

University Hospitals Bristol and Weston NHS Trust



Department of Pathology



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**Microbiology Service
User Guide**

**Essential guidelines for staff that use
University Hospitals Bristol and Weston Trust
Microbiology Services at Weston**

2023 Version 5.0

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Microbiology User Guide

1.0 Scope of document

- This document is a User Manual which describes the services provided by the microbiology division within Pathology at University Hospitals Bristol NHS Trust, Weston. The document is designed for use by all users of the service and the information contained herein is correct as of the time of printing.

2.0 General information

- The Microbiology service for Hospital users and local community GP's is provided, in the main, by Southmead Microbiology, Southmead Hospital, Telephone 0117 414 6222.
- This facility provides a comprehensive high quality, medically led service. For specialist tests, this facility refers samples to appropriate nationally accredited Reference Laboratories across the UK.
- UHBW NHSFT has a contract with UKHSA at Bristol for bacteriological, virological and serological investigations.
- We are happy to meet all interested staff to discuss matters pertaining to Microbiology and to receive any feedback regarding our service. Whether it be Medical, Scientific, Computing or Clerical please contact us during normal laboratory hours.
- Laboratory services are provided by Biomedical Scientists (BMSs), MLAs (Medical Laboratory Assistants), and Consultant Laboratory Medical Staff.
- The Medical Microbiology laboratory at Southmead provides services to the Weston Area General Practice Surgeries in conjunction with the Hospital patients and clinics.
- Deliveries are made to the hospital at 12pm, 3pm and 6pm from various surgeries in the local area.
- This Microbiology work is packaged for dispatch to Southmead Microbiology for processing, without further handling or input.
- Weston Hospital hosts a Microbiology Essential Services Laboratory, [ESL], to provide a limited repertoire of on-site tests. This includes PCR testing for C. difficile toxin, respiratory viruses, Norovirus and Covid-19.
- Results of all tests generated by both laboratories are entered into the laboratory computer system as soon as they are available and reports are issued daily. Results judged to be of particular clinical urgency or relevance is made known to the responsible clinician as soon as they become available. Isolates of public health significance or of importance for hospital cross infection are reported directly to the relevant person.

2.1 GENERAL CONTACT INFORMATION AND CLINICAL ADVICE CONTACT INFORMATION

For public health advice and advice on Meningitis and infectious disease notification please call 0300 3038162.

2.2 LABORATORY AVAILABILITY

- Routine Hours for Microbiology at Southmead are 08.30 – 20:00 Monday - Friday (exc. Public Holidays)
- Routine Hours for the Microbiology Essential Services laboratory at Weston General are 08.30 – 17:00 Monday - Friday (exc. Public Holidays)
- On Saturday and Sundays mornings and Public Holidays, Microbiology at Southmead can be reached on 0117 424 6222 between 08:00 – 17:00 (see below).
- On Saturday and Sundays mornings and Public Holidays, The Microbiology Essential Service Laboratory at Weston General can be reached on 01934 647053 or ext. 3305 between 08:30 – 12:00 (see below).

2.3 MICROBIOLOGY CONTACT LIST AND GENERAL ENQUIRIES

| Microbiology | | | |
|--|---|--|-----------------|
| Medical Microbiologists: | | | |
| Dr Mbiye Mpenge | 01934 647053 01934 636363 Ext 5304 See notes below | Mbiye.Mpenge2@uhbw.nhs.uk | Monday - Friday |
| Dr Julia Colston | 01934 647053 01934 636363 Ext 5304. See notes below | Julia.colston@nbt.nhs.uk . | |
| Microbiology Laboratory Southmead | 0117 414 6222 | | Monday - Friday |
| Head Biomedical Scientist: Mrs Nicola Childs | Tel: 0117 4146218 Mob: 07800915205 | Nicola.childs@nbt.nhs.uk | Monday - Friday |
| Microbiology laboratory: For routine enquiries | 0117 414 6222 | | Monday - Friday |
| Essential Services Laboratory Weston: | 3305 01934 647053 | | Monday - Friday |
| Head Biomedical Scientist: Mr Mark Woodward | 3303 01934 647017 | Mark.woodward2@uhbw.nhs.uk | Monday - Friday |
| Microbiology laboratory: For routine enquiries | 3305 01934 647053 | | Monday - Friday |

2.4 CONTACT GUIDELINES FOR DUTY CLINICAL MICROBIOLOGIST @ WESTON

- To streamline our service provision and ensure enquiries can be managed in a timely way, we first ask that all practitioners consult their local antimicrobial guidance (MicroGuide / Primary Care guideline) before calling for microbiology clinical advice.
- Much of the routine local guidance can be found within these guides:
- MicroGuide: <https://viewer.microguide.global/UHBRISTOL/>
- Primary Care Guidelines: <https://remedy.bnssg.icb.nhs.uk/>
- Within working hours (Mon-Fri 9am to 5pm) clinical advice can be sought via: - Telephone: 01934 881304. Please note, the service is staffed by a single Consultant Microbiologist, and calls cannot be answered immediately at all times, due to our busy clinical schedule.

2.4.1 Hospital Clinician enquiries

- We request that non-urgent enquiries are made through the methods highlighted below (CareFlow referral for inpatients and email referral for primary care patients).
- Otherwise, we will endeavour to protect time to answer calls between 12:00 - 13:00 and 15:30 - 16:30. If your call is not immediately answered or the line is engaged, you may need to call back after 15-30 mins.
If your query is non-urgent, inpatient enquires can be submitted via CareFlow to Microbiology Clinical Advice*.
- Queries will be answered within the same working day, if received before 4pm.
- Enquires received after 4pm will be dealt with in the next working day.
- CareFlow MUST NOT be used for out of hours or urgent enquiries.

2.4.2 Primary Care Clinician Enquiries

- Primary care non-urgent enquires can be emailed through to our Clinical Advice email address*: WGHClinicalMicrobiology@uhbw.nhs.uk
- Please note, queries will be answered within the same working day, if received before 4pm.
- Enquires received after 4pm will be dealt with in the next working day.
- Emails MUST NOT be used for out-of-hours or urgent enquiries.
- If your enquiry is urgent and there is no response from 01934 881304, please go through to the NBT Bacteriology Clinical Advice telephone line on 0117 414 6222. Please note, this is for urgent enquiries only, that require an immediate response
- All out-of-hours calls (5pm to 9am, weekends and bank holidays) must go through switchboard to the on-call Microbiologist at NBT, who covers both NBT and Weston General out of hours.
- This service is for urgent out-of-hours enquires only, which are required to optimise patient care out of hours.
- Non-urgent enquiries should be discussed in working hours.
- Inappropriate use of the out-of-hours service will be escalated to senior leaders for review

*For both CareFlow referrals and primary care email referrals, we require the below minimum information (if enquiries are received with insufficient detail, they will be rejected, asking for more information): -

- Name / Grade (job title) of referrer.
- Responsible Consultant / Specialty (if applicable).
- Contact details (bleep and/or direct extension and/or mobile number) for the referrer (or the correct person to contact for the next working day, if applicable).
- Patient details (not applicable for CareFlow, as referral to be made through the patient record)
- Name / NHS No. / DoB / Location.
- Brief clinical summary - As much detail as possible around past and present antimicrobials and drug allergies.
- The question to Medical Microbiology.

3.0 Sample collection

3.1 SAMPLE LABELLING

- It is imperative that any sample taken from a patient can be identified using 3 patient identifiers. Without this minimum information, a sample cannot be guaranteed to be processed. In order to do so, the minimum requirement for identification is:
 - Surname
 - Forename
 - Hospital registration number or date of birth or NHS number

4.0 Containment Level 4 Organisms

- Certain organisms are classified as being Containment Level 4 by the Advisory Committee on Dangerous pathogens (ACDP). Samples should NOT be taken or sent to the laboratory from patients suspected as having the following diseases without consulting the Medical Microbiologist, Head BMS and referring to the relevant Trust policy:
 - Severe Adult Respiratory Syndrome (SARS)
 - Viral Haemorrhagic Fever (VHF)
 - Creutzfeldt Jakob Disease (vCJD)
 - Rabies
 - Anthrax
- Likewise for Containment Level 4 organisms, please ensure that the request form is clearly labelled as 'DANGER OF INFECTION' and use unambiguous and commonly recognised terminology. Failure to do this may result in risk to laboratory staff.

5.0 Microbiology investigations

- General Bacteriology;
- Priority Specimens [CSF/ Sterile fluids / Tissues]
- Mycology
- Parasitology
- Mycobacterial investigation
- Miscellaneous PCR
- Serological tests
- Antifungal drug assays

Performed at Southmead Microbiology, please refer to the Southmead Infectious Sciences User Manual

[Southmead Infection Sciences User Manual](#)

6.0 Antigen and molecular detection – on-site testing in the ESL

| Investigation | Sample Type | Container | Pre-analytical Storage | Post-analytical Storage | Notes |
|--|---|---|--|--|---|
| <i>Influenza A, B and RSV</i> (Respiratory Viruses) by PCR | Viral throat swab 1ml or 3 ml tube is acceptable. Please ensure there is liquid in the tube before sending to the laboratory | Viral swab container with green or red top | Refrigerate for up to 24 hrs if necessary; immediate dispatch for testing is preferred | Samples are stored in the fridge for four days after testing | All negative samples for ITU patients and children under the age of 1 will be referred to Bristol for full respiratory panel testing. Performed on site by the Essential Services Laboratory Positive samples will be referred to UKHSA for further testing, dependent upon results, for further information, please contact the laboratory |
| <i>Clostridium difficile</i> – toxin testing | Faeces samples [Please send a minimum of 10ml of faeces] | Sterile 30 ml. plastic universal container with spoon | Refrigerate for up to 24 hrs if necessary; immediate dispatch for testing is preferred | Refrigerate (stored for 3 days or frozen for 1 year if positive) | 5-20g (or ml) sample required. This test can be performed from the same sample requested for Norovirus or culture. Please include details of current or previous anti-microbial therapy Please discuss if there are concerns regarding the presence of interfering substances in the sample due to patient’s current treatment Performed on site by the Essential Services Laboratory Positive samples may be referred to UKHSA for further testing, dependent upon results, for further information, please contact the laboratory |

7.0 Antigen and molecular detection – on-site testing in the ESL [Continued]

| Investigation | Sample Type | Container | Pre-analytical Storage | Post-analytical Storage | Notes |
|-----------------------------|---|---|--|---|---|
| Norovirus by PCR | Faeces or vomit samples [Please send a minimum of 10ml of faeces] | Sterile 30 ml. plastic universal container with spoon | Refrigerate for up to 24 hrs if necessary; immediate dispatch for testing is preferred | Refrigerate (stored for 3 days or frozen for 1 year if positive) | Will only be processed once per patient per hospital stay. This test can be performed from the same sample requested for C. difficile or culture. Some test interference can occur with excess haemoglobin, mucin, cholesterol, triglycerides or whole blood in the sample. Please discuss if there are clinical concerns. Performed on site by the Essential Services Laboratory Positive samples may be referred to UKHSA for further testing, dependent upon results, for further information, please contact the laboratory |
| COVID-19 testing by Cepheid | Viral nose and throat swab 1ml or 3ml tubes are acceptable Please ensure there is liquid in the tube before sending to the laboratory | Viral swab container green or red lids. | Refrigerate for up to 24 hrs if necessary; immediate dispatch for testing is preferred | Samples are stored in the fridge for four days after testing, Positive samples are referred to UKHSA for Genotyping | Rapid onsite tests must be authorised by the site team. All other samples are referred to NBT laboratory. Samples must be double bagged with the rapid label on the external packaging. Performed on site by the Essential Services Laboratory Positive samples will be referred to UKHSA for further testing, dependent upon results, for further information, please contact the laboratory <i>Onsite COVID-19 PCR is currently a non-accredited ISO 15189 Test. Assessment has taken place and we are awaiting confirmation of compliance.</i> |

8.0 Weston ESL in-house turnaround times

The final identification and susceptibility testing of some organisms can take much longer than indicated and may need referral to a reference laboratory. In this situation interim results will be issued as soon as practicable.

| Turnaround times are measured from the time of receipt to availability of report in 90% of cases | |
|--|-----------------|
| Sample | Turnaround time |
| Respiratory Virus [inc. Covid] | 2 Hours |
| Clostridium. Difficile | 24 Hours |
| Norovirus | 24 Hours |

9.0 Southmead infection sciences turnaround times

- For all investigations performed at Southmead Microbiology, please refer to the Southmead Infectious Sciences User Manual

[Southmead Infection Sciences User Manual](#)

10.0 Test preparation and sample containers

10.1 REQUESTING

- For all requests please provide accurate and appropriate clinical details. This will allow the laboratory to correctly process and interpret specimens and their results. Clinical details include antibiotic treatment, clinical signs and symptoms, foreign travel, immune status and dates of onset.







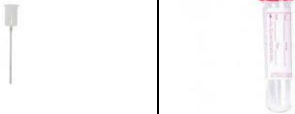





10.1.1 Form Completion

- Ideally, most requests will now be made electronically through the ICE system.
- Where this is not the case or during downtime we will accept paper request forms, however it is important that they are filled in correctly. For guidance on the completion of request forms, including the minimum criteria for positive patient identification, please refer to the Pathology User Guide.

10.1.2 Electronic Requesting

- Where possible, please use the electronic requesting system ICE for requesting tests. This enables a more rapid receipt and processing of samples within the laboratory. Please also ensure that the specimen is labelled with an ICE produced sticker (barcoded) before sending the specimen to the laboratory in the specimen bag.
- Please ensure that you have selected the correct test and obtained the correct sample for this request before sending the specimen to the laboratory. Failure to do this may result in incorrect tests being performed or rejection of samples for processing.

11.0 Microbiology sample container description

| Swabs | Container |
|---|--|
|  | Purple topped, liquid trans-swab, for routine bacterial culture |
|  | White topped, liquid trans-swab, for MRSA / MSSA culture |
|  | Viral swab pack with red tube. Note that lids could also be purple or green in some cases. This is appropriate for Herpes and Covid testing. |
|  | Aptima <u>vaginal</u> swab pack with orange tube |
|  | Aptima <u>urine</u> pack with yellow tube |
|  | Swab pack with blue tube, Whooping cough culture / PCR |
|  | Red lidded Boric Acid tubes with collection transfer device – 10ml (for Microbiology ONLY) |
|  | Blue universal with spoon – 30ml |
|  | Plain universal 30ml pot |
|  | Myco-Trans envelope containing sealable package |
|  | Quantiferon tubes x4 pack – available from Microbiology |
|  | Serology blood tubes – yellow SST (general serology) and purple EDTA (viral load) |

12.0 Routine and out of hours service

12.1 ROUTINE HOURS

- Routine Hours for Microbiology at Southmead are 08.30 – 20:00 Monday - Friday (exc. Public Holidays)
- Routine Hours for the Microbiology Essential Services laboratory at Weston General are 08.30 – 17:00 Monday - Friday (exc. Public Holidays)
- On Saturday and Sundays mornings and Public Holidays, Microbiology at Southmead can be reached on 0117 424 6222 between 08:00 – 17:00 (see below).
- On Saturday and Sundays mornings and Public Holidays, The Microbiology Essential Services Laboratory at Weston General can be reached on 01934 647053 or ext. 3305 between 08:30 – 12:00 (see below).

12.2 OUT OF NORMAL ROUTINE HOURS (INCLUDING PUBLIC HOLIDAYS)

- The microbiology out of hours service is for essential urgent requests only. If you require an urgent microbiology request, contact the OOH Blood Science BMS on bleep 4017.
- N.B. It is the responsibility of the requesting clinician to;-
- 1, To contact Weston Pathology staff when an urgent sample is taken to the lab.
- 2, To contact the on-call Microbiology BMS @ Southmead, who will arrange collection of the sample from Weston, the processing of the sample @ Southmead, and the telephoning of results to the requesting clinician.
- The Weston OOH Blood Sciences BMS will provide details of contact numbers, and record the dispatch of the sample for audit purposes.
- On Saturday, Sunday and Public Holiday mornings, the Microbiology Laboratory @ Southmead will be staffed between 8 am and 5pm, some routine and all urgent work will be processed.

12.3 MICROBIOLOGY TESTS AVAILABLE BY TELEPHONE REQUEST (URGENT SAMPLES)

| Department | Urgent work during routine hours | Urgent work out of hours |
|--------------|---|---|
| Microbiology | Telephone requests and specified requests for result to be phoned | Microscopy and culture for CSF |
| | | Joint fluids and Ascitic fluids |
| | | Tissue or pus samples that require urgent gram stains |

- Please phone urgent test requests in advance during routine hours to the ESL
- Please phone urgent test requests in advance out of hours to the on-call BMS @ Southmead to ensure that upon arrival they are processed accordingly.
- No notification of an urgent request may result in a significant delay in processing.
- It is the responsibility of the requesting clinician to ensure that the laboratory is informed of an urgent sample. It is also best practice to highlight upon the request that the sample is to be urgently processed and to provide a bleep number.
- All out of hours investigations will be entered, on completion, onto the Pathology computer system and can be accessed on ICE, with the appropriate password, from any network PC terminal in the hospital. All urgent results will be telephoned upon request. Please provide a bleep or other contact number with the sample.

13.0 Test result reporting at Southmead microbiology and essential service laboratory at Weston general

- All test results will be available on ICE; these results will include reference ranges [where appropriate] and clinical interpretation of the clinical significance of the results in the report. This interpretation will be guided by biological reference intervals for each specific analysis, details of which are available upon request from the laboratory, using the contact numbers above in 2.2.1.

14.0 Trust antimicrobial policy

- Gentamicin and Vancomycin Antibiotic level testing is performed in Biochemistry.
- Other assays, including Amikacin and Teicoplanin are referred to Bristol. Please refer to the Biochemistry User Manual for further information.
- To ensure the most cost effective use of antibiotics, and to minimise the emergence of resistant strains, antibiotic policies have been developed. These and other documents can be found in the Trust Intranet under “Policies & Guidelines” and “Antibiotic Policies”:
 - Trust Antimicrobial Guidance
 - Guidance for the Restriction of Antibiotic Prescribing
 - Antibiotic Prescribing in the Penicillin Allergic Patient
 - Antibiotic Policy for Switching from Intravenous to Oral Antibiotics
 - IV Gentamicin Guidance for Prescribing and Monitoring
 - IV Vancomycin Guidance for prescribing and Monitoring
 - Clostridium *difficile* Policy – Management, Treatment and Control
 - Medical Antibiotic Guidance
 - Surgical Antibiotic Guidance
 - Critical care Antibiotic Guidance (ITU)

For further information or clinical advice regarding antimicrobial therapy, please contact the Consultant Microbiologist.

14.1 ANTIBIOTIC LEVELS

- When aminoglycosides or glycopeptides are used for therapy, blood levels must be determined. Levels must be monitored at least twice weekly and more often with impaired renal function.
- Specific Antibiotic Guidance for individual specialities is available from individual departments e.g. Critical Care Antibiotic Guidance is available from the Anaesthetic Department. Copies of Antibiotic Guidance will also be kept with microbiology secretary ext. 3321.
- All samples submitted for assay must have the following information.
 - Date and time that the level was taken
 - Drug was last administered.
 - Indication (i.e. diagnosis) for the antibiotic
 - Dose and frequency of the prescribed antibiotic

Failure to provide this information will make it impossible to interpret the result.

Please refer to the Biochemistry User Manual for further information.

15.0 Governance – Quality Standards

15.1 UNITED KINGDOM ACCREDITATION SERVICE (UKAS)

- Microbiology at Southmead Hospital holds laboratory accreditation with United Kingdom Accreditation Service (UKAS) for the majority of their tests. Please refer to the UKAS website for full accreditation status: [Search UKAS accredited organisations](#).
- UHBW ESL is compliant with ISO 15189:2012 and all tests are accredited with the exception of Covid on the Cepheid which is awaiting completion of extension to accredited test scope. A comprehensive quality assurance program is an integral part of the procedures of the diagnostic ESL and is necessary for compliance with accreditation standards assessed by the UKAS.
- The following examinations provided by the Department do not currently come under our current accreditation status to ISO 15189 and are listed below:
 - Point of Care Testing
 - COVID-19 Testing (by Cepheid)
- The accreditation status of referral laboratories can be found on the UKAS website and is checked regularly to confirm that these laboratories are ISO 15189:2012 compliant.

15.2 HEALTH AND SAFETY EXECUTIVE (HSE)

- The relevant areas within microbiology also comply with requirements and regulations of the Health and Safety Executive (HSE) regulatory body.

16.0 Appendix 1 - notification of infectious diseases**NOTIFIABLE DISEASES**

| List of Notifiable Diseases | | |
|--|---------------------------|--------------------------|
| Acute encephalitis | Meningitis | Smallpox |
| Acute poliomyelitis | Meningococcal septicaemia | Tetanus |
| Anthrax | Mumps | Tuberculosis |
| Cholera | Ophthalmia neonatorum | Typhoid fever |
| Diphtheria | Paratyphoid fever | Typhus fever |
| Dysentery | Plague | Viral Haemorrhagic fever |
| Food Poisoning | Rabies | Viral Hepatitis |
| Leptospirosis | Relapsing fever | Whooping cough |
| Malaria | Rubella | Yellow fever |
| Measles | Scarlet fever | |
| N.B. This list includes statutory notifiable infectious diseases and other infectious diseases that should be notified. | | |

- It is the statutory duty of the clinician responsible for a patient suffering from one of the notifiable diseases listed below to notify the proper officer. Forms for the Notification of Infectious Diseases or Food Poisoning are available from the Microbiology Laboratory, and from the following address:-

The Consultant**CCDC****Control of Infection Unit****Avon Health****10 Dighton St****Bristol****BS22 8EE****Tel 0117 9002621**

- Communication by telephone should be made during the day to the Control of Infection Unit, Avon Health, on 0117 9766621, and where appropriate out of hours, through the hospital switchboard via Ambulance Control to the CCDC, or deputy on-call for Public Health Medicine.
- Telephone contact allows the CCDC to implement any action required in the community as rapidly as possible and is particularly important for prophylaxis in some meningitis cases.
- Telephone contact should be followed by written notification.