.</td>
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<tr>
<td>Identify a Common Biomedical Waste Treatment and Disposal Facility (CBWTF) for collection of biomedical waste from quarantine centers / home-cares from designated locations.</td>
<td>Never store biomedical waste at waste deposition center / collection point for more than 24 hrs, the same should be immediately handed over to CBWTF for final disposal.</td>
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<tr>
<td>Share details of ULBs with Quarantine Camps / Quarantine Homes / Home-Cares State Pollution Control Boards / Pollution Control Committees to facilitate disposal of biomedical waste.</td>
<td>Never send worker without PPEs for collection of waste from quarantine center / quarantine home / home-care.</td>
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<tr>
<td>Provide necessary support and security to waste handlers of CBWTF while collection of biomedical waste.</td>
<td>Don’t use the trolley / cart dedicated for collection COVID-19 biomedical waste for collection of general waste.</td>
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<td>Establish common waste deposition centers (as stipulated under SWM Rules, 2016) for receiving / collection of biomedical waste.</td>
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<td>Provide adequate Personnel Protective Equipment (PPEs) such as three layer masks, splash proof aprons/jackets, heavy-duty gloves, gum boots and safety goggles to workers involved in handling of COVID-19 biomedical waste.</td>
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<td>Form a dedicated team of workers for collection of waste from quarantine centers or home care.</td>
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<td>Arrange regular awareness programs and training to the workers engaged in Solid waste handling.</td>
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<td>Ensure dedicated trolleys / cart / vehicles are used for collection of waste and ensure regular sanitization with 1% sodium hypochlorite solution after every trip of collecting biomedical waste from home care / home quarantine.</td>
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THANK YOU