☐ADMINISTRATE POLICY & PROCEDURE (APP)	☐ INSTITUTIONAL POLICY & PROCEDURE (IPP) ☐ INTERDEPARTMENTAL ☐ INTERNAL	
TITLE		**POLICY NUMBER/V#**
Post-exposure Management		MMC-IPC-03 (1)
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APPLIES TO	**RESPONSIBILITY**	
All Staff	ER and Infection Control Departments.	

1. PURPOSE

1.1. Outline the process to prevent transmission of infection (blood borne pathogens) through exposure to patient's blood, body fluid, secretions and excretions either via sharp injury, patient manipulation or splashing.

1.2. To provide guidelines for the management of healthcare workers (HCWs) exposed to selected infectious disease transmissible via the airborne or droplet routes.

2. DEFINITION

2.1. Exposure: is defined as the direct contact of patients' blood, body fluid, secretion or excretion to individual mucous membrane or penetration into the skin.

2.2. Blood borne pathogens mainly include; hepatitis B virus, hepatitis C virus and human immunodeficiency virus.

2.3. Risk for Occupational Transmission: The risk of developing clinical hepatitis B if the blood was hepatitis B surface antigen (HBsAg)-positive is 22% to 31%.

2.3.2. The average incidence of anti-HCV seroconversion after accidental percutaneous exposure from an HCV positive source is 1.8%.

2.3.3. The average risk of HIV transmission after a percutaneous exposure to HIV-infected blood has been estimated to be approximately 0.3%.

2.4. Hepatitis B immune globulin (HBIG) contains antibodies that provide temporary protection against the infection. HBIG is an injection, which should be given as soon as possible after exposure, preferably within 24 hours for staff who are at high risk (i.e. un-immune exposed staff to unknown source or a known positive source of HBV).

2.5. Eye Wash Station is a device used to irrigate and flush the eyes after eye splash and shall be provided within the work area for immediate emergency use.

2.6. Selected infectious diseases transmitted via the airborne and droplet:

2.6.1. Varicella (Chickenpox) and shingles

2.6.2. Measles

2.6.3. Rubella

2.6.4. Mumps

2.6.5. Mycobacterium tuberculosis

2.6.6. Meningococcal meningitidis (Neisseria meningitidis)

2.6.7. Pertussis

2.6.8. COVID-1

2.6.9 TST: Tuberculin Skin Test

2.6.10 AFB: Acid- Fast Bacilli

2.6.11 IGRA: Interferon Gamma Release Assay

2.6.12 VZIG: Varicella Zoster Immunoglobulin

2.6.13 HCW: Health Care Worker

3. RESPONSIBILITY

3.1. ER and Infection Control Departments.

4. CROSS REFERENCES

Work Restrictions for Staff with Communicable Diseases

5. POLICY

5.1. Apply standard precaution.

5.2. Do not recap needles.

5.3. Needles should be handled safely and properly disposed of.

5.4. All exposures to blood, body fluids, secretions and excretions must be reported.

5.5. Exposed staff must seek medical attention ASAP or within 2 hours from exposure.

5.6. Exposed staff for selected infectious diseases transmitted via airborne or droplet: ER will assess HCWs for exposure, prophylaxis, treatment, and work restriction and will notify Infection Control of the actions taken.

6. PROCEDURE

6.1. Post exposure management for needlestick and sharp object injury or blood and body fluid exposure**:**

6.1.1. Apply first aid as follows:

6.1.1.1. Encourage bleeding under runny water, but do not squeeze the exposed area.

6.1.1.2. Wash with soap and water, then rinse thoroughly for 10 minutes.

6.1.1.3. For eye splash:

6.1.1.3.1. Tap water can be used for eye wash.

6.1.1.3.2. The involved eye must be washed for 10 minutes.

6.1.1.3.3. The Eye wash water must be changed every 7 days.

6.1.1.3.4. The eye wash bottle must be labeled with the date of filling and the due date for changing the water.

6.1.1.3.5. Before changing the water, the bottle must be properly sanitized. Wash it with soap and water. Apply approved disinfectant. Rinse well with water. Air dry and refill again.

6.1.2. Remove the sharps to prevent further injury

6.1.3. Report to your supervisor and seek medical attention as soon as possible.

6.1.4. Fill the EPINET form (needle-stick and sharp object injury or blood and body fluid exposure).

6.1.5. Report to ER.

6.1.6. Blood works (HIV, HBSAg , HCV and ALT) will be taken for the source after taking his/her consent, if the source is known.

6.1.7. Blood works (HIV, HBsAg and HBV surface antibody, HCV, and ALT) will be taken for the exposed person.

6.1.8. Follow up with ER.

6.1.9. Blood works except for HBV surface antibody to be repeated after 6 weeks, 3 months and 6 months from the Exposure date.

. 6.1.10. Hepatitis B post-exposure prophylaxis:

6.1.10.1. Post exposure treatment should begin as soon as possible after exposure, preferably within 24 hours, and no later than 7 days.

6.1.10.2. HCW unvaccinated and source HBsAg+: recommend HBIG plus vaccine series (3 doses).

6.1.10.3. HCW unvaccinated and source unknown: vaccine series (3 doses).

6.1.10.4. HCW vaccinated and known to be a responder (anti-HBs >10 mIU/mL): No treatment.

6.1.10.5. HCW non-responder and source HBsAg+ or high risk: HBIG x2 (first dose as soon as possible and the second dose 1 month later).

6.1.10.6. HCW antibody status unknown: Test for anti-HBs and no treatment if anti-HBs >10mIU/mL . If less than 10 HBIGX1 and vaccine poster

6.1.11. HIV post exposure prophylaxis:

6.1.11.1. HIV post exposure prophylaxis should be start as soon as possible after exposure

. 6.1.11.2. Staff will be sent to MOH King Saud Hospital at HIV clinic to receive the antiviral medication.

6.1.12. Hepatitis C post-exposure prophylaxis:

6.1.12.1. There is no vaccine against hepatitis C and no treatment after an exposure that will prevent infection. Neither immune globulin nor antiviral therapy is recommended after exposure.

6.1.12.2. Determine anti-HCV for both the source and the exposed person.

6.1.12.3. If the source is + or has a high-risk activity then perform baseline testing for anti-HCV and ALT activity and check HCV viral load of the exposed person after 3 weeks, or repeat anti-HCV testing after 6 weeks, 3 months and 6 months from the exposure

TABLE 3. Recommended postexposure prophylaxis for exposure to hepatitis B virus

Vaccination and antibody response status of exposed workers*	Treatment		
	Source HBsAg† positive	Source HBsAg† negative	Source unknown or not available for testing
Unvaccinated	HBIG§ x 1 and initiate HB vaccine series¶	Initiate HB vaccine series	Initiate HB vaccine series
Previously vaccinated			
Known responder**	No treatment	No treatment	No treatment
Known nonresponder††	HBIG x 1 and initiate revaccination or HBIG x 2§§	No treatment	If known high risk source, treat as if source were HBsAg positive
Antibody response unknown	Test exposed person for anti-HBs¶ 1. If adequate,** no treatment is necessary 2. If inadequate,† administer HBIG x 1 and vaccine booster	No treatment	Test exposed person for anti-HBs 1. If adequate,¶ no treatment is necessary 2. If inadequate,¶ administer vaccine booster and recheck titer in 1–2 months

* Persons who have previously been infected with HBV are immune to reinfection and do not require postexposure prophylaxis.
† Hepatitis B surface antigen.
§ Hepatitis B immune globulin; dose is 0.06 mL/kg intramuscularly.
¶ Hepatitis B vaccine.
** A responder is a person with adequate levels of serum antibody to HBsAg (i.e., anti-HBs ≥10 mIU/mL).
†† A nonresponder is a person with inadequate response to vaccination (i.e., serum anti-HBs < 10 mIU/mL).
§§ The option of giving one dose of HBIG and reinitiating the vaccine series is preferred for nonresponders who have not completed a second 3-dose vaccine series. For persons who previously completed a second vaccine series but failed to respond, two doses of HBIG are preferred.
¶¶ Antibody to HBsAg.

6.2**. Post exposure management to a selected infectious disease transmitted via airborne and droplet:**

6.2.1. Managing Varicella (Chickenpox) or Shingles Exposure: (Procedure: Refer to Appendix 1–VI-09)

6.2.1.1. Incubation period: Usually 14-16 days; range,

10-21 days; up to 28 days in persons who have received varicella zoster immunoglobulin (VZIG).

6.2.1.2. Exposure criteria:

6.2.1.2.1**. Varicella**: A household contacts, face-to-face contact for more than 5 minutes with an infected person without wearing a surgical mask, or direct contact with vesicle fluid without wearing gloves

6.2.1.2.2. **Shingles**: Direct contact with vesicle fluid without wearing gloves.

6.2.1.3. **Period of communicability:**

6.2.1.3.1**. Varicella:** Affected persons are most contagious 1-2 days before and shortly after vesicles appear. Transmission can occur up to 5 days after onset of rash. Immunocompromised persons may be contagious as long as new vesicles are appearing.

6.2.1.3.2. **Shingles**: Affected persons are most contagious from 24 hours before the first vesicle appears and up to 48 hours after the final vesicle appears.

6.2.1.4**. ER**:

6.2.1.4.1. **Assess immunity**: HCW is susceptible unless he or she has a history of varicella or has serological evidence of immunity. Consider checking varicella IgG antibody titer to determine the immune status of the HCW.

6.2.1.4.2. Vaccination of HCWs against VZV if applicable.

6.2.1.5. **Work restrictions**:

6.2.1.5.1. Exposed: From days 1-7 of exposure no restrictions is required. HCW should be excluded from duty on day 8th after 1st exposure through day 21st of last exposure (28th day if VZIG was given after the last exposure).

6.2.1.5.2. **Infected**: HCW may return to work after all lesions have crusted over.

6.2.1.6. Prophylaxis: Consider giving VZIG to non-immune, immunocompromised persons or pregnant women within 96 hours of exposure.

6.2.2. **Managing Measles Exposure** (Procedure: refer to Appendix 2–VI-09):

6.2.2.1. **Incubation period**:

Usually 8-12 days; range, 7-21 days.

6.2.2.2. **Exposure criteria**: Spending time in a room with an infected person without wearing a respirator. If air is recirculated, spending time in the area supplied by the air-handling system while an infected person was present or within 1 hour after the person's departure. Contact with nasal or oral secretions from an infected person or items contaminated with these secretions without wearing gloves.

6.2.2.3. **Period of communicability**: From 4 days before the rash appears to 4 days after the rash appears, but transmission is minimal by 2 to 4 days after the rash appears.

6.2.2.4. ER :

6.2.2.4.1. Assess immunity; an HCW is susceptible unless he or she was born before 1957, provides serological evidence of immunity, or has two documented doses of measles vaccine.

6.2.2.4.2. Obtain blood for IgG antibody titers as needed. For staff who has not received two doses of measles vaccine, consider initiating or completing the vaccine series.

6.2.2.5. Work restrictions:

6.2.2.5.1. Exposed: From days 1-4 no restrictions required. From days 5 to 21 for a single exposure or day 5 of the first exposure through day 21 of the last exposure the HCW either must not work or must have no direct patient contact or must only work with immune persons away from patient care areas.

6.2.2.5.2. Infected: HCW may return to work 4 days after developing a rash.

6.2.2.6. Prophylaxis: Consider giving susceptible HCWs the vaccine within 3 days or IG within 6 days of exposure to modify severity of infection; vaccine or IG given after exposure does not change work restrictions.

6.2.3. Managing Rubella Exposure: (Procedure: Refer to Appendix 3–VI-09).

6.2.3.1. Incubation period: Usually 16-18 days; range, 14-21 days.

6.2.3.2. Exposure criteria: Contact within 3 feet of an infected person without wearing a mask; contact with nasopharyngeal secretions from an infected person or items contaminated with these secretions without wearing gloves; contact with nasopharyngeal secretions or urine from an infant with congenital rubella without wearing gloves.

6.2.3.3. Period of communicability: Form 7 days before the rash to 7 days after the rash appears; up to 1 year for infants with congenital rubella.

6.2.3.4. ER: Assess immunity; an HCW is susceptible unless he or she was born before 1957, provides serological evidence of immunity, or has one documented dose of rubella vaccine. Obtain blood for IgG antibody titers as needed. For staff who has not received two doses of rubella vaccine, consider initiating or completing the vaccine series.

6.2.3.5. Work Restrictions:

6.2.3.5.1. Exposed: Form days 1-6 no restrictions required. From 7 th day after the 1st exposure through the last exposure on the 23rd day, the HCW either must not work or must have no direct patient contact or must only work with immune persons away from patient care areas.

6.2.3.5.2. Infected: HCW may return to work 7 days after developing rash.

6.2.3.6. Prophylaxis: None; the rubella vaccine does not prevent infection after exposure. IG does not prevent infection.

6.2.4. Managing Mumps Exposure (Refer to Appendix 4–VI-09):

6.2.4.1. Incubation period: Usually 16-18 days; range, 12-25 days.

6.2.4.2. Exposure criteria: Being within 3 feet of an infected person without wearing a mask; contact with saliva or items contaminated with saliva from an infected person without wearing gloves.

6.2.4.3. Period of communicability: Patients are most communicable 48 hours

6.2.4.4. Staff health clinic: Assess immunity; an HCW is susceptible unless he or she was born before 1957, provides serologic evidence of immunity, or has one documented dose of mumps vaccine. Obtain blood for IgG antibody titers as needed. For staff who has not received two doses of mumps vaccine, consider initiating or completing the vaccine series.

6.2.4.5. **Work restrictions:**

6.2.4.5.1. Exposed: Form days 1-11, no restrictions required. Restrict from work day 12th after first exposure through day 25th of last exposure or 5 days after onset of parotitis. The HCW either must not work or must have no direct patient contact, or work only with immune persons away from patient care areas.

6.2.4.5.2. Infected: HCW may return to work 5 days after the onset of parotid gland swelling.

6.2.4.6. Prophylaxis: None; the mumps vaccine is not proven to prevent infection after exposure; mumps IG does not prevent infection.

6.2.5. Managing Meningococcal Disease Exposure (Refer to Appendix 6–VI-09):

6.2.5.1. Incubation period: Usually

6.2.5.6. Prophylaxis: Rifampin 600 mg every 12 hours for 2 days (contraindicated in pregnancy) or Ciprofloxacin 500 mg single dose (contraindicated in pregnancy) or Ceftriaxone 250 mg IM single dose (safe during pregnancy).

6.2.6. Managing Pertussis Exposure (Refer to Appendix 7–VI-09):

6.2.6.1. Incubation period: Usually 7-10 days; range, 5-21 days.

6.2.6.2. Exposure criteria:

6.2.6.2.1. Face-to-face contact without wearing a mask for more than 10 minutes.

6.2.6.2.2. Spending 1 hour in a room with a confirmed case without wearing a mask.

6.2.6.3. Period of communicability: Patients are most contagious during the catarrhal stage; communicability diminishes rapidly after the onset of coughing but can persist for as long as 3 weeks.

6.2.6.4. ER: If the HCW has no symptoms, he/she should begin prophylaxis and return to work. If the HCW is symptomatic, he/she should begin therapy and exclude from work until test results are available.

6.2.6.5. Work restrictions:

6.2.6.5.1. Exposed:

6.2.6.5.1.1. Post-exposure (asymptomatic): No restrictions, prophylaxis recommended.
6.2.6.5.1.2. Post-exposure (symptomatic): Exclude from duty until 5 days after initiating effective therapy or until the disease is excluded by negative serology and negative nasopharyngeal culture.

6.2.6.5.2. Active: Exclude from duty from the beginning of the catarrhal stage through the 3rd week after the onset of paroxysm or until 5 days after the start of effective antimicrobial therapy.

6.2.6.6. Prophylaxis: The recommended drug is erythromycin (40 mg/kg/day in 4 divided doses, maximum of 2 gm/day) for 14 days (estolate preparation is preferred). Azithromycin or clarithromycin may be tolerated well than erythromycin. If the HCW is allergic to the macrolide group, Cotrimoxazole DS (1 tablet twice daily for 14 days) can be administered.

6.2.7. Managing Mycobacterium Tuberculosis Exposure: (Procedure: Refer to Appendix 5–VI-09)

6.2.7.1. Incubation period: From 2 to 10 weeks after exposure to detection of positive Tuberculin skin test (TST) or Interferon-gamma release assay (IGRA); the risk of developing active disease is greatest in the first 2 years after exposure.

6.2.7.2. Exposure criteria: Spending time in a room with a person who has active disease without wearing an N95 respirator; packing or irrigating wounds infected with Mycobacterium Tuberculosis (MTB) without wearing an N95 respirator.

6.2.7.3. Period of communicability: Persons whose smears are AFB positive are 20 times more likely to cause secondary infections than persons who are smear negative. Children with primary pulmonary MTB are rarely contagious.

6.2.7.4. Staff health clinic: Obtain baseline TST results by doing 2 step TST if these have not been performed recently and if the HCW was previously negative; perform post-exposure TST test at 8 to 10 weeks; if the TST test result comes out positive prescribe MTB prophylaxis. Positive IGRA result is also an indication for MTB prophylaxis.

6.2.7.5. Work restrictions:

6.2.7.5.1. Persons whose TST results and IGRA test results are positive.

6.2.7.5.2. Infected: Restrict HCWs with active MTB from duty until after they have taken 2 to 3 weeks of effective anti-tuberculosis chemotherapy and they have had 3 AFB-negative sputum samples taken over 8 to 24 hours (one must be an early morning specimen).

6.2.7.6. Prophylaxis: Prescribe Isoniazid 300 mg daily for 9 months (or 12 months for HIV-infected persons) and pyridoxine 20-40 mg daily. Consult with Infectious disease consultant for verification of the most appropriate prophylaxis regimen.

6.2.8. Managing Mycobacterium Tuberculosis Exposure: (Procedure: Refer to Corona virus policy)

FORMS & ATTACHMENTS

7.1. Management of Post Exposure & Reporting Flow Chart

7.2. Source Patient Risk Assessment Form

7.3. Needle Stick & Sharp Object Injury Report

7.4. Blood and Body Fluid Exposure Report

8. EQUIPMENT

8.1. Sharp containers as per the international standardization

10.REFERENCES

10.1. Centers for Disease Control and Prevention, Post-exposure Prophylaxis for Bloodborne Pathogens

10.2. National Center for Infectious Diseases, Division of Healthcare Quality Promotion and division of Viral Hepatitis

10.3. American National Standards Institute (ANSI) Standard Z 358.1- 2009 “Emergency Eye Wash and Shower Equipment” 10.4. The GCC Infection Prevention and Control Manual 3rd edition.

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