



NHS Grampian Blood Borne Virus Testing Guidance

Authors:

Helen Corrigan, Health Protection Nurse Specialist, Public Health

Lisa Allerton, Public Health Manager, Public Health

Penny Gillies, Public Health Practitioner (Advanced), Public Health

Reviewers:

Dr Daniela Brawley, Consultant in Sexual Health & HIV/MCN Clinical Lead for Sexual Health and HIV

Dr Noha El Sakka, Consultant in Medical Microbiology and Virology

Pauline Dundas, Lead Hepatology Nurse Specialist/MCN Clinical Lead for Viral Hepatitis

Approver:

Chris Littlejohn, Consultant in Public Health/ Strategic Lead for Sexual Health and Blood Borne Viruses

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NHS Grampian BBV testing guidance

Title:	NHS Grampian Blood Borne Virus Testing Guidance
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Authors:	Helen Corrigan, Lisa Allerton, Penny Gillies, Daniela Brawley, Noha El Sakka, Pauline Dundas
Plan Owner:	Chris Littlejohn, Consultant in Public Health/Strategic Lead for Sexual Health and Blood Borne Viruses
Policy application:	NHS Grampian
Purpose:	This document describes who should be offered testing for Blood Borne Viruses (BBVs), which tests should be offered, and how results should be provided. This document also provides information on where people will be seen for treatment/follow-up as appropriate.
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 manual should be sent in writing to: Health Protection Team, Public Health, Summerfield House

gram.healthprotection@nhs.scot

Approved by:



Date: 18 December 2023

Designation: Consultant in Public Health/ Strategic Lead for Sexual Health and Blood Borne Viruses

NHS Grampian BBV testing guidance

1.0 Scope

This guidance covers testing for Blood Borne Viruses (BBVs) defined as Hepatitis B Virus (HBV), Hepatitis C Virus (HCV) and Human Immunodeficiency Virus (HIV).

2.0 Who should test and who should be offered testing

The general principle is that all three Blood Borne Viruses (BBVs) should be routinely tested for. Some settings should provide opt-out testing, where attendees are informed that they will be automatically tested for all three BBVs unless they actively decline. Tests should always be performed for anyone requesting one. See [annex one](#) for details of who should be offered testing by setting or clinical presentation.

3.0 When to test

Test on presentation as per [annex one](#). For those with an exposure within the window period, organise retesting after this period.

Virus	Window period
HBV	6 months
HCV	6 months
HIV	HIV serology: 45 days POCT test: 90 days

4.0 Tests to order

Laboratory tests on venous blood - preferred sample	
Hepatitis B core antibody (HBcAb)	All tests: Adults: 10ml purple top EDTA tube Paediatrics: 1ml purple top EDTA tube
Hepatitis C antibody test (if known to be antibody positive, take additional sample for HCV PCR if required for diagnostic purposes)	Provide patient name, DOB, CHI number/Sexual Health AN number; requesting clinician; date and time specimen taken; BBV tests requested and reason for testing.
HIV 1 and 2 serology* <i>* 4th generation combined antigen and antibody test</i>	Send samples to the Virology Laboratory (if urgent contact the Lab on 01224 552452 or the duty Microbiologist Out-Of-Hours)
Dried Blood Spot Testing (DBST)	
In community settings or primary care settings, if unable to perform venepuncture.	State any known risk factors and/or symptoms if known on the request form. NB this is not necessary to test.
Pinprick sample to check Hepatitis B surface antigen, HCV antibody (or HCV PCR if previously HCV antibody positive), HIV antibody.	Ordering dry blood spot testing equipment: <ul style="list-style-type: none">• Pharmacies and third sector organisations can order by contacting NHS Grampian Resources: grampian.resources@nhs.scot• Primary Care and NHS services can order using their normal departmental ordering channels.
See references below for Good Practice and Checklist documents	

Point of Care Testing (POCT)	
<p>If rapid result required:</p> <p>HCV PCR</p> <ul style="list-style-type: none"> - Cepheid machine used in patients with higher risk of non-engagement. <p>HIV antibody</p> <ul style="list-style-type: none"> - Point of care testing with 15-minute turn around via pin prick or venous sample. - Oral testing also available. 	<p>HCV PCR only, available on cepheid machine which is accessed through the Liver Team – call 01224 554757</p> <p>Accessed via NHS Grampian Sexual Health. Professional contact 01224-655525, patient contact 0345-337-9900.</p>

5.0 Test results

A general overview of results is provided below, but patients must be treated in light of the individual virology interpretation provided with each result.

5.1 Hepatitis B virus

People who acquire HBV infection can either clear the infection without symptoms, present with an acute infection, or develop chronic infection. A positive Hepatitis B core antibody (HBcAb) test result shows the person has at some point been infected with hepatitis B virus. The Hepatitis B Surface Antigen (HBsAg) test is positive when the person is either acutely or chronically infected.

Test results	Interpretation
HBcAb negative and HBsAg negative	No history of infection
HBcAb positive and HBsAg negative	Immune following past infection
HBcAb positive and HBsAg positive	Acute or chronic infection

5.2 Hepatitis C virus

People who acquire HCV infection either develop chronic infection or clear the infection. A positive HCV antibody test result shows the person has at some point been infected with HCV. A 'detected' (positive) HCV PCR test result shows that their infection is active.

Test results	Interpretation
HCV antibody negative	No history of infection
HCV antibody positive and HCV PCR negative	Past infection
HCV antibody positive and HCV PCR positive	Active infection

5.3 HIV

People who acquire HIV infection initially have detectable antigen and later have detectable antibodies. Detection of antigen or antibodies shows the person has acquired HIV infection.

Test results	Interpretation
HIV antigen/ antibody positive	Active infection

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The healthcare professional ordering the test/s is responsible for chasing the results and communicating the results to the patient and should in all circumstances organise referral for appropriate clinical care as standard.

Referrals can be made as follows:

Patient	Infection	Refer to:
Adult	HIV	Refer to Sexual Health or Infectious Diseases - the latter is recommended if the patient requires admission
	HBV and/or HCV	Liver Service
	HIV and (HBV and/or HCV)	Refer to Sexual Health or to Infectious Diseases as above for HIV; AND to the Liver Service for HBV and/or HCV, highlighting the coinfection in both referrals
Paediatric	HIV and/or HBV and/or HCV	RACH

For some services, automatic referral directly to specialist services is in place, for example tests completed in secondary care (this is to allow the potential for specialist services to see people whilst in hospital without delay).

For individuals testing negative with ongoing exposure risks for acquiring BBVs, give advice about prevention (barrier contraception such as condoms; HIV Pre-Exposure Prophylaxis (PrEP); Hepatitis B vaccination; Injecting Equipment Provision) and/or refer to services.

Also discuss the need for repeat testing annually or sooner if at higher risk (see section 3 above for window period).

6.0 References

HBV testing <https://cks.nice.org.uk/topics/hepatitis-b/diagnosis/when-to-test-for-hepatitis-b/>

HCV testing <https://cks.nice.org.uk/topics/hepatitis-c/diagnosis/who-to-screen-test/>

HCV testing <https://cks.nice.org.uk/topics/hepatitis-c/diagnosis/how-to-test/>

HIV testing <https://www.bashhguidelines.org/media/1250/hiv-testing-2020-wiley.pdf>

DBST Good Practice document:

https://scottish.sharepoint.com/:w/s/MCNLeads/ERsw_RO-wIBCiOCY8fmElkB9Nbwn-kNecjkkyZNgss8hA?e=qwPell

DBST Checklist:

https://scottish.sharepoint.com/:w/s/MCNLeads/EYtENg0DVIBJmh8bEt_XZSMB62Cz0x_vnULLIJdwGfB66Q?e=KRYfe8

NHS Grampian BBV testing protocol
ANNEX ONE – WHO TO TEST BY SETTING

	Hepatitis B Virus (HBV) testing for those with no previous HBV diagnosis	Hepatitis C Virus (HCV) testing for those with no previous HCV diagnosis	Human Immunodeficiency Virus (HIV) testing for those with no previous HIV diagnosis
All healthcare services The default recommendation is 'if testing for one BBV, then test for all three BBVs'	<ul style="list-style-type: none"> - Offer testing to those presenting with signs or symptoms consistent with acute HBV (non-specific malaise, fatigue, fever, nausea, and poor appetite; right upper quadrant abdominal pain; jaundice; elevated ALT, AST, PT, AP, bilirubin); glomerulonephritis, vasculitis, or polyarteritis - Offer testing to those presenting with signs or symptoms consistent with chronic liver disease (spider naevi, finger clubbing, jaundice, hepatosplenomegaly, thin skin, bruising, ascites, liver flap and encephalopathy) - Offer HBcAb testing to those undergoing immunosuppressive therapies - Offer testing to all people who inject drugs (PWID) 	<ul style="list-style-type: none"> - Offer testing to those presenting with signs or symptoms consistent with HCV (e.g. non-specific fatigue, myalgia, anxiety, depression, poor memory or concentration, nausea and vomiting, right upper quadrant abdominal pain, jaundice, elevated ALT twice upper limit of normal or ALT elevated on two occasions three months apart) - Offer testing to healthcare workers who have been accidentally exposed to blood where there is a risk of hepatitis C (for example needlestick injuries) - Offer testing to looked-after children and young people; people living in hostels for the homeless or sleeping on the streets; close contacts of someone known to be chronically infected with Hepatitis C, including family members, close friends, household contacts, or sexual partners; people who have received medical, cosmetic, or dental treatment (or any other invasive treatment) in countries where hepatitis C is common and 	<ul style="list-style-type: none"> - Offer testing to those commencing chemotherapy or immunosuppressive or immunomodulatory therapy - Offer testing to all those presenting with signs or symptoms consistent with an HIV indicator condition (see annex two) - Offer testing to all patients with a new sexual partner/s. - Offer testing to all PWID

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	Hepatitis B Virus (HBV) testing for those with no previous HBV diagnosis	Hepatitis C Virus (HCV) testing for those with no previous HCV diagnosis	Human Immunodeficiency Virus (HIV) testing for those with no previous HIV diagnosis
		<p>infection control may be poor (including people who have received blood transfusion products that have not been screened for hepatitis C)</p> <ul style="list-style-type: none"> - Offer testing to all PWID 	
Maternity Services	<ul style="list-style-type: none"> - Offer testing for babies born to mothers infected with hepatitis B surface antigen positive - Offer antenatal testing to women born or brought up in Africa, Asia, the Caribbean, Central and South America, Eastern and Southern Europe, the Middle East, and the Pacific islands 	<ul style="list-style-type: none"> - Offer testing for babies born to mothers infected with hepatitis C - Offer antenatal testing to women with a history of substance misuse, any other high-risk activity or lived in countries with high prevalence* and received medical or dental treatment including childhood immunisation. <p>* Born or brought up in Africa, Asia, the Caribbean, Central and South America, Eastern and Southern Europe, the Middle East, and the Pacific islands</p>	<ul style="list-style-type: none"> - Offer opt-out testing at booking - Reoffer testing at 28-32 weeks or 36 weeks and mark as “late booker” if declined at booking
HMP Grampian	<ul style="list-style-type: none"> - Offer opt-out testing for all three BBV on admission to everyone entering custody (remand and sentenced). If it is not possible to conduct testing on admission this should be completed at the first healthcare appointment and no later than a maximum of 14 days following admission 		

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ANNEX ONE – WHO TO TEST BY SETTING

	Hepatitis B Virus (HBV) testing for those with no previous HBV diagnosis	Hepatitis C Virus (HCV) testing for those with no previous HCV diagnosis	Human Immunodeficiency Virus (HIV) testing for those with no previous HIV diagnosis
Sexual Health Service	<ul style="list-style-type: none"> - Offer opt out testing to the following patient groups; people from or whose partners are from areas of high prevalence; gay, bisexual and other men who have sex with men (GBMSM) or partners; people prescribed HIV pre and post-exposure prophylaxis; people living with HIV; contacts of a BBV; involvement in sex industry; history of substance misuse especially PWID; following a sexual assault. 	<ul style="list-style-type: none"> - Offer opt-out testing to the following patient groups; GBMSM if additional exposure factors such as chemsex/group sex; people living with HIV; contacts of a BBV; involvement in sex industry; history of substance misuse especially PWID; following a sexual assault. 	<ul style="list-style-type: none"> - Offer opt out testing on 3-12 month intervals depending on exposure to the following patient groups; GBMSM; people prescribed HIV pre and post-exposure prophylaxis; contacts of a BBV; involvement in sex industry; history of substance misuse especially PWID.
Substance Use/Drug and Alcohol Services	<ul style="list-style-type: none"> - Offer annual testing to all clients who have ever injected drugs 	<ul style="list-style-type: none"> - Offer annual testing to all existing clients who have ever injected, snorted, or smoked drugs (including those who have previously been successfully treated for HCV) 	<ul style="list-style-type: none"> - Offer testing to all clients - Offer annual testing to all clients who have ever injected drugs

*See Medication Assisted Treatment Standard 4 Criterion 4.2 (“have a procedure in place to offer hepatitis and HIV testing..., using an opt-out approach with regular follow-up as per local protocols”)

<https://www.gov.scot/publications/medication-assisted-treatment-mat-standards-scotland-access-choice-support/pages/9/>

NHS Grampian BBV testing protocol
ANNEX ONE – WHO TO TEST BY SETTING

	Hepatitis B Virus (HBV) testing for those with no previous HBV diagnosis	Hepatitis C Virus (HCV) testing for those with no previous HCV diagnosis	Human Immunodeficiency Virus (HIV) testing for those with no previous HIV diagnosis
Termination of Pregnancy (Abortion) services	<ul style="list-style-type: none"> - Offer testing to the following patient groups; people from or whose partners are from areas of high prevalence; GBMSM or partners; contacts of a BBV; involvement in sex industry; history of substance misuse especially PWID; following a sexual assault. 	<ul style="list-style-type: none"> - Offer testing to the following patient groups; GBMSM or partners if additional exposure factors such as chemsex/group sex; contacts of a BBV; involvement in sex industry; history of substance misuse especially PWID; following a sexual assault. 	<ul style="list-style-type: none"> - Offer testing to all patients

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ANNEX TWO – INDICATOR CONDITIONS TO INFORM HIV TESTING

Specialty	AIDS-defining conditions in people living with HIV	Indicator condition
Dentistry	<ul style="list-style-type: none"> Kaposi's sarcoma 	<ul style="list-style-type: none"> Oral hairy leukoplakia Unexplained oral candidiasis
Dermatology	<ul style="list-style-type: none"> Herpes simplex, ulcer(s) >1 month Kaposi's sarcoma 	<ul style="list-style-type: none"> Exanthema Herpes zoster Seborrhoeic dermatitis Severe or atypical psoriasis
Ear, nose and throat		<ul style="list-style-type: none"> Mononucleosis-like illness Oral hairy leukoplakia Unexplained lymphadenopathy Unexplained oral candidiasis
Gastroenterology/hepatology	<ul style="list-style-type: none"> Cryptosporidiosis diarrhoea >1 month Isosporiasis >1 month Candidiasis, oesophageal 	<ul style="list-style-type: none"> Anal cancer/dysplasia Hepatitis A Hepatitis B or C (acute or chronic) Unexplained chronic diarrhoea Unexplained weight loss
General practice/emergency medicine	<ul style="list-style-type: none"> Symptomatology fitting any of the listed conditions 	<ul style="list-style-type: none"> Symptomatology fitting any of the listed conditions
Sexual Health Service	<ul style="list-style-type: none"> Herpes simplex, ulcer(s) >1 month 	<ul style="list-style-type: none"> Sexually transmitted infections
Haematology	<ul style="list-style-type: none"> Lymphoma 	<ul style="list-style-type: none"> Unexplained leukocytopenia/thrombocytopenia >4 weeks Unexplained lymphadenopathy
Infectious diseases/internal medicine	<ul style="list-style-type: none"> Mycobacterium avium complex or Mycobacterium kansasii, disseminated or extrapulmonary Mycobacterium, other species or unidentified species, disseminated or extrapulmonary Salmonella septicaemia, recurrent Cytomegalovirus, other (except liver, spleen, glands) Herpes simplex, ulcer(s) >1 month/bronchitis/pneumonitis 	<ul style="list-style-type: none"> Candidaemia Herpes zoster Invasive pneumococcal disease Mononucleosis-like illness Oral hairy leukoplakia Unexplained chronic renal impairment Unexplained fever Unexplained lymphadenopathy Unexplained oral candidiasis Unexplained weight loss

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Specialty	AIDS-defining conditions in people living with HIV	Indicator condition
	<ul style="list-style-type: none"> • Atypical disseminated leishmaniasis • Reactivation of American trypanosomiasis (meningoencephalitis or myocarditis) • Cryptococcosis, extrapulmonary • Histoplasmosis, disseminated/extrapulmonary • Coccidioidomycosis, disseminated/extrapulmonary • Talaromycosis (penicilliosis), disseminated 	<ul style="list-style-type: none"> • Visceral leishmaniasis
Nephrology		<ul style="list-style-type: none"> • Unexplained chronic renal impairment
Neurology	<ul style="list-style-type: none"> • Progressive multifocal leukoencephalopathy • Cerebral toxoplasmosis 	<ul style="list-style-type: none"> • Guillain–Barre syndrome • Mononeuritis • Multiple sclerosis-like disease • Peripheral neuropathy • Subcortical dementia
Oncology	<ul style="list-style-type: none"> • Cervical cancer • Non-Hodgkin lymphoma • Kaposi's sarcoma 	<ul style="list-style-type: none"> • Anal cancer/dysplasia • Malignant lymphoma • Primary lung cancer • Unexplained lymphadenopathy • Unexplained weight loss
Obstetrics and gynaecology		<ul style="list-style-type: none"> • Cervical dysplasia
Ophthalmology	<ul style="list-style-type: none"> • Cytomegalovirus retinitis 	
Primary care	<ul style="list-style-type: none"> • Symptomatology fitting any of the listed conditions 	<ul style="list-style-type: none"> • Symptomatology fitting any of the listed conditions
Respiratory	<ul style="list-style-type: none"> • Pneumonia, recurrent (two or more episodes in 12 months) • <i>Mycobacterium tuberculosis</i>, pulmonary or extrapulmonary • <i>Pneumocystis carinii</i> pneumonia • Candidiasis, bronchial/tracheal/pulmonary 	<ul style="list-style-type: none"> • Community-acquired pneumonia • Invasive pneumococcal disease

From Table 3A in <https://www.bashhguidelines.org/media/1250/hiv-testing-2020-wiley.pdf>