# Report On Regional Virtual Training on Bio Medical Waste Management during COVID 19 Pandemic for North Eastern States Organized by QI Division, RRCNE, Branch of NHSRC, MOHFW, GOI

#### A. Introduction

State and Central Governments have initiated various steps to deal with COVID 19 pandemic, which include setting up of quarantine centers/camps, Isolation wards, sample collection centers and laboratories. In this regard, Central Pollution Control Board (CPCB) have issued specific guidelines for management of waste generated during diagnosis and treatment of COVID 19 suspected/confirmed patients, which are required to be followed by all who are managing isolation wards, quarantine centers, sample collection centers, laboratories, ULBs and common Biomedical waste treatment and disposal facilities, in addition to existing practices under BMW (Biomedical Wastes) Management Rules, 2016. These guidelines are based on current knowledge on COVID -19 and existing practices in management of infectious waste generated in hospitals while treating viral and other contagious diseases like HIV, H1N1 etc. This version 4 (four) of CPCB guidelinesissued to provide revised guidance on segregation, collection, transportation and disposal of General Solid wastes and Biomedical Waste generated from quarantine centers/homecare/healthcare facilities treating COVID-19 patients.

## B. Objectives of the Training

Regional Training on Biomedical Waste Management in COVID 19 Scenario was organized on digital platform for the 8 NE States with the following objectives:

- i. To handhold the District Officials & Medical Officer I/Cs of Primary health facilities in NE States for managing General Waste and Bio Medical Waste generated from COVID care centres, laboratory, sample collection centres, Quarantine and Home care centres.
- ii. To sensitize the officials on the 4th Revision of CPCB guideline dated 21st July 2020.

## C. Dates and Participants of the Training

The participants of the meeting are District BMW Nodal Officers, Medical Officer from PHCs of 8 NE States, State QA nodal officers and State and District QA Consultants. The list of the participants is attached in Annexure I. The Training was conducted in three batches as follows:

SN	Batch	State	State wise Total Participants	Batch wise Total Participants	Dates of Training
1	First Batch	Arunachal	16		14 <sup>th</sup> August 2020,
		Pradesh		37	Friday
		Manipur	21		
		Sikkim	10	64	19th August 2020,
2	Second Batch	Mizoram	18		Wednesday
		Tripura	14		
		Meghalaya	22		
3	Third Batch	Assam	26	46	21st August
		Nagaland	20		2020,Friday
TOTAL			147	147	

#### D. Inaugural Address

**Dr.Ashoke Roy,Director RRCNE** welcomed all State representatives namely Dr Baroon Subba (SiKkim), Dr. Hunsi Giri (Meghalaya), Dr. Lalchawnawma (Mizoram), Dr. Rohini Kumar (Assam), Dr. Anirban Hore (Tripura), Dr. Takhellabam Napolean(Manipur), Dr. Laltliani (Mizoram) and Ms. Toko Jumsi (Arunachal Pradesh) along with all District Nodal Officers (BMW) and the Medical Officers from selected health facilities of the NE States to the virtual training on Biomedical Waste Management in COVID 19 scenario. Dr Roy then explained the objective and the need of the training at this time. He emphasized on proper segregation, transportation, storage and disposal of Biomedical Waste during this pandemic.

#### E. Technical Session

The first session on "Management of general waste & biomedical waste in COVID Isolation Ward & Sample Collection Centres/Laboratories" was taken by Mr. Anupjyoti Basistha, Consultant-QI, RRCNE. He started his presentation with the overview of Biomedical Waste, BMW Rule 2016 & the Revision 4 of CPCB guideline for handling, treatment & disposal of waste generated during COVID 19. Then he mentioned that opening or operation of COVID 19 isolation ward, laboratories and sample collection centres should be reported to State Pollution Control Board(SPCB). He further highlighted the additional points in the revised CPCB guideline which includes use of double layered bags (using 2 bags) for collection of BMW waste from COVID 19 isolation wards/lab/sample collection centres so as to ensure adequate strength and no leakage, use of foot operated bins, COVID 19 label in addition to hazardous symbol. He also spoke about identification of dedicated sanitation worker separately for BMW and general solid waste from COVID centres and maintenance of separate record.

He then explained about General Solid waste which comprises of wrappers/syringes, fruit peel offs, empty juice bottles, discarded papers, carton boxes, leftover food, disposable food plate etc. which should not be treated as BMW wastes and thereby should not be put in yellow bags.

Viral transport media, plastic vials, vacutainers, plastic cryovials, pipette tips generated from the laboratories should be pre-treated as BMW rule 2016 and collect in red bags. He also explained about the importance of fecal management, Spill management, Liquid management, Linen management during COVID pandemic.

Dr Suchitra Rajkumari, Sr. Consultant-QI, RRCNE took the session on "Management of General waste and Biomedical waste in Quarantine centres & Homecare facilities". She explained that Bio Medical waste (Used masks, gloves and tissues or swabs contaminated with blood/body fluids of COVID 19 patients including used syringes and medicines); if any generated from quarantine camps / centres should be collected separately in yellow coloured bagsprovided by ULBs and handed over to authorized waste collectors at door steps engaged by ULBs or deposit the biomedical waste at designated deposition centres established by ULBs or directly hand over to CBWTF (Common Biomedical Waste Treatment Facility) operator. She also explained about disposal of General Wastes and those general wastes contaminated with blood / body fluids of COVID-19 patients.

She further highlighted the use of the new application namely "COVID19BWM" which require uploading of data pertaining to amount of wastes generated from COVID 19 isolation ward, quarantine centres, home care facilities, sample collection centres & laboratories. All these facilities need to register in the application and update the details of COVID 19 biomedical waste generated on daily basis. She also explained the duties & responsibilities of State Pollution Control

Board (SPCB)& CBWTF, process of disposal of used PPEs at homes and commercial places and also explained COVID 19 dead body management as per guideline issued by MOHFW.

#### F. Discussion

During discussion, following queries were raised by the participants. The queries along with the responses are listed below as Frequently Asked Questions (FAQ).

**Question 1**. How can we justify that left over food and disposable plates used by covid patients are free from infections?

**Answer:** As per the CPCB guideline Revision 4, dated 21<sup>st</sup>July 2020 for Handling, Treatment and Disposal of Waste Generated during Treatment/Diagnosis/Quarantine of Covid 19 patients, the leftover food, disposable food plates, etc. should be treated as General Waste and collected as per Solid Waste Management Rule 2016. In order to minimize waste generation as far as possible, non-disposable items must be used for serving food, which is to be handled with appropriate precautions and cleaned and disinfected as per hospital guidelines.

**Question2**. 6%, 8% and 12% chlorine solutions are available in market and the supply is there in the hospitals also. How can we prepare 0.5 % or 1% chlorine solution fromit?

Answer: The formula for preparing the required strength of solution is as follows

Total parts of water = [% concentrate/% dilute] - 1

eg. If you have 8% solution and need to prepare 1 % solution,

Total parts of water required = 8/1 - 1 = 7. This means you require addition of 700 ml of water in 300 ml of 8% Chlorine solution to prepare 1000 ml of 1% Chlorine solution.

Question3. How to disinfect the soiled mattress and pillows?

**Answer:** Wipe mattress and pillows with disinfectant (if there is waterproof cover). Otherwise, soiled mattresses-pillows should be first disinfected, mutilate and discard it.

**Question4.** Is lab waste need to be disinfected?

**Answer:** Pre-treat viral transport media, plastic vials, vacutainers, eppendorf tubes, plastic cryovials, pipette tips and it should be disposed as per BMW Rule2016.

The infected liquid/chemical waste generated in laboratory to be disinfected by 1%-2% hypochlorite solution with a minimum contact time of 30 minutes before final disposal.

**Question5**. How to prepare 10% solution Sodium Hypo Chloride Solution if only 5% Solution is available?

**Answer:** It is not possible to increase the strength but we can always lower the strength by diluting it. You may prepare 10% NaoCl from Bleaching powder, if it is not available. Preparation of 10% NaoCl from Bleaching powder is mentioned in the presentationslide.

**Question 6.** What kind of PPE is to be used during cleaning and transportation?

**Answer:**Sanitation workers may use PPEs - three layer mask, splash proof aprons/gowns, nitrile gloves, gum boots and safety goggles.

**Question7.** Is there any disinfectant, apart from sodium hypochlorite, which can be used for disinfection of vehicle used for transporting COVID waste as sodium hypochlorite solutions reacts with metals?

**Answer:** Yes, Vehicle should be sanitized with sodium hypochlorite or any appropriate chemical disinfectant after every trip.

**Question8.** Is it wise to ask the COVID positive household to keep their BMW waste at home only for total 17 days (14 days as we keeping patient for 14 days plus 3 days extra), then they will dispose in Municipality Bin with other General waste?

**Answer:** No, this is not advisable at all. BMW waste is to be given to CBWTF or captive facility when CBWTF is not available every 48 hours and General Waste is to be given to Municipal Waste Collector.

Question9. How to find the app in play store?

Answer: Android users can download "COVID19BWM" app from play store.

**Qusetion 10**. Do we need to register for the COVID care centre& laboratory separately in the COVID 19 BWM app?

**Answer:** Yes, all COVID Care Centres and laboratory are to be registered separately in COVID19BWM app.

**Question11**. In case if there is no weighing machine what is the procedure to measure the bleaching powder?

**Answer**: Teaspoon which measure approximately 10 grams of bleaching powder may be used.

Question 12. For how long can we keep the BMW waste in a dustbin before transportation?

**Answer:** All BMW wastes are to be transferred to the temporary waste collection area in every shift and it has to be disposed of within 48 hours of collection.

**Question13** Do we need to have a separate deep burial pit for COVID 19 BMW or can we use the existing one in the catchmentarea?

Answer: Existing deep burial pit may be used for disposal of COVID 19 Biomedical waste.

**Question 14** How to disinfect non-disposable item from home carefacilities?

**Answer:** Disinfect the non-disposable items of home care facilities with 0.5% NaOCl solution and rinse with soap water and then clean with water and dry.

**Question. 15** How long can we store the prepared sodium hypochlorite solution?

**Answer:** Use of daily freshly prepared sodium hypochlorite solution is recommended.

**Question.16** Water bottles are used in CCC for patients. In case there is no such third party to receive this plastic waste in that case what we cando?

**Answer:**After disinfecting, mutilate the plastic waste and store it or handed over to municipal authority.

**Question.17.** Can Silvicide solution (0.01% w/v Silver nitrate IP, 10% w/v Hydrogen Peroxide IP)be used as disinfectant for covid related disinfection other than Sodium hypochlorite solution?

Answer: Yes, Silvicide solution can be used as disinfectant for covid related disinfection.

**Question 18.** Is it mandatory to disinfect the yellow category waste before disposable into deep burial pit?

**Answer:** No, it is not mandatory to disinfect yellow category wastes before disposal into Deep Burial Pit.

Question. 19. What do you mean by soiled mattress?

**Answer**: Mattresses which have been contaminated with blood and/or body fluid is termed as soiledmattress.

Question.20. What are the commonly available neutraldetergents?

**Answer:** Surf Excel, Ariel, Rin, Ezeeetc

**Question 21** How long can N95 mask be used by the BMW collectors - one time basis, whole day or many days. Kindlyadvise.

**Answer:** It is suggested that BMW waste collectors used three layer masks and not N 95 mask. In case N 95 Mask is provided, you may follow the SOP issued by AIIMS for Use of N-95.

Question 22. Is it safe to wrap the mattresses with mackintosh, sanities and reuse?

**Answer:** Yes, it is safe to wrap the mattresses with mackintosh, sanitise and reuse.

**Question 23.** In COVID care centres where there is no facility for CBWTF, no captive facility for incineration and no space for Deep Burial Pit, limited space with nearby water body, what can be done to dispose the yellow category waste?

**Answer:** Under such circumstances, one should seek advices on the issue from higher authority - joint director/Chief Medical Officer/District Medical Officer for taking up the corrective appropriateaction.

**Question 24.** Is the washer man who had worked for washing of linen from COVID care facilities need to be quarantined for 7 days?

**Answer:** First of all any washer man/woman aged 50 years or more should not be allowed for washing of linen from COVID care centres. He/she should be provided with adequate PPEs – 3 layer mask, splash proof apron/gown, nitrile gloves, gumboots and safety goggles.

<u>If washing machine is available</u>: Soiled linen should be placed in clearly labeled, leak proof bags or containers, after carefully removing any solid excrement and putting it in a covered bucket to be disposed of in toilet. Machine washing with warm water at 60-90 degree C and laundry detergent is recommended. The laundry can be dried according to routine procedure.

<u>If machine washing is not available</u>, linens can be soaked in hot water and soap in a large drum using a stick to stir, taking care to avoid splashing. The drum should then be emptied and the linens soaked in 0.5% chlorine for approximately 30 minutes. Finally, it should be rinsed with clean water and allowed to dry fully, if possible in sunlight.

**Question 25.** Is it allowed to burn the BMW wastes in the locally made incinerator?

**Answer**: It is not recommended as per the provisions of the Rule to burn the BMW wastes in the locally made incinerator.

**Question 26.** How to dispose the used mask from general population?

**Answer:** It may be put in the paper bag for minimum 72 hours, mutilate it and disposed of as General waste, give it to municipal wastecollector.

**Question 27.** What to do in big Covid hospital where the amount of daily liquid waste generated is more than 25 litres (Karnataka Model not applicable)?

**Answer:** Karnataka Model is a model accepted by Central Pollution Control Board for treatment of liquid waste from smaller healthcare facilities where the amount of daily liquid waste generated is around 25 litres. In bigger healthcare facilities where the amount of liquid wastes generated is higher, solution is the establishment of exclusive ETP/STP for which the facility in charge should take the matter to the higher authority for appropriate action.

**Question28.** Does it require to register temporary covid care centre with the COVID19BWM app? **Answer:** Yes, all health care facilities providing COVID care services, Quarantine Centres, Lab and sample collection centres, CBWTF, SPCB need to be register with this application.

**Question 29.** Can the treated liquid waste from COVID care facilities be used for washing the linen?

**Answer:** No, utilization of treated waste water from COVID care facilities should be avoided.

## G. Concluding Remarks

**Mr. Anup Basistha**, in his closing remarks, thanked all the State QA Nodal Officers and State QA Consultants, District Nodal Officers (BMW) and the Medical Officers from PHCs for their active participation in the training. Also he thanked **Dr. Ashoke Roy, Director RRC-NE and Dr. Suchitra Rajkumari, Sr. Consultant, QI** for their inputs extended during the training programme which was conducted on digital platform.

## H. Suggestions

- i. Many Participants expressed that it was a much needed training programme, requested to share the presentations, CPCB guidelines and other reference materials which were subsequently mailed to all the participants.
- ii. It was also suggested by the participants to organize such trainings for any new developments under National Quality Assurance Programme.

# <u>List of Participants</u> Annexure-I

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