University Hospitals of Leicester NHS
NHS Trust

UHL policy for the management of occupational exposure incidents to blood borne viruses (HBV, HCV and HIV)

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REVIEW DATES AND DETAILS OF CHANGES MADE DURING THE REVIEW

Aug 2022

- In response to new national guidance
  - Staff who need HIV-PEP routinely receive full treatment (rather than initial starter) pack
  - New drug regimen with once daily dosing
  - Mucocutaneous HIV transmission risk from known HIV-positive sources with detectable or unknown viral load revised upwards (from < 1 in 10.000 to 1 in 1000)
- In response to changes in how HBIG is now supplied nationally through RIgS
  - New HBIG requesting procedure added as a further appendix
  - Role for GPAU to administer HBIG added
- Requirement to report significant exposure incidents involving BBV positive source patients to the 'Blood borne viruses unit' (BBVU) removed, as service currently on hold
- Section 5.3.A rewritten, referencing BASHH/BHIVA guideline approach to HIV transmission risk stratification
- Single contact number for occupational health department (previously site-specific)
- LGH HIV-PEP pack location updated in response to Trust reconfiguration of services
- Corresponding changes made to relevant appendices (HIV-PEP information sheet for prescribers, immediate actions poster for affected workers and ED management proforma)
- Corresponding amendments to references list

KEY WORDS

BBV, BBI, blood borne, virus, infection, HIV, hepatitis, occupational, OHD, antiretroviral, emergency, exposure, needle stick, percutaneous, mucocutaneous, bite, bitten, post-exposure, prophylaxis, PEP, vaccine, vaccination, source, recipient

1 INTRODUCTION AND OVERVIEW

1.1 This policy provides a framework and tools for the effective management of incidents in which healthcare workers (HCW) employed by University Hospitals of Leicester (UHL) and others within its scope have been potentially exposed to (in other words, become the 'recipient' of) blood borne viruses in the course of their work.

1.2 HCWs and any other personnel affected in this way will be referred to as 'affected workers' for the purposes of this policy.

1.3 Assessment of affected workers by appropriate professionals, including BBV testing of the source patient, must take place without delay to ensure that
- Effective treatment can be given where required
- The affected worker is able to return to work as early as possible
- The psychological burden associated with concerns about the possibility of contracting a BBV infection is minimised

2 POLICY SCOPE

2.1 The policy covers trust procedures for acute assessment, management and follow-up for HCWs involved in significant occupational BBV exposure incidents, up to the point where HCW seroconversion (infection) has been excluded or confirmed. It also includes the relevant operational and clinical governance arrangements to deal with such events.

2.2 HCWs are defined as persons whose activities involve contact with patients or with blood or other body fluids from patients in healthcare settings.

2.3 The policy applies to all UHL HCW and extends also to students, contractors, visiting clinicians, public safety workers and volunteers.

2.4 It also extends to local HCW not employed by UHL and other staff groups (e.g. the police) who might be unable to access their own OHD within the necessary timeframe.

3 DEFINITIONS AND ABBREVIATIONS

3.1 Affected workers - healthcare workers and others within the scope of this policy who have been potentially exposed to blood borne viruses in the course of their work

3.2 Seroconversion - the time period during which a specific antibody to an infection develops and becomes detectable in the blood

3.3 Significant blood borne virus (BBV) exposure is defined as one of the following:

- Percutaneous exposure (e.g. a needle stick injury or cut with a sharp object)
- Bite (= breakage of the skin with passage of blood) causing deep wounds
- Splash to mucous membranes or non-intact skin

3.4 Source patient – the patient whose blood, body fluids or tissues potentially containing BBV the affected worker was exposed to

3.5

BBV	Blood borne virus
BBVU	Blood borne virus unit
BMS	Biomedical Scientist
CDU	Clinical Decisions Unit
CMG	Clinical Management Group
DAA	Direct-acting antivirals
DPS	Dynamic priority score
ED	Emergency Department
GPAU	General practice assessment unit
HBIG	Hepatitis B immunoglobulin
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HCW	Healthcare worker
HIV	Human immunodeficiency virus
HSE	Health and Safety Executive
IDU	Infectious Diseases Unit
IPT	Infection Prevention Team
OHD	Occupational Health Department
PEP	Post-exposure prophylaxis
RNA	Ribonucleic acid
RIDDOR	Reporting of Injuries, Diseases and Dangerous Occurrences
RIgS	Rabies and Immunoglobulin Service
UKHSA	United Kingdom Health Security Agency

4 ROLES

4.1 Board Director Lead

The Medical Director is the executive lead for this policy.

4.2 Occupational Health Department (OHD)

- Takes overall lead on managing occupational BBV exposure incidents as per
  - UHL Sharps safety policy (Trust reference B8/2013)
  - Current internal OHD policies on the management of BBV exposure incidents
  - 'Essential NHS reference guide to health, safety and welfare at work', needlestick injury section [1]
- Provides advice to / manages affected workers immediately following BBV exposure incidents occurring during OHD working hours
- Provides rapid review for all affected workers with significant exposure incidents initially managed out-of-hours in ED
- Obtains affected worker's blood sample for BBV screen in virology laboratory
- Administers HB vaccine booster / requests and administers HBIG as appropriate
- Liaises with the on-call Infectious Diseases Unit (IDU) consultant if initiation / continuation of HIV-PEP needs to be considered
- Arranges appropriate follow-up testing for the affected worker until BBV seroconversion (infection) has been excluded or, rarely, diagnosed (the latter scenario requiring onward specialist referral)
- Ensures that any need for sickness absence associated with adverse effects of PEP drugs following the exposure does not contribute to the affected worker's sickness absence record (for monitoring and absence control purposes)
- Notifies UHL Health & Safety Team of all cases of BBV infection resulting from occupational exposure incidents for reporting to HSE under RIDDOR [2]

4.3 IDU Consultants

- During hours, at the request of the OHD where indicated
  - Arrange HIV-PEP for affected workers at the LRI site
  - Liaise with prescribers on LGH Ward 15 and the Clinical Decisions Unit (CDU) at the GGH so HIV-PEP packs can be prescribed and issued to affected workers at those sites on their behalf
- Provide HIV-PEP advice to ED clinicians managing affected workers out of hours
- Give advice to HCW working on IDU immediately following occupational BBV exposure incidents and initiate HIV-PEP (pack held on IDU) if required
- For affected workers who need to go on and take the full 30-day HIV-PEP course, arrange a first same-day appointment over the phone (the appointment will usually take place on IDU or in the Jarvis Clinic) and schedule further follow-up through the HIV Treatment & Care Services at the Jarvis Clinic

4.4 Emergency Department (ED)

Manage affected UHL workers outside OHD hours as well as other affected workers (e.g. police) who are unable to access their own OHD within the necessary timeframe by

- Ensuring they are processed with high urgency from the point of presentation to the Adult Walk-In Reception Area (i.e. by assigning Dynamic Priority Score 1)
- Managing them using the proforma shown in **Appendix H** and **Appendix I**
- Where indicated, initiating HIV-PEP as outlined in the 'HIV-PEP - Information sheet for prescribers' shown in **Appendix D** and **Appendix E**
- Administering HB vaccine / requesting HBIG from UKHSA RIgS if required

4.5 Prescribers on LGH Ward 15 and CDU

Prescribe and issue an HIV-PEP pack to affected workers when contacted and requested to do so by the on-call IDU consultant, as explained in 'HIV-PEP - Information sheet prescribers in ED / CDU / LGH Ward 15' shown in **Appendix D** and **Appendix E**.

4.6 IDU Senior Pharmacist

Ensure that an appropriate number of HIV-PEP packs are available in IDU, ED, CDU and LGH Ward 15, and that the packs are kept in date.

4.7 GPAU

Offer affected worker an appointment to administer first dose of HBIG where required.

4.8 Source Patient's Team

Test source patient if known for blood borne viruses based on the guidance shown in **Appendix J** and **Appendix K** and refer patient to Joint Hepatitis Clinic or HIV Treatment & Care Services (Jarvis Clinic) at the LRI as appropriate if a BBV infection is confirmed.

4.9 Virology Laboratory Staff

Process source patient 'Bloodborne virus screen (HIV, HBV & HCV)' urgently. HIV test results will usually be within 24h (**NB**: On Sundays there is not always a qualified biomedical scientist on duty so samples received late on Saturdays will take longer).

4.10 Joint Hepatitis Clinic

- Provide appropriate follow-up / treatment for affected workers if HBV and / or HCV seroconversion occurs
- Manage source patients who test positive for HBV and / or HCV

4.11 HIV Treatment & Care Services at the Jarvis Clinic, LRI

- Monitor affected worker weekly if / while treated with 30-day HIV-PEP course
- Manage antiretroviral treatment for affected worker if HIV seroconversion occurs
- Manage source patients who test positive for HIV

4.12 All UHL HCWs

- Undertake their roles in a manner that also reduces the risk of sharps injury not only to themselves but to patients and other health care professionals
- Comply with
  - UHL hand hygiene policy (Trust reference B32/2003)
  - UHL personal protective equipment at work policy (Trust reference B9/2004)
  - UHL sharps safety policy (Trust reference B8/2013)
  - UHL guideline for the infection prevention management of patients with known or suspected blood borne viruses (Trust reference B4/2006)
- Follow the 'Immediate actions poster for affected workers' shown in **Appendix F** and **Appendix G** and
  - Report BBV exposure incidents to Line Manager, Duty Manager and OHD
  - Attend ED for urgent assessment out of hours if indicated as per self-assessment risk matrix on the 'Immediate Actions Poster'
- Record incident on Datix electronic incident reporting system

4.13 **Line Managers**

- Through induction and appraisal, ensure that all HCWs receive appropriate training regarding the prevention of, and required actions following, BBV exposure incidents
- Investigate such incidents that involve their staff and
  - Provide emotional support to the affected worker
  - Identify education and practice requirements
  - Ensure affected HCWs comply with their responsibilities as set out above
  - Identify resource issues - consider needle-free systems
  - Report any significant exposure incidents involving BBV positive source patients to UHL Health & Safety Team under RIDDOR
  - Document findings and actions on the Datix system
  - Review current risk assessments and standard operating procedures following an incident

4.14 **Duty Managers**

Ensure that affected UHL workers who need to attend the ED out of hours are assessed within the appropriate timeframe and able to return to work as soon as possible (rarely, more severe physical injury may preclude this).

4.15 **Ward / Departmental Managers**

- Undertake local risk assessments pertaining to the prevention of needle stick injuries
- Consider change of practice where the use of sharps can be avoided or reduced. Sharps should only be used where they are required.
- Following line management investigation of exposure incidents, consider if any further specific action is required. This may include:
  - Review of processes
  - Further analysis of trends
  - Waste audits – monitoring use and appropriateness of sharp bins

4.16 **Sharps Safety Group**

The Sharps Safety Group comprises representatives from Health and Safety, OHD, Infection Prevention Team (IPT), Staff Side, Diabetes Nurses, Clinical Procurement, Nursing, QSHE and other relevant parties. It reports to the Local Health & Safety Committee and is responsible for ensuring that the Trust complies with current legislation, and to ensure that new innovations and legislation is reviewed as necessary. The purpose of the group is to reduce the risk of sharps injury by carrying out the following actions:

- Keeping up to date with developments in practice and/or new sharps devices
- Monitoring and reviewing Trust systems and arrangements
- Analysing incident data and making recommendations to key stakeholders

4.17 **Local Health & Safety Committee**

Links with relevant stakeholders, namely the Sharps Safety Group, OHD and Staff Side, to

- Review data regarding all significant exposure incidents from
  - OHD
  - Datix electronic incident reporting system
- Encourage appropriate reporting

4.18 **Trust Health & Safety Services Team**

- Investigate 'Reporting of Injuries, Diseases and Dangerous Occurrences Regulations' (RIDDOR) incidents (i.e. incidents where sharps injuries result in staff exposure to blood and blood contaminated body fluids from known positive source patients/samples). Excludes Estates & Facilities staff – see 4.19 below.
- Report all RIDDOR incidents to the Health & Safety Executive within prescribed timescales
- Report RIDDOR investigation findings to key stakeholders in order to inform local and Trust-wide learning
- Provide advice and guidance on systems and arrangements required in order to comply with statutory duties
- Carry out trend analysis of incident data
- Report incident trends to the Sharps Safety Group
- Work with managers and staff to review systems where trends are identified

4.19 **Quality, Safety, Health and Environment (QSHE; Estates & Facilities)**

- Investigate sharps related RIDDOR incidents involving Estates & Facilities staff upon notification via the DATIX reporting system or the Health and Safety Services Team. Any findings concerning the Sharps injury will be updated into the specific DATIX report.
- Carry out trend analysis of data for Estates & Facilities incidents
- Report Estates & Facilities incident trends to the Sharps Safety Group
- Work with Estates & Facilities managers and staff to review systems where trends are identified

4.20 **Infection Prevention Team (IPT)**

- Regularly review UHL Sharps Safety Policy and coordinate HCW training through induction and annual updates (collaborating with other interested parties, including occupational health and managers)
- Coordinate HCW training in the management of potential BBV exposure incidents required under this policy through induction and annual updates
- Support Trust CMGs with their investigation of BBV exposure incident trends and training requirements

5 POLICY IMPLEMENTATION AND ASSOCIATED DOCUMENTS

5.1 **Body fluids and tissues potentially containing BBV**

The risk of occupational BBV transmission arises from the possibility of workers becoming exposed to blood or, rarely, the following material from an infected patient:

- Amniotic fluid
- Breast milk
- Cerebrospinal fluid
- **Dentistry-associated** saliva
- Fluid from burns or skin lesions
- Pericardial fluid
- Peritoneal fluid
- Pleural fluid
- Semen
- Synovial fluid
- Unfixed tissue or organs
- Vaginal secretions
- Other **visibly bloodstained** body fluid

5.2 Risk of BBV transmission

A. Percutaneous exposure

In the healthcare setting, transmission most commonly occurs after percutaneous exposure to a patient's blood by 'sharps'. 'Sharps' are needles, sharp-edged instruments, broken glassware or any other item contaminated by blood or body fluids which may cause lacerations or puncture wounds; bone fragments or teeth may also pose a risk.

The risk of infection following a **percutaneous exposure** is

~ 1 in 3 if source patient is HBV positive
~ 1 in 30 if source patient is HCV positive
~ 1 in 333 if source patient is HIV positive

Factors associated with a higher risk of occupationally acquired HIV infection are

- Deep penetrating injury
- Visible blood on the device that has caused the injury
- Injury with a needle which had been placed in source patient's artery or vein
- Terminal HIV-related illness in the source patient
- High viral load

B. Mucocutaneous exposure

Mucocutaneous exposure occurs as a result of contamination of the mucous membranes of eyes, mouth or nose or of broken skin with infected blood or other infectious material. The risk of infection following a **mucocutaneous exposure** is

unknown if source patient is HBV or HCV positive
1 in 1,000 if source patient is HIV positive with detectable viral load [3]

BBVs are potentially transmissible by human bites if the bite breaks the skin of the person bitten. **NB**: In this scenario both parties are a potential source of BBV infection. The risk is generally **< 1 in 10,000** but may be higher under the following circumstances:

- Presence of blood in saliva
- High viral load
- Deep wounds inflicted

There is no evidence that BBV can be transmitted by blood contamination of intact skin or inhalation, by faecal-oral contamination, or by spitting.

5.3 Agent-specific considerations for post-exposure management

A. Hepatitis B Virus (HBV)

Healthcare workers will usually have been fully vaccinated against HBV infection, but around 10% of individuals do not respond to the vaccine and, rarely, HCWs and other affected workers might be incompletely vaccinated at the time of a BBV exposure incident.

HB vaccine and HB immunoglobulin (HBIG) are available to provide effective PEP. Consequently, there have been no documented HBV infections following occupational exposure incidents since many years.

Decisions about the appropriate HBV-PEP must consider the affected worker's HB vaccination history as well as the source patient's infectivity (HBsAg status).

Details of the appropriate post-exposure interventions are shown in **Appendix A**. As evident from the table, a dose of HB vaccine (followed by further doses where indicated) is appropriate after virtually every significant exposure incident.

HBIG on the other hand is only required in one of the following two rare situations:

- The affected worker has so far received only one or no doses of HB vaccine **AND** source patient is known to be HBV-positive
- The affected worker is known to be non-responder to HB vaccine **AND** source patient's HBV status is positive or unknown

HB vaccine and HBIG are most effective if given within 24h but should be considered up to a week after exposure. HB vaccine for out-of-hours use is held in the LRI Emergency Department. Hepatitis B Immunoglobulin (HBIG) is now only available from the UK Health Security Agency's (UKHSA) Rabies and Immunoglobulin Service (RIgS). For details on how to obtain HBIG see **Appendix B**.

If the source patient's HBsAg status is confirmed as positive or remains unknown, HBsAg testing of the affected worker at six months after exposure will rule out or confirm seroconversion (infection).

B. Hepatitis C Virus (HCV)

Neither vaccination nor other effective PEP is currently available and HCV therefore currently poses the greatest occupational BBV infection risk. 14 HCV seroconversions in HCW have been reported in the UK between 1997 and 2007. [4]

Post-exposure management is aimed at early detection of seroconversion. Anyone seroconverting to hepatitis C should be referred for specialist assessment. Treatment with new direct-acting antivirals is now very effective: Oral therapy for 8-12 weeks will result in a cure in virtually all cases. [5]

If the source patient's HCV status is confirmed as positive or remains unknown, HCV testing of the affected worker over the course of 6 months after exposure will rule out or confirm seroconversion (infection). Details of the appropriate testing schedule are shown in **Appendix C**.

C. Human Immunodeficiency Virus (HIV)

Effective HIV-PEP using a combination of antiretroviral medications is available. Since 1999, there have been only two new documented cases of HIV seroconversion due to percutaneous occupational exposure. [4]

Following significant exposure incidents, current BASHH/BHIVA guidance recommends stratifying the risk of HIV transmission into one of three groups: [3]

>1 in 1000	PEP recommended - benefits likely to outweigh risk. PEP should be given unless there is a clear reason not to.
1 in 1,000 - 10,000	Risk of transmission is low and benefit is less clear. Case by case consideration.
<1 in 10,000	Generally not recommended - risk of HIV transmission very low. Toxicity and inconvenience of PEP likely to outweigh benefits.

The BASHH/BHIVA approach is reflected in the risk assessment matrix on the ED management proforma, shown in **Appendix I**.

To ensure optimum efficacy, every effort should be made to commence HIV-PEP as soon as possible after the incident - ideally within the hour. Nevertheless, HIV-PEP should be considered for all affected workers attending within 72h, and on a more individual basis up to 2 weeks following exposure.

If the source patient proves to be HIV negative and test results are obtained and reviewed within 24h, HIV-PEP can be discontinued after no more than 2 – 3 doses and before any side effects develop.

If it is not possible to identify the source patient (e.g. if the injury is due to a discarded needle) an attempt should be made to determine the epidemiological risk of the source patient being HIV positive, but the use of HIV-PEP is unlikely to be justified in the overwhelming majority of such incidents.

In UHL, 30-day HIV-PEP packs containing raltegravir and Truvada (tenofovir disoproxil with emtricitabine) are available from the ED, IDU, CDU and LGH Ward 15. **Appendix D** and **Appendix E** shows the information sheet for non-specialist HIV-PEP prescribers (inserted into every pack for ease of reference).

Other drug combinations might be required if the source patient is known to have a drug-resistant HIV infection, or if the affected worker is pregnant or taking medications that interact with Truvada or raltegravir.

If the source patient's HIV status is confirmed as positive or remains unknown, HIV testing of the affected worker 4 weeks after exposure (or 4 weeks after HIV-PEP completed) will normally rule out or confirm seroconversion (infection).

A longer follow-up period with additional HIV testing may be indicated in complex cases; e.g. in scenarios involving immunocompromise in the affected worker or those who experience symptoms compatible with acute seroconversion illness, or source patients with HIV / HCV co-infection.

5.4 Step-by-step management of occupational BBV exposure incidents

A. Immediate actions

Guidance is available from the OHD Sharps Injuries INsite page and described on the Immediate Action Poster for Affected Workers – see **Appendix F** and **Appendix G**:

The affected worker should take the following first aid measures:

- Washing exposed area liberally with soap & water but without scrubbing
- Encouraging free bleeding of wounds but without sucking
- Copious irrigation of affected mucous membranes (inside of nose, mouth or eyes); irrigating eyes before & after removing any contact lenses

After notifying their line manager (or appropriate equivalent out of hours) and being relieved from current duties, the affected worker should call the OHD without delay on extension **15307** (for external calls, the number is **0116 258 5307**).

If the call is redirected to voicemail (i.e. if the OHD is closed) the affected worker should leave their name and a personal phone number (ideal their mobile) on the system, stating that they wish to report a blood borne virus exposure incident. Following this, the affected worker should go through the self-assessment risk matrix together with a colleague or senior and, if advised to do so as per matrix, attend the ED without delay.

The OHD professional (or, out-of-hours, ED clinician using the proforma shown in **Appendix H** and **Appendix I**) will undertake a structured assessment to establish the following:

- Significance of exposure
- Need to commence HIV-PEP
- HB vaccination status
- Appropriate setting for HB vaccine (+/- HBIG) administration

If exposure was insignificant, the affected worker will be given reassurance and may return to work immediately (unless, rarely, more severe physical injury precludes this) after recording the incident on Datix. No further action is required.

The steps below only apply to workers affected by significant exposure incidents

B. Actions within 1h

If the affected worker is considered to require commencement of HIV-PEP, OHD will liaise with the on-call IDU consultant who will arrange the release of an HIV-PEP pack from IDU within 1h of exposure (if contact was delayed: within 1h of contact with OHD).

Out of hours, a pack will be prescribed and issued in ED within the same timeframe.

To confirm compliance with that timeline out of hours, the ED clinician will record at what time the first dose was taken by the affected worker on the management proforma.

Rarely, if there are contraindications to the standard drug regimen, the on-call IDU consultant might recommend an individualised HIV-PEP regimen.

C. Variations for HCWs working on IDU

If exposure occurs on the IDU ward or from an inpatient managed by ID physicians, the affected worker may contact the on-call IDU consultant instead of the OHD (or the ED) for advice and a HIV-PEP pack may be released from IDU if required. In such cases the IDU consultant is also responsible for following up source patient BBV test results if their BBV status is not yet known. The IDU consultant will liaise as appropriately if HB vaccine / HBIG is required.

D. Further same-day actions

The OHD professional will take a 10mL blood sample in a white top container from the affected worker for a 'bloodborne virus screen' (HIV, HBV & HCV)' (**NB**: this will not be done in ED) and administer HB vaccine (and, rarely, HBIG) as appropriate.

To remain within the 24h window for effective HBV immunisation, it might occasionally be necessary to give HB vaccine in ED.

The ED clinician will remind the affected worker to leave a message on the OHD answer phone (if not already done). After completing a DATIX incident report, the affected worker may return to work (unless, rarely, more severe physical injury precludes this).

E. BBV testing of known source patients

A clinician from the team caring for the patient or on-call clinician (but **NOT** the affected worker) should undertake BBV testing unless recent test results are already available (an HIV test is now routinely offered on patients admitted via the LRI Acute Medical Unit). The guidance is summarised in **Appendix J**. A source patient information leaflet is available (**Appendix K**).

F. Actions during next normal working day

The affected should (re-)attend the OHD on the next working day following the exposure:

- UHL staff call **0116 258 5307** to arrange a visit to an OHD that is open
- Non-UHL staff who are sure that their organisation has its own OHD and who do not require HIV-PEP attend their own OHD
- Non-UHL staff who are unsure where to go or have been started on HIV-PEP phone the OHD on **0116 258 5307**

If the initial assessment was carried out in the ED out of hours, a 10mL blood sample in a white top container will now be taken from the affected worker for a 'bloodborne virus screen' (HIV, HBV & HCV)' and a HB vaccine dose will be administered as appropriate unless this was already done in ED.

Any outstanding source patient test results will be reviewed. In the majority of cases, the source patient will test negative to all three BBV and in this case no further follow-up will be required.

Steps below only apply where source patient has not tested negative to all BBV

G. Follow-up for recipients requiring a full course of HIV-PEP

The OHD clinician will contact the on-call IDU consultant on-call during the follow-up visit; the IDU consultant can then arrange same-day assessment directly with the recipient.

After this, regular follow up at the HIV Treatment & Care Services in the Jarvis Clinic at the LRI will be arranged to monitor possible toxicity and adherence to therapy, and to provide support and counselling.

The HIV Treatment & Care Services will provide follow-up information to the UHL OHD so that records are complete for local review of management of occupational exposure to BBVs and HIV-PEP practice, and for reporting to surveillance systems.

NB: The OHD must ensure that any need for sickness absence associated with adverse effects of PEP drugs following occupational exposure will not contribute to an individual's sickness absence record (for monitoring and absence control purposes).

H. Monitoring for recipient seroconversion

In general, the OHD will retest the affected worker for evidence of BBV seroconversion at 6, 12 and 24 weeks. Follow-up is complete if testing at 24 weeks shows no evidence of recipient seroconversion. The exact testing schedule will depend on available source patient test results and other individual circumstances, as guided by OHD policies.

I. Management following recipient seroconversion

Affected workers with evidence of HIV transmission will be managed by the HIV Treatment & Care Services.

The Joint Hepatitis Clinic will manage affected workers with evidence of hepatitis B or C infection.

J. **Actions for affected workers until completion of follow-up**

Affected workers must comply with BBV transmission risk reduction measures until follow-up testing has ruled out BBV seroconversion. This will include strict adherence to infection control measures and the principles of safer sex, and avoiding the donation of blood or other body fluids / tissue.

In the absence of seroconversion, HCWs who have been occupationally exposed to BBV need not be subject to any modification of their working practices such as avoidance of exposure prone procedures (**subject to discussion with the OHD**).

6 EDUCATION AND TRAINING REQUIREMENTS

6.1 Training of all relevant staff with regard to the management of occupational BBV exposure incidents shall be in line with the relevant policies at a frequency as defined by the Trust's Training Needs Analysis. [E,F]

7 PROCESS FOR MONITORING COMPLIANCE

7.1 Policy monitoring table

Element to be monitored	Lead	Tool	Frequency	Reporting arrangements
Proportion of HCWs who, during a spot check by their line manager, are able to locate information on immediate actions following BBV exposure e.g. intranet, wall poster, ward file etc.	Line managers	Manager selects a random sample of staff	Biannually	Sharps Safety Group
Number of HCWs involved in exposure incidents attending OHD (both in working hours and next working day after attending ED out of hours)	OHD	OHD data search	Quarterly	Local H&S Committee
Number and proportion of HCWs requiring HIV PEP who receive it within 1 hour of seeking advice	OHD	OHD data search	Quarterly	Local H&S Committee
Proportion of exposure incidents (where the source is known / identifiable) where the source is tested and results are available	OHD	OHD data search	Annually	Local H&S Committee
Proportion of HCWs who, after exposure to a positive or unknown source, receive appropriate follow up testing with OHD (the right tests at the right time, as per OHD policy)	OHD	OHD data search	Annually	Local H&S Committee
Number and proportion of exposure incidents involving a BBV-positive source that are investigated by Trust H&S Services team / QSHE and reported through RIDDOR	Trust H&S Services Team & QSHE	Trust H&S Services Team & QSHE investigations	Quarterly	Local H&S Committee

8 EQUALITY IMPACT ASSESSMENT

8.1 The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.

8.2 As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

9 SUPPORTING REFERENCES, EVIDENCE BASE AND RELATED POLICIES

9.1 Related policies

A. UHL hand hygiene policy (Trust reference B32/2003)
B. UHL personal protective equipment at work policy (Trust reference B9/2004)
C. UHL sharps safety policy (Trust reference B8/2013)
D. UHL guideline for the infection prevention management of patients with known or suspected blood borne viruses (Trust reference B4/2006)
E. UHL core training policy for statutory, mandatory and essential to job training (Trust reference B21/2005)
F. Induction UHL Policy (Trust reference B4/2003)

9.2 References

1. NHS Employers. Essential NHS reference guide to health, safety and welfare at work. Health and Safety page. 2010.
2. Health and Safety Executive. Reporting accidents and incidents at work. A brief guide to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR). HSE 2013.
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4. Occupational exposure to HIV. Health Protection Agency, March 2005.
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6. SalisburyD, RamsayM, NoakesK, editors. Hepatitis B: The Green Book, Chapter 18. London: 2017 (table 18.7 on p17).
7. General Medical Council. Decision making and consent. London: GMC, 2020.
8. PalfreemanA, FisherM and OngE. Testing for HIV: concise guidance. ClinMed 2009;9:471-6.

10 PROCESS FOR VERSION CONTROL, DOCUMENT ARCHIVING AND REVIEW

10.1 The Trust lead, in collaboration with the guideline working party, is responsible for reviewing the policy and will make any necessary alterations within the 6 months preceding the review date.

10.2 The updated document is passed on to the Trust Policy and Guideline Committee (PGC) for approval.

10.3 The updated version of the Policy will then be uploaded and available through INsite Documents and the Trust's externally-accessible Freedom of Information (FOI) publication scheme. It will be archived through the Trusts PAGL system.

Appendix A. HBV-PEP. [a]

HBV vaccination history of affected worker	Source HBsAg status: Proven positive	Source HBsAg status: Status unknown	Source HBsAg status: Proven negative
Unvaccinated	Dose of HepB vaccine Further doses 1 and 2 months later **Dose of HBIG in GPAU**	Dose of HepB vaccine Further doses 1 and 2 months later	Dose of HepB vaccine Further doses 1 and 2 months later
Partially vaccinated **(response unknown)**	One dose of HepB vaccine and finish course	One dose of HepB vaccine and finish course	Finish course of HepB vaccine
Known responder to HepB vaccine [b]	Booster dose of HepB vaccine if last dose ≥ 1year ago at time of OHD visit	Consider booster dose of HepB vaccine if last dose ≥ 1year ago at time of OHD visit	Reassure
Known non-responder to HepB vaccine [b]	Booster dose of HepB vaccine at time of OHD visit **Dose of HBIG in GPAU** **Second dose of HBIG dose 1 month later in OHD**	Consider booster dose of HepB vaccine at time of OHD visit **Dose of HBIG in GPAU** **Second dose of HBIG dose 1 month later in OHD**	Consider booster dose of HepB vaccine at time of OHD visit

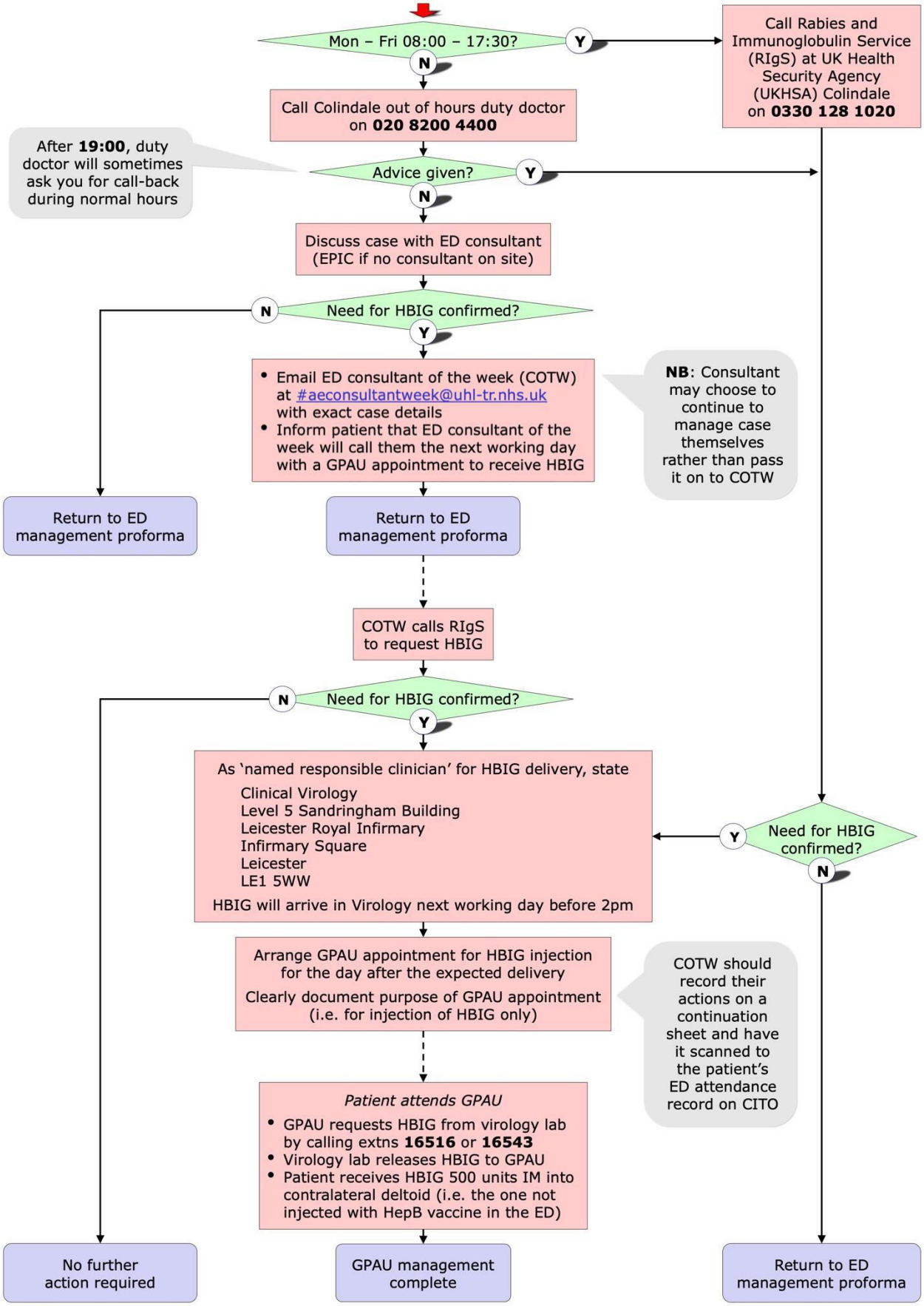
[a] Adapted from the 'Green Book' [6]

[b] 'Response' is defined as Anti-HBs >10 mIU/mL 1 - 2 months after course completed

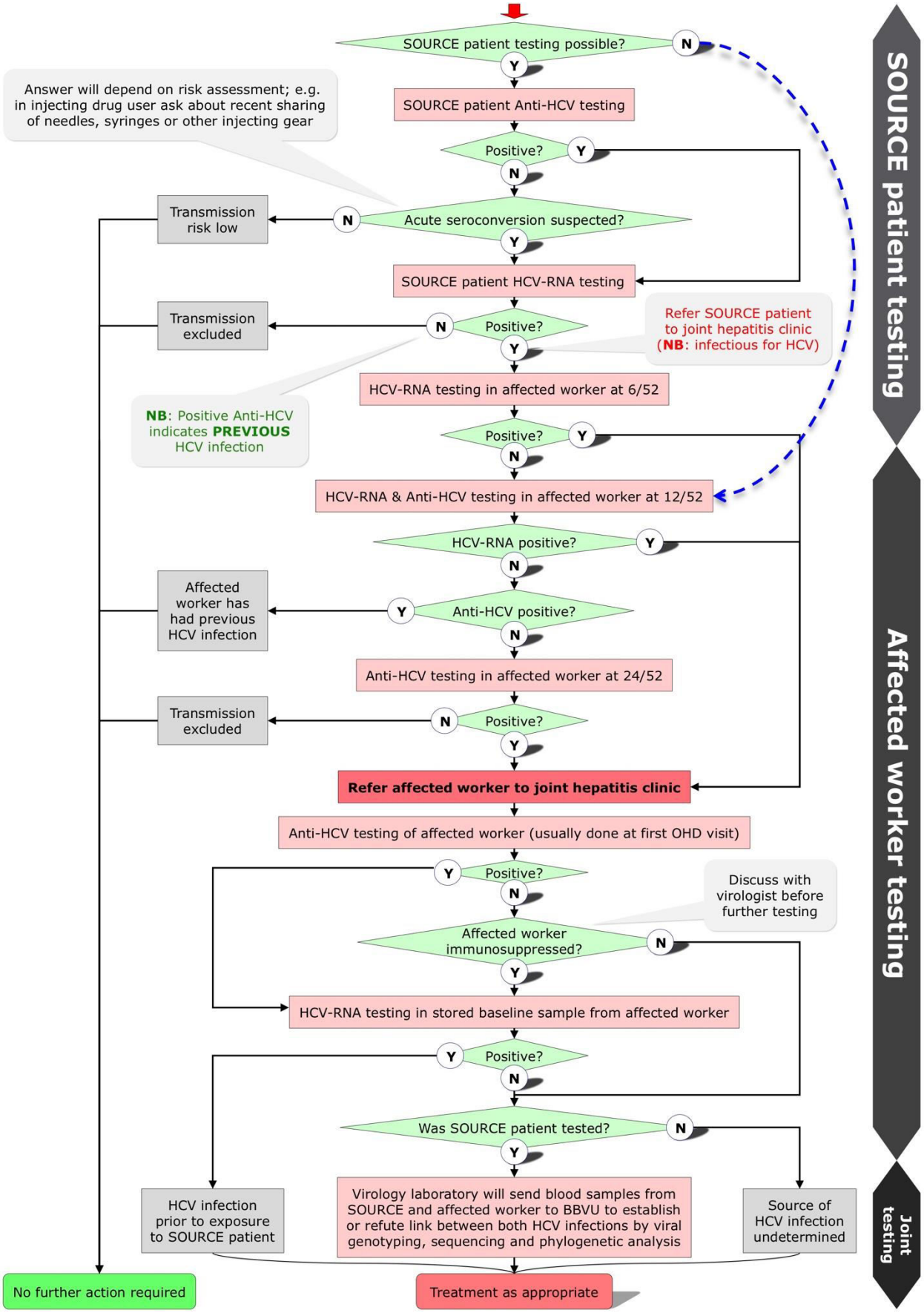
Additional notes

- Unless stated otherwise, give HB vaccine and HBIG within 24h of exposure
- Give HB vaccine as Engerix B 20 micrograms IM (into deltoid muscle)
- If HBIG is required, give 500 units IM (into contralateral deltoid muscle)

Appendix B. Initial HBIG requesting and administration procedure.



Appendix C. HepC testing.



Appendix D. HIV-PEP - Information sheet for prescribers (p1).

HIV-PEP (Post Exposure Prophylaxis) pack
Information for prescribers in ED, CDU and LGH Ward 15

Indication

To allow persons requiring HIV-PEP or PEPSE (PEP after sexual exposure) timely access to antiretroviral therapy (ART) out of hours. This includes ED patients as well as affected workers attending the ED, CDU or LGH Ward 15 in the context of occupational blood borne virus exposure incidents.

Content

This pack contains a 30-day supply of antiretroviral medications in labelled pre-packs, as well as written information for patients requiring HIV-PEP or PEPSE (including this leaflet):

- Tenofovir 245mg/emtricitabine 200mg tablets + copy of manufacturer's Patient Information Leaflet (PIL)
- Raltegravir® 600mg tablets + copy of manufacturer's Patient Information Leaflet (PIL)
- UHL out-patient prescription form
- 2-page PEP information resource compiled by the HIV Pharmacy Association with BHIVA and BASHH

Dispensing procedure

1. Pack **MUST ONLY** be dispensed / prescribed by
   - An ED doctor in the context of the relevant guidelines
     - HIV post-exposure prophylaxis after sexual exposure (PEPSE) ED proforma
     - Blood borne viruses (HBV, HCV and HIV) occupational exposure UHL policy
     - Blood borne viruses exposure (non-occupational) ED proforma
   - A prescriber on CDU or LGH Ward 15 when contacted and requested to do so by the on-call IDU consultant
2. **Before** prescribing / issuing the antiretroviral medicines from this pack, seek advice from Infectious Diseases on-call consultant or, for sexual exposure, the Leicester Sexual Health (LSH) on-call doctor **IF** any of the following potential issues are present:
   - **Female patient / affected worker has missed a period or is known to be pregnant**
   - **Patient / affected worker takes one of the following medications (i.e. there is a potential for drug interactions with raltegravir or tenofovir/emtricitabine)**
     - Rifampicin, carbamazepine, oxcarbazepine, phenytoin or phenobarbital
     - Calcium, iron, aluminium or magnesium, which can be found in multivitamin supplements and indigestion remedies
   - **Patient seeking PEPSE has already been taking PrEP (pre-exposure prophylaxis)**
   - **Patient / affected worker has impaired kidney function and an eGFR<50mls/min**
   - **Source patient / 'donor' is known to be HIV positive and taking antiretroviral treatment (i.e. there is a potential for drug resistance)**
3. If none of the above apply, or following advice from the on-call LSH doctor or ID consultant:
   - Discuss all items listed on the next page with the patient / affected worker
   - Take the blank prescription from the pack & complete patient / affected worker's details
   - Prescribe medication as follows (**NB**: patients / healthcare workers are not to be charged for this):
     - **Tenofovir 245mg/emtricitabine 200mg one tablet PO once daily for 30 days**
     - **Raltegravir® 600mg tablets PO take two tablets once daily for 30 days**
   - Sign and date the prescription and print your name and contact details
     - In the ED, place it in the plastic wallet (with the other out-patient prescriptions intended for pharmacy) on the outside of the pre-labelled medicine cabinet in the Majors treatment room
     - On CDU and LGH Ward 15, place it back inside the drug cupboard where the packs are stored (there's a labelled plastic wallet on the inside of the door)
   - Hand out the medicines and written information

Appendix E. HIV-PEP - Information sheet for prescribers (p2).

HIV-PEP (Post Exposure Prophylaxis) pack
Information for prescribers in ED, CDU and LGH Ward 15

Items for discussion with the patient / affected worker initiating HIV-PEP / PEPSE

☐ The rationale for HIV-PEP / PEPSE (covered in the leaflet from the pack)

☐ The lack of conclusive data for the efficacy of HIV-PEP / PEPSE (covered in the leaflet)

☐ The potential risks and side effects of HIV-PEP / PEPSE (covered in the leaflet)

☐ The arrangement for follow-up with LSH or the Infectious Diseases team (as applicable)

☐ The need for an HIV test. Pre-test discussion should cover

- the benefits of testing to the person seeking HIV-PEP / PEPSE
- that the result will be given by LSH or the Infectious Diseases team (as applicable)

NB: Written consent is unnecessary

- *Only if implications for insurance are raised*: The ABI code of practice 1994 states that questions regarding whether an individual has ever had an HIV test or a negative result should not be asked. Applicants should however declare any positive results if asked as would be the case with any other medical condition.
- *Only if concerns about criminal prosecution for HIV transmission are raised*: There have been a number of prosecutions of individuals under the Offences Against the Person Act 1861 for reckless HIV transmission. This has included a prosecution of an individual who had not been HIV tested. There is detailed guidance on the legal implications of this available from the voluntary sector as well as advice on safer sexual practices designed to minimise risk of transmission of HIV to others.

If patient / affected worker declines HIV testing, document any reasons why in the patient's ED record

☐ The need to have a follow-up HIV test 8-12 weeks post-exposure (rationale covered in the leaflet)

☐ The need for to practice 'safer sex' for the following two months (covered in the leaflet)

☐ If relevant, the need for emergency contraception should be explored

☐ Coping strategies including, if relevant, an assessment of vulnerabilities and social support

☐ For patients concerned about sexual risk-taking, that Sexual Health Advisers can offer ongoing risk reduction work or referral to psychology

Joanne Dey / Martin Wiese Version 26 May 22

Appendix F. Immediate actions poster for affected workers (left half).

Had a sharps injury, splash or been bitten?

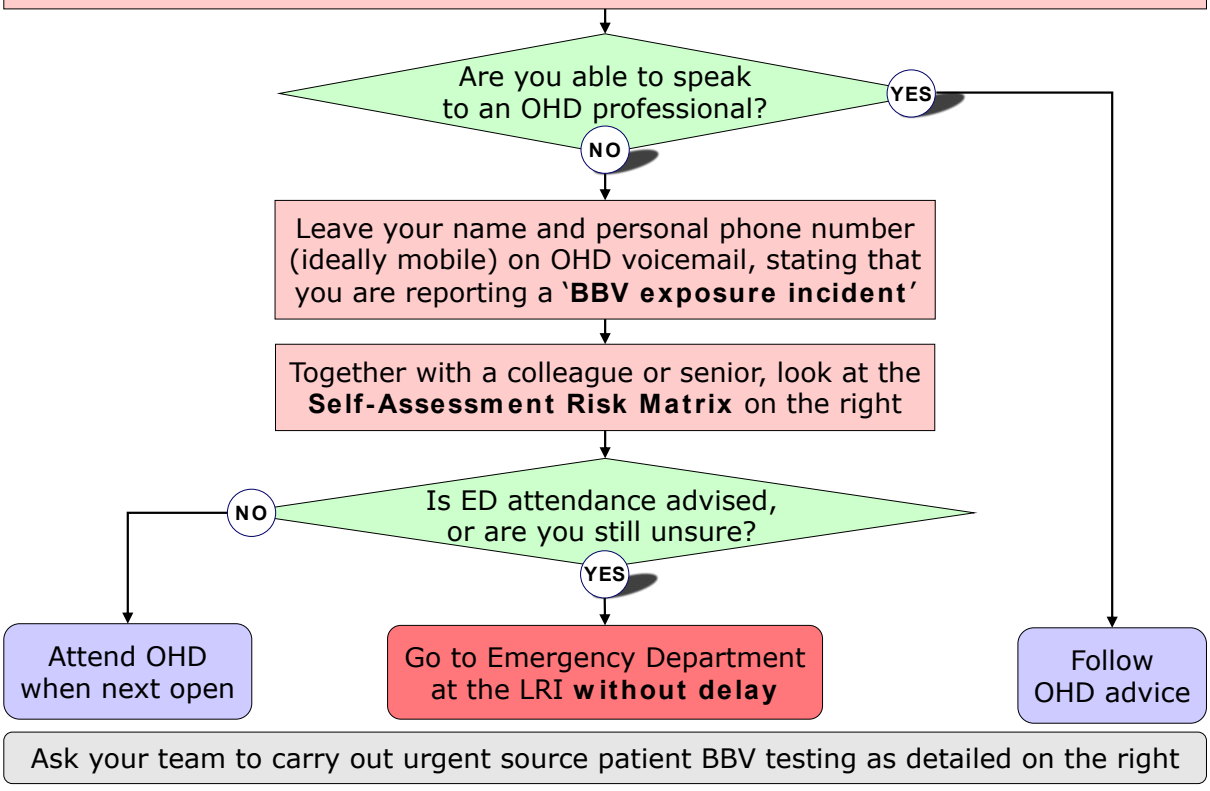
A splash involves a patient's body fluid landing in your eyes, mouth or nose or on broken skin. (NB: **Splashes to intact skin pose no BBV infection risk.**)
Body fluids that may contain blood borne viruses (Hep B, Hep C or HIV) are:

- Amniotic fluid
- Blood
- Breast milk
- Cerebrospinal fluid
- Fluid from burns
- Fluid from skin lesions
- Pericardial fluid
- Peritoneal fluid
- Pleural fluid
- Semen
- Synovial fluid
- *Unfixed* tissue or organs
- Vaginal secretions
- *Visibly bloodstained* saliva (or dentistry-related saliva)
- Other *visibly bloodstained* body fluid

Immediate actions for affected workers

1. Take first aid measures **without delay**
   - Wash exposed area liberally with soap & water **but without scrubbing**
   - Encourage free bleeding of wounds **but without sucking**
   - Irrigate affected mucous membranes (inside of nose, mouth or eyes) copiously; irrigate eyes **before & after** removing any contact lenses
2. Cover any wounds with waterproof dressing
3. Ask line manager to relieve you from present duties
4. Call Occupational Health Department (OHD) on extn **15307** (**DO NOT delay**) while a colleague should check patient's records for risk factors / known HBV, HCV or HIV

For external calls, the OHD numbers is **0116 258 5307**



Appendix G: Immediate actions poster for affected workers (right half).

BBV Transmission Self-Assessment Risk Matrix

	Source Patient Characteristics			
Injury Characteristics	HIV status unknown	HIV positive	HIV positive	HIV status unknown
	High prevalence group • Man who has sex with men • Injecting drug user • Originating from a country with HIV prevalence ≥1% (see Wikipedia page https://bit.ly/2Ln0gXf	Viral load detectable or unknown, e.g. source not receiving treatment	Viral load undetectable (source has confirmed that their viral load [VL] is <200 copies/mL)	Not from high prevalence group or 'sharp in linen bag' scenario
Bite injury	**Go to LRI ED**		No need to go to ED **UNLESS**: OHD will not reopen within the next 24h **AND** **EITHER** you have never had a single dose of Hep B vaccine **OR** you have been told by OHD that you have not responded to your Hep B vaccination course	
Sharps Injury • Used hollow-bore needle • Used razor • Bone fragment (e.g. on inserting a chest drain) • Other sharp object				
Splashed with blood or another potentially virus-containing fluid				

NB: Neither a vaccine and nor post-exposure prophylaxis are currently available to prevent Hep C transmission. But in the extremely rare event that infection should occur, it can now be cured with very effective oral treatment.

Procedure for source patient BBV testing

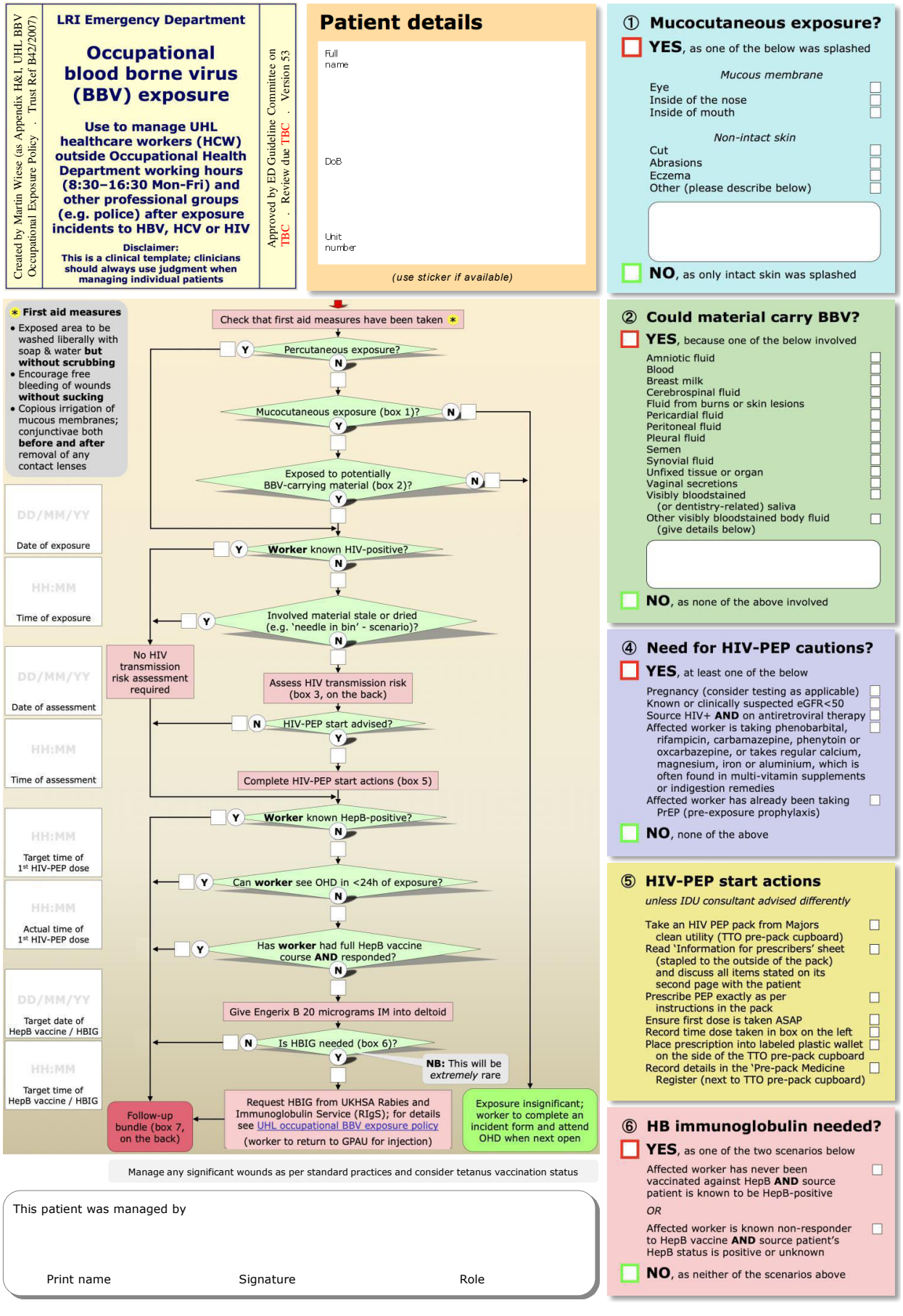
NB: *To be carried out by a clinician caring for the patient / on-call but **NOT** the affected worker*

- Inform the source patient about the exposure incident (**NB**: use 'Source Patient Information Leaflet' shown in Appendix I of the 'UHL policy for the management of occupational exposure incidents to blood borne viruses' as a crib sheet for conversation and leave it with patient)
- Pre-test discussion for BBV testing should cover the following:
  - Benefits of testing to the individual (and significant others)
  - Benefits of testing to the affected worker
  - Risk assessment
    - Results of any previous tests for HIV, and Hepatitis B and C
    - If known HIV infection, details of past and current antiretroviral therapy
    - Past medical history suggestive of BBV infections
  - Details of how the results will be given
- Obtain and document informed verbal consent to test for HBV, HCV and HIV
- Obtain a clotted blood sample (5-10mL in white top bottle where available, otherwise brown top bottle)
- On ICE, click the 'Micro/Virology' tab at the top and then 'UHL Virology' on the left, followed by selecting 'Bloodborne virus screen (HIV, HBV & HCV)' (**NB**: Use Virology Request Form instead if your ward or department does not use ICE)
- In the 'Global Clinical Details' text box, state 'BBV exposure (source)' and enter all relevant details
- Under 'Order Details;', select 'Urgent/Stat'
- Send sample to virology laboratory

Further reading

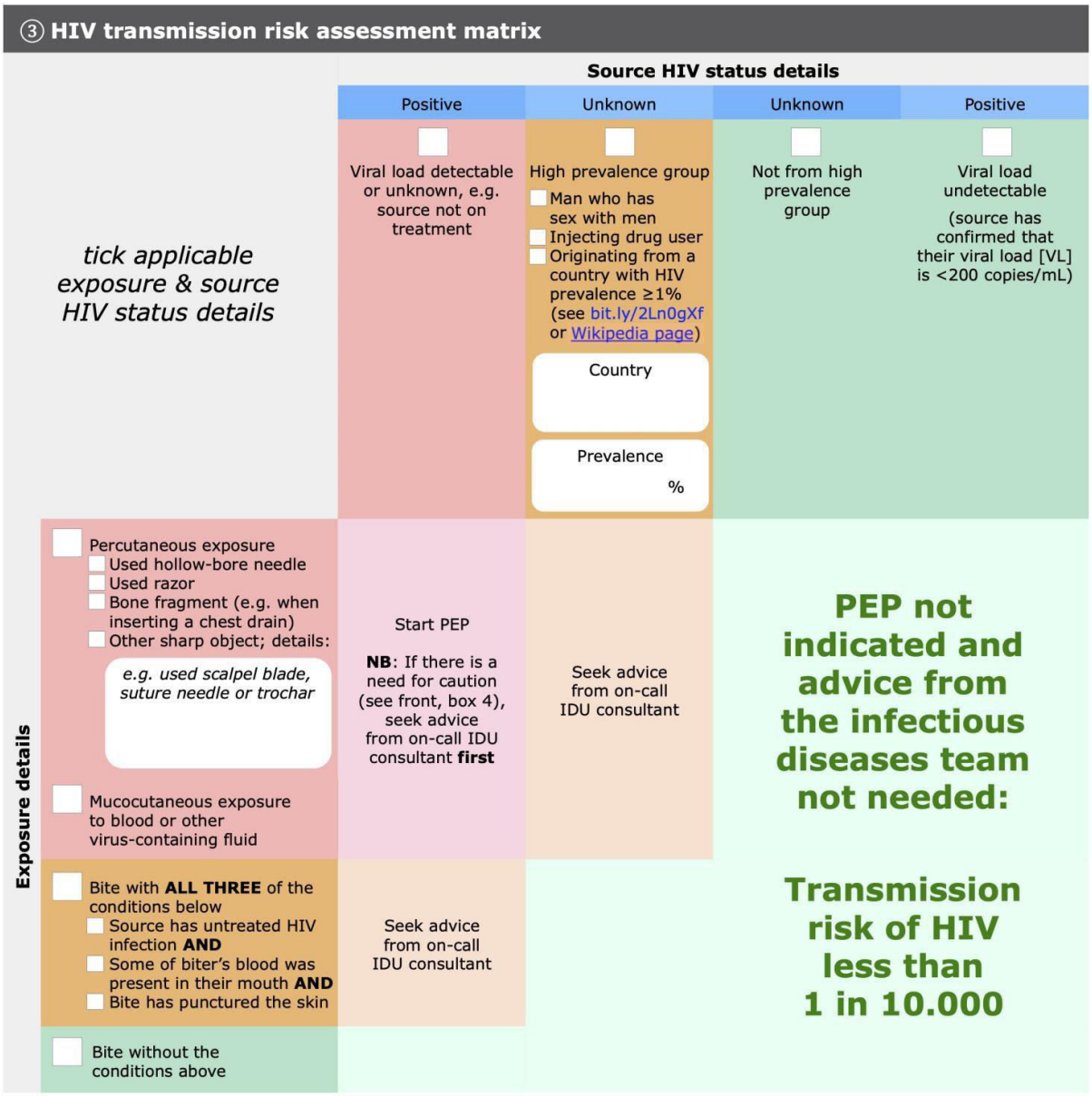
UHL policy for the management of occupational exposure incidents to blood borne viruses on INsite

Appendix H. ED management proforma (p1).



Appendix I. ED management proforma (p2).

Risk assessment matrix adapted from CresswellF et al. [3]



⑦ Follow-up bundle

Advise affected worker to

☐ Call the Occupational Health Department (OHD - if not already done) before leaving the ED to record a brief message with a personal phone number on the OHD voicemail **0116 258 5307**

Visit the Occupational Health Department (OHD) as directed when called back by the OHD

☐ Non-UHL staff who are sure that their organisation has its own OHD and who do not require HIV-PEP attend their own OHD
☐ Non-UHL staff who are unsure where to go or have been started on HIV-PEP attend LRI OHD

☐ Record incident on DATIX

☐ Return to working as per usual (unless, rarely, more severe physical injury precludes this)

☐ Practice safer sex (i.e. use condom) and not donate blood or other body fluids / tissue pending further advice from OHD

☐ **ONLY If** HBIG needed, return to GPAU to receive HBIG injection, as arranged by ED clinician

☐ Ask their own team to arrange source patient testing for HBV, HCV and HIV unless recent results are available

Please consider printing the following resources that the affected worker can take back to their team to aid source testing
- Source patient team guidance notes - Occupational BBV exposure policy, Appendix J
- Source patient information leaflet - Occupational BBV exposure policy, Appendix K

Appendix J. Source patient team guidance notes

University Hospitals of Leicester NHS
NHS Trust

Blood borne virus testing after occupational exposure incidents

Source Patient Team Guidance Notes

Procedure for source patient BBV testing

***NB**: To be carried out by a clinician caring for the patient / on-call but **NOT** the affected worker*

- Inform the source patient about the exposure incident (**NB**: use 'Source Patient Information Leaflet' shown in Appendix I of the 'UHL policy for the management of occupational exposure incidents to blood borne viruses' as a crib sheet for conversation and leave it with the patient)
- Pre-test discussion for BBV testing should cover the following:
  - Benefits of testing to the individual (and significant others)
  - Benefits of testing to the affected worker
  - Risk assessment
    - Results of any previous tests for HIV, and Hepatitis B and C
    - If known HIV infection, details of past and current antiretroviral therapy
    - Past medical history suggestive of BBV infections
  - Details of how the results will be given
- Obtain and document informed verbal consent to test for HBV, HCV and HIV
- Obtain a clotted blood sample (5-10mL in white top bottle where available, otherwise brown top bottle)
- On ICE, click the 'Micro/Virology' tab at the top and then 'UHL Virology' on the left, followed by selecting 'Bloodborne virus screen (HIV, HBV & HCV)' (**NB**: Use Virology Request Form instead if your ward or department does not use ICE)
- In the 'Global Clinical Details' text box, state 'BBV exposure (source)' and enter all relevant details
- Under 'Order Details;', select 'Urgent/Stat'
- Send sample to virology laboratory

Source patients unwilling or unable to consent to BBV testing

- Consent is not usually withheld if the source patient is approached in a sensitive manner and if the rationale for testing is explained
- UK law does not permit BBV testing of patients lacking mental capacity solely for the benefit of an **affected worker** but does permit testing if there is benefit for the **patient**
- Refer to General Medical Council advice on consent [7] and Royal College of Physicians HIV testing guidance [8]
- Consider contacting the on-call consultant of the source patient's team to discuss possible options if the patient refuses testing or lacks capacity to give valid consent

Consent for BBV testing in children and young people

- Involve children and young people as much as possible
- Children (age under 16): Person with parental responsibility must give consent
- Young people (age 16-17): If the person is capable of understanding what is proposed and give valid consent it is not legally necessary to obtain additional consent from someone with parental responsibility for the young person. It is however good practice to involve the young person's family in the decision-making process, provided he or she consents for their information to be shared

Appendix K. Source patient information leaflet.

University Hospitals of Leicester NHS
NHS Trust

Blood borne virus testing after occupational exposure incidents

Source Patient Information Leaflet

Q. What has happened?

A. A member of staff involved in your care has come into contact with your blood (or another body fluid). If you have any virus infections that can be transmitted through contact with blood or related body fluids it is possible that you may have passed on the infection to our staff.

Q. What does this mean for me?

A. The three most important so-called blood borne viruses, also known as 'BBV', are Hepatitis B virus (HBV), Hepatitis C virus (HCV) and HIV. Your risk of carrying one of those viruses without knowing it is small, but we would like to take a sample of your blood to make sure.

Q. Will having the tests be of any benefit to me?

A. Knowing that you are free from any BBV can be very reassuring. If the results do show any of the infections you will be able to decide on appropriate treatment. All three of the infections are treatable; it is therefore much better to know whether or not you have them.

Q. Will having the tests be of any benefit to the affected staff member?

A. If we do not know whether or not you have any of the infections the staff member will need numerous blood tests over several months before we can be certain that none of the viruses have been transmitted. This will cause our staff considerable anxiety.

Depending on a risk assessment, they may need to take medication to protect them against the possibility of HIV infection. The medication can have significant side effects and may force staff to take sickness absence, during which they will be unable to care for patients.

All this can be avoided if we can rule out the infections by testing your blood.

Q. What if I am found to have a BBV infection?

A. If tests show that you have a BBV infection we inform you as soon as this result becomes available and will offer you care and support including prompt confidential referral to specialist services if needed. Whether or not you should start treatment will be discussed and you will receive treatment if you need it.

Q. What if I am found not to carry any BBV infection?

A. As with any tests, normal results are not always given formally. The information will be available after 24 hours; you can ask any doctor in your team to look it up for you.

Please talk to one of the doctors in your team if you would like more information

Martin Wiese and Adrian Palfreeman Version 10 Dec 18