Respiratory Protection Program (RPP)

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Element : B-6

- **Sub- Element (12)**
- **Activities for auditing:**

✓**(D)** documentation

✓**(SI)** Staff Interview

✓**(O)** Observation

- **Score** (0-1-2)

Sub- Element (B-6.1)

- **There is a written policy and procedure for Respiratory Protection Program (RPP) with well-designed programs' components & activities and based on current scientific knowledge, approved MOH guideline, reference practice, and regulations. (D)**

Respiratory Protection Program (RPP) aims to provide effective protection from respiratory risks and to ensure that all employees, patients, and visitors are protected from respiratory hazards.

Respiratory Protection Program (RPP) is based on the systematic approach that incorporates the four major elements with relevant sub-elements:

1. Prevention of respiratory hazards through the use of administrative controls
2. Early identification of respiratory hazards
3. Prevention of respiratory hazards through the use of engineering controls
4. Prevention of respiratory hazards through the use of respiratory protection equipment

Review:

- Policy & Procedures for **Respiratory Protection Program (RPP)** which should be:
- ***Comprehensive:***
  - ❖Each healthcare facility should establish comprehensive internal policies and procedures to manage the RPP effectively.
  - ❖Following must be incorporated in the Policy & procedures:

- Key elements of Respiratory Protection Program (RPP) with relevant sub elements.
- Steps required in the Implementation of an Effective Respiratory Protection Program.
- P/P must include detailed program activities for each program component in order to ensure effective implementation:

1. Prevention of Respiratory Hazards through Administrative Controls :

Sub elements of this component include:

1. Development of the RPP and Assigning Responsibilities of Hospital Respiratory Protection Program Team
2. Discussion of RPP Activities in the Infection Prevention & Control Regular Committee

3. Development of Policies and Procedures that govern all aspects of the RPP, developed according to the MOH guidelines and regulations & easily accessible to all Healthcare workers. (HCWs) with emphasis on staff vaccination and efficient respiratory protection program record keeping.
4. Regular program monitoring and evaluation are required by the RPP team
5. Respiratory Protection Program Education & Training which is a critical component of an effective RPP.

2. Early Identification of Respiratory Hazards:

Sub elements of this component include:

1. Respiratory Hazard Evaluation
2. Early Identification of Patients with Acute Infectious Respiratory Illnesses
3. Early Recognition and Source Control of Patients with Acute Infectious Respiratory Illnesses
4. Transportation of Suspected/Confirmed Infectious Respiratory Illnesses Cases
5. Collecting & Handling of Respiratory Specimens

3. Prevention of Respiratory Hazards Through Engineering Controls:

Sub elements of this component include:

1. Availability and functioning of Airborne Infection Isolation Room (AIIR)
2. Availability and Functioning of Portable High-Efficiency Particulate Air Filter (HEPA filter)
3. Availability and Functioning of Laboratory's Biological Safety

4. Prevention of Respiratory Hazards Through Respiratory Protection Equipment (RPE)

Sub elements of this component include:

1. Availability of RPE Including Face Mask, Respirator, and Powered Air Purifying Respirator (PAPR)
2. Respirator Fit Testing

Other domains of Policies & procedures:

- Fully applicable: all elements of the policy can be applied and comply with the hospital's scope of services
- Based on scientific references approved by MOH
- Signed from authorized personnel (i.e., owner of the policy / hospital director or medical director / concerned department)
- Approved by IC committee
- Valid updated based on latest guidelines released from MOH.

Sub- Element (B-6.2)

- **There is a written policy and procedure for dealing with suspected or confirmed respiratory illnesses patients based on updated national guidelines. It contains early detection, management, and transfer of respiratory illness patients. (D)**

Patient with respiratory illness pose a significant risk of cross infection within the healthcare facilities if appropriate infection control measures are not followed. Therefore, each hospital needs to have clear policies and procedures for suspected or confirmed respiratory illnesses patients e.g COVID – 19, MERS – CoV, tuberculous, Influenza etc adopted from MOH guidelines & tailored according to hospital situation)

Review:

- Policies & Procedures for dealing with suspected or confirmed respiratory illnesses patients should be:

1. **Comprehensive:**
   Incorporating following important domains:

- *<u>Protocols for early detection of patients with respiratory illness</u> i.e. Respiratory Triage, Respiratory Pathway, early recognition and Source Control of Patients with Acute Infectious Respiratory Illnesses*

- **<u>Management protocols of patients with respiratory illness:</u>**

➢Case definition of suspected and confirmed case of respiratory illness

➢Description of respiratory pathway / Designated respiratory triage area with clear flowchart

➢Transmission based Precautions

➢Patient Placement

➢Personal Protective Equipment (PPE) For Healthcare workers

➢Environmental Cleaning /Disinfection & Handling waste and linen

➢IC Precautions for Aerosol-Generating Procedures (AGPs)

- Management of exposure to Respiratory illness (HCWs & Patient exposure)
- Management of respiratory illness outbreaks
- Duration of isolation Precautions for specific respiratory illness
- Home Isolation instructions for eligible patients
- Laboratory Diagnosis (Specimen shipment protocols: Sample collection, packaging and shipping)
- General outlines of Management
- Managing bodies of deceased patients with respiratory illness (MERS – CoV & COVID-19 etc.)

- **<u>Patient Transportation protocols:</u>**

Patient Transportation & Prehospital Emergency Medical Services

Other domains of Policies & procedures:

Policy & Procedures for dealing with suspected or confirmed respiratory illness patients should be:

- **Fully applicable** all elements of the policy can be applied and comply with the
- **Based on scientific references** approved by MOH
- **Signed** from authorized personnel (i.e., owner of the policy / hospital director or Medical director / concerned department)
- **Approved** by IC committee
- **Valid** updated based on latest guidelines released from MOH.

Sub- Element (B-6.3)

- **The IPC committee regularly discuss RPP program's activities, progress, and any issues with potential to impede the effective implementation of the program. (D,SI)**

- Respiratory Protection program’s activities, progress need to be discussed in multidisciplinary regular infection prevention & control committee.
- Any issues & concerns with potential to impede the effective implementation of the program must be discussed as urgent issue in the infection prevention & control committee meetings with proposed solutions in order to ensure smooth functioning of respiratory protection program.

Review:

- Meeting minutes of last IPC Committee meetings to check the content / issues discussed in last meeting and check the status.
- Check if the respiratory protection program activities & progress are being discussed as part of routine agenda. e.g N-95 fit test coverage. Staff immunization status, Training & education of staff on RPP, discussion & approval of any new updates related to Policies and procedures of respiratory illnesses & issues related to engineering controls etc

- Discussion and reinforcement of program follow up during IPC committee meetings to ensure the continuity of the program. e.g each department head / representative should be an advocate of respiratory protection program in their respective areas in order to ensure HCWs, patients, and visitors are in a safe environment and are protected against exposure to respiratory pathogens.
- Verify if any major issue was discussed in the previous meeting: what were the suggested solutions & what is current status. e.g non-availability of vaccines or specific sizes of N-95 masks and / or PAPR in ER.

Interview

- Ask Infection Prevention & control staff about discussion of respiratory protection program in the committee meetings.
- Ask how agenda is prepared and who is responsible to follow up for unresolved open issues related to RPP.
- Ask about the tracking mechanism to follow up the respiratory protection program activities & progress.
- During the audit round in the clinical areas randomly ask the IPC Committee representatives about respiratory protection program & assess their awareness e.g ER or ICU heads can be interviewed to assess their awareness and orientation about respiratory protection program activities. Ask about % of N 95 fit test coverage of their staff, education & training of staff on RPP etc

Sub- Element (B-6.4)

- There is a designated respiratory triage facing the entrance of the Emergency and Hemodialysis units of the hospital. i.e., First area to be reached by any patients. (O)

Respiratory triage and pathway should effectively prevent the transmission of respiratory diseases to patients, healthcare workers (HCWs), and visitors through using simple clinical symptoms and clinical history needed for rapid identification and isolation of suspected cases with infectious respiratory diseases. Therefore in order to prevent the transmission of respiratory infections in the healthcare settings, including MERS-CoV& COVID-19 and influenza, all healthcare facilities should have designated triage area for suspected MERS-CoV& COVID-19 cases that is physically separated from other areas.

Observe:

- *Availability of designated triage area in the following units:* ***(Should be the first area to be reached by ER & dialysis patients before they get in contact with staff or other patients.)***

Emergency Rooms & Hemodialysis Units:

- **Reparatory Triage:**

– It is a simple screening method for the early detection of patients with respiratory symptoms. It must be available at the entry point of the healthcare facility (i.e. emergency room entrance, dialysis unit entrance) for effective capturing & early identification of all individuals passing through the entrance with ARI symptoms.

- It is a triaging scoring system applied to alert healthcare workers in an emergency (ED) and hemodialysis units for the possibility of occurrence of respiratory infections with a particular pathway for those patients.
- It should be first area to be reached by any patients coming to ER or Hemodialysis unit.

During audit round visit the respiratory waiting area and assess if following specifications are being met;

- *A certified trained HCW should operate the respiratory triage point, and they must be able to communicate with patients in both Arabic and English.*
- *The area should be manned by HCWs continuously (24/7).*
- *An informative / attention poster should be erected in the respiratory triage area on the mandatory steps that are required before passing through it.*
- *Updated version of the respiratory triage screening tool.*

- *Availabity of Medical masks and alcoholic hand rub solution at the respiratory triage desk.*
- *Patients identified with infectious respiratory illness should be asked to perform hand hygiene and wear a face mask.*
- *Those with respiratory symptoms meeting scoring criteria must be immediately directed to the respiratory pathway (i.e., the respiratory clinic or waiting area) without first opening a patient file (staff members or caregivers can perform the registration in the reception instead.)*
- *One-way flow of patients should be ensured at all times.*

Respiratory Clinic:

During audit round visit the respiratory clinic and assess if protocols are followed:

- Patients with respiratory symptoms should be screened in the respiratory clinic (i.e., as part of the respiratory pathway) according to the respiratory triage process.
- After the clinical assessment, the physician must decide whether the patient meets the case definition for any particular disease.

- Accordingly, the patient will be directed to an Airborne Infection Isolation Room (AIIR) so that a respiratory specimen can be performed.
- if an AIIR is not available, a single room with a portable HEPA filter should be used.
- Portable chest X-rays must be available for chest imaging and to minimize the transfer of patients around the hospital.

Respiratory Waiting Area:

During audit round visit the respiratory waiting area and assess if following specifications are being met;

- The waiting area for the respiratory pathway should be a well-ventilated separate area that is only used for suspected infectious respiratory cases.
- The respiratory waiting area should be kept free of excessive equipment or furniture.

- Should be equipped with chairs that are easy to clean and fix, with a safe social distance of 1.2 m between chairs.
- Educational materials (posters and screens) about respiratory hygiene and cough etiquette must be available, together with hand hygiene supplies, tissues, and ordinary waste receptacles.

Sub- Element (B-6.5)

- **Written reminders in the emergency department for updated definitions of respiratory illnesses of national alert are available and based on updated national guidelines and staff are quite familiar with these definitions (O, SI)**

Observe:

- *Updated written case definition reminders in Emergency department and hemodialysis unit.* ***(Case definition posters, personal cards etc.)***
- *Observe if posted at convenient locations****.*** ***(Nursing stations, respiratory assessment rooms etc. for education & as a reminder for ER & HDU physicians to apply criteria for suspected case definitions respiratory illness for all patients directed from respiratory triage station)***

Interview:

- ER & HDU physicians & other relevant staff regarding updated case definition of respiratory illnesses e.g MERS- CoV & COVID-19.
- Ask about the last orientation / training about latest case definitions of respiratory illness e.g MERS- CoV & COVID-19.

Answer must include age categorization, Clinical presentation of suspected case categories (I – IV) including Severity Scores for Community-Acquired Pneumonia (CURB 65) & epidemiological link.

MERS -CoV Case Definition:

4. CASE DEFINITION

4.1 SUSPECTED CASE[1]

Age	Clinical Presentation	Epidemiologic Link
Adults	I. Severe pneumonia (severity score ≥3 points) *(Appendix A)* or ARDS (based on clinical or radiological evidence)	Not required
Adults[2]	II. Unexplained deterioration[3] of a chronic condition of patients with congestive heart failure or chronic kidney disease on hemodialysis	Not required
Children and adults	III. Acute febrile illness (T ≥38^0 C) with/without respiratory symptoms OR IV. Gastrointestinal symptoms (diarrhea or vomiting), AND leukopenia (WBC≤3.5x10^9 /L) or thrombocytopenia (platelets < 150x109/L)	Within 14 days before symptom onset: 1. Exposure[4] to a confirmed case of MERS-CoV infection OR 2. Visit to a healthcare facility where MERS-CoV patients(s) has recently (within 2 weeks) been identified/treated OR 3. Contact with dromedary camels[5] or consumption of camel products (e.g. raw meat, unpasteurized milk, urine)

COVID – 19 Case Definition:

3. SURVEILLANCE CASE DEFINITIONS

3.1 Definition of COVID-19 Suspected Cases

Clinical Presentation	Criteria
1. Patient with acute respiratory illness (sudden onset of at least one of the following: fever[1] (measured or by history), cough, or shortness of breath	**Not required**
2. Patient with sudden onset of at least one of the following: headache, sore throat, rhinorrhea, nausea, diarrhea or loss of smell or taste. **AND** in the 14 days prior to symptom onset, met at least one of the following criteria	• Had contact[2] with a confirmed COVID-19 case **OR** • Working in or attended a healthcare facility where patients with confirmed COVID-19 were admitted.
3. Any admitted adult patient with unexplained sever acute respiratory infection (SARI), either Community Acquired Pneumonia (CAP) or Hospital Acquired Pneumonia (HAP).	**Not required**

Sub- Element (B-6.6)

- **Flowchart is available in Emergency and Hemodialysis Units for early detection & management of respiratory illness patients (D,SI)**

Review:

- Flowchart for respiratory illness patients based on updated MOH guidelines.
- Flowchart should clearly describe respiratory pathway from initial checkpoint at ER / HDU entrance to the final destination.

Interview:

- IC team about how they developed the flowchart. ***(Ask about the latest versions of MOH guidelines for respiratory illnesses to verify if updated versions are available)***
- Ask Staff in ER about the flowchart and match if consistent with the real hospital situation.
- Flowchart must be available & posted in ER & HDU for respiratory illnesses & all staff must be very well oriented about the protocols / steps to be followed based on hospital flowchart.

Comment:

- HDU must have their own flowchart describing the respiratory pathway for suspected hemodialysis patients

Sub- Element (B-6.7)

- **Patients who have acute infectious respiratory symptoms are instructed to wear surgical masks and placed in a dedicated and separated waiting area with at least 1.2-meter distance between them. (O,SI)**

Observe:

- How the respiratory triage nurse is dealing with patients with acute respiratory symptoms. (Instruction should include perform hand hygiene & wear surgical mask)
- Observe if alcohol-based hand sanitizer, surgical masks are available at the respiratory triage desk or not.
- Observe how she is directing the patients to the dedicated respiratory waiting area.

- Observe dedicated respiratory waiting area for respiratory illness patients during audit round & check if fulfills MOH requirements.
  - Estimate the distance between chairs in the waiting area. (Spatial separation of at least 1.2 meter between patients.
  - Observe if alcohol-based hand sanitizer, paper towels, education material on cough etiquette /respiratory hygiene & hand hygiene etc. is posted.

Interview:

- Staff at the visual triage station about the instructions to be given to the patients with symptoms of respiratory illness and their companions. **(Identified ARI patients should be asked to perform hand hygiene and wear a surgical mask.)**
- Ask staff what will be next patient destination if score is 4 & above and how she will manage situation if she faces 2 or more patients at the same time.

(Answer: Patient A will be directed to respiratory clinic & remaining patients will wait in dedicated waiting area for respiratory illness patients)

Sub- Element (B-6.8)

- **The facility conducts a tracing for all HCWs who have exposed to a confirmed respiratory illness (e.g: TB or MERS-CoV) cases as per the latest national guidelines. (D,SI)**

- All healthcare facilities should identify and trace all health care workers who had protected (proper use of PPE) or unprotected (without wearing PPE or PPE used improperly) exposure to patients with respiratory like MERS-CoV & Tuberculosis infection.
- Healthcare workers shall be assessed daily for 14 days post exposure for the development of symptoms through the activation of log.

Review:

- Log with line listing of all contacts exposed to confirmed respiratory illness (e.g: TB or MERS-CoV) cases with record of signs & symptoms for the duration of 14 days. Sample of log sheet is attached below.

Interview:

- Staff about the post exposure management & follow up to a confirmed-to-confirmed respiratory illness (e.g: TB or MERS-CoV) cases
- Ask her if she has low risk unprotected exposure, for how long she / he should be under observation & how the monitoring will be done.

APPENDIX 3

Contact Tracing Form

Novel Coronavirus

Name of the contact: ______________________ **ID/ Iqama number:** ______________________

Age: __________ **Nationality:** ____________________ **Phone #:** ______________________

Daily Contact Follow-Up Form			
1 Day after last exposure / /	5 Day after last exposure / /	9 Day after last exposure / /	13 Day after last exposure / /
☐ No symptoms ☐ Fever ______ °C ☐ Shortness of breath ☐ Sore throat ☐ Cough ☐ Headache ☐ Muscle/joint pain ☐ Diarrhea ______ times/day ☐ Vomiting/nausea ☐ Runny nose Others ______	☐ No symptoms ☐ Fever ______ °C ☐ Shortness of breath ☐ Sore throat ☐ Cough ☐ Headache ☐ Muscle/joint pain ☐ Diarrhea ______ times/day ☐ Vomiting/nausea ☐ Runny nose Others ______	☐ No symptoms ☐ Fever ______ °C ☐ Shortness of breath ☐ Sore throat ☐ Cough ☐ Headache ☐ Muscle/joint pain ☐ Diarrhea ______ times/day ☐ Vomiting/nausea ☐ Runny nose Others ______	☐ No symptoms ☐ Fever ______ °C ☐ Shortness of breath ☐ Sore throat ☐ Cough ☐ Headache ☐ Muscle/joint pain ☐ Diarrhea ______ times/day ☐ Vomiting/nausea ☐ Runny nose Others ______

Sub- Element (B-6.9)

- **There is an implemented system for reporting, follow up, and management of exposure to open pulmonary TB, MERS-CoV, chicken pox, measles, mumps, and rubella. (D - SI)**

Review the following documents:

1. Last 2 - 3 fulfilled forms for exposure (lists of HCWs who had exposed to MERS-CoV, open pulmonary TB, chicken pox, measles, mumps or rubella, with classification into low or high risk / protected or non-protected exposure).
2. Isolation room's logs that record HCWs who had exposed to the above-mentioned diseases

3. Evidence of reliable reporting of exposures to GDIPC when indicated (e.g., exposure to MERS-CoV confirmed cases, exposures during chicken pox or measles outbreaks, etc..).
4. Annual report of the employee health clinic that includes exposure incidents to MERS-CoV, open pulmonary TB, chicken pox, measles, mumps and rubella

Ask IPC team members / assigned staff of the employee health:

1) How can you properly apply post-exposure reporting, follow up & management plan for MERS-CoV, COVID-19, open pulmonary TB, chicken pox, measles, mumps and rubella?

Ask IPC team members / assigned staff of the employee health:

Ask questions by giving different scenarios:

- How do you report, manage and follow up a physician who had exposed to a patient confirmed for MERS-CoV, COVID-19?
- How will you report, manage and follow up a respiratory therapist who had been exposed to a case of open pulmonary TB?
- How do you report, manage and follow up exposures during chicken pox outbreak?
- How can you report, manage and follow up a nurse who had exposed to a patient +ve for measles?

Comments:

Instead of direct questions, indirect ones or scenarios are advisable.

Sub- Element (B-6.10)

- **Aerosol generating procedures (AGPs) (e.g; nasopharyngeal swabs, tracheal aspirate, etc) of suspected infectious respiratory patients are performed by trained HCWs , and there must be schedule for assigned trained HCWs to cover all shifts. (D,MR,SI)**

An aerosol-generating procedure (AGP) is defined as any medical procedure that can induce the production of aerosols of various sizes, including small (< 5 microns) Particles. AGPs includes bronchoscopy, sputum induction, intubation and extubation, cardiopulmonary resuscitation, open suctioning of airways, Ambu bagging, nebulization therapy, high frequency oscillation ventilation and Bilevel Positive Airway Pressure ventilation – BiPAP

Review:

- List of health care workers (Doctors, nurses etc.) who have received training on appropriate technique of nasopharyngeal swab & tracheal aspirate which are Aerosol generating procedures (AGPs).
- Check of schedule for duty covering 24 hours for the trained assigned HCWs for Aerosol generating procedures (AGPs) (e.g; nasopharyngeal swabs, tracheal aspirate, etc)

Interview:

- Concerned staff (doctors, nurses etc.) in ER, ICU about last training received on various AGPs like nasopharyngeal swab & tracheal aspirate technique.
- Randomly ask staff to explain technique of nasopharyngeal sample collection for MERS – CoV, COVID 19 testing etc

Sub- Element (B-6.11)

- **HCWs must perform aerosol generating procedures (AGPs) on any suspected or confirmed respiratory illnesses cases in a negative pressure room or single room with a portable high-efficiency particulate air (HEPA) filter machine (if the negative pressure room is not available) and by using proper PPE (e.g., N95 fitted mask, eye protection, gloves, and gown). (D,O,SI)**

Review:

- File of any patient of suspected or confirmed respiratory illnesses cases and check date, time & responsible HCW who performed aerosol generating procedures (AGPs).
- Review the logsheet for the specific isolated case and match with the date and time of AGP.
- Ask for evidence of appropriate PPE use during AGPs.

Observe:

- HCWs performing any aerosol generating Procedure (AGPs) like CPR, intubation, extubation, suctioning etc. for any suspected or confirmed respiratory illness case. (If possible, to observe the real situation / scenario)
- Observe the type of PPE used by HCWs while preparing for AGPs.
- Observe If AGPs are performed in negative pressure room / single room with HEPA filter.

Interview:

- Ask HCWs (Doctors / nurses) at random about what is meant by term Aerosol Generating Procedures **AGPs** and if they can enumerate different **(AGPs.)**
- Ask HCWs about type of precautions to be taken & / PPE to be worn while performing **AGPs.**
- Ask HCWs where **AGPs** to be performed for any suspected or confirmed respiratory illness patient.

Interview:

- Alternatively, they can be interviewed by giving a scenario.

Scenario

Ask any ER Physician:

Patient XYZ was directed to Respiratory clinic from respiratory triage with score 8. After clinical examination & applying criteria for suspected COVID – 19 based on updated guidelines patient fulfilled criteria for a suspected case. You decide to take Nasopharyngeal swab for the patient. Where are you going to perform the procedure and what type of precautions will be taken before entering the patient's room?

Sub- Element (B-6.12)

- **There is a proper maintenance of all portable HEPA filter machines and all HEPA filters are changed on a regular basis and according to the manufacturer's recommendations. (D)**

Review:

- Document showing total number of portable HEPA filter machines available in the hospital. E.g ER, ICU, HDU, OR etc
- Review all documents that prove the maintenance and changing of HEPA filter of portable machines.
- Check the records of last HEPA filter change for each portable machine and verify if manufacturer’s instructions for frequency are being followed.
- Document can be reviewed in infection control department and in relevant departments as well by random selection. e.g ER, HDU, isolation wards etc

Thank you