

Information for Clinicians

Microbiology Department

Microbiology Handbook

Amendment History

Issue	Status	Date	Reason for Change	Authorised
13	Approved	31/03/2023	Updated staff details	K Lomas

Microbiology Handbook: Royal united Hospitals Bath

1. Background

The UK Health and Security Agency (UKHSA) Bristol Laboratory is the Public Health Laboratory for the South West. It is one of the largest Microbiology laboratories in the UK, providing a clinical service for University Hospitals Bristol and Weston NHS Foundation Trust, (UHWBristol) the Royal United Hospital Bath NHS Trust (RUH) and for the many GP practices in the South Bristol and Bath areas. The laboratory is accredited by UK Accreditation Service (UKAS) board, giving an assurance of quality. It is located over two different sites and operates under the organisational title: Severn Pathology Services:

The Southmead (North Bristol Trust and UKHSA) site houses the Infection Sciences Service. This department accepts many hundreds of specimens daily for bacteriological, Mycology and virological investigation.

The Royal United Hospital (RUH), Bath site houses a small satellite laboratory, in B38, offering an urgent bacteriological service, processing all blood cultures and cerebrospinal fluids (CSFs) from RUH inpatients ran by UKHSA. In addition to this RUH also runs a small molecular service.

The combined laboratories are well equipped to offer a comprehensive Clinical Microbiology and are pleased to accept any enquiries and feedback from all who use the service.

Royal United Hospital Bath Clinical Team

The Clinical Team consists of:

Dr Sarah Meisner – Consultant Medical Microbiologist
Dr Jane Liu – Consultant Medical Microbiologist
Dr Julia Vasant - Consultant Medical Microbiologist
Dr Georgina Beckley- Consultant Medical Microbiologist
Dr Sabrina Fudge- Consultant Medical Microbiologist

Katy Lomas- Laboratory Manager
Julie Phelps- Microbiology Secretary
Andrea Langley- Microbiology Secretary

The RUH Bath Laboratory is open as follows:

Monday – Friday	09.00h – 17.00h (22:00 for Flu/RSV, Noro and C. difficile, COVID)
Saturday	08.30h – 16.30h (22.00 for Flu/RSV, Noro and C. difficile, COVID)
Sunday	08.30h – 16.30h (22.00 for Flu/RSV, Noro and C. difficile, COVID)

To contact the laboratory please use the following:

Testing/sample advice and results: 01225 824747 (x 4747 internal)
Clinical Advice (From Consultant Microbiologist): 01225 825428 (x 5428 internal)

Urgent calls only are taken between 4pm and 5pm
For non-urgent queries please email: ruh-tr.microbiologygeneric@nhs.net

Out of hours (post 5pm) please contact the on call Microbiology Biomedical Scientist or Microbiologist via switchboard. The On-call service is Bristol based and therefore cannot answer queries around RUH molecular testing for FLU/RSV, Norovirus, C. difficile or COVID-19.

2. Royal United Hospital, Bath Onsite Laboratory repertoire

The satellite laboratory at the RUH performs a restricted range of tests on-site. The majority of specimens are transferred to the UKHSA Bristol Laboratory for processing. The on – site repertoire includes:

- Clinical advice / Infection Control advice

Routine bacteriological examination (microscopy and culture) of the following clinical specimens:

- Blood culture
- Cerebrospinal Fluid
- Environmental Monitoring (Pharmacy)
- Susceptibility testing
- Urgent specimens (Tissue, fluids) (except sputa or suspected category 3 or 4 organisms)

2.1 Onsite testing

The laboratory also offers a Rapid Molecular (PCR) testing service for Hospital Inpatient for *Clostridioides difficile*, Norovirus, SARS-CoV-2 and Flu A/B/ RSV specimens.

2.2 Specimen

C. difficile and Norovirus

A fresh Bristol stool chart Type 5-7 (diarrhoeal) patient specimen should be sent to RUH Pathology laboratory in a standard Blue Topped faecal MC&S pot ¼ full with specimen (approx. 10-25ml). In addition to this, Vomit samples may be sent in white top universal containers for Norovirus testing.

Flu A/B RSV/SARS-COV-2

An Oropharyngeal (Throat) Swab should be sent to RUH Pathology laboratory using a red Copan viral transport media swab.

Appendix 1 (page 9) shows which specimens to take/requests to make – either Rapid PCR only or Respiratory virus Panel

SARS-CoV-2 ONLY

A combined nose and throat swab should be sent to the RUH Pathology laboratory using a red Copan viral transport media swab, Red top Remel MR4T or Green Topped Virocult. This should be double bagged following the follow charts available on trust intranet.

2.3 Requesting a specimen and hours of service

These tests should be requested on Millennium and labelled with Millennium labels.

Please use:

Norovirus PCR (Bath)

C. difficile Screen PCR (Bath)

Symptomatic COVID Screen (Combined FLU/RSV/SARS-COV-2)

SARS-CoV-2 PCR ONLY (Bath) see flow COVID pages on trust intranet for up to date guidance.

The service will be available 7days a week at the following times:

Mon-Fri: Results will be available 'same day' for specimens arriving at laboratory during normal working hours (up to 22:00). Results for specimens arriving after this will be available the following morning.

Sat-Sun: Results will be available 'same day' for specimens arriving at laboratory up to 22:00.

Results for specimens arriving after this will be available the following morning.

Lab operating hours may vary during times of outbreak, please liaise with the lab, ICN and the trust during these times.

Please note -

- ***Specimens should only be sent to the Lab for these tests up until 22:00 (10pm).***
- ***From 10pm PLEASE KEEP SPECIMENS AT REQUESTING LOCATION AND SEND TO LABORATORY FROM 08.00A.M. ONWARDS.***
- ***Specimens for faecal MC&S (i.e. not C. Difficile or Norovirus) should be sent in a different specimen bag (as these are sent on to UKHSA Bristol Lab).***
- ***Specimens for 'Respiratory virus PCR panel' should be sent in a different specimen bag (as these are sent on to UKHSA Bristol Lab).***
See: Severn Pathology Infection Sciences User manual link, below.

2.4 Expected Results

TEST	PCR result	Supplementary test	Overall Result
C. difficile	PCR Negative	n/a	Negative
C. difficile	PCR Positive	Toxin Negative	Colonised
C. difficile	PCR Positive	Toxin Positive	<i>C. difficile</i> Infection
Norovirus	PCR Negative	n/a	Norovirus Negative
Norovirus	PCR Positive	n/a	Norovirus Positive
Flu A	PCR Negative	n/a	Flu A Negative
Flu A	PCR Positive	n/a	Flu A Positive
Flu B	PCR Negative	n/a	Flu B Negative
Flu B	PCR Positive	n/a	Flu B Positive
RSV	PCR Negative	n/a	RSV Negative
RSV	PCR Positive	n/a	RSV Positive
SARS-CoV-2	PCR Positive	n/a	SARS-CoV-2 Positive
SARS-CoV-2	PCR Presumptive Pos	n/a	SARS-CoV-2 Pres Pos
SARS-CoV-2	PCR Negative	n/a	SARS-CoV-2 Negative

Note: Rapid influenza A/B RSV will display results for each of Flu A, Flu B and RSV as individual tests.

2.5 Specimen retention

All Negative Specimens will be kept in the laboratory for 14 days after testing and are available for re-testing or further testing.

C. difficile PCR Positive specimens are kept for at least 28 days and are available for re-testing, further testing and Ribotyping upon request.

Norovirus positive samples will be stored for at least 28 days and are available for re-testing or further testing.

In house Respiratory PCR positive samples will be stored for 2-3 months and are available for re testing or further testing.

2.5.1 Time limit for add ons

Specimen retention times provides the basis for the time limit to add on tests for Norovirus or *C. difficile* – see above.

3. Specimen Transport

Internal transport of samples at the Bath site is undertaken by RUH Trust management. This consists of regular RUH portering rounds and van transport between GP practices. Urgent transport of samples on site is undertaken by RUH portering staff or hospital pneumatic tube system.

Transport of the offsite inpatient, outpatient and GP specimens from the area are transported from RUH Bath Laboratory reception to UKHSA Bristol laboratory by UKHSA contracted van drivers, and occur 4 times a day on weekdays and twice a day, at weekends. Departure times from Bath are:

	Collection time from Bath	Arrival time at Bristol
Mondays to Friday	0900h 1300h 1500h 1700h	1000h 1400h 1600h 1800h
Weekends (Sat and Sun/Bank holidays) Couriers	0915h – 0930h 15:00h	1000h – 1030h 16:00h

Samples which are received in the RUH Pathology department after the stated times will be sent on the next available transport. Please note that, samples received after 1700h will not be transported to the Bristol laboratory until the following day on the 0900h transport. For full repertoire please see Severn Pathology Infection Sciences User manual:

http://www.ruh.nhs.uk/pathology/departments/microbiology.asp?menu_id=3&intranet=y

Some urgent specimens may need to be sent to the UKHSA Bristol Laboratory for processing out of hours or at weekends e.g. BAL specimens. Packaging and transport

of these specimens should be arranged through the on call BMS via the RUH switchboard. Clinical discussion about the patient with the Consultant Medical Microbiologist on call may also be helpful.

4. Specimen Labelling

All specimens must be received in appropriate containers, sealed in a plastic bag with the request form in a separate compartment. ALL sections of the request form MUST be completed and relevant clinical information provided. Incomplete data may result in significant delays and/ or inappropriate processing. For Health and safety of laboratory staff any recent travel history should be clearly recorded.

For information on:

Specimen collection (general guidance)

Electronic requesting (Millennium (Trust users) or ICE (GPs) requests)

Paper Request Forms (including which forms to use)

Labelling of Specimens

Acceptance & Rejection Policy

(See the UKHSA Bristol Laboratory User manual pg.12-17, or for RUH requests http://www.ruh.nhs.uk/pathology/requesting/index.asp?menu_id=1).

5. Specimen Type Required

- For detailed explanation of Collection of specimens (technique) and Interpretation of Results see UKHSA Bristol User manual, pg.27-52.
- For quick reference (table) of appropriate specimen type and appropriate container see UKHSA Bristol Laboratory User manual, pg.52-62

6. Interfering substances

For testing completed by UKHSA, interfering substances will be listed as part of the UKHSA Bristol Laboratory User Manual).

For Norovirus and *C. difficile*, interfering substances include blood, excess faeces and mucus. For Flu/RSV/SARS-COV-2, interfering substances in the nasopharynx, include blood, nasal secretions or mucus, nasal and throat medications used to relieve congestion, nasal dryness, or asthmas and allergy symptoms, as well as antibiotics and antivirals.

7. Clinical Advice

The following Local Trust antibiotic guidance is available:

Clostridium Difficile Guidelines

Dosing and Monitoring of Gentamicin Vancomycin and Teicoplanin

Elispot testing

Empirical treatment of infections in adults
Empirical use of antibiotics in children and neonates
Interim antifungal guidance for haematology patients
Periorbital cellulitis in children guideline
Prophylaxis for asplenic and hyposplenism in adults
Surgical prophylaxis

Please use this local guidance in the first instance, available on the intranet via the following link:

http://webserver.ruh-bath.swest.nhs.uk/clinical_directory/clinical_guidelines/antibiotic.asp?menu_id=1

The Microbiology Consultants are very happy to discuss complex clinical queries but would be grateful if teams could review results and discuss management within the hierarchy of their own clinical teams before telephoning.

A Duty Medical Microbiologist is available on-site between 9am and 5pm: Call 01225 825 428.

An On-Call Medical Microbiologist is available out of hours via the RUH switchboard.

Note that the on-call Microbiologist may not be an RUH based doctor. Please consider whether your query could wait to be discussed with an RUH based Microbiologist the following day. If it does require urgent discussion, ensure that you have all the necessary information to hand before phoning the on-call doctor.

8. High Risk Specimens

“Universal Precautions” policy is adopted in the laboratory, specimens from patients known or clinically suspected to be infected with HIV, Hepatitis B or C virus and specimens taken from patients known or suspected to present a health hazard to laboratory staff, e.g. TB, typhoid and paratyphoid, brucellosis are covered by this Policy.

Certain organisms are classified as being serious biohazards. Information can be found at <https://www.hse.gov.uk/pubns/misc208.pdf> . They require specialist laboratories designed for containment during manipulation of specimens and cultures.

Specimens should NOT be taken or sent to the laboratory from patients suspected as having the following diseases without consulting the Medical Microbiologist/Virologist.

- Severe Acute Respiratory Syndrome (SARS)
- Middle East respiratory syndrome coronavirus (MERS-CoV)
- TB
- Viral Haemorrhagic Fever (VHF)
- Typhoid
- HCID's

- Creutzfeldt Jakob Disease
- Rabies
- Avian Influenza

If concerned regarding any of the above or foreign travel please contact the Clinical Consultant Microbiologist.

9. Out of Hours (on-call) service

The RUH Bath Laboratory offers a restricted out-of-normal hours service. A qualified, state registered Biomedical Scientist (BMS) is always 'on-call' to process urgent specimens and a member of the Medical Microbiology staff is always available for clinical advice.

Contact via the RUH switchboard ((01225) 428 331) and ask for:

- Biomedical Scientist microbiology for specimen processing except RUH rapid testing
- On-Call Consultant Microbiologist/ Virologist for clinical advice

It is not necessary to contact the on-call BMS regarding blood cultures (unless one of the pathogens above suspected) which should be kept at room temperature, not refrigerated, before sending to the laboratory. Please do not contact the BMS for any RUH PCR service, the on – call Biomedical scientist is based in Bristol and cannot advise on rapid testing.

10. Public Holiday Arrangements

The Laboratory service is not available for routine work or enquiries but will provide an on-call service for urgent requests only. Please contact the RUH Bath laboratory (bacteriology) or BRI switchboard (virology) using the above out of hours arrangements.

It is advisable not to submit bacteriology samples over a Public Holiday weekend and is preferable to send freshly taken specimens on the day following the Public Holiday unless the samples are unrepeatable or the patient has already started antibiotics.

11. Urgent Specimen Requests

If results are required to assist with urgent clinical decisions, the laboratory must be notified by telephone, during normal working hours (x4747 or (01225) 824 747) or out of hours via switchboard (see below). Without such notification the specimen will not be prioritised and likely be processed as non-urgent. All FLU/RSV/SARS-CoV-2 requests are considered urgent, regardless of the requesting location.

Bottles and containers that are unavailable on the ward can be obtained from Pathology stores x4724. Stock order before midday will be available to collect the same day.

12. Antibiotic Assay

Gentamicin, and vancomycin assays are now undertaken by Chemical Pathology. Clinical advice on appropriate dosage and out of range assays is still available from microbiology. Please refer to relevant Trust Antibiotic Guidelines on the intranet site for Gentamicin and Vancomycin.

All other assays including amikacin, teicoplanin, tobramycin, acyclovir and ganciclovir assays which must be received into the RUH laboratory by 11.00 to ensure same day processing as these are processed at referral sites. Assays arriving after this time will be processed the following day (TAT = 0.5 days).

Assays for antifungal agents are discussed on UKHSA Bristol Laboratory User manual pg. 41.

13. Microbiology Results Enquiries

Please restrict these as far as possible for results that are not yet available through Millennium (Trust users) and ICE (GP users). As soon as results are completed and authorised they should be available.

The Laboratory Turnaround Times (TAT) for microbiology specimens are given in the UKHSA Bristol Laboratory User manual pg. 27-52 for all tests (please check before enquiring).

If a result is required on an incomplete test, this should be requested from the Bristol Laboratory on (0117) 414 62 22 (Microbiology and Virology) by following the options. For other result enquiries the RUH Bath Laboratory Microbiology secretary can be contacted on (01225) 825 428.

Please note that urgent virology results may not be available on the computer until the next working day, but significant results will be telephoned.

14. Infection Control Advice

Local Trust Infection Control policies are available on the intranet via the following link:

http://webserver.ruh-bath.swest.nhs.uk/clinical_directory/clinical_guidelines/antibiotic.asp?menu_id=1

(Includes: Infection control policies, Trust guidelines for treatment of HIV infected adults)

The Infection Control Nurses are available on site between 9am and 5pm on (01225) 825450 or 01225 428 5569 and bleep 7991.

Out of hours infection control advice can be sought from the on call Medical Microbiologist via the RUH switchboard ((01225) 428 331).

Please contact the microbiologist before sending any samples for the below:

- Viral Haemorrhagic Fever (VHF)
- Creutzfeldt Jakob Disease
- Rabies
- Avian Influenza
- Severe Acute Respiratory Syndrome (SARS)
- Middle East respiratory syndrome coronavirus (MERS-CoV)
- TB
- Typhoid
- HCID's

Please note: this list is not exhaustive, if there is any suspicion of a high risk atypical organism please contact the laboratory to discuss.

For sending potentially radioactive samples, medico-legal specimens and tissue samples from deceased people please refer to UKHSA Bristol Microbiology User manual pg.16-17.

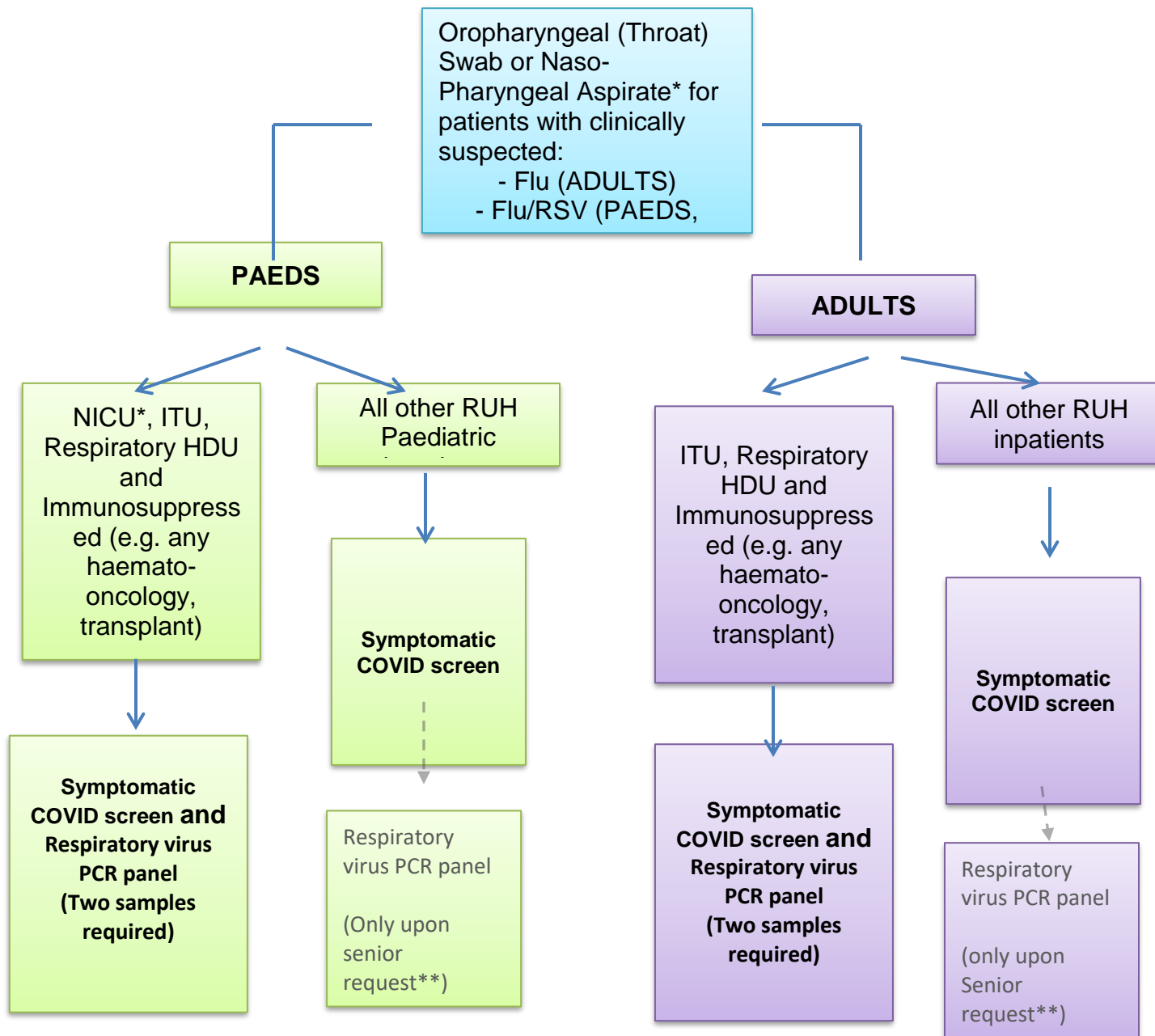
Appendix 1: DECISION TREE FOR FLU PCR testing at RUH

Symptomatic COVID screen = In-house rapid PCR for Flu A/B/RSV and COVID-19.

Millennium request: Symptomatic COVID screen

Respiratory virus PCR panel = UKHSA Bristol lab PCR panel for Flu A/B, RSV, parainfluenza 1-3, Human metapneumovirus, adenovirus and rhinovirus.

Millennium request: Respiratory virus PCR panel



****Senior clinician** = Consultant microbiologist or Consultant physician/Registrar.

Ref: PATH-028

Approved by: Dr Georgina Beckley, Consultant Medical Microbiologist,
Lead for antimicrobial stewardship

Author: Katy Lomas, Microbiology Laboratory Manager

Date of Issue: March 2023

Version:13

Approved on: 31st March 2023

Review date: 31st March 2026

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Please note: Only swabs can be tested by Symptomatic COVID screen other sample types will need to be processed by the respiratory virus PCR panel.