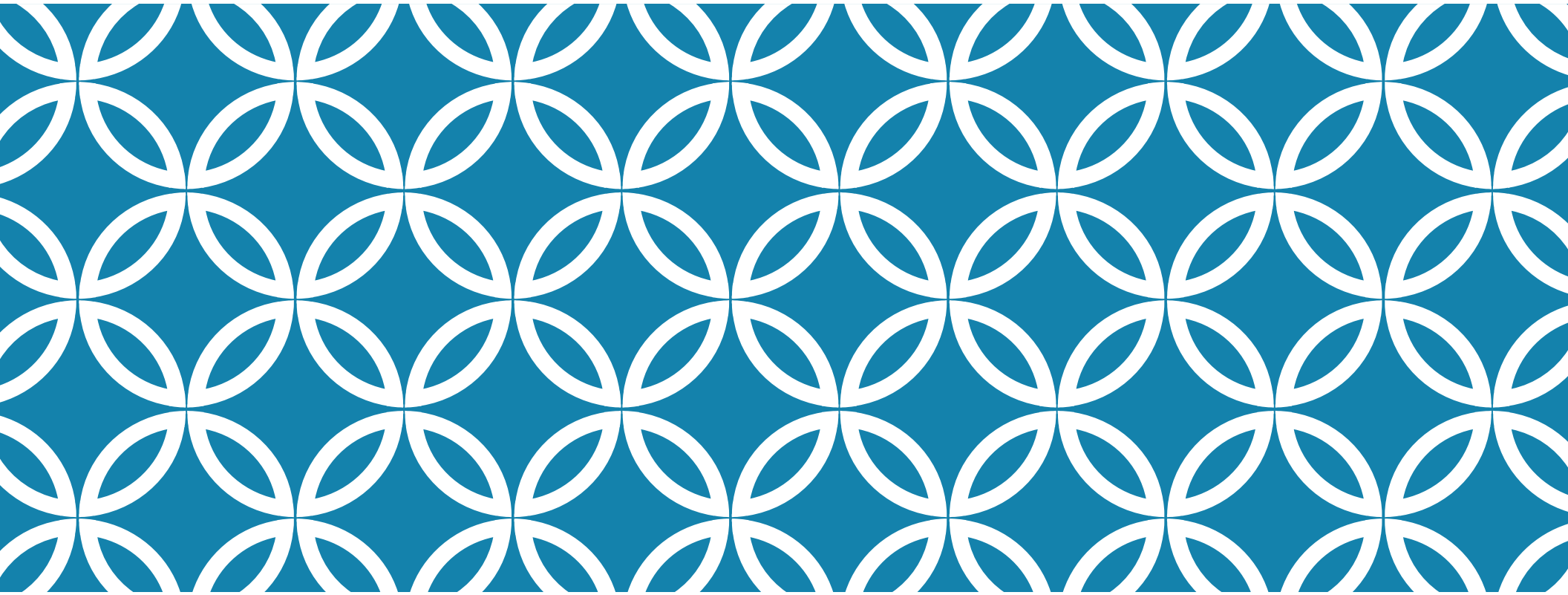


HEALTHCARE WORKERS LIVING WITH BLOOD-BORNE VIRUS INFECTIONS

MODULE OBJECTIVE

Types of blood borne viral (BBV) infection

To ensure health care workers (HCW)s know their responsibility if and when infected with any BBV

To reduce the risk of HCW to patient transmission of BBV

To retain HCWs at work and reducing societal and professional impact of living with BBV

Promote voluntary testing and self declaration of BBV amongst HCW

BLOOD BORNE VIRUS (BBV) INFECTION

Healthcare personnel are at risk for occupational exposure to bloodborne pathogens, including

- Hepatitis B virus (HBV),
- Hepatitis C virus (HCV), and
- Human Immunodeficiency Virus (HIV)

Risk of infection may vary with factors such as these:

- ☐ The pathogen involved
- ☐ The type of exposure
- ☐ The amount of blood involved in the exposure
- ☐ The amount of virus in the patient's blood at the time of exposure

SOURCE OF CONTAMINATION

Blood

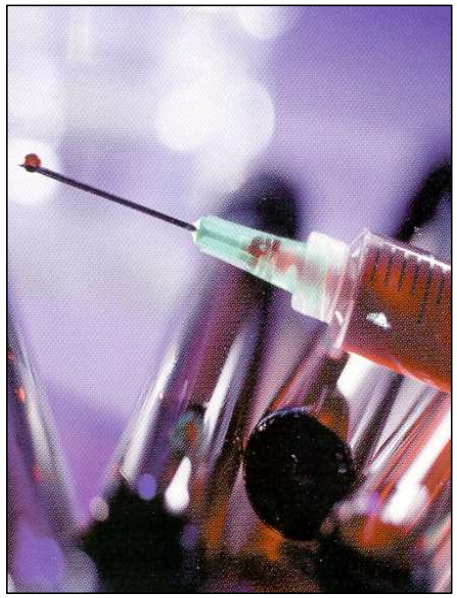
Other potentially infectious materials (OPIM)

- Human body fluids
- Any unfixed tissue or organ from human
- Cultures, culture mediums, or other solutions
- Experimental animal blood, tissues, or organs infected with HIV or HBV

RISK OF EXPOSURE

How exposure occurs:

- Needlesticks
- Cuts from other contaminated sharps
- Contact of mucous membrane or broken skin with contaminated blood or other potentially infectious material



RISK OF SEROCONVERSION

Source Status	Risk of Infection
HBV:	1 in 3 (6 - 30%)
HCV:	1 in 30 (3%)
HIV:	1 in 300 (0.3%)

(source: CDC, 2004)

HIV

HIV continues to be a major global public health issue, having claimed 36.3 million [27.2–47.8 million] lives so far.

- HIV can lead to the disease AIDS (*acquired immunodeficiency syndrome*) if left untreated
- The human body can't get rid of HIV and no effective HIV cure exists. So, once you have HIV, you have it for life.
- With HIV treatment (called antiretroviral therapy or ART), people with HIV can live long and healthy lives and prevent transmitting HIV to their sexual partners.
- There are effective methods to prevent getting HIV through needle stick injury, which is post-exposure prophylaxis (PEP).

MANAGEMENT OF HIV INFECTED HCW

All HCWs with HIV should be started on cART as soon as they were diagnosed.

Aim of treatment is to maintain their HIV viral load less than the detectable range (<50copies/ml)

MONITORING AND CLEARANCE FOR HIV

HCWs living with HIV must meet the following criteria before they can perform EPPs:

1. be on effective cART, and

2. have a plasma viral load that is undetectable (<200 copies/mL) on 2 blood samples taken no less than 3 months apart, and

3. be subject to plasma viral load monitoring every 12 -24 weeks, as decided by the FTP Committee

4. be under joint supervision of a responsible physician and occupational health unit of employing organisation (if self-employed must be under joint supervision of a responsible physician and MMC)

5. agree to inform MMC if there is any change in work scope

Accessed from: MMC-GUIDELINE-ON-BLOOD-BORNE-VIRAL-INFECTIONS (20th October 2020)

Table 1: HIV viral load monitoring and subsequent action	
Viral load test	Action
<50 copies/ml or below	No action required. Retest in 3-6 months
≥50 but <200 copies/mL	A case-by-case approach based on clinical judgement should be taken which may result in no action (as above) or a recommendation that a second test should be done 10 days later to verify the viral load remains below the threshold of 200 copies/ml. Further action will be informed by the test result.
≥200 copies/ml but <1000 copies/ml	Cease EPPs pending a repeat viral load to verify the first test result. If the repeat viral load is >200 copies/ml, the HCW should cease conducting EPPs until their reading, in two consecutive tests no less than three months apart, is <200 copies/ml.
1000 copies/ml or above	The HCW should cease conducting EPPs immediately. A second test must be done to verify the first result. If the count is still >1000 copies/ml, a full risk assessment should be initiated to determine the risk of transmission to patients. At a minimum, this will include discussions between the consultant occupational physician and the treating physician on the significance of the risk of HIV transmission to patient. Following a risk assessment, patient notification may be indicated but would generally only be considered when a serious breach of infection prevention and control practices has been identified.

Accessed from: MMC-GUIDELINE-ON-BLOOD-BORNE-VIRAL-INFECTIONS (20th October 2020)

HEP B

WHO estimates that 296 million people were living with chronic hepatitis B infection in 2019, with 1.5 million new infections each year.

- Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease.
- The virus is most commonly transmitted from mother to child during birth and delivery, as well as through contact with blood or other body fluids during sex with an infected partner, unsafe injections or exposures to sharp instruments.
- There is no specific treatment for acute hepatitis B. Antivirals if started need to be taken for life.
- A safe and effective vaccine that offers 98% to 100% protection against hepatitis B is available.

MANAGEMENT OF HBV INFECTED HCW

Health care workers who are HBeAg positive or HBeAg negative with high viral load are at the highest risk of HBV transmission to patients when performing EPPs.

A HBV-infected health care worker should, in general, be on antiviral with effective viral suppression regardless of whether he or she is HBeAg positive or negative if he or she intends to perform EPPs.

Pros and cons on being on antiviral therapy should also be considered, especially when there is otherwise no indication for initiation of the antiviral therapy.

MONITORING AND CLEARANCE FOR HEP B

HCWs who are living with Hep B must meet the following criteria before they can perform EPPs:

1. HBV DNA viral load undetectable or very low (<50 IU/ml)

2. Either from natural suppression or on continuous antiviral therapy

3. Be subject to plasma viral load monitoring every 12 - 24 weeks

4. Be under joint supervision of a responsible physician and occupational health unit of employing organisation (if self-employed must be under joint supervision of a responsible physician and MMC)

5. Agree to inform MMC if there is any change in work scope

Accessed from: MMC-GUIDELINE-ON-BLOOD-BORNE-VIRAL-INFECTIONS (20th October 2020)

Table 2: HBV viral load monitoring and subsequent action

Viral load	Action
<50 IU/ml	No action required. Retest in 12 - 24 weeks.
≥50 IU/mL	Cease EPPs pending a repeat viral load 2 weeks later to verify the first test result. If the repeat viral load is ≥50 IU/ml, the HCW should cease conducting EPPs until their reading, in two consecutive tests no less than 4 weeks apart, is <50 IU/ml. A full risk assessment should be initiated to determine the risk of transmission to patients. At a minimum, this will include discussions between the consultant occupational physician and the treating physician on the significance of the risk of HBV transmission to patient. Following a risk assessment, patient notification may be indicated but would generally only be considered when a serious breach of infection prevention and control practices has been identified.

Accessed from: MMC-GUIDELINE-ON-BLOOD-BORNE-VIRAL-INFECTIONS (20th October 2020)

HEP C

Globally, an estimated 58 million people have chronic hepatitis C virus infection, with about 1.5 million new infections occurring per year.

- Hepatitis C is an inflammation of the liver caused by the hepatitis C virus.
- The virus can cause both acute and chronic hepatitis, ranging in severity from a mild illness to a serious, lifelong illness including liver cirrhosis and cancer.
- The hepatitis C virus is a bloodborne virus and most infection occur through exposure to blood from unsafe injection practices, unsafe health care, unscreened blood transfusions, injection drug use and sexual practices that lead to exposure to blood.
- Antiviral medicines can cure more than 95% of persons with hepatitis C infection, but access to diagnosis and treatment is low.
- There is currently no effective vaccine against hepatitis C.

MANAGEMENT OF HCV INFECTED HCW

The presence of antibody to HCV (detectable anti-HCV) in an individual does not necessarily infer there is active or current HCV infection and more importantly it does not confer immuno-protection.

A confirmed HCV-infected HCW (detectable HCV RNA) should abstain from performing EPP.

AntiHCV positive and HCV RNA-negative individuals should be retested for HCV RNA 12 and 24 weeks after a negative result to confirm definitive clearance.

The management of anti-HCV antibody positive HCW starts with confirmation of HCV infection; i.e both anti-HCV antibody and HCV RNA are detectable. The HCV RNA assays should have a minimum sensitivity of 50 IU/mL, this is important in particular to determine if an anti-HCV positive HCW is non infective with undetectable for HCVRNA.

MONITORING AND CLEARANCE FOR HEP C

HCWs who are living with Hep C must meet the following criteria before they can perform EPPs:

1. if anti-HCV positive, must be repeatedly HCV RNA negative

Or

2. If HCV RNA positive, must be treated and be HCV RNA negative for at least 6 months after cessation of treatment (ie achieve sustained virological response at 24 weeks post treatment, SVR24)

3. Additional test for HCV RNA at 3 months after SVR24. However, in the presence of ongoing risk factors that could not be completely removed, annual HCVRNA is required.

Accessed from: MMC-GUIDELINE-ON-BLOOD-BORNE-VIRAL-INFECTIONS (20th October 2020)

Table 3: **Test results and subsequent action**

Results	Actions
Anti-HCV positive, detectable HCV RNA (≥50 IU/ml)	Confirms HCV infection, abstain from performing EPPs. Refer for HCV treatment
Anti-HCV positive, undetectable HCV RNA (at least ≤ 15 IU/ml)	No history of HCV therapy: Abstain from performing EPPs. Re-tested for HCV RNA 12-24 weeks after a negative result to confirm definitive clearance as the viral load varies with period of undetectability in cases of acute phase of HCV infection. Those who are anti-HCV positive but repeatedly HCV RNA negative should be allowed to continue performing EPPs Has history of HCV therapy: If this negative HCV RNA was at least 6 months after completion of HCV therapy , the HCW had achieved sustained virological response. Able to perform EPPs and retest HCVRNA 3 months later.

Accessed from: MMC-GUIDELINE-ON-BLOOD-BORNE-VIRAL-INFECTIONS (20th October 2020)

DUTIES AND OBLIGATIONS OF HCW LIVING WITH BBV

HCW is responsible for his/her own status of disease. Has the onus of keeping oneself infection free and NOT infecting others

Anyone exposed to a BBV infection must promptly seek confidential professional advice

Stay updated on the Codes of Professional Conduct

Comply to all restrictions imposed (by employer or supervisor) at all times

Must never undertake any exposure prone procedures (EPP)s until deemed fit to recommence

Ethical and legal obligation

Any breach may be subjected to disciplinary procedures by the Malaysian Medical Council (MMC)

PROCEDURES TO BE ADOPTED BY HCW WITH BBV INFECTION

Take leave from professional duties immediately by informing supervisor or employer in confidence

Seek confidential consultation with a physician

Submit a latest medical report to MMC

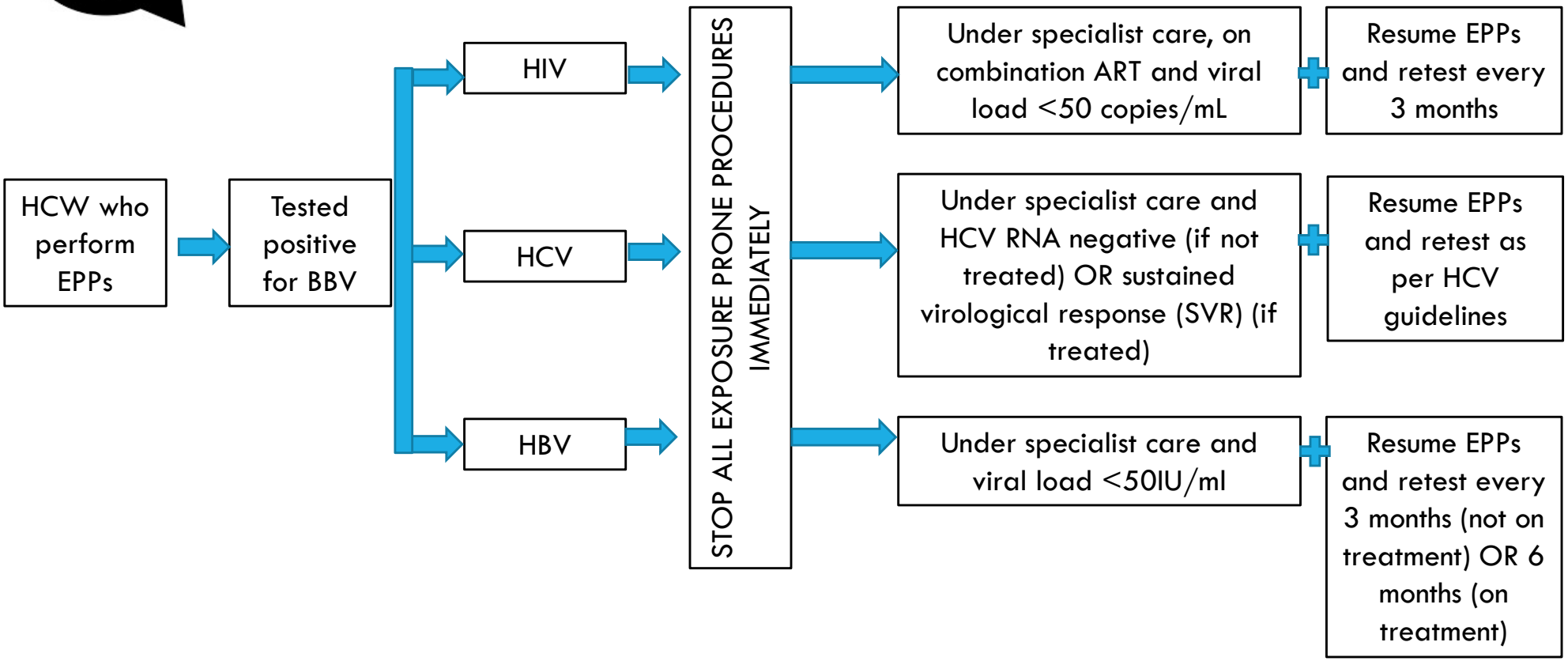
Attend review with the FTP-MMC

Consent to the recommendations of the FTP-MMC

Comply with the decisions of the president of the MMC with regards to employment and restrictions to practice

Immediately report all incidents of exposures to patients open tissues to the occupational physician in the health facilities

WHAT HAPPENS NEXT?



THANK YOU FOR YOUR ATTENTION