NHS Grampian
Blood Borne Virus
Community Exposure Guidance

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Purpose:	To support timely assessment and management of those with potential BBV exposure
Review:	The document will be formally reviewed every two years, in the light of new guidance, or changes to guidance.

Amendment

Out-with the planned cycle of review and revision, requests for amendments to the guidance should be sent to Chris Littlejohn, Consultant in Public Health, Chair of Grampian SHBBV MCN chris.littlejohn@nhs.scot

Consultation

A consultation draft was shared in August 2024 with community pharmacy, emergency medicine, forensic medicine, general practice, GMED, HMP grampian, infectious diseases, midwifery/obstetrics, OHS, paediatrics, sexual health service, vaccination team.

Approved by: Chris Littlejohn Date: 08 October 2024

Designation: Chair of Grampian SHBBV MCN

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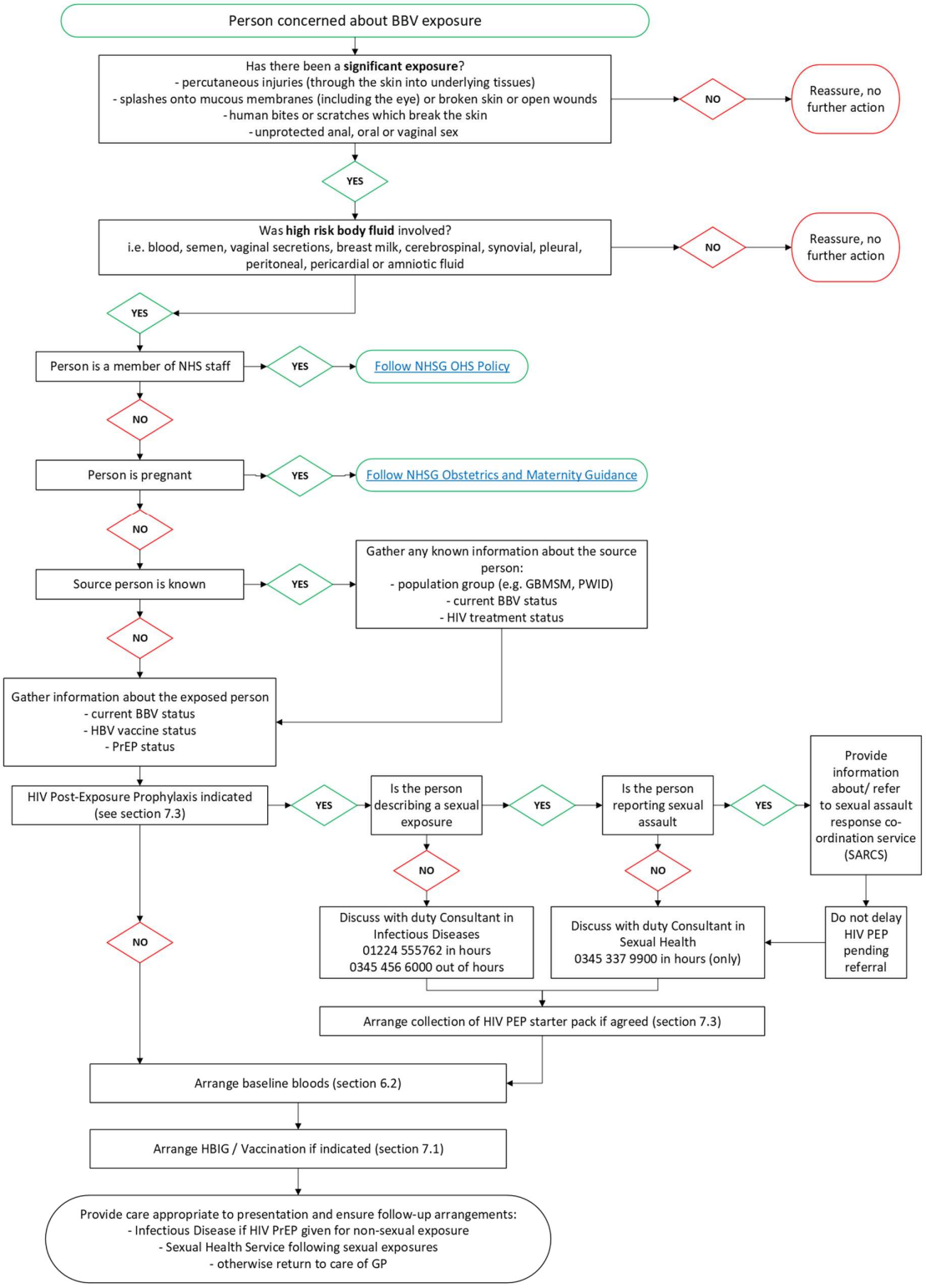
GLOSSARY

ARI	Aberdeen Royal Infirmary
ART	Anti-Retroviral Therapy
BASHH	British Association for Sexual Health and HIV
BBV	Blood Borne Viruses
CHI	Community Health Index
eGFR	estimated Glomerular Filtration Rate
GBMSM	Gay, Bisexual, Men who have Sex with Men
HBIG	Hepatitis B Immunoglobulin
HBV	Hepatitis B Virus
HBcAb	Hepatitis B core antibody
HBsAb	Hepatitis B surface antibody
HBsAg	Hepatitis B surface antigen
HCV	Hepatitis C Virus
HCAb	Hepatitis C Antibody
HIV Ag/Ab	HIV 1&2 fourth generation combined antigen and antibody test
HIV	Human Immunodeficiency Virus
LFT	Liver Function Tests
OHS	Occupational Health Service
PCR	Polymerase Chain Reaction
PEP	Post-Exposure Prophylaxis
POCT	Point of Care Test
PrEP	Pre-Exposure Prophylaxis
PWID	People Who Inject Drugs
U&E	Urea & Electrolytes

SUMMARY FLOWCHART



1. INTRODUCTION

Hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV) are referred to as **blood borne viruses** (BBV). BBV have the potential to be transmitted through infected blood and body fluids. This local guidance provides a summary approach to risk assessment, testing, post-exposure prophylaxis (PEP) and follow-up. It is intended for all NHS Grampian healthcare professionals, but may also be helpful to those in other organisations or settings.

2. EXCLUSIONS

This local guidance document does not cover NHS Grampian occupational exposures.

> All NHS Grampian staff and managers must adhere to the NHS Grampian Occupational Health Service policy, available via the NHS Grampian intranet (NHS Grampian Intranet > Departments > Occupational Health Service > Exposure to Blood & Body Fluids).

This local guidance document does not cover infection risks in pregnancy.

> Those working in antenatal services must follow “managing common viral, protozoal and sexually transmitted infections in pregnancy”, available via the NHS Grampian Guidance sharepoint site (NHS Grampian Guidance > Obstetrics and Maternity > Medical Conditions in Pregnancy).

3. PRINCIPLES

Provide first aid and ensure appropriate medical attention for injuries.

Undertake risk assessment to inform decisions about BBV testing and PEP: Has an individual had a **significant exposure** to high risk **body fluid** that puts them at risk of acquiring BBV?

significant exposure	high risk body fluid	further action
NO	NO	NO
NO	YES	NO
YES	NO	NO
YES	**YES**	**YES**

Only **significant exposures** involving **high risk body fluid** require further information gathering and decisions about testing and PEP.

4. RISK ASSESSMENT

Risk assessment must be undertaken by a competent clinician in the following specialties: Emergency Medicine, General Practice, GMED, Infectious Diseases or Sexual Health.

4.1 Significant exposure

A **significant exposure** involves high risk body fluid breaching the skin or getting onto mucous membranes or eyes.

Significant exposures:

- percutaneous injuries (through the skin into underlying tissues)
- splashes onto mucous membranes (including the eye) or broken skin or open wounds
- human bites or scratches which break the skin
- unprotected anal, oral or vaginal sex

Non-significant exposures:

- splashes onto intact skin
- shaking hands
- hugging
- kissing
- sharing utensils
- using the same toilet
- mouth-to-mouth resuscitation

4.2 High risk body fluid

High risk body fluids:

- blood, semen, vaginal secretions, breast milk, cerebrospinal, synovial, pleural, peritoneal, pericardial and amniotic fluid.

Low risk body fluids:

- faeces, nasal secretions, saliva, gastric secretions, sputum, sweat, tears, urine and vomit

There may be uncertainty about body fluid. For example, it may be difficult to determine whether low risk body fluids were blood-stained or not. Blood-stained body fluids are high risk because they contain blood. This requires a clinical judgment to be made.

5. FURTHER INFORMATION GATHERING

A significant exposure involving a high risk body fluid requires further information gathering from the exposed person, and from the source person (if known, willing and available). This information will inform decisions about testing and PEP.

5.1 Exposed person

Gather the following information about the person who has been exposed:

- is their current BBV status known
- have they been vaccinated against HBV
- are they taking HIV pre-exposure prophylaxis (PrEP)

5.2 Source person

The source person is often not known in community exposures. If they are known, gather the following information if possible:

- Is the source person's identity known?
- If their identity is known, are they in a higher prevalence population group?

BBV	**Higher prevalence population groups**
HBV	Gay, bisexual and other men who have sex with men (GBMSM), people who inject drugs (PWID)
HCV	PWID, history of overseas invasive procedures
HIV	GBMSM, PWID, those who have lived in, or have had sexual partners from, an endemic region (sub-Saharan Africa, Caribbean, Thailand)

- If their identity is known, is their current BBV status known?
- If their BBV status is known, are they infectious?

Undetectable **= U**ntransmittable https://ourpositivevoice.org/uu

There is no HIV infection risk from those living with HIV if:
- they are being treated with anti-retroviral therapy (ART), AND
- they have been treated for at least six months, AND
- they have an undetectable plasma HIV viral load (at the time of last measurement and within the last six months), AND
- they report good treatment adherence

- If their BBV status is not known, are they willing and available to be tested?

  Decisions about HBV or HIV PEP may be required before test results can be obtained from the source person, but their test results can still inform subsequent decisions to (dis)continue HIV PEP

6. TESTING

6.1 Testing of a known source person

The source person is often not known in community exposures.

Rapid HIV testing is available in some circumstances from Grampian Sexual Health Service (telephone 0345 337 9900 in-hours).

6.2 Testing of the exposed person

Offer testing after **significant exposure** to **high risk body fluid**.

BBV Testing schedule after significant exposure to high risk body fluid					
	Baseline	**2 weeks**	**45 days***	**12 weeks**	**6 months**
Hepatitis B	HBcAb, HBsAg, HBsAb			HBsAg, HBsAb if unvaccinated or HBsAb <10 IU at baseline	HBsAg if HBsAb < 10 at 12 weeks
Hepatitis C	HCV Ab	HCV PCR if source HCV+		HCV Ab	HCV Ab if source HCV+ and previous test negative at 12 weeks
HIV	HIV1&2 Ag/Ab		Fourth generation HIV1&2 Ag/Ab**		Not required unless further exposures
* 60 days for third generation HIV laboratory tests, 90 days for all POCTs ** If 28-day PEP course completed delay until 73 days post-exposure. For sexual exposure, HIV testing can be aligned with syphilis follow-up testing at week twelve.					

Details to include on the request:

- Name
- Date of Birth / CHI Number
- Requesting clinician
- Date & time of incident
- Tests requested
- Where copies of report should be sent (e.g. GP, Sexual Health)
- HBV immunisation status, if known

Adults: 10ml purple top EDTA tube
Paediatrics: 1ml purple top EDTA tube

6.3 Additional testing

Following unprotected sexual exposures, follow-up by Grampian Sexual Health Service is recommended so that the following tests can be offered:

- Chlamydia and Gonorrhoea testing at 14 days
    - Urine for men/people with a penis
    - Self-taken vulvovaginal swab for women/people with a vagina
    - Self-taken throat and rectal swabs in GBMSM, if contact with sex industry or following sexual assault
- Syphilis blood testing at 8 weeks, 10mls EDTA

6.4 Disclosure of sexual assault

The NHS Sexual Assault Response Coordination Service (SARCS) is available to provide healthcare and support for those who have experienced sexual assault if they are not ready to tell the police or are unsure.

SARCS offer relevant testing and HBV PEP and HIV PEP as indicated.

If the person disclosing sexual assault consents to referral then they can expect a telephone call that same day.

Do not delay HIV PEP commencement pending referral. HIV PEP should be started as soon as possible, and within 72 hours, of exposure.

If the person does not consent to referral then provide them with information about SARCS and how to self-refer, and continue with the assessment.

https://www.nhsgrampian.org/service-hub/sexualhealth/nhs-sexual-assault-response-coordination-service-sarcs

https://www.nhsinform.scot/sarcs

7. POST-EXPOSURE PROPHYLAXIS

7.1 HBV

HBV PEP includes hepatitis B immunoglobulin (HBIG) and hepatitis B vaccine. HBIG should ideally be administered within 24 hours but can be administered up to seven days post-exposure.

7.1.1 HBIG is indicated for the **exposed person** after a **significant exposure** to a **high risk body fluid** when:

- the **source person** is known to be infectious for HBV AND the **exposed person** is **unvaccinated** or a known **non-responder** to past vaccination

  OR

- the **source person** status is unknown AND the **exposed person** is a known **non-responder** to vaccination

  OR

- the **source person** is known to be infectious with **acute HBV** AND there has been **unprotected sexual exposure** within the previous seven days

  OR

- the **source person** is known to be infectious with **chronic HBV** AND a **new sexual partner** has had **unprotected sexual exposure** within the previous seven days

7.1.2 Hepatitis B vaccine is indicated for the **exposed person** as soon as possible after a **significant exposure** to a **high risk body fluid** when:

- the **source person** is known to be infectious for HBV (HBsAg positive)

  OR

- the **source person** status is unknown AND the **exposed person** is not fully vaccinated or a known non-responder to vaccination

7.1.3 HBV PEP summary table

		Source person	
		HBsAg positive	**Unknown**
Exposed person	**Unvaccinated**	Accelerated course of Hepatitis B vaccine plus HBIG with first dose	Accelerated course of Hepatitis B vaccine
	Partially vaccinated	One dose of Hepatitis B vaccine and finish course (plus HBIG for sexual exposure within seven days)	One dose of Hepatitis B vaccine and finish course
	Fully vaccinated with primary course	Booster dose of Hepatitis B vaccine if last dose ≥ 1year ago (booster dose plus HBIG for sexual exposure within seven days)	Consider booster dose of Hepatitis B vaccine if last dose ≥ 1year ago
	Known non-responder to HBV vaccine (anti-HBs <10ml IU/ml 1-2 months post-immunisation)	Booster dose of Hepatitis B vaccine plus HBIG A second dose of HBIG should be given at one month	Booster dose Hepatitis B vaccine plus HBIG A second dose of HBIG should be given at one month
https://www.gov.uk/government/publications/hepatitis-b-the-green-book-chapter-18			

An accelerated course of Hepatitis B vaccine consists of doses spaced at zero, one and two months, with a booster dose at 12 months; a super-accelerated (or very rapid) schedule consists of doses spaced at 0, 7, and 21 days, with a booster dose at 12 months if ongoing risk.

Hepatitis B vaccination is available from the relevant Vaccination Team https://www.grampianvax.com/healthcare-professionals.

7.2 HCV

There is no recommended PEP for HCV.

There is effective treatment in the event of infection.

Contact the NHS Grampian Liver Service on 01224 554757 if advice is required.

7.3 HIV

HIV PEP involves combination antiretroviral medication taken daily for 28 days.

Always discuss with a clinician from Sexual Health or Infectious Diseases before issuing HIV PEP.

Sexual Health Service	0345 337 9900 in hours
Infectious Diseases	01224 555762 in hours 0345 456 6000 (out of hours, via ARI switchboard)

Take blood samples for U&E and LFTs alongside bloods for BBV tests. HIV PEP initiation should not be delayed by waiting for blood results and should be started as soon as possible.

7.3.1 HIV PEP eligibility

HIV PEP is indicated as per the table below and should be started as soon as possible and within 72 hours.

HIV PEP is not indicated following any type of exposure where an HIV-positive **source person** has been on antiretroviral therapy for at least 6 months, with an undetectable plasma HIV viral load at the time of last measurement and within the last 6 months, and with good reported adherence.

HIV PEP is indicated in those using PrEP if more than 48 hours have elapsed since the last dose or event-based PrEP has not been taken as recommended.

HIV PEP can also be considered after a human bite IF the biter's saliva was visibly contaminated with blood, AND the biter is known or suspected to have a detectable HIV viral load, AND the bite has resulted in severe and/or deep tissue injuries.

HIV PEP is not recommended following community needlestick injuries. There have been no reported cases of HIV transmission following community needlestick injuries. Once blood has dried, HIV becomes non-viable within a couple of hours.

HIV PEP PRESCRIBING RECOMMENDATIONS (BASHH, 2023)				
	Source person HIV positive		Unknown source person HIV status	
	HIV Viral Load detectable or unknown	HIV Viral Load undetectable	From high prevalence population group [a]	From low prevalence population group
SEXUAL EXPOSURES (susceptible exposed person)				
Receptive anal sex	Recommend	Not recommended [b]	Recommend	Not recommended
Insertive anal sex	Recommend	Not recommended [b]	Consider [c,d]	Not recommended
Receptive vaginal sex	Recommend	Not recommended [b]	Generally not recommended [c,d]	Not recommended
Insertive vaginal sex	Consider [c]	Not recommended	Generally not recommended [c,d]	Not recommended
Fellatio with ejaculation	Not recommended	Not recommended	Not recommended	Not recommended
Fellatio without ejaculation	Not recommended	Not recommended	Not recommended	Not recommended
Splash of semen into eye	Not recommended	Not recommended	Not recommended	Not recommended
Cunnilingus	Not recommended	Not recommended	Not recommended	Not recommended
OTHER EXPOSURES (susceptible exposed person)				
Sharing of injecting equipment	Recommended	Not recommended [b]	Generally not recommended [e]	Not recommended
Sharps injury	Recommended	Not recommended [b]	Generally not recommended [c,e]	Not recommended
Mucosal splash injury	Recommended	Not recommended [b]	Generally not recommended [c]	Not recommended
Human bite	Generally not recommended [g]	Not recommended	Not recommended	Not recommended
Needlestick from a discarded needle in the community			Not recommended [h]	Not recommended [h]

Recommended: the benefits of PEP are likely to outweigh the risks, PEP should be given unless there is a clear reason not to

Consider: the risk of HIV transmission is low, the risk / benefit balance of PEP is less clear. The risk should be assessed on a case by case basis taking into consideration factors shown in footnotes c and d below

Generally not recommended: the risk of HIV transmission is very low, the potential toxicity and inconvenience of PEP is likely to outweigh the benefit unless there is a clear specific extenuating factor which increases the risk (see footnotes c, d, e, f below). We anticipate PEP should very rarely be given when the risk has been assessed and discussed

Not recommended: the risk of HIV transmission is negligible and PEP should not be given

https://www.bashh.org/_userfiles/pages/files/resources/pep2021_2023amendment.pdf, p.34

Table footnotes
(a) High prevalence countries or risk-groups are those where there is a significant likelihood of the index case individual being HIV positive. Within the UK at present, this is likely to be MSM (men who have sex with men), people who inject drugs from high-risk countries (see d below) and individuals who have immigrated to the UK from areas of high HIV prevalence, particularly sub-Saharan Africa (high prevalence is >1%). HIV prevalence country specific HIV prevalence can be found at https://aidsinfo.unaids.org and at https://kpatlas.unaids.org/dashboard
(b) The index case has been on ART for at least 6 months with an undetectable plasma HIV viral load at the time of last measurement and within the last 6 months) with good reported adherence. Where there is any uncertainty about HIV VL results or adherence to ART then PEP should be given. The viral load threshold considered 'undetectable' in the PARTNER 1 and 2 and HPTN052 studies was <200 copies/ml.
(c) Factors that influence decision-making in all exposures: More detailed knowledge of local HIV prevalence within index case subpopulation a . The recommendations relate to high-risk groups living in the UK (based on the known prevalence of detectable HIV viraemia in the UK, guideline table 1). Where the index case is from a high risk group and normally resides outside the UK, the risk may be greater and where there is doubt PEP should be given.
(d) Factors that may influence decision-making include in sexual exposures: 1. Breaches in the mucosal barrier such as genital ulcer disease and anal or vaginal trauma following sexual assault or first intercourse 2. Multiple episodes of exposure within a short period of time e.g. group sex 3. Sexually transmitted infection in either partner 4. Individuals at higher risk of acquiring HIV e.g. transgender
(e) HIV prevalence amongst PWID varies considerably depending on whether there is a local outbreak and country of origin and is particularly high in IDUs from Eastern Europe and central Asia. Region-specific estimates can be found in the UNAIDS Gap Report http://www.unaids.org/sites/default/files/media_asset/05_Peoplewhoinjectdrugs.pdf
(g) PEP should only be considered after a bite if all three criteria are met: a) the biter's saliva was visibly contaminated with blood; b) the biter is known or suspected to have a plasma HIV viral load >3.0 log copies/ml; and c) the bite has resulted in severe and/or deep tissue injuries
(h) "In general, PEP is not recommended following a community needlestick exposure as the risk is extremely low risk and usually not possible to determine: (i) whether the needle has been used and for what purpose; (ii) the HIV status of the index case and; (iii) the interval between the needle use and the exposure. Whilst there have been a handful of cases of hepatitis B and C transmission from community needlesticks there have been no reported cases of HIV transmission… Once blood has dried, HIV becomes non-viable within a couple of hours; in studies where only small amounts of blood are in the syringe, viable HIV cannot be detected after 24 hours…" (BASHH, 2023, p.32)
BASHH 2023 pp.34-35

7.3.2 First line regimen

The standard first-line 28-day regimen is:

- tenofovir disoproxil 245mg/emtricitabine 200mg fixed dose combination (one tablet once a day), plus
- raltegravir 1200mg (two 600mg tablets once a day)

HIV PEP starter packs contain a 30 day supply and are available from:

- Aboyne Hospital Minor Injury Unit
- Chalmers Hospital Minor Injuries Unit
- Emergency Department majors, ARI
- Emergency Department, Dr Gray's Hospital, Elgin
- Fraserburgh Hospital Minor Injuries Unit
- GMED Pharmacy Store, Green Zone, Health Village, Frederick Street, Aberdeen
- Infection Unit (Ward 111), ARI
- Jubilee Hospital Minor Injuries Unit
- Peterhead Hospital Minor Injuries Unit
- Sexual Health Service, Health Village, Frederick Street, Aberdeen

Reinforce the importance of good adherence and completion of the 28-day HIV PEP course. Provide the British Association in Sexual Health and HIV leaflet on HIV PEP https://www.bashh.org/resources/13/hiv_postexposure_prophylaxis

7.3.3 Pregnant and breastfeeding mothers

A pregnancy test should be done for all women of childbearing age considering HIV PEP. Consider the need for emergency contraception. Pregnancy and breastfeeding should not alter the decision to start HIV PEP.

First line regimen for women who are pregnant is:

- tenofovir disoproxil 245mg/emtricitabine 200mg fixed dose combination, one tablet once a day, plus
- raltegravir 400mg tablet twice daily

If accessing raltegravir 400mg might cause delay use raltegravir 600mg twice daily and switching at the earliest opportunity. Contact oncall pharmacy for advice.

Although anti-retrovirals used for HIV PEP are unlicensed in pregnancy, they are used commonly to treat HIV in pregnancy. Risks/benefits must be carefully discussed and advice is available from Sexual Health, Infection Unit and oncall pharmacy. People who are breastfeeding must be counselled regarding the potential transmission risk following significant HIV exposure, and regarding the transfer of anti-retrovirals to the infant via the breastmilk.

8. FOLLOW UP

Follow-up must be arranged by the clinician who completed the initial risk assessment and organised testing/PEP.

Advise to refrain from donating blood, plasma, organs, tissue or semen, and to use barrier contraception, until test results ruling out BBV infection are known.

- Baseline test results: test results are the responsibility of the clinician who took the test.

- Hepatitis B immunoglobulin and/or vaccine: can be obtained via the pharmacy store at Aberdeen Royal Infirmary on 01224 553227. https://nhsgintranet.grampian.scot.nhs.uk/depts/Pharmacy/PharmacyStores

- Hepatitis B vaccination course completion: refer to the relevant vaccination team. https://www.grampianvax.com/healthcare-professionals

- HIV PEP: refer to the nearest setting (see 7.3.2 above) to obtain a starter kit.

- Sexual exposures: refer to Grampian Sexual Health Service for follow-up blood tests, for testing for other sexually transmitted infections, and/or to review HIV PEP.

- Non-sexual exposures: refer to infectious diseases **if** HIV PEP provided, for follow-up blood tests and review of HIV PEP; otherwise, discharge to the care of the GP.

Free condoms are available from community pharmacies, Sexual Health Service or ordered from gram.freecondoms@nhs.scot.

A patient information leaflet on BBVs can also be provided to reduce further risk exposure: https://www.grampiansexualhealthservices.com/library/document/BBV%20Leaflet%20-%20E-Version%20final.pdf

9. REFERENCES

British Association for Sexual Health and HIV (BASHH) (2023) *UK Guideline for the use of HIV Post-Exposure Prophylaxis 2021 (Post consultation version, 2023 amendment)*
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