NHS Lanarkshire
Blood Borne Virus Testing Guideline

<table>
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<th>Version No.</th>
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<tr>
<td>Date of Introduction</td>
<td>May 2016</td>
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<tr>
<td>Review Date</td>
<td>May 2018</td>
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<tr>
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<td>Reviewed by</td>
<td>Lanarkshire BBV Testing, Treatment &amp; Care Group</td>
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<td>Endorsed by</td>
<td>Lanarkshire BBV PCN Steering Group</td>
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1. Introduction

Offering to test for a blood-borne virus (BBV) infection, i.e. Human Immunodeficiency virus (HIV), Hepatitis B (HBV) or Hepatitis C (HCV), is still often regarded as a complicated and time-consuming process. There is a perception that extensive counselling is required before a BBV test (particularly an HIV test) should be offered, with dedicated training on HIV/BBV counselling required for anyone intending to offer this service. However, this approach to BBV testing, whilst prevalent in the 1980s and 1990s, is now outdated and represents a major barrier to efforts to ensure that individuals with underlying BBV infection are diagnosed as early as possible.

In the modern era, effective drug therapies are available for the treatment of HIV, HBV and HCV. For HIV, this has revolutionised care, transforming HIV infection from a terminal illness dominated by AIDS and palliative care issues to a manageable long-term condition with an excellent prognosis. Effective therapies are also available for the HBV and HCV. Indeed, in the case of HCV infection, it is usually possible to eradicate the infection entirely (i.e. ‘cure’ HCV infection) with an appropriate course of anti-viral therapy.

These advances in BBV therapy have had significant implications for the approach to BBV testing that is currently advocated in the UK. The benefits to an individual of receiving an early diagnosis are much greater than they were in the past. However, many individuals remain undiagnosed because they have never been offered a test and are thus unable to benefit from treatment. Missed and/or late BBV diagnoses remain common. In the case of HIV, an estimated 17% of infected individuals in the UK were unaware of their infection in 2014; of those diagnosed, a high proportion are still identified at a late stage (CD4 count <350), which may have serious consequences for successful clinical management. For HCV, in 2009 there were an estimated 46,000 prevalent infections in people who have ever injected drugs in Scotland of which 59% were undiagnosed. There are fewer data for HBV, but undiagnosed infection and late diagnoses are undoubtedly a problem here as well.

Enhanced testing for BBV infection in high risk settings/populations, such as specialist sexual health clinics and within drug services, has an important role. However, these initiatives, by themselves, are not enough. To make a significant impact on undiagnosed BBV infection, significantly higher rates of BBV testing are required in non-specialist settings such as GP surgeries, general medical wards and outpatients, and other areas where undiagnosed BBV infection may be present.
2. ‘Normalising’ BBV testing

A very different approach has historically been taken to HIV testing and to a lesser extent to HBV and HCV testing, compared to testing for other medical conditions. The term ‘HIV exceptionalism’ has been used to describe this phenomenon. While well-intentioned - stemming from concerns regarding stigma and discrimination - the negative consequences of this approach, in terms of presenting a significant barrier to testing, are now more fully realised.

To ensure higher rates of BBV testing in non-specialist settings such as GP surgeries and general medical wards there needs to be an explicit ‘normalisation’ of the approach taken to BBV testing, bringing this more in line with the approach used when testing for other serious medical conditions (e.g. other long-term medical conditions and cancer). The UK guidelines on HIV testing state that ‘it should be within the competence of any doctor, midwife, nurse or trained healthcare worker to obtain consent for and conduct an HIV test’. This approach should also be applied to HBV and HCV testing.

3. Settings where BBV testing should be offered

1. NHS settings

BBV testing should be available wherever individuals with undiagnosed BBV infection may present for healthcare. This will include a variety of specialist / high-risk settings as well as non-specialist/ lower risk settings, including:

   a. High-risk settings/ populations

   • GUM and/or sexual health clinics
   • BBV counselling/ testing services
   • termination of pregnancy services
   • drug services
   • other services where patients at increased risk of HIV/BBV infection present, such as services for tuberculosis and lymphoma

HIV testing is recommended routinely on an opt-out basis in all of these settings, with a full BBV screen being offered on a routine opt-out basis in some of these settings (e.g. drug services) or using a risk-based approach in others (e.g. specialist sexual health clinics). See Section 4 for further guidance.

In addition, for control of infection reasons, BBV testing will also be offered routinely, irrespective of identified risk, in the context of:-
renal patients undergoing assessment for haemodialysis
organ donation
blood transfusion

b. Non-specialist/ lower risk settings

- GP surgeries
- emergency receiving units
- general medical wards and clinics
- general surgical wards and clinics
- haematology ward and clinics
- gynaecology ward and clinics
- critical care units
- medical and surgical sub speciality wards and clinics, including ENT, dermatology, respiratory medicine, neurology, gastroenterology, oncology, ophthalmology and infectious diseases.
- antenatal services

BBV testing should be recommended on a case-by-case basis in these settings, based on clinical presentation and/or identified underlying BBV risk factors (see Section 4, below). The exception is antenatal services, where a routine opt-out testing strategy is adopted for the HIV and HBV testing, with HCV testing offered based on identified risk.

2. Non- NHS and outreach settings

Several Boards have developed, or are in the process of developing, initiatives that aim to provide BBV testing in non-NHS community outreach settings. Significant community outreach testing already takes place in Lanarkshire (e.g. HCV testing offered at local mosques and HIV ‘Fastest’ clinics), provided by BBV nursing staff and/ or 3rd sector organisations.

The introduction of new BBV testing approaches that do not require phlebotomy, such as dry blood spot (DBS) testing and point-of-care tests (POCT), facilitates the expansion of community outreach testing (see Appendix IV) . However, initiatives of this kind require careful planning and, for clinical governance reasons, must always be closely linked to existing NHS services with agreed clear and robust referral pathways.

Areas suitable for enhanced community outreach BBV testing include:-
• places of worship and other venues that are attended by BME communities – or other ethnic groups at increased risk of BBV infection
• community venues attended by individuals with a history of injecting drug use
• venues attended by men who have sex with men (MSM)

Community outreach testing programs should be developed in conjunction with, and approved by, the Lanarkshire BBV Prevention and Care Network (PCN).

4. Blood borne viruses: Who should be offered a test?

In broad terms this can be summarised as:

- Anyone requesting a test
- Anyone in an identified ‘risk group’ or who has had risk behaviours
- Anyone with a clinical presentation (‘clinical indicator condition’) that could reflect underlying HIV/BBV infection (see Appendix I).
- Certain specific healthcare situations where BBV infection needs to be excluded to prevent transmission to others

Suggested BBV tests in specific situations are summarised below, adapted from published guidelines. HBV and HCV testing should usually be offered together and a full BBV screen (HIV, HBV & HCV) is appropriate in many/most situations.

<table>
<thead>
<tr>
<th>RISK FACTOR</th>
<th>HCV</th>
<th>HBV</th>
<th>HIV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenatal clinic</td>
<td>If additional risk factors</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Haemodialysis patients, blood donation, organ donation, etc</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Injection drug use (current or past)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Men who have sex with men (MSM)</td>
<td>If additional risk factors</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Diagnosed STI and/or GUM attendance</td>
<td>If additional risk factors</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Clinical indicator disease for possible HIV infection present (see Appendix I)</td>
<td>If additional risk factors</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Originating from, or had sexual contact in, a country with a high HIV prevalence (&gt;1%) (see Appendix V)</td>
<td>If additional risk factors</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Originating from a country with an intermediate or high (&gt; 2%) HCV or</td>
<td>✓</td>
<td>✓</td>
<td>If additional risk factors</td>
</tr>
<tr>
<td><strong>HBV prevalence (see Appendix V)</strong></td>
<td></td>
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<tr>
<td><strong>Medical or dental treatment in a country with an intermediate or high BBV prevalence (see Appendix V)</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Tattoo/body piercing where infection control likely to have been suboptimal</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td><strong>Prisoners, including young offenders</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td><strong>Blood factor concentrate prior to 1987</strong></td>
<td>✓</td>
<td></td>
<td></td>
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<tr>
<td><strong>Blood/blood component transfusion prior to Sept 1991; Organ/ tissue transplant prior to 1992</strong></td>
<td>✓</td>
<td></td>
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<tr>
<td><strong>Household contact of HBV case</strong></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td><strong>Household contact of HCV case – particularly where suspected significant transmission risk (eg shared razor, toothbrush, etc.)</strong></td>
<td>✓</td>
<td></td>
<td></td>
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<tr>
<td><strong>Looked after children and young people, including those living in care homes</strong></td>
<td>✓</td>
<td>✓</td>
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<tr>
<td><strong>People living in hotels for the homeless or sleeping on the streets</strong></td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td><strong>Persistently elevated ALT/AST where a cause cannot be clearly established</strong></td>
<td>✓</td>
<td>✓</td>
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<tr>
<td><strong>Sexual partner(s) of BBV infected person</strong></td>
<td></td>
<td>Test for the relevant BBV(s)</td>
<td></td>
</tr>
<tr>
<td><strong>Infant/child of BBV infected mother</strong></td>
<td>Test for the relevant BBV(s) (paediatrician to advise on correct tests and timing)</td>
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<tr>
<td><strong>Anyone who has tested positive for either HIV, HBV or HCV infection</strong></td>
<td>Ensure patient tested for all 3 BBVs</td>
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### 5. Consent to test

Consent should always be obtained prior to BBV testing. However, obtaining consent for a test is usually a very straightforward process. Verbal (rather than written) consent is adequate, following a brief pre-test discussion (Section 6). Record that the patient has given verbal consent in your case-notes.

Occasionally, the considerations involved in obtaining consent may be more complex. Consent issues in the context of adult patients who lack capacity to
give consent and BBV testing in children are described in Appendix II and Appendix III respectively. Where there is uncertainty regarding how to proceed, advice can be sought from the on-call Infectious Diseases consultant (available via Monklands Hospital switchboard), or in the case of children the on-call Paediatrician (available via Wishaw General Hospital switchboard). The legal issues surrounding testing of the unconscious patient are currently (2016) being re-examined in the context of Scottish law and guidance may change.

6. Pre-test discussion

a) Bringing up the question of BBV testing

Aim to do this in a relaxed and comfortable manner – like discussing any other investigation. This becomes easier with practise. Remember that if you convey anxiety or nervousness this is likely to make the person you are speaking to nervous and apprehensive.

Useful phrases for bringing up the issue of BBV testing might include:-

HIV:

“One of the many tests that we routinely recommend when we are investigating these types of medical problems would be an HIV test. Would you be happy for me to arrange this?”

“In certain parts of the world there are higher rates of HIV than others and it might be beneficial to include an HIV test as part of a thorough investigation to rule things out. Would you be OK with that?”

HEPATITIS B AND C:

“I am not entirely sure why your liver tests are slightly abnormal. This may well turn out to be nothing. However, I think it would be wise to run a couple of tests, including tests for Hepatitis B and C. Would that be OK?”

“We currently advise that anyone who has used drugs in the past should be tested for hepatitis B and C, as well as for HIV. Would you be happy to have these tests done today?”

“We routinely offer hepatitis testing to people who have grown up certain parts of the world, as the infection rates are quite high in some areas and infection can remain symptomless for many years. Would you be happy to be tested for Hepatitis B and C today?”
b) The key elements of pre-test discussion

The main purpose of pre-test discussion is to establish informed consent for BBV testing. The discussion can usually be fairly brief and lengthy ‘pre-test counselling’ is not a requirement, other than for the occasional patient who requests or needs this. Non-specialist doctors, nurses and midwives are able to obtain informed consent for an HIV test in the same way that they currently do for any other medical investigation.

The discussion should cover:-

1. The benefits of testing to the individual concerned
   - If a **negative** result:-
     1. Reassurance
     2. Can continue to take steps to avoid infection
     3. Other causes for the patient’s symptoms can be sought
   - If a **positive** result:
     1. Effective treatments are now available
     2. Can prevent condition from progressing to late-stage disease (AIDS, cirrhosis)
     3. Can take steps to avoid transmission to others

2. Details of how the result will be given
   - Ensure that you have the relevant contact details
   - Arrange an appointment/ method for conveying the result to the patient. A face-to-face meeting is preferred, where possible, even for negative results. However, this is not always practical and many units that offer a lot of HIV testing now rely on phone-calls or group texts for negative results (never for positive results).

7. Which sample to test and what to request

a) **Standard blood tests – the ‘gold standard’**

BBV tests performed in a NHS laboratory on serum obtained from a standard blood sample provide the most reliable results (highest sensitivity and specificity). Where possible, therefore, phlebotomy should be performed to obtain 5 ml of clotted blood (yellow-topped tube) for BBV testing. Requests can be made on a standard blue microbiology request form. BBV laboratory testing is performed at Monklands and WGH hospital, although a sample can be delivered to any of the 3 NHS Lanarkshire Microbiology laboratories and will be forwarded. BBV testing is routinely performed Mon-Friday during normal laboratory working hours. However, in urgent clinical situations BBV testing can also be arranged out-of-hours (evenings and weekends) following discussion with the on-call Microbiology Consultant.
HIV:
- **HIV antibody** (the current 4\textsuperscript{th} generation antibody tests also detect p24 antigen). Positive samples will be sent by lab to Glasgow for confirmation using an alternative assay.

HBV:
- **HBsAg** is the basic screen for acute or chronic HBV.
- Also request **anti-HBc** routinely if looking for evidence of past infection and the development of ‘natural immunity’ - and consider **anti-HBs** if there is a history of previous partial immunisation.
- Testing for **anti-HBc** is essential, even in patients who are HBsAg negative, for patients who are immunocompromised or where there are plans to introduce immunosuppressive therapy.

HCV:
- **HCV antibody**.
- Samples testing positive for HCV antibody will automatically be sent by lab to Glasgow for HCV PCR testing (HCV antigen testing is not currently being performed in Lanarkshire).

b) **Finger-prick blood samples for BBV testing**

While phlebotomy and routine laboratory BBV testing on a serum sample remains the gold standard, obtaining a smaller blood sample for BBV testing by means of a finger-prick is now a widely used alternative option. Finger-prick sampling is of particular value in certain outreach settings (e.g. addiction services) and allows patient populations who may not attend their GP service for a conventional blood test to be reached.

A number of validated test systems are now available. In general terms, these tests are highly sensitive and false negative tests are very rare. However, false positive tests are more common. **It is therefore imperative that all positive BBV results obtained via a finger-prick sample test are confirmed in an NHS laboratory on a 5 ml clotted blood sample obtained via conventional phlebotomy.**

The options available in Lanarkshire are described in Appendix IV.

8. **Interpreting conventional laboratory BBV test results**

A summary of laboratory blood test result interpretation is provided below.

**HIV antibody/ p24 antigen test result (4\textsuperscript{th} generation HIV test):**

- **Negative**
  - No evidence of HIV infection. If the last potential exposure was more than 8 weeks ago the patient can be reassured and no further test is required.
A negative result using a 4th generation test performed as early as 4 weeks post-exposure is also highly likely to exclude HIV infection. A further test at 8 weeks post-exposure need only be considered following an event assessed as carrying a high risk of infection. However, patients at ongoing risk of HIV infection should be advised to re-test at regular intervals.

- **Positive**
  - Very likely to be a true positive. The lab will automatically send the serum to Glasgow for confirmatory testing - using an alternative assay. A further confirmatory blood sample should also be obtained from the patient and sent for a repeat test (sending a repeat sample for confirmation of positive results is good practice for all BBV infections; however, to avoid delays in referral this can be deferred until the time of specialist assessment).

**HBsAg test result:-**

- **Negative**
  - No evidence of HBV infection. If last potential exposure was more than 6 months previously the patient can be fully reassured. If exposure risk within last 6 months, consider repeat testing 6 weeks, 3 and 6 months after last exposure (or sooner if symptoms develop).
  - A negative HBV anti-HBc result provides further confidence in excluding acute or chronic HBV infection.
  - A negative HBsAg result with a positive HBV anti-HBc result indicates previous infection that has spontaneously cleared (‘natural immunity’). The patient can usually be reassured that all is well. However, seek specialist advice if the patient is immunocompromised, or if immunosuppressive therapy is planned. In the latter context severe Hepatitis B induced ‘flares’ can occur even in HBsAg –ve / anti-HBc +ve patients. HBV viral load testing, potentially followed by antiviral therapy, will be required.

- **Positive**
  - Laboratory will automatically perform anti-HBc (total and IgM) testing
    - anti-HBc IgM positive: Probable acute HBV infection
    - anti-HBc IgM negative: Probable chronic HBV infection
  - A further confirmatory blood sample will also be sent when the patient attends for specialist assessment.

**HCV antibody test result:-**

- **Negative**
  - No evidence of HCV infection. If last potential exposure was more than 6 months previously the patient can be fully reassured. If risk exposure within last 6 months, consider repeat testing at 6 weeks, 3 and 6 months after last exposure (or sooner if symptoms develop).
- **Positive**
  - HCV antibody test and HCV PCR positive: Acute or chronic HCV infection. A further confirmatory blood sample will also be sent when attends for specialist assessment
  - HCV antibody positive but HCV PCR negative: No evidence of active HCV infection, but a further HCV test 3 – 6 months later recommended.

9. **Confidentiality and information sharing**

a) **Confidentiality – a generic approach**

The GMC advises that:

> ‘Confidentiality is central to trust between doctors and patients. Without assurances about confidentiality, patients may be reluctant to seek medical attention or to give doctors the information they need in order to provide good care. But appropriate information sharing is essential to the efficient provision of safe, effective care, both for the individual patient and for the wider community of patients’.

The GMC has issued generic guidance on confidentiality, with supplementary guidance on disclosing information about serious communicable diseases. The NHS Scotland Code of Practice on protecting patient confidentiality also applies. Staff should familiarise themselves with these documents and with local generic confidentiality policies – and be aware that breaching these policies may constitute a serious disciplinary offence. Individuals undergoing BBV testing can be reassured regarding this strict, standardised approach to confidentially and information governance.

b) **Identification of sample and test results**

Full name and CHI number should be used when requesting a BBV test. The result should then be filed in the patient’s case-records (or electronic record) as for other blood-test results. Results will also be available to view on the Trak Lab electronic browser (all BBV results) and SCI store (currently only HBV and HCV results).

c) **Requests for anonymous BBV testing**

Occasionally, an individual may express a wish to have a BBV test but is not be prepared to have this performed on a ‘named patient’ basis as described above. In this situation referral to Sexual Health or to the BBV testing service at LHAHC, where anonymous BBV testing can be performed, may be helpful. Some 3rd sector organisations may also be
able to help with anonymous BBV testing (see Appendix VI for contact details).

d) **Information sharing**

Individuals who test positive for a blood-borne virus should be strongly encouraged to accept referral to specialist services for further assessment and treatment. Consent to share information for such a referral should be sought. Equally, where an individual receives a positive test result (eg. a positive HIV test result) in a specialist and/or secondary care environment, he/she should be strongly encouraged to allow this information to be shared with other relevant healthcare practitioners, particularly the patient’s GP. The GMC have provided a useful case study that explores the latter situation.\(^\text{11}\)

e) **Divulging an individual’s BBV status to others without consent**

Confidentiality is an important duty, but it is not absolute. The GMC indicates that personal information can be disclosed if (a) it is required by law (b) the patient consents or (c) it is justified in the public interest.\(^\text{8}\) The **NHS Scotland Code of Practice** provides further helpful guidance on this complex and difficult issue.\(^\text{10}\)

10. **Conveying the test result**

The details of how the result will be provided should have been agreed at the pre-test discussion. A face-to-face discussion is preferred, even for negative results, with face-to-face provision particularly encouraged for:-

- Ward-based patients
- Patients more likely to have a positive BBV result
- Those with mental health issues or risk of suicide
- Those for whom English is a second language
- Young people under 16 years
- Those who may be highly anxious or vulnerable

Telephone consultations and texting arrangements are increasingly used to communicate negative results and may be entirely satisfactory as long as clear protocols are in place.

a. **Post-test discussion for individuals who test negative**

- Convey result promptly
- Tailor discussion around original reason for BBV test being requested
• Provide advice on risk reduction strategies for the future and signpost to other services, including sexual health and addiction services
• Explore the ‘window period’ and determine whether, in the context of recent exposure risk, a follow-up test is required. The ‘window periods’ are:
  o HIV: 2 months if 4th generation test used (previously regarded as 3 months)
  o HBV: 3 - 6 months
  o HCV: 3 - 6 months

b. Post-test discussion for individuals who test positive
• Clarify pathway for onward referral prior to meeting the patient – and seek specialist advice on result interpretation and/or clinical issues, if required
• Consider the need for an interpreter
• Convey result promptly
• Result should be given face to face in a confidential environment
• Painting a relatively positive and reassuring picture is generally justified in the modern era
• Refer for specialist assessment (see Section 11)
• Partner notification and testing is an important issue for HIV and HBV. This is usually taken forward at the time of specialist clinic assessment by a Sexual Health Advisor or BBV Specialist Nurse. Active contact tracing for people who test positive for HCV is not generally recommended, given low transmission rates to both sexual and household contacts, but may be appropriate for selected cases/situations (see also above)

11. Referral to specialist services

i. Which patients should be referred for specialist assessment and potential treatment?
• HIV: anybody who tests positive for HIV
• HBV: anybody who is HBsAg positive.
• HCV: anybody who is HCV antibody and HCV PCR positive (this includes DBS results – the confirmatory serum test will be done in the HCV clinic)

ii. Who do I refer a patient to and how?
• HIV:
  o Refer on an ‘urgent’ basis to the Infectious Diseases unit, Monklands Hospital. Newly diagnosed patients should been seen within 2 weeks of diagnosis (or earlier if symptomatic)
The BBV specialist nurses at Monklands Hospital are happy to help support the post-test discussion, prior to formal medical review
- If there are particular clinical concerns then please telephone the on-call Infectious Diseases consultant (can be contacted 24/7 via Monklands Hospital switchboard).

- **HBV**:
  - If well, refer electively to either the Infectious Diseases unit at Monklands Hospital or the Gastroenterology/Hepatology service at Hairmyres Hospital (the choice guided by what is most convenient for the patient)
  - If unwell (eg acute hepatitis or decompensated chronic hepatitis) then refer on an urgent outpatient basis (or arrange admission, if patient is very unwell)

- **HCV**
  - If well, refer electively to either the Infectious Diseases unit at Monklands Hospital or the Gastroenterology/Hepatology service at Hairmyres Hospital (the choice guided by what is most convenient for the patient)
  - Outreach clinics are also provided within existing drug services in Motherwell and Lanark by the Infectious Diseases unit. Please indicate in the referral letter if you wish a patient to be seen at an outreach setting.
  - If unwell (eg acute hepatitis or decompensated chronic hepatitis) then refer on an urgent outpatient basis (or arrange admission, if patient is very unwell)

**Third sector support services**

It is important to recognise that, in between clinical appointments, patients may require wider support in coming to terms with their diagnosis. Staff should make patients aware of the specialist services that are provided by the voluntary sector in Lanarkshire and, where appropriate facilitate referral on behalf of the patient (and with their permission). (See Appendix VI, ‘useful contacts’).
12. REFERENCES


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   http://www.gmc-uk.org/Confidentiality__disclosing_information_about_serious_communicable_diseases.pdf


11. General Medical Council. Confidentiality case study: serious communicable diseases. Should a doctor override a patient’s objection to disclosure of their HIV status? 
    http://www.gmc-uk.org/guidance/ethical_guidance/confidentiality_serious_communicable_diseases.asp

    http://www.gmc-uk.org/static/documents/content/Consent_-_patients_and_doctors_making_decisions_together-english.pdf


15. General Medical Council. 0 – 18 years: guidance for all doctors. 2007. 
    http://www.gmc-uk.org/static/documents/content/0_18_years_guidance_for_all_doctors.pdf


17. UNAIDS. How AIDS Changed Everything Report – 2015. Data summary available at: 
### Appendix I. UK HIV testing guidelines (2008)\(^4\) Clinical indicator conditions in Adults

<table>
<thead>
<tr>
<th></th>
<th>AIDS-defining conditions</th>
<th>Other conditions where HIV testing should be offered</th>
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<tbody>
<tr>
<td><strong>Respiratory</strong></td>
<td>Tuberculosis</td>
<td>Bacterial pneumonia</td>
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<td></td>
<td>Pneumocystis</td>
<td>Aspergillosis</td>
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<tr>
<td><strong>Neurology</strong></td>
<td>Cerebral toxoplasmosis</td>
<td>Aseptic meningitis/encephalitis</td>
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<td></td>
<td>Primary cerebral lymphoma</td>
<td>Cerebral abscess</td>
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<tr>
<td></td>
<td>Cryptococcal meningitis</td>
<td>Space occupying lesion of unknown cause</td>
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<td></td>
<td>Progressive multifocal leucoencephalopathy</td>
<td>Guillain-Barré Syndrome</td>
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<td>Transverse myelitis</td>
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<td><strong>Dermatology</strong></td>
<td>Kaposi’s sarcoma</td>
<td>Severe or recalcitrant seborrhoeic dermatitis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe or recalcitrant psoriasis</td>
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<tr>
<td></td>
<td></td>
<td>Multidermatomal or recurrent herpes zoster</td>
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<tr>
<td><strong>Gastroenterology</strong></td>
<td>Persistent cryptosporidiosis</td>
<td>Oral candidiasis</td>
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<tr>
<td></td>
<td></td>
<td>Oral hairy leuokplakia</td>
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<tr>
<td></td>
<td></td>
<td>Chronic diarrhoea of unknown cause</td>
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<tr>
<td></td>
<td></td>
<td>Weight loss of unknown cause</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salmonella, shigella or campylobacter</td>
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<tr>
<td></td>
<td></td>
<td>Hepatitis B infection</td>
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<td></td>
<td></td>
<td>Hepatitis C infection</td>
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<tr>
<td><strong>Oncology</strong></td>
<td>Non-Hodgkin’s lymphoma</td>
<td>Anal cancer or anal intraepithelial dysplasia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lung cancer</td>
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<tr>
<td></td>
<td></td>
<td>Seminoma</td>
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<tr>
<td></td>
<td></td>
<td>Head and neck cancer</td>
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<tr>
<td></td>
<td></td>
<td>Hodgkin's lymphoma</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Castleman’s Disease</td>
</tr>
</tbody>
</table>
| Gynaecology | Cervical cancer | Vaginal intraepithelial neoplasia  
| Cervical intraepithelial neoplasia Grade 2 or above |
| Haematology | Any unexplained blood dyscrasias including:  
| thrombocytopenia  
| neutropenia  
| lymphopenia |
| Ophthalmology | Cytomegalovirus retinitis | Infective retinal diseases including herpesviruses and toxoplasma  
| Any unexplained retinopathy |
| ENT | Lymphadenopathy of unknown cause  
| Chronic parotitis  
| Lymphoepithelial parotid cysts |
| Other | Mononucleosis-like syndrome (primary HIV infection)  
| Pyrexia of unknown origin  
| Any lymphadenopathy of unknown cause  
| Any sexually transmitted infection |
Appendix II. BBV testing for adults who lack capacity to give consent (including the unconscious patient)

This is a controversial area that is currently under review. For now, the generic GMC guidance on consent should be referred to. In Scotland, the Adults with Incapacity (Scotland) Act 2000 applies in this situation along with the Human Tissue (Scotland) Act 2006. NHS Lanarkshire staff should already be familiar with AWI legislation and its application, which is not specific to the BBV testing context. CEL 11 (2008) provides a revised Code of Practice for Part 5 of the AWI Act (which deals with medical treatment) and this can be referred to. The 5 key principles are:

Principle 1 – benefit
Principle 2 – minimum necessary intervention
Principle 3 – take account of the wishes of the adult
Principle 4 – consultation with relevant others
Principle 5 – encourage the adult to exercise residual capacity

The concept of benefit remains of central importance in the context of potential BBV testing for a patient who lacks capacity (e.g. an unconscious patient). Two examples below illustrate this:

1. A doctor suffers a needle-stick injury whilst inserting a central line in an unconscious patient. It is suggested that the patient should be urgently tested for HIV and viral hepatitis to determine whether the doctor requires post-exposure prophylaxis (PEP). Is this reasonable?

   Answer: In this situation there is no clear benefit to the patient. HIV/BBV testing without consent cannot therefore be justified. The doctor should, of course, still seek immediate advice on whether PEP is required. A risk assessment of the patient can be made using all available evidence (case-notes, information from relatives, etc.) which will guide the PEP decision. When the patient regains consciousness/capacity he can be approached regarding possible HIV/BBV testing.

2. A 40 year old man presents on a Friday night with a life-threatening community acquired pneumonia, requiring urgent intubation and ventilation. There are clinical features suggestive of possible pulmonary PCP or CMV infection, although he has no risk factors for these conditions other than possible underlying HIV infection. Results for PCP and CMV will not be available for several days. Empirical CMV therapy would probably exacerbate an existing acute kidney injury. His treatment would be significantly altered if his HIV status was known. Can an HIV test be justified?

   Answer: In this situation there are clear benefits for the patient if his HIV status is determined as soon as possible as well as potential detriment if it is not. Following consultation with colleagues, as well as relevant others where it is reasonable and practicable to do so (a proxy with welfare powers or the patient’s close relative if there is no identified proxy), HIV testing could be justified for this unconscious patient. It is safest to assume that an HIV test (or any other test for a ‘serious communicable disease’, as described by the GMC) constitutes ‘treatment’ for the purposes of the AWI 2000 Act and hence a Certificate of Incapacity under Section 47 of the AWI Act 2000 form should be issued specifying the intended test(s)/treatment(s) prior to the HIV test. Patients admitted to ITU will in general actually have had a Certificate of Incapacity in place along with an associated Treatment Plan; depending on how this is worded, this may be adequate to cover testing for serious communicable diseases (which includes HIV), but if in doubt a separate form should be issued. Once the patient has regained consciousness/capacity the fact that the test has been performed should be explained, along with the rationale for this and the result of the test.
Appendix III. BBV testing in children

It is important to ensure that children and adolescents who are at significant risk of BBV infection are tested. The urgency is usually greatest for HIV testing, with a strong emphasis on ensuring that the children of HIV positive parents are always identified and tested. However, a sensitive approach and some time and negotiation may be required; even in the context of HIV risk testing only needs to be undertaken urgently in infants who are at risk of rapid disease progression.

In the context of potential HIV risk, the following groups should be considered for HIV testing:

- infants and children whatever their age where the mother has HIV, or may have died of an HIV-associated condition
- infants born to mothers known to have HIV in pregnancy
- infants born to mothers who have refused an HIV test in pregnancy
- infants and children who are presented for fostering/adoption where there is any risk of blood-borne infections
- infants and children newly arrived in the UK from high-prevalence areas (they may be unaccompanied minors)
- infants and children with signs and symptoms consistent with an HIV diagnosis
- infants and children being screened for a congenital immunodeficiency
- infants and children in circumstances of post-exposure prophylaxis
- infants and children in cases where there has been sexual abuse

The GMC has provided detailed guidance on capacity and consent issues relating to children (defined in Scotland as < 16 years of age). Other UK guidance is available in relation to HIV testing in particular.

It is beyond the scope of this guideline to cover this area in detail and expert advice should be sought if there is any uncertainty. However, points that should be highlighted are:

- the law is complex in this area and differs across the UK
- young people under 16 years accessing sexual healthcare (which would include HIV testing as part of a sexual health screen) without a parent or guardian should be assessed for competency to consent
- if a child lacks the capacity to consent, then the consent of one parent or carer with parental responsibility is sufficient (if you are aware of parental disagreement, refer to GMC guidance)
- particular difficulties may be encountered in the context of:
  - refusal of testing by a competent young person, or
  - parental refusal for testing of a non-competent child or young person
Appendix IV. Options for BBV testing using finger-prick blood samples

Tests performed in an NHS laboratory on serum obtained from a standard blood sample provide the most reliable results (highest sensitivity and specificity). There is a significantly higher rate of false positive results using some of these finger-prick sample testing methods. **It is therefore imperative that all positive BBV results obtained via a finger-prick sample test are confirmed in an NHS laboratory on a 5ml clotted blood sample obtained via conventional phlebotomy.**

Several options are now available in Lanarkshire, including NHS and 3rd sector providers, with an expansion of options likely in future.

I. **Dry blood-spot (DBS) testing for BBV infection in community settings**

This was initially targeted primarily at HCV testing (HCV antibody and PCR) within NHS Lanarkshire community addiction services, but the range of settings where DBS testing is utilised has now been extended and a complete BBV screen (HCV, HBV and HIV) is now usually performed. All DBS samples are currently forwarded to Glasgow for the actual BBV testing. Although a 'simple' test, it is imperative staff have had proper training (coordinated by Maureen Woods, Team Leader for Harm Reduction Team) before embarking on DBS testing to ensure that the results are reliable. A separate protocol relating to DBS testing has been developed, which is available to NHS Lanarkshire staff on FirstPort.

II. **HIV postal testing kits ('Fastest Direct')**

This is an HIV testing initiative supported by Terrence Higgins Trust (THT) Scotland. An HIV test kit is ordered online from the THT website ([https://www.tht.org.uk/fastest](https://www.tht.org.uk/fastest)). A self-taken finger-prick sample is collected in a tube (i.e different from DBS technology) and returned to the THT laboratory partner by post for screening (4th generation HIV test). Negative results are provided by text on a mobile phone within 5 days. Reactive and anomalous results are delivered via a one to one telephone call, where the THT staff member will offer support and guidance. THT Scotland has agreed referral pathways for reactive patients with NHS Boards and will make contact on behalf of patients when permission is given.

III. **HIV Point of Care Testing (POCT) in community clinics - ‘HIV Fastest’**

A blood sample obtained via a finger-prick is tested in real time for HIV using a dedicated HIV POCT (i.e rather than being sent to a laboratory), with the test result available in 20 minutes or less, depending on the type of test used. Terrence Higgins Trust (THT) Scotland currently supports 2 outreach HIV testing clinics in Lanarkshire (Cumbernauld and East Kilbride) where HIV POCT is offered (see Appendix VI for contact details). Where it is not appropriate to give an immediate result, a blood sample will be taken via finger-prick and sent to the laboratory partner for screening. Results will be managed as per the protocol for postal testing.

IV. **HIV self-testing using POCT kits**

Self-testing kits became legal in the UK in April 2015. At present (August 2015) the only CE mark awarded HIV self-test kit available in the UK is the ‘BioSure HIV Self Test’, which can be purchased online only via the BioSure website.
although it is likely that other tests will become available in future. This is a POCT kit in which a self-taken sample is tested at home with the result becoming available within 15 minutes. The test packs and the BioSure website do provide information on how to access support and confirmatory blood testing if a test does come back positive. Further information on HIV self-testing is available via the BioSure website and on the Lanarkshire BBV website www.lanarkshirehivandhepatitis.org.
Appendix V. Prevalence of blood-borne virus infection worldwide

**Chronic hepatitis B: worldwide distribution**
Counties with an intermediate or high prevalence (2% or greater) of chronic hepatitis B include: All countries in Africa, Asia, the Caribbean, Central and South America, Eastern and Southern Europe, the Middle East and the Pacific islands.⁶

**Chronic hepatitis C: worldwide distribution**
Counties with an intermediate or high prevalence (2% or greater) of chronic hepatitis C include: all countries in Africa, Asia, the Caribbean, Central and South America, Eastern and Southern Europe, the Middle East and the Pacific islands (data not available for all counties).⁶

**HIV: Worldwide distribution**
Regions/ countries where the seroprevalence of HIV in the general population is estimated to exceed 1% are indicated below.¹⁷

<table>
<thead>
<tr>
<th>Region/ Country</th>
<th>Estimated regional prevalence (15-49 y.o.)</th>
<th>Specific countries with identified high risk (&gt;1%) (data lacking for many countries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sub-Saharan Africa</td>
<td>4.8%</td>
<td>Most countries – treat all as high risk</td>
</tr>
<tr>
<td>2. Middle East &amp; North Africa</td>
<td>0.1%</td>
<td>Djibouti</td>
</tr>
<tr>
<td>3. Asia &amp; the Pacific</td>
<td>0.2%</td>
<td>Thailand</td>
</tr>
<tr>
<td>4. Eastern Europe &amp; Central Asia</td>
<td>0.9%</td>
<td></td>
</tr>
<tr>
<td>5. Western &amp; Central Europe &amp; North America</td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>6. Caribbean</td>
<td>1.1%</td>
<td>Dominican Republic, Haiti, Jamaica,</td>
</tr>
<tr>
<td>7. Latin America</td>
<td>0.4%</td>
<td>Belize, Guyana, Suriname,</td>
</tr>
</tbody>
</table>
Appendix VI: Useful contacts

Lanarkshire HIV and Hepatitis Services

i. Hospital Based Services

Once someone is tested as having a positive HIV or hepatitis test result they should be referred to the specialist services for further testing and assessment

- **BBV Service Monklands Hospital**
  The BBV Service, Ward 2, Monklands Hospital provides specialist care and treatment for Hep B and Hep C and is the only specialist treatment service for HIV patients in Lanarkshire

  **Contact the BBV Service Monklands on 01236 712246 or 01236 712247**

- **Hairmyres Hepatitis Service**
  The specialist hepatitis treatment service in Lanarkshire is based in the Gastro ward (17), Hairmyres Hospital

  **Contact the Hairmyres Hepatitis Service on 01355 584049 (answer machine) or 07766 511 471**

ii. Community Based Services

- **NHS Lanarkshire Harm Reduction Team**
  The primary focus of this NHS Lanarkshire service is to reduce and avoid the transmission and onward spread of blood borne viruses. This service provides injecting equipment to people who inject drugs and also offer a full sexual health and BBV screen for all, including anonymous testing should this be requested.

  **Contact the Harm Reduction Team on 01236 441067 / 07884 454961 / 07810 153 940**

- **Lanarkshire Sexual Health Services**
  The Lanarkshire sexual health service provides information and testing (including anonymous testing) for all blood borne viruses. Visit the Lanarkshire sexual health website for more information about local sexual health services.

  **Contact the Lanarkshire sexual health services on 08456 187 191 (Line open Monday to Friday 9am to 4.45pm)**

iii. Voluntary Sector BBV Services in Lanarkshire

In Lanarkshire we have a number of services available to support people living with, or affected by HIV and Hepatitis
Appendix VI: Useful contacts

- **Lanarkshire African Health Project**
  The Lanarkshire African Health Project has been operational since 2009 and provides support for Africans living, studying and working in Lanarkshire, raising awareness of HIV and other blood borne viruses, as well as providing support to individuals and families living with and affected by HIV.

  Contact Lanarkshire African Health Project on 0141 332 520 or 07853041130 or email ahplanarkshire@waverleycare.org

- **Confident Families (Scotland)**
  Confident Families is a newly established (2013) project operating in Lanarkshire and across the central belt of Scotland. The service is for all family members, friends and partners affected by HIV.

  Contact Confident Families on 0141 332 3838 or email confidentfamilies@tht.org.uk

- **Lanarkshire Men who have Sex with Men (MSM) Project**
  The Lanarkshire Gay Men’s Project has been operating for over a decade. The project provides information, advice, group support for men who have sex with men (MSM). This service also provides testing in the community.

  Contact the Lanarkshire MSM Project at 0141 332 3838

- **Positive Support: Viral Hepatitis Support Service**
  Positive Support is an information, support and advice service for people living with or affected by hepatitis in Lanarkshire.

  Contact Positive Support on 01698 337 195 or email positivesupport@addaction.org.uk

iv. **Lanarkshire HIV and Hepatitis Website**

For further information on all BBV and related services in Lanarkshire go to http://www.lanarkshirehivandhepatitis.org/services/

v. **National HIV and Hepatitis Services**

There are a number of national and UK wide services that provide support and advice to people living with a blood borne virus. A full list of national services can be obtained via the Lanarkshire HIV and Hepatitis Website at http://www.lanarkshirehivandhepatitis.org/services/national-services-scotland/