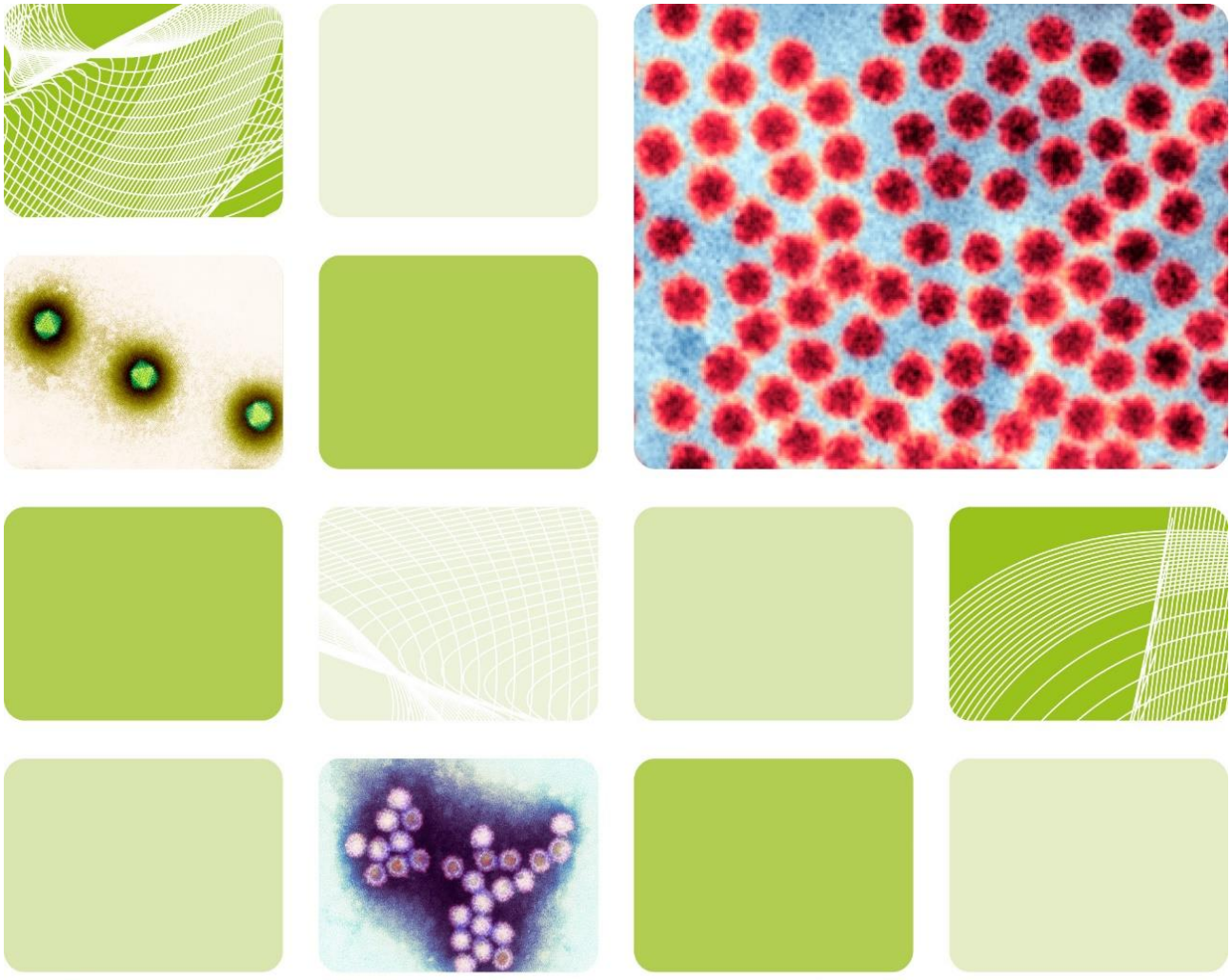
UK Health Security Agency

UK Standards for Microbiology Investigations

Investigation of viral encephalitis



Issued by the Standards Unit, UK Standards for Microbiology Investigations, UKHSA
Virology | V 43 | Issue no: 2.4 | Issue date: 08.05.25 | Page: 1 of 10

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	4/08.05.25
Issue number discarded	2.3
Insert issue number	2.4
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 02/11/2011.** 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.	3/16.04.14
Issue no. discarded.	2.2
Insert Issue no.	2.3
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.	2/02.11.11
Issue no. discarded.	2.1
Insert Issue no.	2.2
Section(s) involved	**Amendment**
Whole document.	Document presented in a new format.
References.	Some references updated.

1 General information

View general information related to UK SMIs.

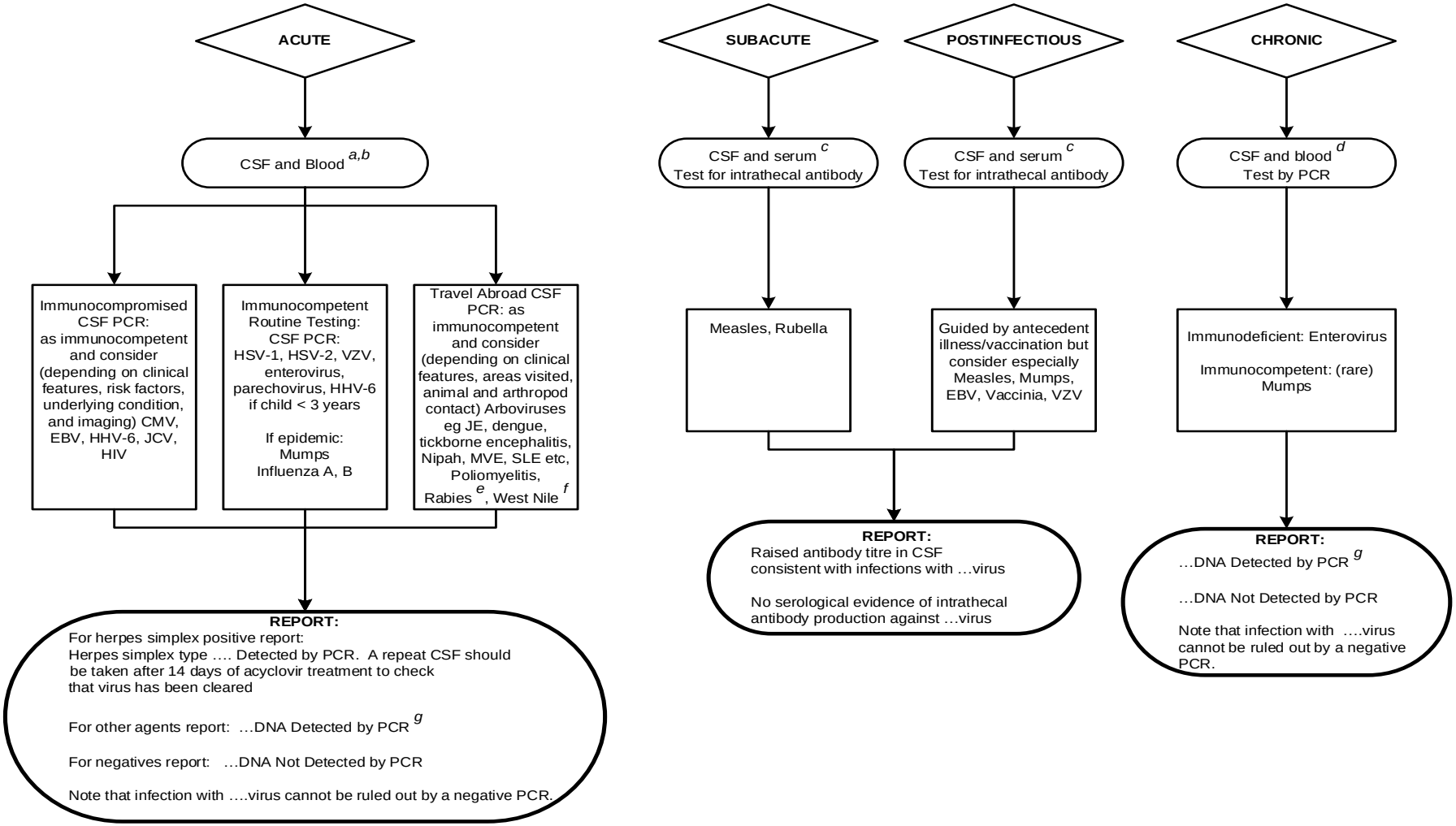
2 Scientific information

View scientific information related to UK SMIs.

3 Investigation of Viral Encephalitis

This algorithm assumes that, when clinically indicated, appropriate investigations will also be carried out by culture, antigen detection, and PCR to exclude bacterial pathogens such as meningococci, pneumococci, *Listeria* etc, Fungal pathogens such as *Cryptococcus* and *Aspergillus*, and parasitic infections such as Toxoplasmosis, Prion diseases may also need to be considered.

3.1 Algorithm - Investigation of Viral Encephalitis



3.2 Footnotes

a) EDTA anticoagulated blood for PCR, especially in testing for neonatal herpes simplex infection.

b) Additional specimens may support a diagnosis without being diagnostic eg faeces virus culture in enterovirus infection, HIV PCR positivity in blood in HIV seroconversion illness, low avidity HHV-6 IgG and positive HHV-6 IgM in serum in a young child.

c) Paired CSF and serum samples are required for the detection of specific intrathecal antibody production.

d) Clotted blood can be used for enterovirus and parechovirus PCR.

e) Consider rabies in areas designated by WHO as ‘rabies-free’, including UK, if contact with a bat.

f) Infections such as West Nile fever may be part of routine testing for surveillance purposes in some non-endemic countries eg UK.

g) Report positive findings to relevant Public Health and surveillance authorities eg SCIEH, UKHSA.

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

The Health Protection (Notification) regulations 2010 require diagnostic laboratories to notify UK Health Security Agency (UKHSA) 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 UKHSA 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 UKHSA. The vast majority of NHS laboratories voluntarily report a wide range of laboratory diagnoses of causative agents to UKHSA and many UKHSA 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’.

Specialist and reference microbiology: laboratory tests and services - GOV.UK

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

5 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). **++**