

20.4-2020

NOTIFICATION NO. 2020-18

## Infection prevention and Control(IPC) practices in the laboratories during COVID-19 (Version.1)

Laboratories (Biochemistry, Serology, emergency lab, haematology, blood bank, virology, bacteriology, virology)

The laboratories shall be dealing with clinical samples from COVID-19 patient/suspect and non COVID patients.

The treating physician shall decide the type of clinical samples from COVID-19 patient/suspect(as per guidelines)

Laboratory processing of samples should follow standard guidelines as recommended by Govt. of India or competent authorities

All the samples from COVID patient/suspect may be processed in a dedicated laboratory preferably with provision of biosafety cabinet( required for certain procedures). Alternatively samples may be processed in the laboratory with additional precautions and measures.

Donning and Doffing should be done in a designated area and follow proper donning& doffing technique ( Flow charts & videos)

### 1.Non respiratory samples from COVID patient or Suspect

Received from COVID ward and triage ward.

#### Blood sample :

Received in COVID laboratory or biochemistry, serology, emergency, haematology laboratory and blood bank.

- a. Serum separator vacutainer (yellow cap), should be preferred for serum(obviating need for centrifuge).
- b. Receive COVID sample in a zip lock/leak proof container
- c. Requisition forms sent in a paper envelope, Requisition forms through e mail or some suitable electronic media may be worked out, if possible.
- d. Dedicated HCWs should be involved in laboratory processing of samples
- e. Wear full PPE as Gloves, gown, Goggles/eye shield, mask, cap, closed washable shoes
- f. Always follow standard precautions and good laboratory practices(GLP), contact and droplet precautions
- g. Use a dedicated machine if possible. If not after processing the sample clean and disinfect the machine with suitable disinfectant(consider manufactures instructions also)
- h. Allow minimum people inside the laboratory
- i. Maintain a record/log book of persons involved in testing of COVID samples.
- j. The lab should be well ventilated (windows open/exhaust fan on)
- k. All aerosol generating procedure including centrifugation of samples, making smears should be avoided (use alternative method if possible). Aerosol generating procedures should be done in a biosafety cabinet.
- l. After wearing PPE, open the sample container/zip lock and disinfect outer surface of the vacutainers/containers with 1% hypochlorite/70% alcohol
- m. Process the sample with all precautions (never take off PPE in between)

Other sterile body fluids shall also be processed on similar lines.

#### Disposal of Biomedical Waste (BMWM,SOPs):

- a. Put the vacutainers in the red double bag & autoclave it( if available) or
- b. Discard vacutainers (with open cap) into 1% hypochlorite solution(1 hr), drain the treated sample in drainage. And put the vacutainers in the **Red double bags** lining Red Bins.
- c. Tie the bags properly and label as **COVID-19 Waste**, wipe the outer surface of the bag with 1% hypochlorite solution( not required when bags autoclaved) ,send the waste separately as COVID waste.
- d. All waste bins need also be disinfected(inner & outer surface) with 1% hypochlorite after each use.
- e. All the PPE should be disposed properly
- f. Maintain separate **record** of COVID waste generated in each laboratory
- g. BMW from other sections for the laboratory shall be handled as per existing policy(SOPs).

Rest of the blood samples received from non-COVID areas (wards/OPDs) may preferably be sent in leak proof container after proper disinfection of outer surface of the container through a dedicated health care worker. These samples shall be



processed in the routine laboratory with all standard precautions and good laboratory practices and wearing appropriate PPE (mask & gloves, eye shield/goggles, gown, hand hygiene) depending on the risk assessment.

## 2. All clinical samples for culture from COVID patient/suspect and respiratory samples regardless of source:

- a. Follow all standard precautions and good laboratory practices
- b. Wear PPE (gloves, gown, mask, cap, eye shield/goggles, covered closed shoes)
- c. Receive the samples in zip lock /leak proof container and requisition forms in paper envelope separately
- d. Open the zip lock/container in biosafety cabinet
- e. Disinfect the outer surface of sample container with 1% hypochlorite/70% alcohol
- f. Smear preparation and plating done in Biosafety cabinet
- g. Keep the plates inside the zip lock/container
- h. Disinfect the outer surface of zip lock/container and place in the incubator
- i. Plate reading be carried out in biosafety cabinet

BMW management:

COVID BMW to be managed as described above.

Separate record of COVID waste (patient/suspect) is maintained

BMW from other sections(non COVID samples) shall be handled as per existing policy(SOPs).

Environmental cleaning & disinfection (SOPs)

Wet mopping of floor with detergent & water followed by 1% hypochlorite (2-3 times/day)

Wet dusting of high touch surfaces with 1% hypochlorite every 2-3 hours

## 3. COVID-19 patient/suspect Samples in Pathology:

- a. Receive the histopathology sample in formalin in a leak proof container labeled clearly.
- b. The primary container put in the secondary container to minimize leakage
- c. Dedicated and trained HCWs are put on duty for processing of COVID samples
- d. Wear appropriate PPE(gloves,N95 mask, eye shield/goggles, gown/apron)
- e. Wipe outer surface of the containers with 1% hypochlorite/70% alcohol
- f. Change formalin after 24 hours
- g. Ensure proper fixation & then only process
- h. Frozen section must not be performed
- i. All fresh samples should be handled in biosafety cabinet
- j. Always follow the standard precautions and good laboratory practices.
- k. Avoid centrifugation of cytological and hematological samples as much as possible. Preferably centrifugation is done in biosafety cabinet. If not available, it is done in a dedicated and well ventilated room, maintain relative negative pressure, centrifuge with biosafety cap used, centrifuge with full PPE, do not permit any other person to enter the room. Allow to stand for 30 minutes then only open the tubes.

The samples from non COVID areas/patients shall preferably be sent in triple packing. These samples would be processed with all standard precautions and good laboratory practices and wearing appropriate PPE( surgical mask/N95 mask, gloves, eye shield/goggles) after risk assessment.

Disinfection of environmental surfaces and floor done consistently as per policy (SOPs).

PPE should be disposed properly (SOPs, Charts)

BMW of COVID-19 managed as described above(SOPs)

**4. PCR:** The respiratory samples(oropharyngeal and nasopharyngeal swabs) for COVID PCR testing shall be sent in triple packaging transported and processed in the dept. of microbiology as per existing SOPs (dept. of Microbiology)

- a. The sample container received in the laboratory should be placed in a dedicated area
- b. Donning and Doffing of PPE shall be done in designated area and correct technique to be followed.

- c. The samples should only be opened in biosafety cabinet wearing full PPE( including N95 respirator, gloves, face shield/goggles, cap, gown, shoe covers)
- d. The outer and inner surfaces of the outer container/ vaccine carrier should be wiped with 1% sod. Hypochlorite solution.
- e. Follow all biosafety precautions while carrying out sample testing.
- f. Restrict entry to the laboratory to minimum possible. Maintain daily record of persons visiting the lab (other than those on duty) which would help in contact tracing, if needed.
- g. The biomedical waste shall be treated as COVID waste and handled as per BMWM rules 2016 as amended with some additional precautions (follow BMWM SOPs)
- h. The COVID waste would be transported daily to CBMWTF.
- i. Separate record of the COVID waste shall be maintained in the laboratory.
- j. PPE should be disposed properly(SOPs, Charts)
- k. Environmental cleaning and disinfection shall be done consistently as per policy(SOPs)

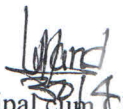
The HODs/laboratory in charges may ensure that all HCWs are adequately trained in infection control practices by HICC team. They may also ensure that the HCWs attend the regular orientation classes conducted in small groups by HICC team time to time (schedule shall be communicated to respective departments). Hand hygiene and social distancing shall be observed by all, all the time and at all places.

Note: Correct Technique of Donning and Doffing of PPE is most important to prevent HAIs

The Basic Principles of IPC and Standard precautions should be applied in all health care facilities.

This is a Dynamic document and shall be updated time to time as the knowledge with COVID-19 evolve with time and with new national and international guidelines

Resources: WHO Biosafety manual, ed 3. MoH&FW, TOTs, DGHS(Emergency medical relief), IPC SOPs of PGI Chandigarh, IPC guidelines JIPMER, Puducherry, AIIMS, New Delhi , AIIMS Rishikesh with institutional modification after discussion among members of different committees.

  
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