Health facility Training: COVID-19

HOSPITAL IN-CHARGES, DOCTORS AND PARAMEDICAL STAFF THROUGH VIDEO-CON, YOJNA BAHWAN, LUCKNOW

March, 27 2020
Agenda

1. Corona virus introduction, epidemiology
2. Case definitions
3. L1 and L2 facilities and selection criteria
4. Facility preparedness including logistics
5. Sample collection and transportation
6. Clinical case management
7. Specific PPE, IPC & BMW Management
8. Dead body disposal protocol
OBJECTIVES

1. To prepare Hospitals and Health care workers in the current uncertain scenario of the Corona Virus COVID 19 pandemic

2. This resource package has been developed to update health care workers about -
   - Novel corona Virus epidemiology
   - Latest case definitions, quarantine and Isolation protocols
   - The concept of COVID Hospitals
   - Technical information on treatment / diagnosis and management of COVID 19 suspected/ infected cases
   - Infection control protocols at COVID-Hospitals
   - Using this resource package the master trainers will train all other staff at their facility

3. Worker-based training is envisaged to prevent and reduce exposure of hospital employees who are at risk of exposure to coronavirus through their work duties.
• Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as
  • Severe Acute Respiratory Syndrome (SARS-CoV)
  • Middle East Respiratory Syndrome (MERS-CoV).
• Coronaviruses cause zoonosis, meaning they are transmitted between animals and people.
COVID-19

• Coronavirus disease 2019 (COVID-19) is a respiratory tract infection caused by a newly emergent corona-virus (SARS-COV-2), that was first recognized in Wuhan, China, in December 2019.

• Genetic sequencing of the virus suggests that it is a beta-coronavirus closely linked to the SARS virus.

• Incubation period i.e appearance of symptoms after infection is usually 5-14 days.
Highly infectious viral disease of respiratory system and spreads by:

- Droplets - when an infected person coughs, sneezes or talks, or during certain procedures.
  - Infectious particles > 5 microns in size.
  - Droplet distribution range is limited by the force of expulsion and gravity and is usually < 1 metre.
  - Droplets can also be transmitted indirectly to mucosal surfaces (e.g. via hands) or contact of hands with surfaces contaminated by droplets and by touching the face, nose and mouth with hands.

- Contact of hands with contaminated surfaces.

**How it spreads**
COVID-19: Current situation globally

- **INDIA:** 724 confirmed cases
  - Deaths: 17
- **UP:** 47 Cases and 0 Deaths

<table>
<thead>
<tr>
<th>कुल धनात्मक रोगियों की संख्या</th>
<th>47</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 जलनपदवार विवरण</td>
<td></td>
</tr>
<tr>
<td>6.2 आगरा</td>
<td>9</td>
</tr>
<tr>
<td>6.3 लखनऊ</td>
<td>8</td>
</tr>
<tr>
<td>6.4 गाजियाबाद</td>
<td>3</td>
</tr>
<tr>
<td>6.5 गौतम बुध नगर</td>
<td>18</td>
</tr>
<tr>
<td>6.6 लखीमपुर-खीरी</td>
<td>1</td>
</tr>
<tr>
<td>6.7 कलपुर नगर</td>
<td>1</td>
</tr>
<tr>
<td>6.8 पीलोभीत</td>
<td>2</td>
</tr>
<tr>
<td>6.9 मुरादाबाद</td>
<td>1</td>
</tr>
<tr>
<td>6.10 काराणगढ़</td>
<td>1</td>
</tr>
<tr>
<td>6.11 शामली</td>
<td>1</td>
</tr>
<tr>
<td>6.12 जौनपुर</td>
<td>1</td>
</tr>
<tr>
<td>6.13 बागपत</td>
<td>1</td>
</tr>
<tr>
<td>6.13 कुल धनात्मक रोगी</td>
<td>47</td>
</tr>
</tbody>
</table>

Globally
- 462,684 confirmed (49,219)
- 20,834 deaths (2,401)

Western Pacific Region
- 99,058 confirmed (12,992)
- 3,540 deaths (22)

European Region
- 250,287 confirmed (29,771)
- 13,950 deaths (19,64)

South-East Asia Region
- 253,6 confirmed (19,2)
- 79 deaths (7)

Eastern Mediterranean Region
- 32,442 confirmed (2,811)
- 2,162 deaths (15,4)

Region of the Americas
- 75,712 confirmed (14,878)
- 10,65 deaths (252)

African Region
- 1937 confirmed (275)
- 31 deaths (2)

WHO RISK ASSESSMENT
- Global Level: Very High
Countries, areas or territories with COVID-19 cases reported in the last 7 days, as of 26 March 2020, 10:00 (CET)


Number of cases of Serbia and Kosovo (UNSCR 1244, 1999) have been aggregated for visualization purposes.

Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.
COVID-19: Clinical profile

✓ Most people infected with COVID-19 virus (SARS-COV2) develop only mild illness
  ▪ Approximately 14% develop severe disease, which requires hospitalization and oxygen support
  ▪ Less than 5% may require admission to an intensive care unit (ICU) with ventilator support

✓ The severe cases can be complicated as severe pneumonia, acute respiratory distress syndrome (ARDS), sepsis, multi-organ failure and shock.

✓ Patients above 60 years of age or with co-morbidities like Diabetes Mellitus, Hypertension and COPD have higher mortality
History of foreign travel during the 14 days prior to symptom onset

AND

Any of the following:

• Fever
• Cough
• Respiratory distress

OR

• A patient/Health care worker with any acute respiratory illness AND having been in contact with a confirmed COVID-19 case in the last 14 days prior to onset of symptoms;

OR

• A patient with severe acute respiratory infection {fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness breath)} AND requiring hospitalization AND with no other etiology that fully explains the clinical presentation;

OR

• A case for whom testing for COVID-19 is inconclusive.
Case Definitions - Probable

A person with acute respiratory illness of any degree of severity who, within 14 days before onset of illness, had any of the following exposures:

a. close physical contact with a confirmed case of nCoV infection, while that patient was symptomatic;

Or

b. a healthcare facility in a country where hospital associated nCoV infections have been reported

Case Definition - Laboratory

- Patients that meet the case definition and tested positive with Specific Real time RT-PCR test for 2019 nCoV.
Touched **body fluids** of the patient (Respiratory tract secretions, blood, vomit, saliva, urine, faeces)

Had **direct physical contact** with the body of the patient including **physical examination without PPE**.

Touched or cleaned the **linens, clothes, or dishes** of the patient.

Lives in the **same household** as the patient.

Anyone in **close proximity** (within 3 ft) of the confirmed case without precautions.

Passenger in close proximity (within 3 ft) of a conveyance with a symptomatic person who later tested positive for COVID-19 for more than 6 hours.
### HIGH RISK CONTACTS-DEFNITION

<table>
<thead>
<tr>
<th>Definition</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touched <strong>body fluids</strong> of the patient</td>
<td>Respiratory tract secretions, blood, vomit, saliva, urine, faeces</td>
</tr>
<tr>
<td>Had <strong>direct physical contact</strong> with the body of the patient</td>
<td>Including physical examination without PPE.</td>
</tr>
<tr>
<td>Touched or cleaned the <strong>linens, clothes, or dishes</strong> of the patient.</td>
<td></td>
</tr>
<tr>
<td>Lives in the <strong>same household</strong> as the patient.</td>
<td></td>
</tr>
<tr>
<td>Anyone in <strong>close proximity</strong> (within 3 ft) of the confirmed case</td>
<td>Without precautions.</td>
</tr>
<tr>
<td>Passenger in close proximity (within 3 ft) of a conveyance</td>
<td>With a symptomatic person who later tested positive for COVID-19 for more than 6 hours.</td>
</tr>
<tr>
<td>Low Risk Contacts Definition</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td></td>
</tr>
<tr>
<td>Passengers in the same cabin or other persons in contact.</td>
<td></td>
</tr>
<tr>
<td>Shared the same space (Same class for school/worked in same room/similar and not having a high risk exposure to confirmed or suspect case of COVID-19).</td>
<td></td>
</tr>
<tr>
<td>Travelled in same environment (bus/train/flight/any mode of transit) but not having a high-risk exposure.</td>
<td></td>
</tr>
</tbody>
</table>
**High Risk contacts**

Symptomatic: Isolation in hospital + testing for COVID-19

Asymptomatic: Home quarantine + test between days 5-14 days of contact

If turns symptomatic during day 0-14 of contact or Test result is positive, then isolation in hospital

---

**Low Risk contacts**

Symptomatic: Isolation in hospital + testing for COVID-19

Asymptomatic: Home quarantine

If turns symptomatic during day 0-14 of contact, then isolation in hospital + testing for COVID-19
Admission and quarantine protocols
Admission and quarantine protocols

**MECHANISM**

- **Traveler data received from different agencies (DGCA, Border check posts)**
- **Segregation of Data at State HQ**
- **Sharing of data with Districts**
- **Initial Tracking of travelers and filling of form-A by District Teams**
- **Initial home visit by District teams is followed by Telephonic tracking till 28 days**
- **If any traveler reports symptoms he is shifted to Quarantine facility and samples collected**
- **Is Sample is positive, shifted to COVID-1 Hospital**
- **Patient becomes serious-Shifted to a COVID 2 / 3 Hospital**

DEVELOPED BY SSU UTTAR PRADESH WITH SUPPORT FROM UPTSU AND WHO-NPSP
Laboratory confirmation for COVID-19 (as per ICMR guidance)

**Whom to test**

- **All SYMPTOMATIC** (fever, cough, difficulty in breathing) individuals who have undertaken international travel in the last 14 days - Isolate and test
- **All SYMPTOMATIC** contacts of laboratory confirmed cases.
- **All SYMPTOMATIC** health care workers.
- **All HOSPITALIZED PATIENTS WITH SARI** Severe Acute Respiratory Illness (fever AND cough and/or shortness of breath).
- **ASYMPTOMATIC DIRECT AND HIGH-RISK CONTACTS** of a confirmed case should be tested once between day 5 and day 14 of coming in his/her contact
Laboratory confirmation for COVID-19

Where to test

2 Sample collection centres / District

At Designated Quarantine facility – For Persons who will be admitted at the quarantine facility

Another location decided by CMO/CMS – DH- For Persons who do not require institutional quarantine
Quarantine refers to separation of individuals who are not ill yet but have been exposed to COVID-19 and therefore have a potential to become ill.

**HOME QUARANTINE-14 Days**

- All persons with foreign travel history over past 14 days.
- Contacts of suspect cases.
- Persons who have come back to UP from different States.

**INSTITUTIONAL QUARANTINE-14 Days**

- All symptomatic suspects.
- Close Contacts of confirmed cases.
- A minimum of one meter distance needs to be maintained between adjacent beds.
- All such patients need to wear a triple layer surgical mask at all times.
- All suspect cases can also be cohorted in separate wards maintaining adequate 1-metre distance between beds with clean bed linen and hand hygiene.
QUARANTINE FOR HEALTH WORKERS

Two Separate Quarantine locations for Staff posted in Quarantine

➢ Facility for On Duty Staff
➢ Facility for Off Duty Staff

ACTIVE QUARANTINE-14 Days

• On duty Health staff of Covid Hospitals

PASSIVE QUARANTINE-14 Days

• Off duty Health staff of Covid Hospitals

• All Logistics for these facilities including transportation, Food, Water all Day to day use articles to be arranged by DM/CMO/CMS. Sufficient funds already allocated. More may be demanded if required.
• Isolation refers to separation of individuals who are confirmed for COVID-19.
• There are various modalities of isolating a patient.
  • Ideally, patients can be isolated in individual isolation rooms.
  • In resource constrained settings, all positive COVID-19 cases can be cohorted in a ward with good ventilation.
• Under no circumstances these cases should be mixed up with suspected cases.
Strategy behind establishing dedicated L1, L2 and L3 COVID 19 Hospital
COVID-19: Italy
Total number of COVID-19 cases and daily number of new cases in Italy

As of March 26, 2020
Source: Johns Hopkins University
COVID-19: Iran

Total number of COVID-19 cases and daily number of new cases in Iran

- Daily new cases
- Total cases

As of March 26, 2020
Source: Johns Hopkins University
Coronavirus: Upward Trajectory or Flattened Curve?

Cumulative confirmed COVID-19 cases in selected countries from day 1 to 40 after 100+ cases

As of March 25, 2020
Source: Johns Hopkins University
Novel corona virus has shown a tendency for remarkable spread after reaching a critical level.

If Symptomatics and Positive cases are not identified and isolated quickly, the infection becomes widespread. In such a scenario, additional hospitals and quarantine facilities are required to isolate and treat the confirmed cases and to keep contacts in quarantine.

This is necessary to-

- Prevent spread of the disease
- To keep the other patients and hospital staff in an environment free of Covid-infection
- To prevent general public getting infection from health care staff and Covid-19 patients.
- To prevent community transmission.
- To get ready for large number of patients if coming in future.
- Ensure dedicated logistics and beds available at time of requirement.
L -1 Facilities
• At least 1 dedicated CHC with ≥30 beds in each of the 75 districts.
• To admit and treat –
  ➢ ASYMPTOMATIC AND SYMPTOMATIC BUT UNCOMPLICATED POSITIVE CASES.
  ➢ COVID-19 positive patients who DO NOT require ICU and ventilatory support.
• In case, the condition of the patients deteriorate, then the patient should be referred to higher facilities in ALS (108) Ambulance.
प्रत्येक दल हेतु कोविड समर्पित एल1 चिकित्सा इकाईयों के लिए मानव संसाधनों की संरचना:

<table>
<thead>
<tr>
<th>श्रेणी</th>
<th>संख्या</th>
</tr>
</thead>
<tbody>
<tr>
<td>चिकित्सक</td>
<td>6</td>
</tr>
<tr>
<td>नर्सिंग</td>
<td>6</td>
</tr>
<tr>
<td>फार्मासिस्ट</td>
<td>2</td>
</tr>
<tr>
<td>वार्ड ब्लॉक</td>
<td>3</td>
</tr>
<tr>
<td>स्वीपर</td>
<td>6</td>
</tr>
<tr>
<td>लैब टेक्नीशियन</td>
<td>2</td>
</tr>
<tr>
<td>एक दल हेतु कुल संख्या</td>
<td>25</td>
</tr>
</tbody>
</table>
(3) मुख्य चिकित्साधिकारियों को निदेशित किया जाता है कि वे अनुलग्नक–3 के अनुसार इन कोविड समर्पित एल1 चिकित्सा इकाईयों में तैनात किये जाने वाले 50 स्टाफ को नाम एवं उनके इएचआरएएमएस कोड से चिह्नित करें।

(4) मुख्य चिकित्साधिकारियों को यह सुनिश्चित करने हेतु भी निदेशित किया जाता है कि उक्त कार्मिक अच्छी प्रकार से प्रशिक्षित एवं समर्पित हों। यह जरूरी नहीं है कि ये कार्मिक उसी चिकित्सा इकाई में पूर्व से तैनात हों, बल्कि निपुणता, दक्षता व परिपक्वता/अनुभव के मानदंड के आधार पर इनका चयन जनपद के किसी भी चिकित्सालय में तैनात कार्मिकों में से किया जा सकता है। किसी भी अन्य चिकित्सा इकाई में तैनात कार्मिकों की अनुभव व उपयुक्तता के आधार पर आवश्यकता के दृष्टिगत कोविड समर्पित एल1 चिकित्सा इकाई में उनकी अस्थायी तैनाती जिलाधिकारी के अनुमोदन से किया जा सकेगा। उक्तानुसार गठित प्रत्येक दल का वरिष्ठतम चिकित्सक उक्त कोविड समर्पित एल1 चिकित्सा इकाई में अपनी तैनाती के दौरान प्रभारी के रूप में कार्य करेगा।
5. **L - 1 Facilities**

(1) **Nishikhy Sanrargh Swa Vidha (Passive Quarantine facility)**

Jab aal-1 fasiliti per korena vaayus sammikta rogi ke upwaar hetu dal-1 karyartha raha ga, to dal-2 nishikhy sangroh fasiliti mein hogat. Jilaadhikari/muakhy chiviktsadhikari/muakhy chiviktsa adhikakshh duhar ya suhishchit kia jaaye ki dal-2 - nishikhy sangroh fasiliti ke pree dal hetu 15 dinon ki adhikta tak ke liye tharane ke liye alo gaovaly ke suvidha santu upar yukt vyastha suhishchit kia jaaye. Iss adhikta ke dhaana, dal-2 ke samvat sadasy utmaa chivihit nishikhy sangroh suvidhaa mein hii raha ga.

Dukta adhikta ke dhaana nishikhy sangroh fasiliti mein naa vyasth vikasak bhajane, panii aur sukaa ke vyastha ki jaaye. 15thi din seva dene ke pratin dal-2 ko nishikhy sangroh suvidhaa se saky sangroh fasiliti mein jaane ke liye parivahan ki vyastha suhishchit kia jaaye.

(2) **Saky sangroh (Active Quarantine)**

Koobid samarpita aal-1 chiviktsa ikaiyohna per tanaat tiem ko vyasth/sarkaak jinno kare apnaa pali (Shift) puna kah li hoo. Yah prayaas kia jaaye unke tharane ke liye aal-1 fasiliti ke aavasiiy piersar mein hii muakhy chiviktsadhikaroon duhar kia jaaye aal-1 piersar mein sricha aavasias ke aavasiktaanuusari muakhy chiviktsadhikara dharra manmat bhii karaat ta sakta hai. Chivihit saky sangroh suvidhaa mein aavasik bhajane, panii aur sukaa ke vyastha ki jaaye. Aavasiktaanuusar tiem ke sadtho hetu saky sangroh aal-1 fasiliti ko aane v jaane ke liye parivahan ki vyastha suhishchit kia jaaye.

Tharane, manmat ityada ke vyastha ke liye dharnaashh chiviktsa aur swasth mahanihishchalyo, 0opro dharra upalambh karaaye jaaegi.
स्टाफ का प्रशिक्षण :

(1) मुख्य चिकित्साधिकारियों द्वारा अपने-अपने जनपदों में चिह्नित मास्टर ट्रेनर (प्रति जनपद 02 चिकित्सक एवं 02 नर्सें) को कोविड महामारी के दौरान अपनाये जाने वाले प्रोटोकॉल पर राज्य मुख्यालय से वीडियो-कान्फ्रेंसिंग के माध्यम से दिनांक 25.03.2020 को प्रशिक्षण प्रदान किया गया था, जिनकी सूची अनुलग्नक-7 पर संलग्न है। इन मास्टर ट्रेनरों का द्वितीय प्रशिक्षण सत्र दिनांक 27.3.2020 को अपरान्ह 3.00 बजे वीडियो-कान्फ्रेंसिंग के माध्यम से आयोजित किया गया।

(2) उक्त दल-1 एवं दल-2 हेतु चिह्नित सभी 50 स्टाफ सदस्यों को मास्टर ट्रेनरों द्वारा दिनांक 30 मार्च, 2020 तक कम से कम दो सत्रों में प्रशिक्षण प्रदान किया जायेगा। उचित प्रशिक्षण के बिना किसी भी व्यक्ति की तैनाती कोविड समर्पित चिकित्सालयों में नहीं की जायेगी। उक्त प्रशिक्षण मुख्य चिकित्साधिकारी अथवा अन्य किसी वरिष्ठ चिकित्साधिकारी की देखरेख में सम्पन्न होगा।

(3) मुख्य चिकित्साधिकारी द्वारा कोविड समर्पित एल.1 चिकित्सा इकाई में तैनात किए जाने वाले प्रत्येक दल के सदस्यों के प्रशिक्षण से संबंधित सूचनाओं को अद्यतन करते हुए सुरक्षित रखा जायेगा।
• All logistics are being transported to UPMSC warehouses in the Districts
• These will be readily made available to COVID- Hospitals as per requirement
• Necessary to stop misuse and indiscriminate distribution to non-eligible persons
• To ensure that Health staff gets these supplies when they require them
• Level 1 Hospitals to be made ready with all supplies by Sunday.
• Operationalization of Hospitals in Districts where we already have positive cases.
• As new cases will appear in other Districts, L1 Hospitals will be operationalized there.
• Initially, till the time L2 Hospitals are made operational, Serious patients will be referred to L3 Hospitals at Medical Colleges.
L – 2 AND L3 FACILITIES
L-2 Facilities

- A dedicated health facility at Distt. / DIVISIONAL LEVEL to manage any emergency case and referred cases from L1 Covid Hospitals
- All non complicated cases requiring ICU facilities.
- Availability of ventilators with adequate oxygen supply
- 1 MO and 2 nurses for every 25 beds.
- Separate entry and exit doors with adequate infection control logistics.
- Laboratory services - 8 AM to 8 PM
- X-ray technician on call
L - 3 Facilities

• A dedicated health facility at Medical College to manage any emergency case.

• All complicated cases requiring ICU/ Ventilator facilities.

• There must be optimum number of ventilators with adequate oxygen in these facilities.

• Separate entry and exit doors with adequate infection control logistics.
<table>
<thead>
<tr>
<th>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></td>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Screening area help desk/ Registration counter</td>
<td>Provide information to patients</td>
<td>Moderate</td>
<td>N-95 mask</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Temperature recording station</td>
<td>Record temperature with hand held thermal recorder</td>
<td>Moderate</td>
<td>N 95 mask</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Holding area/ waiting area</td>
<td>Nurses / paramedic interacting with patients</td>
<td>Moderate</td>
<td>N 95 mask</td>
<td>Minimum distance of one meter needs to be maintained.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gloves</td>
<td></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>No aerosol generating procedures should be allowed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gloves</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Sanitary staff</td>
<td>Cleaning frequently touched surfaces/ Floor/ cleaning linen</td>
<td>Moderate</td>
<td>N-95 mask</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gloves</td>
<td></td>
</tr>
</tbody>
</table>
HEALTH FACILITY PREPAREDNESS
ARAES FOR ATTENTION

• Orientation of the Health facility staff on hand hygiene, mask management and donning/doffing PPE and adequate supplies.
• Extreme care for Infection prevention measures
• Ensuring sufficient logistics are available at all times
• Ensuring all protocols are adhered to
• Staff nurses and Sweepers need most rigorous training for infection prevention
• Repeated Disinfection of floors, all surfaces, equipment and biomedical waste (BMW) management with daily supervision as per guideline is essential for protection of Staff

DEVELOPED BY SSU UTTAR PRADESH WITH SUPPORT FROM UPTSU AND WHO-NPSP
The Facility In-charge will need to review & plan

- Orientation of the Health facility staff on hand hygiene, mask management and donning/doffing PPE and adequate supplies.

- Case management including diagnostics and oxygen support-
  - Provide masks to the patient and advise cough etiquette & hand hygiene.
  - Isolation room with linkage for laboratory testing or Quarantine with follow up.
  - Provision of intensive care with ventilator support.
FACILITY PREPAREDNESS

• **CMS/MS & CMO** will need to ensure procurement and availability of the following logistics:

  • **PPE** like triple layer mask and N95 mask, goggles, gloves, alcohol hand-sanitizers and surface disinfectants like hypochlorite solution (bleach) in quantity to last at least 2 months.
  • **Infra-red thermometer** or thermal scanner for measuring body temperature.
  • **Pulse oximeter** for measuring pulse, P O2 level and referral to an ICU with Ventilator if required.
  • **Digital sphygmomanometer** for measuring blood pressure and digital glucometer.
  • **Oxygen supply**/ Oxygen concentrator with Oxygen delivery interfaces like Nasal cannula, nasal prongs, simple face mask, and mask with reservoir bag), Nebulizer machine and Ventilator/ ICU support.
  • **Antibiotics** for pneumonia including Azithramycin, Amoxycillin with Clavalunic acid and cephalosporins.
  • **Adjunct therapy**: drugs being used as for COVID-19: Hydroxychloroquine and Oseltamavir.
  • **Additional supply** of Bed linen, towels etc. for quarantine / Isolation rooms.
The CMS of District Hospital along with CMO will need to review the COVID-19 preparedness of the hospital and assign specific responsibilities including:

1. **COVID-19 Hospital Nodal officer,**
2. **An Infection control team to review daily the ICP measures.**
3. **24 X 7 duty roster for health care staff.**

1. **Orientation** of facility health-care staff on Hand hygiene, donning/doffing of PPE and mask management
2. **Case management** including diagnostics, oxygen support, isolation ward and Quarantine
3. **Disinfection measures** of surfaces, equipment's and bio-medical waste management
4. **Notification,** record keeping and linkage with facility for Laboratory testing
5. **Provision for Intensive care (ICU) with ventilator support**
STATE OF READINESS - REQUIREMENT/ EXPECTATIONS

- Availability of Logistics
- Inventory listing
- Functionality of equipment
- Disinfection and Waste disposal protocol with clear guidelines and responsibility delegation

Identification of Isolation ward
- Identification and duty roster of staff for Isolation ward
- Additional training of Isolation staff

Training of all Hospital Staff
- Clinicians
- Staff Nurses
- Pharmacists
- Laboratory personnel
- Cleaning staff
Establishment of Isolation Ward

• Well ventilated (Windows to remain closed but functional exhaust fan should be available as per the size of the ward).
• Separate entry (Not common with other areas of the Hospital).
• Proper and clean toilets.
• Proper Hand-washing facility with elbow tap.
• Color coded dust-bins.
• Separate logistics available inside the ward-
  • Infra-red thermometer, PPE, N-95, Gloves, Triple layered masks, Alcohol based hand sanitizer, Surface Disinfectant, Waste disposal bags.
  • Proper Waste disposal as per Waste Disposal Guidelines (Waste not to be stored with other waste from the Hospital, to be handed over directly to the Waste disposal agency).
• All patients under isolation and Medical staff including the cleaning staff to use N-95.
• All Medical staff to use PPE inside this ward.
Infection Prevention Control
BMW Management
Benefits of IPC

- Protecting yourself
- Protecting your patients
- Protecting your family, community & environment
General advice for COVID-19

• Avoid close contact with people suffering from acute respiratory infections

• Frequent *hand hygiene*, especially after direct contact with ill people or their environment

• People with symptoms of acute respiratory infection should practice
  • respiratory etiquette
  • wear a medical mask
  • seek medical care for advice
IPC strategies for preventing/limiting the spread of COVID-19

• Applying *standard precautions* for all patients

• Ensuring *triage, early recognition, and source control*

• Implementing empiric additional precautions for suspected cases of COVID-19 infection

• Implementing administrative controls

• Using *environmental* and engineering controls.
Elements of Standard Precautions

1. Hand hygiene
2. Respiratory hygiene (etiquette)
3. PPE according to the risk
4. Safe injection practices, sharps management and injury prevention
5. Safe handling, cleaning and disinfection of patient care equipment
6. Environmental cleaning
7. Safe handling and cleaning of soiled linen
8. Waste management
Hand Hygiene

- Best way to prevent the spread of germs in the health care setting and community
- Our hands are our main tool for work as health care workers-and they are the key link in the chain of transmission.
Hand hygiene: WHO 5 moments

1. BEFORE TOUCHING A PATIENT
2. BEFORE CLEAN/ASEPTIC PROCEDURE
3. AFTER BODY FLUID EXPOSURE RISK
4. AFTER TOUCHING A PATIENT
5. AFTER TOUCHING PATIENT SURROUNDINGS

Hand hygiene: HOW

- Use appropriate product and technique
- An alcohol-based hand rub product is preferable, if hands are not visibly soiled
  - Rub hands for 20–30 seconds!
- Soap, running water and single use towel, when visibly dirty or contaminated with proteinaceous material
  - Wash hands for 40–60 seconds!
How to handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds

1a. Apply a palmful of the product in a cupped hand, covering all surfaces;
1b. Rub hands palm to palm;

2. Rub hands palm to palm;

3. Right palm over left dorsum with interlaced fingers and vice versa;

4. Palm to palm with fingers interlaced;

5. Backs of fingers to opposing palms with fingers interlaced;

6. Rotational rubbing of left thumb clasped in right palm and vice versa;

7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8. Once dry, your hands are safe.

How to handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40–60 seconds

0. Wet hands with water;

1. Apply enough soap to cover all hand surfaces;

2. Rub hands palm to palm;

3. Right palm over left dorsum with interlaced fingers and vice versa;

4. Palm to palm with fingers interlaced;

5. Backs of fingers to opposing palms with fingers interlocked;

6. Rotational rubbing of left thumb clasped in right palm and vice versa;

7. Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

8. Rinse hands with water;

9. Dry hands thoroughly with a single use towel;

10. Use towel to turn off faucet;

11. Your hands are now safe.

Respiratory hygiene/etiquette

Reduces the spread of microorganisms (germs) that cause respiratory infections (colds, flu).

• Turn head away from others when coughing/sneezing
• Cover the nose and mouth with a tissue.
• If tissues are used, discard immediately into the trash
• Cough/sneeze into your sleeve if no tissue is available
• Clean your hands with soap and water or alcohol based products

Do not spit here and there

PPE for use in health care for COVID-19

- Face Mask
  - Nose + mouth
- N95 Mask
  - Nose + mouth
- Face shield
  - Eyes + nose + mouth
- Goggle
  - Eyes
- Gown
  - Body
- Apron
  - Body
- Gloves
  - Hands
- Head cover
  - Head + hair
Donning and doffing of PPE

Order of wearing the PPE
1. Footwear Cover
2. Body Gown
3. Headgear
4. Surgical Mask
5. Eye Goggles
6. Hand Gloves

Order of removing PPE
1. Gloves
2. Gown
3. Eye Goggles
4. Mask
5. Head Gear
6. Shoe Cover
<table>
<thead>
<tr>
<th>Setting</th>
<th>Activity</th>
<th>Risk</th>
<th>Recommended PPE</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulance Transfer to designated hospital</td>
<td>Transporting patients not on any assisted ventilation</td>
<td>Moderate risk</td>
<td>Gloves N 95 masks</td>
<td></td>
</tr>
<tr>
<td>Management of SARI patient while transporting</td>
<td>High risk</td>
<td>Full complement of PPE</td>
<td>When aerosol generating procedures are anticipated</td>
<td></td>
</tr>
<tr>
<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>
Principles for using PPE

- Always clean your hands before and after wearing PPE
- PPE should be available where and when it is indicated
  - in the correct size
  - select according to risk or per transmission based precautions
- Always put on before contact with the patient
- Always remove immediately after completing the task and/or leaving the patient care area
- NEVER reuse disposable PPE
- Clean and disinfect reusable PPE between each use
- Change PPE immediately if it becomes contaminated or damaged
- PPE should not be adjusted or touched during patient care; specifically
Use of disinfectants

• Bleach (sodium hypochlorite) 1% for disinfection of material contaminated with body fluids

• Several concentrations may be marketed (e.g., 2.5%, 5%)
  ❑ If 5% solution available, mix 1 part 5% solution with 5 parts clean water
  ❑ If 2.5% solution available, mix 2 parts 2.5% solution with 5 parts clean water

• Clean and disinfect patient areas daily, with particular attention to frequently touched surfaces – counter tops, door handles, medical equipment.

• Use bleaching powder (16g/1L water as per state guideline) for disinfection of toilets/bathrooms
Environment cleaning, disinfection and BMWM

- It is important to ensure that environmental cleaning and disinfection procedures are followed consistently and correctly.
- Thorough cleaning environmental surfaces with water and detergent and applying commonly used hospital level disinfectants (such as sodium hypochlorite or ethanol, 70%) are effective and sufficient procedures. (Suggested frequency from state for disinfection every 3-4 hour)
- Medical devices and equipment, laundry, food service utensils and medical waste should be managed in accordance with safe routine procedures. (Suggested frequency from state, bed linen to be change with the shift of staff every 8 hourly)
Patients suspected or confirmed COVID-19 (1)

- **Contact and droplet precautions** for all patients with suspected or confirmed COVID-19
- Airborne precautions are recommended **only for aerosol generating procedures** (i.e. open suctioning of respiratory tract, intubation, bronchoscopy, cardiopulmonary resuscitation).
- Preferably patient should be in a single room:
  - natural ventilation with air flow of at least 160 L/s per patient or
  - in negative pressure rooms with at least 12 air changes per hour and controlled direction of air flow when using mechanical ventilation
- Cohort: All patients with respiratory illness should be in a single room, or **minimum 1m away from other patients** when waiting for a room
- Dedicated & trained HCW
- **HCW to wear PPE**: a medical mask, goggles or face shield, gown, and gloves
- **Hand hygiene** should be done **any time the WHO “5 Moments” apply**, and before PPE and after removing PPE
Patients suspected or confirmed COVID-19 (2)

- Equipment should be single use when possible, dedicated to the patient and disinfected between uses.
- Avoid transporting suspected or confirmed cases – if necessary, have patients wear masks. HCW should wear appropriate PPE.
- Routine cleaning of the environment is crucial.
- Limit the number of HCW, visitors, and family members who are in contact with the patient. If necessary, everyone must wear PPE.
- All persons entering the patients room (including visitors) should be recorded (for contact tracing purposes).
- Precautions should continue until the patient is asymptomatic.
Use of masks

• Use of Mask- limit spread of certain respiratory diseases
• Mask alone is insufficient to provide the adequate level of protection and other equally relevant measures should be adopted – Hand hygiene
• Wearing medical masks when not indicated may cause
  • unnecessary cost
  • procurement burden
  • create a false sense of security that can lead to neglecting other essential measures such as hand hygiene practices.
• Using a mask incorrectly may hamper its effectiveness to reduce the risk of transmission.
Use of Mask: Home care

- Individuals with suspected infection with mild respiratory symptoms
- Relatives or caregivers

Along with

- hand hygiene
- keep distance from affected individual as much as possible (at least 1 meter)
- improve airflow in living space by opening windows as much as possible
- Mask management
Use of Mask: Health Care Settings

Individuals with respiratory symptoms should:

• wear a medical mask while in waiting areas or during transportation within the facility;

• wear a medical mask when staying in cohorting areas dedicated to suspected or confirmed cases;

• do not wear a medical mask when isolated in single rooms but cover mouth and nose when coughing or sneezing with disposable paper tissues.

Health care workers should:

• wear a medical mask while providing care to the patient

• Use a particulate respirator N95 (NIOSH certified), FFP2 (EU standard), or equivalent, when performing aerosol generating procedures (tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy.)
Masks management

• place mask carefully to cover mouth and nose and tie securely to minimise any gaps between the face and the mask
• while in use, avoid touching the mask
• remove the mask by using appropriate technique (i.e. do not touch the front but remove the lace from behind)
• after removal or whenever you inadvertently touch a used mask, clean hands by using an alcohol-based hand rub or soap and water if visibly soiled
• replace masks with a new clean, dry mask as soon as they become damp/humid
• do not re-use single-use masks
• discard single-use masks after each use and dispose of them immediately upon removal
## BMW: Colour coding & treatment

<table>
<thead>
<tr>
<th>COLOR</th>
<th>TYPE OF CONTAINER</th>
<th>OPTION</th>
<th>WASTE CATEGORY</th>
<th>TREATMENT OPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>Yellow plastic bag in plastic bin</td>
<td>Cat 1,2,3,5 6 &amp; 10</td>
<td>Anatomical, animal, microbiology, soiled</td>
<td>Incineration/deep burial / Plasma Pyrolysis</td>
</tr>
<tr>
<td>Red</td>
<td>Red plastic bag in plastic bin</td>
<td>Cat 7</td>
<td>Disposable items</td>
<td>Autoclave/microwave/chemical treatment</td>
</tr>
<tr>
<td>Blue</td>
<td>Blue Puncture proof box</td>
<td>Cat 4</td>
<td>Glassware / Metallic body implants</td>
<td>Disinfection / Autoclaving / Microwaving / Hydroclaving</td>
</tr>
<tr>
<td>Waste Sharps</td>
<td>Puncture proof, Leak proof, Tamper proof containers</td>
<td>Cat 4, Cat 9 &amp; 10</td>
<td>Sharp metals discarded medicine, chemical &amp; incineration ash</td>
<td>Autoclaving / dry heat sterilization followed by Shredding or Mutilation/landfill</td>
</tr>
</tbody>
</table>
Conclusions

• IPC is key for containment
• Based on key principles- Hand Hygiene, Respiratory etiquette, safe distance
• Hospital Infection Prevention & control- Standard & Additional precautions
  • Protect Yourself and the community
  • Triage & Admissions
  • PPE
    • Judicious and Appropriate use
    • Pay attention to donning and doffing
• Home care precautions
THE LABORATORY TESTS FOR COVID-19 DISEASE

• **Sample:** The sample is collected from the nostril/throat using a nasopharyngeal viral swab with aseptic precaution.

• **Screening Test:** This is a PCR (Polymerase chain reaction) test which detects the RNA of the virus. This can be positive for other viruses also.

• **Confirmatory Test:** This is a “Reverse transcriptase test” which uses a probe to convert it into DNA and this is specific for the COVID-19 virus (SARS-COV2) and is the confirmatory test.

• The tests are available at government medical colleges,

  1. KGMU Lucknow
  2. BHU Varanasi
  3. AMU, Aligarh in U.P
  4. SGPGI Lucknow
  5. LLRM Meerut
  6. Command Hospital (for paramilitary and military)

Results are usually available within 24-48 hours.
LABORATORY TESTS FOR COVID-19 DISEASE
Sample Collection – Nasopharyngeal Swab

RESPIRATORY MATERIAL* (nasopharyngeal and oropharyngeal swab in ambulatory patients and sputum (if produced) and/or endotracheal aspirate or bronchoalveolar lavage in patients with more severe respiratory disease)

Tilt head backwards
Insert flexible fine-shafted polyester swab into nostril and back to nasopharynx
Leave in place a few seconds
Withdraw slowly; rotating motion
Over VTM
Nasopharyngeal Secretions

- **VIRUS TRANSPORT MEDIA (VTM)**
- Allows organisms (pathogens and contaminants) to survive
- Non-nutritive - does not allow organisms to proliferate
Labeling specimens

OVER PRIMARY RECEPTACLE

1. Patient’s name
2. Clinical specimen
3. Unique ID number (Research/Outbreak)
4. Specimen type
5. Date, time and place of collection
6. Name/initials of collector

Case investigation form

EPIDEMIOLOGIST SENDS:

Patient information
- Age (or date of birth), Sex, Complete address

Clinical information
- Date of onset of symptoms, clinical history, risk factors or contact history where relevant

Laboratory information
- acute or convalescent specimen
- other specimens from the same patient

Line listing – if large number of patients
Transport regulations

- Transport of infectious substances is subject to strict national and international regulations:
  - proper use of packaging materials
  - proper labelling, notification

- Compliance:
  - reduces likelihood of damaging packages
  - minimizes exposure
  - improves carrier’s efficiency and confidence in package delivery
Triple packaging

• Main goals
  • protects the environment, the carrier
  • protects the sample
    • arrival in good condition for analysis

• If triple packaging not available
  • prepare according to international dangerous goods transportation rules (see IATA guidelines)

• Three layers of protection are needed:
  • primary receptacle
  • secondary packaging
  • outer packaging

• IATA shipping guidelines provide details about definitions, packaging requirements, markings and labels, accompanying documentation, notification protocols and refrigerants
THE BASIC TRIPLE PACKAGING SYSTEM

**PRIMARY RECEPTACLE**
- Leak-proof specimen container
- Packaged with sufficient absorbent material to absorb the entire content of the primary receptacle in case of breakage

**LEAK-PROOF SECONDARY CONTAINER**
- Encloses and protects the primary receptacle(s)
  - several cushioned primary receptacles may be placed in one secondary packaging
  - sufficient additional absorbent material to absorb all fluid in case of breakage

**OUTER PACKAGING**
- Secondary packaging(s) are placed in outer shipping packaging with suitable cushioning material
- Outer packaging protects contents from outside influences, physical damage, while in transit
- Smallest overall external dimension 10 x 10 cm

**LABELING EXAMPLE (Label Over The Outer Packing)**
Infectious substances, Category BIATA Packing Instruction 650, “Diagnostic specimens” (UN 3373)
LABELING EXAMPLE (Label Over The Outer Packing)

Category B, “650 package” UN 3373 No biohazard label
DETAILS ON THE OUTER PACKING OF SAMPLES

SAMPLE TO BE SENT TO-
DEPARTMENT OF MICROBIOLOGY
KGMU, LUCKNOW, UP
Contact: Dr Danish M: 98895 48323

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Traveler</th>
<th>Naso-pharyngeal Swab (Yes/No)</th>
<th>Serum (Yes/No)</th>
<th>Whole Blood (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SENDERS DETAILS AND ADDRESS WITH MOBILE NUMBER:
Name:
Designation:
Address:
Mobile Number

LINE LIST AS BELOW

UN 3373 LABEL AS BELOW

Category B, “650 package”
UN 3373
CLINICAL CASE MANAGEMENT

DEVELOPED BY SSU UTTAR PRADESH WITH SUPPORT FROM UPTSU AND WHO-NPSP
### Clinical case management

<table>
<thead>
<tr>
<th>L 1 FACILITIES</th>
<th>L 2-3 FACILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Early supportive therapy and monitoring</td>
<td>• Early supportive therapy and monitoring</td>
</tr>
<tr>
<td>• Antibiotics and Antipyretics</td>
<td>• Antibiotics and Antipyretics</td>
</tr>
<tr>
<td>• Intravenous fluids</td>
<td>• Intravenous fluids</td>
</tr>
<tr>
<td>• Oxygen Therapy</td>
<td>• Oxygen Therapy</td>
</tr>
<tr>
<td>• Refer to L2-L3 Level if there are any complications</td>
<td>• Mechanical Ventilation of severe cases (40%)</td>
</tr>
<tr>
<td>• 80-85% of total patients will need only L1 Level support. They will recover and go back home</td>
<td>• Use of Oximeter highly recommended</td>
</tr>
<tr>
<td></td>
<td>• Intubation, ICU, ECMO required for severe patients</td>
</tr>
</tbody>
</table>

DEVELOPED BY SSU UTTAR PRADESH WITH SUPPORT FROM UPTSU AND WHO-NPSP
SEVERE ACUTE RESPIRATORY INFECTIONS (SARI): DIAGNOSIS

MILD PNEUMONIA

Patient with pneumonia and no signs of severe pneumonia

Child with non-severe pneumonia has cough or difficulty breathing + fast breathing (in breaths/min): <2 months, ≥60; 2–11 months, ≥50; 1–5 years, ≥40

SEVERE PNEUMONIA

Adolescent or adult: fever or suspected respiratory infection, plus one of respiratory rate >30 breaths/min, severe respiratory distress, or SpO2 <90% on room air

Child with cough or difficulty in breathing, plus at least one of the following: central cyanosis or SpO2 <90%; severe respiratory distress (e.g. grunting, very severe chest indrawing); signs of pneumonia with a general danger sign: inability to breastfeed or drink, lethargy or unconsciousness, or convulsions.

ACUTE RESPIRATORY DISTRESS SYNDROME

Onset: new or worsening respiratory symptoms within one week of known clinical insult. Chest imaging (radiograph, CT scan, or lung ultrasound): bilateral opacities, not fully explained by effusions, lobar or lung collapse, or nodules

•Origin of oedema: respiratory failure not fully explained by cardiac failure or fluid overload. Need objective assessment (e.g. echocardiography) to exclude hydrostatic cause of oedema if no risk factor present

DEVELOPED BY SSU UTTAR PRADESH WITH SUPPORT FROM UPTSU AND WHO-NPSP
SARI Management: Oxygen support

MILD PNEUMONIA

SEVERE PNEUMONIA

ACUTE RESPIRATORY DISTRESS SYNDROME

MANAGE*

Early supportive therapy and monitoring

- Initiate oxygen therapy at 5 L/min and titrate flow rates to reach target SpO2 ≥ 90% in non-pregnant adults and SpO2 ≥ 92-95% in pregnant patients. Children with emergency signs (obstructed or absent breathing, severe respiratory distress, central cyanosis, shock, coma or convulsions) should receive oxygen therapy during resuscitation to target SpO2 ≥ 94%; otherwise, the target SpO2 is ≥ 90%.

- Start empiric antibiotics if you suspect sepsis but do not do fluid overload. Send sample for blood culture for sensitivity but do not delay start of antibiotics for testing. Do not use steroids routinely.

Management of hypoxemic respiratory failure and ARDS

Facemask with reservoir bag (flow rates of 10-15 L/min, which is typically the minimum flow required to maintain bag inflation: FiO2 0.60-0.95)

- High-flow nasal oxygen (HFNO) or non-invasive ventilation (NIV) should only be used in selected patients with hypoxic respiratory failure.
Discharge policy for admitted nCoV positive patients

A. **Case Scenario 1 : Admission**
   - 1st Sample Collection-Negative
     Patient to be discharged after becoming asymptomatic
   - Follow up for 28 days

B. **Case scenario 2: Admission**
   a. 1st Sample Collection-positive
      Patient to be kept admitted
   b. 2nd Sample to be taken after the patient becomes asymptomatic. If – Negative,
   c. 3rd Sample to be taken after 24 hours of 2nd Sample. If – Negative then discharge if patient is Clinically stable
   d. If any of the 2nd or 3rd samples is positive, repeat sampling till you get 2 negative samples 24 hours apart
   e. Discharge if patient is Clinically stable
   f. Follow up for 28 days
Policy for disposal of dead-bodies of nCoV positive patients
Policy for disposal of dead-bodies of nCoV positive

Removal of the body from the isolation room or area

- The health worker attending to the dead body should perform hand hygiene, ensure proper use of PPE (water resistant apron, goggles, N95 mask, gloves).
- All tubes, drains and catheters on the dead body should be removed.
- Any puncture holes or wounds (resulting from removal of catheter, drains, tubes, or otherwise) should be disinfected with 1% hypochlorite and dressed with impermeable material.
- Apply caution while handling sharps such as intravenous catheters and other sharp devices. They should be disposed into a sharps container.
- Plug Oral, nasal orifices of the dead body to prevent leakage of body fluids.
- If the family of the patient wishes to view the body at the time of removal from the isolation room or area, they may be allowed to do so with the application of standard precautions.
Policy for disposal of dead-bodies of nCoV positive cont...

• Place the dead body in leak-proof plastic body bag. The exterior of the body bag can be decontaminated with 1% hypochlorite. The body bag can be wrapped with a mortuary sheet or sheet provided by the family members. The body will be either handed over to the relatives or taken to mortuary.

• All used/soiled linen should be handled with standard precautions, put in biohazard bag and the outer surface of the bag disinfected with hypochlorite solution.

• Used equipment should be autoclaved or decontaminated with disinfectant solutions in accordance with established infection prevention control practices.

• All medical waste must be handled and disposed of in accordance with biomedical waste management rules.
Policy for disposal of dead-bodies of nCoV positive cont.........

• The health staff who handled the body will remove personal protective equipment and will perform hand hygiene.

Environmental cleaning and disinfection

• All surfaces of the isolation area (floors, bed, railings, side tables, IV stand, etc.) should be wiped with 1% Sodium Hypochlorite solution; allow a contact time of 30 minutes, and then allow to air dry
Policy for disposal of dead-bodies of nCoV positive patients cont...

**Handling of dead body in Mortuary**

- Mortuary staff handling COVID dead body should observe standard precautions.
- Dead bodies should be stored in cold chambers maintained at approximately 4°C.
- The mortuary must be kept clean. Environmental surfaces, instruments and transport trolleys should be properly disinfected with 1% Hypochlorite solution.
- After removing the body, the chamber door, handles and floor should be cleaned with sodium hypochlorite 1% solution.

**Embalming**

- Embalming of dead body should not be allowed.
Autopsies on COVID-19 dead bodies
Autopsies on COVID-19 dead bodies

**Autopsies should be avoided.** If autopsy is to be performed for special reasons, the following infection prevention control practices should be adopted:

- The Team should be well trained in infection prevention control practices.
- The number of forensic experts and support staff in the autopsy room should be limited.
- The Team should use full complement of PPE (coveralls, head cover, shoe cover, N-95 mask, goggles / face shield).
- Round ended scissors should be used
- PM40 or any other heavy duty blades with blunted points to be used to reduce prick injuries
- Only one body cavity at a time should be dissected
- Unfixed organs must be held firm on the table and sliced with a sponge – care should be taken to protect the hand
- Negative pressure to be maintained in mortuary. An oscillator saw with suction extraction of the bone aerosol into a removable chamber should be used for sawing skull, otherwise a hand saw with a chain-mail glove may be used
- Needles should not be re-sheathed after fluid sampling – needles and syringes should be placed in a sharps bucket.
- Reduce aerosol generation during autopsy using appropriate techniques especially while handling lung tissue
NOTIFICATION

• All suspect cases and contacts to be notified to the **District Surveillance Officer (DSO)**, **IDSP** and the CMO at the District Control Room by the health facility/ hospital nodal officer on daily basis.

• The DSO will coordinate the sample collection, contact tracing and testing of the cases for COVID-19. All cases and contacts will be line listed and tracked for follow up.

**FOR ANY INFORMATION REGARDING COVID 19 CONTACT**
Dr Mithilesh Chaturvedi, Director Vector Borne Diseases, Up(M:9415362556)
Dr Vikasendu Agarwal Joint Director-VBD/State Surveillance Officer, UP (M:9219793100)

E-MAIL ID FOR FOR ALL NOVEL CORONA VIRUS COMMUNICATION
ncov.idspup@gmail.com
THANK YOU