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## **Pollution watchdog releases guidelines to handle COVID-19 biomedical waste**

**by Mayank Aggarwal on 24 March 2020**

- To ensure safe disposal of biomedical waste generated during treatment, diagnosis and quarantine of patients with the novel Coronavirus disease (COVID-19), the Central Pollution Control Board of India has come out with special guidelines.
- The guidelines provide a series of steps for safe disposal of waste generated in hospital isolation wards for COVID-19 patients, testing centres and laboratories, quarantine facilities and homes of suspected patients.
- Doctors stated that biomedical rules are already being followed but admitted that in overcrowded hospitals and those that are not in major cities, it becomes more of a challenge.

India's pollution watchdog, the Central Pollution Control Board (CPCB), has released guidelines for handling, treatment and safe disposal of biomedical waste generated during treatment, diagnosis and quarantine of patients confirmed or suspected to have the novel coronavirus disease (COVID-19).

The virus SARS-CoV-2, responsible for COVID-19, has spread across at least 190 countries and more than 334,000 confirmed cases of COVID-19 have been reported globally (as of March 24, 2020 according to the World Health Organisation), since it was first reported in China late last year. At least 14,652 people globally have died due to this disease so far.

In India, according to the Indian Council of Medical Research (ICMR), a total of 20,864 samples from 19,974 individuals have been tested for the coronavirus as of March 24, 2020. So far, a total of 482 individuals in India have been confirmed positive and nine deaths have been recorded, as of March 24, 2020.

Though India already had Bio-Medical Waste Management Rules, 2016, the CPCB guidelines were released to ensure that the waste generated specifically during testing of people and treatment of COVID-19 patients is disposed of in a scientific manner. Biomedical waste, according to the existing biomedical waste rules, is any waste that is generated during the diagnosis, treatment or immunisation of human beings, animals or research activities etc. It could include human tissues, items contaminated with blood, body fluids like dressings, plaster casts, cotton swabs, beddings contaminated with blood or body fluid, blood bags, needles, syringes or any other contaminated sharp object.

For isolation wards where COVID-19 patients are kept, the guidelines stressed that, in addition to rules regarding biomedical waste, as a precaution, double-layered bags (two bags) "should be used for the collection of waste to ensure adequate strength and no-leaks."

"Collect and store biomedical waste separately prior to handing over the same (to) Common Bio-

medical Waste Treatment Facility (CBWTF). Use a dedicated collection bin labelled as COVID-19 to store COVID-19 waste and keep separately in a temporary storage room prior to handing over to the authorised staff of the CBWTF. Biomedical waste collected in such isolation wards can also be lifted directly from ward into CBWTF collection van,” said the guidelines while seeking a separate record of waste generated from COVID-19 isolation wards.

The guidelines also sought that bags/containers used for collecting biomedical waste from COVID-19 wards should be labelled as COVID-19 waste to enable CBWTFs to identify the waste easily for priority treatment and immediate disposal after getting it. In addition, the guidelines sent to all states, direct use of dedicated trolleys and collection bins in COVID-19 isolation wards and recommended that the surface of containers, bins, trolleys used for storage of COVID-19 are disinfected regularly.

The CPCB suggested similar steps for the sample collection centres and laboratories for COVID-19 suspected patients. The pollution watchdog said opening or operation of COVID-19 ward, sample collection centres and laboratories should also be intimated to the State Pollution Control Boards (SPCBs).

According to the union ministry of health and family welfare, so far, over 1.5 million passengers (15,24,266) have been screened at airports across India. Many Indians, who either came to India from foreign countries during the past month or people who came in contact with such people, are in quarantine at home or in community-based facilities (popularly called as camps) to ensure that if they are infected, the disease does not spread further. Quarantine is the separation and restriction of movement or activities of persons who are not ill but who are believed to have been exposed to infection, for the purpose of preventing transmission of diseases, according to the government of India’s National Centre for Disease Control.

As per the WHO, coronavirus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes. These droplets then land on objects and surfaces around the person. Other people can get infected when they touch their eyes, nose or mouth after touching these contaminated objects or surfaces. According to WHO, people can also get COVID-19 if they breathe in droplets from a person with COVID-19 who coughs out or exhales droplets and that is why it is important to stay more than one meter (three feet) away from a person who is sick. At this time, there are no specific vaccines or treatments for COVID-19. WHO is assessing ongoing research on the ways COVID-19 is spread. The organisation put out a statement by Poonam Khetrpal Singh, Region Director, WHO South East Asia, on social media in which she said “airborne spread has not been reported for COVID-19”. “Based on the information received so far and on our experience with other coronaviruses, COVID-19 appears to spread mostly through respiratory droplets (for instance produced when a sick person coughs) and close contact. This is why WHO recommends maintaining hand and respiratory hygiene,” said Singh on March 23, 2020.

At the quarantine facilities and during home care for suspected COVID-19 patients, the guidelines noted that even though a low quantity of biomedical waste is expected to be generated, they still need to follow strict steps to ensure safe handling and disposal of waste.

For instance, it said, while the routine solid waste generated from quarantine centres can be treated and disposed of as per the solid waste management rules 2016, “biomedical waste generated should be collected separately in yellow coloured bags and bins.” Quarantine camps/centers shall inform the CBWTF operator as and when the waste is generated so that waste can be collected for treatment and disposal at the CBWTFs.



In case of home-care for suspected patients, biomedical waste should be collected separately in yellow bags (yellow coloured, non-chlorinated plastic bags) and handed over to authorised waste collectors engaged by local bodies. “Urban local bodies should engage the CBWTFs to pick up such waste either directly from such quarantined houses or from identified collection points,” the guidelines said.

For the CBWTFs that will be disposing of this waste, the CPCB asked them to maintain a separate record for collection, treatment and disposal of COVID-19 waste. It asked them to report to the state pollution control boards about receiving waste from COVID-19 isolation wards, quarantine camps, quarantined homes and testing centres.

Jugal Kishore, Director Professor and Head, Department of Community Medicine, Vardhman Mahavir Medical College and Safdarjung Hospital, said biomedical waste rules have been there and are being strictly followed in their hospital but cautioned that everyone needs to take care.

“We need to ensure that the health workers and the overall environment remain safe. India’s biomedical rules are robust and are being followed. There were similar steps recommended during previous outbreaks like swine flu or Nipah. CPCB’s guidelines are reinforcing the strict measures that are required. The best management of these items (biomedical waste) is segregation at the time of waste generation, which can be much higher in times of outbreak. So, the CPCB’s guidelines are a welcome step,” Kishore told Mongabay-India.

He explained that this is a major challenge for hospitals because of overcrowded and overworked hospitals where mixing could happen with regular medical waste.

“If you go to health centres and hospitals in peripheral areas then they (biomedical waste rules) are not followed properly due to various reasons like lack of training and frequent transfers of doctors. Rigorous monitoring is required to ensure such waste does not end up infecting others. Also, we need to ensure that people who are at home are disposing of their tissues etc. properly to ensure that they do not end up passing it to anyone including garbage collectors. What we need are universal precautions by everyone,” said Kishore.

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The guidelines further said that the CBWTF operators “shall ensure regular sanitisation of workers involved in handling and collection of biomedical waste and that they should be provided with adequate personal protective equipment including three-layer masks, splash-proof aprons/gowns, nitrile gloves, gumboots and safety goggles.”

It directed the facilities to use dedicated vehicles to collect COVID-19 ward waste and asked them to sanitise such vehicles after every trip.



The pollution watchdog recommended that COVID-19 waste should be disposed of immediately upon receipt at facilities and emphasised that they should not allow “any worker showing symptoms of illness to work at the facility.”

The CPCB clarified that these guidelines need to be followed by all stakeholders including isolation wards, quarantine centers, sample collection centers, laboratories, urban local bodies, and the CBWTFs, in addition to the existing biomedical waste management rules.

It also specified that these guidelines are based on current knowledge of COVID-19 and existing practices in the management of infectious waste generated in hospitals while treating viral and other contagious diseases and will be updated if needed.

Deepak Saxena, a medical expert on public health and Professor, Indian Institute of Public Health, in a press release, said, “the society’s perception and practice of indiscriminate disposal of various items can be a potential source of infection of COVID to municipal workers.”

“The communities need to dispose their used napkins, tissues, empty sanitizer bottles in a separate bag, to ensure the safety of municipal workers and ragpickers. It will also ensure that the cycle of garbage collection and plastic recycling don’t get affected. The government should also provide safety kits to municipal workers urgently and educate them on how to handle household waste during the outbreak, to help in halting the chain of transmission,” said Saxena.

Meanwhile, as far as the state pollution control boards are concerned, the guidelines said they shall maintain separate records of COVID-19 treatment wards, quarantine centers, quarantined homes in

respective states.

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