Sultanate of Oman
Ministry of Health

Infection Prevention & Control Guidelines for (COVID-19)

MOH/DGDSC-DIPC/COVID-19 IPC
guidelines /Vers 03/15th March 2020

The Department of Infection Prevention and Control

DIRECTORATE GENERAL FOR DISEASES SURVILLANCE AND CONTROL

Table of Contents :

S.no	Content	Page
i	Glossary	3
ii	Introduction	4
1.	Administrative intervention	4
2.	Transmission precautions	5
3.	Patient placement	6
4.	Performing Aerosol-Generating procedure (AGP)	6
5.	Patient Transport	7
6.	Personal Protective Equipment(PPE) for Healthcare worker	7
7.	Environmental cleaning and disinfection	8
7.1.	Decontamination of Ambulances transporting Suspected/ confirmed case of COVID-19	9
8.	Collection and Handling of Laboratory specimens from suspected or confirmed COVID -19 patient	10
9.	Medical waste	11
10.	Textile (Laundry & Linen)	11
11.	Managing the visitor to the patient	11
12.	Management of Exposure to a suspected/ confirmed COVID-19 Cases	12
13.	Guidelines for De-isolation of Patients with Suspected/ Confirmed COVID -19	16
14.	Home quarantine for contacts suspected/confirmed COVID-19 infection	18
15.	Infection prevention and control messages to the public	19
16.	Annex1: case definition Annex2: log sheet Annex3: management of HCW contact Aneex 4: management of patient contact Annext 5: Management of patient attendants and visitor contacts Annex6: Checklist for Implementing IPC measures Annex 7: PPE use for a patient suspected or confirmed COVID-19 Annex8: line list sheet	20 21 22 23 24 25 27 29

Glossary : Abbreviations

AIIR	Airborne infection isolation room
AGP	Aerosol generating procedures
BAL	Bronchio-alveolar lavage
DGHS	Director General of Health Services
HCW	Health care worker
HEPA	High-effeciency particulate filter
IPC	Infection prevention and control
PPE	Personal Protective Equipment
PCR	Polymerase chain reaction
PAPR	Powered air-purifying respirator

The Newly Emerging (COVID-19)
Infection Prevention & Control Guideline for Healthcare Facilities

Introduction:

An outbreak of a Coronavirus (SARS CoV-2) declared in Wuhan City, Hubei Province, China in December 2019 with probable link to a large seafood and animal market, suggesting zoonotic origin of this virus. With spread of this infectious disease to more than 100 countries globally, the World Health Organization (WHO) has declared this as a Pandemic.

The central infection prevention and control department issues this document as a guideline for infection prevention and control management of suspected or confirmed cases of COVID-19 within health care facilities. This is the third version of the guidelines with the following changes/additions:

a. Change in the nomenclature of the disease from nCoV-2019 to COVID-19
b. Adding protocol for decontamination of ambulance
c. Adding most updated case definition for COVID -19
d. Adding guidelines for De-isolation of admitted suspected/confirmed cases
e. Updating checklist for infection prevetionand control

Objectives:

This document provides guidelines for COVID-19 infection prevention and control practices to be implemented when managing suspected or confirmed cases based on the best available scientific evidence and expert consensus.

1. Administrative Interventions:

Health care facilities should observe and ensure the following:

- Availability of instructions for patients and persons who accompany them (e.g., family, friends) and display them in the outpatient departments or day care; to inform healthcare personnel of symptoms of acute respiratory illness when they first register for care.
- Provide space and encourage persons with symptoms of respiratory infections to sit as far away from others as possible.
- Provide supplies to perform hand hygiene to all patients upon arrival to facility (e.g., at entrances of facility, waiting rooms, at patient check-in) and throughout the entire duration of the visit to the healthcare setting.
- All persons with symptoms of a respiratory infection adhere to respiratory hygiene* and cough etiquette, hand hygiene, and triage procedures throughout the duration of the visit
- Special attention for healthcare worker training and ensure their competency in hand hygiene, the proper use and disposal of any personal protective equipment including N95.
- All HCWs starting from those who are in high risk areas (e.g: ER, Medical Wards, intensive care units, isolation rooms) should have N95 mask fit testing

to ensure their proper size and shape and they should be trained on donning, testing proper seal of the mask, and doffing procedure .

- High-risk staff who failed N95 mask fit test should receive training on the use of PAPR (Powered Air Purifying Respirators) or otherwise exempted from looking after suspected or confirmed cases.
- The case definition (annex 1) and algorithm issued by the Ministry is available and disseminated to all HCWs and training on cases recognition provided especially for triage staff.

* Respiratory Hygiene/Cough Etiquette

- Cover your mouth and nose with a tissue when coughing or sneezing.
- Dispose of the tissue in the nearest waste receptacle right after use.
- Perform hand hygiene (e.g., hand washing with non-antimicrobial soap and water, alcohol-based hand sanitizer, or antiseptic hand wash) after having contact with respiratory secretions and contaminated objects or materials.

2. Transmission Precautions:

- Adhere to standard precautions including hand hygiene; assume that every person coming to the facility is a risk for infection transmission.
- Adhere to transmission based precautions in addition to the standard precautions:
    - **Droplet & contact precautions**: For suspected, probable, or confirmed COVID-19 patients who are **not** critically ill.
    - **Airborne & contact precautions**: Should be implemented for suspected, probable, or confirmed COVID-19 patients when they are;
        - Critically ill (e.g. pneumonia with respiratory distress or hypoxemia), due to the high likelihood of requiring aerosol-generating procedures.
        - Critically or non-critically ill but anticipating or performing aerosol-generating procedures for example ;
            - Bronchoscopy
            - Sputum induction
            - Intubation and/or extubation
            - Cardiopulmonary resuscitation
            - Open suctioning of airways
            - Manual ventilation via ambu bagging through a mask before intubation

3. Patient Placement

Place suspected or confirmed COVID-19 patients as follows:

- Patient who is **not** critically ill in a single isolation room with dedicated toilet facility.
- Critically ill patient (e.g. pneumonia with respiratory distress or hypoxemia) in an Airborne Infection Isolation Rooms (Negative Pressure Rooms) due to the high likelihood of requiring aerosol-generating procedures.
- When single rooms are not available, cohort patients with the same diagnosis together ensuring at least 1.2 meters between beds and there is dedicated toilet facility for the cohort. Ensure that cohorting area ventilation is not shared with other patients clinical care areas and that suspected COVID-19 patients are not mixed with confirmed ones.
- Put the isolation sign so that it is visible and clear for all HCWs, patients and visitors.
- Ensure availability of PPE by the patient isolation room.
- Avoid the movement and transport of patients out of the isolation room or area unless medically necessary.
- The use of designated portable X-ray, ultrasound, echocardiogram and other important diagnostic machines is recommended when possible or otherwise ensure proper cleaning and disinfection after use for suspected or confirm case.
- Use either disposable equipment or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers). If sharing equipment is unavoidable, clean and disinfect it after each patient use.
- Use the log sheet for all persons who enter the isolation room. (Annex 2)

4. Performing Aerosol-Generating Procedures (AGP)

Performing AGP on suspected or confirmed COVID-19 patients can generate higher concentrations of infectious respiratory aerosols than coughing, sneezing, talking, or breathing. These procedures potentially put HCWs at an increased risk for COVID-19 exposure. The following are precautions for aerosol-generating procedures on patients with suspected or confirmed with COVID-19:

- Perform these procedures only if they are medically necessary and cannot be postponed.
- Limit the number of HCWs present during the procedure to only those essential for patient care and support.
- Conduct the procedures in an airborne infection isolation room (AIIR) when feasible and consider using portable High Efficiency Particulate Air (HEPA) filtration units for further reducing the concentration of contaminants in the air.
- HCWs should adhere to standard precautions, including wearing gloves, a gown, and either a face shield that fully covers the front and sides of the face or goggles.

- HCWs should wear respiratory protection equivalent to a fitted N95 filtering respirator or equivalent N95 respirator (e.g., powered air purifying respirator, elastomeric) during aerosol-generating procedures.
- Unprotected HCWs should not be in a room where an aerosol-generating procedure is being conducted or was conducted until sufficient time has elapsed to remove potentially infectious particles.
- Conduct environmental surface cleaning following procedures.

5. Patient Transport:

Avoid the movement and transport of patients out of the isolation room or area unless medically necessary. The use of designated portable X-ray, ultrasound, echocardiogram and other important diagnostic machines when possible. If transport within or outside facility is unavoidable, the following to be observed;

- Patients should wear a surgical mask to contain secretions (N95 mask is not required for this purpose).
- Use routes of transport that minimize exposures of staff, other patients, and visitors.
- For transport to other healthcare facility;
    - Use an ambulance with close door/ window between driver and patient compartment
    - Ensure that healthcare workers (HCWs) who are transporting patients wear appropriate PPE and perform hand hygiene when appropriate.
    - As far as possible family members and close relatives to be discouraged from travelling in the same vehicle. If this is not possible, they must be evaluated for fever and lower respiratory symptoms and either is present they must wear a surgical mask during transport.
    - Notify the receiving area of the patient's diagnosis and necessary precautions as soon as possible before the patient's arrival.
    - Do not touch unnecessary surfaces in the vehicle.
    - Clean and disinfect the vehicle according to the housekeeping policy of the healthcare facility .

6. Personal Protective Equipment (PPE) for Health Care Workers (HCWs)

- The following PPE to be used by HCWs upon entry into patient rooms or care areas in the respected order:

    Gowns (clean, non-sterile, long-sleeved disposable gown)

    Surgical mask (or N95 when airborne precautions are applied)

    Eye protection (goggles or face shield)

    Gloves

- For patients on airborne precautions, any person entering the patient's room should wear a fit-tested N95 mask instead of a surgical mask. For those who failed the fit

testing of N95 masks (e.g. those with beards), an alternative respirator, such as a powered air-purifying respirator (PAPR), should be used.

- Upon exit from the patient room or care area;

  Remove PPE at the doorway or in the anteroom except the N95 mask, after leaving the patient room and closing the door.

  PPEs to be removed and discarded in sequence: 1. Gloves, 2. Goggles or face shield, 3. Gown, and 4. Mask or respirator.

  Hand Hygiene after removal of gloves, masks, goggles and face shield as their outside is usually contaminated.

- Never wear a surgical mask under the N95 mask as this prevents proper fitting and sealing of the N95 mask thus decreasing its efficacy.
- Whenever possible, use either disposable equipment or dedicated equipment (e.g. stethoscopes, blood pressure cuffs and thermometers).

7. Environmental Cleaning and Disinfection

As the role of environment in the transmission of SARS CoV-2 is not yet clear nor the appropriate decontamination materials; the same measures used for MERS-CoV is recommended:

- Designating specific, well-trained housekeeping personnel for cleaning and disinfecting of patient rooms/units.
- Using a checklist to promote accountability for cleaning responsibilities
- Housekeeping personnel should wear PPE as described above.
- Refreshment training for housekeeping staff by the infection control team in proper procedures for PPE use, including removal of PPE, and the importance of hand hygiene.
- Keep cleaning supplies outside the patient room (e.g., in an anteroom or storage area).
- Keep areas around the patient free of unnecessary supplies and equipment to facilitate daily cleaning.
- Use MOH approved disinfectant, follow manufacturer's recommendations for dilution (i.e., concentration), contact time, and care in handling.
- The patient isolation room or cohort area to be cleaned and disinfected at least daily and more often when visible soiling/contamination occurs.
- Give special attention to frequently touched surfaces (e.g., bedrails, bedside and over-bed tables, TV control, call button, telephone, lavatory surfaces including safety/pull-up bars, doorknobs, commodes, ventilator and monitor surfaces) in addition to floors and other horizontal surfaces.
- Wipe external surfaces of portable equipment for performing x-rays and other procedures in the patient's room with a MOH approved disinfectant upon removal from the patient's room.

- After an aerosol-generating procedure (e.g. intubation), clean and disinfect horizontal surfaces around the patient.
- Privacy curtains are to be removed after patient discharge and placed in a bag for transport to the laundry.
- After discharge, follow standard procedures for terminal cleaning of an isolation room.

7.1. Decontamination of ambulance transporting suspected/ confirmed case of COVID-19

A. Training elements for decontamination team

1. General introduction to the principles of IPC
2. Orientation to health care worker for national vaccination policy
3. Ambulance IFU - cleaning procedures
4. How to prepare and use different detergents, disinfectants, and cleaning solutions
5. How to prepare, use, reprocess, and store cleaning supplies and equipment including PPE use.
6. Biological spill management
7. Work and chemical safety

B. Procedure of cleaning and disinfection:

- **Materials:**
  - PPE - fluid resistance long sleeves gowns, if not use a plastic apron on top, fluid resistance boots, medical mask , googles, nitrile gloves
  - Yellow waste bags
  - Hand Sanitizers
  - Mops – if needed
  - Buckets
  - Disposable cleaning cloth
  - Disinfectant wipes, if available
  - MoH supplied disinfectants (HAZTAB- 1tab to 1.5 liter and Hycolin 1part to 19 parts of water)
  - For cleaning blood and body fluids spillage refer to disinfectants labels
- **Before decontamination**
  1. Formulate a decontamination team
  2. Train the team for standard and transmission based precautions, donning, doffing of PPE and hand hygiene
- **During decontamination**
  1. Disinfect the reusable medical equipment
  2. Clean the surfaces with all-purpose detergent and water
  3. Apply the surfaces with MoH supplied disinfectants – **observe for contact time**
  4. Rinse with water - if needed

5. Clean and disinfect the interior of the patient care compartment especially the high-touch surfaces such as door handles and surfaces with visible contamination of blood and body fluids.
6. Prevent aerosols generating procedures (e.g. spraying directly of disinfectant on the surfaces, vacuuming) when cleaning and decontaminating surfaces using cleaning cloth.
7. Disinfect the ambulance's exterior; patient loading doors and handles, and any areas that may have been contaminated .The exterior of the ambulance does not require a wiping with disinfectant.
8. Remove PPE and dispose in yellow waste bag.
9. Wash hands with soap and water

- **After decontamination**
  1. Dispose of all waste during the procedure including PPE in yellow waste bag. Use double bagging.
  2. Additional cleaning methods can also be used e.g. hydrogen peroxide fumigation. Follow the manufacturers Information for Use (IFU).
  3. The ambulance can then be returned to service.

8. Collection and handling of laboratory specimens from suspected or confirmed COVID-19 patient

- All specimens collected for laboratory investigations should be regarded as potentially infectious and receving laboratory sections should be notified to take appropriate precautions
- HCWs who collect or transport clinical specimens should adhere rigorously to Standard Precautions to minimize the possibility of exposure to pathogens.
- The respiratory specimen should be collected under aerosol generating procedure; healthcare personnel should wear a fit-tested N95 respirator, eye protection,long sleved gloves and long-sleeved gown
- Ensure that all personnel who transport specimens are trained in safe handling practices and spill decontamination procedures.
- Place specimens for transport in triple packing with the patient's name label on the specimen container (primary container), and a clearly written laboratory request form.
- Ensure that health-care facility laboratories adhere to appropriate biosafety practices and transport requirements
- Deliver all specimens by hand whenever possible.
- DO NOT use pneumatic-tube systems to transport specimens.
- Document full name, date of birth of suspected COVID-19 patient of potential concern clearly on the accompanying laboratory request form.
- Notify the Central Public Health laboratory as soon as possible that the specimen is being transported (hotline : 91313316)

9. Medical Waste

- Contain and dispose off SARS CoV-2 contaminated medical waste in yellow bag and follow the national guidelines of medical waste management.
- Wear disposable gloves when handling waste.
- Perform hand hygiene after removal of gloves.

10. Textiles (Linen and Laundry)

- Store clean linen outside patient rooms, taking into the room only linen needed for use during the shift.
- Place soiled linen directly into a red laundry bag in the patient's room. Contain linen in a manner that prevents the linen bag from opening or bursting during transport and while in the soiled linen holding area.
- Wear gloves and gown when directly handling soiled linen and laundry (e.g., bedding, towels, personal clothing).
- Do not shake or otherwise handle soiled linen and laundry in a manner that might aerosolize infectious particles.
- Wash and dry linen as per the Laundry services Policy.

11. Managing the Visitor to the Patient:

- Consider visitors who have been in contact with the patient before and during hospitalization are a possible source of SARS CoV2 infection for other patients, visitors, and staff.
- For persons with acute respiratory symptoms, facilities should develop visitor restriction policies that consider location of patient being visited (e.g., oncology units) and circumstances, such as end-of-life situations, where exemptions to the restriction may be considered at the discretion of the facility. Regardless of restriction policy, all visitors should follow precautions for respiratory hygiene and cough etiquette.
- Visits to COVID-19 patients in isolation should be scheduled and controlled to allow for:
    - Screening visitors for symptoms of acute respiratory illness before entering the hospital.
    - Providing instruction, before visitors enter patients' rooms, on hand hygiene, limiting surfaces touched, and use of personal protective equipment (PPE)
    - Visitors/attendants should not be present during aerosol-generating procedures.

12. Management of exposure to suspected /confirmed COVID-19 cases

12.1. **Purpose of contact management:**

The purpose of managing COVID-19 case contacts is:

- to identify symptomatic contacts as early as possible for isolation and treatment

- to facilitate prompt laboratory diagnostic testing

12.2. **Definition of a contact person:**

A contact of a COVID-19 case is a person currently not presenting symptoms, who has or may have been in contact with COVID-19 case. The associated risk of infection depends upon the level of exposure, which will also determine the type of monitoring. In the healthcare facility; contacts can be HCWs, patients, and/or visitors, who had unprotected exposure to suspected or confirmed cases of COVID-19. Establishing the level of contact can be difficult and require the case to be interviewed.

12.2.1. **Close contacts (high- risk exposure)**

A close contact of a suspected or confirmed COVID-19 case is defined as:

- A health care worker or other person providing direct care for COVID-19 patient, or laboratory workers handling specimens for COVID-19 test
- A person living in the same household as a COVID-19 patient
- A person having had face to face contact or was in the closed environment with COVID-19 case

12.2.2. **Casual contacts (low-risk exposure)**

A casual contact of a suspected or confirmed COVID-19 case is

- A person identified having casual contact with an ambulant COVID-19 case
- A person having stayed in an area presumed to have ongoing, community transmission

12.3. Steps of contact management after a case has been identified

After confirmation of a case, take following steps:

- Contact identification and listing
- Classification of contacts into close contacts (high-risk exposure) or casual contacts(low –risk) exposure
- Contact tracing and assessment(i.e. communicate with the contact persons and assess risk)
- Contact management and follow -up (i.e. inform, advise, follow-up- this includes testing if indicated)

12.4. General consideration:

- The infection control team of the facility should trace all contacts within the HCF, and follow them for symptoms (fever, cough and difficulty in breathing) for a total of 14 days from last exposure with the case.

- The list of contacts (HCWs & patients), should be shared with the CDIPC. (See Annex 8)
- Consider all HCW contacts of COVID-19 case as high- risk
- All HCWs who are close contacts of suspected or confirmed COVID-19 patient, Symptomatic and asymptomatic should not be allowed to take care of patients and he/she should be on sick leave for a period of 14 days or until they are cleared by infection control team.
- The Exposed and Symptomatic contact is defined as any individual who has:
  - Fever and symptoms of lower respiratory illness (cough, difficulty in breathing) **and**
  - Has close contact with a patient suspected or confirmed to have COVID-19 infection, in the last 14 days before onset of symptoms
- Testing should not be done before 24 hours of exposure
- Healthcare workers who test positive for COVID-19 can be **CLEARED** by IPC team when;
  - Have a second PCR for COVID-19, negative

  And
  - Have been asymptomatic for at least 48 hrs

12.5. Management of exposure within health care facility

12.5.1. Management of exposed healthcare workers to suspected or confirmed COVID-19 case:

12.5.1.1. Symptomatic

- Isolate and maintain standard, droplet and contact precautions
- Airborne precautions only for those who require aerosol generating procedure (AGP)
- Testing (Nasopharyngeal and Oropharyngeal swab) for COVID-19 is recommended
- Stop performing duties immediately
- Should not resume duties until cleared by infection control team in the facility
- If test is negative but have strong clinical suspicion, repeat COVID-19 test and look for alternative etiology

12.5.1.2. Asymptomatic

- Testing (Nasopharyngeal and Oropharyngeal swab) for COVID-19 is recommended
- Contact should be off work until the initial test for COVID-19 is reported negative and is re-evaluated by IPC team of the facility

- If tests for COVID-19 reported positive manage as a confirmed case

- Daily report to the IPC team within the facility assess to for respiratory symptoms
- If symptoms develop within 14 days from exposure to confirmed / suspected COVID-19 case report immediately to the staff health clinic or emergency

12.5.2. **Management of exposed patients to suspected or confirmed COVID-19 case**

12.5.2.1. **In-patient contacts**

- **Symptomatic:**
  - Isolate and maintain standard, contact and droplet precautions
  - Apply airborne precaution for those requiring AGP
  - Testing (Nasopharyngeal and Oropharyngeal swab) for COVID-19 is recommended
  - If test is positive, follow the confirmed case for management
  - Patient is considered CLEARED if
    - Test for COVID-19 is negative and
    - Has completed the 14-day observation period OR
    - Is asymptomatic for 48 hours
- **Asymptomatic:**
  - Cohort or isolate the patient with appropriate isolation precaution (Standard, contact and droplet)
  - For patient requiring aerosol generating procedures (AGP) follow airborne precautions.
  - Testing for (Nasopharyngeal and Oropharyngeal swab) for COVID-19 is recommended
  - If test is positive follow confirmed case management
  - If test for COVID-19 is negative, and requires to be in hospital, should be monitored for 14 days the IPC of the facility
  - If patient can be discharged , send the list to IPC in the Directorate General of Health Services (DGHS) of governorate and home quarantine the patient
  - Continue to monitor the patient for symptoms for 14 days

12.5.2.2. **Discharged patient contact**

- A list of all discharged contacts should be provided to the IPC team at the DGHS of their governorate for evaluation, management and follow-up

- **Symptomatic:**
  - Should be brought back to the hospital for evaluation and management as a suspect case
  - Testing (Nasopharyngeal and Oropharyngeal swab) for COVID-19
  - If test is positive, follow confirmed case Management
  - If test is negative but strong clinical suspension remain repeat the test for COVID-19 and look for other alternative etiology
- **Asymptomatic discharged patients**
  - Instruct the patient about home quarantine
  - Follow up for possible development of symptoms for 14 days after last contact

12.5.3. **Patient attendants and visitors of confirmed or suspected case of COVID-19**

- Log sheet for attendants and visitors to be maintained by the infection control team
- Visitors and attendants who have been in contact with the patient must be listed and assessed for symptoms in coordination with infection control team at DGHS of their governorate
- Monitor for symptoms for 14 days in the community

12.5.3.1 Symptomatic

- If symptoms develop test (nasopharyngeal and oropharyngeal swab) COVID-19
- Instruct the visitor /attendant on home quarantine
- If test is positive admit and manage as confirmed case
- If test result is negative but strong clinical suspicion remains repeat test for COVID-19 and also look for alternative etiology

12.5.3.2 Asymptomatic visitor and attendant

- Home quarantine & continue follow up for 14 days

12.5.4 **Managed of exposed to suspected or confirmed COVID-19 cases outside the healthcare facility**

- All contacts outside the healthcare facility should be followed by IPC in DGHS of governorate.
- Close contacts of confirmed or suspected case of COVID-19 cases in the community could be :
  - Passenger in an aircraft sitting within two seats (in any direction) of COVD-19 cases

- Travel companions providing care for COVID-19 case
- Crew members serving in section of aircraft where case is seated
- Persons sharing a closed work / home environment (e.g. household family member or room-mate, a co-worker in same office)

- The management follows the same principles as for visitors in section 12.5.3

13. Guidelines for De-isolation of Patients with Suspected/ Confirmed COVID -19

The currently available evidences from global experience with COVID-19 outbreaks agreed that No single indicator may be effectively used to decide on de-isolation of a suspect and/ or confirmed case. There were three notable operational challenges the de-isolation of cases;

- With substantial numbers of suspect cases admitted for isolation and the need to hold patients for repeated testing, there was a need to manage isolation room occupancy.
- For patients who needed ongoing inpatient care for other reasons, we also need to address the risk of inadvertent nosocomial amplification, to reduce the risk of transmission from patients who had tested negative early in their clinical illness.
- Management of patient with persistent positive PCR

This rigorous framework was developed to help clinicians and infection control team de-isolate COVID-19 patients safely and limiting risk of health care transmission.

- **De-isolation**: De-isolation of a patient confirmed or suspected of COVID 19, means to discontinue following transmission-based precaution (Contact and Droplet precautions) while ensuring practice of standard precautions.
  - De-isolation does not necessarily mean discharge from the facility rather patient may be de-isolated based on the criteria below and continue to be managed for his clinical condition.
  - Discharging patients should be a clinical decision by treating physician in consultation with infection prevention and control (IPC) team regarding isolation precautions.
  - The criteria below is only for de-isolation considering the diagnosis of suspected or confirmed COVID-19, but patient should be assessed for need of transmission-based precautions for other reasons (e.g.: MDRO, suspected TB, diarrhea, protective isolation for immunocompromised).

  - The de-isolation decision should always be coordinated and discussed with IPC team of the facility.

- For management of increasing number of patients requiring isolation and unavailability of single rooms consider the following:
    - Cohorting the confirmed cases in one area but **NOT** suspected cases as this may facilitates transmission.
    - Home isolation for suspect or confirmed cases if no clinical institution care is needed and maintaining access to care in case of clinical worsening.
        - Please report such cases to the governorate team of DGHS for follow-up of patients and testing results

- The criteria for the **clinical improvement** used in this guideline includes two points:

    ✓ The patient being **Afebrile** (temp< 38**°C**) ≥ 48 hrs without antipyretics

    AND

    ✓ **Asymptomatic** (No cough/breathlessness) **OR** days of illness from onset ≥ 6 days

- Consider the following criteria for de-isolation of a **Confirmed COVID-19** Case in
    - Clinical Improvement

      and
    - A Negative repeated PCR (Nasopharyngeal / Throat swab/ ET or BAL sample) done at least ≥ 48 hrs after initial one

    - If the repeated PCR is positive but patient is clinically and radiologically improving, the decision about de-isolation depends on discharge status :
        - If patient is for discharge, advise for home isolation for 7 more days and no need to repeat PCR unless he/she is a HCW who will need negative sample before joining work.
        - If patient will remain admitted, then continue isolation and repeat PCR in 7 days if he/she is still inpatient.
    - If the repeat PCR is positive and the patient had worsened clinically and/or radiologically, to continue isolation and consider repeating PCR when improving but not before 7 days from last sample tested.
- Consider the following criteria for de-isolation of a **Suspected admitted COVID-19** case and his/her initial PCR is negative;
    - If patient is clinically improving then can be de-isolated
    - If patient is clinically and/or radiologically worsening then do not de-isolate and repeat PCR at least 48 hrs from the initial negative (or earlier if patient in ICU) but consider lower respiratory sample e.g. Sputum/ ET secretions/ Bronchio-alveolar lavage (BAL)

** Due to the observation of prolonged viral shedding in faeces in confirmed cases, careful personal hygiene precautions after de-isolation are warranted especially in children.

14. Home quarantine for contacts suspected/confirmed COVID-19 infection

Discharged patients, visitors, and attendants exposed to Confirmed or suspected COVID-19 cases, should be in home quarantine and cared for as following:

- Person and family members should be educated on personal hygiene and infection control measures including frequent hand hygiene.
- Person should be placed in a well-ventilated single-room as far as possible. If another family member needs to stay in the same room, maintain a distance of at least 1m (e.g. sleep in a separate bed)
- Only assigned family members must care of the patient
- Visitors are not allowed
- Restricted movement within the house
- Cover cough and sneeze with tissue or cough and sneeze on his sleeve.
- Throw used tissues and immediately wash hands with soap and water or disinfect with alcohol-based hand sanitizer
- Wash hand as often thoroughly with soap and water
- Family member giving care should wear surgical mask when attending the ill person, and should dispose it after use and wash hands using soap and water or disinfect with an alcohol-based hand sanitizer.
- Avoid sharing household items e.g; dishes, drinking glasses, cups, eating utensils, towels, bedding, or other items with other people at home
- Clean and disinfect frequently touched surfaces in the patient room (e.g. bed frames, tables etc.) daily with regular household bleach solution (1 part of bleach to 99 part of water)
- Clean the clothes and other linen used by the patient separately using common household detergent and dry.
- Avoid shaking the soiled linen or direct contact with skin
- Use disposable gloves and gown when cleaning the surfaces or handling soiled linen. Wash hands after removing gloves
- Quarantined person if develops any symptoms should report to the nearest health center immediately or the provided contact number

15. Infection prevention and control messages to the public :

Each individual is expected to practice the following general preventive measures for respiratory infections that is also applicable for COVID-19:

- Avoid close contact with people who appear unwell, and have fever and cough.
- Wash hands with soap and water or hand sanitizer thoroughly and often.
- Practice good health habits including adequate sleep, eating nutritious food, and keeping physically active.

- While visiting farms, markets, barns, or other places where animals are present, practice general hygiene measures, including regular hand washing before and after touching animals, and should avoid contact with sick animals.
- Avoid the consumption of raw or undercooked animal products, including milk and meat. Animal products that are processed appropriately through cooking or pasteurization are safe for consumption, but should also be handled with care to avoid cross contamination with uncooked foods.
- Any person with fever, cough, and /or sore throat should be advised to follow the following steps:
    - Separate yourself from other people in your home or work as much as possible.
    - Cover your coughs and sneezes with tissue or you can cough or sneeze into your sleeve.
    - Throw used tissues and immediately wash your hands with soap and water or disinfect it with waterless alcohol-based hand sanitizer.
    - Wash your hands often and thoroughly with antiseptic soap and water.
    - Avoid touching your eyes, nose, and mouth with unwashed hands.
    - Avoid sharing household items e.g; dishes, drinking glasses, cups, eating utensils, towels, bedding, or other items with other people in your home.
    - If you are severely ill, you should see a doctor and disclose to healthcare provider any history of contact with sick person and or travel history.

Annex:1

Ministry of Health

Directorate General for Diseases Surveillance & Control

Human Infection with Novel Corona Virus (COVID-19)

Interim Guideline - 4 for Hospitals, Primary and Private health care

Novel Corona virus (COVID-19) case definition

A suspected case is

A) A person with acute respiratory infection (sudden onset of at least one of the following: fever, cough, shortness of breath, sore throat)

AND

In the **14 days** prior to onset of symptoms, meets at least one of the following epidemiological criteria:

1) A history of international travel.

OR

2) A history of contact with a cluster (2 or more cases with fever and acute respiratory symptoms in a small area e.g. families, offices, schools).

OR

3) A close contact with confirmed case of COVID-19

OR

4) Health care worker involved in direct management of patients.

B) Patient admitted with community acquired pneumonia.

C) Patient admitted with severe acute respiratory infection (SARI), **or** one who develops SARI while in hospital.

↓

Notify

Electronic notification (ARI / SARI) OR
Use SARI Notification Form & share to Governorate FAX or Hotline

Laboratory Investigation

- Collect respiratory samples (Nasopharyngeal and oral pharyngeal swab[1] / Bronchoalveolar lavage/Tracheal aspiration /sputum).
- Adhere to safety procedure during collection.
- Transport samples in triple packing.
- Use Alshifa Laboratory code : SARS-CoV-2 RNA PCR
- Consider other differential diagnosis (Request for RVP, MERS- CoV, Atypical bacterial PCR & and bacterial culture)
- Contact CPHL Hotline (91313316) prior to shipment.

For **infection prevention and control measures** and for **case management** please refer to relative guidelines.

[1]Nasopharyngeal and oral pharyngeal swabs should be placed in one VTM tube.

© Ministry of Health, Oman, 2020

Annex 2: Log sheet for all HCWs contacts of patients

Facility:

Ward:

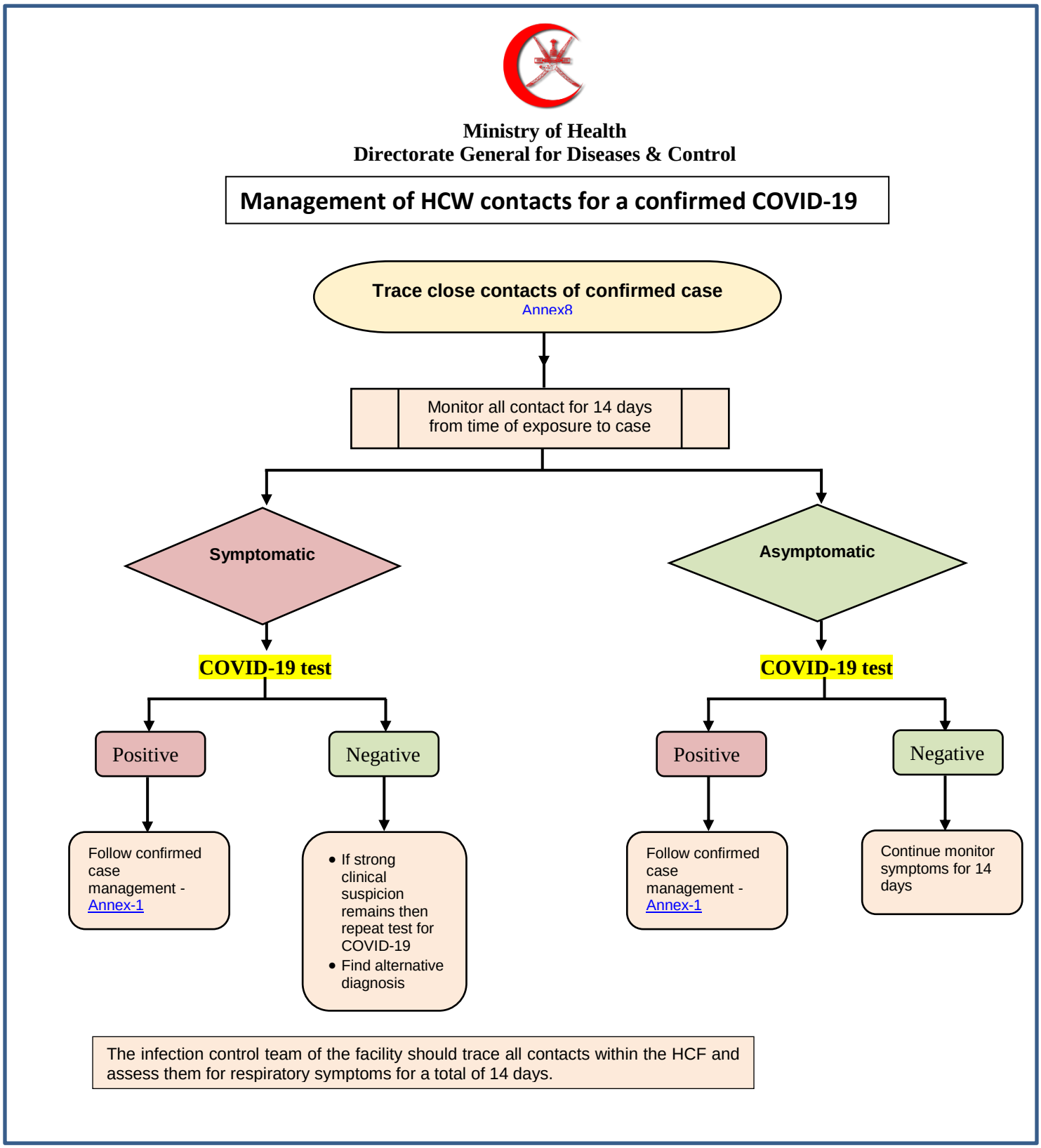
Bed Number:

Patient's Sticker

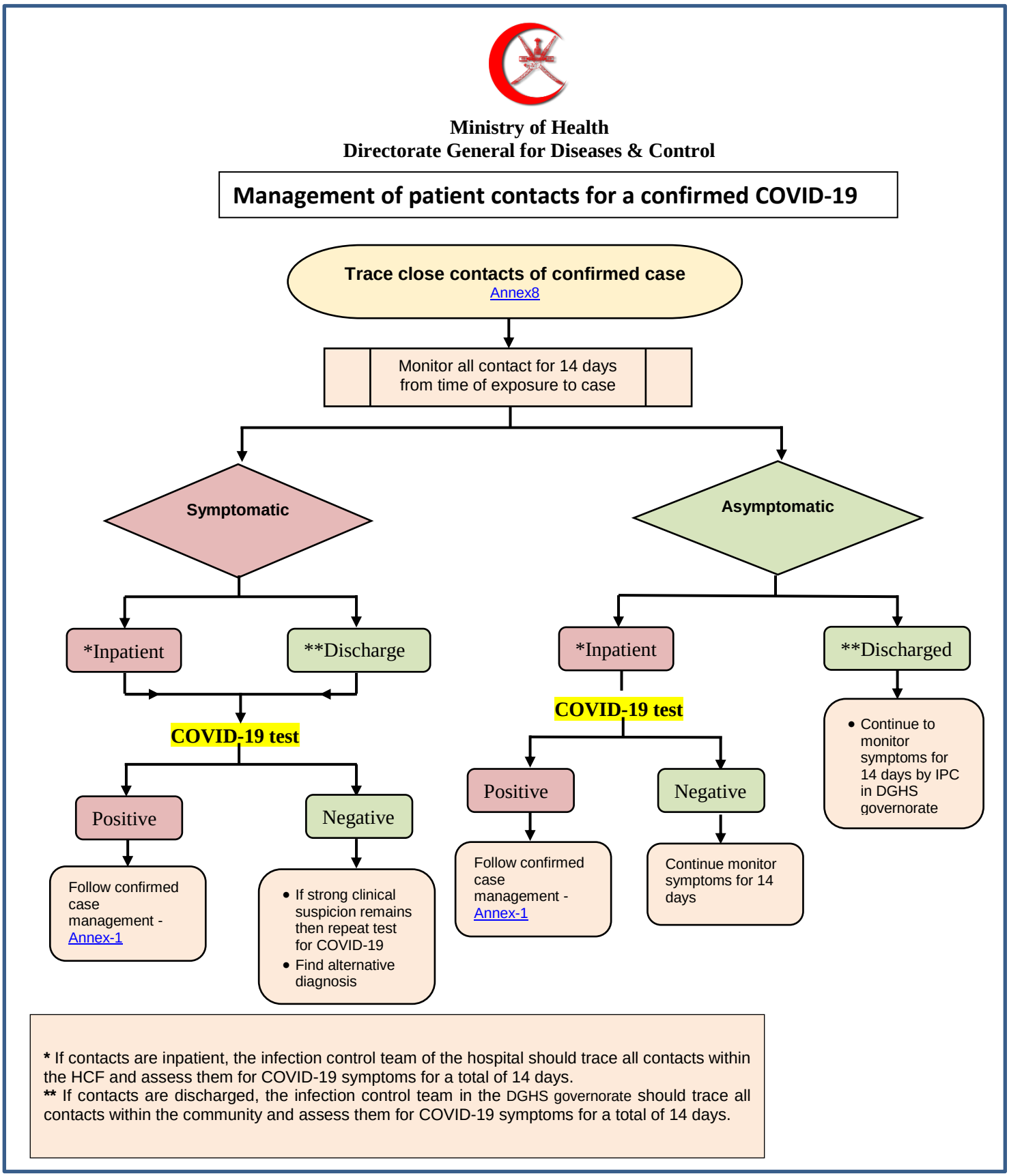
Date	Name (HCWs, Housekeeping, Visitors/family members, etc...)	Staff Number	Time in	Time out

- If patient moves to another area such as Radiology, Theater, etc…, please use another log sheet
- Log sheet to be sent to infection control team

Annex 3. Management of HCW contacts for a confirmed COVID-19



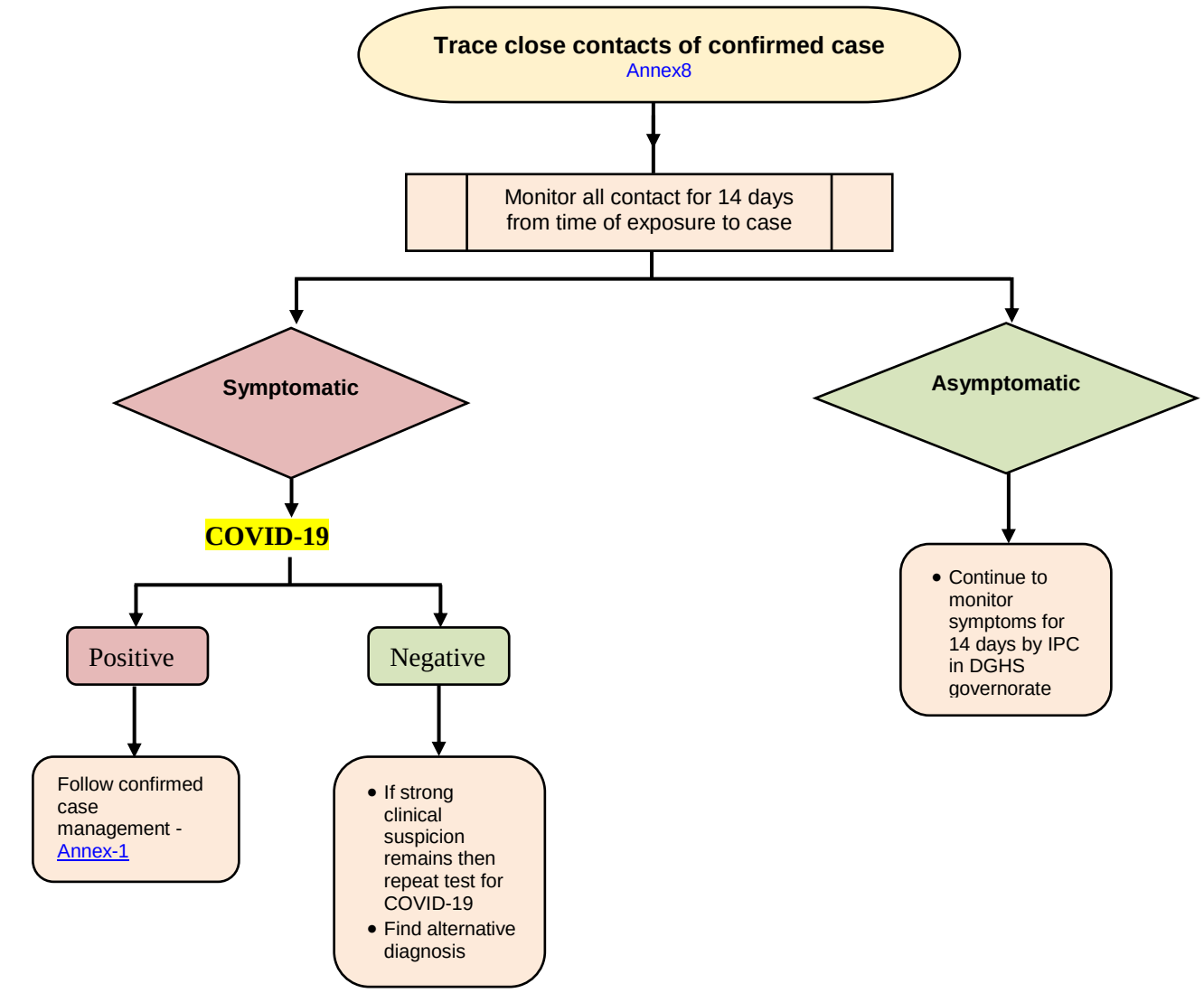
Annex 4. Management of patient contacts for a confirmed COVID-19:



Annex 5. Management of patient attendants and visitor contacts for a confirmed COVID-19:

Ministry of Health
Directorate General for Diseases & Control

Management of patient attendants and visitor contacts for a confirmed COVID-19



The infection control team of the hospital should liaise with IPC in DGHS governorate to trace all contacts of confirmed case and assess them for COVID-19 symptoms for a total of 14 days.

Annex 6. Checklist for Implementing IPC measures in managing suspected or confirmed case of COVID-19 within health care facilities

S.No	Assessment tool	Yes	No	Remarks
1.	**Administrative interventions**			
1.1	The management and leaders of healthcare facility are aware about national COVID-19 guidelines and following the instructions			
1.2	The hospital management is aware about the updated COVID-19 algorithms and communicated to the HCWs			
1.3	HCWs are trained and educated regarding COVID-19 according to IPC guidelines			
1.4	IPC training and education are provided to HCWs e.g. hand hygiene, personal protective equipment (PPE), N95 seal test and PAPR use			
2.	**Triage system in healthcare facility (HCF)**			
2.1	HCF are aware about the triage system according to IPC triage guidelines			
2.2	Signs are posted in entrances of accident and emergency department to instruct individuals with respiratory symptoms to immediately put on a mask and practice cough etiquette			
2.3	Surgical masks are given to coughing patients and other symptomatic individuals upon entry to the facility			
2.4	There is a mechanism to segregated persons with symptoms of respiratory infections in waiting area and place them away from others			
2.5	Alcohol based hand sanitizer for hand hygiene is available at each entrance and in all common areas			
2.6	There is a triage process ensuring patients with confirmed or suspected COVID-19 are immediately moved to an isolation room			
2.7	HCW in triage are trained on proper procedure (e.g., questions to ask and actions to take) to rapidly identify and isolate suspect cases			
2.8	Hospital infection control department and Directorate General of Health Services (DGHS) should be reported about COVID-19 suspect/confirmed cases			
3.	**Patient placement/ isolation precautions:**			
3.1	All COVID-19 suspected cases should be isolated in single room with dedicated toilet under droplet and contact precautions			
3.2	Confirmed cases which critically ill should be isolated in airborne precautions			
3.3	When single isolation room insufficient, cohort patients with confirmed COVID-19 cases and maintain at least1.2 meter between beds			
3.4	Isolation sign is posted in entrance door of isolation room/area			
3.5	PPE available for isolation rooms			
3.6	There is a guideline for aerosol-generating procedures to be performed in negative pressure room using appropriate PPE			
3.7	Minimize the number of HCW who enter the isolation room			
3.8	Maintain log record for HCWs entering isolation rooms			
3.9	There is a process for de-isolation of patients suspected/confirmed with COVID-19 according to IPC guidelines			
4.	**Patient Transport**			
4.1	The patient movement outside of the isolation room should limited to medically essential purposes			
4.2	Patients should wear a surgical mask to contain secretions			
4.3	HCWs should wear appropriate PPE			
4.4	Use an ambulance with close door/ window between driver and patient compartment			

4.5	Notify the receiving area of the patient's diagnosis and necessary precautions as soon as possible before the patient's arrival			
5.	**Personal Protective Equipment for HCWs**			
5.1	There is sufficient supply of (PPE) and other infection prevention and control supplies (e.g., alcohol hand rub)			
5.2	HCWs are trained and competent in hand hygiene, use and selection of (PPE), N95 seal test and/or Powered Air Purifying Respirators use (PAPR)			
5.3	There is a process for auditing adherence to hand hygiene and PPE use			
5.4	There are HH facilities, including alcohol-based hand sanitizer are readily accessible in patient care areas, including areas where HCW remove PPE.			
6.	**Environmental cleaning and disinfection**			
6.1	There is a document to ensure proper cleaning and disinfection of environmental surfaces and equipment in the patient room.			
6.2	The housekeeping staffs are trained and competent to routine and terminal cleaning proper selection and use of PPE.			
6.3	There is a process to ensure shared equipment is cleaned and disinfected after use according to manufacturer's recommendations			
7.	**Collection and handling of laboratory specimens**			
7.1	HCWs who collect or transport clinical specimens should adhere rigorously to Standard Precautions			
7.2	HCWs who collect specimens use appropriate PPE (eye protection, medical mask, long-sleeved gown, gloves)			
7.3	The respiratory specimen should be collected under aerosol generating procedure; personnel should wear a fit-tested N95 respirator			
7.4	Maintain safe handling of specimen			
8.	**Medical Waste**			
8.1	Contain and dispose off medical waste in yellow bag and follow the national guidelines of medical waste management			
8.2	Wear disposable gloves when handling waste and wash hands			
9.	**Textiles (Linen and Laundry)**			
9.1	Place soiled linen directly into a red laundry bag in the patient's room			
9.2	Wear gloves and gown when directly handling soiled linen and laundry			
9.3	Do not shake soiled linen and laundry in a manner that might aerosolize infectious particles and perform hand hygiene			
10.	**Managing visitor within the HCF:**			
10.1	The plan for visitor access and movement within the facility have been reviewed and updated			
10.2	Maintain log record for all visitors who enter and exit the patient isolation rooms			
11	**Monitoring and managing HCW**			
11.1	There are policies and procedures for monitoring and managing HCW with potential for exposure to COVID-19			
11.2	There is a process to track exposures and conduct active- and/or self-monitoring			
11.3	There is a process to conduct symptom and temperature checks prior to the start of any shift of asymptomatic, exposed HCW that are not work restricted			
12	**Discharge Planning**			
12.1	There is a clear instruction for patient after discharge regarding home care include need for isolation/quarantine			
12.2	There is a mechanism for coordinating discharge and home isolation with team in DGHS			

Annex 7: Recommended PPE when caring for a patient suspected or confirmed COVID-19 case

Item	Description	USE
Gloves	Gloves, examination, nitrile, powder-free, non-sterile. Cuff length reach well above the wrist. Sizes, S, M, L	• Perform hand hygiene, then put on clean, non-sterile gloves upon entry into the patient room or care area. Change gloves if they become torn or heavily contaminated. • Remove and discard gloves when leaving the patient room or care area, and immediately perform hand hygiene.
Gown	Single use, fluid resistant, disposable, length mid-calf to cover the top of the boots, light colours preferable to better detect possible contamination, elastic cuff to anchor sleeves in place.	• Put on a clean disposable gown upon entry into the patient room or area. Change the gown if it becomes soiled. Remove and discard the gown before leaving the patient room or care area.
Mask surgical	Medical/surgical mask, high fluid resistance, good breathability, internal and external faces should be clearly identified,	• Surgical masks should be worn when in close contact and droplet precaution. The mask acts as barrier and minimizes contamination of nose and mouth by droplets. • Surgical mask should; cover both nose and mouth, Not allowed to dangle around the neck, Not touched once put on, changed when moist or damaged, discarded after use, perform hand hygiene after discard it.
Goggles (protective)	Good seal with the skin of the face, Flexible frame to easily fit with all face contours with even pressure, Enclose eyes and the surrounding areas, Accommodate wearers with prescription glasses, Clear plastic lens with fog and scratch resistant treatments, Adjustable band to secure firmly so as not to become loose during clinical activity, Indirect venting to avoid fogging, May be re-usable (provided appropriate arrangements for decontamination are in place) or disposable.	• Put on eye protection (e.g., goggles, a disposable face shield that covers the front and sides of the face) upon entry to the patient room or care area. Remove eye protection before leaving the patient room or care area. Reusable eye protection (e.g., goggles) must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use. Disposable eye protection should be discarded after use.
Face shield	Made of clear plastic and provides good visibility to both the wearer and the patient, Adjustable band to attach firmly around the head and fit snuggly against the forehead, Fog resistant (preferable), Completely cover the sides and length of the face, disposable.	• Put on a disposable face shield that covers the front and sides of the face upon entry to the patient room or care area. Remove face shield before leaving the patient room or care area. Discarded after use, perform hand hygiene after discard it.

Particulate respirator (N95 mask)	N95 or FFP2 respirator, or higher Good breathability with design that does not collapse against the mouth (e.g. duckbill, cup shaped) "N95" respirator according to US NIOSH, or "FFP2" according to EN 149	• Use respiratory protection (i.e., a respirator) that is at least as protective as a fit-tested NIOSH-certified disposable N95 filtering facepiece respirator before entry into the patient room or care area. • Disposable respirators should be removed and discarded after exiting the patient's room or care area and closing the door. Perform hand hygiene after discarding the respirator. • Staff should have fit-tested if using respirators with tight-fitting facepieces (e.g., a NIOSH-certified disposable N95) and trained in the proper use of respirators, safe removal and disposal.
Powered Air Purifying Respirators (PAPR)	A hooded respirator with a full face shield, helmet, or headpiece, with a self-contained filter.	• For patients on airborne precautions or when performing aerosol generating procedures. • High-risk staff who failed N95 mask fit test (e.g. those with beards), should receive training on the use of PAPR (Powered Air Purifying Respirators) or otherwise exempted from looking after suspected or confirmed cases. • PAPR must be cleaned and disinfected according to manufacturer's reprocessing instructions prior to re-use.
Alcohol-based hand rub	Contain ethanol, isopropanol, n-propanol or a combination of two of these products; contain 60%-80% alcohol.	• HCWs should apply the 5 moments for hand hygiene; before touching a patient, before any clean or aseptic procedure, after body fluid exposure, after touching a patient, and after touching a patient's surroundings, including contaminated items or surfaces. • Follow the correct technique of hand hygiene • Wash hands with antiseptic soap and water when they are visibly soiled
Fit Test Kit	Qualitative or quantitative fit test, bitter or sweet solution use	• To evaluate effectiveness of seal for tight fitting respiratory protection devices • A fit-tested respirator particulate mask (N95 or higher) is required for all HCWs who will potentially care for patients in airborne isolation. • A fit check or seal check is a quick check performed by the wearer each time use the respirator • After passing a fit test with a respirator, the staff must use the exactly same model, style, and size respirator on the workplace.

Annex 8. Line Listing Record for Close Contacts with COVID-19 Case

Facility Name: Ward:

Patient's Sticker

S. N	Personal Data				COVID-19	Daily Progress Use Legend: SF=Symptoms Free; F=Fever; C=Cough; SOB=Shortness of breath; DB=Difficult breath; Died=Death; HOS=Hospitalization; Test : COVID-19 tested													
	Name	Age/ Sex	Designation	Mobile #	Test result	Day 1 D/M/Y	Day 2 D/M/Y	Day 3 D/M/Y	Day 4 D/M/Y	Day 5 D/M/Y	Day 6 D/M/Y	Day 7 D/M/Y	Day 8 D/M/Y	Day 9 D/M/Y	Day 10 D/M/Y	Day 11 D/M/Y	Day 12 D/M/Y	Day 13 D/M/Y	Day 14 D/M/Y
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			