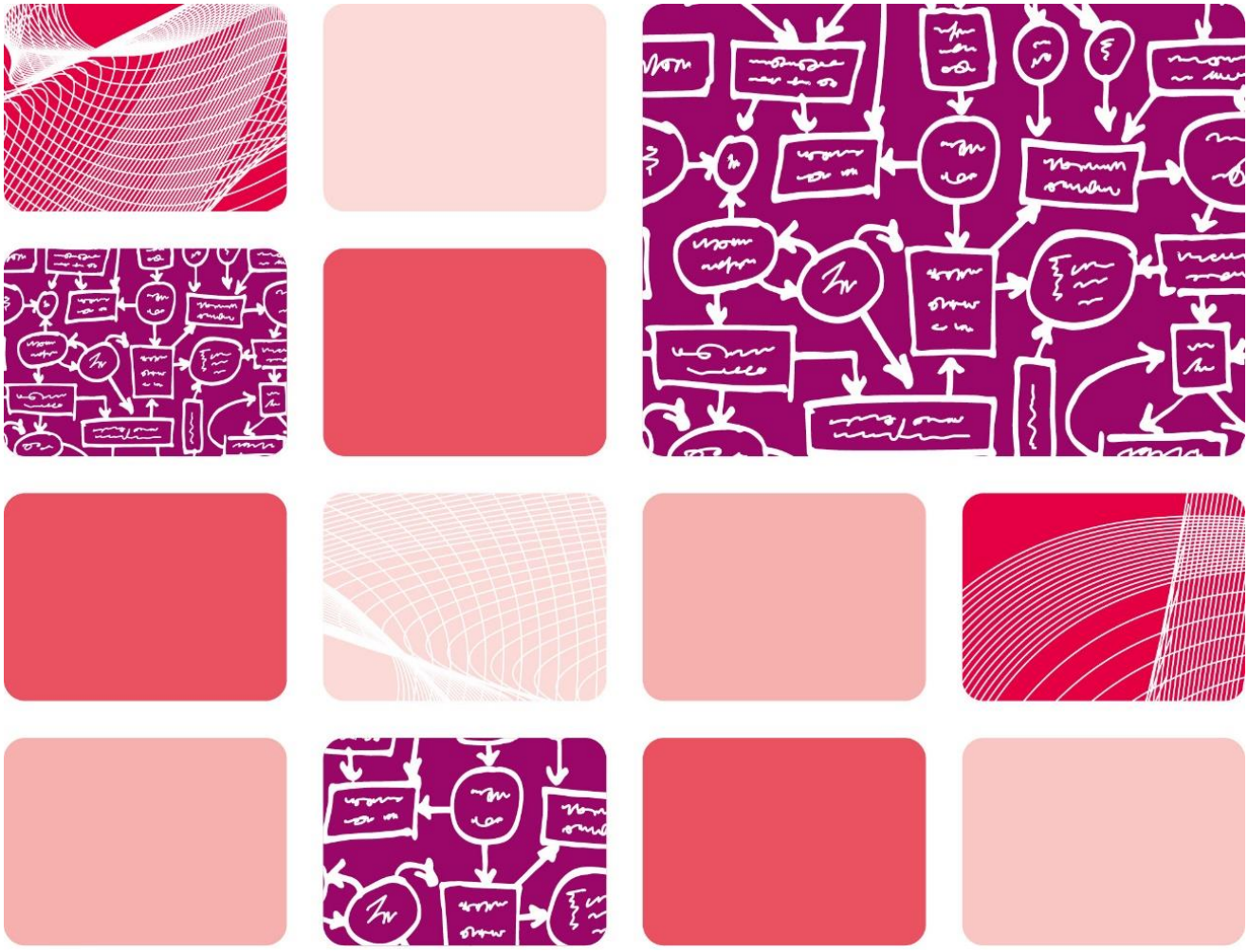
UK Health Security Agency

UK Standards for Microbiology Investigations

Acute Infective Hepatitis



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Acknowledgments

UK Standards for Microbiology Investigations (UK SMIs) are developed under the auspices of UKHSA working in partnership with the partner organisations whose logos are displayed below and listed on the UK SMI website. UK SMIs are developed, reviewed and revised by various working groups which are overseen by a steering committee.

The contributions of many individuals in clinical, specialist and reference laboratories who have provided information and comments during the development of this document are acknowledged. We are grateful to the medical editors for editing the medical content.

UK SMIs are produced in association with:

Displayed logos correct as of December 2024

Contents

Amendment table

Each UK SMI document has an individual record of amendments. The amendments are listed on this page. The amendment history is available from standards@ukhsa.gov.uk.

Any alterations to this document should be controlled in accordance with the local document control process.

Amendment number/date	4/24.04.25
Issue number discarded	1.3
Insert issue number	1.4
Section(s) involved	**Amendment**
Whole document.	**This is an administrative point change.** **The content of this UK SMI document has not changed.** **The last scientific and clinical review was conducted on 03.02.2010.** Hyperlinks throughout document updated to Royal College of Pathologists website. Public Health England replaced with UK Health Security Agency throughout the document, including the updated Royal Coat of Arms Partner organisation logos updated. Broken links to devolved administrations replaced. References to NICE accreditation removed. Scope and Purpose replaced with General and Scientific information to align with current UK SMI template.

Amendment No/Date.	3/13.02.14
Issue no. discarded.	1.2
Insert Issue no.	1.3
Section(s) involved	**Amendment**

Whole document.	Document has been transferred to a new template to reflect the Health Protection Agency's transition to Public Health England. Front page has been redesigned. Status page has been renamed as Scope and Purpose and updated as appropriate. Professional body logos have been reviewed and updated. Standard safety and notification references have been reviewed and updated. Scientific content remains unchanged.

Amendment No/Date.	2/25.06.12
Issue no. discarded.	1.1
Insert Issue no.	1.2
Section(s) involved	**Amendment**
Whole document.	Minor formatting amendments.

1 General information

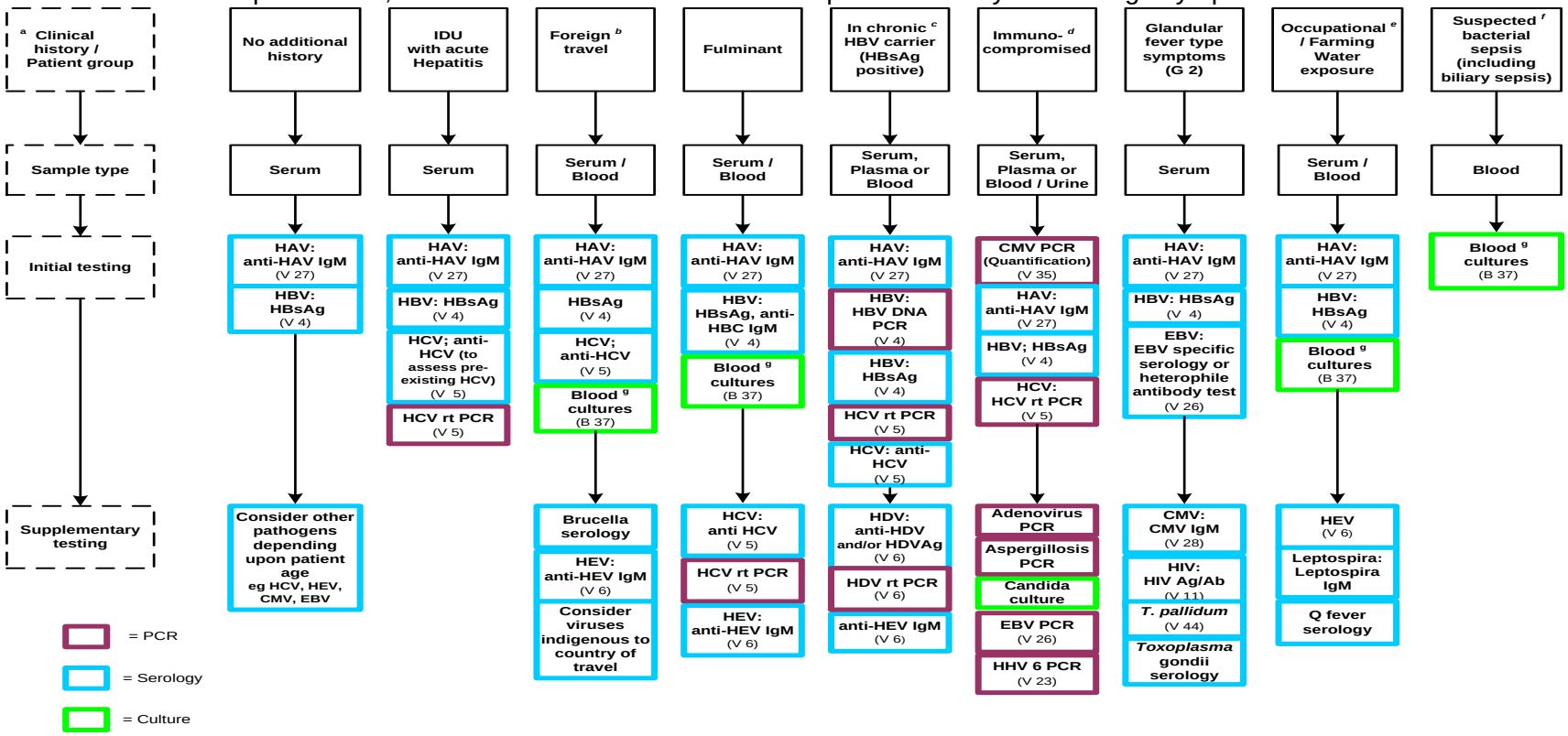
View general information related to UK SMIs.

2 Scientific information

View scientific information related to UK SMIs.

3 Acute Infective Hepatitis (Except Asymptomatic and Neonates)

Clinical features of hepatitis include malaise, fever, jaundice and serum chemical tests revealing evidence of abnormal liver function. An inflammation of the liver can be caused by a number of aetiological agents, including viruses, bacteria, fungi, parasites, drugs and chemicals. Testing is recommended in all patients in whom abnormal liver function tests (LFTs) have been recorded. Abnormal LFTs can be defined as test results that indicate an increase of two times above the upper limit of the locally defined “normal” range of values for liver function tests (LFTs). The most common infectious hepatitis is of viral aetiology. All types of hepatitis are characterised by distortion of the normal hepatic lobular architecture due to varying degrees of necrosis of individual liver cells or groups of liver cells, acute and chronic inflammation, and Kupffer cell enlargement and proliferation. There is usually some degree of disruption of normal bile flow, which contributes to jaundice. The severity of the disease is highly variable and often unpredictable, and it should be noted that acute hepatitis can vary from being asymptomatic to fulminant.

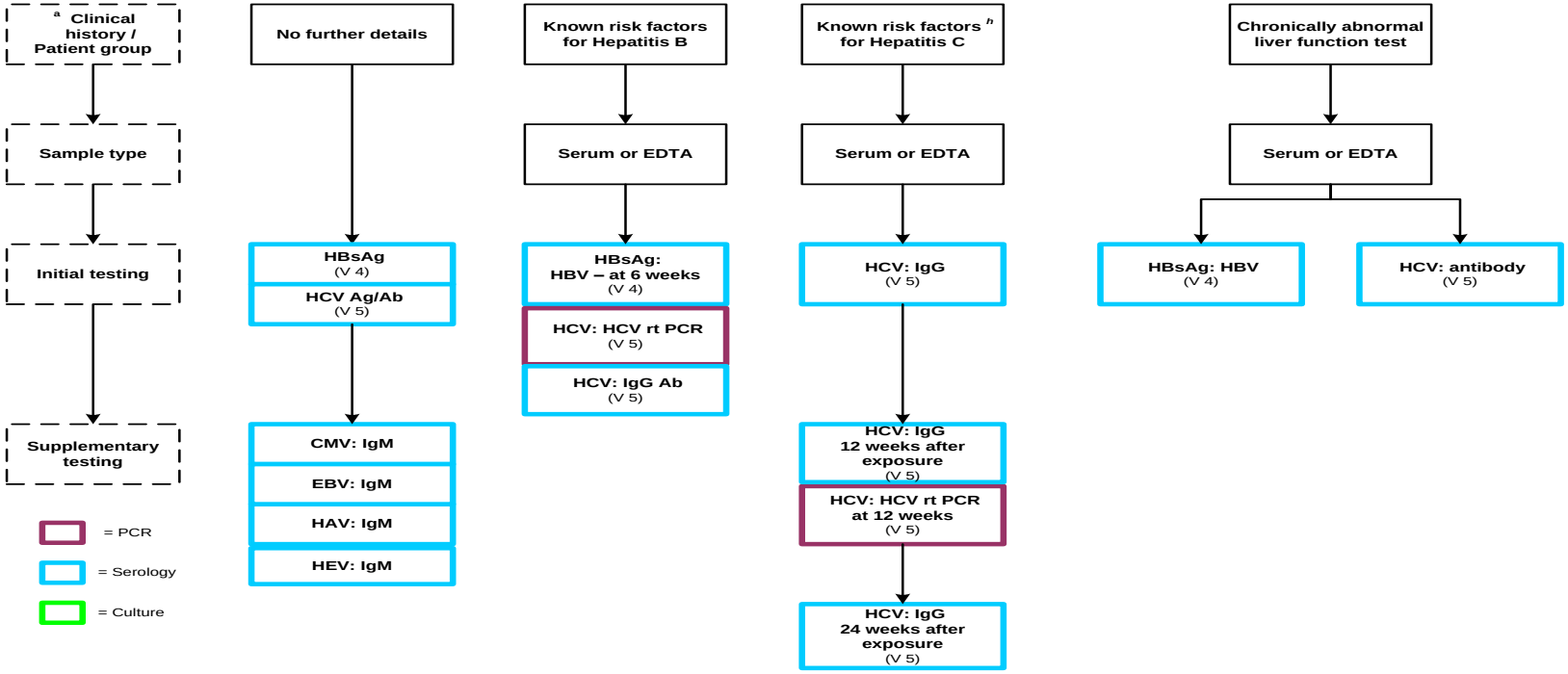


4 Asymptomatic Hepatitis

Liver function tests (LFTs) are often performed as part of a routine set of tests in patients who have no signs or symptoms of liver disease; either as health screening, drug monitoring, or to establish baseline values prior to starting potentially hepatotoxic medications. This can result in the detection of abnormal values in otherwise well patients, and subsequent requests for investigation of possible infective causes. The pattern of abnormalities can indicate the likely cause; however, such information is often unavailable to the microbiology/virology laboratory receiving such requests. The majority of UK patients with persistently abnormal LFTs do have liver disease, most of which is not related to infection.

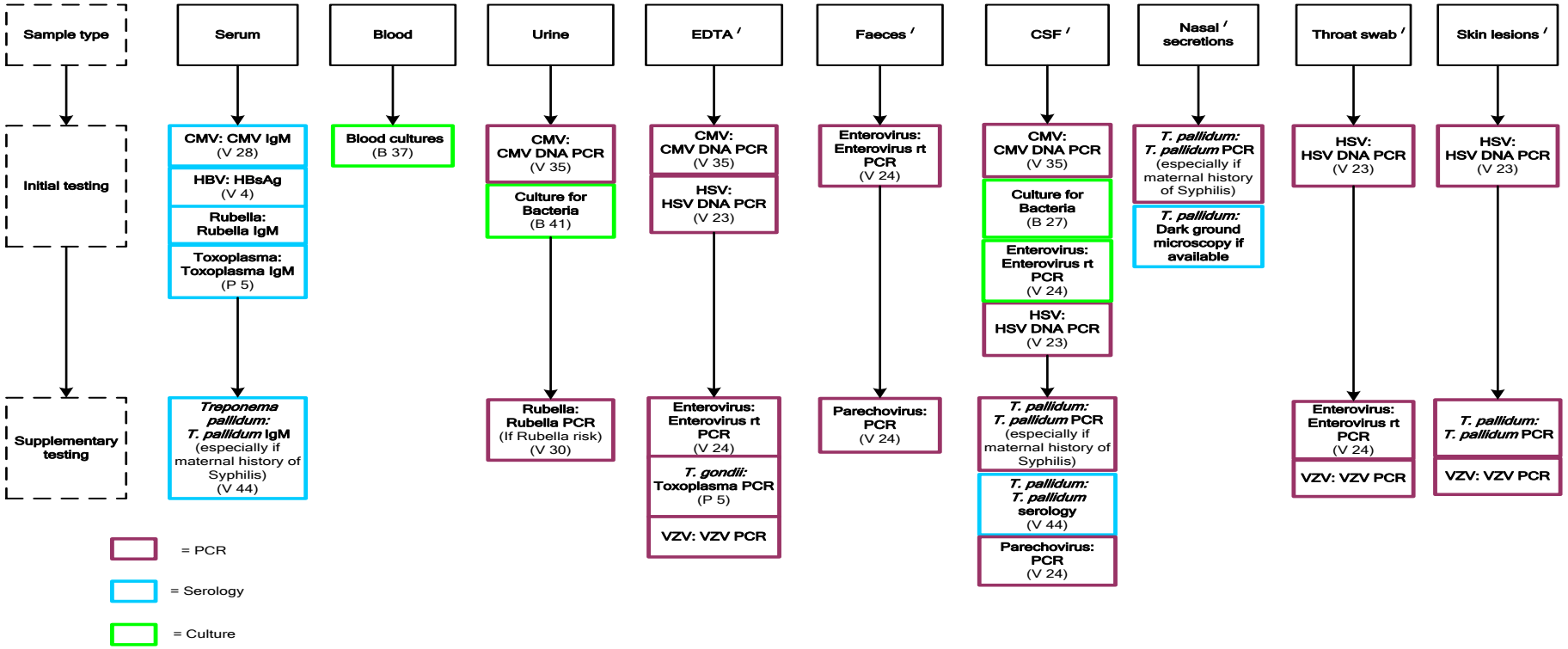
Chronic hepatitis B and hepatitis C may be present for many years without resulting in symptomatic disease, and detection of these infections could lead to successful treatment along with protection of relevant contacts from transmission. The minimum testing required in the setting of clinical details simply stating abnormal LFTs (when it is impractical to gain further information) should therefore be HBsAg and HCV antibody. Testing for other potential infective causes (for example, CMV, EBV, HAV, and HEV) should be based upon local decision.

Note: This algorithm investigates the causes of LFTs above the normal range at the particular time of testing / presentation.



5 Hepatitis in Neonates

Neonatal hepatitis is the term given to non-specific hepatic inflammation which may develop due to many different causes. The pathognomonic signs for this syndrome include conjugated hyperbilirubinaemia, dark urine and pale stools. These signs when presented should be investigated immediately by the liver unit even if awaiting the results of first line investigations. In some cases direct referral to a supra regional liver unit is appropriate to exclude the diagnosis of billary atresia as quickly as possible. Early discussion with the supra regional liver unit is necessary for infants presenting with neonatal liver failure or possible obstruction. Discussion should not be delayed whilst waiting for results of first line investigations. In some cases paediatric gastroenterologists will perform some of the second line investigations depending upon radiological and histopathological expertise. There are also cases when the testing of maternal samples can act as surrogate testing for neonates and/or provide additional information.



Footnotes

a) In all cases testing for hepatitis C should be considered (HCV rtPCR) although it may not be the primary cause of acute hepatitis.

b) Information received must include country, length of stay, date of return, when symptoms manifested and immunisation details.

c) When presented with a patient who is a chronic HBV carrier tests for all viruses should be carried out including the HIV antibody.

d) Must consider underlying conditions, duration and severity.

e) If pig farming then it should be noted that these are recognised reservoirs of Hepatitis E, however, farming is not considered to be of risk.

f) Bacterial sepsis may present as positive cholestatic jaundice, increase in alkaline phosphatase, bilirubin and aminotransferases.

g) With blood cultures consider *Brucella* and other organisms.

h) For known exposure to Hepatitis C then PCR should be carried out at 6, 12 and 24 weeks after exposure.

i) These samples should be taken based upon presenting symptoms and results from previous serology tests.

6 Notification to UKHSA [1,2] or Equivalent in the Devolved Administrations[3-6]

The Health Protection (Notification) regulations 2010 require diagnostic laboratories to notify Public Health England (PHE) when they identify the causative agents that are listed in Schedule 2 of the Regulations. Notifications must be provided in writing, on paper or electronically, within seven days. Urgent cases should be notified orally and as soon as possible, recommended within 24 hours. These should be followed up by written notification within seven days.

For the purposes of the Notification Regulations, the recipient of laboratory notifications is the local PHE Health Protection Team. If a case has already been notified by a registered medical practitioner, the diagnostic laboratory is still required to notify the case if they identify any evidence of an infection caused by a notifiable causative agent.

Notification under the Health Protection (Notification) Regulations 2010 does not replace voluntary reporting to PHE. The vast majority of NHS laboratories voluntarily report a wide range of laboratory diagnoses of causative agents to PHE and many PHE Health protection Teams have agreements with local laboratories for urgent reporting of some infections. This should continue.

Note: The Health Protection Legislation Guidance (2010) includes reporting of Human Immunodeficiency Virus (HIV) & Sexually Transmitted Infections (STIs), Healthcare Associated Infections (HCAIs) and Creutzfeldt–Jakob disease (CJD) under ‘Notification Duties of Registered Medical Practitioners’: it is not noted under ‘Notification Duties of Diagnostic Laboratories’.

Other arrangements exist in Scotland[3,4], Wales[5] and Northern Ireland[6].

7 Public health responsibilities of diagnostic laboratories

Diagnostic laboratories have public health responsibility as part of their duties. Amongst these are additional local testing, or referral to further characterise the organism as required, primarily for public health purposes e.g. routine cryptosporidium detection; serotyping or microbial subtyping; and a duty to refer appropriate specimens and isolates of public health importance to a reference laboratory.

Diagnostic laboratory outputs inform public health intervention, and surveillance data is required to develop policy and guidance forming an essential component of healthcare. It is recognised that additional testing and referral of samples may entail some costs that has to be borne by the laboratory but in certain jurisdictions these costs are covered centrally.

Diagnostic laboratories should be mindful of the impact of laboratory investigations on public health and consider requests from the reference laboratories for specimen referral or enhanced information.

References

An explanation of the reference assessment used is available in the scientific information section on the UK SMI website.

1. Public Health England. Laboratory Reporting to Public Health England: A Guide for Diagnostic Laboratories. 2013. p. 1-37

2. Department of Health. Health Protection Legislation (England) Guidance. 2010. p. 1-112.

3. Scottish Government. Public Health (Scotland) Act. 2008 (as amended).

4. Scottish Government. Public Health etc. (Scotland) Act 2008. Implementation of Part 2: Notifiable Diseases, Organisms and Health Risk States. 2009.

5. The Welsh Assembly Government. Health Protection Legislation (Wales) Guidance. 2010.

6. Home Office. Public Health Act (Northern Ireland) 1967 Chapter 36. 1967 (as amended).