



Biosafety guidance for laboratory tests (chemical Pathology) related to the novel coronavirus (COVID-19)

College of chemical Pathologists of Sri Lanka (CCPSL)

Interim guidance (15-03-2020)

1. Introduction

- The purpose of this document is to provide guidance on laboratory biosafety related to the chemical Pathology testing of clinical specimens received from the suspected and diagnosed patients with COVID-19.
- Various biochemistry tests for example inflammatory markers, renal and liver functions are performed on serum or whole blood. Specimens such as urine, stool and body fluids may be sent to the laboratory for analysis in certain cases.
- As our understanding of the disease caused by 2019 nCoV is rapidly growing and CCPSL continues to monitor developments and will revise this guidance as necessary.

2. Specimen transport

- All materials transported from wards to laboratory or within the laboratory should be placed in a secondary container to minimize the potential breakage or a spill.
- All specimens being transported should have appropriate packaging, labelling and documentation (request forms should be labelled "bio hazards "for easy identification.
- The surface or the racks where the specimens are kept until analysis should be decontaminated. The porters should wear personal protective equipment during specimen transport.

3. Specimen reception, processing and analysis

- All personal involved in specimen reception, processing and analysis should wear appropriate personal protective equipment.
- The specimens should not be open during reception and processing i.e. During centrifugation.
- Any sample which is leaking should not be accepted.
- Ideally centrifugation should be done in sealed centrifuge buckets. Loading and unloading of centrifuge buckets and opening of specimen containers should be performed in appropriately maintained and validated bio safety cabinet (class 2) or primary containment device with demonstrated capability.

- In the absence of above facilities, centrifugation in a dedicated area followed by 30 minutes waiting time to open the lid of centrifuge is recommended. Opening of the lids of the specimen containers should be done by an experienced person with no or minimum aerosol generation in the same dedicated area before placing in the biochemistry analyzer.

4. Good microbiological practices and procedures (GMPP)

- When handling and processing specimens, laboratory practices and procedures that are basic to good microbiological practices and procedures (GMPP) should be followed. Please see the annexure-1 (Laboratory biosafety guidance related to coronavirus disease 2019 (COVID-19): interim recommendations, WHO)

5. Decontamination and waste management

- Any surface or material known to be, or potentially be, contaminated by biological agents during laboratory operations must be correctly disinfected.
- Clinical waste must be packaged in yellow double bags for transfer to the facility with decontamination capacity.
- Appropriate disinfectants with proven activity against enveloped viruses should be used (e.g. 0.1% hypochlorite (1% for blood spills), alcohol (62-71%), 0,5% hydrogen peroxide, quaternary ammonium compounds and phenolic compounds)

6. Personal protective equipment

- Laboratory coats- Must have long sleeves, preferably with elasticized or fitted cuffs. Coats must be long enough to cover the knees, but not trail on the floor. Where possible, the fabric of the coat should be splash-resistant and overlap to provide a solid front. When not in use, they should be stored appropriately; they should not be hung on top of other lab coats, or in lockers or hooks with personal items.
- Appropriate disposable gloves must be worn for all procedures which is related clinical samples.
- Safety glasses, safety goggles, face shields (visors) or other protective devices must be worn whenever it is necessary to protect the eyes and face from splashes.
- Footwear must be worn in the laboratory and must be of a design that minimize slips and trips and can reduce the likelihood of injury from fallen objects.

References:

Laboratory biosafety guidance related to the novel coronavirus (2019-nCoV), interim guidance 12 February 2020, World Health Organization (WHO)

Annex 1. Good microbiological practice and procedure (GMPP)

- Never store food or drink, or personal items such as coats and bags in the laboratory. Activities such as eating, drinking, smoking and/or applying cosmetics are only to be performed outside the laboratory.
- Never put materials, such as pens, pencils or gum in the mouth while inside the laboratory, regardless of having gloved hands or not.
- Thoroughly wash hands, preferably with warm running water and soap, after handling any biological material, including animals, before leaving the laboratory, and any time contamination is known or suspected to be present on the hands.
- Ensure open flames or heat sources are never placed near flammable supplies and are never left unattended.
- Ensure that coverings are placed over any cuts or broken skin prior to entering the laboratory.
- Ensure, prior to entry into the laboratory, that supplies of laboratory equipment and consumables, including reagents, PPE and disinfectants, are sufficient and appropriate for the activities being performed.
- Ensure supplies are stored appropriately (that is, according to storage instructions) and safely, to reduce the chance of accidents and incidents such as spills, trips or falls for laboratory personnel.
- Ensure proper labelling of all biological agents and chemical and radioactive material.
- Protect written documents from contamination using barriers (such as plastic coverings), particularly those that may need to be removed from the laboratory.
- Ensure work is performed with care, in a timely manner and without rushing. Working when fatigued should be avoided.
- Keep the work area tidy, clean and free of clutter and materials that are not necessary for the work being done.
- Prohibit the use of earphones, which can distract personnel and prevent equipment or facility alarms from being heard.
- Appropriately cover or remove any jewellery that could tear glove material, easily become contaminated or act as a fomite for infection. If worn regularly, cleaning and decontamination of the jewellery or spectacles should be considered.
- Refrain from using mobile electronic devices (for example, mobile telephones, tablets, laptops, flash drives, memory sticks, cameras and/or other portable devices, including those used for DNA/RNA sequencing) when not specifically required for the laboratory procedures being performed.
- Keep mobile electronic devices in areas where they could not easily become contaminated or act as a fomite for infection. Where close proximity of such devices to biological agents is unavoidable, ensure they are either protected by a physical barrier or decontaminated before leaving the laboratory.