# NATIONAL TRAINING MODULE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS

**Directorate General of Health Services (DGHS)**
Ministry of Health and Family Welfare (MOHFW)
**Bangladesh**


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# ACKNOWLEDGEMENT

Like other countries worldwide, COVID-19 pandemic has put the health systems of Bangladesh on the strain. Acute health workforce crisis, lack of proper training and unavailability of appropriate protective equipment are some of the key challenges in combating COVID-19. In response to the pandemic, the Government of Bangladesh developed the National Preparedness and Response Plan, based on which several guidelines are were developed, including the Infection Prevention and Control (IPC) guideline. To support the Government initiatives, the UN organisations formed the One UN platform and developed the Country Preparedness and Response Plan (CPRP) for the COVID-19 health emergency. The CPRP comprises interventions which are presented by pillars as outlined in the WHO Global Guidance. The pillars are as follows:

1. Surveillance and laboratory support
2. Point of Entry (POE) and Quarantine
3. Case management and IPC
4. Risk communication/awareness and community engagement
5. Logistics and procurement
6. Preserving stability and addressing social tensions

This training module has been developed under pillar three (case management and IPC), based on the National IPC guideline to develop capacities for health care providers in the facilities.

As per guidance of the Directorate General of Health Services of the Ministry of Health and Family Welfare, more than 13 experts from different national and international development partners supporting the Government of Bangladesh in developing this training module. Amid the crisis and challenges posed by COVID19 pandemic, the experts prepared the module and relevant training materials in two weeks. My sincere gratitude to the colleagues from CDC and Hospitals and Clinics Section of DGHS, as well as other development partners, particularly WHO, FAO, FFP, UNFPA, UNICEF, USAID MTaPS, Save the Children, UKAID and icddr,b.

I have found this training module to be quite rigorous and technically sound. I believe that this module will help in raising awareness and capacities of health care providers on IPC. However, I would also like to urge that this is a living document and will be updated based on new evidence and recommendation if and when necessary.

Lastly, I hope that this module will help to reduce the risk of cross-infection among health care providers and patients in health care settings across Bangladesh and promote IPC measures and practices in the context of COVID-19 and beyond.

# TRAINING SCHEDULE

| Time: | Topic | Facilitator |
|---|---|---|
| 08.45 - 09.00 | Registration | |
| 09.00 - 09.30 | Introduction and ice-breaking: Participant introduction and team-building exercise; Pre knowledge review | |
| 09.30 - 10.10 | Chapter-1: Introduction to COVID-19 and importance of IPC | |
| 10.10 - 10.55 | Chapter-2: IPC strategies in health care settings: Recommendations for triage in the context of COVID-19 | |
| 10.55 - 11.15 | Tea/Coffee break | |
| 11.15 - 12.45 | Chapter-3: Application of standard precautions | |
| 12.45 - 13.30 | Lunch and prayer | |
| 13.30 - 14.30 | Chapter-4: Implementing additional transmission-based precautions | |
| 14.30 - 15.15 | Chapter-5: Environmental cleaning in health care settings | |
| 15.15 - 16.00 | Chapter-6: Implementing administrative controls | |
| 16.00 - 16.15 | Post knowledge review and closing | |
| 16.15 | Tea/Coffee | |

## Knowledge Review Questions on IPC training for health care providers (with answer keys for facilitators)

Circle the letter, which represents the best answer to the question. Only one answer per question.

**1. Which of the following best describes the agent that causes COVID-19?**

a) A bacteria
b) An enveloped virus
c) A non-enveloped virus
d) A prion

**2. What are the ways that we can control the spread of COVID-19?**

a) Infection prevention control
b) Isolation
c) Antibiotics
d) a and b
e) We cannot control COVID19

**3. Which is not the health & socio-economic impacts of COVID19?**

a) People to people transmission at a large number within a short perio
b) This crisis is not going to cause both demand and supply shocks for o eco my
c) People may lose their jobs
d) Health care providers are at high risk of infection

**4. To avoid COVID-19, when outside the home, you should:**

a) Try to stand in the sun as much as possible
b) Keep a distance of 1 meter or more from other people
c) Frequently wash hands with appropriate measures
d) A, b and c
e) b and c

**5. To remove coronavirus, hard surfaces in the home should be cleaned with:**

a) A piece of cloth and water,
b) 0.5% bleach solution
c) Detergent and water
d) Brush/duster
e) b and c

**6. COVID-19 primarily spreads through**

a) Respiratory droplets from an infected person
b) Close-contract (less than 3 feet) with an infected person
c) Contact with contaminated surfaces or objects
d) a, b, c

**7. Which tool is NOT sufficient to kill the coronavirus?**

a) 50% alcohol
b) Detergent
c) 0.5% bleaching powder solution
d) Soap

**8. In a health care facility, which measure gives the best protection to both the patient and caregiver from COVID19?**

a) Isolation
b) Infection prevention control measures
c) Only personal protection equipment
d) Ventilation

**9. Why IPC is the best solution to protect us from COVID-19 in Bangladesh?**

a) Comparatively cheap measures
b) To protect the health care providers from COVID-19
c) Not so difficult and feasible for our country context.
d) Above all

**10. Which are the COVID-19 specific standard precautions, according to WHO?**

a) Advanced hand hygiene
b) Respiratory hygiene and cough etiquette
c) Use of PPE
d) Environmental disinfection
e) a, b, c & d
f) c&d
g) b, c, & d

**11. Which is NOT applicable for COVID-19?**

a) Can spread through close contact with an infected person
b) Can spread by respiratory droplets produced by an infected person during coughing or sneezing
c) SARS-CoV-2 can spread from human to pets
d) High touch surfaces contaminated with SARS-CoV-2 are capable of transmitting COVID-19

**12 The spread of SARS-CoV-2 can be prevented by**

a) Maintaining appropriate social distance
b) Maintaining respiratory hygiene
c) Decontamination of surfaces/rooms/equipment/items
d) All of the above

**13. Which of the following is NOT a strategy for IPC in health care settings**

a) Ensuring triage
b) Vaccinating suspected COVID-19 patients
c) Following standard precautions for infection control
d) Implementing additional transmission-based precautions

**14. Which logistics/facilities are required for IPC in the observation and screening area?**

a) Tap with running water and soap/70% alcohol-based hand sanitiser
b) Disposal bags with bins
c) Thermometer
d) All of the above

**15. Which activity is NOT related to the examination of a COVID-19 patient in the triage room?**

a) Screen by taking respiratory symptoms
b) Measure temperature
c) Collect contact history
d) Collect travel history

**16. When does someone need to wear an N95 respirator?**

a) During entering the COVID-19 designated cabin
b) During aerosol-generating medical procedure of the COVID-19 patient
c) During sample collection from suspected COVID-19 patients and in the laboratory
d) a, b, c is correct
e) b and c is correct

**17. After using a needle, what would be the measures for IPC?**

a) Immediately cap the needle and throw it on the yellow designated bin
b) Immediately cap the needle and throw it on the puncture-resistant red designated bin
c) Do not cap the needle and throw it on the puncture-resistant red designated bin
d) None is correct

**18. What is the required strength alcohol-based hand sanitiser and how long do we have to rub our hands to kill SARS-CoV-2?**

a) More than 80% of alcohol for 20-30 seconds
b) At least 80% of alcohol for 30-60 seconds
c) More than 70% of alcohol for 30-60 seconds
d) 70% of alcohol for 20-30 seconds

**19. What would be the probable workflow if we have a needle pick injusry?**

a) Immediately inform the authority and get panicked about the situation
b) Wash the wound immediately with soap and water, if possible find out whether the patient has any blood-borne diseases of the patient, Inform authority for further instruction
c) Put antiseptic on the wound and look for blood-borne diseases in the patient
d) None is correct

**20. What should be the requirement of an adequately ventilated room for a general ward of COVID-19 patients?**

a) Natural ventilation with airflow of at least 160 L/s per patient
b) Natural ventilation with airflow of at least 60 L/s per patient
c) Natural ventilation with airflow of at least 80 L/s per patient
d) Natural ventilation with airflow of at least 90 L/s per patient

**21. What should be the requirement of an adequately ventilated room for aerosol-generating procedure?**

a) Natural ventilation with air flow of at least 160 L/s per patient
b) Natural ventilation with airflow of at least 60 L/s per patient
c) Natural ventilation with airflow of at least 80 L/s per patient
d) Natural ventilation with airflow of at least 90 L/s per patient

**22. What is spatial separation?**

a) Keep patients in general ward maintaining 3 feet distance from each other
b) Keep infected and not infected patients in same ward
c) Keep infected and not infected patients in same ward maintaining minimum 3 feet distance to avoid cross contamination
d) None is correct

**23. What would be the frequency of disinfection for high touch areas?**

a) Every 2 hours interval
b) Every 2-3 hours interval
c) Every 3-4 hours interval
d) Every 4-5 hours interval

**24. What is the recommendation for cleaning and disinfection of linen?**

a) Soak with soap/detergent and hot water for 20 minutes
b) Soak in soap/detergent for 30 minutes or in water at 70°C for at least 25 minutes
c) Soak in bleach solution for 5 minutes
d) Wash with soap under running water

**25. How many types of waste are there in a health care setting?**

a) 4
b) 5
c) 3
d) 6

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# BACKGROUND

On 31 December 2019, WHO was informed of cases of pneumonia of unknown cause in Wuhan City, China. A novel coronavirus (nCoV) was identified as the cause of pneumonia by Chinese authorities on 7 January 2020 and was temporarily named "2019-nCoV". The novel coronavirus is a new strain that has not been previously identified in humans. However, coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases. These are RNA enveloped viruses and have a large family, commonly found in human and in different animals.

In human, coronaviruses cause illness ranging from the common cold to more severe diseases. Animal coronaviruses rarely infect human-like MERS-CoV, SARS-CoV, and currently, the nCoV has been infecting human, spreading with human-to-human transmission and causing the disease called COVID-19. International Committee on Taxonomy of Viruses (ICTV), announced "severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)" as the name of the new virus on 11 February 2020. WHO announced "COVID-19" as the name of the coronavirus disease on 11 February 2020, following guidelines previously developed with the World Organisation for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO). WHO declared COVID-19 a global pandemic on 11 March 2020.

**As of 19 September 2020,there have been 30.7 million confirmed cases, of which 20.9 mil recovered and 961,037 already died.**

**The toll of diseased and dead attributed to COVID19 in Bangladesh is not an exception to the global picture. As of 19 September 2020,**

**348,567 cases were identified, 245,000 recovered and 4945 of them died. Till 19 May 2020, there was no approved vaccine or medicine for COVID-19.**

**Therefore, preventing transmission of this disease is essential, and this document aims to provide with appropriate knowledge and skills for prevention and control of infection caused by SARS-CoV-2**

# CHAPTER

# I

## Introduction to COVID19 and Importance of Infection Prevention Control (IPC)

# BACKGROUND

The world is experiencing the biggest challenge in public health due to novel coronavirus causing pandemic COVID19. We are still learning about it's genetic properties and looking for a stable solution. Currently we have no vaccine available. However, we have some tools (based on available evidences thus far) to control the spread of this disease: Social distance & IPC including good hygiene practice, testing and isolation/ quarantine with care of the sick people. Basically prevention and control of any infectious disease including COVID19 greatly depends on understanding the importance of the good hygiene practice. Bangladesh national hygiene baseline survey June, 2014 stated that <2% of HCWs were compliant with recommended hand hygiene practices in a national survey. On the other hand, US WaterAid reported that globally, 4 out of 5 people do not wash hands even after using the bathroom. Therefore, only by focusing to change our personal behaviour we can ensure the good hygiene practice in institutional environment and protect ourselves from such health concerns.

**Audience:**

Health care providers (Doctors, Nurses, paramedics, SACMO, persons/committee designated for IPC etc.)

**Class room size:**

Recommended for 20 participants in normal situation in case of face to face training. If [illegible] is issue, may make two or three separate batches in separate training rooms.

**Under outbreak situation like COVID19:**

10-12 participants (Doctors-5/6, Nurses-5/6 from ICU, Isolation ward, Flu corner, General ward and OPD) maximum in case of physical setup. Flexible for online option but remember that participants must follow social distance protocol.

**General Objective**

The participants need to have basics about SARS COV-2, route of transmission, how to limit the spread of the virus with a particular focus on IPC.

| Training goals | Session plan |
|---|---|
| Upon completing the session, participants are expected to be able:<br>• To understand the impact of COVID19 in health and economic perspective in world and in Bangladesh<br>• To recapitulate the virus, it's spreading mechanism and killing process<br>• To discuss and compare different control tools and<br>• To understand the importance and contribution of IPC as a good practice in controlling such infectious disease<br>**Time: 40 minutes** | 1. Sharing global and Bangladesh COVID19 situation and its impact on health & economy (05 minutes)<br>2. Knowing our enemy-coronavirus: (20 minutes)<br>• What is coronavir us?<br>• How is it spread?<br>• How is it killed?<br>• What tools do we have to control coronavirus in Bangladesh?<br>3. Why we should call the patient a "Virus Fighter", what is IPC and why it is so important in controlling highly infectious disease like COVID19 management (15 minutes) |

**Materials**

1. Laptop, projector, projector screen with stand
2. Standard training materials (VIPP cards, flipcharts, markers, masking tape etc)
3. Soft copy of PPT on for chapter 1 (print for all participants as handouts)
4. Flip charts/VIPP cards labelled: What do we know about the virus? How is the disease spread? How can we kill the virus? What tools do we have to combat the virus?
5. Video clips on droplets
6. Video clips on dos and don'ts

**FACILITATOR NOTES:**

This module is based on discussion. So the facilitators must be fully aware of the technical issues in the hints and have a good understanding of COVID19.

**Introduction (in general for all modules)**

1. Start the session by greeting the participants.
2. The facilitator informs the participants about the topics, goal, sub-topics and methods that will be used in each session (copy the session flow chart on a piece of flipchart paper and display it in the class to help the study flow that will be used in studying each sub-topic). This should be prepared before the session begins.

## Session 1 Sharing global and Bangladesh COVID19 situation and its impact on health & economy (05 minutes)

**Key points:**

- **Number of COVID19 cases increasing in Bangladesh**
- **It has impacts on country's health system and economy**
- **Doctors and health care providers are at risk and must follow standard protocol to protect ourselves**

1. Show the PPT for chapter 1 (slide 1-2). Note for facilitators: please update this PPT regularly or go to website and take a note before night.
2. Ask a volunteer (if time management an issue, please do it by the facilitator him/herself) to read out the slides and then brainstorm with the audience and write the health & socio-economic impacts of COVID19.

**Tips for facilitators:**

- People to people transmission at large number within short period.
- People may die from COVID19 and we cannot ignore the spare of lives.
- This crisis is going to cause both a demand and supply shock for our economy.
- 265 million people on earth are marching towards the brink of starvation.

- We have sufficient food, but ensuring food security will be a big challenge for all in Bangladesh.
- People have to stay home for a long period resulting a loss of earnings (mostly daily earning people; 85% of our people work in the informal sector).
- Industry may shut down resulting risk falling into debt traps.
- Any other issue may come from participants (please include new relevant ideas into the modules)

**Footnote for facilitator to understand the fact:**

WFP Chief warns of hunger pandemic as COVID-19 spreads (Statement to UN Security Council) stated below:

821 million people go to bed hungry every night all over the world, chronically hungry, and as the new Global Report on Food Crisis published today shows, there are a further 135 million people facing crisis levels of hunger or worse. That means 135 million people on earth are marching towards the brink of starvation. But now the World Food Programme analysis shows that, due to the coronavirus, an additional 130 million people could be pushed to the brink of starvation by the end of 2020. That's a total of 265 million people.

**Source:**

https://www.wfp.org/news/wfp-chief-warns-hunger-pandemic-covid-19-spreads-statement-un-security-council

Despite the pragmatic policies and the great efforts of the farmers, we have sufficient food, but ensuring food security in case of a prolonged crisis will be a big challenge for all, especially for the South Asian countries. Our agriculture sector employs the highest number of our informal workers and it has been adversely affected due to huge disruption of supply chains all over the country. In Bangladesh, we realized very quickly that this crisis is going to cause both a demand and supply shock for our economy. We have to sustain export industries and also support domestic ones. Poverty and inequality within and among societies will increase rapidly. In the last decade, we lifted half of our poor out of poverty. Many of them will now slide back. People risk falling into debt traps. 85% of our people work in the informal sector. Our SMEs are badly hit. The situation is not different in other parts of South Asia or even Africa. Migrant workers are frontline contributors to societies and economies in richer countries. However, they are suddenly finding themselves in very difficult situations, including joblessness. That is also risking South Asian economies.

**Source:**

https://www.weforum.org/agenda/2020/04/cooperation-not-isolation-will-help-fight-covid-19/

3. Now discuss the impacts on doctors and other health care professionals.

**Tips for facilitators:**

- Huge burden in COVID19 hospitals.
- Lack of knowledge & skills on rational use of PPE and negligence in attitude towards strict personal protection and IPC will be a critical factor.
- Patient management with insufficient ventilator support may become critical and challenging.
- Virus does not know who is doctor or not; therefore, doctors and health care providers will be at great risk.
- Patient hiding history

- Global shortage of PPE
- Doctors and health care providers may spread the disease to other patients and also to his/her family.
- Private practice may shut down.
- Anxiety and mental health
- Any other issue may come from participants (please include new relevant ideas into the modules).

Note for facilitators: conclude the discussion focusing on health care providers' own risks so that they may start finding a good feasible solution and here IPC matters.

## Session 2 Knowing our enemy-coronavirus (20 minutes)

Key points:

- **COVID19 is a new experience for the world**
- **Spread mainly through close contact from person-to-person in respiratory droplets and contact with contaminated surfaces or objects**
- **Killing the virus is simple-use soap and water or alcohol based hand rub or recommended disinfectants**
- **Testing, isolation, quarantine, cleaning & disinfection and proper treatment are the tools we have to tackle the problem**

1. Before the session starts put several (6) VIPPs and markers onto the marked social distance circles on the floor where the participants must stand.
2. Ask everyone to take his/her place and pick up the VIPP cards. Explain that we are going to explore coronavirus together.
3. Ask the participants "what do we know about the coronavirus that causes COVID19?" Put up the following flip charts or VIPP cards (on wall) with the titles:
    a. What do we know about the virus?
    b. How is the disease spread?
    c. How can we kill the virus?
    d. What tools do we have to combat the virus?
4. Ask the participants to search through their VIPPs to find the appropriate titles on the flip charts/ VIPP cards. Show the participants the four flip charts/VIPP cards and ask him/her to paste his/her comments on to the appropriate Flip chart/VIPP card. When the first VIPP card is pasted up, ask the rest of the participants to say if it is correctly pasted or not. Use this to have a discussion. If not correctly pasted, ask others to find the appropriate one.
5. Continue until all participants have pasted up their comments and they have been assessed for correct or not. (Facilitators tips: Ask remaining participants to directly stick VIPP cards without discussion for the same message given by others under appropriate title. It will save our time).

6. Once the discussion of sneezing comes, please show the video clips on droplets and explain the reason for keeping social distance and sneezing etiquette.
7. There may be some statements that the facilitators cannot answer. These should be pasted on a wall and answered later after consultation with experts.
8. At end, show the video clips on dos and don'ts.

**Tips for facilitators:**

1. **What do we know about the virus that causes COVID 19?**
    - COVID-19 disease is caused by new coronavirus that has not been previously identified in humans. The COVID19 is the cause of an outbreak of respiratory illness first detected in Wuhan, Hubei province, China.
    - The virus possibly originated in bats.
    - Coronaviruses are a large family of viruses that are known to cause illness ranging from the common cold to more severe diseases such as Severe Acute Respiratory syndrome (SARS) and Middle East Respiratory Syndrome (MERS).
    - Coronavirus particles are spheres with diameters of approximately 0.125 [illegible] (125 nm). The smallest particles are 0.05 microns, and the largest are 0.20 microns. Therefore, they are difficult to trap in masks. In one single dot, about ten thousand virus particles may [illegible].
    - The virus can live on hard surfaces for many hours, longer than 3 days in some instances.
    - COVID19 can be a mild disease in the majority of patients, but can be lethal in the minority of cases.
    - Any other issue may come from participants (please include new relevant ideas into the modules)

**Tips for facilitators:**

2. **How is the disease spread?**
    - COVID19 is thought to spread mainly through close contact from person-to-person in respiratory droplets from someone who is infected. People who are infected often have symptoms of illness but some people without symptoms may be able to spread virus.
    - Person to person: close contract between people (less than 3 feet); respiratory droplets from coughing, sneezing and talking.
    - Contact with contaminated surfaces or objects: It may be possible that a person can get COVID19 by touching a surface or object that has the virus on it and then touching their own mouth, nose, or possibly their eyes. This is not thought to be the main way the virus spreads, but we are still learning more about this virus. The virus may remain active for up to 72 hours.
    - The virus does not spread on its own. People spread the virus through their behavior. Travel, social events, close personal contact all spread the virus.
    - Any other issue may come from participants (please include new relevant ideas into the modules)

**Tips for facilitators:**

3. **How can we kill the virus?**
    - Soap/detergent and water break up the lipid envelope around the virus.
    - Disinfectants at the correct dilution and contact time:

- Quaternary ammonium products – dilute according to directions. Contact time is 10 minutes.
- Chlorine bleach disinfectants - dilute as recommended to a 0.5% solution. Bleach disinfectants can be corrosive.
- Hydrogen peroxide 3% and can be used as straight from the bottle. Contact time is five minutes
- Alcohol – use 70% alcohol with a contact time of 30 seconds.

- Heat (above 70 degree)
- Antibodies in recovered people. People recover from the illness because their antibodies kill the virus. People who have recovered from COVID 19 are immune to further infection.
- Any other issue may come from participants (please include new relevant ideas into the modules)

**Tips for facilitators:**

4. **What tools do we have to beat the virus?**

- Isolation
  - People do not mix with others then the chance of the virus moving between people. Social distancing of 1 meter from each other. People stay home, public transport reduced etc.
  - Schools and offices redesign to observe social distancing
- Quarantine-sick or suspected sick people need to keep away from the community to avoid passing on the virus to others. If you feel sick, stay at home and if severe you may contact for hospitalization.
- Hygiene and IPC-regular handwashing; cleaning and disinfection of surfaces touched by the public and by suspected sick people. Regular practice of IPC measures not only protect us from COVID19 but also from any other such infectious diseases.
- Testing suspect cases so that the foci of coronavirus can be identified and people can be isolated.
- Care of the sick at home or in hospital-recovered people are immune and the virus may not grow in them.
- Any other issue may come from participants (please include new relevant ideas into the modules).

## Session 3 Why we should call the patient a "Virus Fighter (VF)", what is IPC and why it is so important in controlling highly infectious disease like COVID19 management (15 minutes)

**Key points:**

- **VF is the sacrificing fighter in the country to kill it through his/her natural defense mechanism (producing antibody)**
- **We must provide necessary supports for helping them to win fighting against the virus**
- **Protecting ourselves is very crucial to serve VF**
- **IPC is the most important, effective, evident and feasible protection mechanism**
- **Our changing behavior matters a lot in following IPC protocol**

1. Ask "Who is sacrificing the most to fight against the infectious coronavirus in our country"? Probe for: A "Virus Fighter" (VF) is fighting for his/her own life, trying to save his/her family and all of us through natural defense mechanisms (producing antibody).
2. Ask, if the viruses inside a VF become dead, can those dead viruses be able to infect you? Probe for: Probably no
3. Ask " if the VF has recovered, can he/she get the virus again?" Probe for: Probably no
4. So who is the most valuable fighter among us to get rid of that virus? Probe for: VF
5. Now explain the audience that that is why we must call/treat the patients as VF to give due respect to encourage them with positive mindset and take the best care of them.
6. Tell the participants that now we will discuss about the most important things we need to follow to save VF and protect ourselves from infection.
7. Show the PPT on for chapter 1 (slide 3-6) in brief. Note for facilitators: please let the participants know that IPC is a vast topic and we will go through each component of IPC in details throughout this training later on.
8. Ask the participants-Who is our enemy in Bangladesh now? Probe for: coronavirus
9. Is it visible by naked eye? Probe for: No; so we are fighting blindly; we can only feel it while we have exposure and get sick.
10. Should we wait until becoming sick and then try to kill it? Probe for: No; we must protect early.
11. Do we have vaccine at hand? Probe for: No.
12. Should lock down be the permanent solution? Probe for: No; why? Please note their answers on a flip chart.
13. In that case, what is the best permanent solution we may have which certainly protects us from COVID19? Probe for: Good hygiene practice and IPC measures; why? Please note their answers on a flip chart.

**Tips for facilitators:**

- Comparatively cheap measures.
- Not so difficult and feasible for our country context.
- Any other issue may come from participants (please include new relevant ideas into the modules).

14. Let us be fair and share why we ignore such effective tool? **Probe for;**
    - We never understood it's real impact on public health concerns until COVID19 pandemic outbreaks.
    - It's an issue of behavior change and we are reluctant to change ourselves.
    - Any other issue may come from participants (please include new relevant ideas into the modules)
    - Agree that we must change our behaviors and follow standard protocol.
15. Conclude the session by giving thanks to the participants for their sincere engagement and helping the facilitators. Focus the participants again on the importance of following IPC measures. Reinforce them about changing our attitude and behavior towards regular hand hygiene and disinfection of hospital premises including operational triage. Invite them for the next session.

**For online facilitation:**

Modules designed for physical training should be sent to government and ask them to help developing online module.

# CHAPTER 2

## Strategies for Triage in Health Care Settings

# BACKGROUND

Appropriate triage mechanism could be the first level defense in a health care setting for prevention a control of COVID-19. A triage without adoption of proper IPC method will not be effective against the spre of COVID-19, and this facility is not established in many facilities.

**Audience:**

Health care providers (doctors, nurses, paramedics, SACMO, persons/committee designated for IPC etc.)

**Classroom size:**

Recommended for 20 participants in a normal situation for face to face training. If coverage is an issue, two o three batches can be organised in separate training rooms.

**Under outbreak situation like COVID19:**

10-12 participants (Doctors-5/6, Nurses-5/6 from ICU, Isolation ward, Flu corner, General ward and OPD) maximum in case of physical setup. Flexible for an online option, but all participants must follow the social distance protocol at all times.

**General Objective:**

The participants need to get appropriate knowledge and achieve skills to implement evidence-based strategies fo preventing the spread of COVID-19 in health care settings.

| **Training goals** | **Session plan** |
|---|---|
| Upon completion of the training participants are expected to be able to:<br>• Understand how triage in a health care setting works<br>• Understand the health care staff involved in triage<br>• Understand the IPC measures need to be followed in the triage of health care settings<br>• Identify the PPE required for triage<br>• Understand the methods for proper use of PPE in a triage<br>**Time: 45 Minutes** | 1. Key definitions (15 minutes)<br>i. Suspected case<br>ii. Probable case<br>ii. Confirmed case<br>iv. Clinical triage<br>2. IPC strategies in health care settings and flow of COVID-19 patients in the triage (20 minutes)<br>3. Summary of IPC measures during a triage process (10 minutes) |

**Materials**

- Laptop, projector, projector screen with stand
- Soft copy of PPT (slide no. 3-9) containing case definitions
- Soft copy of PPT on the triage flow chart adapted from National COVID-19 Clinical Management Guideline
- Soft copy of PPT on "Table of Measures for IPC during the triage process"
- Make the following 6 VIPP cards before training and please put them on a suitable place:
    i. Suspected COVID-19 case (two suspected case definitions A or B):
    ii. A. A person who meets the clinical AND epidemiological criteria:
    iii. Clinical criteria:
    iv. Epidemiological criteria:
    vi. Probable COVID-19 case:
    v. Confirmed case:

- Make the following 19 VIPP cards before training for participants to paste under appropriate heading put by facilitators on the wall:
- Acute onset of fever & cough
- Acute onset of ANY THREE OR MORE of the following signs or symptoms: fever, cough, general weakness/fatigue, headache, myalgia, sore throat, coryza, dyspnea, anorexia/nausea/vomiting, diarrhoea, altered mental status
- Residing or working in an area with high risk of transmission of the virus: for example, closed residential settings and humanitarian settings, such as camp and camp-like settings for displaced persons, any time within the 14 days prior to symptom onset
- Bangladeshi residence or traveling to an area/country reporting community transmission of COVID-19 disease during the 14 days prior to symptom onset
- Health care worker, working in health setting, including within health facilities anytime within the 14 days prior to symptom onset
- A patient with severe acute respiratory illness (SARI: acute respiratory infection with history of fever or measured fever of ≥ 38 C°; and cough; with onset within the last 10 days; and who requires hospitalization)
- A patient who meets clinical criteria above AND is a contact of a probable or confirmed case, or epidemiologically linked to a cluster of cases which has had at least one confirmed case identified within that cluster.
- A [illegible] (described above) with chest imaging showing findings suggestive of COVID-19 disease
- chest radiography: hazy opacities, often rounded in morphology, with peripheral
- and [illegible] distribution
- chest CT: multiple bilateral ground glass opacities, often rounded in morphology, with peripheral and lower lung distribution
- lung ultrasound: thickened pleural lines, B lines (multifocal, discrete, or confluent), consolidative patterns with or without air bronchograms
- A person with recent onset of anosmia (loss of smell) or ageusia (loss of taste) in the absence of any other identified cause.
- Death, not otherwise explained, in an adult with respiratory distress preceding death AND who was a contact of a probable or confirmed case or epidemiologically linked to a cluster which has had at least one confirmed case identified within that cluster.
- A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.
- A person not having symptoms at present but who has been exposed to probable case or confirmed case.
- Contact timing: 2 days before and the 14 days after the onset of symptoms of a probable or confirmed case
- Contact pattern-Face-to-face contact with a probable or confirmed case within 1 meter and for more than 15 minutes.
- Contact pattern-Direct physical contact with a probable or confirmed case
- Contact pattern-Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment
- Five VIPP cards with the heading of each in separate VIPP card titled:
    i. The point at which the identification and separation process starts
    ii. The sections of health facility involved
    iii. Human resources required for triage process
    iv. Logistics required for triage process
    v. The infrastructure and management of the specific room
- Standard training materials (VIPP cards, flipcharts, markers, masking tape etc.)
- Answer sheet of quiz (answer in yellow marks) (annex-1 and annex-2)

**FACILITATOR NOTES:**

This module is based on group discussion and questions, especially around the triage process, IPC sures, and the use of PPE. Facilitators must have the most updated knowledge regarding IPC meas a health care setting recommended by DGHS and WHO.

**Introduction**

1. Start each of the sessions by greeting the participants.
2. Inform the participants about the topics, goal, sub-topics and methods that will be used in eac sion (display the list of sessions in front of the class to help the trainees follow the sessions) should be prepared before the session begins.

## Session 1 Key definitions (15 minutes)

Key points:

- Learning key definitions of COVID19 patent classifications.

Discuss the case definitions of COVID19

### Suspect COVID-19 case

A. A person who meets the clinical

AND

epidemiological criteria:

**Clinical criteria:**

Acute onset of fever AND cough;

OR

Acute onset of ANY THREE OR MORE of the following signs or symptoms:

| | | |
|---|---|---|
| fever | cough | general weakness/fatigue |
| headache | myalgia | sore throat |
| coryza | dyspnoea | anorexia/nausea/vomiting |
| diarrhoea | altered mental status | |

**AND**

**Epidemiological criteria:**

Residing or working in an area with high risk of transmission of virus: closed residential setting humanitarian settings such as camp and camp-like settings for displaced persons; anytime within t 14 days prior to symptom onset;

**OR**

Bangladeshi residence or traveling to an area/country with community transmission of COVID19 anytin within the 14 days prior to symptom onset;

**OR**

Health care worker, working in any health care setting, including within health facilities anytime within the 14 days prior to symptom onset.

B. A patient with severe acute respiratory illness (SARI: acute respiratory infection with history of fever or measured fever of ≥ 38 C°; and cough; with onset within the last 10 days; and requires hospitalization)

### Probable COVID-19 case

1. A patient who meets clinical criteria above AND is a contact of a probable or confirmed case, or epidemiologically linked to a cluster of cases which has had at least one confirmed case identified within that cluster.
2. A suspect case with chest imaging showing findings suggestive of COVID-19 disease*

* Typical chest imaging findings suggestive of COVID-19 include the following

- **Chest radiography:** Hazy opacities, often rounded in morphology, with peripheral and lower lung distribution
- **Chest CT:** Multiple bilateral ground glass opacities, often rounded in morphology, with peripheral and lower lung distribution
- **Lung ultrasound:** Thickened pleural lines, B lines (multifocal, discrete, or confluent), consolidative patterns with or without air bronchograms

3. A person with recent onset of anosmia (loss of smell) or ageusia (loss of taste) in the absence of any other identified cause
4. Death, not otherwise explained, in an adult with respiratory distress preceding death AND was a contact of a probable or confirmed case or epidemiologically linked to a cluster with at least one confirmed case.

### Confirmed COVID-19 case

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

Note: Clinical and public health judgment should be used to determine the need for further investigation in patients who do not strictly meet the clinical or epidemiological criteria. Surveillance case definitions should not be used to guide clinical management.

**Contact:**

A person not having symptoms at present but who has been exposed to probable case or confirmed case.

**Contact timing:**

2 days before and the 14 days after the onset of symptoms of a probable or confirmed case

**Contact pattern:**

- Face-to-face contact with a probable or confirmed case within 1 meter and for more than 15 minutes.
- Direct physical contact with a probable or confirmed case
- Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment

1. Put six separate VIPP cards pasted with six titles (see materials, bullet-5, -page 16) on the wall at different places in the training room before this session starts.

2. Now mix 19 separate VIPP cards (see materials, bullet-6, page 16, 17) in front of participants and ask one person at a time to collect one VIPP card. If any card remains undistributed, ask any volunteer to get more.

3. Ask each person to read the definition and place it under the appropriate title stuck on the wall. Keep them in fun and competitive moods.

4. If the work is correct, give chocolate (clap during fasting). If wrong, ask others to help to find the correct place. In that way, finish all 14 cards.

**Note for facilitator:** Be polite while discussing the definitions. Remain updated about the definitions. (as per NATIONAL GUIDELINE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS- Page 7 and 8).

**Tips for facilitators: (National Guideline- Pg 7-8)**

## Session 2 IPC strategies in health care settings and flow of COVID-19 patients in the triage (20 minutes)

Key points:

- Triage is the first IPC strategy of a health care setting and helps in early identification and separation of patients having symptoms of COVID-19
- Team building among (health care, admin and support staff is the most effective approach for ensuring triage management)

1. Show the triage flow chart (annex 3) and explain it quickly.
2. Make four groups (three in each) in a humorous way.
3. Mix five separate VIPP cards with the heading of each in separate VIPP card "
    - The point at which the identification and separation process starts
    - The sections of health facility involved
    - Manpower required for triage process
    - Logistics required for triage process
    - The infrastructure and management of the specific room
4. Ask each group to collect one VIPP card.
5. Request the groups to discuss and make a presentation through group work using the flipchart on their idea about the topic. Assure them that there are no right or wrong answers. As they are persons working in health care settings, their opinions are very important and need to be discussed.

**Tips for facilitators:**

This discussion will help them think through and make them eager to know what is recommended. Give them five minutes to discuss and prepare a presentation. Let them know that one person from each group will present for two minutes, followed by an open discussion for one minute. In total, within 12 minutes, all the presentations will be finished. Ask your co-facilitators to help when required.

As per NATIONAL GUIDELINE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS- Page 8 to 10

**IPC strategies in health care settings**

- Ensuring triage
- Following standard precautions
- Implementing additional transmission-based precautions
- Implementing administrative and environmental controls

## Session 3 Summary of IPC measures during the triage process (10 minutes)

Key points:

- Learning the actions to be taken by whom and how during the triage process under five points i. Observation and screening, ii. Ticket counter, iii. Triage room, iv. Examination room and v. High touch surfaces

1. Discuss the measures for IPC during the triage process (annex-4)
2. Discuss the summary of IPC measures during the triage process (annex-5)
3. Show the PPT with "Table on IPC measures during the triage process" and get inputs from the trainees to fill-out the blank cells and then show the answer on PPT. In this way, complete the table.

| Area/sections | Health care staff involved | Type of target patients | Activity | Type of personal protective equipment (PPE) for patients | Type of personal protective equipment (PPE) for health care staff | Type of IPC logistics |
|---|---|---|---|---|---|---|
| Observation and screening | | | | | | |
| Ticket Counter | | | | | | |
| Triage room | | | | | | |
| Examination room | | | | | | |
| High touch surfaces | | | | | | |

1. Conclude the session with a big round of applause.

# CHAPTER 3

## Application of Standard Precautions

# BACKGROUND

Standard precautions are the foundation of IPC in the health care facility. It is the minimum IPC that applies to all patient care in all settings to break the chain of transmission. But this practice is not functional in many facilities which create public health concerns like COVID19 outbreaks.

**Audience:**
Health care providers (Doctors, Nurses, paramedics, SACMO, persons/committee designated for IPC etc.)
**Class room size:**

Recommended for 20 participants in normal situation in case of face to face training. If coverage is issue, may make two or three separate batches in separate training rooms.

**Under Outbreak situation like COVID19:**

10-12 participants (Doctors-5/6, Nurses-5/6 from ICU, Isolation ward, Flu corner, General ward and OPD) maximum in case of physical setup. Flexible for online option but remember that participants must follow social distance protocol.

**General Objective:**
The participants will understand the value of standard precautions as the foundation of IPC and its importance in the current COVID19 context.

**Training goal**

Upon completion participants are expected to be able to:

- Understand the importance and function of standard precautions for all healthcare facilities and staff
- Understand the importance of hand washing and skills on proper hand washing
- Develop the skill on the standard ways of hand washing
- Develop the knowledge and skills on the standard ways of respiratory hygiene
- Develop skill on proper donning and doffing of PPE
- Learn precautions during handling sharp objects

**Time: 90 Minutes**

**Session plan**

1. Standard precaution, objective and elements (05 minutes)
2. Hand Hygiene (20 minutes)
3. Respiratory hygiene and cough etiquette (20 minutes)
4. Personal Protective Equipment (PPE) (35 minutes)
5. Safe injection practices, sharps management and injury prevention (10 minutes)
6. Safe handling, cleaning and disinfection of patient care equipment (including sample, patient care area)
7. Decontaminate environmental surfaces (patient care area, work surfaces, table, room etc.) and safe handling and cleaning of soiled linen
8. Waste management

**Materials**

- Bangla hand washing video clips
- A big bowl, water, soap and towel
- Alcohol based hand sanitizer
- Photo copy of group works for session 3 on Respiratory hygiene and cough etiquette
- Soft copy of PPT on Standard Precaution for Chapter 3
- Sample set of PPEs as per required
- Soft copy of video clips on donning and doffing of PPE
- Standard training materials (VIPP cards, flipcharts, markers, masking tape etc)

**FACILITATOR NOTES:**

This module is based on discussion and questions, especially around PPE and technical issues. Facilitat must be fully aware of technical issues and have a strong understanding of COVID-19 in the health c setting.

**Introduction (in general for all modules)**

1. Start the session by greeting the participants.
2. The facilitator informs the participants about the topics, goal, sub-topics and methods that will be us in each session (copy the session flow chart on a piece of flipchart pap and display it in front of t class to help the study flow that will be used in studying each sub-topic). This should be prepared befo the session begins.
3. Discuss with participants as in earlier sessions we learn about IPC in health care facilities. We will no go through elements of the standard precaution as per national guideline.

## Session 1 Standard precaution, objective and elements (05 minutes)

**Key points:**

- Learning elements for Standard Precaution as per WHO

1. Show slide 1-2 of the PPT on Standard precaution for Chapter 3. Note for facilitators: please update th PPT regularly and make it a very few slides.
2. Ask a volunteer to read out the slides.
3. Tell the participants that we already know the elements of standard precaution. Ask one participant t recall the elements for Standard Precaution as per WHO. Probe for: The elements:
   - Hand hygiene (soap-water/hand sanitizer/70% ethanol)
   - Respiratory hygiene and cough etiquette(cover cough-sneeze)
   - Personal protective equipment (PPE) use
   - Decontaminate PPE/equipment/work surface/table/room etc.
   - Safe handling of sample, case and waste
   - Environmental decontamination and waste management

## Session 2 Hand Hygiene (20 minutes)

**Key points:**

- **Maintaining hand hygiene is crucial to combat the COVID19 infection.**
- **Correct hand washing will save lives**
- **It's cheap and easy to do**

1. Show slide 4, 5 of PPT on the Standard precaution for Chapter 3. Show the participants the definition or meaning of Hand hygiene, Hand washing, Antiseptic hand wash, Alcohol-based hand rub, surgical hand hygiene/antisepsis etc. Tell them to look into NATIONAL GUIDELINE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS- Page 11 to 17 as we will not go details on it.
2. In a participatory manner with the audience discuss and write the WHO recommended 5 critical moments of hand hygiene
3. Show and discuss the table in slide 6 of the PPT on Standard precaution for Chapter 3 When to perform hand hygiene
4. Ask [illegible] volunteers to read out the slide 8 of the PPT on Standard precaution for Chapter 3 on most and less frequently missed areas of hand
5. Demonstration:
   - Explain that we will start with hand washing. Ask someone to describe how they wash their hands. If possible get a person to demonstrate how to do this with a basin, water and soap (if he starts to do it the new way, stop him and ask him to do it the old way. Ask if anyone has changed their hand washing habits since COVID19. If so, ask them what they do now.)
   - Now show the Bangla hand washing video clips from IEDCR.
   - If possible in that facility (but recommending to try to do that) arrange a big bowl, water, soap and a towel in the training room and ask two or three different participants to practice. Note that we should emphasize the points of making sufficient soapy foams showed on the video clips. While they are doing this, the other participants will count 1-6 as showed in the video.
   - If arrangement is not possible, ask all the participants to show the steps of hand washing without soap and water.
   - Remind them that DJ and other facilitators will observe if we are washing our hands during the rest of the day and rest of the life.
   - When should we wash our hands? Probe for: after coughing or sneezing, after touching our face, after touching another person, after touching commonly used hard surfaces, before eating, on arrival at our home and before leaving. For HCW: before donning gloves and mask, etc.
6. Now the facilitator explain the process for the preparation of low cost soapy water which is also effective to use for COVID-19 pandemic.
7. Then ask one of the facilitators to show the procedure of hand hygiene using Alcohol-based Hand Rub.
8. Finally, the Facilitator will ask one of the participants to use the Alcohol-based Hand Rub following the proper steps of hand hygiene and ask all other participants to follow him or her. Ask how long they should wash their hands. Probe for: 20-30 seconds and review again for rub hand for hand hygiene and wash hand when visibly soiled.

## Session 3 Respiratory hygiene and cough etiquette (20 minutes)

**Key points:**

- Maintaining respiratory hygiene is also crucial to combat the COVID19 infection.
- Correct respiratory hygiene and cough etiquette will save lives

1. Ask participants to sit in groups on the designated floor as per previously formed four groups.
2. Give the groups the following issues:
    a. Group 1 will play role of wrong way of respiratory hygiene and cough etiquette
    b. Group 2 will play role of correct way of respiratory hygiene and cough etiquette
    c. Group 3 will discuss and deliver a presentation on ways to minimize exposure to respiratory droplets in HCF
    d. Group 4 will discuss and deliver a presentation on masks as protection from respiratory droplets
3. Hand over a photocopy of below message to group-2 (note that group-1 will play role from normal habits)

Respiratory hygiene and cough etiquette includes coughing and sneezing in a way to minimize the spread of droplets:

a. Cover nose and mouth when coughing/sneezing with a tissue or mask
b. Dispose of used tissues and masks and immediately perform hand hygiene
c. In case of sudden episode, use upper arm/inner elbow during cough or sneeze
d. Turn your head away from people or food when sneezing or coughing
e. Avoid touching the "T" zone! (mouth, nose and eyes)

4. Hand over a photocopy of below message to group-3

Ways to minimize exposure to respiratory droplets in HCF:

a. Keep febrile/respiratory symptomatic patient at least 6 ft from others in common area and provide with surgical mask
b. IN HCF: Post visual alerts/education at entrance regarding how to do respiratory hygiene and cough etiquette.
c. IN HCF: Consider offering hand hygiene resources (i.e. hand washing stations, hand rub), tissues and masks (if available) in common areas and triage/screening area.

5. Hand over a photocopy of below message to group-4

Masks as protection from respiratory droplets:

a. Reusable cloth masks are for public use only (not HCW). Wash in soapy water daily.
b. Triple layer disposable surgical masks for anyone with suspected/probable or confirmed case of COVID and their family members
c. Triple layer disposable surgical masks are also for all patients in isolation. Use one for one day only, not reusable, not washable.

d. Triple layer disposable surgical mask is for all HCW providing patient care. Use one for one day only, not reusable, not washable.

e Triple layer disposable surgical masks are also for infection control when handling dead bodies, for ambulance staff, for security personnel and for healthcare workers in community settings.

f. N95 mask requires a fit test with every application, and is for HCW participating in aerosol generating medical procedures (i.e. intubation).

g. N95 mask is also to be used for sample collection and in the laboratory

ALL masks carry a risk of self-contamination if not used correctly. Never touch the front of the mask. Don't wear a mask longer than recommended. When removing, only touch the strings behind the ears to remove and immediately dispose of triple layer disposable surgical masks. N95 can be decontaminated. Cloth masks must be washed daily. Remember to ALWAYS wash your hands immediately upon handling any mask.

What if I only have one surgical mask? WHO recommends NOT reusing or washing. If you only have one, it is better to reuse then have none at all. But you are at high risk of contaminating yourself or others. The front of your mask is considered very contaminated. Take it off carefully by the strings behind your back. Keep in a protected container or bag so nothing else can touch it. ALWAYS wash your hand before and after touching it. If you touch the front, and then the back of the mask, it must be thrown away as now the whole mask is contaminated (you may breathe in Corona virus if you use it). DO not wash it. Keep in full sunlight to help decontaminate when not in use.

Tips for facilitators:

Encourage them to show in a funny way of proper and wrong way of respiratory hygiene and cough etiquette (without actually coughing)

6. Give them 5 minutes to read the document and make the preparations. Clear that group-1 will discuss from their observations in daily life and make the preparations. Let them know that each group will get 2 minutes role play or presentation time followed by 1 minute discussion.
7. Ask group 1 to perform and then give claps for the performance. Now discuss on why we should not follow such behavior.
8. Ask group 2 to perform and give claps for the performance. Now discuss on why we must follow such good behavior. Also discuss how this good behavior minimizes the spread of disease.
9. Ask group 3 to deliver their presentation and give claps for the performance. Now discuss on why we must follow it and can we be able to follow it.
10. Ask group 4 to deliver their presentation and give claps for the performance. Now discuss on what we have learnt from this presentation and can we be able to follow and ask others to follow.

**Tips for facilitators:**

Provide samples of cloth, triple layer disposable surgical mask and N95 masks to this group. Discuss differences between them.

11. Now show and quickly go through the slides 09-21 of PPT on Standard precaution for Chapter 3 and discuss only if anything was not covered through group work and tell the participants they will find these in the given handouts.
12. Conclude the session with reinforcement of practicing standard precautions.

## Session 4 Personal Protective Equipment (PPE) (35 minutes)

Key points:

- By following clear guidance, we can protect ourselves and others from COVID19
- Masks and gloves must be used correctly or they can make things worse

1. Ask participants other than hand hygiene what is another important tool of IPC. Probe for: PPE
2. Ask participants "we are using PPE in HCF but still why are we getting infected? Probe for:
   a. The quality of PPEs were not good
   b. Not able to use PPE properly
   c. Before COVID19 we were not really used to with it
   d. We did not get chance to practice
   e. It is hard to change our common behavior
3. Tell participants that we all are using PPE. Thus let us discuss what the types of PPE are. Ask one participant to voluntarily come and help to list down the types on the flipchart.

**Tips for facilitators:**

(as per NATIONAL GUIDELINE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS- Page 18)

**Types of PPEs 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

**Using gloves**

1. Ask the participants why we should use gloves. Probe for it impedes the contact of the skin of hand with contaminated surfaces, Work from "clean to dirty", protect yourself, patients and environment.
2. Ask "what are the likely problems with using gloves". Probe for: they are easily contaminated and we may forget and touch our face. They do not take the place of handwashing.
3. Ask participants when to change the gloves? Probe for: Change gloves between patient care and procedure of another patient, between procedure in the same patients if infectious materials in different areas, gloves whenever break, remove after use, before touching non-contaminated items and surfaces, and before going to another patient.
4. Ask two participant to volunteer for donning and doffing of the gloves. Facilitator will correct them if there is any gap. Then everybody will perform donning and doffing of gloves.
5. Tell the participants they will get the donning and doffing of gloves as handout. Thus facilitator need not to show the Slides 22-24 of PPT on Standard precaution for Chapter 3 .

6. Ask "where do they dispose of the gloves". Probe for: In a plastic bag for disposal.

7. Ask "are we finished with the task or we left something? Probe for: perform hand hygiene immediately after removal of gloves.

**Donning and doffing of PPE**

1. Show the slides 26-30 of PPT on Standard precaution for Chapter 3. Ask one participant to read out the slide of principles of donning and doffing of PPE. Ask another participant to read out the slides on PPE storage, donning area and removal area. Discuss the points with participants.

2. Show the video on donning and doffing of PPE. Leave it on the screen and give everyone a set of PPE. Working in pairs, they should practice donning and doffing the PPE until they can all do it without mistake.

3. Disposal of PPE:

    a. Show the video clips/PPT on how to knot the disposal bag and then discuss the below points:

        i. Keep PPE in biohazard bag/waste bag in wastes bins

        ii. 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

## Session 5 Safe injection practices, sharps management and injury prevention (10 min)

Key points:

- Be aware of risks from injection or sharp object injury while caring COVID19 patients
- Knowing possible measures if accidental injury occurs

1. Discuss what a needle stick is and how you safely recap and dispose of needles.
2. Ask why sharps are a risk to health care providers, cleaners and waste management staff. Probe to cover the below points:

All patients could potentially have a blood borne infection. Standard precautions protect healthcare workers from this, but a needle stick could potentially expose us.

*Safe injection practice-*

a. Prepare injection using aseptic technique

b. Make sure the red puncture resistant disposal container is nearby.

c. Use one needle and syringe for ONE patient- NO sharing or reuse

d. Disinfect rubber stopper on medication vial with alcohol before piercing

e. Use needle with caution

f. Do not use fluid infusion sets (e.g., IV bags, tubing) for more than one patient

g. After use, DO NOT recap needle, immediately place used needle and syringe into puncture resistant sharps containers for disposal.

3. Ask what we can do if we have a needle stick? Probe to cover the below points:

   a. Wash the wound immediately with soap and water.

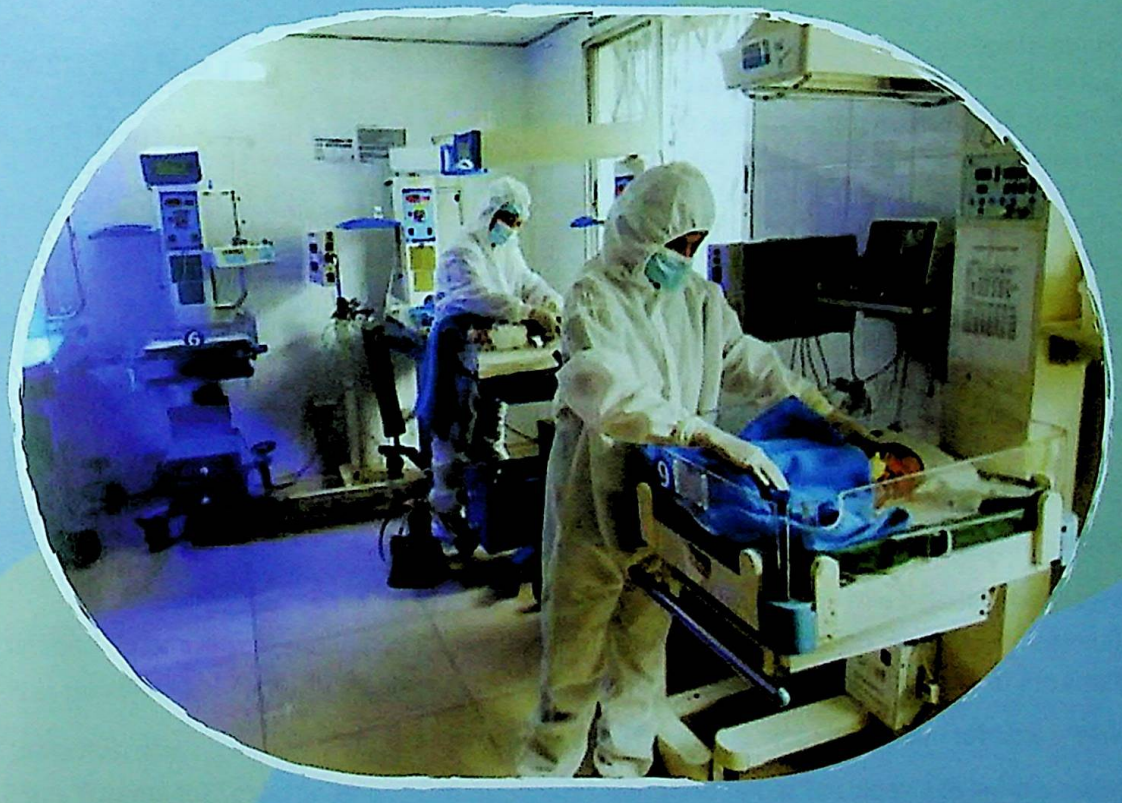
   b. If able, note any blood borne diseases the patient is known to have.

   c. Inform your supervisor and follow any further instructions and management.

4. At the end, please check that all concerns have been answered and give thanks for hard works and cooperation to the facilitators.

# CHAPTER 4

## Implementing additional transmission-based precautions



# BACKGROUND

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

**Audience:**

Health care providers (Doctors, Nurses, paramedics, SACMO, persons/committee designated for IPC etc.)

**Class room size:**

Recommended for 20 participants in normal situation in case of face to face training. If coverage is issue, may make two or three separate batches in separate training rooms.

**Under Outbreak situation like COVID19:**

10-12 participants (Doctors-5/6, Nurses-5/6 from ICU, Isolation ward, Flu corner, General ward and OPD) maximum in case of physical setup. Flexible for online option but remember that participants must follow social distance protocol.

**General Objective:**

The participants will understand requirements of additional precautions when specific transmission is expected in different patient management settings and application of IPC measures and its importance in the current COVID19 context.

| **Training goals:** | **Session plan:** |
|---|---|
| Upon completing the session, participants are expected to be able:<br>• Understand the importance and function of additional precautions for all healthcare facilities and staff in the settings of specific transmission of disease.<br>• Review and compare different PPEs for different disease precautions.<br>**Time: 60 minutes** | 1. Concept of Transmission-based Precaution (10 minutes)<br>2. Precautions in different settings (15 minutes)<br>3. Use of PPE in different settings (15 minutes)<br>4. Rational use of PPE (20 minutes) |

**Materials**

1. Soft copy of PPT on Transmission Based Precautions & use of PPE in different settings
2. VIPP cards with information on aerosol-generating procedure
3. Flip charts labeled with Precautions in different settings:
   Community setting, Outpatient care, Collecting and handling laboratory specimens, Transfer of Patients to designated facility, Case management in Isolation (VIPP cards for each)
4. VIPP cards for use in the table of use of PPE in different settings
5. Make a print of 5 copies of table1 of Annex-7 for group A, 5 copies of table2 for group B and 5 copies of table3 for group C.

**FACILITATOR NOTES:**

This module is based on discussion and questions, especially about PPE and technical issues. So the facilitator must be fully aware of the technical issues in the hints and have a good understanding of disease transmission and different settings managing COvid19 patients.

**Introduction (in general for all modules)**

1. Start the session by greeting the participants.
2. The facilitator informs the participants about the topics, goal, sub-topics and methods that will be used in each session (copy the session flow chart on a piece of flipchart paper and display it in front of the class to help the study flow that will be used in studying each sub-topic). This should be prepared before the session begins.

## Session 1 Concept of Transmission-based Precaution, routes of transmission and special precautions for aerosol-generating procedures (10 minutes)

Key points:

- Standard procedure and guideline required to be followed meticulously in addressing transmission based precautions in regards to
  - i Contact transmission
  - ii Droplet transmission
  - iii Airborne transmission

1. Ask the participants "what are the differences between standard precaution and transmission based precaution"
2. Ask in which way microorganisms are transmitted? Probe for, Contact Transmission, Droplet Transmission, Airborne Transmission.
3. Show slide 1-7 of the PPT on Transmission Based Precautions for Chapter 4. Ask a volunteer to read out the slides.
4. Ask another participant to brainstorm with the audience and write the aerosol-generating procedures. Show slide 8 of the PPT on Transmission Based Precautions for Chapter 4.

**Tips for facilitators:**

- Endotracheal intubation
- Open respiratory and airway suction
- Tracheostomy care
- Cardiopulmonary resuscitation
- Nasopharyngeal/throat/nasal swab collection process
- Bronchoscopy
- Pulmonary function testing
- Manual ventilation before intubation

- some dental procedures (such as high-speed drilling),
- non-invasive ventilation (NIV) such as bi-level positive airway pressure (BiPAP)
- continuous positive airway pressure ventilation (CPAP),
- high-frequency oscillating ventilation (HFOV),
- high flow nasal oxygen (HFNO), also called high flow nasal cannula,
- induction of sputum
- Nebulization (ultrasonic, jet)
- Collection of Oropharyngeal & Nasopharyngeal swabs

5. Now recall and discuss standard precautions such as hand sanitization, Wear PPE by patient and HC Placement of patient beds at more than 1-2 meter distance, other IPC activities-use of disinfecta and disposal of waste.
6. Show slide 9-12 of the PPT on Transmission Based Precautions for Chapter
7. Ask for additional airborne precautions required for doctors and other heal ca professionals. Pro for: Perform procedures in an adequately ventilated room and use of N95 sk minimum number persons should be present in the room for the patient's care and support.
8. Ask what is meant by adequately ventilated room? Probe for: Natural ventilation with air flow of at lea 160 L/s per patient or in negative pressure rooms with at least 12 air changes per hour and controlle unidirectional air flow when using mechanical ventilation. For negative ventilation, duct system wit exhaust fan and HEPA filter can be used.
9. Ask the recommendations on extended use of N95 respirator or equivalent in case of supply shortage.
10. Ask "Can you please explain the 6 days reuse strategy of N95 respirator or equivalent?"
11. Ask what additional precaution is required for doctors and other health care professionals to use th N95 mask? Probe for: Performance of seal check.
12. Now recall and discuss the process of seal checking of N95 respirator.
13. Discuss Do's and Don'ts of using mask/respirator.
14. Now recall and discuss the proper way of wearing and removing masks.

**Tips for facilitators:**

- Plasma sterilization by Vaporized Hydrogen Peroxide (VHP) is recommended method by WHO.
- Maximum allowable reprocessing cycle is TWO times. That means each N95 can be used maximum for three times with two mines reprocessing in-between
- Additional precautions along with standard precaution required when transmission through contact droplet, or airborne is expected.
- All precautions are required to break the chain of infection for disease transmission.
- Doctors and health care providers are at great risk at any settings of patient management from transferring patients to sample collection in labs, outpatient and in Isolation centers (teasers fo next session).

**Tips for facilitators:**

- Please update this PPT regularly and make it a very few slides.
- Conclude the discussion focusing on health care providers' own risks so that they may start finding a good feasible solution by understanding and practicing IPC.

## Session 2 Precautions in different settings (15 minutes)

**Key Points:**

- Transmission based precautions are different for different settings of patient management and providing health care services.
- Standard guideline and procedures should be followed to ensure adherence to compliance to standard

1. Before the session starts put several (6) VIPPs and markers onto the marked social distance circles on the floor where the participants must stand.
2. Ask everyone to take his/her place and pick up the VIPP cards. Explain that we are going to explore precautions in different health care settings.
3. Ask the participants "what precautions do we need to follow in these patient care settings?" Put up the following flip charts or VIPP cards (on wall) with the titles:
   - Community setting (during case findings and contact tracing)
   - Outpatient care
   - Collecting and handling laboratory specimens
   - Transfer of Patients to designated facility
   - Case management in Isolation
4. Ask the participants to search through their VIPPs to find the appropriate titles on the flip charts/VIPP cards.
5. Show the participants the five flip charts/VIPP cards and ask him/her to paste his/her comments on to the appropriate Flip chart/VIPP card.
6. When the first VIPP card is pasted up, ask the rest of the participants to say if it is correctly pasted or not. Use this to have a discussion.
7. If not correctly pasted, ask others to find the appropriate one.
8. Continue until all participants have pasted up their comments and they have been assessed for correct or not.
9. Ask participants to stick VIPP cards with the same message given by others under appropriate title.
10. For community settings, ask participants to post comments considering two types of patients; one with respiratory symptoms like cough, difficulty breathing and patients without respiratory symptoms.

15. Show slide 14-23 of the PPT on Transmission Based Precautions for Chapter 4.

11. There may be some statements that the facilitators cannot answer. These should be pasted on a w and answered later after consultation with experts.

**Tips for facilitators:**

Community setting (during case findings and contact tracing)

a) Individuals without respiratory symptoms should

- Avoid crowd or gathering, closed crowded spaces
- Maintain 1-2 meter distance from any patients/cases
- Follow hand hygiene(hand wash with soap-water or alcohol-based hand rub)
- Refrain from touching mouth and nose;
- Use Surgical mask
- Wash hand returning home
- If coughing or sneezing, cover nose and mouth with flexed elbow or paper tissu dispose-off tissu immediately ( in closed bins) after use and perform hand hygiene

b) Individuals with respiratory symptoms should (fever, cough and difficulty breat g c) or

**suspected/probable COVID19:**

- Frequent hand wash
- Wear Surgical mask
- Stay at home
- Maintain 1-2 meter distance to other
- Call to Hotlines of IEDCR/DGHS (333,16263 etc)
- Seek medical care: consultation, sample collection-lab test, treatment
- Wash the cloths with soap and water
- Decontaminate floor, table, door locks with 0.5% sodium hypochlorite
- If respiratory distress, take admission with an isolation center after discussion with doctors

**Outpatient care:**

12. What approach should be applied in outpatient care settings? Probe: Triage
13. Ask what physician and health workers will communicate to the patients and family?

**Tips for facilitators:**

- Consider alternatives to face-to-face outpatient visits using telemedicine (e.g. telephon consultations or cell phone video conference) to provide clinical support without direct contac with the patient
- Screening, early recognition and isolation of patient with suspected COVID19
- emphasis on hand hygiene, respiratory hygiene; supplied masks to be used by patients wit respiratory symptoms

- Appropriate use of contact and droplet precautions when performing clinical examination on patients with suspected COVID19.
- Prioritization of care of symptomatic patients
- When symptomatic patients are required to wait, ensure they have a separate waiting area where they can sit at least 1-meter apart and provide them with a mask.
- Educate patients and families about the early recognition of symptoms, basic precautions to be used and which health care facility they should refer to if any family member shows signs of COVID19.

**Collecting and handling laboratory specimens:**

14. Ask what precautions they think should be taken during collecting and handling laboratory specimen? Probe: Specimens to be kept in leak-proof container (primary) and appropriate specimen bags (i.e., secondary containers), to be transported in a cool box with 4 ice packs.

**Tips for facilitators:**

- Ensure that health workers who collect specimens, including nasopharyngeal and oropharyngeal swabs, use appropriate PPE.
- Nasopharyngeal/nasal and throat swab should be collected following standard precautions and airborne precautions
- All personnel who transport specimens should be trained in safe handling practices and spill decontamination procedures
- Specimen to be kept in specimen container (primary) and leak-proof specimen bags (i.e. secondary containers) and to be transported in a cool box with 4 ice packs.
- Deliver all specimens by hand whenever possible.
- Labeling of the specimen container (i.e., the primary container), and a clearly written laboratory request form containing patient's ID, age, date of birth and clinical diagnosis of the suspected case of COVID-19.
- Notify the laboratory as soon as possible that the specimen is being transported.

**Transfer of Patients to designated facilities**

15. Ask participants what precautions should be taken during transfer of patients?

**Tips for facilitators:**

- Avoid moving and transporting patients out of their room or area unless medically necessary.
- Use designated portable X-ray equipment and/or diagnostic equipment.
- If transport is required, use predetermined transport routes to minimize exposure for staff, other patients and visitors, and have the patient using a medical mask
- PPE should be put on before handle patient.
- HCWs are to perform hand hygiene and to wear PPE
- Notify and keep ready the area/ward before the patient's arrival
- Decontaminate surfaces/equipment of patient's contact
- Limit the number of HCWs, family members and visitors for suspected and confirmed COVID19 patient
- Maintain a record of all HCW/persons entering the patient's room.

**Case management in Isolation:**

16. Ask participants about their understanding? Probe: 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

**Tips for facilitators:**

1. Installation of exhaust fans
2. Installation of whirlybirds (e.g. whirligigs, wind turbines)
3. Use of duct system with exhaust fan and HEPA filter

- 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.
- Cohorting
  - When single rooms are not available, suspected COVID19 patients should be grouped together in one ward or in one corner of a ward.
  - All patients' beds should be placed at least 1-2 metre apart
  - "A team" of HCWs should be dedicated to care exclusively for "COVID cases" to reduce the risk of transmission
- Restrict HCWs from entering the Corona ward if they are not involved in direct care.
- Restrict HCWs evaluating suspected cases of COVID-19 disease, one HCW can evaluate/screen, others can maintain distance and interact; thus minimizing the need for these individuals to go to healthcare facilities for evaluation.
- Spatial separation
  - If it is not possible to separate infected and non-infected patients, then a spatial separation of minimum 1-2 metre distance between beds to reduce the risk of cross-infection.

**Patient care item**

Stethoscope, Glucometer, thermometer has to be disinfected after each use and in between patient use with alcohol wipe.

**Disinfection of the rooms:**

- Room of patient must be frequently cleaned and adequately disinfected (e.g. at least twice daily or prior to use by another patient) focusing on patient care items, bedside equipment, frequently touched surface area and environmental surface (See details in environmental cleaning section).
- Clean and disinfect bathroom
  - Private patient room toilet: at least twice daily
  - Shared toilets: at least three times daily

## APPROPRIATE USE OF PERSONAL PROTECTIVE EQUIPMENT

PPE should be used based on the risk of exposure; will vary according to the setting and type of personnel and activity. The overuse/misuse of PPE will have a further impact on supply shortages.

| Activity by HCW | Type of PPE required |
|---|---|
| • *Direct Contact without Aerosol-generating procedures of corona patients (suspected/ confirmed) | • should use the following PPE: Gowns, Gloves, Surgical mask and Eye protection (goggles or face shield) |
| • Aerosol-generating procedures of corona patients (suspected/confirmed) | • Gowns, Gloves, Eye protection (goggles or face shield), N95 Respirators or equivalent |

(*Direct contact or close contact refers to coming closer to patients by less than one meter)

### Session Use of PPE in different settings (15 minutes)

Key points:

- By following clear guidance, we can protect ourselves and others from COVID19
- Give consideration to the global crisis rational use of PPE is must
- Proper use of PPE now will help to solve future crisis

1. Ask the participants, "Can Only PPE provide safety? Why? Probe for: Only PPE would not provide safety.
2. Ask the participants "do we need to use a similar set of PPE for all sorts of patient care settings?" Probe for: different sets of PPE are being used and required for different sorts of patient care settings. It is important for health care providers to be well aware about the WHO recommended guidance for use of PPE in different settings to avoid any confusion.
3. Ask the participants,' why should participants know what PPE is required for his/her specific activities and correct use of PPEs and application of IPC knowledge simultaneously? Probe for: participants know what PPE is required for his/her specific activities and correct use of PPEs and application of IPC knowledge simultaneously required for the safety of all health professionals.
4. Show Slide 24-32 of the PPT on Transmission Based Precautions & Use of PPE in different settings for Chapter 4.

**Tips for facilitators:**

(as per NATIONAL GUIDELINE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS- Page 31)

Based on our previous discussions, now we understand precautions need to be taken in different settings. Along with precautions we also need to clearly understand recommended PPE use according to the setting, personnel, and type of activities. Based on need you can visit the list and focus on "must to know" and "nice to know" sections of the list.

**Guidance of PPE use as per the recommended list by WHO consists of five sections;**

1. Inpatient facilities
2. Outpatient facilities
3. Home care
4. Points of entry at airports, ports and ground crossing as applicable
5. Special considerations for rapid-response teams assisting with public health investigations

## Session 4 Rational use of PPE (20 minutes)

**Key points:**

- Rational and appropriate use of PPE is very important in countries like Bangladesh

1. Describe participants that the protection of our frontline health workers is paramount but in view of the global PPE shortage, what should be the strategy? Probe for:
   - strategies that can facilitate optimal PPE availability
   - include minimizing the need for PPE in health care settings,
   - ensuring rational and appropriate use of PPE, and
   - coordinating PPE supply chain management mechanism
2. Make three groups with the participants. Give them the WHO guideline on "rational use of personal protective equipment for coronavirus disease (COVID19) and considerations during severe shortages". Assign task for each group from the Annex-7. Make a print of 5 copies of table1 of aneex-7 for group A, 5 copies of table2 for group B and 5 copies of table3 for group C.

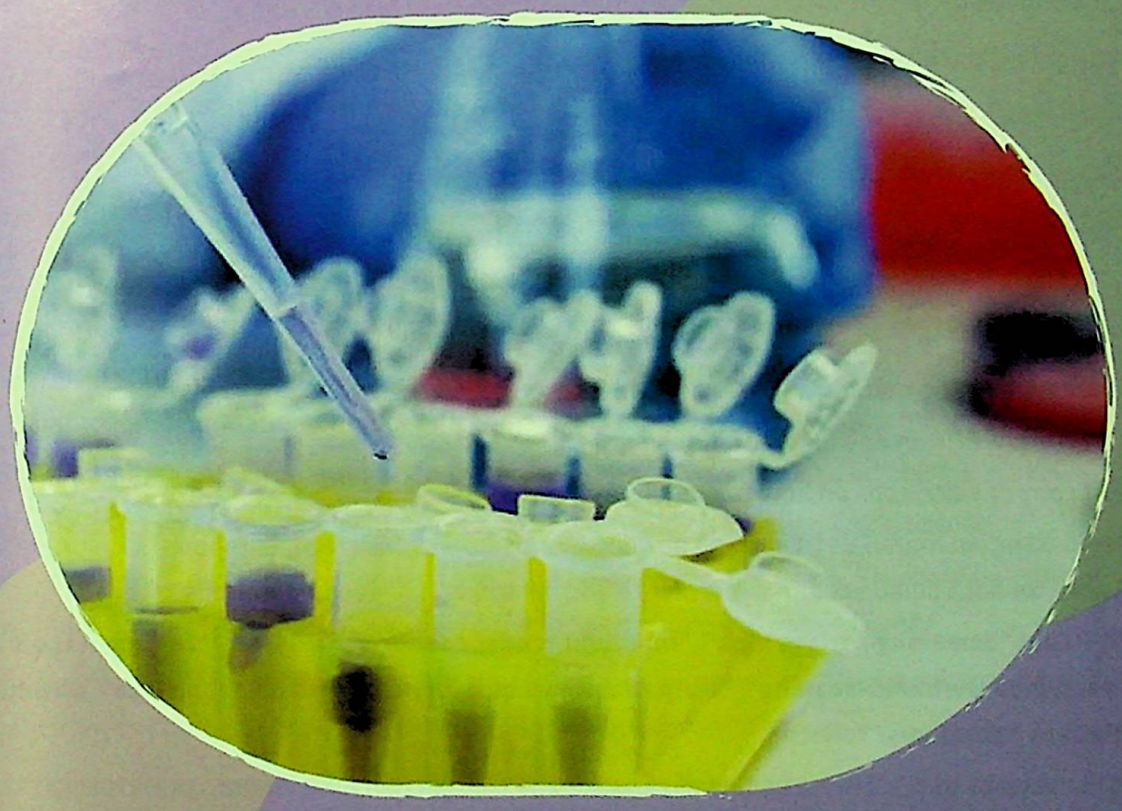
   Group A: Medical mask used by the health workers, Respirators
   Group B: Gown used by the health workers
   Group C: Goggles or safety glasses, face shield used by the health workers
3. Give 10 minutes to discuss the table.

   **Tips for facilitators:**

   Ask each group to focus on the extended use the designated PPE item, how they could be reuse, when not to reuse those items
4. Each team will then present their part mostly focusing on the extended use of the PPEs in the flip chart. Allocate 3 minutes for each team.
5. Show slide 33-34 of the PPT on Transmission Based Precautions & Use of PPE in different settings for Chapter 4.
6. Conclude the session by giving thanks to the participants for their sincere engagement and helping the facilitators. Focus again on the importance of following IPC measures both for service providers and service recipients. Reinforce in imparting knowledge and changing attitude towards basic practices e.g. hand hygiene and use of PPE considering the different routes of transmission of infection and precautions.

# CHAPTER 5

## Environmental and engineering controls in Healthcare Facilities



# BACKGROUND

To prevent the spreading of COVID 19 infection, environmental cleaning in health care facilities is one of th major pillars to break the chain of transmission. All facilities should clean, disinfect, dispose infected wast materials following the SOP of IPC. Hence environmental cleaning plays vital role to break the transmissio among people working or attended in a hospital facility.

**Audience:**

Health care providers (Doctors, Nurses, paramedics, SACMO, persons/committee designated for IPC etc.)

**Class room size:**

15-20 participants maximum in case of physical setup following the "National Standard Operating Procedure for training/EVENT under COVID19 outbreak situation". Flexible for online option but remember that participants must follow the SOP.

**General Objective**

The participants will be able to implement and supervise correct environmental clean g in heir healthcare facilities as one of the basic pillars of IPC and its importance in the current COVID c te

| **Training goals** | **Session plan** |
|---|---|
| Upon completing the session, participants are expected to be able:<br>• to follow correct environmental cleaning and engineering control and be able to explain its importance to others<br>• to prepare the disinfection solutions correctly<br>• to carry out correct waste management<br>• to take the precaution after cleaning<br>**Time: 75 minutes** | 1. Understanding on e ro nental cleaning (15 minutes)<br>2. Preparing the solution (20 minutes)<br>3. How to clean, what to clean, when to clean (25 minutes)<br>4. Dealing with spillage and waste (15 minutes) |

**Materials**

1. Standard training materials (VIPP cards, flipcharts, markers etc.)
2. Soft copy of PPT on environmental cleaning.
3. Soft copy of video clips on how to prepare disinfectant.
4. Demonstration materials (Bleaching powder, Clorox, Bucket with lead, Bamboo stick/stirrer, Table spoon) for both liquid sodium hypochlorite and bleaching powder preparations
5. VIPP card **"Screening / triage area", "Inpatient rooms / cohort – occupied", "Inpatient rooms – unoccupied (terminal cleaning", "Outpatient / ambulatory care rooms", "Hallways / corridors", "Patient bathrooms/ toilets.**
6. 25 Hardcopies of the daily schedule of cleaning and disinfection (one for each participant).
7. Daily Monitoring checklist tool.

**FACILITATOR NOTES:**

This module is based on discussion. Therefore, the facilitator must be fully aware of the technical issues in the hints and have a good understanding of COVID 19.

### Introduction (in general for all modules)

1. Start the session by greeting the participants.
2. The facilitator informs the participants about the topics, goal, sub-topics and methods that will be used in each session (copy the session flow chart on a piece of flipchart paper and display it in front of the class to help the study flow that will be used in studying each sub-topic). This should be prepared before the session begins.

## Session 1 Understanding on environmental cleaning (15 minutes)

Key Points:

- **Environmental cleaning includes Sterilization, Disinfection, Decontamination and Antisepsis.**
- **Cleaning agents can be prepared with 0.5%Sodium Hypochlorite (NaClO) and 70% alcohol**
- **All the surfaces, floor, equipment and line should be cleaned at given frequency to prevent virus transmission**
- **Clear daily schedules and practices need to be followed**

1. Ask the participants why we carry out environmental cleaning or decontamination? Probe for:
   - To reduce the number of infectious agents that may be present on (frequently touched) surfaces and minimize the risk of transfer of micro-organisms from one person/object to another,
   - Reducing the risk of cross-infection.
   - Infectious agents can survive in the environment and on surfaces for many hours or even days.
   - Protection for hospital personnel, patients and visitors.
2. Ask the participants "What do you think about the term environmental cleaning? Probe for:
   - **Sterilization:** Elimination of all microorganisms (viruses, microscopic fungi, bacteria, both vegetative and spore forms). Operationally defined as a decrease in microbial load by 10-6. Sterilization can be achieved by autoclave.
   - **Disinfection:** Elimination of most microorganisms present on a surface or object.
   - **Decontamination:** Decontamination is a process by which pathogenic organisms are killed.
   - **Antiseptic:** is a non –toxic disinfectant that can be used on skin and living tissues.
3. Ensure that the participants understand the difference between Sterilization, Disinfection, Decontamination and Antisepsis by asking different participants to define them.
4. Show PowerPoint slide 2 and 3 and explain the importance of environmental cleaning and compare the answers from the participants with the definitions on the PowerPoint.
5. Tell participants that we are going to make a list of appropriate disinfectants. Ask one participant to write the disinfectants in flipchart based on brainstorming of the participants. Probe for:

- Soap, detergent
- 0.5% (5000ppm) Sodium Hypochlorite solution, (Chlotech, Clorox bleach)
- Bleaching solution (Mixture of 1 lit water + one table spoon full bleaching powder)
- Alcohol 70-90% (e.g. isopropyl 70-90% or ethyl alcohol 70-90%):
- Hydrogen peroxide >0.5%.

6. Show PowerPoint slide 4 and compare the answers from the participants with details. Also Refer t page no-41 of NATIONAL GUIDELINE ON INFECTION PREVENTION AND CONTROL IN HEALTHCAR SETTINGS on IPC, 4.2.1.1 for their information and future reference

## Session 2 Preparing the solution (20 minutes)

**Key Points:**

- **Appropriate preparation is very important to do correct disinfection. The contact time depend on the correct dilution.**
- **It's easy and all facilities can prepare strong disinfectant from bleaching powder or liquid bleac**

1. Ask the participants to guess how we can prepare a good disinfectant solution

**Note for facilitators:**

Make fun by quoting that during lockdown, we believe that we all have a sort of exposure for cleanin everything at home!

2. Ask one participant, which disinfectants are used in hospital? Probe for:
    - 0.5% (5000ppm) Sodium Hypochlorite solution
    - Alcohol 70-90% (e.g. isopropyl 70-90% or ethyl alcohol 70-90%):
3. Show the slide 5 of the PPT and explain how the staff should take preparation for personal safety whe preparing and using disinfectants

**Tips for facilitators:**

- cleaners should wear the following PPE
    - Gown
    - Heavy duty gloves
    - Medical mask
    - Eye protection
    - Face shield and
    - Boots or closed work shoes.
- Disinfectant solutions should always be prepared with proper dress in well-ventilated areas.
- Avoid combining disinfectants, both during preparation and usage, as such mixtures cause respiratory irritation and can release potentially fatal gases, in particular when combined wit hypochlorite solutions

4. Show the slide 6 for the table of dilutions based on the concentration. Remind the participants to always check the label before diluting for the expiry date as the concentration decreases over time.

5. Ask the participants how can we prepare 0.5% sodium hypochlorite solution? Show the slide 6.

**Tips for facilitators:**

**Calculation of sodium hypochlorite concentrations:**

$$\frac{\text{\% chlorine in liquid sodium hypochlorite}}{\text{\% cholorine desired}} - 1$$

= Total parts of water for each part sodium hypochlorice

To prepare 1:10 (0.5%) bleach solution add one volume of household bleach to nine volumes of clean water.

$$\frac{\text{5\% chlorine in liquid sodium hypochlorite}}{\text{0.5\% cholorine desired}} - 1$$

= 9 parts parts of water for each part sodium hypochlorice

ml 5% Bleach + 900 ml water = 1 Liter 0.5% Bleach Solution

ters 5% Bleach + 9 Liters water = 10 Liters 0.5% Bleach Solution

ters 5% Bleach + 18 Liters water = 20 Liters 0.5% Bleach Solution

6. Ask te. C to do calculation of preparation of 0.1% sodium hypochlorite solution and ask team DD to p. pare . % sodium hypochlorite solution from 10% concentrated bleaching solution. Give them 2 minutes

To prepare 1:50 (0.1%) bleach solution add one volume of household bleach to 49 volumes of clean water.

20ml 5% Bleach + 980 ml water = 1 Liter 0.1% Bleach Solution.

400ml 5% Bleach + 19.6 Liter water = 20 Liters 0.1% Bleach Solution

To prepare 0.5% bleach solution from 10% sodium hypochlorite add one volume of 10% bleach to 19 volumes of clean water.

$$\frac{\text{10\% chlorine in liquid sodium hypochlorite}}{\text{0.5\% cholorine desired}} - 1$$

= 19 parts parts of water for each part sodium hypochlorice

50ml 10% Bleach + 950 ml water = 1 Liter 0.5% Bleach Solution.

500ml 10% Bleach + 9.5L water = 10 Liter 0.5% Bleach Solution

1L 10% Bleach + 19 L water = 20 Liter 0.5% Bleach Solution

7. Show slide 7 how to make 0.5% sodium hypochlorite solution from bleaching powder.
Calculation of Chlorine solutions from Calcium hypochlorite:

$$\frac{\text{\% chlorine desired}}{\text{\% chlorine in hypochlorite powder or gramules}} \times 1000$$

= Grams of Calcium hypochlor powder for each liter of water

$$\frac{\text{0.5\% chlorine desired}}{\text{35\% chlorine in hypochlorite powder or gramules}} \times 1000$$

$$= 0.0143 \times 1000$$

$$= 14.3 \text{ Grams (1 Tablespoon)}$$

Therefore, we must dissolve 14.3 grams of calcium hypochlorite powder in each liter of water used to m a 0.5% chlorine solution.

0.1% chlorine solution can also be prepared by dissolving 2.86 grams of calcium hypochlorite powd each liter of water.

8. Now show the video on how to prepare disinfectant.
9. If demonstration materials are available and ready, ask practicing the preparations by few of volunteers
10. Ask "how often do we need to prepare the solution?" Probe for: Fresh solut n r ust be prepared ev day. Ask "why?" Probe for: The chlorine gas evaporates from the solution d the concentratio lower than 0.5% by the next day.
11. Give the following information to the participants:

    Please look at the original concentration of chlorine on the outer surface of e ottle or packet bef making a working solution.

    Bleach solution is better, safer and easier than powder form for making a working solution. Best try use a 5% or 10% solution form.

    Hypochlorite powder must contain at least 35% chlorine to prepare 0.5% hypochlorite solution fr powder form.

12. Ask the participants what is the concentration of ethanol on the market. Probe for: 99.9%. Then a how we prepare 100 ml 70% alcohol from pure ethanol. Collect the answers and show PowerPoint 8 with the correct dilution..
13. Ask the participants why we do not use 99.9% ethanol? Probe for: It evaporates too quickly; 70% h a longer contact time.

## Session 3 How to clean, what to clean, when to clean

**Key point:**

- **Frequency of cleaning is very important.**
- **Focusing on different surfaces for cleaning has a vital role for disinfection.**

1. Prepare VIPP card heading before the session "Screening / triage area", "Inpatient rooms / cohort occupied", "Inpatient rooms – unoccupied (terminal cleaning", "Outpatient / ambulatory care room "Hallways / corridors", "Patient bathrooms/ toilets".
2. Give 4 teams 6 VIPP cards so that two teams will get two VIPP card each and two team one VIPP ca

each. Give the participants the table of Health-care setting: Recommended frequency of cleaning of environmental surfaces, according to the patient areas with suspected or confirmed COVID-19 patients.

3. Ask the team to present the area and frequency of cleaning and additional guideline.

**Table: Health-care setting: Recommended frequency of cleaning of environmental surfaces, according to the patient areas with suspected or confirmed COVID-19 patients.**

| Patient area | Frequency | Additional guidance |
|---|---|---|
| Screening / triage area | At least twice daily | Focus on high-touch surfaces, then floors (last) |
| Inpatient rooms / cohort – occupied | At least twice daily, preferably three times daily, in particular for high-touch surfaces | Focus on high-touch surfaces, starting with shared/common surfaces, then move to each patient bed; use new cloth for each bed if possible; then floors (last) |
| Inpatient rooms – unoccupied (terminal cleaning) | Upon discharge/transfer | Low-touch surfaces, high-touch surfaces, floors (in that order); waste and linens removed, bed thoroughly cleaned and disinfected |
| Outpatient ambulatory care rooms | After each patient visit (in particular for high-touch surfaces) and at least once daily terminal clean | High-touch surfaces to be disinfected after each patient visit<br>Once daily low-touch surfaces, high-touch surfaces, floors (in that order); waste and linens removed, examination bed thoroughly cleaned and disinfected |
| Hallways / corridors | At least twice daily b | High-touch surfaces including railings and equipment in hallways, then floors (last) |
| Patient bathrooms/ toilets | Private patient room toilet: at least twice daily<br>Shared toilets: at least three times daily | High-touch surfaces, including door handles, light switches, counters, faucets, then sink bowls, then toilets and finally floor (in that order)<br>Avoid sharing toilets between staff and patients |

4. Ask the participants when do the cleaners clean or disinfect High touch surfaces? Probe for: Every 8 hours.
5. Ask the participants when do the cleaners clean or disinfect low touch surfaces? Probe for: at least once daily.
6. Ask the participants what will we use between two patients for disinfection? Probe for: 70% alcohol based hand sanitizer.
7. Ask the participants how frequently do the cleaners mop floor? Probe for: Mop the floor 8 hourly
8. Ask the participants what will we use between in case of curtains/linen for disinfection? Probe for:

Remove used curtains/ fabrics/ quilts for washing 2-3 times in a week (preferable using hot water detergent or 0.1% bleach solution for 30 minutes then wash with running water)

9. Who is responsible to monitor the frequency of cleaning? Probe for: Every HCP will have to focus on cleaning process.
10. Ask the participants "have they heard about Tipple bucket method"? If heard, please request describe. Show the presentation slide 9-13.

**Tips for facilitators:**

**Tipple Bucket Method:**


| | |
|---|---|
| 1st bucket with detergent water/ cleaning solution for rinsing: | Mop rinsed again in this water. |
| 2nd bucket with fresh water: | Dirty mop is sponged or rinsed. The rinse water bucket allows the mop to be rinsed and wrung out before it is re-dipped into the prepared solution. This extends the life of the solution which saves both time and material costs. |
| 3rd bucket fresh disinfectant solution: | Mop is immersed in this solution and the floor mopped literally. |
| Another one bucket is needed more for rinsing the mop (in a heavily soiled floor one bucket with Detergent and warm water before disinfectant mopping). | |

11. Give the instruction Copy to everyone. Read the instruction one by one.

**Instruction:**

1. Use a separate mop for different areas (patient area, nurse's room-store room, veranda-pantry, bathroom-to dry the floor).
2. Cleaning should progress from the least soiled (cleanest) to the most soiled (dirtiest) areas, and from the higher to lower levels so that debris may fall on the floor and is cleaned lasting a systematic manner to avoid missing any areas.
3. At high risk of COVID-19 virus contamination, use a new cloth to clean each patient bed.
4. Wash the mop under running water before doing wet mopping.
5. Do not double dip mop as dipping it multiple times may be re-contaminated.
6. Soiled clothes should be reprocessed properly after each use.
7. Change solution after cleaning area of 240 square feet.
8. Use a checklist for every cleaning and take the signature of the cleaner.
9. **Mopping method:**
   a. Place a 'wet floor' caution sign outside of the room or area being mopped.
   b. Divide the area into sections (e.g. corridors may be divided into two halves, lengthwise so that one side is available for movement of traffic while the other is being cleaned).
   c. Immerse mop in cleaning solution and wring out.
   d. First paying particular attention to removing soil from corners.
   e. In open areas use a figure eight stroke in open and wide spaces, overlapping each stroke and turn the mop head over every five or six strokes.
   f. While in small spaces starting in the farthest corner of the room, drag the mop toward you then push it away, working in straight, slightly overlapping lines and keeping the mop head in full contact with the floor.
   g. Repeat until the entire floor is done.
10. **After Cleaning:**
    - Clean mop head after use with detergent and hot water dry in sunlight-mop head up and handle down.
    - In high risk areas keep a separate set of mops for each shift.
    - Clean the buckets with detergent and water and store it dry.

## Session 4 Dealing with spillage and waste (15 minutes)

**Key points:**

- **Any spills must be attended using PPE (mask, gloves, protective coat/cloths/PPE) and decontaminating material**
- **Spill kits should be kept ready at all hospital wards or labs**

- **Spill Kit:**
  - i **Bucket and plastic scoop or dustpan**
  - ii **0.5% Sodium Hypochlorite/spirit/ethanol**
  - iii **Biohazard Bag/waste bag**

1. Ask the participants what type of spills may occur in a health facility and why they can be dang
   Probe for: Vomitus, Blood, nasal secretion, any type of body secretion and contaminated mater
2. Show the slides 14-15 of the PPT on environmental cleaning and discuss what a spillage is and h
   you manage liquid spill.
3. Discuss why liquid spill is a risk to health care providers and cleaners.
4. Ask the participants what should be in a spill kit.

   **Probe for:** PPE including gloves and mask, 0.5% bleach solution, paper towels, plastic scoop/du
   biohazard bag, mop, soap and water.
5. Make a line on the wall with the word SPILL at one end and CLEAN at the other. Ask the team to
   the steps of cleaning up on VIPP cards. Choose one participant from the team to stick his/her VI
   onto the wall in order so that we can see all the steps from spilling to a clean area.
6. Ask the other participants to add missing steps and to correct any mistakes. Show PowerPoint
   9 to check if the list is correct.
7. Give a big clap for those team who can do the sequence correctly.

**Tips for facilitators:**

**7 steps of liquid spill management:**

a) Decontaminate spills of blood and potentially infectious materials.

b) Wear PPE and protective gloves.

c) Using a pair of forceps and gloves, carefully retrieve broken glass and sharps if any, and use a
amount of folded absorbent paper to collect small glass splinters. Place the broken items in
puncture proof sharps container.

d) Cover spills of infected or potentially infected material on the floor with paper towel/ bl
paper/newspaper.

e) Pour freshly prepared 0.5% Sodium hypochlorite solution and leaves for 20-30 minutes for co

f) Place all soiled absorbent material and contaminated swabs into a designated waste contai

g) Then clean the area with gauze or mop with water and detergent with gloved hands.

**[NB: Any material treated with hypo-chlorite solution should never be sent for incineration**

8. After the presentation, ask the participants on "what are the types of waste" and list down on th
   chart. Check against PowerPoint 17.
9. Show the slides 18 of the PPT on environmental cleaning and the correct way to tie the waste disc
   bag and show the video "how to tie the bio hazard bag"
10. Ask the participants, "What should be used if Bio-hazard bag is not available?"

    Probe for: Any heavy plastic bag with same standard and can be sterilized should be used. But pref
    use labeled biohazard bag.

11. Ask the participants, once cleaning and disinfection is done, do we need anything further to do? Take answers from 2 to 3 participants and write on a flip chart. Probe for: Dispose of PPE and cleaning material in double bagged biohazard bag, wash hands in soap and water,
12. Show the slide 19 and check against the points on the flip chart.
13. Ask the participants what are Instrument and linen cleaning process? Show the PowerPoint Slide 20-21.

**Tips for facilitators:**

- Liquid spills:
  - any contaminated liquid spilled from patient's bowel
  - Blood/plasma mixed liquid etc
- Four Type of waste
  - General waste
  - Infectious waste
  - Non-infection plastic
  - Sharp
- Precautions to take after completing the clean-up and disinfection
  - Staff should wash their hands with soap and water immediately after removing the PPE and when cleaning and disinfection work is completed.
  - Discard all used PPE in a double-bagged biohazard bag, which should then be securely sealed and labeled. After sealing the bio-hazard bag, wear another pair of gloves and spray NaClO solution around the bio-hazard bag. Remove and discard the gloves in the yellow color bin.
  - The staff should be aware of the symptoms and should report to their occupational health service if they develop symptoms.
  - Sterilization of Instruments used for cleaning

14. Ask the participants how do the cleaners clean ICU room? Show the slide 22-23

**Tips for facilitators:**

**Cleaning Protocol in COVID ICU**

- Always start from clean to dirty area and from top to bottom.
- Always the surface disinfection has to be done 1st followed by floor cleaning and last washroom cleaning.
- Different mops and buckets with labels has to be used for different designated areas. Example: one for nurse's station, one for doffing area, one for patient beds and one for rest of the ICU.
- No washing and brooming has to be done inside ICU.
- Only soap and water and disinfectant has to be used for cleaning every 4th hourly.

**I - Always to be started with nurses station 1st:**

- Tissue paper Dispenser
- Computer
- Keyboard & mouse

- Intercom
- Chair arms
- Nursing counter table
- Crash cart
- Medicine trolley
- Injection trolley Followed by these, floor cleaning near to nursing station has to be done.

**II - Patient area has to be cleaned 2nd:**

Patient beds have to be placed 1-2 meter away from each other and 1-2 meter away from the wall.

- Switch board (alcohol wipes to be used) - DO NOT SPRAY
- Bed side table with case sheet
- Ventilator screen to be cleaned 1st then to the other parts of the ventilator
- CCM and SPO2 monitor
- Infusion pump
- IV stand

**Cleaning of the cot:**

- 1st - Head end rails
- Side rails
- Foot end rails
- Cot wheels

Floor cleaning near the patient beds: Patients bed side floor has to be cleaned, starting from the foot e and proceeding towards the head end. (All the beds have to be cleaned in this manner).

III. 3rd the rest of the ICU: It has to be cleaned starting from the entrance and proceeding in a clockwis manner (as shown in picture 1 with pink colored arrows).

IV. 4th the doffing area: It has to be cleaned, as it is the dirtiest area of the entire ICU.

**Doffing area:**

- Full size mirror should be present on the wall to check for the proper doffing procedure.
- Designated closed bin and bag for discarding PPE has to be placed.
- Hand rub stand with hand rub has to be fixed.
- Stand to be fixed on the wall for glove box
- Doffing poster has to be present to check for the correct doffing sequence.
- Hand hygiene poster to be placed on wall

14. Show the Daily monitoring Checklist. DMCH has started this checklist and use properly.
15. Conclude the session by giving thanks to the participants for their sincere engagement and helpin facilitators.

- Intercom
- Chair arms
- Nursing counter table
- Crash cart
- Medicine trolley
- Injection trolley Followed by these, floor cleaning near to nursing station has to be done.

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# CHAPTER 6

## Implementing Administrative Controls

# BACKGROUND

Functionalising good practice of IPC as per SOP is one of the key gaps in most of the facilities in Bangladesh. There is IPC committee formed by the director of hospital in most of the health facilities but the challenge became how to make them functional. Without changing the mind set and behaviors, it is very difficult to get positive response from the management. Therefore, engaging hospital management in the process and involving them to support the IPC committee and the workers who will perform IPC is very vital.

**Audience:**

Health care providers (Doctors, Nurses, paramedics, SACMO, persons/committee designated for IPC etc.)

**Class room size:**

Recommended for 20 participants in normal situation in case of face to face training. If coverage is issue, may make two or three separate batches in separate training rooms.

**Under Outbreak situation like COVID19:**

10-12 participants (Doctors-5/6, Nurses-5/6 from ICU, Isolation ward, Flu corner, General ward and OPD) maximum in case of physical setup. Flexible for online option but remember that participants must follow social distance protocol.

**General Objective**

The participants will understand the importance of administrative control by the IPC committee and their role to prepare and functionalise the facility for COVID 19 management as per national guideline.

| **Training goals** | **Session plan** |
|---|---|
| Upon completing the session, participants are expected to be able:<br>• Know the different committee responsible for COVID 19 management and their responsibility<br>• Responsibility of facility health care staff for COVID 19<br>• Strengths of team work<br>**Time: 45 minutes** | 1. IPC committee and responsibilities (15 minutes)<br>2. Team building with committee members, doctors, nurses and workers and taking self-commitments (15 minutes)<br>3. Making action plan by the facility and discussing the issues in parking lot (15 minutes) |

**Materials**

1. Soft copy of PPT on administrative control
2. Standard training materials (VIPP cards, flipcharts, markers etc)

**Introduction (in general for all modules)**

1. Start the session by greeting the participants.

2. The facilitator informs the participants about the topics, goal, sub-topics and methods that will be used in each session (copy the session flow chart on a piece of flipchart paper and display it in front of the class to help the study flow that will be used in studying each sub-topic). This should be prepared before the session begins.

## Session 1 IPC committee and responsibilities (15 minutes)

Key points:

- Learning DGHS Operational Manual to run a COVID19 hospital
- Following compliance is worthy enough:
  - i ensure all necessary preventive and protective measures to minimise health risks and to ensure occupational safety
  - ii Ensure adequate IPC and PPE supplies (masks, gloves, goggles, gowns, hand sanitiser, soap and water, cleaning supplies)
  - iii Responsible for external communication (higher authority, media etc.) and ensure patients protection
- Assessment logistics and facility capacity, identification and maintenance of supply chain
- Planning to manage emergency situation including back up plan if any staff is sick

1. Ask the participants "to run a COVID hospitals, what are the Administrative measures that must be followed in the facilities?"
2. Pick the related answers and write down on the flip chart.
3. Ask the participants, within their knowledge, what are the major actions have been taken in their facilities to manage COVID 19 situation? Take answer from three to four person.
4. Show the slides 1-6 of the PPT on administrative control (Also inform the participants to look into page 56 and 57 of NATIONAL GUIDELINE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS 5.1 and 5.2).
5. Request five persons to read 2 slides each.
6. Ask the participants is there is any IPC committee in their facility? what does the IPC committee do?
7. Show slide.
8. Ask the participants what they do if they have any roster and what if anyone is sick.
9. Show the slides 7-8 of the PPT on administrative control.
10. Read out and discuss if the facility is following the same.

**Tips for facilitators:**

**IPC committee:**

**Formation of IPC Committee members**

**District Hospital:**

Chairperson: Hospital Superintendent

Member Secretary: Resident Medical Officer (RMO)

Members: One representative from each department (Consultant), Nursing Superintendent/Matron and Ward Master

**Upazila Health Complex:**

Chairperson: Upazila and Family Planning Officer (HFPO)

**Member Secretary:** Resident Medical Officer (RMO)

**Members:** One representative from each department (Consultant), Nursing Superintendent/Matron and Ward Master

**The IPC Committee for different level of Hospital has the following responsibilities:**

- Developing an IPC work plan and implementing it within the hospital.
- Introduce infection register and establish infection surveillance, regularly review data, and take necessary measures
- Coordinating and conducting training activities, including staff training
- Providing/advocating for sufficient resources to support the IPC program
- Monitoring infection prevention practices and applying measures to close gaps between set standards and actual practices (e.g., Hand hygiene, appropriate use of PPE, isolation, sterilization of equipment, waste management, etc.)
- Collecting data to measure indicators reflecting extent of infections acquired in the
- Health facility (e.g. COVID infection rate among the hospital staff, peri-operative infection rate)
- Developing and disseminating infection control policies for the hospital.
- The committee will meet together once every month to review the IPC situation of the hospital and take necessary actions.
- The Member secretary will arrange the monthly IPC committee meeting.

**IPC Team:**

There will be one or more IPC teams in a hospital or in a health complex. The team will work dedicatedly for the hospital and the team will form with:

1. Medical Officer (Facilitator from the existing Work Improvement Team)
2. Senior Staff Nurse (Member from existing Work Improvement Team)

**Responsibility of the IPC Team:**

- The IPC team at different sections of the hospital will implement the action plan as developed by the IPC committee
- The teams will coordinate with the IPC committee for necessary logistic and technical supports as and when required
- The team will introduce the infection register in the section, and record all the information
- The team will monitor and report the progress of implementation of the action plan and the IPC situation of the section to the IPC committee periodically (weekly)
- The team will meet every week/fortnightly to discuss the IPC situation of the section and take necessary measures to improve the situation

## Session 2 Team building with committee members, doctors, nurses and workers and taking self-commitments (15 minutes)

Key points:

- IPC can only be functionalized if there is a strong team building approach is established

1. Ask participants to help to arrange representatives from existing IPC committee, Administrative officer, and cleaning sector.
2. Perform a very short team building exercise to create an open discussion environment.
3. Make a circle maintaining social distance and ask everybody to put his/her hands on heart.
4. Ask everybody to share his/her important contributions on functioning IPC and share a gift (commitment) that will make a difference from onwards.

## Session 3 Making action plan by the facility and discussing the issues in parking lot (15 minutes)

Key points:

- Train[illegible] will not create impacts until there is a good plan to execute on ground

1. Ask the te[illegible]is [illegible]ome up with a tentative action plan for functioning IPC in their facility. The plan must also inclu[illegible]re[illegible]r quality monitoring process and a reporting system to Director Hospital. If time is short, may ask [illegible]em to do that later on and share with QIC.
2. **Now,** it's time to discuss issues on parking lot. Again, if time permits, discuss and help them to solve the issue.
3. Conclude the session with great thanks for their firm commitments.

## Annex 1 Quiz for IPC training on chapter-1 (only for online course)

**Please chose the best possible one answer to each question.**

26. Which of the following best describes the agent that causes COVID19?

e) A bacteria
f) An enveloped virus
g) A non-enveloped virus
h) A prion

27. What are the ways that we can control the spread of COVID19?

f) Infection prevention control
g) Isolation
h) Antibiotics
i) a and b
j) we cannot control COVID19

28. Which is not the health & socio-economic impacts of COVID19?

e) People to people transmission at large number within short period
f) This crisis is not going to cause both a demand and supply shock for our economy
g) People have to be more & more jobless
h) More Health care providers are under pressurised conditions

29. To avoid coronavirus when outside the home, you should:

f) Try to stand in the sun as much as possible
g) Keep a distance of 1 meter between other people
h) Wash hands with adequate measures
i) a, b and c
j) b and c

30. To remove coronavirus, hard surfaces in the home should be cleaned with:

f) A piece of cloth and water,
g) 0.5% bleach solution
h) Detergent and water
i) Brush/duster
j) b and c

31. COVID19 is thought to spread mainly through

e) Respiratory droplets from infected person
f) Close contract between people (less than 3 feet)

g) Contact with contaminated surfaces or objects:

h) a, b, c

31. Which tool is insufficient to kill the coronavirus?

e) 50% alcohol

f) Detergent

g) 0.5% bleaching powder solution

h) Soap

32. In health care facility which measure gives the best protection to both the patient and care giver from COVID19?

e) Isolation

f) Infection prevention control measures

g) Only personal protection equipment

h) Ventilation

33. Why IPC is the best solution to protect us from COVID19 in Bangladesh?

e) Comparatively cheap measures

f) To protect the health care providers from COVID 19

g) Not so difficult and feasible for our country context.

h) Above all

34. Which is the COVID19 specific standard precautions according to WHO?

h) Basic hand hygiene

i) Respiratory hygiene and cough etiquette

j) Use of PPE

k) Environmental disinfection

l) a, b, c & d

m) c & d

n) b, c, & d

## Annex 2 Quiz for IPC training on chapter-2 (only for online course; developed as per information updated till 6 May 2020)

**Please chose the best possible one answer to each question.**

1. Which is not applicable for COVID19?

   a. Can spread due through close contact with an infected person

   b. Can spread by respiratory droplets produced by an infected person during coughing or sneezing

   c. Touching surfaces are capable of transmitting SARS-CoV-2

   d. SARS-CoV-2 can spread from human to pets

2. The spread of SARS-CoV-2 can be prevented by -

   a. Maintaining appropriate social distance

   b. Maintaining respiratory hygiene

   c. Decontamination of surfaces/rooms/equipment/items

   d. All of the above

5. Which of the following is not a strategy for IPC in health care settings –

   a. Ensuring triage

   b. Following standard precautions

   c. Implementing additional transmission-based precautions

   d. Vaccinating suspected COVID19 patients

6. What is the logistics required for IPC in the observation and screening area?

   a, Tap with running water and soap

   b. Hand sanitiser

   c. Disposal bags with bins

   d. All of the above

7. What are the activities related to the examination of a COVID19 patient in the triage room?

   a. Measure temperature

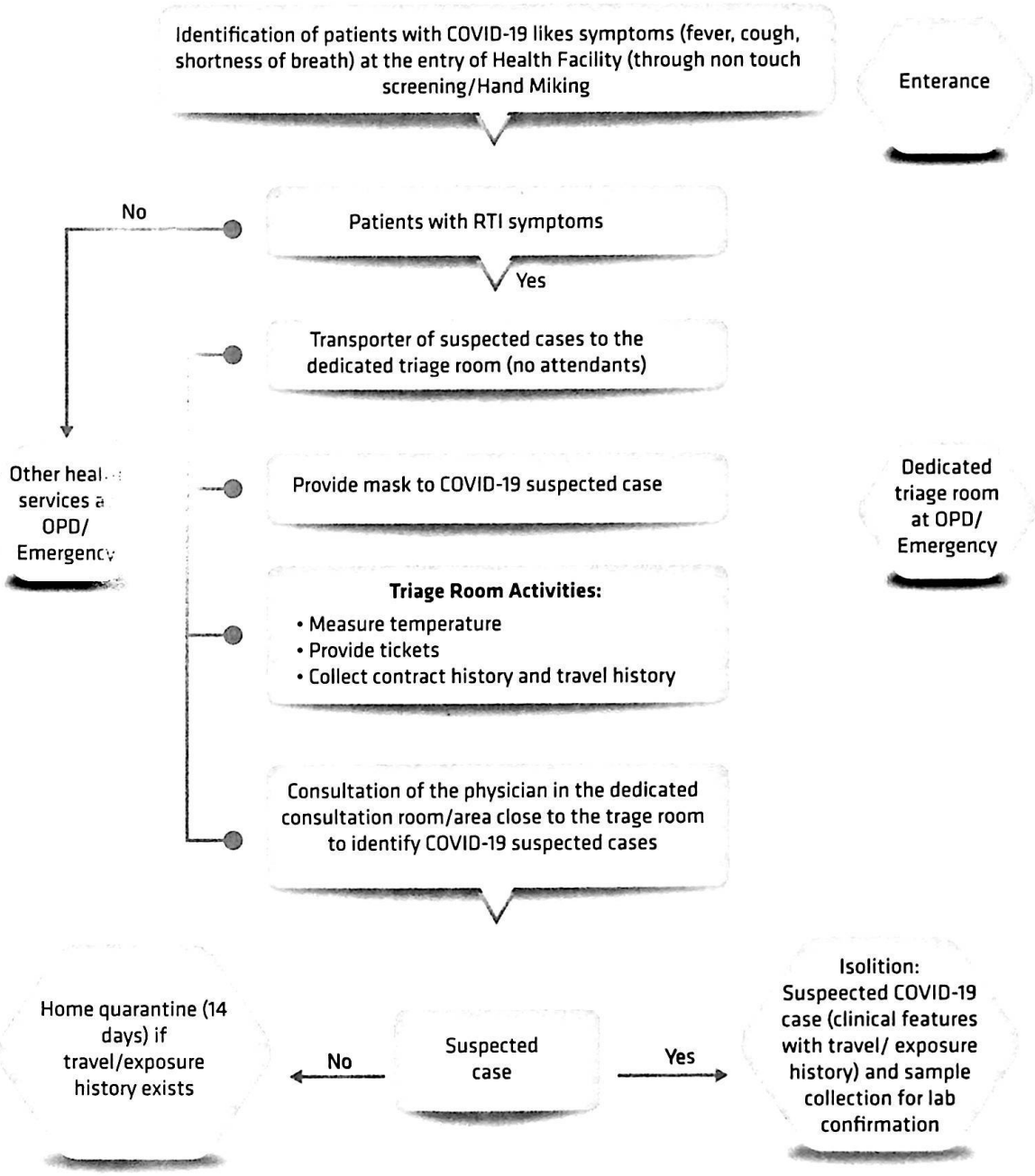
   b. Collect contact history

   c. Collect travel history

   d. Screen by taking respiratory symptoms

# Annex 3: Flow of COVID19 patients in the triage of a health facility

## Follow of COVID 19 patients in the triage of a health facility



## Annex 4 Measures for IPC during the triage process

| Area/sections and health care staff | Health care staff involved | Type of target patients | Activity | Type of personal protective equipment (PPE) for patients | Type of personal protective equipment (PPE) for health care staff | Type of IPC logistics |
|---|---|---|---|---|---|---|
| Observation and screening | SACMO or Nurse or outdoor staff or ward boy | All patients | Preliminary screening not involving direct contact (observation and questioning) Provide mask to patients having sympotoms of COVID19 (those who do not have masks with them) | Maintain a spatial distance of at least 3 feet or 1 meter, use medical mask at all time | Maintain a spatial distance of at least 3 feet or 1 meter, use medical mask at all time | Tap with running water, soap or 70% alcohol-based hand sanitiser, tissues, disposal bag with bins |
| Ticket Counter | Health facility staff appointed for providing tickets | Patients with respiratory symptoms | Ticket distribution | Maintain a spatial distance of at least 3 feet or 1 meter, use medical mask at all time | Use medical mask, maintain a spatial distance of at least 3 feet or 1 meter | Tap with running water, soap or 70% alcohol-based hand sanitiser, tissues, disposal bag with bins |
| Triage room | Paramedic or Nurse | Patients with respiratory symptoms | Check the temperature, collect history of exposure or visit | Maintain a spatial distance of at least 3 feet or 1 meter, use medical mask at all time | Gown, medical mask or respirator, glove | Tap with running water, soap or 70% alcohol-based hand sanitiser, tissues, disposal bag with bins |
| Examination room | Physician | Patients with respiratory symptoms | Examine the patients | Maintain a spatial distance of at least 3 feet or 1 meter, use medical mask at all time | Gown, medical mask or respirator, eye protection, gloves | Tap with running water, soap or 70% alcohol-based hand sanitiser, tissues, disposal bag with bins |
| High touch surfaces | Cleaning staff | Patients with respiratory symptoms | Cleaning surfaces | Maintain a spatial distance of at least 3 feet or 1 meter, use medical mask at all time | Heavy-duty hand gloves, mask, boots or closed work shoes, eye protection (if applicable) | 1% sodium hypochlorite solution, surface cleaning equipment as appropriate |

## Annex 5 Summary of IPC measures during the triage process

**Observation and screening:**

This will be done at the entry point of the health facility. Nurse/SACMO/outdoor staff/ward boy will be responsible for initial screening. He will wear a medical mask, keep a spatial distance of at least three feet to screen patients entering into the health facility. The whole screening process will be performed using the non-touch technique. Questions related to COVID19 symptoms (fever, cough, shortness of breath, sneezing, runny nose, sore throat, diarrhoea, vomiting, etc.) will be asked. She will wash his hands with soap and running water or hand sanitiser in every two to three hours.

**Ticket counter:**

The health facility staff distributing tickets will wear a medical mask, keep a spatial distance of at least 3 feet while she provides tickets to patients. She will use gloves if necessary and wash his hands frequently using hand sanitiser. He must be careful and not touch his mouth, nose, eyes without cleaning those properly with hand sanitiser. When necessary, he will also wash his hands with soap and running water.

**Triage room:**

The health care staff will wear medical mask, gown, and gloves. He will wash his hands using running water and soap or hand sanitiser before and after examining each patient. There should be tissues and disposal bags with bins in the examination room.

**Examination room:**

The physician will wear a medical mask or respirator, gown, eye protector (as appropriate), and gloves. He will wash his hands using running water and soap or hand sanitiser before and after examining each patient. There should be tissues and disposal bags with bins in the examination room.

**High touch surfaces:**

The cleaner will be responsible for disinfecting high touch surfaces wearing heavy-duty gloves, mask, boots, eye protection (if applicable). High touch surfaces include doorknobs, telephone, call bells, bedrails, stair rails, light switches, lift-buttons, armrests tables, air or light controls, keyboards, switches, basin, wall areas around the toilet) to be done every 3-4 hours. 1% sodium hypochlorite solution, and other surface cleaning equipment as appropriate.

**Sources:**


1. National Guideline on Infection Prevention and Control for Healthcare Providers in the context of COVID19 pandemic. (DGHS)
2. Link: https://dghs.gov.bd/index.php/bd/publication/guideline
3. Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected. (WHO)
4. Link: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125
5. Infection prevention and control of epidemic-and pandemic-prone aute respiratory infections in health care. (WHO)

Link:https://apps.who.int/iris/handle/10665/112656?search-result=true&query=Infection+prevention+and+control+of+epidemic-+and+pandemic-prone+acute+respiratory+infections+in+health+care&scope=&rpp=10&sort_by=score&order=desc

## Annex 6 Rational use of personal protective equipment for coronavirus disease (COVID19) and considerations during severe shortages

**Table 1. Recommended PPE during the outbreak of COVID19 outbreak, according to the setting, personnel, and type of activity**

| Setting | Target personnel or patients | Activity | Type of PPE or procedure |
|---|---|---|---|
| **Health care facilities** | | | |
| **Inpatient facilities** | | | |
| Screening | Health care workers | Preliminary screening not involving direct contact. | • Maintain physical distance of at least 1 metre.<br>• Ideally, build glass/plastic screens to create a barrier between health care workers and patients<br>• No PPE required<br>• When physical distance is not feasible and/or no patient contact, use mask and eye protection. |
| Clinical triage for prioritisation of care according to severity (e.g. Manchester classification) should be performed in separate area for individuals with symptoms and signs | Patients with symptoms suggestive of COVID19 | Any | • Maintain physical distance of at least 1 metre.<br>• Provide medical mask if tolerated by patient.<br>• 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 metre from other patients.<br>• Perform hand hygiene and have the patient perform hand hygiene |
| | Patients without symptoms suggestive of COVID19 | Any | • No PPE required<br>• Perform hand hygiene and have the patient perform hand hygiene |
| Patient room/ ward | Health care workers | Providing direct care to COVID19 patients, in the absence of aerosol- generating procedures | • Medical mask<br>• Gown<br>• Gloves<br>• Eye protection (goggles or face shield)<br>• Perform hand hygiene |

| | | | |
|---|---|---|---|
| Patient room/ ward | Health care workers | Providing direct care to COVID19 patients in settings where aerosol- generating procedures are frequently in place | • Respirator N95 or FFP2 or FFP3 standard, or equivalent.<br>• Gown<br>• Gloves<br>• Eye protection<br>• Apron<br>• Perform hand hygiene |
| Patient room/ ward | Cleaners | Entering the room of COVID19 patients | • Medical mask<br>• Gown<br>• Heavy-duty gloves<br>• Eye protection (if risk of splash from organic material or chemicals is anticipated)<br>• Closed work shoes<br>• Perform hand hygiene |
| | Visitors | Entering the room of a COVID19 patient | • Maintain physical distance of at least 1 metre<br>• Medical mask<br>• Gown<br>• Gloves<br>• Perform hand hygiene |
| Areas of transit where patients are not allowed (e.g. cafeteria, corridors) | All staff, including health care workers. | Any activity that does not involve contact with COVID19 patients | • Maintain physical distance of at least 1 metre<br>• No PPE required<br>• Perform hand hygiene |

| | | | |
|---|---|---|---|
| Laboratory | Lab technician | Manipulation of respiratory samples Specimen handling for molecular testing would require BSL-2 or equivalent facilities.<br>Handling and processing of specimens from cases with suspected or confirmed COVID19 infection that are intended for additional laboratory tests, such as haematology or blood gas analysis, should apply standard precautions. | • Maintain physical distance of at least 1 metre<br>• Medical mask<br>• Eye protection<br>• Gown<br>• Gloves<br>• Perform hand hygiene |
| Administrative areas | All staff, including health care workers. | Administrative tasks that do not involve contact with COVID19 patients. | • Maintain physical distance of at least 1 metre<br>• No PPE required<br>• Perform hand hygiene |
| **Outpatient facilities** | | | |
| Screening/ triage | Health care workers | Preliminary screening not involving direct contact | • Maintain physical distance of at least 1 metre.<br>• Ideally, build a glass/plastic screen to create a barrier between health care workers and patients<br>• No PPE required<br>• When physical distance is not feasible and yet no patient contact, use mask and eye protection.<br>• Perform hand hygiene |

| | | | |
|---|---|---|---|
| Screening/ triage | Patients with symptoms suggestive of COVID19 | Any | • Maintain spatial distance of at least 1 metre.<br>• Provide medical mask if tolerated.<br>• Perform hand hygiene |
| | Patients without symptoms suggestive of COVID19 | Any | • No PPE required<br>• Perform hand hygiene |
| Waiting room | Patients with symptoms suggestive of COVID19 | Any | • Provide medical mask if tolerated.<br>• 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 metre from other patients.<br>• Have the patient perform hand hygiene |
| | Patients without respiratory symptoms | Any | • No PPE required<br>• Have the patient perform hand hygiene |
| Consultation room | Health care workers | Physical examination of patient with symptoms suggestive of COVID19 | • Medical mask<br>• Gown<br>• Gloves<br>• Eye protection<br>• Perform hand hygiene |
| | Health care workers | Physical examination of patients without symptoms suggestive of COVID19 | • PPE according to standard precautions and risk assessment.<br>• Perform hand hygiene |
| | Patients with symptoms suggestive of COVID19 | Any | • Provide medical mask if tolerated.<br>• Hand hygiene and respiratory etiquette |
| | Patients without symptoms suggestive of COVID19 | Any | • No PPE required<br>• Have the patient perform hand hygiene |

| | | | |
|---|---|---|---|
| Consultation room | Cleaners | After and between consultations with patients with respiratory symptoms. | • Medical mask<br>• Gown<br>• Heavy-duty gloves<br>• Eye protection (if risk of splash from organic material or chemicals).<br>• Closed work shoes<br>• Perform hand hygiene |
| Administrative areas | All staff, including health care workers | Administrative tasks | • Maintain physical distance of at least 1 metre between staff<br>• No PPE required<br>• Perform hand hygiene |
| Home care | | | |
| Home | Patients with symptoms suggestive of COVID19 | Any | • Maintain physical distance of at least 1 metre.<br>• Provide medical mask if tolerated, except when sleeping<br>• Hand and respiratory hygiene |
| | Caregiver | Entering the patient's room, but not providing direct care or assistance | • Maintain physical distance of at least 1 metre<br>• Medical mask<br>• Perform hand hygiene |
| | Caregiver | Providing direct care or when handling stool, urine, or waste from COVID19 patient being cared for at home | • Gloves<br>• Medical mask<br>• Apron (if risk of splash is anticipated)<br>• Perform hand hygiene |
| | Health care workers | Providing direct care or assistance to a COVID19 patient at home | • Medical mask<br>• Gown<br>• Gloves<br>• Eye protection |
| **Points of entry at airports, ports and ground crossing as applicable** | | | |
| Administrative areas | All staff | Any | • No PPE required |
| Screening area | Staff | First screening (temperature measurement) not involving direct contact | • Maintain physical distance of at least 1 metre.<br>• Ideally, build a glass/plastic screen to create a barrier between health care workers and patients<br>• No PPE required<br>• When physical distance is not feasible, yet no patient contact, use mask and eye protection.<br>• Perform hand hygiene |

| | | | |
|---|---|---|---|
| Screening area | Staff | Second screening (i.e. interviewing passengers with fever for clinical symptoms suggestive of COVID19 disease and travel history) | • Maintain physical distance of at least 1 metre.<br>• Medical mask<br>• Gloves<br>• Perform hand hygiene |
| | Cleaners | Cleaning the area where passengers with fever are being screened | • Medical mask<br>• Gown<br>• Heavy duty gloves<br>• Eye protection (if risk of splash from organic material or chemicals).<br>• Boots or closed work shoes<br>• Perform hand hygiene |
| Temporary isolation area | Staff | Entering the isolation area, but not providing direct assistance | • Maintain physical distance of at least 1 metre.<br>• Medical mask<br>• Gloves |
| | Staff, health care workers | Assisting or caring for passenger being transported to a health care facility as a suspected COVID -19 cases | • Medical mask<br>• Gown<br>• Gloves<br>• Eye protection<br>• Perform hand hygiene |
| | Cleaners | Cleaning isolation area | • Maintain physical distance of at least 1 metre.<br>• Medical mask<br>• Gown<br>• Heavy duty gloves<br>• Eye protection (if risk of splash from organic material or chemicals).<br>• Closed work shoes<br>• Perform hand hygiene |

| | | | |
|---|---|---|---|
| Ambulance or transfer vehicle | Health care workers | Transporting suspected COVID19 patients to the referral health care facility | • Medical mask<br>• Gowns<br>• Gloves<br>• Eye protection<br>• Perform hand hygiene |
| | Driver | Involved only in driving the patient with suspected COVID19 disease and the driver's compartment is separated from the COVID19 patient | • Maintain physical distance of at least 1 metre.<br>• No PPE required<br>• Perform hand hygiene |
| | | Assisting with loading or unloading patient with suspected COVID19 | • Medical mask<br>• Gowns<br>• Gloves<br>• Eye protection<br>• Perform hand hygiene |
| | | No direct contact with patient with suspected COVID19, but no separation between driver's and patient's compartments | • Medical mask<br>• Perform hand hygiene |
| | Patient with Suspected COVID19. | Transport to the referral health care facility. | • Medical mask if tolerated<br>• Have the patient perform hand hygiene |
| | Cleaners | Cleaning after and between transports of patients with suspected COVID19 to the referral health care facility. | • Medical mask<br>• Gown<br>• Heavy duty gloves<br>• Eye protection (if risk of splash from organic material or chemicals).<br>• Boots or closed work shoes<br>• Perform hand hygiene |

| Special considerations for rapid-response teams assisting with public health investigations | | | |
|---|---|---|---|
| Anywhere | Rapid-response team investigators | Remote interview of suspected or confirmed COVID19 patients or their contacts. | • No PPE if done remotely (e.g. by telephone or video conference).<br>• Remote interview is the preferred method. |
| | | In-person interview of suspected or confirmed COVID19 patients or contacts without direct contact | • Medical mask<br>• Maintain physical distance of at least 1 metre.<br>• The interview should be conducted outside the house or outdoors, and confirmed or suspected COVID19 patients should wear a medical mask if tolerated.<br>• Perform hand hygiene |

## Annex 7 Extended use of PPE as per WHO

**Note for facilitator:**

please go to folder Chapter 4 and you will find a word file named copy for group works in session 3 of chapter 4. Print 5 copies of Table-1 for group A, Table-2 for group B and Table-3 for group C.

Food and Agriculture Organization of the United Nations

## Annex 8 Standard Operating Procedure for conducting face to face training under COVID19 outbreak situation developed by Food and Agriculture Organization of the United Nations (FAO)

**Scope**

The purpose of this SOP is to provide guidelines for training teams while conducting face to face training under COVID19 outbreak situation.

- Select and visit the suitable venue in the institution on the day before the training starts and ensure the following things are in place. Ask a responsible volunteer of that facility to ensure all the issues. Facilitators and other staff from DPs must help them because it is very important to ensure social distance, cleaning & disinfections as well as hand hygiene.

- Place a designated person to take temperature by infra-red thermometer for all entering the premises. DO NOT ALLOW ANYBODY WHO HAS FEVER. Then ensure everybody washes hands with soap and water or clean them with hand sanitiser (70% alcohol based rub; Hexisol). Show the designated person how he can help visiting persons to perform hand sanitisation following protocol.

- Make social distance circle markings using masking tape on the floor at least 1 meter apart and then set up the chairs for both the participants and the facilitators in the training room within the each social distance circle.

- Mark similar circles maintaining similar distance on the floor in between the chairs in the room for group works/exercises.

- Now make similar circles maintaining similar distance on the floor in between the training room upto dining room and all the fresh room.

- Again make similar circles maintaining similar distance on the floor throughout the common walking passages from the entry of that building.

- Designate one facilitator from the team as DJ (distance judge) of the event who will observe who among us not following protocol. Give him/her a water gun to fire water on each person who will not maintain the social distance and putting hands on T zone during the training days.

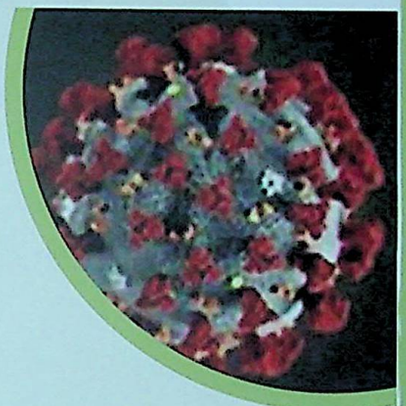
- Arrange sufficient liquid soap and running water facility with a fresh towel in each fresh room and basin in the dining room.

- Ensure that a designated person from the facility cleaned all the floors of training room, dining space, fresh room and common walking passages with 1% bleach solution-two table spoon bleach in 1 Liter of water (as per national guidelines).
- This disinfection procedures must be ensured in presence of a responsible person and must be completed early in the morning before training starts and again during lunch or prayer breaks.
- DJ will also ensure that each participant and facilitator performs hand hygiene before taking any food in the training room and in the dining room.
- The checklist and job aid for cleaning and screening procedure must be hung on the wall at the entry point of the building, the training, the dining and the fresh room.
- Ensure that all required logistics are in place.

**NOTE:** Remember that the training team members must show examples of how to follow protocol. Help the facility to learn such an important issue from the very beginning. Take the daylong training as an opportunity to show them good examples. **Remember, eyes around you are following you and they will follow WHAT YOU DO, NOT WHAT YOU SAY.**

# NATIONAL TRAINING MODULE ON INFECTION PREVENTION AND CONTROL IN HEALTHCARE SETTINGS





**Directorate General of Health Services (DGHS)**
Ministry of Health and Family Welfare (MOHFW)
**Bangladesh**

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