VIRAL HEPATITIS (A, B AND C)

Key Points:

- Please ensure that eligible individuals have received Hepatitis A and B vaccinations and **update the BBV forms** in NaSH with current immune status
- Our standard vaccination schedule **0, 1, 6 months**. If rapid immunity is required use 0, 1, 2 months with a reinforcing dose at 12 months.
- Twinrix ® is **not licensed for PEP** (post exposure prophylaxis) use separate vaccines unless this is declined in which case Twinrix use is off-label.
- Please discuss any concerns about possible **hepatitis presentation** or transmission with **GUM doctor of the day**
- Screening for Hepatitis B and C extends to cover those from or sexual partners of those from **indeterminate** or **higher** prevalence countries (>2%)
- People who are Hepatitis B core Ab positive and sAg negative, anti-HBs will be checked. If anti-HBs <10, recall for vaccine booster if ongoing risk.
- Hepatitis B vaccination is now included in the routine immunisation programme for children born after 1st August 2017.

NHSGGC Clinical Guidelines for Hepatitis are at https://rightdecisions.scot.nhs.uk/ggc-clinical-guideline-platform/adult-infection-management/blood-borne-viruses/

NHSGGC Guidance for BBV, Testing and Referral (March 2022) is at

https://rightdecisions.scot.nhs.uk/media/2263/bbv-amended.pdf

Hepatitis A

- People with acute infection can present to sexual health in **prodromal** (3-10 days) or **icteric** phase (1-3 weeks). However most of those infected have mild or no symptoms with little or no jaundice.
- Can be prevented by **vaccination**
- Take a **recent travel history** if you suspect someone has hepatitis A.

Main Transmission Routes

Faeco-oral (via food, water, close personal contact).

Outbreaks have been reported in men who have sex with men, possibly linked to oro-anal or digital-rectal contact, multiple sexual partners, anonymous partners, sex in public places and group sex.

Hepatitis A Prevention within Sandyford

Offer vaccination to:
- Gay, Bisexual and Men who have sex with Men (GBMSM)
- People who inject drugs
- People living with HIV, HCV or HBV

See protocol on MSM. Routine vaccination for MSM attending Sandyford is Twinrix® so Hepatitis A is covered but if the accelerated schedule has been used doses must include the 4th at one year to achieve optimal response to hepatitis A component.

Single agent vaccine (Avaxim ®, Vaqta ® , and Havrix®) is two doses six months apart, giving 95% protection for over 10 years. If vaccination schedule is interrupted, there is no need to restart – simply complete course.

Hepatitis A antibody is not a reliable test to confirm successful vaccination, therefore **do not check Hep A antibody to determine if someone has previously been vaccinated**.

General advice to give to all men to reduce risk of transmission

- Washing hands after sex (ideally buttocks, groin and penis too)
- Changing condoms between anal and oral sex
- Gloves for fingering or fisting
- Barrier for rimming
- Not sharing sex toys or douching equipment

Screening and Management of Acute Hepatitis A

1. If suspected, confirm by a positive serum **Hepatitis A virus-specific IgM** (HAV-IgM) which remains positive for six months or more. (HAV-IgG does not distinguish between current or past infection and may remain positive for life). Also perform serology for other hepatitis viruses, HIV and syphilis if non-specific illness.

2. Check LFTs and clotting. If Prothrombin time (PT) prolonged by more than 5 seconds suggests developing hepatic decompensation: consider admission to the local acute medical Unit. Admit if severe vomiting, dehydration, or if conscious level or personality changes (encephalopathy). Always discuss with a senior GUM doctor if the patient is unwell.

3. Patients should be advised to avoid food handling and unprotected sexual intercourse until they have become non-infectious. This should be reinforced by giving them clear and accurate written information available at NHS choices or THT http://www.tht.org.uk/sexual-health/About-STIs/Hepatitis/Hepatitis-A

4. Screen for other sexually transmitted infections in cases of sexually-acquired hepatitis.

5. Refer to Sexual Health Advisor for partner notification and support. Partner notification should be performed for at-risk contacts within the period two weeks before to one week after the onset of jaundice. Passive immunisation should be considered for close household and sexual contacts who are not known to be immune.

6. Pregnant women should be advised of the increased risk of miscarriage/premature labour and the patient's obstetric and midwifery team should be updated with the patient's permission. Breastfeeding can be continued. There is no evidence that hepatitis A is transmitted in breast milk, and infection is not a contraindication to breastfeeding, but good hygiene measures are pragmatically suggested to reduce any risk of transmission.

7. If LFT's abnormal refer to GP for follow up until amino-transferase levels are normal (usually 4 -12 weeks). Alcohol should be avoided until ALT is normal.

8. Following infection patients can be assumed to have life-long natural immunity for Hepatitis A

Partner Notification

The infectious period is two weeks before and up to one week after onset of jaundice. For potential sexual transmission in MSM PN is performed by SHAs – all other household, social or food handling contacts to be dealt with by local Public Health Department.

1. Non-immune sexual contacts (oro-anal, digital/anal, penetrative anal) can be given Hep A vaccine up to 14 days after exposure.

2. Human Normal ImmunoGlobulin (HNIG) can also be given intramuscularly (off license) to at risk groups (Age >60or immunosuppressed) in addition to vaccination but offers no protection more than two weeks after exposure.

Follow the latest UKHSA guidance Hepatitis A immunoglobulin (issued 2024) - GOV.UK (www.gov.uk)

Hepatitis B

Main Transmission Routes

- Parenteral (blood, blood products, drug-users sharing needles and syringes, needlestick, acupuncture) and vertical (infected mother to infant).
- Sexual transmission risk correlates with multiple partners, condomless anal sex, transactional sex
- Locally as of 2024 there is a cluster of Hepatitis B amongst heterosexual young women in Glasgow and Lanarkshire, the source of infection is currently unknown. There has also been an outbreak in Ayrshire in older men, it has been associate with GBMSM sexual contact.

Identifying those at higher risk – screening and risk reduction

Screening and Vaccination

The following populations should have an assessment of previous vaccination and screened for ongoing infection if thought to be non-immune. They should also be offered vaccination if deemed to be at *ongoing* risk:

- men who have sex with men
- people who have been sexually assaulted
- people having transactional sex
- sexual partners of those with positive HBsAg
- people who inject drugs
- people who have HIV or Hepatitis C infection
- Those resident or those having sex with those resident in areas with indeterminate or higher prevalence of Hepatitis B (>2%)
- Sexual partners of people at high risk of HBV infection including people having transactional sex
- Healthcare and other staff (eg police) who may be at risk of needlestick injuries should be screened and vaccinated through the appropriate Occupational Health department

Hep B core Antibody (HBcAb or Anti-HBc) is the initial screening test in someone who is of unknown infection status.

- If found to be anti-HBc positive, the lab will automatically check carrier status by testing for HepBsAg and immune status testing anti-HBs.
- If anti-HBc positive, HepBsAg negative and anti-HBs positive (> 10), **no need to vaccinate** as they have natural immunity
- If anti-HBc positive, HepBsAg negative and anti-HBs negative (< 10), please recall client for a **booster vaccination only** if there is ongoing risk

- If HBsAg negative, complete vaccination schedule

If patients are anti-HBc positive but HepBsAg negative, they should be made aware of their results.

There is a specific SMS available, which will be sent by the SHA office

Risk reduction

- All non-immune clients deemed to be at ongoing risk (as outlined above) should be offered vaccination
- Hepatitis B acquisition can be reduced by using condoms for penetrative anal and vaginal sex and reducing sexual partner numbers
- Sexual partners and household contacts of those with ongoing Hepatitis B infection should be immunised appropriately
- Advice on not sharing sex toys
- Advice on post exposure prophylaxis following exposure to Hepatitis B in non-immune
- People who inject drugs can greatly reduce risk by adopting safer injecting practices, avoiding sharing needles and injecting paraphernalia.
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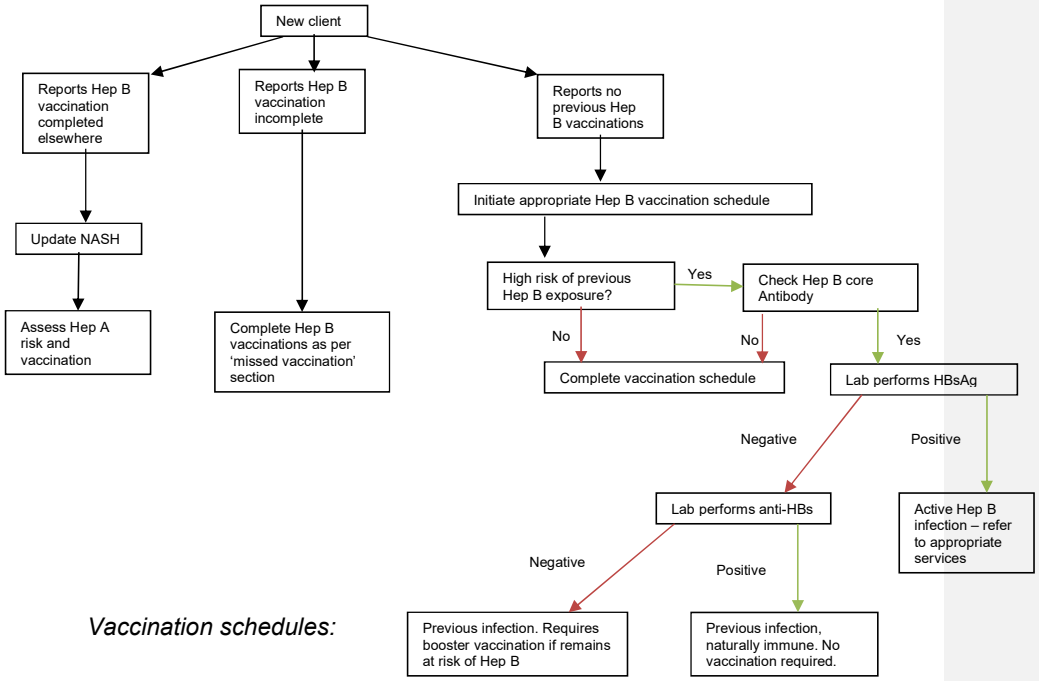


Vaccination schedules:

- The preferred schedule is **0,1 and 6 month**
- For patients requiring Hepatitis B vaccine for PEP (post exposure prophylaxis) use mono-vaccine **accelerated vaccine schedule 0,1 and 2 months** with a fourth dose at 12-24 months (if at ongoing risk).
- If there is a concern about reattendance or travel away an **ultra-rapid** course can be given**: four doses at 0, 7– 10 days, 21 days, and 12 months**
- Twinrix® is 'off label' for administration as PEP and separate vaccines are recommended if Hep A prophylaxis also required e.g. as Engerix and Havrix. Although off-label, prescribers can use Twinrix if deemed suitable i.e. will refuse two vaccine administrations. If administered under PGD as PEP these vaccines must be given separately.

Nurses in Sandyford can administer Twinrix®, combined Hep A and Hep B vaccine under PGD or as independent prescribers.

- Vaccination should ideally be offered and started at **first visit**. There is no requirement to wait for the anti-HBcAb result.
- Ensure client is issued with a vaccination schedule card (Blue Card).
- Use Twinrix® if Hep A and B cover is needed or just use single agent vaccines if they already have immunity to one of the infections.
- After accelerated schedule remind clients about the 4th dose at one year.

- **There is no requirement to check post-immunisation titres.**

Vaccination schedules in under 16s:

- Hepatitis B vaccinations are now part of routine UK immunisations for children born on or after 1st August 2017.
- This consists of three doses of a hepatitis B containing product with an interval of one month between each dose, before the age of one year. This confers life-long immunity.

*There are various different vaccination regimes for hepatitis A & B vaccination***:**

- The adult dose (20mcg /1ml) is licensed for use in clients 16 years or over.
- A licensed lower paediatric dose (10mcg / 0.5ml) of Engerix® (or combined in Twinrix®) is used in children aged 15 years and younger on three-dose regimen.
- Adolescents aged 11-15 who are not likely to attend for three doses and are at low immediate risk can be offered a two-dose regimen using the adult 20 mcg preparation. If in doubt about appropriate dosing, then seek advice.
- Take care to check the syringe – 1ml for adults aged 16 years and over, 0.5 ml for 15 years and under

Example

Vaccine	Dose	Volume	Regime
Engerix B® **First line** Licensed	**10** micrograms	0.5ml	**Age: 1 month – 15 years** Three dose: 0, 1 and 6 months
EngerixB® Unlicensed	**20** micrograms	1ml	**Age: 11-15 years** (low immediate risk, issues with follow up) Two dose: 0 and 6 months
Twinrix Paediatric® **First line**	Dose: HAV 360 ELISA units Dose: HBV 10ìg HB	0.5ml	**1 month – 15 years** Three dose: 0, 1 and 6 months

Missed Vaccine Doses

This is common. One or two doses of vaccine may provide immunity in 40% and over 90% of immunocompetent patients respectively.

- There is no routine recall for clients who may have missed vaccine doses.
- If a course of immunisation is interrupted: simply resume so that it is completed rather than restart the entire programme. (DH green book)
  - If two doses have already been administered, give the third.
  - If only one dose has been administered, give the remaining two at least 4 weeks apart.

Management of **Acute** Hepatitis B

Discuss all suspected cases of acute Hepatitis B with GUM doctor of the day

Refer to Health Advisor for partner notification and general advice. They should ensure appropriate referral to the local hepatitis centre is made - see [add in link to PHPU Acute Hepatitis B SOP

Management of **Chronic** Hepatitis B Infection In Greater Glasgow & Clyde

All follow up is arranged through the sexual health advisor team based at Sandyford Central.

Patients are referred to their local Hepatitis Centre. Check with the patient for consent to inform GP or other services and document this in the notes**.** Patients from other areas should be referred to appropriate local services. There

patients will be fully assessed (which may require liver imaging and biopsy) and considered for therapy.

Discuss all patients with current Hep B wishing to start PrEP with GUM DOD

Partner Notification and Management of Sexual and Household Contacts

Should include any sexual contact (penetrative vaginal or anal sex or oro-anal sex) or needle sharing partners during the period in which the index case is thought to have been infectious. Needle-stick injuries should not be dealt with at Sandyford and the patient should be directed to their nearest A&E department. The infectious period is from two weeks before the onset of jaundice until the patient becomes surface antigen negative.

In cases of chronic infection, trace contacts as far back as any episode of jaundice or to the time when the infection is thought to have been acquired although this may be impractical for periods of longer than two or three years. Practically, this should include current and recent sexual partners and household contacts.

- **Non- or presumed non-immune**
  - Specific **hepatitis B immunoglobulin** (HBIG) 500 iu intramuscularly may be administered to >10 year old non-immune contact after a single unprotected sexual exposure or parenteral exposure if theindex has acute Hepatitis B). This works **best within 48 hours (sooner is better, ideally 24 hours)** and is of no use after more than seven days. This is not required if 2 or more doses of their vaccination schedule have previously been given.

    Follow the latest UKHSA advice Hepatitis B immunoglobulin (issued November 2023)GOV.UK (www.gov.uk).
  - An accelerated course of recombinant **vaccine** should be offered to all previously un-vaccinated contacts (at 0, 1, 2 and 12 months). If a patient is part-way through their schedule give a single booster and complete vaccination course as planned. Avoid sexual contact with index, especially unprotected penetrative sex, until vaccination has been completed.
  - Household contacts should be screened and vaccinated as per local policy, usually via their GP
- **Previously vaccinated and achieved immunity**
  - should have a **single booster dose** as soon as possible, with no HBIG

If there is significant concern of Hepatitis A/B transmission discuss with the GUM Doctor of the day.

NB: Administration of Hepatitis B vaccination should not be delayed while awaiting access to immunoglobulin.

Hepatitis D (Delta virus infection, HDV)

This is an incomplete RNA virus that requires the hepatitis B virus outer coat. It is only found in patients with hepatitis B.

- Suspect HDV in hepatitis B particularly if the acute hepatitis is severe, if chronic hepatitis B carriers get a further episode of acute hepatitis or if the liver disease in chronic HBV is rapidly progressive. Response to anti-viral therapy is poor
- Diagnosis is confirmed by a positive HDV-RNA test.

Hepatitis C

Amongst PWID, sharing of injecting or snorting paraphernalia causes an elevated risk of hepatitis C virus (HCV). Sexual transmission occurs at a low rate (maximum incidence rate 0.07% per year in heterosexual couples) but these rates increase in MSM if the index patient also has HIV.

Natural History

The majority of patients (>80%) undergo asymptomatic acute infection. Approximately 50-85% of infected patients become chronic carriers – a state which is normally asymptomatic but may cause non-specific ill health. Of 100 people infected with Hep C, 16 will get cirrhosis over 20 years and 1-2 of these will eventually develop liver cancer.

Who Should Be Offered A Test For Hepatitis C?

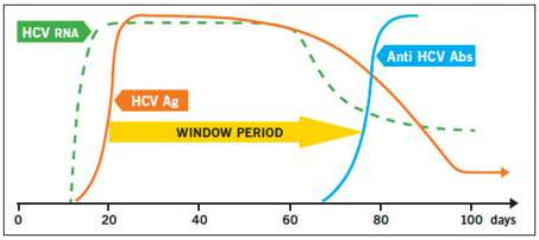
- People who have ever injected substances including steroids
- Those involved in chemsex if sharing injecting or snorting paraphernalia
- People who received blood products or organ transplant before 1990
- Following a needle stick injury if the index HCV status is positive or unknown
- Those with known HIV infection
- Children born to women with HCV (deferred until aged 18 months)
- Sexual partners of those at risk of or living with Hepatitis C
- People who may have had ear piercing, body piercing, tattooing or acupuncture with unsterile equipment
- People who may have had unsterile medical or dental procedures abroad
- Patients diagnosed with LGV infection
- People from countries of intermediate to high hepatitis C prevalence (>2%)
- GBMSM using PrEP (checked annually)
- People who are started on HIV PEPSE
- GBMSM having group sex, using toys, doing fisting etc or MSM who are recommended to have regular STI testing
- People from higher prevalence countries or who have had sexual partners from higher prevalence countries
- People who have been in prison

Hepatitis C Testing at Sandyford Services

- **The screening test from March 2021 for all Sandyford patients is an HCV PCR test** (9 ml plasma, purple bottle). Hepatitis C PCR testing detects current hepatitis C infection. It will not determine if someone has cleared previous infection. Patients who have spontaneously cleared or been treated successfully for Hepatitis C will have a negative HCV PCR result but a positive HCV antibody test.
- If HCV PCR **positive (detected, >12)**: This is evidence of ongoing infection that may require treatment. The lab will do an HCV antibody test if the patient is not known to have Hepatitis C.
  - Refer patients to a health adviser for a detailed explanation of their condition and partner notification to include any sexual contact or needle sharing partners during the period in which the index case is thought to have been infectious.
  - The infectious period is from two weeks before the onset of jaundice in acute infection. If there was no acute infection trace back to the likely time of infection (e.g. blood transfusion, first needle sharing) although this may be impractical for periods longer than two or three years.
  - Sexual transmission should be discussed, including risk (see above) Sex likely to result in blood exposure (eg fisting, S&M) should be avoided.
  - Patients should also be advised not to donate blood, semen or organs, not to consume alcohol & never to share injecting equipment or razors or toothbrushes.
- HCV PCR **negative (undetectable, <12)** – there is no evidence of current HCV infection.
- HCV PCR is usually positive within two weeks of infection. If there are concerns about very early acute infection then repeat the test after 1-2 weeks. See the diagram below for details of how long HCV PCR (RNA), HCV antigen and HCV antibody take to become positive.
- Offer testing for syphilis and other bloodborne viruses including HIV.

The window period of HCV

- HCV antibody assays are positive on average 40-70 days (up to 180 days) post infection
- Antibody is negative while patients are highly infectious in the window period
- HCV RNA is PCR positive 7-14 days post infection
- Architect HCV Ag assay is positive 10-15 days post infection



http://www.tdlpathology.com/test-information/new-tests/hepatitis-c-virus-core-antigen-(hcv-ag)

Risk reduction

- Needle exchange programs, opiate substitution therapy and addiction services
- The use of condoms, and not sharing lubricant, gloves, toys or other objects (including insertive partners in the setting of group sex)
- Interferon-free direct-acting antiviral (DAA) therapy, HCV treatment for prevention can be a cost-effective measure to reduce the burden of HCV, including PWID, prison settings and in MSM with higher-risk sexual practice (note there is a **risk of re-infection** following treatment)
- There is currently no effective vaccine for HCV

Management of Hepatitis C Infection in Greater Glasgow & Clyde

Please discuss all cases of suspected acute HCV with the GUM DoD for advice. Cases should be referred to the health advisor team for acute referral and partner notification. Acute referrals should be made to the patient's local hepatitis centre. See NHSGGC Clinical Guideline

- Some patients will self-clear the infection, others will require 2-3 months of direct acting antiviral therapy in tablet form. This is highly effective in achieving cure.

Check with the patient for consent to inform GP or other services and document this in the notes.

All patients with hepatitis C, if not immune, should be vaccinated against hepatitis A and B.

Hepatitis and pregnancy

- All people at risk of pregnancy who are either partners of individuals who have Hepatitis B or C, or who test positive themselves and who are considering pregnancy should be referred to the Women's Health Unit at Princess Royal Maternity for further support and advice about reproductive health issues. This may include issues relating to pregnancy, breast feeding and reducing the risk of vertical transmission, as well as dealing with social issues and contraceptive needs.

References and Useful Links

- NHSGGC Public Health Protection Unit – Blood Borne Viruses *[accessed 11/03/2024]*
- Blood Borne Viruses | Right Decisio https://rightdecisions.scot.nhs.uk/ggc-clinical-guideline-platform/adult-infection-management/blood-borne-viruses/ ns (scot.nhs.uk) - *[accessed 11/03/2024]*
- Scottish Needle Exchange Directory: accessed 11/03/2024
- BASHH Hepatitis guideline Viral Hepatitides A,B & C (bashhguidelines.org) [*accessed 11/03/2024*]
- 2017 IUSTI Europe Hepatitis Guideline; Brook G et al *[accessed 11/03/2024*]
- Systematic review on hepatitis B and C prevalence in EU/EEA, ECDC Scientific Advice, *[accessed 11/03/2024]]*
- Green book Hepatitis A https://www.gov.uk/government/publications/hepatitis-a-the-green-book-chapter-17 (*accessed 11/03/2024*])
- Green book Hepatitis B https://www.gov.uk/government/publications/hepatitis-b-the-green-book-chapter-18 (accessed 11/03/2024)

Appendix 1

Commented [BH1]: How old is this data?

Table 1: List of intermediate or high hepatitis B prevalence (>2%)

Africa	All African countries except the Seychelles
Americas	
Caribbean	All Caribbean Islands
Central America	Belize, Colombia
South America	Ecuador, French Guyana, Guyana, Peru, Suriname +
Northern	Greenland,
Asia	
Central Asia	Kazhakstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan,
Eastern Asia	China, Mongolia, North Korea, ,
Southern Asia	Bangladesh, Bhutan, Pakistan Sri Lanka,
SE Asia	Brunei, Cambodia, Myanmar, Philippines, Singapore, South Korea, Taiwan, Vietnam,
Western Asia	Armenia, Azerbaijan, Cyprus, Georgia, Oman, Saudi-Arabia, Syria, Turkey, Yemen,
Europe	Albania, Belarus, Bulgaria, Greece, Kosovo, Moldova, Romania, Russian Federation,
Oceania	New Zealand + all Pacific islands

Data may not be complete for all countries. The purpose of this table is solely to help decide on an offer of risk-based testing where patients originate from or disclose risk in the countries cited

Table 2: List of intermediate or high hepatitis C prevalence (>2%)

Africa	Angola, Benin, Burkina Faso, CAR, Cameroon, Chad, Congo, DRC, Egypt, Equatorial Guinea, Gambia, Ghana, Ivory Coast, Gabon, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo,.Western Sahara
Americas	Greenland, Puerto Rico
Asia	
Central Asia	Kazakhstan, Kyrgyzstan, Tajikistan Turkmenistan, Uzbekistan,
Eastern Asia	Mongolia,
Southern Asia	Pakistan
SE Asia	Cambodia, Thailand, Taiwan
Western Asia	Armenia, Azerbaijan, Georgia, Israel, Iraq, Yemen
Europe	Belarus, Estonia, Greece, Italy, Latvia, Lithuania, Moldova, Romania, Russian Federation, Slovakia, Ukraine,
Oceania	-

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