राज्य स्वास्थ्य समिति, बिहार

खालिद अरसाद, बिहार प्रशासन

प्रशासनी पदाधिकारी

पत्रांक: SHSB/AO Cell/02/2020/………………

सेवा में,
सभी प्राचार्य/अधीक्षक, चिकित्सा महाविद्यालय अस्पताल, बिहार
सभी असैनिक राजस्व चिकित्सक-सह-मुख्य चिकित्सा पदाधिकारी, बिहार

पटना, दिनांक………………

25/2/2020

विषय: Guidelines on rational use of Personal Protective Equipment (PPE) का प्रेषण के संबंध में।

महाशय,

उपर्युक्त विषय के संबंध में कहना है कि स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार, नई दिल्ली से प्राप्त Guidelines on rational use of Personal Protective Equipment से संबंधित विस्तृत दिशा-निर्देश निर्देशानुसार पत्र के साथ संलग्न कर आवश्यक कार्रवाई हेतु उपलब्ध कराया जा रहा है।

अनुलग्नक:— यथोक्त।

विविधासभाजन,

(खालिद अरसाद)

परिवार कल्याण मंत्री, शेखपुरा, पटना– 800 014.
"phone: 0612-2290328, fax: 0612-2290322, website: www.statehealthsocietybihar.org"
राज्य स्वास्थ्य समिति, बिहार

खालिद अरसाद, विप्रमुख

प्रशासी पदाधिकारी

पत्रक: SHSB/AO Cell/02/2020/……………..

सेवा में,

सभी प्राधिकार/अधीक्षक, चिकित्सा महाविश्वविद्यालय अस्पताल, बिहार
सभी असीमिक राज्य चिकित्सक-सह-मुख्य चिकित्सा पदाधिकारी, बिहार

पटना, दिनांक…………………..

विषय: Guidelines on rational use of Personal Protective Equipment (PPE) का प्रेषण के संबंध में।

महाशय,

उपयुक्त विषय के संबंध में कहना है कि स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत
सरकार, नई दिल्ली से प्राप्त Guidelines on rational use of Personal Protective Equipment से
संबंधित विस्तृत दिशा-निर्देश निदेशानुसार पत्र के साथ संलग्न कर आवरण कार्यवाई हेतु उपलब्ध
कराया जा रहा है।

अनुलग्नक:— यथोक्त।

विश्वासभाजन,
हो/—
(खालिद अरसाद)

पत्रक………………….. पटना, दिनांक…………………..

प्रतिलिपि:

• प्रमाण सचिव, स्वास्थ्य विभाग, बिहार पटना को कुप्रया सूचनार्थ।
• सचिव, स्वास्थ्य विभाग, बिहार पटना को कुप्रया सूचनार्थ।
• कार्यालय निदेशक, राज्य स्वास्थ्य समिति, बिहार को कुप्रया सूचनार्थ।
• श्री कौरल बिनशोर, अपर सचिव, स्वास्थ्य विभाग, बिहार पटना को कुप्रया सूचनार्थ एवं
आवरण कार्यवाई हेतु प्रेषित।
• सभी जिला पदाधिकारी, बिहार को कुप्रया सूचनार्थ एवं आवरण कार्यवाई हेतु प्रेषित।
• निदेशक, आई.डी.एस.एम.एस.०, शेखपुरा, पटना/ निदेशक, AIIMS, बिहार, पटना को
सूचनार्थ एवं आवरण कार्यवाई हेतु प्रेषित।
• सभी अपर निदेशक, स्वास्थ्य सेवाएँ, बिहार को सूचनार्थ एवं आवरण कार्यवाई हेतु प्रेषित।
• राज्य सर्वेक्षण पदाधिकारी, आई.डी.एस.पी.०, राज्य स्वास्थ्य समिति, बिहार को सूचनार्थ एवं
आवरण कार्यवाई हेतु प्रेषित।
• सभी अपर मुख्य चिकित्सा पदाधिकारी/जिला सर्वेक्षण पदाधिकारी, बिहार को सूचनार्थ एवं
आवरण कार्यवाई हेतु प्रेषित।

प्रशासी पदाधिकारी

परिवार कल्याण भवन, शेखपुरा, पटना— 800 014,
सूचना: 0612-2290328, फॅक्स: 0612-2290322, वेबसाइट: www.statehealthsocietybihar.org

1. About this guideline

This guideline is for health care workers and others working in points of entries (POEs), quarantine centers, hospital, laboratory and primary health care / community settings. The guideline uses setting approach to guide on the type of personal protective equipment to be used in different settings.

2. Introduction

Coronaviruses are a large family of viruses, some causing illness in people and others that circulate among animals, including camels, cats and bats. Rarely, animal coronaviruses can evolve and infect people and then spread between people such as has been seen with MERS and SARS.

The outbreak of Novel coronavirus disease (now named COVID-19) was initially noticed from a seafood market in Wuhan city in Hubei Province of China in mid-December, 2019, has spread to more than 185 countries/territories worldwide including India.

The causative agent for COVID-19, earlier termed provisionally as novel Coronavirus has been officially named as SARS-CoV-2.

3. Mode of transmission

There is clear evidence of human-to-human transmission of SARS-CoV-2. It is thought to be transmitted mainly through respiratory droplets that get generated when people cough, sneeze, or exhale. SARS-CoV-2 also gets transmitted by touching, by direct touch and through contaminated surfaces or objects and then touching their own mouth, nose, or possibly their eyes. Healthcare associated infection by SARS-CoV-2 virus has been documented among healthcare workers in many countries.

The people most at risk of COVID-19 infection are those who are in close contact with a suspect/confirmed COVID-19 patient or who care for such patients.

4. Personal Protective Equipment (PPE)

Personal Protective Equipments (PPEs) are protective gears designed to safeguard the health of workers by minimizing the exposure to a biological agent.

4.1 Components of PPE

Components of PPE are goggles, face-shield, mask, gloves, coverall/gowns (with or without aprons), head cover and shoe cover. Each component and rationale for its use is given in the following paragraphs:
to be a predominant mode of transmission, care should be exercised while handling objects/surface potentially contaminated by suspect/confirmed cases of COVID-19.

Nitrile gloves are preferred over latex gloves because they resist chemicals, including certain disinfectants such as chlorine. There is a high rate of allergies to latex and contact allergic dermatitis among health workers. However, if nitrile gloves are not available, latex gloves can be used. Non-powdered gloves are preferred to powdered gloves.

4.1.4 Coverall/Gowns

Coverall/gowns are designed to protect torso of healthcare providers from exposure to virus. Although coveralls typically provide 360-degree protection because they are designed to cover the whole body, including back and lower legs and sometimes head and feet as well, the design of medical/isolation gowns do not provide continuous whole-body protection (e.g., possible openings in the back, coverage to the mid-calf only).

By using appropriate protective clothing, it is possible to create a barrier to eliminate or reduce contact and droplet exposure, both known to transmit COVID-19, thus protecting healthcare workers working in close proximity (within 1 meter) of suspect/confirmed COVID-19 cases or their secretions.

Coveralls and gowns are deemed equally acceptable as there is a lack of comparative evidence to show whether one is more effective than the other in reducing transmission to health workers. Gowns are considerably easier to put on and for removal. An apron can also be worn over the gown for the entire time the health worker is in the treatment area. Coveralls/gowns have stringent standards that extend from preventing exposure to biologically contaminated solid particles to protecting from chemical hazards.

4.1.5 Shoe covers

Shoe covers should be made up of impermeable fabric to be used over shoes to facilitate personal protection and decontamination.

4.1.6 Head covers

Coveralls usually cover the head. Those using gowns, should use a head cover that covers the head and neck while providing clinical care for patients. Hair and hair extensions should fit inside the head cover.

The specifications for all the PPEs are at Annexure-A.
4.1.1 Face shield and goggles

Contamination of mucous membranes of the eyes, nose and mouth is likely in a scenario of droplets generated by cough, sneeze of an infected person or during aerosol generating procedures carried out in a clinical setting. Inadvertently touching the eyes/nose/mouth with a contaminated hand is another likely scenario. Hence protection of the mucous membranes of the eyes/nose/mouth by using face shields/ goggles is an integral part of standard and contact precautions. The flexible frame of goggles should provide good seal with the skin of the face, covering the eyes and the surrounding areas and even accommodating for prescription glasses.

4.1.2 Masks

Respiratory viruses that includes Coronaviruses target mainly the upper and lower respiratory tracts. Hence protecting the airway from the particulate matter generated by droplets / aerosols prevents human infection. Contamination of mucous membranes of the mouth and nose by infective droplets or through a contaminated hand also allows the virus to enter the host. Hence the droplet precautions/airborne precautions using masks are crucial while dealing with a suspect or confirmed case of COVID-19/performing aerosol generating procedures.

Masks are of different types. The type of mask to be used is related to particular risk profile of the category of personnel and his/her work. There are two types of masks which are recommended for various categories of personnel working in hospital or community settings, depending upon the work environment:

1. Triple layer medical mask
2. N-95 Respirator mask

4.1.2.1 Triple layer medical mask

A triple layer medical mask is a disposable mask, fluid-resistant, provide protection to the wearer from droplets of infectious material emitted during coughing/sneezing/talking.

4.1.2.2 N-95 Respirator mask

An N-95 respirator mask is a respiratory protective device with high filtration efficiency to airborne particles. To provide the requisite air seal to the wearer, such masks are designed to achieve a very close facial fit.

Such mask should have high fluid resistance, good breathability (preferably with an expiratory valve), clearly identifiable internal and external faces, duckbill/cup-shaped structured design that does not collapse against the mouth.

If correctly worn, the filtration capacity of these masks exceeds those of triple layer medical masks. Since these provide a much tighter air seal than triple layer medical masks, they are designed to protect the wearer from inhaling airborne particles.

4.1.3 Gloves

When a person touches an object/surface contaminated by COVID-19 infected person, and then touches his own eyes, nose, or mouth, he may get exposed to the virus. Although this is not thought
5. Rational use of PPE

The PPEs are to be used based on the risk profile of the health care worker. The document describes the PPEs to be used in different settings.

### 5.1. Point of Entry

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Health Desk</td>
<td>Provide information to travellers</td>
<td>Low risk</td>
<td>Triple layer medical mask</td>
<td>Minimum distance of one meter needs to be maintained.</td>
</tr>
<tr>
<td>2</td>
<td>Immigration counters, customs and airport security</td>
<td>Provide services to the passengers</td>
<td>Low risk</td>
<td>Triple layer medical mask</td>
<td>Minimum distance of one meter needs to be maintained.</td>
</tr>
<tr>
<td>3</td>
<td>Temperature recording station</td>
<td>Record Temperature with hand held thermal recorder.</td>
<td>Low risk</td>
<td>Triple layer medical mask</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Holding area/isolation facility of APHO/PHO</td>
<td>Interview &amp; Clinical examination by doctors/nurses</td>
<td>Moderate Risk</td>
<td>N-95 masks</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Isolation facility of APHO</td>
<td>Clinical management (doctors, nurses)</td>
<td>Moderate Risk</td>
<td>N-95 masks</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Sanitary staff</td>
<td>Cleaning frequently touched surfaces/Floor/cleaning linen</td>
<td>Moderate Risk</td>
<td>N-95 mask</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Administrative staff</td>
<td>Providing administrative support</td>
<td>No risk</td>
<td>No PPE</td>
<td>No contact with patients of COVID-19. They should not venture into areas where suspect COVID-19 cases are being managed.</td>
</tr>
</tbody>
</table>
5.2. Hospital Setting

5.2.1. Out Patient Department (Respiratory Clinic / Separate screening area)

<table>
<thead>
<tr>
<th>S. No</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Triage area</td>
<td>Triaging patients</td>
<td>Moderate</td>
<td>N 95 mask</td>
<td>Patients get masked.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide triple layer mask to patient.</td>
<td>risk</td>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Screening area help desk/</td>
<td>Provide information to patients</td>
<td>Moderate</td>
<td>N-95 mask</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Registration counter</td>
<td></td>
<td>risk</td>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Temperature recording station</td>
<td>Record temperature with hand held</td>
<td>Moderate</td>
<td>N 95 mask</td>
<td>Minimum distance of one meter needs to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>thermal recorder</td>
<td>Risk</td>
<td>Gloves</td>
<td>be maintained.</td>
</tr>
<tr>
<td>4</td>
<td>Holding area/ waiting area</td>
<td>Nurses / paramedic interacting with</td>
<td>Moderate</td>
<td>N 95 mask</td>
<td>No aerosol generating procedures should</td>
</tr>
<tr>
<td></td>
<td></td>
<td>patients</td>
<td>Risk</td>
<td>Gloves</td>
<td>be allowed.</td>
</tr>
<tr>
<td>5</td>
<td>Doctors chamber</td>
<td>Clinical management (doctors, nurses)</td>
<td>Moderate</td>
<td>N 95 mask</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Risk</td>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Sanitary staff</td>
<td>Cleaning frequently touched surfaces/</td>
<td>Moderate</td>
<td>N-95 mask</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Floor/ cleaning linen</td>
<td>risk</td>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Visitors accompanying</td>
<td>Support in navigating various</td>
<td>Low risk</td>
<td>Triple layer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>young children and eldersies</td>
<td>service areas</td>
<td></td>
<td>medical mask</td>
<td></td>
</tr>
</tbody>
</table>

# All hospitals should identify a separate triage and holding area for patients with Influenza like illness. If there is no triage area / holding area for patients due to resource constraints, such hospitals will follow the above guidance for general OPD.

5.2.2. In-patient Services

<table>
<thead>
<tr>
<th>S. No</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Individual isolation rooms/</td>
<td>Clinical management</td>
<td>Moderate</td>
<td>N 95 mask</td>
<td>Patient masked. Patients stable. No aerosol</td>
</tr>
<tr>
<td></td>
<td>cohorted isolation rooms</td>
<td></td>
<td>risk</td>
<td>Gloves</td>
<td>generating generating activity.</td>
</tr>
<tr>
<td>2</td>
<td>ICU/ Critical</td>
<td>Critical care</td>
<td>High risk</td>
<td>Full complement of</td>
<td>Aerosol generating</td>
</tr>
<tr>
<td></td>
<td>care management</td>
<td>PPE activities performed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------</td>
<td>--------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ICU /critical care</td>
<td>Dead body packing</td>
<td>High risk</td>
<td>Full complement of PPE</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>ICU/ Critical care</td>
<td>Dead body transport to mortuary</td>
<td>Low Risk</td>
<td>Triple Layer medical mask, Gloves</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Sanitation</td>
<td>Cleaning frequently touched surfaces/ floor/ changing linen</td>
<td>Moderate risk</td>
<td>N-95 mask, Gloves</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Other Non-COVID treatment areas of hospital</td>
<td>Attending to infectious and non-infectious patients</td>
<td>Risk as per assessed profile of patients</td>
<td>PPE as per hospital infection prevention control practices.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Caretaker accompanying the admitted patient</td>
<td>Taking care of the admitted patient</td>
<td>Low risk</td>
<td>Triple layer medical mask</td>
<td></td>
</tr>
</tbody>
</table>

5.2.3. Emergency Department

<table>
<thead>
<tr>
<th>S.No</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Emergency</td>
<td>Attending emergency cases</td>
<td>Moderate risk</td>
<td>N 95 mask, Gloves</td>
<td>When aerosol generating procedures are anticipated</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Attending to severely ill patients of SARI</td>
<td>High risk</td>
<td>Full complement of PPE</td>
<td>Aerosol generating activities performed.</td>
</tr>
</tbody>
</table>

5.2.4. Pre-hospital (Ambulance) Services

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ambulance Transfer to designated hospital</td>
<td>Transporting patients not on any assisted ventilation</td>
<td>Moderate risk</td>
<td>N-95 mask, Gloves</td>
<td>When aerosol generating procedures are anticipated</td>
</tr>
<tr>
<td></td>
<td>Management of SARI patient while transporting</td>
<td>High risk</td>
<td>Full complement of PPE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Driving the ambulance</td>
<td>Low risk</td>
<td>Triple layer medical mask, Gloves</td>
<td>Driver helps in shifting patients to the emergency</td>
<td></td>
</tr>
</tbody>
</table>
### 5.2.5. Other Supportive/Ancillary Services

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Laboratory</td>
<td>Sample collection and transportation</td>
<td>High risk</td>
<td>Full complement of PPE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sample testing</td>
<td>High risk</td>
<td>Full complement of PPE</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mortuary</td>
<td>Dead body handling</td>
<td>Moderate Risk</td>
<td>N 95 mask, Gloves</td>
<td>No aerosol generating procedures should be allowed. No embalming.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>While performing autopsy</td>
<td>High Risk</td>
<td>Full complement of PPE</td>
<td>No post-mortem unless until specified.</td>
</tr>
<tr>
<td>3</td>
<td>Sanitation</td>
<td>Cleaning frequently touched surfaces/Floor</td>
<td>Moderate risk</td>
<td>N-95 mask, Gloves</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cleaning linen in COVID treatment areas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>CSSD/Laundry</td>
<td>Handling linen of COVID patients</td>
<td>Moderate risk</td>
<td>N-95 mask, Gloves</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Other supportive services</td>
<td>Administrative Financial Engineering Security</td>
<td>No risk</td>
<td>No PPE</td>
<td>No possibility of exposure to COVID patients. They should not venture into COVID-19 treatment areas.</td>
</tr>
</tbody>
</table>

### 5.3. Health Workers in Community Setting

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ASHAs/Anganwadi and other field staff</td>
<td>Field Surveillance</td>
<td>Low Risk</td>
<td>Triple layer mask, Gloves</td>
<td>Maintain distance of one meter. Surveillance team to carry adequate triple layer masks to distribute to suspect cases detected on field surveillance</td>
</tr>
<tr>
<td>2</td>
<td>Doctors at supervisory level conducting field investigation</td>
<td>Field surveillance Clinical examination</td>
<td>Medium Risk</td>
<td>N 95 mask, Gloves</td>
<td></td>
</tr>
</tbody>
</table>
5.4 Quarantine facility

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Persons being quarantined</td>
<td></td>
<td>Low Risk</td>
<td>Triple layer mask</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Healthcare staff working at quarantine facility</td>
<td>Health monitoring and temperature recording</td>
<td>Low Risk</td>
<td>Triple layer mask</td>
<td>Gloves</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clinical examination of symptomatic persons</td>
<td>Moderate Risk</td>
<td>N-95 masks</td>
<td>Gloves</td>
</tr>
<tr>
<td>3</td>
<td>Support staff*</td>
<td></td>
<td>Low Risk</td>
<td>Triple layer mask</td>
<td>Gloves</td>
</tr>
</tbody>
</table>

5.5 Home Quarantine

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Persons being quarantined</td>
<td></td>
<td>Low Risk</td>
<td>Triple layer mask</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Designated family member</td>
<td>Taking care of person being quarantined</td>
<td>Low Risk</td>
<td>Gloves</td>
<td>While cleaning commonly touched surfaces or handling soiled linen</td>
</tr>
<tr>
<td>3</td>
<td>Other family</td>
<td></td>
<td>No Risk</td>
<td>No PPE required</td>
<td>Maintain a distance of at least 1 meter from person under home quarantine. Senior citizens in the household should stay away from such persons under home quarantine.</td>
</tr>
</tbody>
</table>

Points to remember while using PPE

1. PPEs are not alternative to basic preventive public health measures such as hand hygiene, respiratory etiquettes which must be followed at all times.
2. Always (if possible) maintain a distance of at least 1 meter from contacts/suspect/confirmed COVID-19 cases
3. Always follow the laid down protocol for disposing off PPEs as detailed in infection prevention and control guideline available on website of MoHFW.
Annexure A

Personal Protection Equipment (PPE) - Specifications
(for Contact & Airborne precautions)

1. PPE Kit
   1.1 Gloves
       - Nitrile
       - Non-sterile
       - Powder free
       - Outer gloves preferably reach mid-forearm (minimum 280 mm total length)
       - Different sizes (6.5 & 7)
       - Quality compliant with the below standards, or equivalent:
         a. EU standard directive 93/42/EEC Class I, EN 455
         b. EU standard directive 89/686/EEC Category II, EN 374
         c. ANSI/SEA 105-2011
         d. ASTM D6319-10

   1.2 Coverall (medium and large)*
       - Impermeable to blood and body fluids
       - Single use
       - Avoid culturally unacceptable colors e.g. black
       - Light colors are preferable to better detect possible contamination
       - Thumb/finger loops to anchor sleeves in place
       - Quality compliant with following standard
         a. Meets or exceeds ISO 16603 class 3 exposure pressure, or equivalent

   1.3 Goggles
       - With transparent glasses, zero power, well fitting, covered from all sides with
         elastic band/or adjustable holder.
       - Good seal with the skin of the face
       - Flexible frame to easily fit all face contours without too much pressure
       - Covers the eyes and the surrounding areas and accommodates for prescription glasses
       - Fog and scratch resistant
       - Adjustable band to secure firmly so as not to become loose during clinical activity
       - Indirect venting to reduce fogging
       - May be re-usable (provided appropriate arrangements for decontamination are in
         place) or disposable
       - Quality compliant with the below standards, or equivalent:
         a. EU standard directive 86/686/EEC, EN 166/2002
         b. ANSI/SEA Z87.1-2010
1.4. N-95 Masks
   • Shape that will not collapse easily
   • High filtration efficiency
   • Good breathability, with expiratory valve
   • Quality compliant with standards for medical N95 respirator:
     a. NIOSH N95, EN 149 FFP2, or equivalent
   • Fluid resistance: minimum 80 mmHg pressure based on ASTM F1862, ISO 22609, or equivalent
   • Quality compliant with standards for particulate respirator that can be worn with full-face shield

1.5. Shoe Covers
   • Made up of the same fabric as of coverall
   • Should cover the entire shoe and reach above ankles

1.6. Face Shield
   • Made of clear plastic and provides good visibility to both the wearer and the patient
   • Adjustable band to attach firmly around the head and fit snugly against the forehead
   • Fog resistant (preferable)
   • Completely covers the sides and length of the face
   • May be re-usable (made of material which can be cleaned and disinfected) or disposable
   • Quality compliant with the below standards, or equivalent:
     a. EU standard directive 86/686/EEC, EN 166/2002
     b. ANSI/SEA Z87.1-2010

3. Triple Layer Medical Mask
   • Three layered medical mask of non-woven material with nose piece, having filter efficiency of 99% for 3 micron particle size.
     a. ISI specifications or equivalent

4. Gloves
   • Nitrile
   • Non-sterile
   • Powder free
   • Outer gloves preferably reach mid-forearm (minimum 280mm total length)
   • Different sizes (6.5 & 7)
   • Quality compliant with the below standards, or equivalent:
     1. EU standard directive 93/42/EEC Class I, EN 455
     2. EU standard directive 89/686/EEC Category III, EN 374
     3. ANSI/SEA 105-2011
     4. ASTM D6319-10
5. **Body Bags - Specifications**

1) Impermeable
2) Leak proof
3) Air sealed
4) Double sealed
5) Disposable
6) Opaque
7) White
8) U shape with Zip
9) 4/6 grips
10) Size: 2.2 x 1.2 Mts
11) Standards:
   a) ISO 16602:2007
   b) ISO 16603:2004
   c) ISO16604:2004
   d) ISO/DIS 22611:2003

All items to be supplied need to be accompanied with certificate of analysis from national/international organizations/labs indicating conformity to standards.

All items: Expiry 5 years

* Due to scarcity of coveralls, and risk versus benefit, that as an emergency temporary measure in larger public interest, in present given circumstances, the fabric that cleared/passed ‘Synthetic Blood Penetration Resistance Test’ (ISO 16603) and the garment that passed ‘Resistance to penetration by biologically contaminated solid particles (ISO 22612:2005) may be considered as the benchmark specification to manufacture Coveralls.” The Coveralls should be taped at the seams to prevent fluid/droplets/aerosol entry.

The test for these two standards (ISO 16603 and ISO 22612:2005), which can be performed in Indian laboratories are as per WHO Disease Commodity Package (Version 4.0)