

Prevention of transmission of infection in a healthcare setting: for 2019- nCoV

Coronaviruses (CoV) belong to a family of viruses that cause illness ranging from the common cold to more severe diseases. A novel coronavirus (2019-nCoV) is a new strain that has not been previously identified in humans. The infection is spread through respiratory route and direct human contact. Healthcare personnel (HCP) are at risk of infection through respiratory routes and direct contact with infectious patients.

Standard recommendations to prevent infection spread include standard precautions, contact precautions and respiratory precautions.

Patients suspected of having 2019-nCoV infection should be shifted to the isolation facility from the triage area as soon as possible. The HCP should do this after donning appropriate PPE. The patient should wear mask/respirator.

Standard precautions

Health-care workers caring for PUI (Patient under investigation) patients should implement standard infection control precautions. **These include basic hand hygiene, use of personal protective equipment, respiratory etiquettes, and environmental disinfection.**

Patient placement

The PUI has to be admitted in an isolation room with negative pressure and at least 6 air changes per hour.

- Only essential personnel should enter the room. Implement staffing policies to minimize the number of HCP who enter the room.
- Facilities should keep a log of all persons who care for or enter the rooms or care area of these patients.
- Use dedicated or disposable noncritical patient-care equipment (e.g., blood pressure cuffs). If equipment will be used for more than one patient, clean and disinfect such equipment before use on another patient according to manufacturer's instructions.
- HCP entering the room soon after a patient vacates the room should use respiratory protection.

Precaution during Procedures & Sample Collection

- **1. When Performing Aerosol-Generating Procedures**
 - Procedures that are likely to induce coughing (e.g., sputum induction, open suctioning of airways) or procedures such as nebulisation should take place in an isolation facility and personnel should use respiratory protection as described above.
 - In addition:
 - Limit the number of HCP present during the procedure to only those essential
 - Clean and disinfect procedure room surfaces promptly as described in the section on environmental infection
- **2. Respiratory Specimen Collection**
 - Collecting diagnostic respiratory specimens (e.g., nasopharyngeal swab) are likely to induce coughing or sneezing. HCP collecting specimens for testing for 2019-nCoV from patients with known or suspected 2019-nCoV (i.e., PUI) should adhere to **Standard, Contact, and Airborne Precautions, including the use of eye protection.**

Hand Hygiene

Hand hygiene should be practised with **alcohol based hand rub solution or Hand washing** with antibiotic soap and water along with clean towels to wipe hands . HCP should perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves.

PPE

All workers must use PPE as per the OSHA guidelines for prevention of transmission of Respiratory pathogens

1. While working in PPE, HCP should have no skin exposed.
2. Steps and sequence of donning and removing PPE should be done as per CDC guidelines
3. The overall safe care in a facility must be overseen by an onsite manager at all times, and each step of every PPE donning/doffing procedure must be supervised by a trained observer to ensure proper completion of established PPE protocols.
4. N 95 masks are recommended for HCP while patients should wear 3 layered surgical mask

Administration must ensure sufficient stock of PPE in the Institute.

Gloves of proper size are to be worn all the times. Masks with goggles or chin-length face shields can be worn whenever splashes or droplets of potentially infectious materials may be anticipated

Along with that appropriate protective clothing such as gowns, aprons, lab coats or similar outer garments shall be worn depending upon the task and degree of exposure anticipated. PPE must not be readjusted during any time. Discontinuation of isolation precautions should be determined on a case-by-case basis,

Environmental decontamination

Contaminated work surfaces must be decontaminated with an appropriate disinfectant. Even in absence of visible contamination a regular time schedule should be made to disinfect the work area at frequent intervals. **1% Sodium hypochlorite** is an effective disinfectant. The working dilution should be freshly prepared using proper measurement.

Use disposable cleaning cloths, mop cloths, and wipes and dispose of these in leak-proof bags.

Biomedical waste management is as per the rules.

Training in standard precautions

The technical staff should have training in donning and doffing PPE and safe disposal after use.

Manage Visitor Access and Movement Within the Facility

- Restrict visitors from entering the room of known or suspected 2019-nCoV patients (i.e., PUI).

References- <https://www.cdc.gov/coronavirus/2019-ncov/index.html>

www.who.int/coronaviruse/20200126-ncov-ipc-during-health-care

- HICC AIIMS New Delhi