

National Policy Workshop Webinar Series
On
Counter measures for Riverine and Marine Plastic Litter in India
12 -22 May 2020

Session 5: Impact of COVID-19 on plastics consumption, innovation, logistics and waste generation (including PPEs and wastes from Health Care Facilities) and related challenges

Existing Bio Medical Waste Management system in India and the guidelines and initiatives to tackle Covid 19 Pandemic scenario for the BMW Management facilities (BMW Management Facility)

Aspects Methodology adopted

- **Introduction**
- **Guidelines**
- **Challenges faced by CBWTF**
- **Initiatives to Tackle COVID 19**
- **Feedback from Stakeholder meetings**
- **Key findings**
- **Key Gaps and Needs Identified**
- **Suggestions, Recommendations and Discussion**

Major Projects of SMS Envocare Ltd.

- **Bio-Medical Waste Management**
 1. New Delhi
 2. Mumbai
 3. Nasik
 4. Aurangabad
 5. Lucknow
 6. Kampala, Uganda, Africa
 7. Raipur
- **Industrial Waste Water (CETP)**
 1. Nagpur
 2. Aurangabad
 3. Kolhapur
- **Hazardous Waste Management Facility**
 1. Pune
 2. Nagpur
 3. Goa
- **Municipal waste landfill facility**
 1. Kolkata
- **Sewage Water recycling**
 1. Nagpur

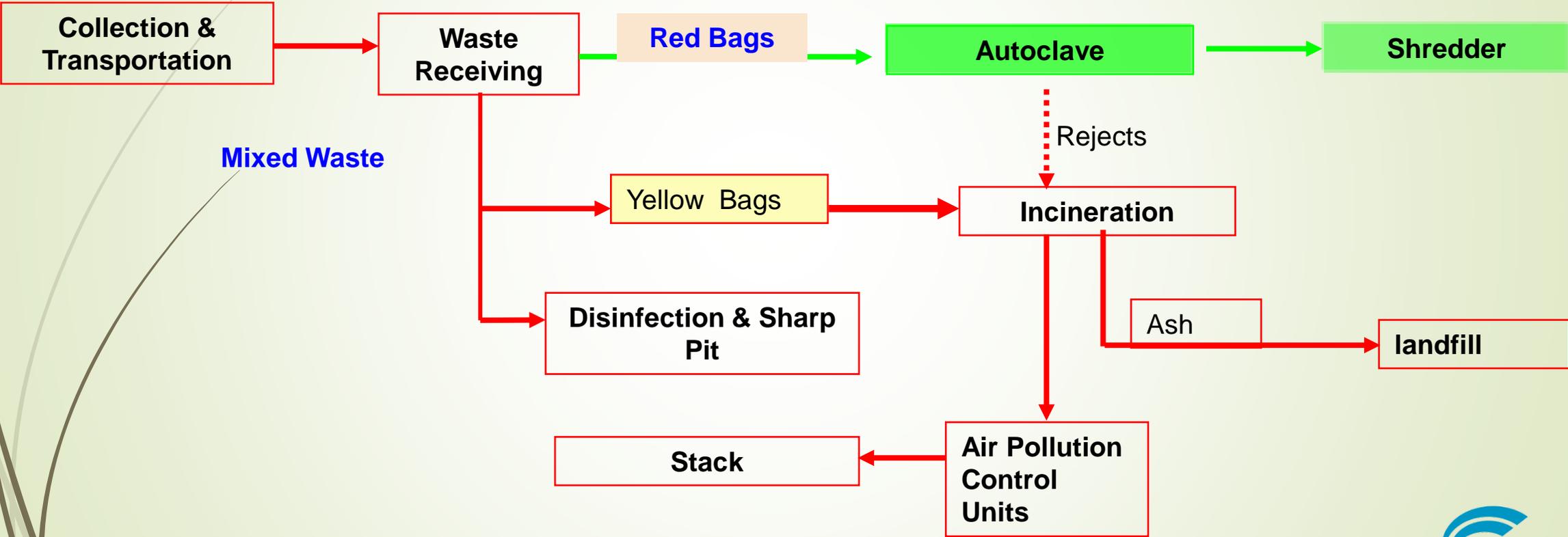
All our facilities are ISO-9000, ISO-14000 & OHSAS 18000 certified



Introduction

- **India currently generates about 550.9 tons of medical waste per day with a compound annual growth rate of 7%.**
- **In India, there are only 198 CBWTFs in operation with 28 more under construction.**
- **Only 1,31,837 (HCFs) come under CBWTFs and approximately 21,870 HCFs have their own treatment facilities on-site.**
- **Bio-medical waste is an equal source of spreading COVID 19, hence its proper disposal is important.**

Process Flow Diagram at Facility



Segregation

- **Segregation is the most crucial steps in Bio-Medical waste management**
- **Segregation refers to the basic separation of different categories of waste Generated at source and thereby reducing the risk as well as cost of handling and disposal**
- **The BMWs must be segregated in accordance to the guidelines laid down Under schedule 1 of BMW Rules, 2016**



Segregation

**Yellow colored
Non-
Chlorinated
Plastic bags or
Containers**

- **Microbiology & Clinical Laboratory Waste**
- **Human Anatomical Waste**
- **Discarded Medicine**
- **Animal Anatomical Waste**
- **Soiled Waste**
- **Discarded linen contaminated with Blood**



**Red colored
Non-Chlorinated
Plastic bags or
Containers**

- **Contaminated Waste (Recyclable)**



**Blue Colored
Non-Chlorinated
Plastic bags or
Containers**

- **Glass Ware**
- **Metallic Body Implants**



Puncture Proof , Temper Proof And Leak Proof Container



Waste Sharps Including Metals

Transportation Fleet



I
D



Transportation Fleet & Trolleys



Autoclave



Incinerator



Incinerator



PC
C

SCC

V
S

Recirculation
Pump

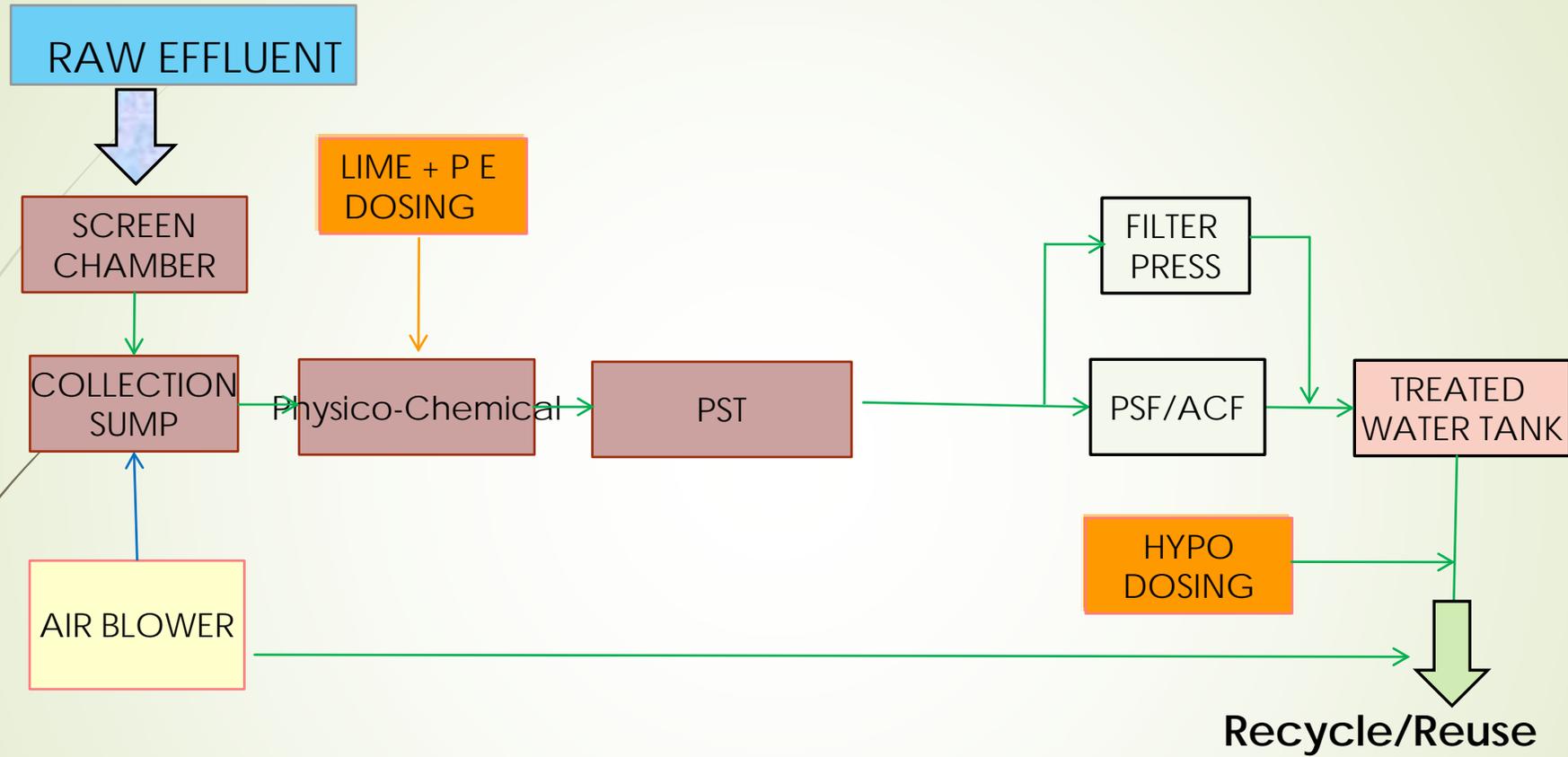
P
a
c
k
B
e
d

FST

I
D



Effluent Treatment Plant



Note : Solid sludge cake from filter press/ settling tank to land fill

PPEs & Disinfection



Salute to Corona Warriors



Guidelines for COVID 19

- It is regulated by BMW Rules, 2016 and amended
- CPCB released set of guidelines on March 18th management of COVID 19 waste.
- Revised on March 25th, because the waste related to home quarantine was not getting collected in most of the municipal areas and CBWTF is mentioned as essential services and part of health infrastructure.
- Revised again on April 18, in view of further addressing the challenges faced by the waste handling community Duties of Common Biomedical Waste Treatment and Disposal Facilities :
 - To report to SPCBs about receipt of COVID-19 waste from isolation wards, quarantine centres/homes and the laboratories.
 - To maintain a separate record of COVID-19 waste.
 - Regular sanitisation of workers handling biomedical waste.
 - Workers are supposed to wear PPE's for their safety.
 - PPE's includes includes triple-layered masks, splash-proof aprons/gowns, nitrile gloves, gumboots and safety goggles.
 - Only dedicated vehicles are to be used for collection, which are also needed to be sanitised with sodium hypochlorite after each trip.

Challenges Faced by CBWTF

- **Administrative challenges:**
 - Difficult for plant staff, operators and contract persons to commute during lockdown
 - Police were not allowing employees to commute and hard actions were taken many times against them.
 - Taking Permissions from authorities were also very difficult in lockdown -1
- **Operation challenges:**
 - HCFs should segregate the biomedical waste in prescribed colour coded categories to avoid any manual waste segregation, post its transportation from the wards.
 - Difficulties in getting PPE's and plant chemicals, sanitizers and Biomedical waste collection bags.
 - Difficulty in getting repair work done for our plant machinery and our vehicles.
 - Disposal of Ash & Recyclable's due to Lockdown
- **Financial challenges:**
 - Monthly collection reduced by more than 45%
 - Incurring additional cost due to dedicated vehicles for collection of COVID 19 waste.
 - Extra cost for PPE's, Sanitization and other consumables due to unavailability in market.
- **Social challenges:**
 - Employees are facing pressure from the community.
 - Neighbourhood and community are threatening to leave rented houses.

Initiatives to Tackle COVID 19

- **Government :**
 - Given stringent guidelines to manage waste generated from COVID-19 hospitals and quarantine and isolation centres.
 - Identified CBWTF as integral part of health infrastructure
 - Direction to Urban local bodies for management of COVID-19 waste.
 - Permissions from health departments for commuting.
- **Health Care Facilities:**
 - Provision of PPE kits to the staff
 - Proper collection, storage and handover of COVID-19 waste to CBWTF
 - Disinfection of waste at Hospitals prior to handover to CBWTF
 - Double layer packaging to COVID-19 waste as per guidelines.
- **CBWTFs:**
 - Managing the collection of waste from COVID-19 centres as numbers are increasing day by day.
 - Proper sanitization and hygienic environment to avoid spread of disease in CBWTF work force.
 - Ensuring immediate disposal of COVID-19 waste over routine biomedical waste.
 - Provision of all safety gears to all workforce and health check up at entry and exit.
 - Paying Extra allowances to keep motivated staff
 - Health check up of staff & Trainings

Key Findings

- ❖ **Quality and continuous supply of PPEs.**
- ❖ **As waste is not segregated properly, MSW is coming to CBWTF. Incineration of these hazardous waste leads to the emission of dioxin and furans.**
- ❖ **Major capacity of CBWTF is occupied by MSW as a result there may be a capacity crunch for COVID 19 waste treatment.**
- ❖ **Improper segregation poses a serious risk to BMW workforce.**
- ❖ **CPCB has collected all the relevant data like vehicles, manpower and HCEs involved in COVID 19 waste management and they are coming with an App for live tracking of COVID 19 waste.**

Key Gaps and Needs Identified

Gap	Rationale
<p>Misinterpretation of some clauses in CPCB guidelines Wrong implementation of CPCB guidelines by HCFs Excessive fear of COVID waste</p> <p>Guidelines for Isolation Ward waste is :-</p> <p>“General waste not having contamination should be disposed as per SWM Rules 2016”</p> <p>(This particular section of guidelines is misinterpreted by hospitals/ HCFs resulting All MSW (food, water bottles, cartage, Plates, Disposable cups etc.) from Isolation Ward is put in yellow bags)</p> <p>Collect Used PPEs Such as goggles, Face Shield, Splash proof apron, plastic coverall, Hazmat Suit, Nitrile gloves in to <u>Red Bag</u></p> <p>Collect used masks (Including triple layer mask, N95 mask etc.) head cover/cap, Shoe cover, disposable linen Gown, Non Plastic or semi plastic coverall in Yellow Bags Including Diaper of Covid-19 Patients.</p>	<p>In fact all such MSW needs to be disinfected & disposed at usual MSW processing sites using landfill in controlled conditions</p> <p>Unnecessarily burdening CBWTFs</p>

Key Gaps and Needs Identified

Need identified	Who expressed the Need?
<p>Elaboration on the clause “General waste not having contamination should be disposed as per SWM Rules 2016” with respect to</p> <ul style="list-style-type: none">• Colour code for segregation, collection, and storage of food waste/cups/water bottles/coconut cells etc. from isolation wards (Black bag/Green Bag etc.)• Pre-treatment methods for such MSW• Labelling of these waste-(MSW from COVID-Area)• Separate transportation• Ways of disinfection & disposal (Hypochlorite & controlled Landfill) <p>Clarity on the disposal of linens, clothing, and general commodities used by the COVID patients. This may not necessarily be incinerated if disinfected properly.</p>	<p>CBWTF Operators</p> <p>Why Need? All food waste sent to CBWTF as incinerable waste in yellow bags Receiving 7kg/patient/day which is possible when hospitals are putting other MSW also in yellow bags In absence of MSW vesicles & due to fear hospitals are sending all general waste to CBWTF</p> <p>This is posing severe technical problems for incinerators due to</p> <ul style="list-style-type: none">• Low calorific value of MSW and food waste• High moisture content as well as volatile carbon• Capacity overloading• Choking of air pollution control devices• No capacity for critical BMW waste comes in yellow bags 

Suggestions , Recommendations and Discussion

1. Training to HCE for enlighten importance of segregation
2. Disinfection of COVID 19 waste should be done by HCEs before handing over to CBWTF.
3. The segregated wastes must be collected in labelled and symbolised containers
4. The hospital waste should be stored in a proper place after collection before passing onto the CBWTF.
5. Strick monitoring of quarantine centres for Yellow Bag waste collection, storage & Disposal
6. Government institution to pay on time to CBWTFs
7. It is necessary to re-address statement **“General waste not having contamination should be disposed as per SWM Rules 2016”**
8. Collect MSW (food, water bottles, cartage, Plates, Disposable cups etc.) from Covid Isolation ward in **Other colour coded bags or Black Bag label as MSW from Covid-Area** & send for disposal with separate collection, disinfection & deep burial at city Landfills

Thank You.



The poster features the SMS logo at the top center. Below it, the text "Make SMS your habit !" is displayed. The poster is divided into three vertical sections. The first section shows hands being washed with soap, with a yellow circle containing a blue 'S' below it. The second section shows a person wearing a white face mask, with a yellow circle containing a blue 'M' below it. The third section shows a person standing with arms outstretched, with a yellow circle containing a blue 'S' below it. At the bottom of the poster, the SMS logo is on the left, followed by the text "Stay Home Stay Safe", "SMS LIMITED", "IT Park, 20 STPI, Gayatri Nagar, Parsodi, Nagpur-440022", and "www.smsl.co.in".

Make SMS your habit !

S
SOAP
Wash your hands frequently

M
MASK
Wear a mask when go outside

S
SOCIAL DISTANCE
Keep distance

SMS Stay Home Stay Safe
SMS LIMITED
IT Park, 20 STPI, Gayatri Nagar, Parsodi, Nagpur-440022
www.smsl.co.in

Salute to
Corona Warriors
of SMS

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