Managing Biomedical Waste in India: COVID-19 and Beyond

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Legal Framework

- Biomedical Waste Management Rules, 2016, as amended
- CPCB technical guidelines
  - Guidelines for Management of Biomedical Waste as per BMWM Rules, 2016
  - Revised guidelines for CBWTFs
  - Guidelines for Handling of Biomedical Waste for Utilisation
  - Guidelines for Barcode System for Effective Management of Biomedical Waste
  - Environmentally Sound Management of Mercury Waste Generated from HCFs
  - Toolkit for Biomedical Waste Management Rules, 2016
  - Guidelines for Imposition of Environmental Compensation against HCFs & CBWTFs
  - Guidelines for Verification of Two Seconds Residence Time in Secondary Combustion Chamber of BMW Incinerator
  - Guidelines for “Monitoring Compliance of Common Biomedical Waste Treatment Facilities by State Pollution Control Boards / Pollution Control Committees”
- Guidelines for Handling, Treatment and disposal for waste generated during treatment, diagnostics and quarantine of COVID-19 patients
Biomedical Waste Management Scenario

- No. of HCFs: 3,19,907
- No. of bedded HCFs: 1,06,643
- No. of non-bedded HCFs: 2,15,336
- No. of beds: 24,86,823
- No. of CBWTFs: 202* + 36**
- No. of HCFs granted authorization: 1,55,103
- No. of HCFs having Captive Treatment Facilities: 18,552
- No. of Captive Incinerators Operated by HCFs: 130
- Quantity of bio-medical waste generated in Tonnes/day: 615
- Quantity of bio-medical waste treated in Tonnes/day: 541
- No. of HCFs violated BMW Rules: 28,816
- No. of Show-cause notices/Directions issued to defaulter HCFs: 17,196

Note: * - CBWTFs in operation** - CBWTFs under installation
CPCB identified 12 following Key Performance Indicators (KPIs) to assess States with respect to effectiveness in monitoring, ensuring compliance and implementation of BMWM Rules, 2016.

- Inventory of HCFs and biomedical waste generation
- Authorization to all HCFs including non-bedded HCFs
- Facilitate setting-up adequate number of CBWTFs to cover entire State or all HCFs
- Constitution of State Advisory Monitoring Committee and District Level Monitoring Committee
- Implementation status of Barcode system
- Monitoring of Healthcare Facilities other than hospitals/clinics such as Veterinary Hospitals, Animal Houses, AYUSH Hospitals etc.
- Monitoring infrastructure of SPCBs/PCCs
- Training and Capacity Building of officials of SPCBs/PCCs and Healthcare Facilities
- Installation of OCEMS by CBMWTs as a self-monitoring tool and transmission of data with servers of SPCBs/ CPCB
- Preparation of Annual Compliance Status Reports
- Compliance by Common Facilities (emission/discharge standards, barcoding, proper operation, etc.)
- Compliance by Healthcare Facilities (Segregation, pre-treatment, on-site storage, barcoding and other provisions etc.)
Interesting Facts

• 18 States/UTs have achieved more than 80% authorization of inventorised HCFs
• The overall efficiency of authorizations issued in the country is 67%.
• There has been 20% increase in number of HCFs identified and 40% increase in number of HCFs brought under the process authorization under BMWM Rules, 2016.
• Present generation of 615 MT/day may look adequate at national perspective, however, at individual State’s level availability of CBWTFs may vary
• In States namely Assam, Jammu Kashmir, Kerala, Odisha, Pondicherry and Tamil Nadu, the capacity utilization of existing common infrastructure has exceeded 75%,
• States namely A&N, Arunachal, Goa, Lakshadweep, Mizoram, Nagaland, Sikkim and Tripura does not have common facilities for treatment & disposal of biomedical waste
• Only 04 States/UTs namely Bihar, Kerala, Punjab and West Bengal have adopted barcode system and 22 States/UTs are under process of adoption of the same.
## BMW Management Scenario in COVID-19 Pandemic

- No of HCFs having Isolation wards: 3,095
- No of Quarantine Camps/Home Care Facilities: 2,768
- No. of sample collection center: 704
- No. of laboratories: 576
- Quantity of COVID19 BMW generated (Tons/day): 146 (average quantity in December)
- Number of CBWTFs engaged: 198
- Treatment capacity of incinerator (Tons/day)*: 822
- No of States used deep burial pits: 12
Actions Taken by CPCB

• Prepared separate guidelines for Handling, Treatment and disposal for waste generated during treatment, diagnostics and quarantine of COVID-19 patients
• Developed online tracking Application (android & iOS) for tracking of COVID-19 BMW
• Constituted High Level Task Team to review COVID BMW across the Country
• Imposition of Environmental Compensation against defaulting facilities
• Created separate web-page for COVID-19 updated for public
• Conducted awareness programs – through social media, Doordarshan
COVID-19 BMW Generation

![Bar chart showing BMW Generation over months from May to December]

- May: 625.82
- June: 1858.35
- July: 4253.46
- August: 5238.45
- September: 5490
- October: 5597
- November: 4868.53
- December: 4527.55

Covid-19 BMW (in Tons)
What Next??

- Implementation of BMWM Rules, 2016
- State Boards are required to closely monitor the compliance
- Implementation of tracking applications and Barcode system
- Coverage of CBWTFs in every District
- Incidences of dumping of biomedical waste should be closely monitored
- Veterinary Hospitals and AYUSH Hospitals to obtain authorization
- Follow Universal Immunisation Guidelines for management of BMW during COVID-19 vaccination
THANK YOU