

# WELCOME TO ALL



**Topic:** Infection Prevention and Control (IPC)  
during health care when COVID-19 is suspected



# Introduction

- **CoViD-19 =?**
  - Co=Corona
  - Vi=Virus
  - D=Disease
  - 19=2019
- Coronaviruses (CoV), are RNA enveloped viruses.
- It cause illness ranging from the common cold to more severe diseases.



## Introduction (Cont...)

- **In December, 2019**, Wuhan, Hubei province, China, became the centre of an outbreak of this disease, which raised intense attention not only within China but internationally.
- **WHO** declared COVID-19 a **global pandemic** on **11 March 2020**.

## Objectives:

- ✓ To control and prevent infection among HCW.
- ✓ To limit transmission of COVID-19 in healthcare settings and among others.
- ✓ To guide Health care personnel for personal protection.
- ✓ To guide Health care personnel in case management in hospital.
- ✓ To guide safe practice in handling cases in isolation unit.

# Statistics of COVID-19

➤ In Bangladesh-(According to report on 24<sup>th</sup> April)

• New Case-503

• Total Case-4,689

• New Death-04

• Total Death-131

• New recovery-04

• Total Recovery-112

**Ref. DGHS, IEDCR**

# Case

## ➤ Suspected Case

- A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness of breath),
  - with no other etiology that fully explains the clinical presentation
  - a history of travel to or residence in a country/area or territory reporting local transmission of COVID-19 disease during the 14 days prior to symptom onset.

## Case (Cont...)

### ➤ **Probable case**

- A suspect case for whom testing for COVID-19 is inconclusive.

### ➤ **Confirmed case**

- A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.



# How COVID-19 spreads

➤ The virus get transmitted mainly from **person-to-person**:

- Close contact with infected person
- Respiratory droplets produced during coughing or sneezing (within about 3-6 feet)



# How COVID-19 spreads

- Touching contaminated surfaces/objects  
(e.g. table top, door handle, remote, telephone, flush handle, bed rail, saline stand, patient's bed linen, bedside wall, soap dispenser, Toilet seat, BP cuff, stethoscope, thermometer etc.)



## **Actions to prevent COVID-19**

- By preventing exposure to the virus through-
  - ✓ Personal protection: use PPE, wash/sanitize hands
  - ✓ Decontamination surfaces/rooms/equipment/items
  - ✓ Decontamination, management and dispose of waste
- No vaccine or specific antiviral available

# Personal protection

- Steps 1
  - ✓ Perform hand hygiene (hand wash or hand rub)
  - ✓ Avoid touching of eyes, nose and mouth during work
  - ✓ Ensure wearing PPE during patient care
  - ✓ Avoid travel to COVID-19 outbreak area
  - ✓ Limit mass gathering or avoid crowd

## Personal protection(Cont...)

- Steps 2
  - ✓ If sick/infected, report to authority, follow treatment management
  - ✓ Stay at home or isolation facilities
  - ✓ Wear mask
  - ✓ Wash hand before and after work
  - ✓ Maintain 3 feet distance from other
  - ✓ Decontaminate surface/equipment/material

## **Infection prevention and control (IPC) strategies in Health care settings**

1. Ensuring triage, early recognition, and source control  
(isolating patients with suspected COVID-19)
2. Applying standard precautions for all patients
3. Implementing empiric additional precautions (droplet and contact and, whenever applicable, airborne precautions) for suspected cases of COVID-19
4. Implementing administrative controls
5. Using environmental and engineering controls. .

## Ensuring triage

- Triage includes a system for assessing suspected COVID-19 cases having respiratory tract infection with travel history at outdoor or admission site to allow early recognition of possible COVID-19 patients and immediate separation or isolation of suspected COVID-19 patients from other patients (source control).

# Applying standard precautions for all patients

## ➤ **8 Elements** for Standard Precaution

1. Hand hygiene
2. Respiratory hygiene and cough etiquette
3. Personal protective equipment (PPE) use according to risk assessment
4. Injection safety practices
5. Decontaminate PPE, equipment, work surface, table, room etc
6. Safe handling of sample, case and waste
7. Environmental decontamination, and
8. Safe waste management



# 1. Hand hygiene

- Based on WHO-defined **5 critical moments**, hand hygiene is required to reduce risk of pathogen transmission-



Figure: WHO recommended five-moments for hand hygiene

# Methods of hand hygiene

## ➤ Materials used for hand hygiene

a) Soap and water  
(for 20-60 seconds)



Figure: Hand-washing with soap and water

b) Alcohol-based hand sanitizer  
(Hand rubbing needs 20-30secs)



# The steps of hand washing

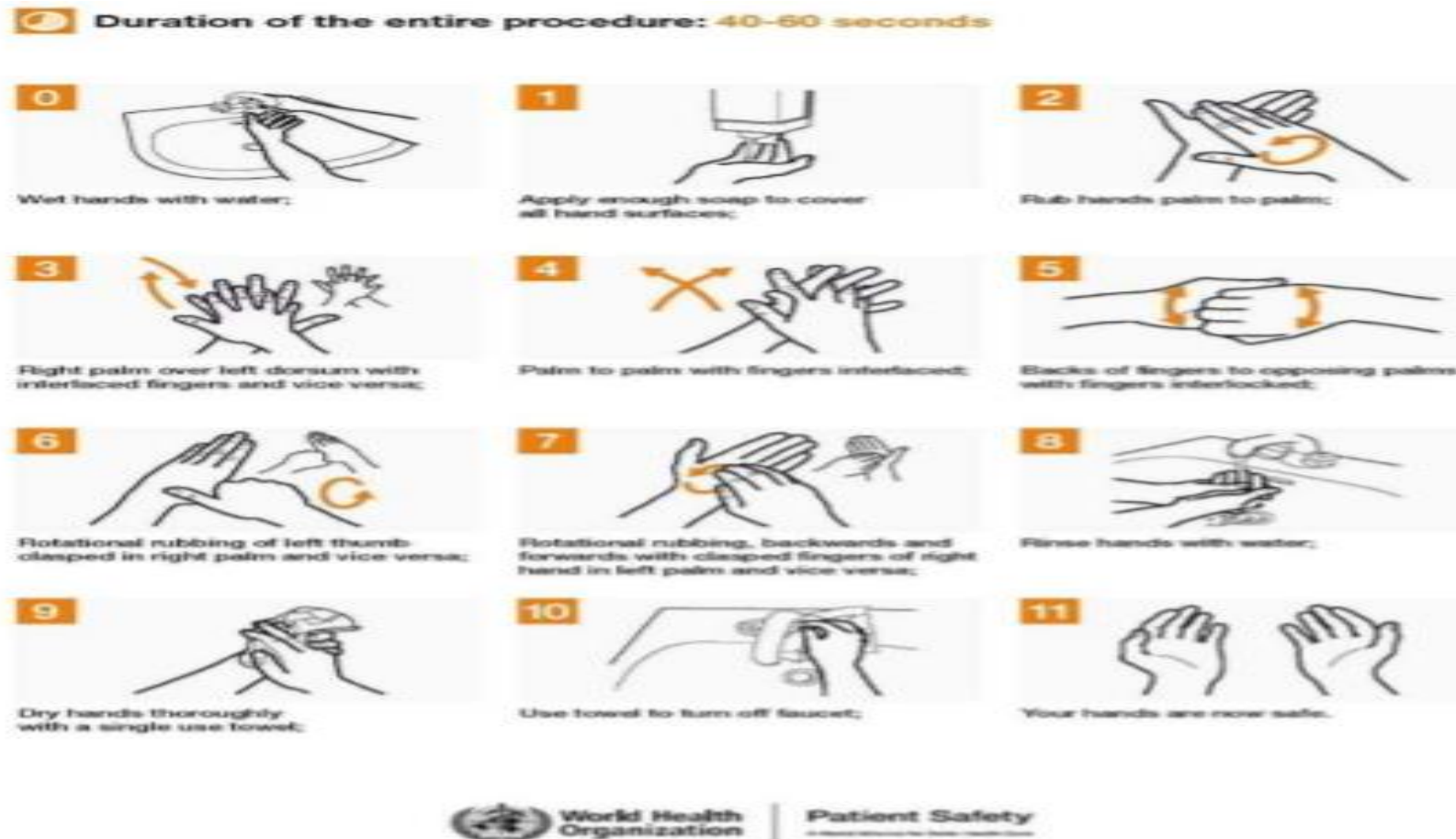


Figure: WHO recommended steps for washing hands with soap

## 2. Respiratory hygiene and cough etiquette

- Cover nose and mouth when coughing/sneezing with tissue or mask
- • Dispose of used tissues and masks
- • And perform hand hygiene after contact with respiratory secretions
- • In case of sudden episode, use upper arm during coughing and sneezing
- • Turn your head away from food while sneezing or coughing



## Remember:

- In resource limited setting, during sudden episode of coughing and sneezing-
  - using upper arm could be more convenient
  - avoid using bare hand palm
  - if use upper arm, do not touch your upper arm later

### 3. Personal Protective Equipment (PPE)

- **Personal protective equipment (PPE)** refers to wearable equipment that is designed to protect healthcare personnel from exposure to or contact with infectious agents.
- Types of PPE used in healthcare settings
  - Gloves-protect hands
  - Gowns/aprons-protect skin and/or clothing
  - Masks-protect mouth/nose
  - Respirators-protect respiratory tract
  - Goggles-protect eyes
  - Face shield- protect face, mouth, nose and eyes (rarely used in our country)
  - Shoe cover

## 4. Safe injection practices, sharps management and injury prevention

- Needle stick and other sharps injuries are a serious hazard in any healthcare setting.

### When needle stick injury potentially can occur?

- ✓ Sudden patient movement during the injection
- ✓ Recapping needles
- ✓ Transferring body fluids between containers
- ✓ Failing to dispose of used needles in puncture resistant sharp container
- ✓ Disposing of used needles and other sharp instruments

## Cont....

- If you get a needle stick injury. Following steps to be performed immediately-
  - ✓ Wash the wound with soap water immediately
  - ✓ Inform your supervisor and follow the instruction for further management
  - ✓ Protect yourself
  - ✓ Make sure the red (waste disposal) container within your reach while using syringe
  - ✓ Use of needle with caution
  - ✓ Safe handling and disposal of needles in red container
  - ✓ Prepare injections using aseptic techniques
  - ✓ Do not use needles/syringe for more than one patient
  - ✓ Disinfect the rubber septum on a medication vial with alcohol before piercing
  - ✓ Do not use fluid infusion sets for more than one patient



## 5. Dealing of spillage

- Any spills must be attended using PPE and decontaminating material.
- Spill kit should be kept ready at all hospital wards or labs.
- **Spill Kit :**
  - i. Bucket and plastic scoop or dustpan
  - ii. 1% Sodium Hypochlorite/sprit /ethanol
  - iii. Biohazard Bag/waste bag

## 6. Decontaminate Environmental surfaces, linen and waste management

### a. Environmental surface decontamination

Two key principles of environmental hygiene are-

#### i. **Step 1 – Cleaning:**

- Clean BEFORE disinfection
- Clean with mopping /washing with water-detergent

#### ii. **Step 2 – Disinfection:** Disinfect items and surfaces that are:

- In contact with a patient's secretion, touch or mucosa
- Frequently touched by healthcare workers

## Appropriate disinfectants for more details

- Type of disinfectant/decontaminants are:
  - Soap, detergent,
  - 0.5-1% sodium hypochlorite solution, (Chlotech, chlorox)
  - Bleaching solution(Mixture of 1 lit water + two table spoon full bleaching powder)
  - 70% ethanol – Lyzol
  - 2% Gluteraldehyde (Cidex),
  - Formaldehyde fumigation etc

## **b. Linen**

- Use clean or sterile cloths
- Change linen everyday
- Place soiled or used linen or cloths into a bag
- Decontaminate all cloths/dresses used by patients and health care workers by autoclave or washing with soap-water

## **c. Waste Management**

- Keep waste in biohazard
- Close/secure waste bag when two third to be filled up
- Decontaminate waste by autoclave or chemical( 1% sodium hypochlorite)
- Incineration (ideal), if not available, do burning
- Burning waste in Pits (>8 feet deep) in premises, behind the hospital building

# Waste management in hospital

Type of waste	Example	Color of waste bin/container
General waste	Leftover meals, administrative rubbish, and paper, sweeping	Black
Clinical/lab waste without sharp objects	Materials used in lab /patient care	Yellow
Clinical waste with sharp objects	Needles or scalpel blades, knives broken glass material etc.	Red
Recyclable waste	Saline kits	Green
Liquid waste	Vomiting, blood	Blue



# Practices for Environmental Cleaning in Healthcare Facilities

## Cleaning agents and disinfectants

### **i. 1% Sodium Hypochlorite**

- The solution should be prepared and used daily.
- Contact time: 20-25 minutes is recommended.

**ii. Alcohol (e.g. isopropyl 70% or ethyl alcohol 70%)** can be used to wipe down surfaces where use of bleach is not suitable, e.g. metals.

# Triage area

1. High touch surfaces: Decontaminate high touch surfaces like (doorknobs, telephone, call bells, bedrails, stair rails, light switches, lift-buttons, arm rests tables, air/ light controls, keyboards, switches, basin, wall areas around the toilet) to be done every 3-4 hours.
2. Low-touch surfaces: For Low-touch surfaces (walls, mirrors, etc.) mopping to be done at least once daily.
3. Mop floor with routinely available disinfectant (1% sodium hypochlorite solution, phenol etc).
4. Remove used curtains/ fabrics/ quilts for washing in washing machine (preferable using hot water cycle).
5. In between patient care: 70% alcohol containing hand sanitizer.

## 5. Implementing Administrative Controls

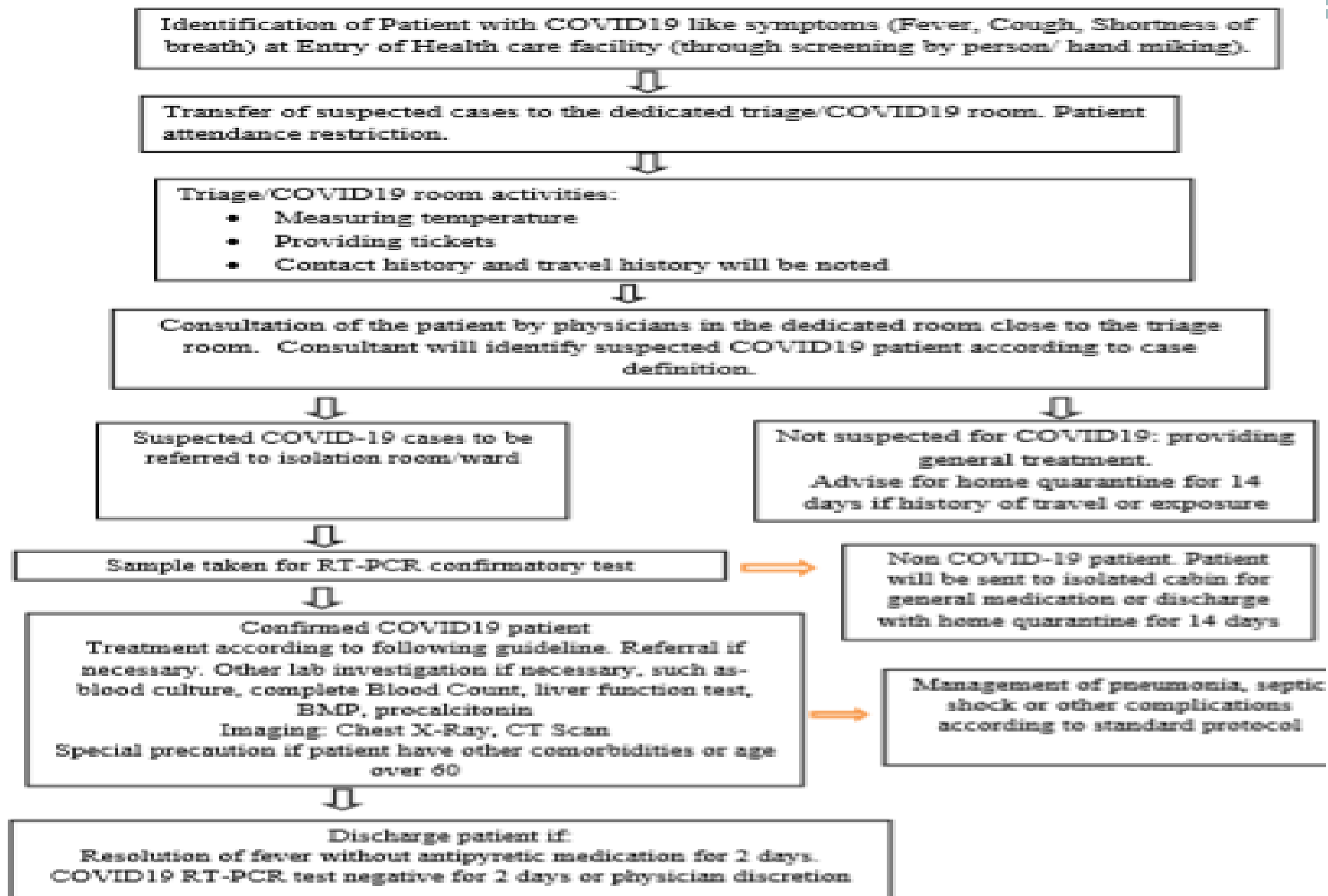
- The responsibility of hospital administration further includes:
  - Establishing sustainable IPC infrastructures and activities
  - Educating patients' caregivers
  - Preventing overcrowding, especially in the emergency department
  - Providing dedicated waiting areas for symptomatic patients
  - Appropriately isolating hospitalized patients
  - Ensuring adequate supplies of PPE, disinfectant, soap, hand sanitizer
  - Ensuring the adherence of IPC policies and procedures for all health care facilities.
  - Ensure water, electricity and security



# Case management in Isolation

- Patients should be placed in adequately ventilated single rooms. For general ward rooms with natural ventilation, adequate ventilation is considered to be 60 L/s per patient
- Single isolation room is recommended for patients for contact precautions.
- Patient notes or bedside chart should be kept outside the room.
- Donning and doffing should be done before entry and after exit from the room.
- Door should be kept closed.

### Flow Chart of COVID-19 Management in Hospital



<b>Inpatient facilities</b>			
<b>Patient room</b>	Healthcare personnel	Providing direct care to suspected COVID-19 patients.	<ul style="list-style-type: none"> <li>• Medical mask</li> <li>• Gown</li> <li>• Gloves</li> <li>• Eye protection (goggles or face shield).</li> </ul>
		Providing direct care to confirmed COVID-19 patients.	<ul style="list-style-type: none"> <li>• Medical mask</li> <li>• Gown</li> <li>• Gloves</li> <li>• Eye protection (goggles or face shield).</li> </ul>
		Aerosol-generating procedures performed on suspected or confirmed COVID-19 patients	<ul style="list-style-type: none"> <li>• N95 respirator/ face shield with mask</li> <li>• Gown</li> <li>• Gloves</li> <li>• Eye protection</li> </ul>
	Cleaners	Entering the room of COVID-19 patients.	<ul style="list-style-type: none"> <li>• Medical mask</li> <li>• Gown</li> <li>• Heavy duty gloves</li> <li>• Eye protection (if risk of splash from organic material or chemicals).</li> <li>• Boots or closed work shoes</li> </ul>
	Visitors	Entering the room of a COVID-19 patient	<ul style="list-style-type: none"> <li>• Medical mask</li> <li>• Gown</li> <li>• Gloves</li> </ul>

# Talk positive Correct the Wrong ideas

- DO - talk positively and emphasise the effectiveness of prevention and treatment measures.

For most people this is a disease they can overcome. There are simple steps we can all take



**THANK YOU**