MANAGING WASTE DURING COVID-19 PANDEMIC- INSTITUTIONAL AND DOMICILARY CARE

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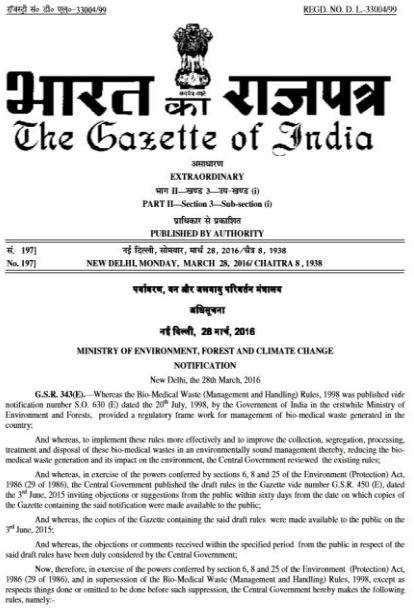
Introduction



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नई दिल्ली, 28 मार्च, 2016

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

NOTIFICATION

New Delhi, the 28th March, 2016

G.S.R. 343(E).—Whereas the Bio-Medical Waste (Management and Handling) Rules, 1998 was published *vide* notification number S.O. 630 (E) dated the 20th July, 1998, by the Government of India in the erstwhile Ministry of Environment and Forests, provided a regulatory frame work for management of bio-medical waste generated in the country;

And whereas, to implement these rules more effectively and to improve the collection, segregation, processing, treatment and disposal of these bio-medical wastes in an environmentally sound management thereby, reducing the bio-medical waste generation and its impact on the environment, the Central Government reviewed the existing rules;

And whereas, in exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government published the draft rules in the Gazette vide number G.S.R. 450 (E), dated the 3rd June, 2015 inviting objections or suggestions from the public within sixty days from the date on which copies of the Gazette containing the said notification were made available to the public;

And whereas, the copies of the Gazette containing the said draft rules were made available to the public on the 3rd June, 2015;

And whereas, the objections or comments received within the specified period from the public in respect of the said draft rules have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by section 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), and in supersession of the Bio-Medical Waste (Management and Handling) Rules, 1998, except as respects things done or omitted to be done before such suppression, the Central Government hereby makes the following rules, namely:-

- **COVID-19 pandemic – Countries: isolation wards/ICUs, sample collection centres, laboratories, quarantine centres & immunization centre**
- **India: BMWM rules 2016, amendments 2018, 2019**
- **CPCB guidelines for COVID-19 waste, 2020, 17 July as amended: Colour categories: Yellow, Red, White, Blue**
- **CPCB guidelines for immunization waste, 8 Feb 2021**
- **COVID 19: Not category A, as per CDC, WHO; lipid envelope gets killed by soap water, commonly used disinfectants: ethanol, Na hypochlorite, hydrogen peroxide, PHE: 90-95C I m: Safe work practices, PPEs and Principles and practices mentioned in BMWM rules, suffice**

City's daily bio-med waste 5 times of what it can process

Jasjeev.Gandhiok
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New Delhi: The quantum of biomedical waste generated in the city increased by 15 times in June compared with the preceding month when just 25 tonnes was being produced daily. Moreover, while 372 tonnes of biomedical waste was generated in June every day, in July it was 349 tonnes, stated a report submitted by Environment Pollution (Prevention and Control) Authority (EPCA) to the Supreme Court.

Delhi's two common biomedical waste treatment facilities can collectively handle only 74 tonnes of such refuse each day. This means that the waste being generated currently is over five times the treatment capacity of the plants.

The report, which collected data from both the state and central pollution control boards, mentioned that in Haryana, UP, Rajasthan and Delhi, the quantum of biomedical waste collectively increased from 94 tonnes per day in May to 761 tonnes in July (till July 24). However, the huge increase in June was attributed to waste from households and quarantine centres not being segregated and mixed with general garbage.

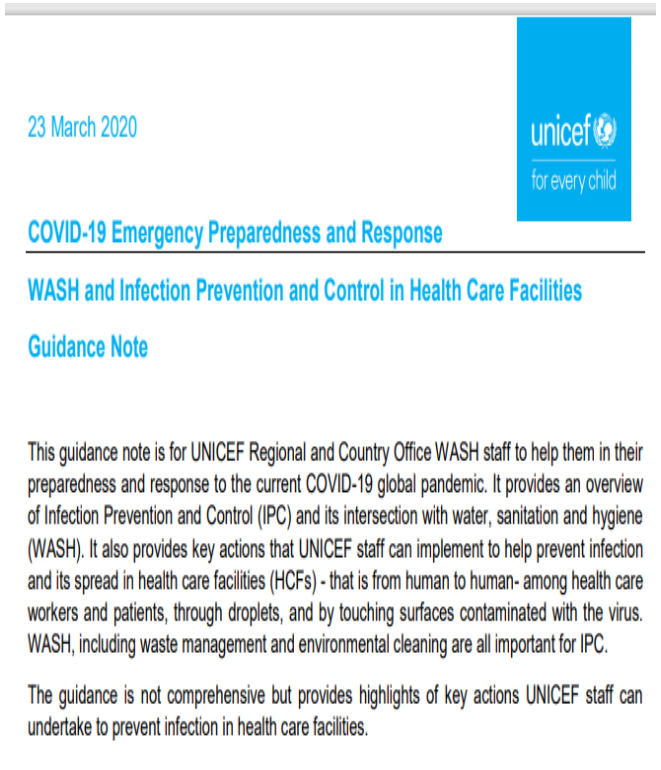
"This puts pressure on the biomedical waste disposal facilities. Now, there is an emphasis on the need to segregate biomedical waste from general waste, even in households where there are Covid-19 patients. According to the guidelines, only infected waste (PPE suits, gloves, masks, swabs) should be put in the yellow bag meant for incineration, while food and other garbage should be collected as general waste," Central Pollution Control Board (CPCB) said in the report, adding that treatment facilities were adequate in the region if waste was segregated properly.

In addition to CPCB and the state pollution control boards, EPCA also collected information from the municipal corporations in Delhi, Gurgaon, Faridabad and Ghaziabad. The civic bodies explained that a system had been set up to collect waste from households and quarantine centres to send to the treatment facilities. However, south and north Delhi municipal corporations said they were sending the refuse to waste-to-energy (WTE) plants for incineration.

EPCA suggested that this be rectified immediately, stating WTE plants were not equipped to deal with biomedical waste. "The south and north municipal corporations may be directed not to send biomedical waste to WTE plants. This is because WTEs are not designed to incinerate biomedical waste, which needs a double-incineration chamber and protocols for storage and emission control," said the report.

The committee also asked for biomedical waste to be tracked and suggested that all state pollution control boards and corporations use the COVID19BWM app for this purpose. "This may be made mandatory so that CPCB can track all biomedical waste and ensure that it is being sent for treatment," said EPCA. It added that barcoding was also important for such waste. "It should not be left to the operators of the treatment facilities, as this will not allow for good management," the report added.

HCWM: International GUIDANCE: WHO WASH, UNDP



23 March 2020

unicef for every child

COVID-19 Emergency Preparedness and Response

WASH and Infection Prevention and Control in Health Care Facilities

Guidance Note

This guidance note is for UNICEF Regional and Country Office WASH staff to help them in their preparedness and response to the current COVID-19 global pandemic. It provides an overview of Infection Prevention and Control (IPC) and its intersection with water, sanitation and hygiene (WASH). It also provides key actions that UNICEF staff can implement to help prevent infection and its spread in health care facilities (HCFs) - that is from human to human- among health care workers and patients, through droplets, and by touching surfaces contaminated with the virus. WASH, including waste management and environmental cleaning are all important for IPC.

The guidance is not comprehensive but provides highlights of key actions UNICEF staff can undertake to prevent infection in health care facilities.

Cleaning and disinfection of environmental surfaces in the context of COVID-19

Interim guidance

15 May 2020

World Health Organization

Background

Coronavirus disease 2019 (COVID-19) is a respiratory infection caused by SARS-CoV-2 (COVID-19 virus). The COVID-19 virus is transmitted mainly through close physical contact and respiratory droplets, while airborne transmission is possible during aerosol generating medical procedures.[1] At time of publication, transmission of the COVID-19 virus had

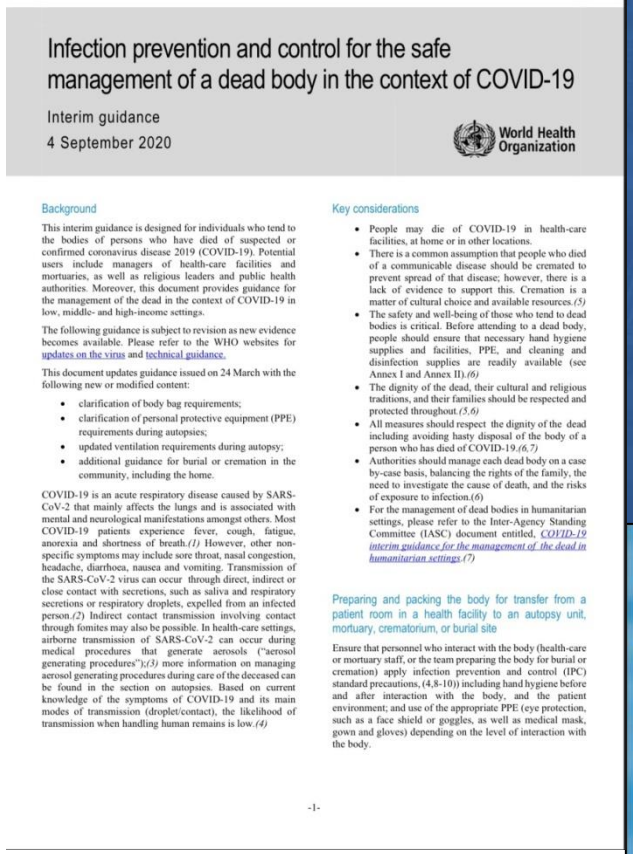
buildings, faith-based community centres, market transportation, and business settings.[10,11] Although the precis role of fomite transmission and necessity for disinfectio practices outside of health-care environments is current unknown, infection prevention and control principle designed to mitigate the spread of pathogens in health-car

- WHO, CDC: Disinfectants: Lipid envelope, killed by normal disinfectants

❑ **Chlorine (Bleach or Hypochlorite)**
- 1% and 2% Bleach –within 5 minutes
- 1% Bleach for blood spills
- 0.1% bleach for general surface disinfection /community/nonhospital setting
- 0.5% for hospital setting: 5min
  0.05% bleach -30 min for contaminated linens

❑ 70% ethyl alcohol: disinfect reusable equipment (thermometers)
❑ Hydrogen peroxide >=0.5

- Treatment technologies (Sustainable): Nonburn
  Autoclaves that typically operate between 121°C to 135°C for 30 min.
  Microwave units that's typically operate between 97°C to 100°C for 30 min
  Alkaline hydrolysis operating with hydroxide at around 150°C
  Dry Heat Treatment system that reach 177°C
  Hydroclaves and hybrid stream system operating between 121°C to 132°C
  Autoclaves that typically operate between 121°C to 135°C for 30 min.



Infection prevention and control for the safe management of a dead body in the context of COVID-19

Interim guidance

4 September 2020

World Health Organization

Background

This interim guidance is designed for individuals who tend to the bodies of persons who have died of suspected or confirmed coronavirus disease 2019 (COVID-19). Potential users include managers of health-care facilities and mortuaries, as well as religious leaders and public health authorities. Moreover, this document provides guidance for the management of the dead in the context of COVID-19 in low, middle- and high-income settings.

The following guidance is subject to revision as new evidence becomes available. Please refer to the WHO websites for updates on the virus and technical guidance.

This document updates guidance issued on 24 March with the following new or modified content:

- clarification of body bag requirements;
- clarification of personal protective equipment (PPE) requirements during autopsies;
- updated ventilation requirements during autopsy;
- additional guidance for burial or cremation in the community, including the home.

COVID-19 is an acute respiratory disease caused by SARS-CoV-2 that mainly affects the lungs and is associated with mental and neurological manifestations amongst others. Most COVID-19 patients experience fever, cough, fatigue, anorexia and shortness of breath.*(1)* However, other non-specific symptoms may include sore throat, nasal congestion, headache, diarrhoea, nausea and vomiting. Transmission of the SARS-CoV-2 virus can occur through direct, indirect or close contact with secretions, such as saliva and respiratory secretions or respiratory droplets, expelled from an infected person.*(2)* Indirect contact transmission involving contact through fomites may also be possible. In health-care settings, airborne transmission of SARS-CoV-2 can occur during medical procedures that generate aerosols ("aerosol generating procedures");*(3)* more information on managing aerosol generating procedures during care of the deceased can be found in the section on autopsies. Based on current knowledge of the symptoms of COVID-19 and its main modes of transmission (droplet/contact), the likelihood of transmission when handling human remains is low.*(4)*

Key considerations

- People may die of COVID-19 in health-care facilities, at home or in other locations.
- There is a common assumption that people who died of a communicable disease should be cremated to prevent spread of that disease; however, there is a lack of evidence to support this. Cremation is a matter of cultural choice and available resources.*(5)*
- The safety and well-being of those who tend to dead bodies is critical. Before attending to a dead body, people should ensure that necessary hand hygiene supplies and facilities, PPE, and cleaning and disinfection supplies are readily available (see Annex I and Annex II).*(6)*
- The dignity of the dead, their cultural and religious traditions, and their families should be respected and protected throughout.*(5,6)*
- All measures should respect the dignity of the dead including avoiding hasty disposal of the body of a person who has died of COVID-19.*(6,7)*
- Authorities should manage each dead body on a case by-case basis, balancing the rights of the family, the need to investigate the cause of death, and the risks of exposure to infection.*(6)*
- For the management of dead bodies in humanitarian settings, please refer to the Inter-Agency Standing Committee (IASC) document entitled, *COVID-19 interim guidance for the management of the dead in humanitarian settings.(7)*

Preparing and packing the body for transfer from a patient room in a health facility to an autopsy unit, mortuary, crematorium, or burial site

Ensure that personnel who interact with the body (health-care or mortuary staff, or the team preparing the body for burial or cremation) apply infection prevention and control (IPC) standard precautions, (4,8-10)) including hand hygiene before and after interaction with the body, and the patient environment; and use of the appropriate PPE (eye protection, such as a face shield or goggles, as well as medical mask, gown and gloves) depending on the level of interaction with the body.

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UNDP

gef GLOBAL ENVIRONMENT FACILITY INVESTING IN OUR PLANET

GLOBAL HEALTHCARE WASTE PROJECT

MODULE 17:
gement of Specific Infectious Wastes

Safe management of wastes from health-care activities

A summary

Safe management of wastes from health-care activities

Second edition

Edited by Yves Chartier, Jorge Emmanuel, Ute Pieper, Annette Prüss, Philip Rushbrook, Ruth Stringer, William Townend, Susan Wilburn and Raki Zghondi

World Health Organization

- **International Literature:** WHO recommends: Log3 reduction

70-90%ethylalcohol: disinfect reusable dedicated equipmt:thermometer:WHO WASH Sodium hypochlorite at 0.1% for disinfection of general env disinfectn touch surfaces Hydrogen Peroxide >=0.5%

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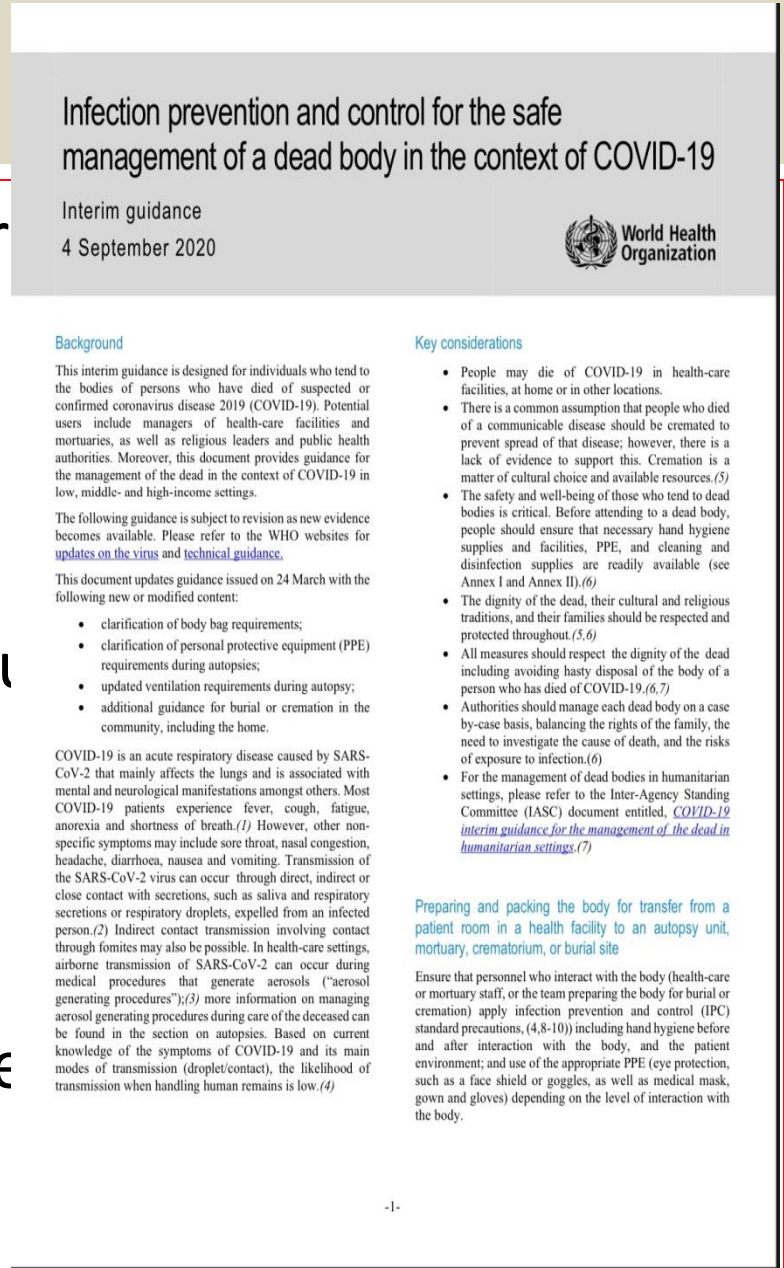

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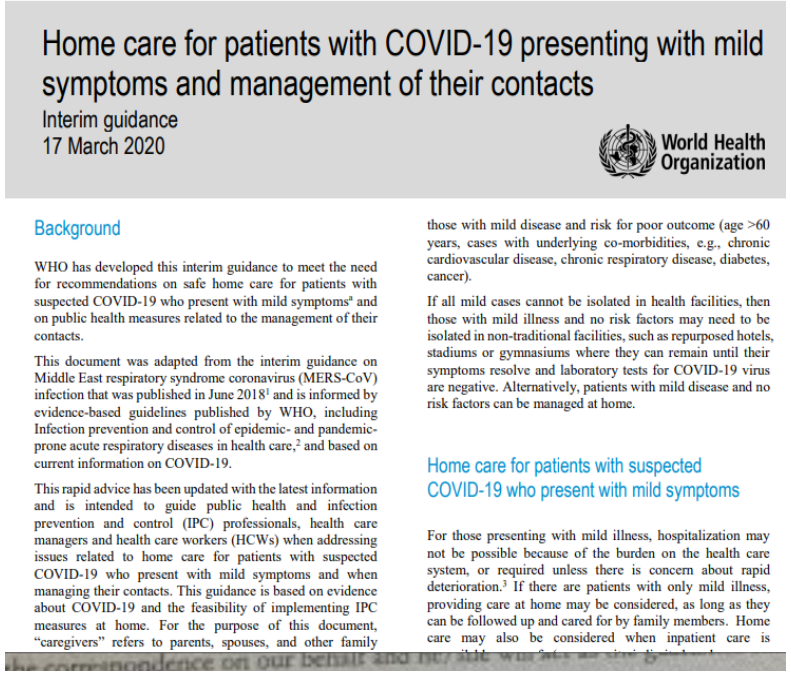
-1-

Disposal of waste in community environment

- International guidance: waste generated in community: general waste
- CDC: virus can last up to 3 d on hard surfaces- plastic, less on porous
- There is no need to treat these materials with disinfectant first.
- People: wear cloth masks in public, but gloves are not necessary
- PHE: untreated waste be left for 72 h: MSW



Home care for patients with COVID-19 presenting with mild symptoms and management of their contacts

Interim guidance
17 March 2020

World Health Organization

Background

WHO has developed this interim guidance to meet the need for recommendations on safe home care for patients with suspected COVID-19 who present with mild symptoms[a] and on public health measures related to the management of their contacts.

This document was adapted from the interim guidance on Middle East respiratory syndrome coronavirus (MERS-CoV) infection that was published in June 2018[1] and is informed by evidence-based guidelines published by WHO, including Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care,[2] and based on current information on COVID-19.

This rapid advice has been updated with the latest information and is intended to guide public health and infection prevention and control (IPC) professionals, health care managers and health care workers (HCWs) when addressing issues related to home care for patients with suspected COVID-19 who present with mild symptoms and when managing their contacts. This guidance is based on evidence about COVID-19 and the feasibility of implementing IPC measures at home. For the purpose of this document, "caregivers" refers to parents, spouses, and other family

those with mild disease and risk for poor outcome (age >60 years, cases with underlying co-morbidities, e.g., chronic cardiovascular disease, chronic respiratory disease, diabetes, cancer).

If all mild cases cannot be isolated in health facilities, then those with mild illness and no risk factors may need to be isolated in non-traditional facilities, such as repurposed hotels, stadiums or gymnasiums where they can remain until their symptoms resolve and laboratory tests for COVID-19 virus are negative. Alternatively, patients with mild disease and no risk factors can be managed at home.

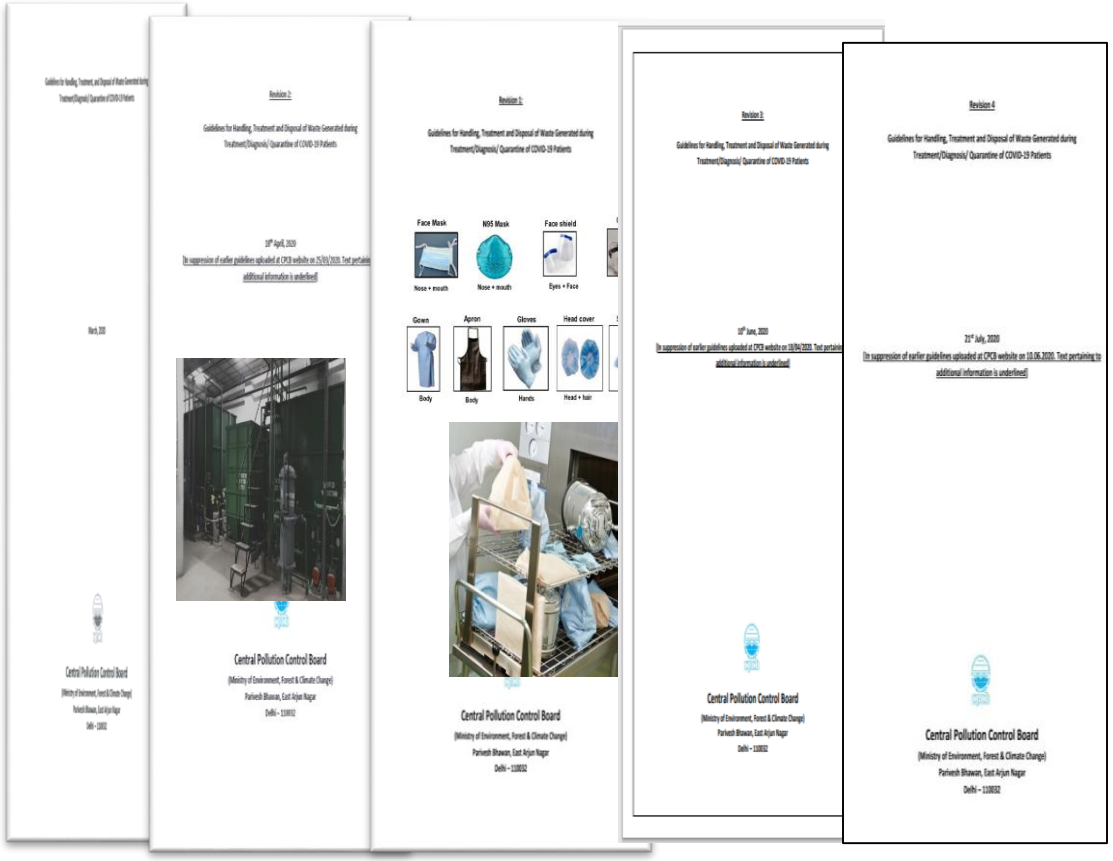
Home care for patients with suspected COVID-19 who present with mild symptoms

For those presenting with mild illness, hospitalization may not be possible because of the burden on the health care system, or required unless there is concern about rapid deterioration.[3] If there are patients with only mild illness, providing care at home may be considered, as long as they can be followed up and cared for by family members. Home care may also be considered when inpatient care is

Institutional Care: CPCB BMWM guidelines for COVID, 2020

- **Guidelines for management of waste generated during diagnostics treatment of COVID-19 suspected/confirmed patients: followed by stakeholders in addition to existing practices under BMWM Rules, 2016**

18 March 25 March 18 April 10JUNE 17 July 2020



CPCB BMWM guidelines for COVID, 2020

- 18 March 2020: **Handling, treatment, disposal: HCFs, quarantine /home-care, sample collection centres, labs, SPCBs, ULBs, CBWTFs**
- Rev 1, 25 March 2020: **+ specific duties of quarantine camps/homes, home-care, UL (c, f), states without CBWTF, TSDFs**
- Rev 2, 18 April 2020: **STP at HCFs, PPE disposal, lab waste and to clarify on management of general waste** from quarantine homes and **masks/gloves** from households
- Rev 3, 10 June 2020: segregation of SW and BMW, occupational safety of sanitation workers of ULB, CBWTFs, Duties
- Rev 4, 17 July 2020: **SW as per SW rules, PPE disposal, public places**

SW Rules 2016 & BMWM Rules 2016, 2018, 2019

Labelling and double bag

- **Collect and store BMW**: Dedicated foot operated bin labelled as “COVID-19” to store in storage room prior: to CBWTF OR be lifted directly
- Separate colour coded bins/bags/containers: proper segregation: BMWM Rules, 2016 as amended and CPCB guidelines on BMWM Rules
- **Mandatory labelling**, BMW bags/containers from COVID-19 wards: labelled: “COVID-19 Waste”
  CBWTFs: priority treatment and disposal

COVID-19 isolation wards

- Use dedicated trolleys and collection bins with label "**COVID-19 waste**"
- Inner and outer surface of containers/bins/trolleys– disinfect with 1% Na hypochlorite solution
- used masks, tissues, toiletries by COVID-19 pt: yellow
- Waste contaminated with blood / body fluids of COVID-19 pt: inf


FIRE EXIT
BIOHAZARD


BIOMEDICAL WASTE STORAGE
TROLLEY WASHING AREA


BIO HAZARD
BIO HAZARD


Police : 100
Ambulance : 102
Nearest Hospital D.D.U Hospital

General waste

- **General waste: SWM Rules, 2016**
- **GENERAL WASTE SHOULD NOT BE DISPOSED IN YELLOW/RED BAGS**
- **Wet(compostable) and dry solid waste bags to be tied securely in leak-proof bags, sprayed with Na hypo-chlorite: authorized waste collector of ULB's: daily**
- **Depute dedicated sanitation workers separately for BMW, SW**
- **Training to Waste handlers IPC: Hand hygiene, Respiratory etiquettes, social distancing, use of appropriate PPE**

COVID-19 isolation wards

X Yellow coloured bags should not be used for collecting general solid waste.

- Items like used masks, used tissues, used toiletries, etc. used by COVID-19 patient shall become biomedical waste and shall be segregated in yellow bag.

Samples

- Feces from COVID-19 confirmed patient, who is unable to use toilets and excreta is collected in **diaper: BMW: yellow bag/ container**
- If a bedpan is used, then faeces to be washed into toilet and cleaned with a neutral detergent and water, disinfected with a 0.5% chlorine solution, then rinsed with clean water

Specific BMW articles disposal

- PPEs: goggles, face-shield, splash proof apron, plastic coverall, Hazmat suit, nitrile gloves into red bag

Specific BMW articles dispos

- Collect used masks (triple layer mask & N95 mask), head cover/cap, shoe-cover, disposable linen gown, non-plastic or semi plastic coverall in yellow bags

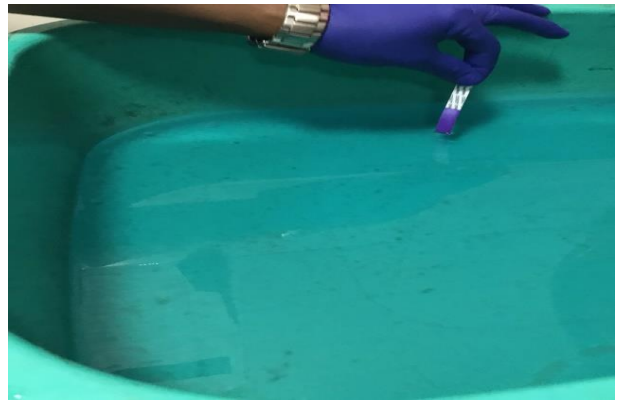





- Segregation of biomedical waste and general solid waste should be done at the point of generation/source.
- There should be no segregation of biomedical waste and solid waste at temporary waste collection / storage area of HCF to ensure occupational safety.

Pretreatment – lab waste, blood bags – sterilization log6

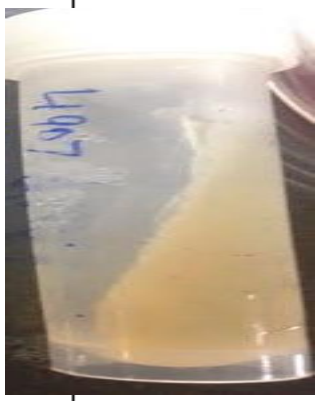
- Waste autoclave HEPA vs Vertical vs Microwave Std
- **Specifications** graphic or computer recording devices: monitor and record dates, time of day, load ID, and operating parameters autoclave cycle
- **Safety standards** of ISI/BIS/ISO/EN installation of in NABL/NABH accredited facilities
- **Validation test** – records
  - Chemical control
    - Browne's tubes
    - Bowie Dick test: each batch, >1sr
  - Microbiological control – spore test
    - *B. stearothermophilus*1w (autoclave $1x10^6$)
    - *B. atropheus* $1x10^4$ (Microwave)
  - Physical control – temp & pressure record



Sample collection centres and laboratories

- Report opening or operation of COVID-19 sample collection centres and laboratories to SPCB
- Guidelines given at section (a) for isolation wards should be applied suitably in centres, lab
- Pre-treat viral transport media, plastic vials, vacutainers, Eppendorf tubes, plastic cryovials, pipette tips, as per BMWM Rules, 2016 and collect in red bags
- Pretreat Catridges of genexpert, chips & microtubes of Truenat then Red

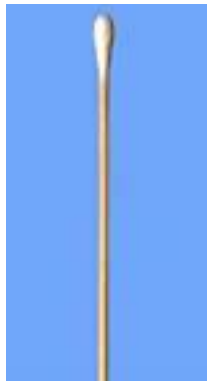
(h) Microbiology, Biotechnology and other clinical laboratory waste: Blood bags, Laboratory cultures, stocks specimens of mi organisms, live attenuated vacci human and animal cultures used research, indus laboratories, production of biological, residual toxins, dishes and devices used for cultures.	Autoclave safe plastic bags or containers	Pre-treat to sterilize with non-chlorinated chemicals on-site as per National AIDS Control Organisation or World Health Organisation guidelines thereafter for Incineration.



Autoclave/Microwave/ hydroclave safe plastic bags/containers

As per WHO guidelines on Safe management of wastes from HC activities and WHO Blue Book, 2014 and thereafter sent for incineration

WASTE DISPOSAL



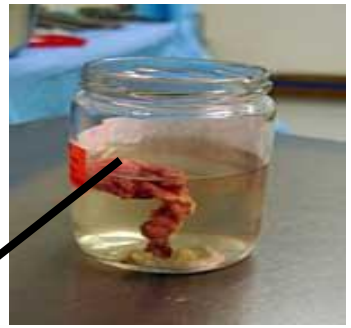
Mask

Cap

Swab stick-contaminated

Soiled Swabs, dressings

Pathology waste, histopathology specimen



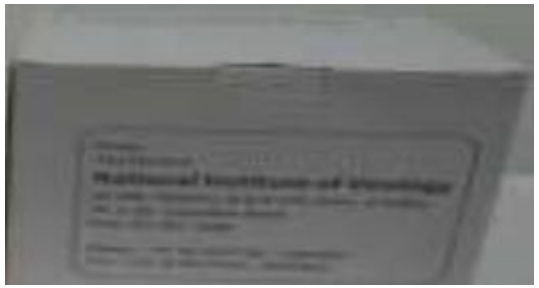
Human anatomical waste-placenta

Microbiology & Biotechnology waste after autoclaving

soiled linen, contaminated gowns, drapes

YELLOW BIN

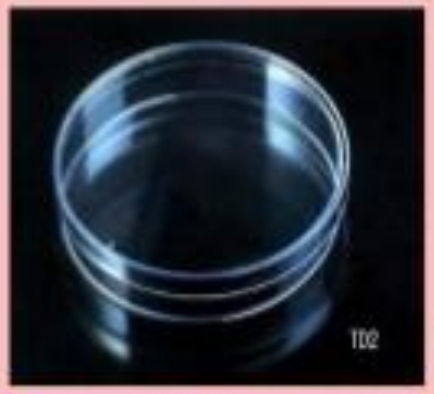
Soiled Bandages

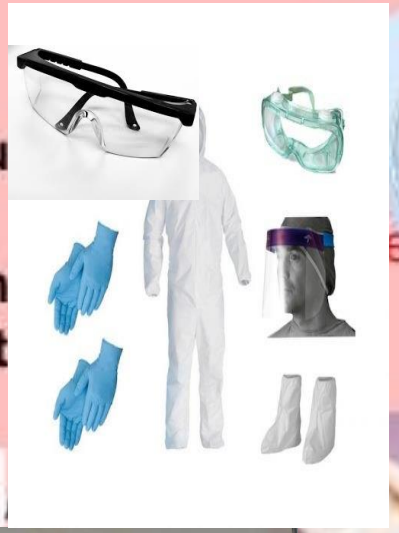


Discarded medicines/drugs

WASTE DISPOSAL

Goggles, face-shield, splash proof apron, plastic coverall, Hazmat suit, nitrile gloves





Plastic culture plates & tubes

Pathology wa

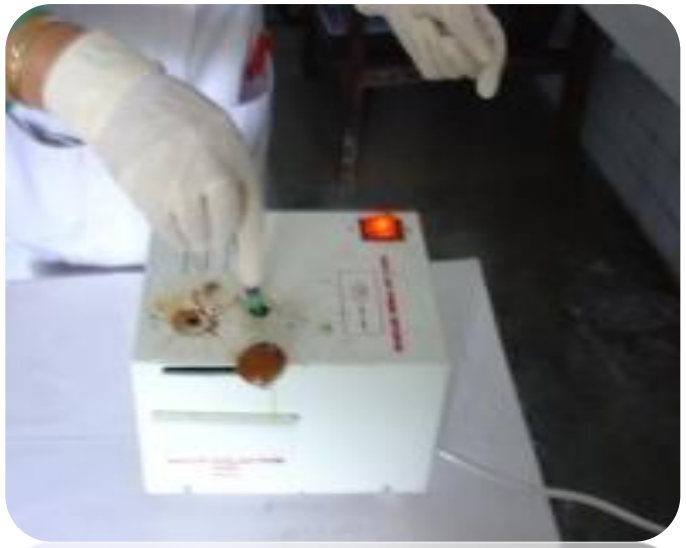
I/V sets

Drains

Blue	(A)Glassware: broken/discarded /contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes	Cardboard boxes with blue colour marking
	(B) Metallic body implants	Cardboard boxes with blue colour marking

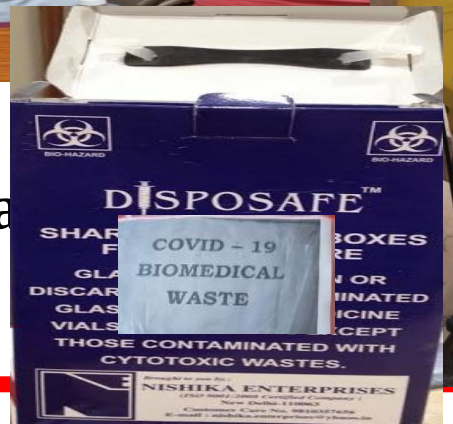
White
(translucent)

Waste sharps including metals: needles, syringes with fixed needles, scalpels, blades any contaminated sharp object



BMWM in COVID-19: Institutional & Domiciliary

- Mandatory labelling, BMW bags/containers from COVID-19 labs, wards: labelled: “COVID-19 Waste” CBWTFs
- Report COVID-19 wards/centre, sample collection labs: SPCB
- Pretreatment of Lab waste
- CPCB Guidelines: centres, lab
- Training – Social distancing, MS Team, small batches,
- Social distancing: Collection of waste, Barcoding
- Hand hygiene, Resp. etiquette, Donni
- SW w BMW
- Health checkup/screening
- Immunization: Socialdistancing
- ETP/STP Plants: Not required for Lab wa
- CPCB Mobile App for COVID waste



Solid Waste Management

- All general population, visitors, attendants, police personnel using PPE
- CPCB guidelines mandate general population, households (not pts or suspects or HCWs): masks, gloves: 72 h paper bags: mutilate and dispose as general solid waste
- Airports: Bulk waste generators: domestic hazardous waste bins
- HCWs: Don’t throw PPEs in blue/green SW bins

CPCB MOBILE APP.

- Centralised monitoring system: CPCB, 9 May2020
- Digital tracking system for yellow, red, white, blue categories of COVID waste: with bed strength
- Software which all waste generators , hospitals, Labs, transporters, CBWTF register
- DPCB: 28 May 2020
- Track COVID-19 waste :Lifecycle: Collection, segregation, transportation to CBWTF disposal incineration: Geotagging
- Penal action: Not tallied

Domiciliary Care: Responsibilities of persons: quarantine camps/homes or home-care facilities

- **SW generated from quarantine centres or camps: handed over to waste collector identified by ULB**
- **BMW from quarantine centres/camps – collected separately in yellow bags provided by ULBs in bins**
- **Persons operating quarantine camps/centres – operator to collect BMW**
- **Contact details of CBWTFs – local authorities – all colour categories, BMWM Rules, 2016**

- Only the used masks, gloves and tissues or swabs contaminated with blood / body fluids of COVID-19 patients, including used syringes, medicines, etc. if any generated should be treated as biomedical waste

GENERAL WASTE SHOULD NOT BE STORED IN YELLOW BAGS

HOME QUARANTINE

- General waste such as like fruit/vegetable peel offs, left-over food, empty juice bottles or tetra packs, empty water bottles, packaging material, discarded papers, carton boxes, and any other items **which were not contaminated by secretions or body fluids of COVID-19 positive person** should be disposed-off as general solid waste: shall not be collected in yellow bag
- General waste contaminated with blood or body fluids from persons infected with COVID-19 shall be segregated in yellow bag along with masks and gloves used by them: Yellow

GENERAL PUBLIC

- Masks and gloves used by persons not infected by COVID-19 at quarantine homes or other households should be kept in paper bag for a minimum of 72 hours prior to disposal of the same as general waste.
- It is advisable to cut the masks prior to disposal to prevent reuse.

Disposal of used PPEs

- Discarded PPEs from general public at commercial establishments, shopping malls, institutions, offices, etc. should be stored in separate bin for 3 days, there after disposed of as dry general solid waste after cutting/shredding.
- PPEs doffed by healthcare workers accompanying diseased body of COVID-19 patient to crematorium / graveyards should be treated as biomedical waste and disposed as per provisions under SWM Rules, 2016 and BMW Management Rules, 2016.

Management of wastewater from HCFs

- CDC – risk of transmission COVID-19 thru sewage is low; operators treatment of STPs: no evidence
- Agencies: HCFs/isolation wards/operators of terminal sewage treatment plants (PHED/Jal Board/etc.)
- **Agencies to ensure disinfection of treated wastewater as per prevailing practices to inactivate coronaviruses**
- **Operators of ETPs/STPs – standard operational practices, practice basic hygiene precautions, and wear PPEs (goggles, face mask , liquid repellent coveralls, waterproof gloves and rubber boots)**
- **COVID-19 pandemic – utilization of treated wastewater in utilities within HCFs may be avoided**

Home care for patients with suspected or confirmed COVID-19 and management of their contacts

Interim guidance
12 August 2020

World Health Organization

Background

This document is an update of the guidance published on 17 March 2020 entitled "Home care for patients with COVID-19 presenting with mild symptoms and management of their contacts". This interim guidance has been updated with advice on safe and appropriate home care for patients with coronavirus disease 2019 (COVID-19) and on the public health measures related to the management of their contacts. The main differences from the previous version include:

- Considerations for clinicians when identifying and supporting patients who could receive care at home,
- Considerations regarding the IPC requirements for the household to be suitable for caring for COVID-19 patients in the home;
- Clinical monitoring and treatment of COVID-19 patients at home;
- Waste management in the home setting in the context of COVID-19 and;
- An appendix on the effective implementation of home-care policies and guidelines for patients with COVID-19

Purpose of the guidance

This rapid advice is intended to guide public health and infection prevention and control (IPC) professionals, health facility managers, health workers [a] and other trained community-based providers when addressing issues related to home care for patients with suspected or confirmed COVID-19, and thus refers to a patient with suspected or confirmed COVID-19 throughout the document.

In many contexts, health services are delivered at community level and in the home by community health workers, traditional medicine practitioners, social care workers, or a variety of formal and informal community-based providers, including caregivers. For the purpose of this document, "caregivers" refers to parents, spouses and other family members or friends providing informal care as opposed to the care provided by formal health-care providers (*1*).

It is therefore critical to ensure that caregivers have appropriate training and guidance on how to care for patients as well as how to minimize the risk of infection, including training on important hygiene procedures and on recognizing signs that the COVID-19 patient's condition is worsening and that he or she needs to be sent to a health facility.

In addition, health workers and caregivers providing support in the home should be provided with the appropriate personal protective equipment (PPE) for the tasks that they are expected to perform and trained in PPE use and removal.

This guidance is based on the latest available evidence on the clinical management of COVID-19, the feasibility of implementing safe care at home, including IPC measures, the capacity for communication between home-based caregivers and community health providers, as well as home-based patients' access to health facilities. The appendix provides implementation strategies for care in the home setting.

Decision to care for COVID-19 patients at home

Home care may be considered for an adult or child with confirmed or suspected COVID-19 when inpatient care is unavailable or unsafe (e.g. when capacity is insufficient to meet the demand for health-care services). Such patients who have been discharged from hospital may also be cared for at home, if necessary.

Caring for an infected person in the home, rather than in a medical or other specialized facility, increases the risk of transmitting the virus to others in the home. However, the isolation of people who are infected with SARS-CoV-2 that causes COVID-19 can make an important contribution to breaking the chains of transmission of the virus. The decision as to whether to isolate and care for an infected person at home depends on the following three factors: 1) clinical evaluation of the COVID-19 patient, 2) evaluation of the home setting and 3) the ability to monitor the clinical evolution of a person with COVID-19 at home.

1. Clinical evaluation of COVID-19 patient

The decision to isolate and monitor a COVID-19 patient at home should be made on a case-by-case basis. Their clinical evaluation should include:

- clinical presentation
- any requirement for supportive care

[a] WHO defines health workers as follows: "Health workers are all people engaged in actions whose primary intent is to enhance

CPVID 19 pt:Homecare hygiene and waste disposal

- Risk assessment: appropriate PPE: droplet and contact precautions
- Ventilated rooms: control contaminants and odours
- Natural ventilation, by opening windows
- Mechanical systems, inc outdoor air: economizer modes: HVAC: 100%
- Heating, ventilation, air-conditioning (HVAC): inspect, maintain, clean: Stds
- Fans: avoided: unless: single occupancy: unavoidable: opening windows
- Limit no. of members: at least 1 metre (m) from HCW
- Pt: mask, resp. hygiene; coughing /sneezing elbow or tissue: dispose; HH
- Perform hand hygiene: pt contact/ env: WHO 5 moments: alcohol based HR

Contd…..

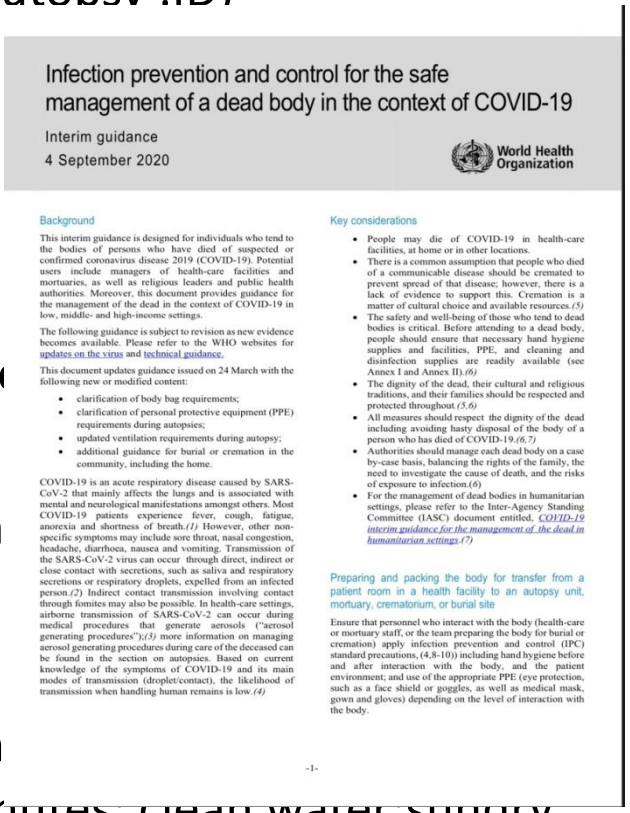
- Washhands(soap&water): disposable paper/cloth towels: dry hands: Dispose
- Instructions: caregivers, household members: clean, disinfect: home: safe use
- Clean and disinfect: standard precautions and established protocols
- Remove PPE: Disposal: hand hygiene Clean and disinfect reusable items (i.e. eye protection) for decontamination as per protocols
- Do not reuse single use PPE
- Dispose of waste generated from pt: infectious waste in yellow bag
- Waste management in community settings: Water, sanitation, hygiene and waste management for the COVID-19 virus, CPCB guidelines, 17 July 2020

Contd…..

- Clean, disinfect surfaces: frequently touched: pts room: btables, bedframes, furnitureleast OD
- Clean and disinfect bathroom and toilet surfaces at least once daily. soap or detergent: cleaning, after rinsing, regular disinfectant: 0.1% Na hypochlorite (1000 ppm): wiping
- Use dedicated linen and eating utensils: cleaned with soap and water: reuse
- Contaminated linen: laundry bag: Do not shake soiled laundry and avoid contact
- Clean the patient's clothes, linen, bath/hand towels using regular laundry soap and water, or machine wash at 60–90°C (140–194 °F): household detergent: dry thoroughly
- Utility gloves: soap, water: 0.1% Na hypochlorite. Single-use gloves (nitrile/latex): discarded after use. Perform hand hygiene before putting on and after removing gloves
- Waste generated at home: strong bags and closed completely before disposal and eventual collection by municipal waste services. If such a service does not exist, waste may be buried.
- • Avoid: exposure: do not share toothbrushes, cigarettes, cutlery, crockery, towels, cloths or bed linen

Management of Dead body in COVID-19 context

- IPC, std precautions, hand hygiene before,after interaction with body, patient environment; PPE
- transfer including removal of all catheters and other indwelling devices. (autopsy :ID)
- Trained medical staff should: no leakage of body fluids from orifices ar
- keep any movement or handling of body to a minimum;
- not disinfect body before its transfer to mortuary area
- wrap body in cloth, and transfer ASAP) to the mortuary area
- body bags (standard mortuary practice): solid, leakproof, nonbiodegradabl
- Disposal of infectious waste preferably on-site, and then safely disposed.
- burials or cremations with local practices, ceremonies: min participants sh distancing, respiratory etiquette, local mask, hand hygiene
- Belongings: detergent: 70% ethanol, hypoch/bleach 0.1% (1000 ppm)
- Clothing: washed at 60–90°C (140–194°F) and laundry detergent/soaked in large drum, avoid splashing: Empty linens soaked in 0.05% chlorine 30 minutes. clean water.sundry



Infection prevention and control for the safe management of a dead body in the context of COVID-19

Interim guidance

4 September 2020

World Health Organization

Background

This interim guidance is designed for individuals who tend to the bodies of persons who have died of suspected or confirmed coronavirus disease 2019 (COVID-19). Potential users include managers of health-care facilities and mortuaries, as well as religious leaders and public health authorities. Moreover, this document provides guidance for the management of the dead in the context of COVID-19 in low, middle- and high-income settings.

The following guidance is subject to revision as new evidence becomes available. Please refer to the WHO websites for updates on the virus and technical guidance.

This document updates guidance issued on 24 March with the following new or modified content:

- clarification of body bag requirements;
- clarification of personal protective equipment (PPE) requirements during autopsies;
- updated ventilation requirements during autopsy;
- additional guidance for burial or cremation in the community, including the home.

COVID-19 is an acute respiratory disease caused by SARS-CoV-2 that mainly affects the lungs and is associated with mental and neurological manifestations amongst others. Most COVID-19 patients experience fever, cough, fatigue, anorexia and shortness of breath.*(1)* However, other non-specific symptoms may include sore throat, nasal congestion, headache, diarrhoea, nausea and vomiting. Transmission of the SARS-CoV-2 virus can occur through direct, indirect or close contact with secretions, such as saliva and respiratory secretions or respiratory droplets, expelled from an infected person.*(2)* Indirect contact transmission involving contact through fomites may also be possible. In health-care settings, airborne transmission of SARS-CoV-2 can occur during medical procedures that generate aerosols ("aerosol generating procedures");*(3)* more information on managing aerosol generating procedures during care of the deceased can be found in the section on autopsies. Based on current knowledge of the symptoms of COVID-19 and its main modes of transmission (droplet/contact), the likelihood of transmission when handling human remains is low.*(4)*

Key considerations

- People may die of COVID-19 in health-care facilities, at home or in other locations.
- There is a common assumption that people who died of a communicable disease should be cremated to prevent spread of that disease; however, there is a lack of evidence to support this. Cremation is a matter of cultural choice and available resources.*(5)*
- The safety and well-being of those who tend to dead bodies is critical. Before attending to a dead body, people should ensure that necessary hand hygiene supplies and facilities, PPE, and cleaning and disinfection supplies are readily available (see Annex I and Annex II).*(6)*
- The dignity of the dead, their cultural and religious traditions, and their families should be respected and protected throughout.*(5,6)*
- All measures should respect the dignity of the dead including avoiding hasty disposal of the body of a person who has died of COVID-19.*(6,7)*
- Authorities should manage each dead body on a case by-case basis, balancing the rights of the family, the need to investigate the cause of death, and the risks of exposure to infection.*(6)*
- For the management of dead bodies in humanitarian settings, please refer to the Inter-Agency Standing Committee (IASC) document entitled, *COVID-19 interim guidance for the management of the dead in humanitarian settings.(7)*

Preparing and packing the body for transfer from a patient room in a health facility to an autopsy unit, mortuary, crematorium, or burial site

Ensure that personnel who interact with the body (health-care or mortuary staff, or the team preparing the body for burial or cremation) apply infection prevention and control (IPC) standard precautions, (4,8-10)) including hand hygiene before and after interaction with the body, and the patient environment; and use of the appropriate PPE (eye protection, such as a face shield or goggles, as well as medical mask, gown and gloves) depending on the level of interaction with the body.

-1-

Summary

- BMWM: duty of all stakeholders HCF, labs, collection centres, home care, quarantine centdomiciliary/institutional
- BMWM: socialdistancing, handhygiene, PPE,resp etiquette
- BMWM rules, 2016, amendment 2018, 2019, CPCB guideli
- CPCB guidelines for COVID -19 waste, 17 July, 2020
- Increase the number of CBWTFs and Recyclers
- General Population using PPEs: MSW bins
- Implementation of SWM rules and other Rules
- PPE: Sanitation workers in COVID ward, Labs, ICU, QC
- Occupational Safety,Home care, deadbody: Most crucial
- Public health concern