COVID-19
CONCERNS & CHALLENGES - CBWTFs

Dr. SHARAFUDHEEN
Secretary, IMAGE - CBWTF, KERALA

Consultant ENT Surgeon
H.O.D., Dept. of ENT & Head & Neck Surgery
EMS Memorial Co-operative Hospital, Perinthalmanna, Kerala
IMAGE – CBWTF
COMMON BIOMEDICAL WASTE TREATMENT FACILITY
Kanjikode, Palakkad, Kerala
**IMAGE** is the Prestigious Project of [Indian Medical Association](#), (IMA KSB), developed for the scientific management of Biomedical Waste generated from HCEs in Kerala.

**IMAGE** Commenced operation in 2004. Presently the Largest CBWTF in India. The only CBWTF for the entire state of Kerala.
### COVID-19 CONCERNS & CHALLENGES in Biomedical Waste Management

1. Increasing **Quantity** of the Biomedical Waste
2. Altered **Quality** of the Biomedical Waste
3. Frequent **Maintenance** of Treatment & Monitoring Equipment
4. Increased **Expenses** for the Covid Waste Management
5. **Environmental** Concerns

6. CPCB Covid BM Waste Tracking **Mobile App** (COVID19BWM)
7. Effect on the **Recycling** Sector
8. **Safety** of Waste Handlers
9. **Collection** – related issues
10. **Transportation** - related issues
11. **Space Constraints** in the CBWTFs for the reception & storage of Covid Waste
12. Increased Workload related to the **Documentation**
### BM WASTE MANAGEMENT – IMAGE Experience

<table>
<thead>
<tr>
<th></th>
<th>Pre - Covid</th>
<th>COVID-19</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HCEs</td>
<td>15,727</td>
<td>15,727</td>
<td>580</td>
<td>16,307</td>
</tr>
<tr>
<td>TPD</td>
<td>48.4</td>
<td>30</td>
<td>25</td>
<td>55</td>
</tr>
<tr>
<td>(Total BMW Quantity)</td>
<td></td>
<td>(14%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gms Per Patient Bed/Day</td>
<td>350</td>
<td>450</td>
<td>1 Kg</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Per Active Case/Day</td>
<td></td>
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Increasing Quantity of Biomedical Waste

- Increasing No. of Covid-19 Cases, being cared in the HCEs
- Increased use of PPEs in the care of Covid cases
- Mixing of Solid waste with Biomedical waste
- Non-BMW (PPEs used by Public) – sent along with BMW

1 Kg of Covid Waste/Covid Case per Day

(Pre-Covid: 250 - 350 gms / Bed / Day)

Capacity Modification of the CBWTF:
biggest challenge to be considered for the effective management of this additional biomedical waste
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Altered Quality of Biomedical Waste

Improper Segregation
- Plastic containing materials
- Food Waste & Food Packaging
- General Solid Waste

Higher Calorific Value of Biomedical Waste Mix *

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>Calorific Value</th>
<th>Energy (KJ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regular BMW Mix</td>
<td>3,000 – 4,000 kcal/Kg</td>
<td>(12 – 16,000 KJ)</td>
</tr>
<tr>
<td>PPEs / Plastics (60-65%)</td>
<td>8,000 – 9,000 kcal/Kg</td>
<td>(34 – 37,000 KJ)</td>
</tr>
</tbody>
</table>

↑ Tremendous Heat  ↓ Quantity of Incineration  ↑ Particulate Matter
COVID-19

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Frequent Maintenance of Treatment Equipment & Monitoring Devices at CBWTF
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Increased Expenses for the Covid Waste Management

- Additional Separate Vehicles for Covid Waste Collection
- Increased use of PPEs & Disinfectants
- Additional Pool of Workers for the collection, transportation & plant operation
- Extra payments / Risk Allowances to the workers
- High Repair & Maintenance cost of Incinerators / Vehicles
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Environmental Concerns

- Efficiency of APCD (Air Pollution Control Devices) of Incinerators
- Incineration of Plastic / Semi-plastic PPEs
- Nitrile Gloves (Synthetic Acrylonitrile Butadiene Gloves)
- Incineration of Materials disinfected with Chlorinated Chemicals
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CPCB Covid BM Waste Tracking Mobile App (COVID19BWM)
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Recyclable Waste Scrap &
Effect on the Recycling Sector
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Safety of Workers
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Covid Waste - Collection - Issues
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Covid Waste - Transportation - Issues
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Space Constraints in the CBWTF for the reception & storage of Covid Waste
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Increased Workload related to Documentation & Reporting
IMAGE – IS OUR RESPONSIBILITY TO
THE SOCIETY

“Let the waste of the sick not contaminate the lives of healthy”

www.imageima.org