



Public Health
England

Laboratory reporting to Public Health England

A guide for diagnostic laboratories

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-leading science, research, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health and Social Care, and a distinct delivery organisation with operational autonomy. We provide government, local government, the NHS, Parliament, industry and the public with evidence-based professional, scientific and delivery expertise and support.

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Published October 2020
PHE publications
gateway number: GW-1643

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The purpose of surveillance

Communicable disease surveillance has a number of goals:

Detection

- The early detection of changes in the temporal, geographic and age distribution of new and known diseases that indicate outbreaks of infection, or changes in the pattern of sporadic diseases.

Analysis

- Determining the exposure, prevalence, burden, morbidity, mortality, carriage and long-term trends of infectious diseases.
- The generation of information on changes in the type, pathogenicity and drug resistance of the organisms causing human and animal disease.
- Monitor the use and coverage of an intervention, any adverse events arising from that intervention and the overall impact of disease control measures including immunisation.
- Monitor changes in properties such as prevalence, spatial distribution and time distribution of disease-causing hazards including animal diseases, weather and social factors as well as population vulnerability and susceptibility.

Action

- Enable appropriate and timely action to be taken in order to protect the public health. This will commonly be at the local level closest to the scene of incidents and outbreaks, but in incidents that are more widespread the action may be regional, national or international, for example the COVID-19 pandemic. In rare instances, a single case may require prompt national/international intervention, for example a case of SARS.
- Inform the development of policies to detect new threats and emerging problems, to reduce exposure to a particular hazard or to protect individuals in advance of such exposure. Normally such policies will be developed nationally in the light of trends in disease and the available methods of prevention.

Information

- Building information on the temporal, geographic and population distribution and epidemiology of new, poorly understood and well understood diseases for informing

decision making for public health, health service planning, risk management, research and control priorities.

- Inform key disease eradication or control programs.
- Provide information to support the development of guidance for professionals on the clinical management of individual patients, the choice of the appropriate control strategy and the organisation of services to deliver them to those at risk.
- Ensure that the UK makes its full contribution to European and International efforts to protect health.
- Informing the public about the risks to individuals and the general public.

In order to meet these surveillance objectives, it is essential that coverage of laboratory reporting is complete and the information provided is accurate and timely. This document sets out standards and procedures that will enable the organisations to meet the laboratory reporting surveillance requirements of Public Health England and the Health Protection (Notification) Regulations 2010.

Health protection (notification) regulations 2010

Since October 2010 the Health Protection (Notification) Regulations (2010) have required diagnostic laboratories to notify PHE of the identification of specified causative agents in a human sample (from live or deceased patients) within 7 days, where causative agent can be taken to mean:

- a causative agent listed in Schedule 2 of the Regulations (and replicated in Appendix 1)
- evidence of an infection caused by such an agent

It should be noted, however, that the existing voluntary reporting includes a more comprehensive list of causative agents than that in the Notification Regulations, and notification under these Regulations does not replace voluntary reporting to PHE, which should continue.

The legal responsibility to ensure that laboratory notification is carried out in accordance with the Notification Regulations rests with the corporate body that operates the testing service, the director of the laboratory or the relevant persons providing the diagnostic test.

Further guidance on the health protection legislation can be found on the Department of Health's archived website¹.

1

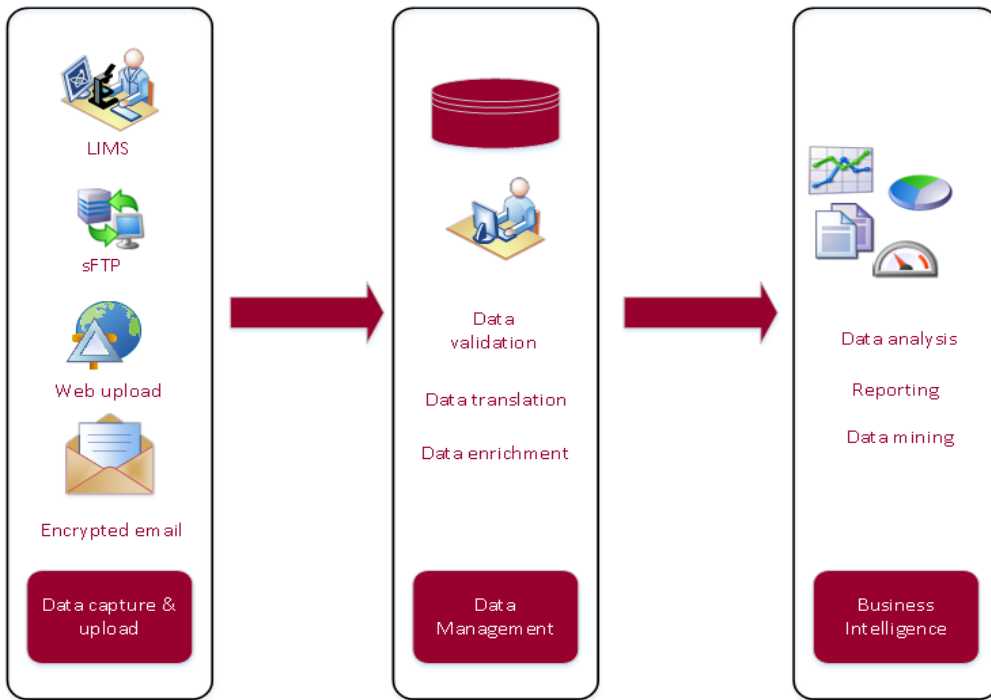
http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_114510

PHE surveillance systems

Second generation surveillance system

The Second Generation Surveillance System (SGSS) is an application that stores and manages data on laboratory isolates and notifications, and is the preferred method for capturing routine laboratory surveillance data on infectious diseases and antimicrobial resistance from diagnostic laboratories across England. The data is stored in a central database within PHE, and made available to a wide range of users within and outwith the organisation, subject to robust access control mechanisms.

Flowchart: Role-based access security model



The flowchart shows that results generated by the Laboratory Information Management System (LIMS) can be sent to SGSS via different routes (that is, sFTP, web upload or encrypted email). Data Management processes then occur, which include validation, translation of local codes and data enrichment. Finally, the data is made available to the Business Intelligence software for analysis, reporting and data mining.

Lablink+ software enables Communicable Disease Report (CDR) and Antimicrobial Resistance Reports (AMR) reports to be transferred from laboratory information systems (LIMS) and the sent to SGSS via sFTP. It is also possible to upload the reports directly to SGSS using the application’s user interface, and there is provision to send data in the legacy encrypted CoSurv format.

Once the reports have been loaded into SGSS, each record is subject to a number of validation processes, and local LIMS codes are translated to SGSS codes to standardise the data for analysis. Patient data is validated against the Demographic Batch Service (DBS), and the record is updated with additional data received from the Spine.

CDR records are transformed into cases using the OPIE principle (explained further in in this document) through a deduplication process, before the data is loaded into a data warehouse for further analysis. AMR data is stored at a test level.

Positive COVID-19 test results are sent multiple times a day from SGSS to the CTAS system to provide information for NHS Test & Trace.

Caldicott and data protection

In order to achieve the objectives described on page 4 of this document, Communicable Disease Surveillance needs to contain some patient identifiers in order to:

- enable duplicate reports from the same patient to be identified and avoid over-estimation of disease prevalence
- enable appropriate follow up to be undertaken with the reporting laboratory
- enable outbreak investigation to be undertaken (geographic mapping from post code or part post code)
- detect geographical and temporal clusters cases that may represent an outbreak (geographic mapping from postcode)
- examine association between environmental factors such as rainfall and animal population (geographic linkage to other datasets from postcode)
- establish linkage, when appropriate and justified, with the reference laboratory data on the organism concerned

PHE undertakes to handle these data in accordance with the Data Protection Act 2018, General Data Protection Regulations (GDPR) and the Caldicott Guidelines. Specifically we undertake to ensure that:

- personal identifiers for the minimum time period are held consistent with their public health purpose
- access controls to databases are restricted to named individuals with a need to know
- postcode data is held in a way that individual patients cannot be traced but linkage to Geographical Information Systems, census and other datasets is retained
- patient identifying data are not transmitted to others outside PHE without review of the legal purpose of the data sharing

Data containing any personal identifiers being transmitted to PHE electronically should be encrypted. This happens automatically for all data sent via sFTP using the secure FTP protocol across N3 or the internet, and the SGSS web application uses 256 bit SSL encryption.

PHE takes the Caldicott requirements very seriously and ensures that, in all areas of activity, its work is consistent with both the Caldicott guidelines and the Data Protection Act. Approval needs to be applied for on an annual basis and our cover under Section 251 of the NHS Act (2006) is dependent on continued adherence to high quality data handling standards.

Organism

A record within the CDR component of SGSS is based upon the OPIE principle (Organism-Patient-Illness-Episode). OPIEs record episodes of infection whereby an episode constitutes each positive organism in a patient in a defined period of time. If an individual is infected by 2 different organisms (including 2 different sub-types of a single species) at the same time, that individual will be represented by 2 distinct OPIEs. Similarly, if an individual is infected on 2 separate occasions by the same organism (with recovery implied between those 2 episodes of infection) they will be represented by 2 distinct OPIEs.

The default episode length is 2 weeks, with the exception of *Clostridium difficile* - 4 weeks, Influenza A - 6 weeks², *Salmonella* spp -13 weeks, *Mycobacterium* spp - 26 weeks, Hepatitis B & C, HIV, HTLV and Creutzfeld-Jakob agent which have indefinite episode lengths. SARS-COV-2 currently has an indefinite episode length, but this is under continuous review the virus becomes better understood.

² The Influenza A episode period is set at 6 weeks to capture, within the same episode, the serology test requested for Avian Influenza at 28 days.

UK standards for microbiology investigations

The UK Standards for Microbiology Investigations (SMIs) are a comprehensive referenced collection of over 200 clinical microbiology Standard Operating Procedures, algorithms (for virology and serology), and guidance notes.

SMIs promote high quality practices and help to assure the comparability of diagnostic information obtained in different laboratories. This in turn improves denominator data and facilitates standardisation of surveillance. The methods are well referenced and represent a good minimum standard for clinical and public health microbiology. In using SMIs laboratories should also take account of local requirements and may need to undertake additional investigations.

Development of UK Standards for Microbiology Investigations (SMIs) are undertaken through the following working groups:

- the steering committee for the UK standards for microbiology investigations
- the UK standards for microbiology investigations – joint working group for syndromic algorithm
- the UK standards for microbiology investigations – working group for microbiology standards in clinical bacteriology
- the UK standards for microbiology investigations – working group for microbiology standards in clinical virology/serology

UK standard for microbiology investigations (SMIs) are discussed and approved by members of the SMI working groups at meetings through open debate. SMIs take into account the best options for patient care and management, and decisions are reached by consensus although the option is available to vote on proposals. Before being issued, SMIs are edited by a medical editor and the chairs of the working groups. NHS Evidence has accredited the process to produce SMIs. The accreditation is applicable to all guidance produced since October 2009 using the SMI development processes. Accreditation is valid for 5 years from July 2011. The process for the development of SMIs is certified to ISO 9001:2008.

They may be accessed from www.gov.uk/government/collections/standards-for-microbiology-investigations-smi

How to report

Submit laboratory reports to PHE either as electronic files:

- in the Lablink+ format described in Appendix 6, sent via secure sFTP.
- in the SGSS Excel template or the SGSS disease/test specific template, sent via secure sFTP.
- in the Lablink+ format described in Appendix 6 or SGSS template formats described above, uploaded directly to SGSS via the web application. By directly entering the data into the forms on the SGSS web application

Contact the regional SGSS support specialist to discuss electronic file transmission. Contact details are in Appendix 5

Note:

Laboratories may send reports to PHE in more than one of the formats outlined above, but only one report of any particular episode of illness due to a specific organism should be sent.

It is understood that private laboratories rapidly set up to support testing for the COVID-19 pandemic do not always have established systems report results to PHE, however, there is a legal requirement to report. Laboratories in this situation should contact the relevant office listed in Appendix 5 or sgss.helpdesk@phe.gov.uk to discuss directly how to report.

Point of care testing results must also be reported to PHE, instructions on how to facilitate this can be obtained by contacting poct.contact@phe.gov.uk, with a description of the proposed testing programme.

When to report

Diagnostic laboratories are required to notify PHE of the identification of the causative agents specified in Appendix 1 within a maximum 7 days, but daily reporting is preferred to enable timely public health action. COVID-19 positive test results should be reported with 24 hours, 7 days a week, so that timely contact tracing can be employed to prevent onward spread of the virus, and if possible multiple times per day.

Local Health Protection Teams (HPTs) should be notified of urgent cases as soon as reasonably practicable after the identification of the causative agent. This should be done orally, usually by telephone. It is recommended that this should always be done within 24 hours. Urgent oral notification should be followed up by written notification within 7 days of identification of the causative agent.

In determining whether a case is urgent, factors that should be considered include the:

- nature of the causative agent, for example a rare and/or re-emerging disease
- ease of spread of that causative agent, including the infectiousness of cases and route of transmission
- ways in which the spread of the causative agent can be prevented or controlled, taking into account, for example, immunisation, isolation and prophylactic treatment
- nature of the disease it causes, including morbidity and case-fatality
- specific circumstances of the case which might represent particular risks, such as occupation, age and sex – it may be relevant, for example, if a patient is a healthcare worker, a child attending nursery or a woman of child-bearing age

Overall, the key consideration will be the likelihood that an intervention is needed to protect human health and the urgency of such an intervention.

All other reports should be made as soon as possible after the organism has been identified, preferably at the same time that the laboratory report is being issued to the requester. Any subsequent information should be reported by updating the original record on SGSS. Reports should be made no later than 6 months after identification. If circumstances exist where reports older than 6 months will be made, please discuss this with your local SGSS support specialist.

Who reports

In most cases the source laboratory or testing service (for example, providers of Point-of-Care tests) will report to the PHE when they first receive the clinical specimen from which an organism is cultured or otherwise identified. In some cases the source laboratory will refer the specimen to a reference laboratory, which provides specialist diagnostic or typing services for specific organisms. The reporting laboratory is the laboratory submitting the report to PHE. All reports to PHE must identify the source and reporting laboratories (which will usually be the same) and where appropriate, the reference laboratory.

Note:

If the source laboratory refers a specimen to another laboratory (for whatever reason) a clear agreement as to which laboratory will report the specimen to PHE will be needed and communicated to the PHE FS team (see Appendix 8). Such an arrangement is necessary to minimise the chance of both or neither laboratory submitting the report. Normally the source laboratory will do the reporting, and, for the organisms specified in Appendix 1, it is the source laboratory's legal responsibility to ensure the case is notified to PHE. The day of identification for notification purposes is taken as the day on which the source laboratory becomes aware of the identification of the organism by the other laboratory.

What to report

Organisms/infections to be reported

The CDR extract should have:

- all organisms specified in Schedule 2 of the Health Protection (Notification) Regulations 2010, and listed in Appendix 1 of this document
- all clinically significant infections caused by the organisms listed in Appendix 2
- all clinically significant isolates from sterile sites such as blood, CSF, joint fluids, bone, pleural and pericardial fluids, heart valves, and abscesses in the brain, liver and spleen – Appendix 3 lists further sterile sites that may be considered to indicate invasive disease
- every organism causing meningitis or encephalitis
- every organism causing haemorrhagic fever
- asymptomatic infections when of clinical or epidemiological relevance (for example viral infections in pregnancy, asymptomatic individuals associated with outbreaks, asymptomatic persons infected with HIV, *Legionella pneumophila*, or *Salmonella typhi*)

Due to surveillance requirements in advance of and during pandemic influenza, laboratories are now requested to report isolates and susceptibility test information for *Streptococcus pneumoniae*, *Haemophilus influenzae* and *Staphylococcus aureus* from lower respiratory tract sites including sputum when this information can be provided automatically (recognising that with the increase in reports, those laboratories that report manually may not be able to provide these data).

Surveillance requirements during the COVID-19 pandemic require testing services to report positive and negative results of tests seeking to detect SARS-CoV-2 (genes, antigen or antibody) and influenza virus.

In accordance with amendments to the Health Protection (Notifications) Regulations 2010, from 1 October 2020 the AMR extract should include:

- all reports of bacteria that have tested positive for an acquired carbapenemase (identified either locally or at the national reference laboratory)
- all reports of bacteria that have antimicrobial test results (from 1 October 2020 diagnostic laboratories have a duty to report antimicrobial susceptibility results for all causative agents listed in Schedule 2) – all antibiotic susceptibility results should be included, including those suppressed on the LIMS
- any resistance mechanism(s) identified in any of causative agents listed in Schedule 2

Organisms/infections not to be reported in CDR extract

- *neisseria meningitidis* identified in a throat swab should not be reported unless associated with invasive disease in that individual
- uncomplicated urinary tract infections unless caused by organisms listed in Appendices 1 or 2
- the isolation of BCG from immunisation sites unless associated with extensive local or disseminated BCG infection

Note:

If a single organism is identified in different specimen types, report it only once, listing each specimen type from which it was identified during that episode. If different organisms are identified as co-infections in the same patient they should all be reported separately.

Report infections identified in mothers and their babies or foetuses as separate infections by cross-referencing to the other report, using the following appropriate feature description; child of infected mother; contact of case; maternal infection; perinatal transmission; pregnant and feature comment field if necessary.

What information a report should contain

Core data

The following core surveillance data are required on all reports submitted to PHE.

Fields marked with an * are mandatory.

- **Source Lab:** ideally always be specified
- **Reference Lab:** if relevant
- **Reporting Lab*:** must always be specified, will usually be source lab, in some cases reference lab
- **Patient identification*:** - one of the following must be present:
 - Patient's surname and initial[†] or soundex code and initial
 - Patient's Hospital number (Patient PID no.)
 - Patient's NHS number[†]

AMR data should contain either patient hospital number or NHS number

- **Date of birth (DOB)* †:** the patient's DOB where known or patient's age
- **Sex*†:** male, female or not known
- **Organism*†:** the full organism name and any typing results, or the description of the illness (for example, toxic shellfish poisoning)
- **Date of onset:** (dd/mm/yyyy format) the date of onset of the illness caused by the organism being reported
- **Specimen type(s)*†:** for example CSF, blood, sputum, serum (where the diagnosis is based on serology, please use serum as the specimen type)
- **Specimen date(s)*†:** (dd/mm/yyyy format): the date the specimen was collected from the patient. If this is not known, use the date the specimen was received at the source laboratory
- **Identification method(s):** the method used to identify the organism
- **Postcode†:** the full postcode of the patient residence
- **Ethnicity†:** required under the Race Relations Amendment Act 2001

In addition to the items marked †, for notifications of organisms listed in Appendix 1 insofar as it is known, the following information must also be provided to PHE:

- name and address of the diagnostic laboratory
- patient's home address
- patient's current residence (if not home address)
- name, address and organisation of the person who solicited the test which identified the causative agent.
- Indicate if a patient is a Care Home resident
- Indicate if patient is a Health Care Worker
- any antimicrobial susceptibility test result and resistance mechanism(s) identified

AMR data also requires the requesting organisation details. This is used by SGSS to indicate the source of the specimen and includes where the requesting organisation of the specimen is:

- a GP **Practice** the pathology system code will be translated to the NHS Organisation Data Service (ODS)_practice code
- an acute hospital the pathology system code will be translated to the ODS site code
- a community hospital the pathology system code will be translated to the ODS Site code

Organism-specific data

The following surveillance data are requested on all reports submitted to PHE:

- for SARS-CoV-2 antibody and antigen test results each report should contain appropriate information on the testing method used (that is, test manufacturer and model designation of device)
- each Hepatitis B report to contain information on whether the case is acute or chronic, and/or if the antibody to core IgM is positive or negative
 - **Note:** The suggested case definitions for Hepatitis B are:
Acute - HBsAg positive **and** anti-HBc IgM positive **and** abnormal liver function tests with a pattern consistent with acute viral hepatitis. Associated risk factors should be reported for all acute infections (Appendix 4).
Chronic - HBsAg positive twice at least 6 months apart **or** HBsAg positive **and** anti-HBc IgM negative **and** anti-HBc positive. Please also indicate when occurring in risk groups such as pregnant women and health care workers (Appendix 4).
- each Hepatitis C report to contain information on the result for the Hepatitis C core antigen (HCV AG) and/or the HCV RNA (which is usually detected by PCR test) – the feature codes HCV AG and HCV RNA should be used to capture these results
- *clostridium difficile* reports should indicate whether identified by toxin detection or culture of the organism
- *corynebacterium diphtheriae* whether toxigenic & non-toxigenic
- Enteric *Escherichia coli* with the serotype specified
- plasmodium reports should specify the species
- all cases of acute infectious syphilis (primary, secondary or early latent in the first 2 years) confirmed by the reference laboratory

In addition to normal communicable disease reporting via SGSS there is a need to urgently inform the local Health Protection Team who would be expected to inform Colindale about conditions with severe or unusual presentations or of public or professional concern, for example toxic shock syndrome, toxic food poisoning, serious cellulitis, gangrene, or infections that could indicate potential terrorist threat (for example anthrax, tularemia).

Augmented surveillance data

PHE has established a number of programme areas to tackle infectious disease priorities. These currently include:

- health-care associated infections and antimicrobial resistance
- gastrointestinal
- Hepatitis B and C
- HIV and sexually transmitted disease

- Vaccine-preventable diseases
- pandemic influenza
- tuberculosis
- emerging health threats
- deliberate release

Surveillance is conducted for diseases other than those covered by programmes and the routine generic reporting provided by the CDR system ensures that there is a safety net able to detect incidents or increases across the broad number of infections covered by CDR.

For many organisms, certain clinical and epidemiological data represent important useful information. Inclusion of such data where laboratories have them is welcomed by PHE, but is not considered a mandatory part of the laboratory report. When these data are recorded on request forms PHE would welcome their inclusion in electronic outputs via Lablink as comment fields. In the future, when pathology and clinical systems may be more closely linked, PHE would welcome the reporting of the following clinical and epidemiological features in a codified manner.

Epidemiological features/Risk factors	Clinical/syndrome features
Recent travel abroad (within 1 year prior to infection) including dates and reasons for travel ¹	Died
Resort country (where they have resided /travelled) ¹	Bacteraemia
Patient country (of birth) and dates they first arrived in the UK ¹	Conjunctivitis
Outbreak	Bronchiolitis
Hospital acquired	Arthritis
Sexual orientation	Meningitis
Animal contact	Invasive
Transplant recipient	Pneumonia
Blood recipient	Croup
Vaccine status ²	Enteric fever
Immunocompromised	HUS (Haemolytic Uraemic Syndrome)
Pregnancy	Asymptomatic
Injecting drug use	
Congenital infection	
Food source/vehicle	
Transmission agent (person to person, waterborne, animal, foodborne)	

Notes:

¹ It is increasingly important to capture information on imported infections in migrants and/or travellers because of changes in global epidemiology and travel patterns. For a wide range of infections SGSS is the only way in which information about travel and migration history can be captured. This information helps to target appropriate public health action.

² All vaccine preventable diseases are under enhanced surveillance and laboratories may be contacted for further details about the patient if key information is not supplied as PHE are required to follow up most cases.

Antimicrobial susceptibilities

Please report antibiotic susceptibility results via susceptibility section for all bacterial infections, noting the following:

- extended-spectrum Beta-Lactamases (ESBLs) reports – If there is confirmatory evidence that the isolate is an ESBL producer then please record in the antibiotic field using the “EXTENDED SPECTRUM B-LACTAMASE” entry. Identify ESBL producers with a result of ‘R’ (Resistant) and non-producers as ‘S’ (Susceptible)
- for Enterococci – please report, if available, susceptibility results for high-level gentamicin (for example, disc content of 200 micrograms) to differentiate from inherent resistance (for example, disc content of 10 micrograms). These reports should be reported selecting the antibiotic field entry “HIGH LEVEL GENTAMICIN”
- reporting of antifungal susceptibility results are also welcome

Appendix 1: notifiable organisms

Causative Agents listed in Schedule 2 of the Health Protection (Notification) Regulations 2010

Note: These organisms must be reported to PHE within 7 days

Viral infections	Infections to be reported	Clinical and/or risk factor data requested as	Enhanced surveillance in place	Likely to be urgent?
Chikungunya virus	All			No, unless thought to be UK acquired
Crimean-Congo Haemorrhagic Fever virus	All			Yes
Dengue virus	All			No, unless thought to be UK acquired
Ebola virus	All			Yes
Guanarito virus	All			Yes
Hanta virus	All			No, unless thought to be UK acquired
Hepatitis A	All	√	√	All acute cases and any chronic cases who might represent a high risk to others, such as healthcare workers who perform exposure-prone procedures
Hepatitis B	All	√	√	
Hepatitis C	All	√	√	
Hepatitis Delta	All			
Hepatitis E	All	√	√	
Influenza virus	All	√		
Junin virus	All			Yes

Viral infections	Infections to be reported	Clinical and/or risk factor data requested as	Enhanced surveillance in place	Likely to be urgent?
Kyasanur Forest disease virus	All			Yes
Lassa virus	All			Yes
Machupo virus	All			Yes
Marburg virus	All			Yes
Measles	All	√	√	Yes
Mumps	All	√	√	No
Omsk Haemorrhagic fever virus	All			Yes
Polio virus	All	√		Yes
Rabies virus	All	√		Yes
Rift Valley fever virus	All			Yes
Rubella virus	All	√	√	No
Sabia virus	All			Yes
SARS coronavirus	All			Yes
SARS-CoV-2	All			Yes
Varicella zoster virus	All			No
Variola virus	All			Yes
West Nile virus	All			No, unless thought to be UK acquired
Yellow Fever virus	All			No, unless thought to be UK acquired

Bacterial infections	Infections to be reported	Clinical and/or risk factor data requested as part of report	Enhanced Surveillance in place	Likely to be urgent?
Acquired carbapenemase-producing Gram-negative bacteria	All (including screening specimens)			No, unless part of a known cluster
<i>Bacillus anthracis</i>	All			Yes
<i>Bacillus cereus</i>	Food poisoning and invasive disease			No, unless part of a known cluster
<i>Bordetella pertussis</i>	All	√		Yes if diagnosed during acute phase
<i>Borrelia</i> spp	All			No
<i>Brucella</i> spp	All			No, unless thought to be UK acquired
<i>Burkholderia mallei/pseudomallei</i>	All			Yes
<i>Campylobacter</i> spp	All			No, unless part of a known cluster
<i>Chlamydophila psittaci</i>	All			Yes if diagnosed during acute phase or part of a known cluster
<i>Clostridium botulinum</i>	All	√		Yes
<i>Clostridium perfringens</i>	Food poisoning			No, unless known to be part of a cluster
<i>Clostridium tetani</i>	All	√		No, unless associated with injecting drug use
<i>Corynebacterium diphtheriae</i>	All	√		Yes
<i>Corynebacterium ulcerans</i>	All	√		Yes

Bacterial infections	Infections to be reported	Clinical and/or risk factor data requested as part of report	Enhanced Surveillance in place	Likely to be urgent?
<i>Coxiella burnetii</i>	All			Yes if diagnosed during acute phase or part of a known cluster
<i>Francisella tularensis</i>	All			Yes
<i>Haemophilus influenzae</i>	Invasive disease	√		Yes
<i>Legionella</i> spp	All	√	√	Yes
<i>Leptospira interrogans</i>	All			No
<i>Listeria monocytogenes</i>	All			Yes
<i>Mycobacterium tuberculosis</i>	All			No, unless healthcare worker or suspected cluster or multi-drug resistance
<i>Neisseria meningitidis</i>	Invasive disease			Yes
<i>Rickettsia</i> spp	All			No, unless thought to be UK acquired
<i>Salmonella</i> spp	All			Yes, if <i>S. Typhi</i> or <i>S. Paratyphi</i> or suspected outbreak or food handler or closed communities such as care homes. No, if sporadic case of other <i>Salmonella</i> species
<i>Shigella</i> spp	All			Yes, except <i>Sh. Sonnei</i> unless suspected outbreak or food handler or

Bacterial infections	Infections to be reported	Clinical and/or risk factor data requested as part of report	Enhanced Surveillance in place	Likely to be urgent?
				closed communities such as care homes
<i>Streptococcus pneumoniae</i>	Invasive disease	√	√	No, unless part of a known cluster
<i>Streptococcus pyogenes</i>	Invasive disease			Yes
Verocytotoxigenic <i>Escherichia coli</i>	All		√ for O157	Yes
<i>Vibrio cholerae</i>	All			Yes
<i>Yersinia pestis</i>	All			Yes

Protozoa infections	Infections to be reported	Clinical and/or risk factor data desirable as part of report	Enhanced Surveillance in place	Likely to be urgent?
Cryptosporidium	All			No, unless part of a known cluster, known food handler or evidence of increase above expected numbers
<i>Entamoeba histolytica</i>	All			No, unless known to be part of a cluster or known food handler
<i>Giardia lamblia</i>	All			No, unless part of a known cluster, known food handler or evidence of increase above expected numbers

Protozoa infections	Infections to be reported	Clinical and/or risk factor data desirable as part of report	Enhanced Surveillance in place	Likely to be urgent?
<i>Plasmodium falciparum, vivax, ovale, malariae, & knowlesi</i>	All			No, unless thought to be UK acquired

Appendix 2 – core organisms

Core organisms. Report all clinically significant identifications unless specified.

Notes:

- these lists are not definitive, and do not include the notifiable organisms, which can be found in Appendix 1
- invasive disease is defined as isolation of the organism, from blood culture, CSF or other normally sterile body site (Appendix 3)

Viral infections	Infections to be reported	Clinical and/or risk factor data requested as part of report	Enhanced surveillance in place
Adenovirus	All		
Arbovirus	All		
Astrovirus	All		
Calicivirus	All		
Coronavirus	All		
Cowpox	All		
Coxsackie virus	All		
Cytomegalovirus	All		
Echovirus	All		
Enterovirus	All		
Epstein-Barr virus (EBV)	All		
Herpes simplex virus	All		
HIV	All	√	√
Human T-cell lymphoma virus (HTLV)	All	√	
Lymphocytic choriomeningitis virus	All		
Norovirus	All		
Orf/paravaccinia	All		
Papillomavirus	All		
Papovavirus	All		
Parainfluenza	All		
Parvovirus B19	All	√	
Polyomavirus	All		
Reovirus	All		
Respiratory syncytial virus (RSV)	All		

Viral infections	Infections to be reported	Clinical and/or risk factor data requested as part of report	Enhanced surveillance in place
Rhinovirus	All		
Rotavirus	All		√
Sapovirus	All		

Bacterial infections	Infections to be reported	Clinical and/or risk factor data desirable as part of report	Enhanced surveillance in place
<i>Acinetobacter</i> spp	Invasive disease		
<i>Actinomyces</i> spp	All		
<i>Aeromonas</i> spp	Invasive disease		
<i>Bartonella</i> spp	All	√	
<i>Chlamydia pneumoniae</i>	All		
<i>Chlamydia trachomatis</i>	All		
<i>Citrobacter</i> spp	Invasive disease		
<i>Clostridium difficile</i>	All		
<i>Clostridium perfringens</i>	All		
<i>Clostridium</i> spp	Invasive disease		
<i>Coxiella</i> spp	All		
<i>Enterobacter</i> spp	Invasive disease		
<i>Enterococcus</i>	Invasive disease		
<i>Erysipelothrix</i> spp	All		
<i>Escherichia coli</i> spp	All enteric infections and invasive disease		√ for O157
<i>Klebsiella</i> spp	Invasive disease		
<i>Leptospira</i> spp	All		
<i>Listeria</i> spp	All	√	√
<i>Lymphogranuloma venereum</i> (LGV)	All		√
<i>Morganella morganii</i>	Invasive disease		
<i>Mycobacterium</i> spp	All	√	√
<i>Mycoplasma</i> spp	All		
<i>Neisseria gonorrhoeae</i>	All		
<i>Nocardia</i> spp	All		
<i>Pasteurella</i> spp	Invasive disease		

Bacterial infections	Infections to be reported	Clinical and/or risk factor data desirable as part of report	Enhanced surveillance in place
<i>Plesiomonas</i> spp	All enteric infections and invasive disease		
<i>Proteus</i> spp	Invasive disease		
<i>Providencia</i> spp	Invasive disease		
<i>Pseudomonas</i> spp	Invasive disease		
<i>Serratia</i> spp	Invasive disease		
* <i>Staphylococcus aureus</i>	Invasive disease	√	√
<i>Staphylococcus</i> spp	Invasive disease	√	
<i>Stenotrophomonas maltophilia</i>	Invasive disease		
<i>Streptobacillus moniliformis</i>	All		
<i>Streptococcus</i> spp	Invasive disease	√	
<i>Treponema pallidum</i>	All	√	√
<i>Treponema</i> spp	All		
<i>Vibrio</i> spp	All		
<i>Yersinia</i> spp	All		

* For those laboratories able to provide data automatically reports are additionally requested from lower respiratory tract sites

Fungal infections**	Infections to be reported	Clinical and/or risk factor data desirable as part of report	Name transmitted
<i>Absidia</i> spp	All		
<i>Acremonium</i> spp	All		
<i>Alternaria</i> spp	All		
<i>Aspergillus</i> spp	Invasive Disease		
<i>Blastomyces</i> spp	All		
<i>Candida</i> spp	Invasive disease		
<i>Coccidioides</i> spp	All		
<i>Cladophialophora</i> spp	All		
<i>Cryptococcus</i> spp	All		

Fungal infections**	Infections to be reported	Clinical and/or risk factor data desirable as part of report	Name transmitted
<i>Curvularia</i> spp	All		
<i>Epidemophyton</i> spp	All		
<i>Exophiala</i> spp	All		
<i>Exerohilum</i> spp	All		
<i>Fusarium</i> spp	All		
<i>Histoplasma</i> spp	All		
<i>Microsporium</i> spp	All		
<i>Paracoccidioides</i> spp	All		
<i>Penicillium marneffii</i>	All		
<i>Phialophora</i> spp	All		
<i>Pichia</i> spp	All		
<i>Pneumocystis</i> spp	All		
<i>Rhizomucor</i> spp	All		
<i>Rhizopus</i> spp	All		
<i>Rhodotorula</i> spp	All		
<i>Saccharomyces</i> spp	All		
<i>Scedosporium</i> spp	All		
<i>Scopulariopsis</i> spp	All		
<i>Sporothrix</i> spp	All		
<i>Trichophyton</i> spp	All		
<i>Trichosporon</i> spp	All		

** Manual reporters should prioritise reports of invasive infections.

Protozoa infections	Infections to be reported	Clinical and/or risk factor data desirable as part of	Enhanced Surveillance in place	Name transmitted
Acanthamoeba	All			
Cyclospora	All			
Hartmannella	All			
Leishmania	All			
Naegleria	All			
Plasmodium spp	All			
Toxoplasma	All			
<i>Trichomonas</i> spp	All			

Protozoa infections	Infections to be reported	Clinical and/or risk factor data desirable as part of	Enhanced Surveillance in place	Name transmitted
Trypanosoma	All			

Helminths infections	Infections to be reported	Clinical and/or risk factor data desirable as part of	Enhanced Surveillance in place	Name transmitted
Clonorchis	All			
Diphyllobothrium	All			
Dracunculus	All			
Gnathostoma	All			
Hymenolepis	All			
Echinococcus	All			Granulosus only
Fasciola	All			
Filaria	All			
Hookworm	All			
Schistosoma	All			
Strongyloides	All			
Taenia	All			
Toxocara	All			
Trichuris	All			

Appendix 3 – sterile sites

BLADDER	LUNG
BLOOD/BLOOD COMPONENTS	LYMPH NODE
BONE	OVARY/FALLOPIAN TUBE
BONE MARROW	OCULAR FLUID
BRAIN	PANCREAS
CSF	PERITONEUM
FASCIA/MUSCLE	PLEURA
GALL BLADDER	SURGICAL IMPLANT E.G VASCULAR SHUNT/ GRAFT
GLAND, SUCH AS THYROID, PAROTID	SPINAL CORD
HEART	SPLEEN
HEART VALVE	TISSUE/TISSUE FLUID
JOINT	UTERUS
KIDNEY	VASCULAR SYSTEM (VEIN/ARTERY)
LIVER	

Appendix 4 – hepatitis B risk factors and groups

Risk factors
Dialysis†
Heterosexual contact of case
Homosexual contact of case
Household transmission
Injecting drug user
Perinatal transmission
Recent residence in an institution
Recent surgery/dental work
Recent transfusion
Relevant recent travel abroad
Skin piercing†
Tattooing†

Risk Groups
Child of infected mother
Healthcare worker
Pregnant
Prisoner†

†Add to comments field if appropriate.

Appendix 5 – contacts

PHE field epidemiology services teams

The SGSS systems specialist is the initial contact point for reporting issues.

East Midlands

PHE East Midlands
Seaton House
City Link
Nottingham
NG2 4LA

Tel: 0344 225 4524

East of England

Institute of Public Health
University Forvie Site
Robinson Way
Cambridge
CB2 0SR

Tel: 01223 762 037

London

Skipton House
80 London Road
London
SE1 6LH

Tel: 020 7811 7200

North East

Floor 2
Citygate
Gallowgate
Newcastle Upon Tyne
NE1 1LF

Tel: 0191 202 3888

North West

Suite 3B
3rd Floor
Cunard Building
Water Street
Liverpool
L3 1DS

Tel: 0344 225 0562 (option 1)

South East

Skipton House
80 London Road
London
SE1 6LH

Tel: 020 7811 7200

South West

2 Rivergate
Bristol
BS1 6EH

Tel: 0300 303 8162

West Midlands

6th floor
5 St Philips Place
Birmingham
B3 2PW

Tel: 0344 225 3560

Yorkshire and Humber

Blenheim House
West One
Duncombe Street
Leeds
LS1 4PL

Tel: 0113 855 7359