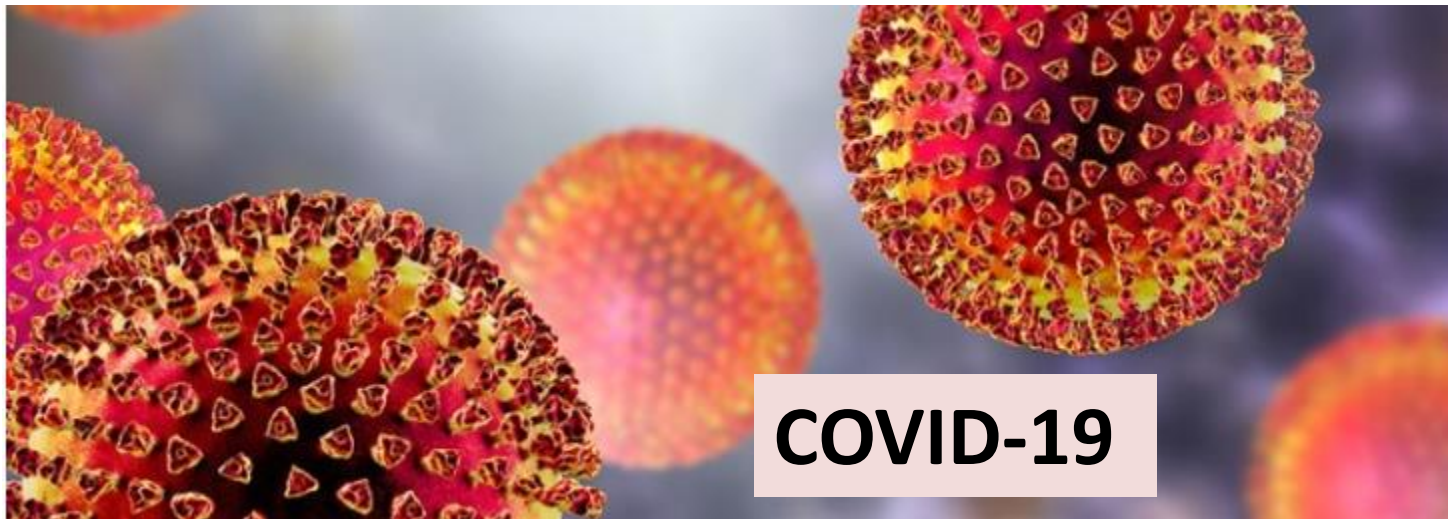


Recommendations for Suspected/Confirmed
Patients in Healthcare Settings

COVID-19: Infection Prevention and Control

Transmission-based Precaution



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রোগতত্ত্ব, রোগ নিয়ন্ত্রণ ও গবেষণা ইনস্টিটিউট (আইইডিসিআর) ও ন্যাশনাল ইনফ্লুয়েঞ্জা সেন্টার (এনআইসি), বাংলাদেশ



Government of the
People's Republic of Bangladesh

Infection control procedures

- Infection control procedures including
 - **Administrative** rules and engineering controls,
 - Appropriate use of **Personal Protective Equipment (PPE)**
 - **Environmental hygiene**, correct work practices,



All are necessary to prevent infections from spreading during healthcare delivery

Transmission-based Precaution:

- Additional precautions taken based on the specific transmission of the disease where standard precautions may not be sufficient to their own-these specific interventions control infection by interrupting the mode of transmission.

COVID-19 Virus are transmitted by three main routes

- **Droplet transmission**
- **Contact transmission**
- **Airborne transmission**

Droplet Transmission:

- Infectious agents that are transmitted through respiratory droplets (large particle droplets more than $5\mu\text{m}$ in size), are generated by a patient during coughing, sneezing or talking
eg;. Corona virus etc.
- Transmission via droplets requires close contact as droplets do not remain suspended in the air and generally only travel a short distance (≤ 1 metre) .

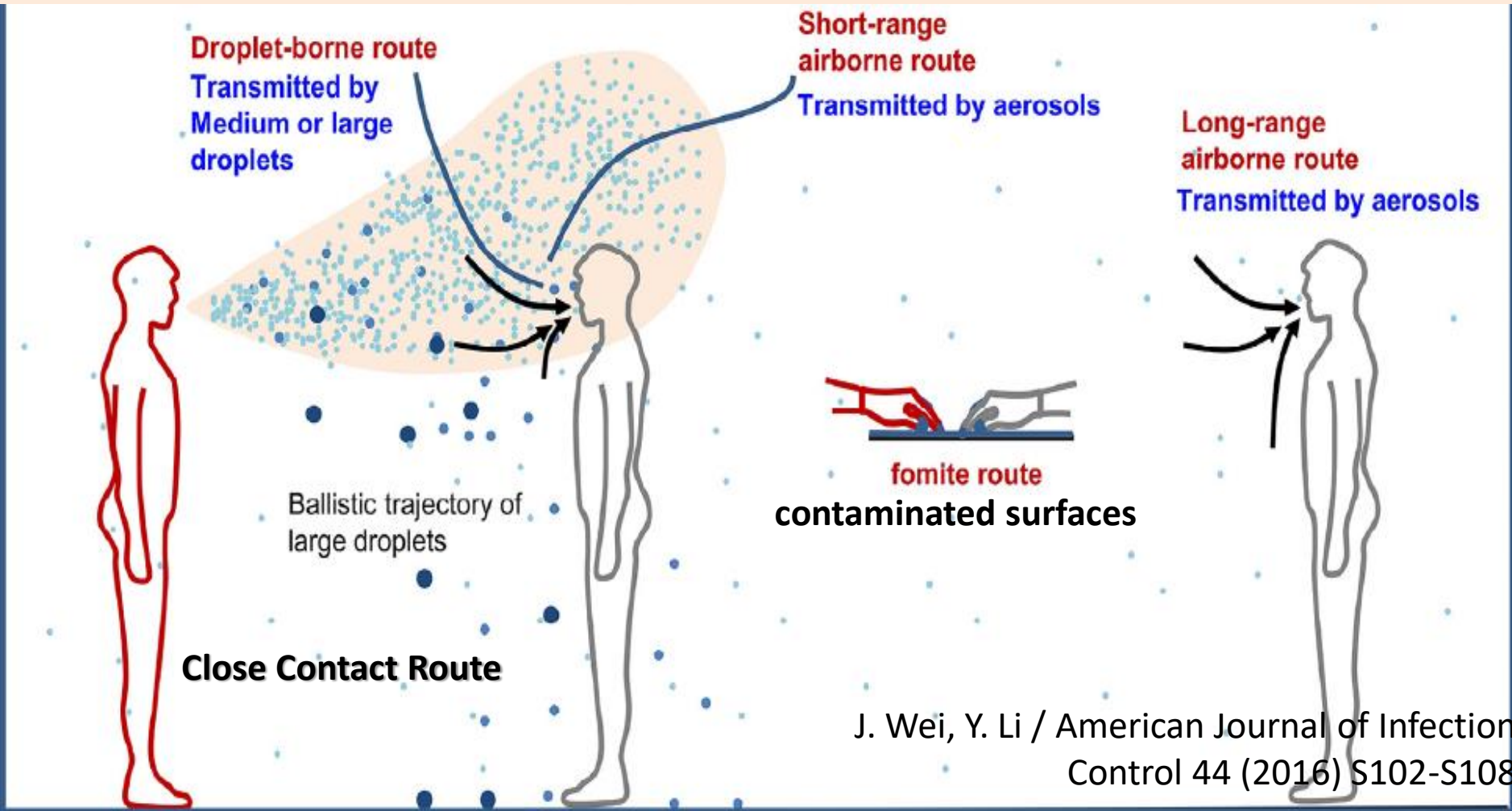
Contact transmission

- Infection occurs through **direct** contact between the source of infection and the recipient or **indirectly** through contaminated objects.

Airborne Transmission

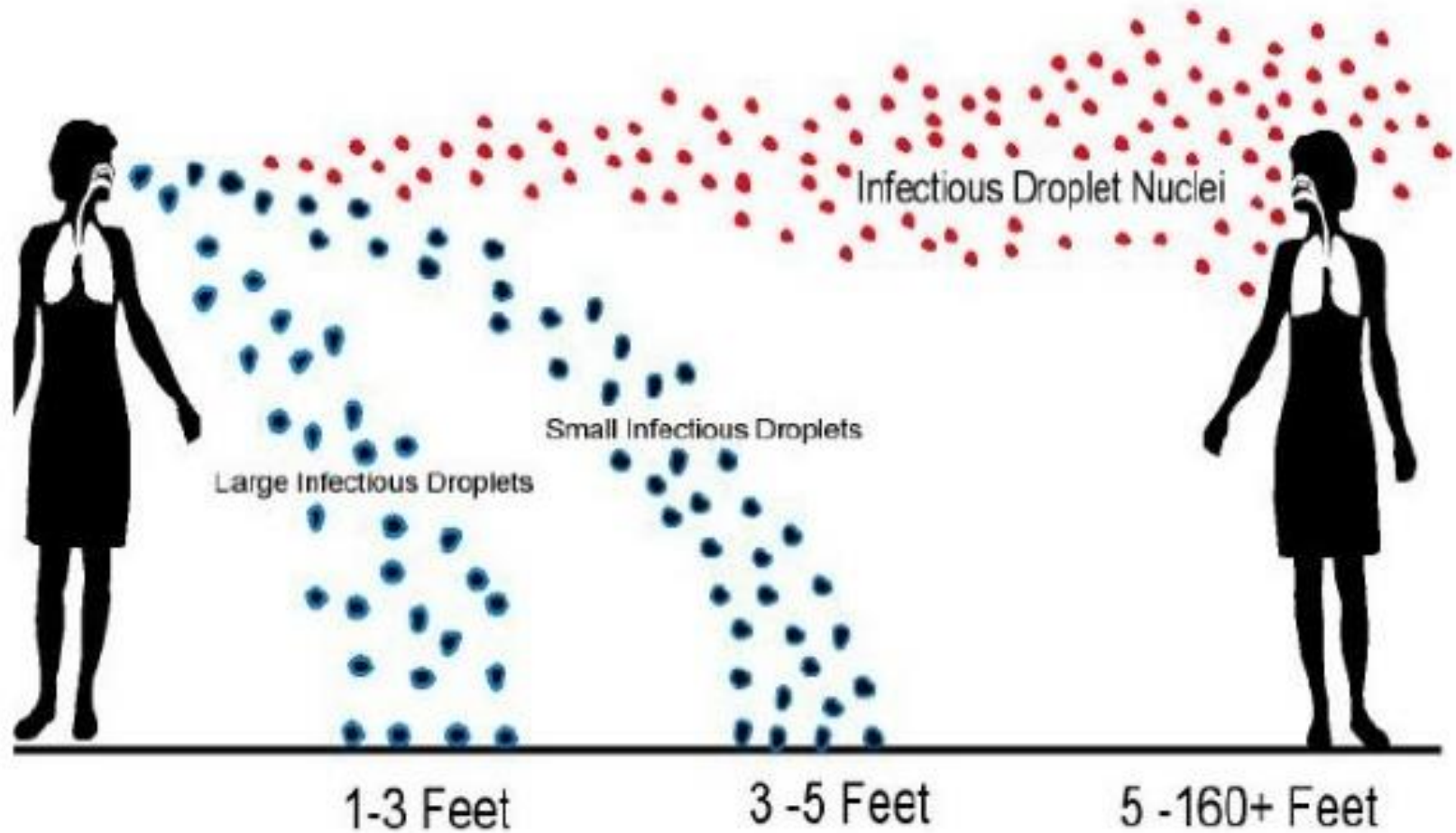
- Airborne transmission occurs through dissemination of either airborne droplet nuclei (small particle residue less than 5 μ m in size) or evaporated droplets containing microorganisms that remain suspended in the air for long periods of time or dust particles containing the infectious agent.
- Microorganisms carried in this manner can be dispersed widely by air currents and may be inhaled by a susceptible host within the same room or over a longer distance from the source patient.

The three major transmission routes: Long-range airborne, close contact and fomite.



- Large droplets ($>100\ \mu\text{m}$) : Fast deposition due to the domination of gravitational force
- Medium droplets between 5 and $100\ \mu\text{m}$
- Small droplets or droplet nuclei, or aerosols ($< 5\ \mu\text{m}$): Responsible for airborne transmission

Infectious Droplets & Droplet Nuclei travel lengths



Precautions are required in following Aerosol generating procedures

- Endotracheal intubation
- Open respiratory and airway suctioning
- Tracheostomy care
- Cardiopulmonary resuscitation
- Sputum induction
- Bronchoscopy
- Pulmonary function testing
- manual ventilation before intubation

Patient care activities

- ✓ Patient assessment **for triage**,
- ✓ Entering examination rooms or patient rooms to provide care or
- ✓ Clean and disinfect the environment,
- ✓ Obtaining clinical specimens,
- ✓ Handling soiled medical supplies or equipment, and
- ✓ Coming in contact with potentially contaminated environmental surfaces

Recommendations: For IP&C

1. Minimize Chance for Exposures
2. Adherence to Standard, Contact, and Airborne Precautions, Including the Use of Eye Protection
3. Manage Visitor Access and Movement Within the Facility
4. Implement Engineering Control (Ventilation)
5. Monitor and Manage ill and Exposed Healthcare Personnel
6. Train and Educate Healthcare Personnel
7. Implement Environmental Infection Control
8. Establish Reporting within Healthcare Facilities and to Public Health Authorities



Cough



Fever



Shortness of breath

Transmission-based Precaution

These precautions includes wearing

- Appropriate PPE
- Patient placement
- Patient transfer and
- Other IPC activities- disposable or dedicated patient-care equipment,
- Perform procedures in an adequately ventilated room – that is, natural ventilation with air flow

Minimize Chance for Exposures

➤ Before patient arrival

- Instruct patients and accompanying persons to call ahead or inform HCP upon arrival
- Follow SOPs for transportation

➤ Upon arrival, and During the Visit

- **Take steps to ensure.**
 - Respiratory hygiene and cough etiquette
 - Hand hygiene, and triage procedures
 - Consider posting visual alerts
- **Ensure that patients**
 - Suspected case, identify a separate, well-ventilated space that allows waiting patients to be separated by 3 feet
- **Ensure rapid triage and isolation.**
 - Implement triage procedures
 - Implement respiratory hygiene and cough etiquette and isolate
- **Provide supplies** for respiratory hygiene, cough etiquette and sanitizer

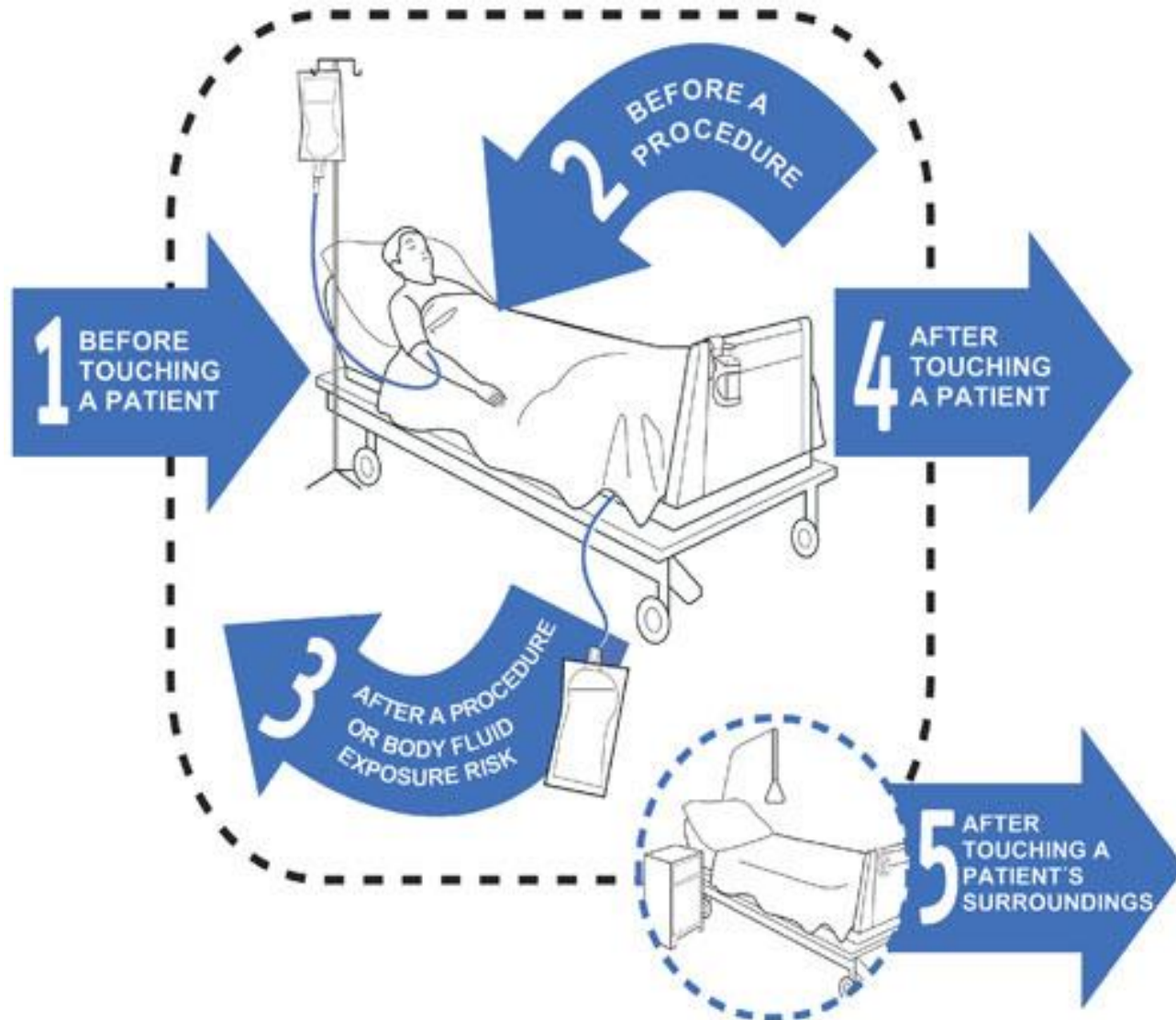


➤ Throughout the duration of the affected patient's presence in the healthcare setting

Adherence to Standard, Contact, and Airborne Precautions, Including the Use of Eye Protection

- Known or suspected **COVID-19** Patient Placement
 - Hand Hygiene
 - Personal Protective Equipment
 - Gloves
 - Gowns
 - Respiratory Protection
 - Eye Protection
 - Others, use caution
 - When Performing Aerosol-Generating Procedures
 - Diagnostic Respiratory Specimen Collection
 - Handling laboratory specimens from patients with suspected **COVID-19** infection
 - Duration of Isolation Precautions for suspected/confirmed **COVID-19** patients

5 Moments for Hand Hygiene



Recommendation type of PPE to be used in context of COVID-19, according to the setting, personnel and type of activity.

(According to WHO)

Setting	Hospital	Target personnel or patients	Activity	Type of PPE or procedure
Triage		Healthcare workers	<u>Preliminary screening</u> not involving direct contact ^c	Maintain spatial distance of at least 1 m. Medical mask
		<u>Patients</u> with respiratory symptoms.	Any	Maintain spatial distance of at least 1 m. Provide medical mask if tolerated by patient.
		<u>Patients</u> without respiratory symptoms.	Any	No PPE required
Laboratory		Lab technician	<u>Manipulation of respiratory samples.</u>	Medical mask Gown Gloves Eye protection (if risk of splash)
Administrative areas		All staff, including healthcare workers.	<u>Administrative tasks</u> that do not involve contact with COVID-19 patients.	No PPE required


Transmission-based Precaution

- **Collecting and handling laboratory specimens from patients with suspected COVID-19**
- **CXR, USG CT-Chest**

Setting Hospital	Target personnel or patients	Activity	Type of PPE or procedure
Waiting room	<u>Patients with respiratory symptoms.</u>	Any	Provide medical mask if tolerated. Immediately move the patient to an isolation room or separate area away from others; if this is not feasible, ensure spatial distance of at least 1 m from other patients.
	<u>Patients without respiratory symptoms.</u>	Any	No PPE required



Setting	Target personnel or patients	Activity	Type of PPE or procedure
Outpatient facilities	Hospital		
Consultation room	Healthcare workers	<u>Physical examination of patient with respiratory symptoms.</u>	Medical mask Gown Gloves Eye protection
	Healthcare workers	Physical examination of patients without respiratory symptoms.	PPE according to standard precautions and risk assessment.
	<u>Patients with respiratory symptoms.</u>	Any	Provide medical mask if tolerated.
	<u>Patients without respiratory symptoms.</u>	Any	No PPE required
	Cleaners	After and between consultations with patients with respiratory symptoms.	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes

Setting	Target personnel or patients	Activity	Type of PPE or procedure
Healthcare facilities			
Inpatient facilities			
Patient room	Healthcare workers 	Providing direct care to <u>COVID-19 patients.</u>	Medical mask Gown Gloves Eye protection (goggles or face shield).
		<u>Aerosol-generating</u> procedures performed on COVID-19 patients.	Respirator N95 or FFP2 standard, or equivalent. Gown Gloves Eye protection Apron
	Cleaners	Entering the room of <u>COVID-19 patients.</u>	Medical mask Gown Heavy duty gloves Eye protection (if risk of splash from organic material or chemicals). Boots or closed work shoes
	<u>Visitors</u> ^b	Entering the room of a <u>COVID-19 patient</u>	Medical mask Gown Gloves
Other areas of patient transit (e.g., wards, corridors).	All staff, including healthcare workers.	Any activity that does not involve contact with COVID-19 patients.	No PPE required

Manage Visitor Access and Movement Within the Facility

- Restrict visitors from entering the room of known or suspected COVID-19 patients
- Scheduled and controlled to allow for (if allowed) limited time
- All visitors should follow respiratory hygiene and cough etiquette precautions.

Implement Engineering Control

- Consider designing and installing engineering controls to reduce or eliminate exposures by shielding HCP and other patients from infected individuals.
 - **Physical barriers or partitions**
 - **Curtains between patients in shared areas**
 - **Spatial separation of at least 1 meter**
 - **Adequate ventilation**
 - **Closed suctioning systems for airway suctioning for intubated patients**

Monitor and Manage Ill and Exposed Healthcare Personnel

- **Movement and monitoring decisions** for HCP with exposure to COVID-19 should be made in consultation with public health authorities (Use SOPs).



Train and Educate

Healthcare Personnel (HCP)

- Training on preventing transmission of infectious agents
- HCP must be
 - Medically cleared/fit,
 - Trained, and
 - Fit tested for respiratory protection device use (e.g., N95).
- Ensure that HCP are educated, trained, and have practiced the appropriate use of PPE prior to caring for a patient, including attention to correct use of PPE and prevention

Implement Environmental Infection Control

- Dedicated medical equipment
- All non-dedicated, non-disposable medical equipment used for patient care should be cleaned and disinfected
- Ensure that environmental cleaning and disinfection procedures
- Routine cleaning and disinfection procedures as appropriate for COVID-19, in healthcare settings
- Management of laundry, food service utensils, and medical waste

Establish Reporting within Healthcare Facilities and to Public Health Authorities

- Promptly **alert key** facility staff
- Promptly notify IEDCR of patients with suspected or known COVID-19.
- Facilities should designate specific persons within the healthcare facility who are responsible for communication

Thank You
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