

Microbiology User Handbook

North Kent Pathology Service and the Pathology Directorate of

Dartford and Gravesham NHS Trust



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# INTRODUCTION

The Microbiology Department at Darent Valley Hospital has produced this Laboratory Handbook to enable users to gain the maximum possible benefit from our service. The Department is part of North Kent Pathology Service which was formed following an integration of the Pathology services from Dartford & Gravesham NHS Trust and Medway NHS Foundation Trust.

The aim is to raise awareness of the tests available (those performed ‘in-house’ and those that are referred on to specialist Reference Laboratories), the factors associated with specimen collection and transport that may affect the quality of the results of investigations. There is also information about the turn round times for tests, the methods by which results are provided and the specialist advisory service offered by the Department.

When requesting a Pathology test, please ensure consideration of the following has occurred:

* The need for the test request has been established and is in the patient’s best interest and that the patient has given consent in line with Trust policy for this to occur.
* Please ensure that the Pathology service is able to undertake the test.

The information is accurate at time of issue, but is reviewed and updated as appropriate. We welcome your comments or suggestions so that we are aware of and can consider your requirements.

### Confidentiality

The laboratory is responsible for the management of all patient information obtained or created during the performance of laboratory activity. Management of patient information is secure and includes privacy and confidentiality. The laboratory will inform the User and /or patient in advance of any information it intends to place in the public domain. Except for information that the User and /or patient makes publicly available or if agreed between the laboratory and the patient. All other information will be considered as proprietary information and be regarded as confidential.

### Impartiality

The Microbiology department is committed to impartiality. All laboratory activities are structured and managed to safeguard impartiality. Any activities performed in collaboration with external companies, contracts, personnel or shared resources will not compromise impartiality.

### UKAS accreditation status

**\*\*The laboratory currently has UKAS accreditation for full scope of bacteriology activities but partial accreditation for Serology services. Serology services currently in scope of UKAS accreditation include all tests performed on the Vidas analyser. These include: Hepatitis B core antibody, Hepatitis B surface antigens, HIV and VZV tests.**

**The DS2 analyser is UKAS accredited for Rheumatoid antibody tests.**

**Manual tests currently UKAS accredited in Serology include Legionella antigen, Streptococcus Pneumoniae antigen and ASOT (Antistreptolysin O titre) .**

## The Microbiology department

The Microbiology Department includes five distinct areas: general microbiology, serology, andrology, One Step Nucleic Acid Amplification (OSNA) and Molecular (Covid 19 testing). The Department is currently UKAS accredited to ISO 15189 standards for general bacteriology and selected tests within serology.

The laboratory currently processes specimens for the investigation of *Mycobacterium* species using a method based on the national standard. However, we have not fully evaluated the additional methods recommended in the national standard and have recently introduced a plan to test those additional recommendations. Our plan will allow us to gather sufficient evidence to determine whether or not our automated system is able to detect all species of non-tuberculous mycobacteria (e.g. *Mycobacterium bovis*) or isolates associated with non-respiratory specimens (such as tissue from superficial lesions).

Blood cultures are processed on an analyser called VIRTUO Bact/ALERT – this analyser has been validated for the enrichment of fluids in blood culture bottles from normally sterile sites. These samples are considered precious as they are difficult to repeat, therefore samples received in blood culture bottles will be processed and reported with suitable clinical comments.

The Microbiology Department participates in External Quality Assessment Schemes for all assays where schemes are available.

The laboratory is located on the third floor, East Wing of Darent Valley Hospital. Entry is for authorised personnel only. Appointments can be made to visit the department and all personnel must report to Pathology Reception.

The laboratory complies with the Trust Information Governance procedures and has an internal Policy for Management of Data and Information (Pathology 2887) to ensure protection of personal information.

Diagnostic laboratory work is undertaken by Biomedical Scientists (BMSs) who are state registered, with assistance from the support staff, the Associate Practitioners and Healthcare Science Support Workers (HSSWs).

***Where necessary for patient care, the laboratory will communicate with users or their representatives, to clarify the user’s request. This may be on occasions where laboratory staff are unsure of the sample type, obtain illegible clinical details or unclear test requests.***

***Relevant information must be available to the health service provider at the request of the patient or the request of a healthcare provider acting on their behalf'. (This must***

***not be misinterpreted as patient results being provided directly to patients by laboratory staff on patient request.***

### Services outside of Microbiology

Service agreements between the laboratory and other parts of the organisation using laboratory services, such as Phlebotomy and Point of care testing (POCT) services shall ensure that respective responsibilities and authorities are specified and communicated. Both the Phlebotomy services and the POCT services are not accredited services but are necessary to collaborate with Pathology services to support the operation of the laboratory.

## General Microbiology

Investigates specimens for clinically significant bacteria, fungi and parasites. The laboratory performs microscopy and culture on urine, faeces, swabs from body sites and orifices, sputum, fluids, skin, hair, nails and blood. This section also performs investigations for the detection of *Mycobacterium* species and antimicrobial susceptibility testing. The laboratory also performs tests for the detection of Helicobacter pylori, *Clostridium difficile* toxin and GDH.

**Serology** - performs ante-natal screening according to Government guidelines and serological testing for a range of antigens, antibodies and nucleic acids that indicate infection with or immunity to viruses, bacteria and fungi.

*This service is not yet UKAS accredited for antenatal screening but is in the process of working towards UKAS ISO 15189:2012 accreditation. This will include compliance with UKAS guidance; section 4.2.1 :* The laboratory must have documented standard operating procedures for the following processes, agreed with relevant services, for how screening specimens are monitored and managed. These must include identified responsibilities and failsafe arrangements for: • receiving and processing specimens to enable matching of these against the cohort of women who have accepted screening (There must be evidence of patient consent). If evidence of consent has not been provided, the antenatal team will be contacted by email.

**OSNA** - the OSNA test is performed on sentinel lymph node biopsies as part of the investigation of breast cancer.

*This service is not yet UKAS accredited but is in the process of working towards UKAS ISO 15189:2012 accreditation.*

**Andrology** a service is provided for investigation of infertility and post-vasectomy analysis. There is an appointment system for patients to bring their sample to the laboratory. The test is carried out Tuesdays and Thursdays 8.30am to 4pm.There is no on-site facility for producing semen samples. Complete instructions are available at the end of this document. *This service is not UKAS ISO 15189:2012 accredited.*

**Molecular** – This includes the detection of Covid 19, Flu A, Flu B and RSV.

*This service is not yet UKAS accredited but is in the process of working towards UKAS ISO 15189:2012 accreditation.*

## Referral laboratories and Consultants

Some specialised investigations are sent to Reference Laboratories and Consultants who provide interpretations and advice for:

1. Procedures, examinations, reports and consulting activities
2. Management of critical results

The referring laboratory is responsible for ensuring that examination results of the referral laboratory are provided to the requestor.

Information concerning test availability and estimated turn round times is described in Laboratory Investigations (Section 13).

# GENERAL INFORMATION

Contact Details

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Address | Microbiology Department | |  | |
|  | Pathology Directorate, 3rd Floor Darent Valley Hospital  Darenth Wood Road Dartford  Kent DA2 8DA | |
| Telephone | Darent Valley Hospital switchboard Main lab Results / Enquiries Serology results/ Enquiries Andrology appointments/Enquiries | | 01322 42 8100  01322 42 8100 Ext 4895  01322 42 8100 Ext 4996  01322 42 8100 Ext 4344 | |
| Key personnel | |  | |  |
| Dr Vasile Laza-Stanca | | Lead Consultant Microbiologist | | 01634 83000 Ext 5223 |
| Dr Sandiya Theminimulle | | Locum Consultant Microbiologist | | Ext 4875 |
| Dr Luis Cotter | | Associate Specialist Microbiologist | | Ext 8836 |
| Mrs Rachael Jeremiah | | Head of Microbiology | | Ext 8733 |
| Mr Graham Fagg | | Senior Biomedical Scientist | | Ext 8476/4895 |
| Ms Vanessa Ball | | Senior Biomedical Scientist | | Ext 8476/4895 |
| Ms Nirali Shah | | Senior Biomedical Scientist | | Ext 4895 |

|  |  |  |
| --- | --- | --- |
| Mrs Holly Rowden | Senior Biomedical Scientist | Ext 4895 |
| Mr Nicholas Broadley | Senior Biomedical Scientist | Ext 4895 |
| Sabrina Kallu | Senior Biomedical Scientist | Ext 4895 |
| Mr Patrick Ruffle | General Manager NKPS | Ext 8499 |
| **Routine opening hours** |  |  |
| Monday to Saturday Sunday 08:00 to 16:30 | 08:00 to 21:00 |  |

### During routine hours

* **Darent Valley** Microbiology Consultant can be contacted on extension 8836 direct dial 01322 428836 or extension 8732 direct dial 01322 4288732
* **Medway** Microbiology Duty Consultant can be contacted on extension 5236 or direct dial 01634 825236. Non-urgent enquiries can be emailed to [medwayft.microdutydoctor@nhs.net](mailto:medwayft.microdutydoctor@nhs.net)

### Outside of routine hours

* **Biomedical Scientist** on call can be contacted via the Hospital switchboard (01322 42 8100). This also applies to the on call Microbiology Consultant for **Darent Valley** Hospital
* **Medway** on call Microbiology Consultant can be contacted via the Hospital Switchboard on 01634 830000

Users may visit the department by prior arrangement by contacting the Pathology Office Manager on 01322 428100 ext 8490.

# TEST REQUESTS

### Requesting procedure

Requests for laboratory tests must be made using Electronic Order Comms where available.

If electronic requesting is not possible then requests must be submitted using a recognised microbiology request form, available from the Pathology Department. Any specimens received without a valid request (either electronic or paper) will not be processed.

Trust Order Comms systems for both Darent Valley Hospital and Medway Maritime Hospital have been developed for pathology requesting along with equivalent systems for GP practices.

The information on all Order Comms request, forms and accompanying specimens must

correspond and meet minimum acceptance criteria as described in Specimen Labelling (see below).

Incomplete requests may cause delays in availability of results as specimens may be delayed or not processed. Incorrectly or incompletely labelled specimens may be discarded.

All unlabelled specimens will be discarded.

Whether a request is made via Order Comms or a form it must include the following:

1. Patient data – name (surname and Forename), hospital number/NHS number, date of birth, gender
2. Specimen type – for example, blood, faeces, wound swab (stating site of wound). If urine, state whether MSU, CSU, clean catch, etc.
3. Test required – please be specific and do not ask for “viral titres.” Please request “viral serology” and state in the clinical details field which viruses you require, or if in doubt, discuss it with the laboratory first. This also applies to autoantibody screens.
4. Clinical information - include information relevant to the specimen and investigation

e.g. type of infection, travel history, anatomical site from which specimen was taken, potential exposure to illness, date of onset and duration of illness and any other information that may be clinically relevant. Serology samples may not be processed without relevant clinical details and will be stored for 3 months awaiting details to be provided. If not received within this period, the sample will be discarded.

1. Antimicrobial therapy – include all recent, current or intended antimicrobials
2. Ward, clinic or GP practice and Consultant / GP’s name - essential for the report to be returned to the relevant place and the doctor to be contacted if the result is urgent. Please write the consultants name clearly and include a contact number
3. Contact / bleep number for urgent results.

Where possible please organise routine specimens to arrive by 16:00hrs Monday to Friday.

### Adding additional tests to a request

If further Microbiology tests are required on a specimen already received by the laboratory the requestor must contact the laboratory first to discuss the additional requests and to check if there is sufficient specimen available. If agreed with the laboratory such requests must be accompanied by a new order for the extra test(s). Do not place an ‘Add-on’ request for extra microbiology tests as these cannot be processed; place a new order for the test required. Requests for additional **Microbiology tests to be added to a Biochemistry sample are not accepted**. The laboratory will advise if a new specimen must be collected.

Requesters **MUST** ensure that blood culture samples are sent separately from samples for blood sciences.

Verbal requests are **NOT** accepted. A paper request form or bar coded request sticker is required stating test(s) requested.

### Urgent requests

During normal laboratory hours please telephone urgent requests to extension 4895 (internal) or 01322 428100 and ask for extension 4895 (external), or speak to the Darent Valley medical staff on extension 8732 or 8836 or for Medway medical staff extension 5236.

It is the responsibility of the person taking the specimen to contact the laboratory to discuss sending urgent specimens and then to contact portering services to arrange delivery.

### Out of hours

1. All tests that need to be performed out of hours must be requested by the clinician looking after the patient by contacting the Biomedical Scientist (BMS) on call for Microbiology via Switchboard. The BMS is on call from home and only attends the department if called in. Do not call Switchboard until the specimen has been taken.
2. A porter must be contacted to take the specimen to the laboratory at the same time as the BMS is called. Do not send unrepeatable specimens (e.g. CSF) via the pneumatic tube system.
3. Tests sent outside of normal working hours without contacting the on-call BMS will not be processed until the next day.
4. Only send urgent specimens when the test will affect the immediate management of the patient.
5. Non-urgent specimens taken out of hours must be sent to the laboratory for refrigeration. These include urines and swabs taken immediately prior to starting antibiotic therapy. It is not necessary to telephone about these.
6. Blood cultures taken out of hours must be sent via a porter to Pathology Reception at either Darent Valley Hospital or Medway Maritime Hospital. It is not necessary to telephone the BMS on call.
7. Specimens that can be examined out of hours are:
   * Cerebrospinal fluids
   * Joint fluids
   * Ascitic fluids
   * Suprapubic aspirates from infants <3 months
   * HIV and HBsAg on women in labour without a booking blood

Requests for other investigations outside of normal working hours need to be discussed with the Consultant Microbiologist who is available via switchboard.

### Specimen containers

Please contact the laboratory if a test is not listed within this handbook or you are unsure about which specimen container to use. Unless specified, one specimen is sufficient for each

test. Types of specimen containers are detailed in the table of laboratory investigations (see below).

If a blood specimen is taken with a syringe and needle do not push the needle through the septum of the blood tube as this is likely to cause significant haemolysis of the specimen, which may invalidate results for some tests. In this case, the cap of the blood tube must be removed as well as the needle from the syringe in order to fill the tube. Plastic caps to seal the blood tube are available from the laboratory.

**Specimen collection** *(Please refer to POL.PAT.27 Sample acceptance and Rejection policy)*

The best results are obtained when an appropriate, well-taken specimen and in the proper container, is delivered to the laboratory promptly. Please contact the laboratory if there is any doubt about the best specimen to take or you have questions about any test. In the case of urgent investigations please contact the laboratory.

## General guidelines on specimen collection

1. Take care to avoid contamination of the specimen by micro-organisms normally found on the skin and mucus membranes. Sterile equipment and aseptic technique must be used for collecting specimens, particularly for those from normally sterile sites. Instructions for patients can be found in appendix i at the end of this document.
2. Send specimens in the correct containers (see table)
3. Collect specimens from the actual site of suspected infection. Please do not send just blood specimens for ‘viral serology’ if there are more suitable specimens such as vesicular fluid, throat swab or CSF
4. Take specimens that are representative of the disease process. For example, respiratory specimens are more appropriate than blood for serology in cases of acute respiratory infection
5. Obtain an adequate quantity of material
6. All swabs or material from swabs for virology must be immersed in virus transport medium (VTM) obtained from the laboratory and transported promptly back to the laboratory; please ensure that caps are firmly screwed on. Viruses may not survive prolonged storage at room temperature or may be overgrown by bacteria or fungi.
7. **Collecting multiple samples**. When several samples from the same patient are to be collected, including multiple pieces of tissues, MRSA swabs, slides etc, ensure primary samples are labelled individually one at a time, in order of collection from the patient. Ensure patient details, collection date and collection time is specified on the sample container/swab to verify identification of the patient. Requestors must ensure that samples collected have secure caps or lids securely tightened or sealed appropriately to prevent leaks and cross contamination.

### Factors affecting specimen quality and interpretation of results

|  |
| --- |
| **Causes of misleading results relating to specimen collection** |
| * Physical activity (including fast walking) within 20 minutes * Smoking * Stress * Dehydration * Drugs or dietary supplement administration within 8 hours * Time (diurnal variance) * Posture (lying, standing or sitting) * Haemoconcentration from prolonged tourniquet pressure * Excessive negative pressure when using syringe * Incorrect tube type * Capillary or venous blood * Insufficient or excess anticoagulant * Inadequate mixing of specimen * Inadequate specimen storage conditions (temperature) * Delay in transit to the laboratory |
| **Factors which may affect laboratory results** |
| * Please note false negative blood culture results can occur due to the use of the following antibiotics – ceftazidime, cefepime and ceftriaxone * Specimen quality (under filled, over filled, clotted including fibrin clots) * Labile properties of assayed components * Interference (lipaemia, icteria, haemolysis) * Centrifugation * Interactions with anticoagulants (eg platelet clumping in EDTA) * Pregnancy |
| **It may be necessary under certain circumstances for the laboratory to request a repeat specimen for confirmation of abnormal or equivocal results** |

### Storing and transporting specimens

Samples are transported from GP surgeries, Queen Mary’s Hospital and Medway Hospital to the Pathology reception each day by regulated couriers. Samples need to be stored in appropriate conditions prior to transportation. A delay in transportation may affect the validity of the results if not stored correctly.

Serology samples are stored for 3 weeks and any additional tests requests may be accepted during this period. There may be exceptions to this dependant on test requested due to stability of the sample. For serology requests such as Parvovirus investigations, no additional requests can be made after 3 days. For all other Serology samples, eg. Booking bloods, if serum has been frozen, then additional test requests may be accepted up to a period of 2 years.

Microbiology samples are stored for 1 week and CSF samples are stored for 2 months. Sterile body fluids are stored for 3 weeks.

### Potentially infectious specimens and high risk specimens

If a patient is in a particularly high risk group e.g. viral haemorrhagic fever, SARS, anthrax, the laboratory must be contacted for further advice prior to taking specimens.

Specimen labelling

All specimens must be labelled with the same patient details as those on the request.

When labelling multiple samples from the same patient eg, MRSA swabs or samples received as part of a screen, samples must be labelled individually ensuring that each sample site matches the corresponding label or barcode, patient details are clear and corresponding and that samples are received in good condition without leaks or possible signs of contamination.

When Order Comms is used to place a request labels are automatically printed for patient specimens. Labels must be attached along the specimen tube, not around it, as the bar codes may not be read by laboratory analysers.

For OSNA specimens:

The specimen must be labelled with patient’s full name, date of birth and numbered according to the order of removal (number 1 will be the sentinel lymph node). Theatre staff must telephone the laboratory when the specimen is on its way.

For all other specimens:

Specimen containers must not be pre labelled before a specimen is obtained.

All specimens and request forms, if used, must have the following patient information:

* Patient surname
* Patient first name
* Patient date of birth
* Patient NHS number or Hospital (PAS) registration number
* Date and time of sampling
* Location (Ward, GP name and address)
* Identifier of the person taking the specimen (this is auditable proof of location and phlebotomist i.e. the use of Order Comms traces the member of staff who printed the labels which in Trust policy is the person who takes the blood and details the location the specimen was taken. For non-order comm requests, the initials of the staff member who took the blood must be on the specimen alongside the location).

NHS numbers or Hospital (PAS) numbers must always be used when available – this ensures a single patient file is maintained on the laboratory computer system.

Positive patient identification is essential and in-patients must have their wristbands checked.

Sending specimens to the laboratory

All specimens for investigation must be sent to the laboratory as soon after collection as possible in order to minimise specimen degradation or possible over growth by commensal organisms. Specimen containers must be securely capped and placed in a sealed specimen transport bag.

Specimens and or requests which do not contain the required patient information as described above, or are in the incorrect specimen container, will not be processed.

It is the responsibility of the sender to ensure that the specimen is labelled, packed appropriately and is accompanied by the relevant documentation.

Specimens from within Darent Valley Hospital

Specimens for the laboratory must be sent via the portering service as soon as possible. Outside of routine hours a porter must be bleeped for any urgent specimen that requires processing.

In addition to sending specimens via portering services all specimens for Microbiology, including blood culture bottles may be sent to the department by the pneumatic air tube delivery system from a variety of locations in the hospital at Darent Valley Hospital including:

* Phlebotomy Outpatients
* Accident and Emergency (A/E)
* Intensive Care Unit (ICU)
* Tambootie Ward (SCBU)
* Rosewood Ward
* Delivery Suite
* Redwood Ward
* Cherry Ward
* Pine Therapy Unit

The pneumatic air tube system is operated by Serco – if it breaks down please phone 8888.

The exceptions are; known high risk specimens (e.g. viral haemorrhagic fever cases) or suspected emerging diseases, which **SHOULD NOT** be sent via the pneumatic tube.

Specimens from Medway Maritime Hospital

Specimens collected at Medway Maritime Hospital are taken by porters to Pathology in Medway Maritime Hospital and transported to Pathology in Darent Valley Hospital via Delta couriers provided by Dartford and Gravesham NHS Trust.

Specimens from Queen Mary’s Hospital, Sidcup

Specimens are collected for Pathology at QMH and transported via Delta courier provided by Dartford and Gravesham NHS Trust.

Specimens from General Practices

While the laboratory will accept patients delivering their specimens direct to the laboratory during normal opening hours, patients must be encouraged to return their specimens to their GP practice. The laboratory provides a courier service to all GP practices in the service area for collection of specimens. In this way specimens are transported to the laboratory in the appropriate transport containers and in a timely manner.

Transport times of specimens

Acceptable transport times (see table below) are stated by the laboratory as the maximum time within which specimens are acceptable for processing. Specimens that are received later than these maximum transport times may be rejected if there is a likelihood that the result may have been affected. All samples are transported within the courier cool bag which is acceptable but must be separated into optimal temperature conditions for each sample type once received in the laboratory.

|  |  |
| --- | --- |
| **Process** | **Optimal stability time before processing** |
| Investigation of faeces | 48 hours |
| Investigation of blood cultures | 11 hours |
| Investigation of throat swabs | 48 hours |
| Investigation of urine | 24 hours |
| Investigation of ear swabs | 48 hours |
| Investigation of nose swabs | 48 hours |
| Investigation of eye swabs | 48 hours |
| Investigation of wound swabs and associated specimens | 48 hours |
| Investigation of bile | 48 hours |
| Investigation of sterile fluids | 24 hours |
| Investigation of cerebrospinal fluid | 1 hour |
| Investigation of genital tract and associated specimens | 48 hours |
| Investigation of MRSA screening swabs | 48 hours |
| Investigation of specimens for Mycobacterium species | 48 hours |
| Investigation of sputum and associated specimens | 48 hours |
| Detection of Helicobacter pylori antigen in faeces | 48 hours |
| Detection of Clostridium difficile toxin in faeces | 48 hours |
| Investigation of samples for dermatophytes | 48 hours |
| Investigation of parasites | 72 hours |
| Detection of hepatitis B surface antigen (HBsAg) | 72 hours |
| Detection of hepatitis B antibody (anti HBs) | 72 hours |
| Detection of hepatitis B core antibody (anti HBc) | 72 hours |
| Detection of hepatitis C antigen / antibody | 72 hours |
| Detection of HIV antigen / antibody | 72 hours |
| Detection of hepatitis E IgG and IgM | 72 hours |
| Detection of rubella IgG antibody | 72 hours |
| Detection of syphilis total antibodies | 72 hours |
| Detection of rheumatoid IgM antibody | 72 hours |
| Detection of hepatitis A IgM antibodies | 72 hours |
| Detection of EBV IgG and IgM antibodies | 72 hours |

|  |  |
| --- | --- |
| Detection of VZV IgG antibody | 72 hours |
| Detection of Borrelia burgdorferi IgG and IgM antibodies | 72 hours |
| Detection of parvovirus IgG and IgM antibodies | 72 hours |
| Detection of CMV IgG and IgM antibodies | 72 hours |
| Detection of Toxoplasma IgG and IgM | 72 hours |
| Detection of HBc IgM, HBeag, anti-HBe ab | 72 hours |
| Detection of Measles IgG | 72 hours |
| Detection of ASO | 72 hours |
| Detection of RSV | 72 hours |
| Detection of Legionella pneumophila antigen | 24 hours |
| Detection of pneumococcal antigen | 24 hours |
| Chlamydia and Gonorrhoea testing using the Cobas 4800 | 72 hours |
| Detection of rotavirus | 72 hours |
| Detection of adenovirus | 72 hours |
| Detection of Flu A/B | 24 hours |
| Detection of SARS COV2 (Covid 19) | 24 hours |

Spillages and leaks

Specimen bags containing leaking specimens will be discarded and the sender notified. If the leak has contaminated the inside or outside of the air tube carrier, the carrier will be taken out of service and decontaminated.

All areas with an air tube station will be notified by Serco to ensure other arrangements for specimen transport can be put in place.

Once the decontamination process is complete and the air tube system is working, users will be notified by Serco.

Specimen rejection (Please refer to POL.PAT.27 Sample acceptance and Rejection policy) Specimens may be rejected for the following reasons:

* The specimen is insufficient for testing
* The specimen labelling requirements are not met
* The specimen is haemolysed
* The specimen is too old to process
* The specimen type is incorrect
* There is doubt over the specimen origin
* There are no or inappropriate clinical details
* The test requested is inappropriate – in some cases the relevant test will be selected by the laboratory
* The specimen does not meet testing requirements, e.g. formed stools for *C. difficile*
* The specimen is received leaking

The requestor will be informed via the electronic reporting system. In some cases, e.g. *C. difficile* or RSV, the laboratory will phone to request another specimen.

Specimens are not immediately discarded so please contact the laboratory to discuss the request in case the specimen can still be used.

## Specimen referral

Specimens for referral to another laboratory must always be sent via Pathology. This will ensure they are correctly packaged and can be tracked.

Report availability

Reports are issued after analysis of the specimen and authorisation. Please refer to tables later on in this handbook that detail expected turnaround times for the different assays and take into consideration the potential need for secondary testing.

Advice on interpretation of reports can be sought from the medical microbiologists.

All authorised results are available on the Web Browser for hospital wards and available via the GP electronic link for GP surgeries – this is dependent upon the time individual practices call off results into their systems.

Information governance

Receipt of a recognised test request assumes that the patient has agreed that the test may be carried out, together with any follow-on tests required, and that information may be shared with healthcare professionals and statutory bodies as required. In accordance with legal requirements the department adheres to the Data Protection Act 1998 for all patient information and follows the guidelines laid out by the Royal College of Pathologists for the retention and disposal of laboratory records and specimens (5th edition 2015). Further information on this topic is available from the department upon request.

## Visitors to the laboratory

Doors to the Pathology Department are locked at all times. Entry is for authorised personnel only. All visitors to Pathology must report to Pathology Reception. Pathology Reception staff are responsible for meeting and greeting all visitors and will inform laboratory personnel of the arrival of the visitors. All visitors must sign in the visitors’ book on arrival and will be issued with a visitor’s badge. On departure visitors must sign out the visitors’ book and return the badge to the Reception staff. Laboratory personnel will escort visitors at all times.

## Consultant guidelines

These can be found on the DVH Trust website [www.dgt.nhs.uk](http://www.dgt.nhs.uk/) and the intranet site ADAGIO. For MFT they can be found at [www.medway.nhs.uk](http://www.medway.nhs.uk/) and the intranet site The Clocktower.

## Complaints

The complaints procedure for the laboratory is to make a formal complaint to the PALS office which is forwarded to the General Manager of Pathology or Designated Individual to investigate and respond to the Trust Complaints office within the required timescale; for further information refer to POL.PAT.33 *Complaints and Compliments Policy.*

Complaints regarding the service must be made in the first instance to any of the personnel

listed on page 7. If you feel the need to take any matter further, a written complaint must be made to Complaints Manager, Darent Valley Hospital or via email to [dgn-tr.complaints-](mailto:dgn-tr.complaints-dvh@nhs.net) [dvh@nhs.net](mailto:dgn-tr.complaints-dvh@nhs.net).

## Laboratory investigations

**Stated turnaround times are calculated from the time samples are received within the laboratory to the time an authorised report is available. Our objective is to have results available up to the stated turnaround time for 95% of requests. Some results will be available earlier than the stated turnaround times.**

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| **Test** | | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic**  **storage conditions** | **Turnaround times (TAT)**  **(Working days)** | **Comments/ Referral Laboratory** |
|  | **Microbiology in-house tests** | | | | | | |
| Bile  ***This test is UKAS accredited.*** | | Bile collected into a 30mL white capped universal and placed in a sealed plastic bag.  Minimum volume required is 1mL. | Isolation and identification of bacteria, fungi and yeasts of clinical significance. | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 3 days for a positive. | Collect specimens before antimicrobial therapy where possible. |
| Blood culture  ***Please Note:***  ***A minimum volume of 10mls of sterile fluid is required.***  ***This test is UKAS accredited.*** | | **Adult:**  Aerobic culture bottle (colour coded green FA PLUS).  For the recovery of aerobic micro-organisms (bacteria and fungi).  Anaerobic culture bottle (colour coded orange | Isolation and identification of bacteria, fungi and yeasts of clinical significance. | Not applicable | Room temp | Interim negative at 48hrs, complete negative at 5 days.  Positive cultures are telephoned immediately. | Collect specimens before antimicrobial therapy where possible.  Although blood can be sampled at any time, drawing blood at or as soon as possible |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | FN PLUS).  For the recovery of anaerobic and facultative anaerobic micro-organisms (bacteria).  **Paediatric**:  Paediatric culture bottle (colour coded yellow PF PLUS).  For the recovery of aerobic and facultative anaerobic micro- organisms (bacteria and yeast) where only a small volume of blood is available.  A minimum volume of 0.5mL of blood is required. |  |  |  | Some cultures are extended for up to 21 days, e.g. endocarditis and brucellosis. | after a fever spike is optimal, except in endocarditis where timing is less important.  Post mortem blood cultures have been shown to be associated with higher positive rates than blood cultures sampled during life. Results of post mortem blood cultures and their clinical significance must be interpreted with caution. |
| Candida auris  ***This test is UKAS accredited****.* | Swabs from nose, throat, groin, perineum, wound.  Urine, sputum. | Isolation of candida auris | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 3 days for a positive |  |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Carbapenemase Resistant Enterobacteriaceae (CRE)  ***This test is UKAS accredited****.* | Rectal swab.  All swabs must be transported to the laboratory using Amies transport medium with or without charcoal. | Isolation and identification of CRE. | Not applicable | Fridge (2-8°C) | 48 hours for negative culture, All positive cultures are sent to referral laboratory for confirmation, up to 7 days for a referral  report | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  Rectal swabs are described in the Infection Control Policy as the recommended specimens for screening. |
| Cerebrospinal fluid  ***This test is UKAS accredited.*** | Ideally a minimum volume of 1mL.  **For *Mycobacterium* species*,* at least 10mL where possible.**  CSF is normally collected sequentially into three or more separate containers which must be numbered consecutively.  Collection of an additional specimen in a | Isolation and identification of bacteria, fungi and yeasts of clinical significance. | Neonates (<28 days)  **Normal ranges:**  WBC: 0-30  cells/mm3  Infants (1 to12 months)  WBC:0-15  cells/mm3  Children (> 1 yr.)/Adults  WBC: 0-5 | Fridge (2-8°C) | Microscopy available within 2 hrs, culture result up to 3 days. | GREAT ORMOND STREET  Broad Range PCR (16S bacterial/18S fungal)  Collect specimens before antimicrobial therapy where possible, but this must not be delayed unnecessarily pending lumbar puncture and CSF |

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|  | container with fluoride for glucose estimation (Biochemistry) is also recommended, although such tubes must be filled last because they may contain environmental bacteria which might contaminate specimens for culture.  Common practice is to send the first and last specimens taken for microbiological examination and the  second specimen for protein.(Biochemistry) |  | cells/mm3  No RBCs should be present in normal CSF |  |  | culture.  Samples must be collected in 30ml sterile white capped universal container. |
| Cerebrospinal fluid (Referral test) | Ideally a minimum volume of 1mL. | Viral PCR | Not applicable | Fridge (2-8°C) |  | Micropathology |
| *Clostridium difficile*  ***This test is UKAS accredited****.* | Faeces collected using a clean, dry, disposable bedpan or similar container, and transferred into a 30mL | Detection of *Clostridium difficile* glutamate dehydrogenase (GDH). | Not applicable | Fridge (2-8°C) | 2 days | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  PHE LEEDS-  Riboytping |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | capped universal container with spoon. | Detection of *Clostridium difficile* toxin. |  |  |  | Not tested if positive within previous 28 days.  Only tested on Bristol Stool chart 5-7. |
| Faeces  ***This test is UKAS accredited.*** | Faeces collected using a clean, dry, disposable bedpan or similar container, and transferred into a 30mL capped universal container with spoon.  A minimum of 5mL is required. | Isolation and identification of bacteria of clinical significance. | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 14 days for a positive. | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  THE DOCTORS LABORATORY-  Enteric PCR  VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE-  Enterovirus abs  Collect specimens soon as possible after onset of symptoms.  Collect specimens before antimicrobial therapy where  possible. All |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  |  | presumptive Salmonella sp , Shigella (Not sonnei), E,coli 0157 and Vibrio Cholera are sent to reference lab for confirmation. |
| Genital tract specimens  ***This test is UKAS accredited.*** | High vaginal swab, urethral swab, cervical swab, pelvic fluid, pelvic pus and fluid from Bartholin's abscess / cyst.  Unless otherwise stated, swabs for bacterial and fungal culture must be transported to the laboratory using Amies transport medium with charcoal.  Fluid or pus must be collected in a 30mL white capped universal. | Isolation and identification of yeasts and fungi of clinical significance. | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 3 days for a positive. | Collect specimens before antimicrobial therapy where possible.  Cervical and high vaginal swabs must be taken with the aid of a speculum. It is important to avoid vulval contamination of the swab. The posterior fornix, including any obvious plaques must be swabbed. If pelvic infection, including gonorrhoea, is suspected, the  cervical os must be |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  |  | swabbed. |
| Hair, nail and skin  ***This test is UKAS accredited.*** | Hair, nail and skin specimens may be collected into folded paper squares, secured and placed in a plastic bag or in commercially available packets.  Alternatively, use a 30mL white capped universal or 70mL yellow capped container. | Isolation and identification of yeasts and fungi of clinical significance. | Not applicable | Room temp | Microscopy 2 days, culture up to 21 days if negative. | PHE, SOUTHMEAD, BRISTOL  Collect specimens before anti-fungal therapy where possible. |
| *Helicobacter pylori*  ***This test is UKAS accredited.*** | Faeces collected using a clean, dry, disposable bedpan or similar container, and transferred into a 30mL capped universal container with spoon. | Detection of *Helicobacter pylori* antigen. | Not applicable | Fridge (2-8°C) | 3 days | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  Gastric biopsy (Mon – Thurs only)  Collect specimens before antimicrobial therapy where possible.  The specimen is  unsatisfactory if any residual soap, |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  |  | detergent or disinfectant remains  in the pan. |
| Methicillin resistant Staphylococcus aureus (MRSA)  ***This test is UKAS accredited.*** | Screening swabs including nose swab, groin swab, throat swab, wound swab and urine as per MRSA screening policy.  All swabs must be transported to the laboratory using Amies transport medium with or without charcoal. | Isolation and identification of MRSA. | Not applicable | Fridge (2-8°C) | 1 day for negative culture, up to 3 days for a positive. | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  Nose and groin swabs are described in the Infection Control Policy as the recommended specimens for screening. |
| *Mycobacterium sp.*  ***This test is UKAS accredited.*** | Sputum, bronchoalveloar lavage, pleural fluids, aspirates, washings and brushings, cerebrospinal fluid, pus, urine, swabs, tissues and biopsies.  Whole of early morning urine collected into 250ml containers- 3 consecutive specimens | Isolation and identification of *Mycobacterium* species of clinical significance. | Not applicable | Fridge (2-8°C) | TB  microscopy 1 day, negative culture result up to 8 weeks.  Positive results released as available. | MYCOBACTERIUM REF LAB (NMRS-  South)  Collect specimens before antimicrobial therapy where possible.  Single swabs will be rejected as unable to process for both microscopy  and culture |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | must be sent.  Bone marrow in a 3mL lithium heparin tube. |  |  |  |  | Discuss with Consultant Microbiologist before taking a  Bone Marrow |
| Parasites  ***This test is UKAS accredited.*** | Faeces, liver aspirate, duodenal / jejunal aspirate, urine, other body fluids, peri-anal swabs, skin and hair.  Whole parasites and arthropods.  Faeces in a 30mL capped universal container with spoon.  Peri-anal swabs in sterile saline in 30mL white cap universal.  All other specimens in a 30mL white-capped universal container.  Take 3 faeces samples over a 2 week period. | Detection and identification of helminths, nematodes, flukes, parasitic larvae, protozoa, ectoparasites, ova, eggs and cysts. | Not applicable | Fridge (2-8°C) | Up to 3 days.  . | HOSPITAL for TROPICAL DISEASE, LONDON  Peri-anal swab for threadworm ova - between 10pm and midnight, or early in the morning, before defecation or bathing. Peri-anal swab must be taken first thing in the morning, before washing and broken off in to container.  For *Schistosoma* the last few drops of urine passed must be collected in to a container over a 24hr period. |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  |  | Please give relevant clinical details including any history of foreign travel. |
| Pus, wound swabs, drain swabs, abscess swabs, tissues and biopsies  ***This test is UKAS accredited.*** | Skin swab, swab from superficial wound, swab from non-surgical wound.  Abscess pus, abscess swab, deep-seated pus swab, post-operative wound swab, wound exudates.  Tissue and biopsy.  IUCDs, vulval, labial and genital ulcer swabs.  All swabs must be transported to the laboratory using Amies transport medium with | Isolation and identification of bacteria, fungi and yeasts of clinical significance. | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 3 days for a positive.  Extended enrichment result may take up to 7 days. | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  Collect specimens before antimicrobial therapy where possible.  Specimens of pus/exudate, if present, are preferred to swabs.  Sample a representative part of the lesion.  Swabbing dry crusted areas is  unlikely to yield the |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | charcoal. |  |  |  |  | causative pathogen.  If specimens are taken from ulcers, the debris on the ulcer must be removed and the ulcer cleaned with saline. A biopsy or, preferably, a needle aspiration of the edge of the wound must then be taken. |
| Semen analysis  ***This test is NOT UKAS accredited****.* | Semen | Analysis of semen sample for infertility and post vasectomy | Parameter Lower reference limit  Semen volume (ml)  1.5 (1.4–1.7)  Total sperm number (106 per ejaculate)  39 (33–46)  Sperm concentration (106 per ml)  15 (12–16)  Total motility (PR + NP, %)  40 (38–42)  Progressive motility | Body temp (36.8-37°C) | 2 days | If manual morphology is required results may take up to 7 days. |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  | (PR, %)  32 (31–34)  Vitality (live spermatozoa, %) 58 (55–63)  Sperm morphology (normal forms, %)  4 (3.0–4.0)  pH ≥7.2 |  |  |  |
| Sputum and associated specimens  ***This test is UKAS accredited.*** | Sputum, bronchoalveloar lavage, pleural fluid, aspirates, washings and brushings.  Sputum - ideally, a minimum volume of 1mL in a 70mL yellow capped specimen container.  BAL - it is difficult to be specific on volume required; in principle, as large a volume as possible is preferred.  For all specimen types, | Isolation and identification of bacteria, fungi and yeasts of clinical significance. | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 3 days for a positive. | MICROPATHOLOGY, COVENTRY  Collect specimens before antimicrobial therapy where possible. |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | numbers and frequency of specimen collection are dependent on clinical condition of patient. |  |  |  |  |  |
| Sterile fluids  ***This test is UKAS accredited.*** | Body fluids including joint fluids, bursa fluids, ascitic fluid, peritoneal fluid and continuous ambulatory dialysis fluid.  Ideally at least 1mL collected in a 30mL white capped universal container | Isolation and identification of bacteria, fungi and yeasts of clinical significance.  Joint fluids - identification of birefringent crystals (scope only to state if present/ absent). | Reference ranges only applies to:-  Ascitic fluids  /CAPD  **Normal ranges:**  WBC <250  cells x 106/L | Fridge (2-8°C) | Microscopy available same day, culture result up to 3 days. | MICROPATHOLOGY, COVENTRY  Collect specimens before antimicrobial therapy where possible. |
| Swabs – Ear  ***This test is UKAS accredited.*** | Ear swab - any pus or exudate.  All swabs must be transported to the laboratory using Amies transport medium with charcoal. | Isolation and identification of bacteria, fungi and yeasts of clinical significance. | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 3 days for a positive. | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE-  (Isolates)  Collect specimens before antimicrobial therapy where possible. |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Swabs – Nose  ***This test is UKAS accredited.*** | Nose swab.  All swabs must be transported to the laboratory using Amies transport medium with charcoal. | Isolation and identification of bacteria of clinical significance. | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 3 days for a positive. | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  (Isolates)  Collect specimens before antimicrobial therapy where possible. |
| Swabs – Throat  ***This test is UKAS accredited.*** | Throat swab.  All swabs must be transported to the laboratory using Amies transport medium with charcoal. | Isolation and identification of bacteria of clinical significance infections. | Not applicable | Fridge (2-8°C) | 2 days for negative culture, up to 3 days for a positive. | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE-  (Isolates)  Collect specimens before antimicrobial therapy where possible.  Throat swab taken from the tonsillar area and/or posterior pharynx, must be taken avoiding the tongue and uvula. |
| Urine | Urine and suprapubic | Isolation and | Normal range: | Fridge (2-8°C) | Microscopy | BACTERIOLOGY |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| ***This test is UKAS accredited****.* | aspirate in a 10mL red capped boric acid urine tube. | identification of bacteria, fungi and yeasts of clinical significance. | WBC count  <10 cells/mm3 |  | available on day of receipt.  Culture results available at 24hrs - final report may take up to 3 days if further work required. | REFERENCE DEPARTMENT, PHE, COLINDALE  Collect specimens before antimicrobial therapy where possible.  Microscopy will not be carried out on pad urine specimens. Culture may not be carried out if microscopy  does not indicate possible infection. |
| Vancomycin Resistant Enterococcus (VRE) also known as Glycopeptide Resistant Glycopeptide (GRE)  ***This test is UKAS accredited.*** | Rectal swab Faeces | Isolation and identification of VRE | Not applicable | Fridge (2-8°C) | 48 hours for negative culture  72 hours for positives | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  Only sent to referral laboratory if requested by Consultant Microbiologist |

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| **Test** | | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
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|  | **Serology tests- (Tests c*urrently performed on Liaison XL platforms are not yet UKAS accredited)*** | | | | | | |
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| Antenatal booking blood  ***This test is NOT UKAS accredited if performed on Liaison platform.*** | | Blood in a 5mL red top (with yellow insert) vacutainer blood bottle. | HIV  Hepatitis B surface antigen  Syphilis | Not applicable | Fridge (2-8°C) | 2 days for negatives  Positives up to 8 days | MICROPATHOLOGY, COVENTRY  If positive or equivocal HIV/Syphilis specimen sent to Reference Laboratory for confirmation. |
|  | |  |  |  |  |  | Late bookers (after 16 weeks) – 24 hr TAT |
|  | |  |  |  |  |  | In labour – (unbooked) |
|  | |  |  |  |  |  | 4 hours TAT |
| Antenatal confirmation  (Referral test) | | Blood in a 5mL red top (with yellow insert) vacutainer blood bottle | Syphilis confirmation  HIV confirmation | Not applicable | Fridge (2-8°C) |  | Bristol PHE  VRL Colindale |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Anti-streptolysin O  ***This test is UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of anti- streptolysin O.  Used to indicate recent infection with group A β-haemolytic streptococci and can be an aid in the diagnosis of acute rheumatic fever and post-streptococcal glomerulonephritis. | ‘Upper limit of normal’ in pre- school children  = <100IU/ml  School age children & young adults = 166 – 250  IU/ml  Average ‘Upper limit of normal’ =  200IU/ml | Fridge (2-8°C) | 2 days | MICROPATHOLOGY, COVENTRY |
| Borrelia burgdorferi  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of Borrelia burgdorferi IgG and IgM for Lymes disease. | Not applicable | Fridge (2-8°C) | 6 days | RARE AND IMPORTED PATHOGENS LABORATORY, PORTON DOWN  GREAT ORMOND STREET-  Borrelia burgdorferi abs –  If positive or equivocal, specimen sent to  referral laboratory |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  |  | for confirmation.  Details of date of  tick bite and travel history required. |
| Cytomegalovirus (CMV)  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of CMV IgG and IgM antibodies. | Not applicable | Fridge (2-8°C) | 2 days | MICROPATHOLOGY, COVENTRY |
| CMV avidity  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Indication for detecting primary CMV infection in pregnancy | Not applicable | Fridge (2-8°C) | 6 days | MICROPATHOLOGY, COVENTRY  Only tested on stored antenatal booking blood if  CMV IgG is positive on Torch screen. |
| Epstein Barr (EBV)  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of EBV IgG and IgM antibodies. | Not applicable | Fridge (2-8°C) | 2 days | MICROPATHOLOGY, COVENTRY |
| Hepatitis A  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of hepatitis A IgM antibody. | Not applicable | Fridge (2-8°C) | 2 days | WILLIAM HARVEY HOSPITAL, ASHFORD- IgG  (immunity)  VIRUS REFERENCE  DEPARTMENT, PHE, COLINDALE- IgM |

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|  |  |  |  |  |  | confirmation. |
| Hepatitis B  ***This test is NOT UKAS accredited if performed on Liaison platform.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of hepatitis B surface antigen and Hepatitis B core antibody. | Not applicable | Fridge (2-8°C) | Urgent tests are processed and available on the same day, routine screens 2 days.  Hepatitis B markers 5 days. | MICROPATHOLOGY, COVENTRY  VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE-  **Genotyping**  If positive surface antigen, hepatitis B markers (HBeAg, anti- HBe, HBc IgM)  will be tested. |
| Hepatitis B surface antibody  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of hepatitis B surface antibody. | Not applicable | Fridge (2-8°C) | 3 days | To check immunity |
| Hepatitis C  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of hepatitis C antigen and antibody. | Not applicable | Fridge (2-8°C) | 2 days.  If positive a confirmation will take up to 7 days | MICROPATHOLOGY, COVENTRY  If positive, specimen sent to referral laboratory for confirmation, RNA and genotyping. |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
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| Hepatitis E  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of Hepatitis E IgG and IgM | Not applicable | Fridge (2-8°C) | 6 days  If positive a confirmation will take up to 10 days | VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE  If positive IgM specimen sent to referral laboratory for confirmation, RNA and  genotyping. |
| Human immunodeficiency virus (HIV)  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of HIV 1 and HIV 2 antigen and HIV antibody. | Not applicable | Fridge (2-8°C) | Urgent tests are processed and available on the same day, routine screens 2 days if negative.  If positive or equivocal a confirmation | VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE  If positive or equivocal, specimen sent to referral laboratory for confirmation and typing. |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  | from a referral laboratory will take up  to 14 days. |  |
| Legionella  ***This test is UKAS accredited.*** | Urine in a 30mL white capped universal container or in a 10mL red capped boric acid urine tube. | Detection of Legionella pneumophila antigen. | Not applicable | Fridge (2-8°C) | 1 day  If positive a confirmation will take up to 10 days | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  If positive, specimen sent to referral laboratory for confirmation |
| Measles IgG  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of Measles IgG | Not applicable | Fridge (2-8°C) | 2 days | For immunity  VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE –  **Measles IgM** |
| Needle stick injury  ***This test is NOT UKAS accredited if performed on Liaison platform.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of HIV, Hepatitis B and Hepatitis C | Not applicable | Fridge (2-8°C) | 1 day | Please state if sample is from donor or recipient.  Sample from Donor will be tested HIV, Hepatitis B &C |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  |  | and stored for 2 years.  Sample from recipient will be stored for 2 years. |
| Parvovirus  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle | Detection of parvovirus IgG and IgM | Not applicable | Fridge (2-8°C) | 5 days | MICROPATHOLOGY, COVENTRY  If positive, sample will be sent to referral laboratory for PCR |
| Pneumococcal antigen  ***This test is UKAS accredited.*** | Urine in a 30mL white capped universal container or in a 10mL red capped boric acid urine tube. | Detection of pneumococcal antigen. | Not applicable | Fridge (2-8°C) | 1 day |  |
| Pneumococcal abs/  Pneumococcal PCR  (Referral tests) | Serum CSF/EDTA  plasma/serum |  | Not applicable | Fridge (2-8°C) | 28 days  2 days | PHE,MANCHESTER |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Rheumatoid Factor  ***This test is UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of Rheumatoid IgM antibody. | = / >6 IU/ml Positive | Fridge (2-8°C) | 5 days | DVH samples processed on site.  Medway- East Kent |
| Rotavirus / Adenovirus  ***This test is UKAS accredited.*** | Faeces in a 30mL capped universal container with spoon. | Detection of rotavirus and Adenovirus antigen. | Not applicable | Fridge (2-8°C) | 1 day | VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE |
| Rubella  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle | Detection of rubella IgG antibodies. | Not applicable | Fridge (2-8°C) | 5 days | VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE  To check immunity. |
| Syphilis  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle | Detection of syphilis total antibodies. | Not applicable | Fridge (2-8°C) | 2 days.  If positive a confirmation will take up to 7 days | PHE, SOUTHMEAD, BRISTOL  If positive/equivocal  , specimen sent to  referral laboratory for confirmation. |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Toxoplasma  ***This test is NOT UKAS accredited.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Detection of *Toxoplasma* IgG and IgM. | Not applicable | Fridge (2-8°C) | 2 days  If positive a confirmation will take up to 14 days. | TOXOPLASMA REF LAB, SWANSEA  If positive IgM specimen sent to referral laboratory for confirmation. |
| Toxoplasma PCR (Referral test) | CSF, EDTA/citrated whole blood, amniotic fluid, aqueous/vitreous humours, tissue |  | Not applicable | Fridge (2-8°C) | 1 Day | MICROPATHOLOGY, COVENTRY |
| Varicella zoster virus (VZV)  ***This test is NOT UKAS accredited if performed on Liaison platform.*** | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | VZV IgG antibody for immunity | Immunocompetent:  >100 is a protective level  Immunosuppresse d  >150 is a protective level. | Fridge (2-8°C) | If urgent 1 day  Routine 2 days | State suspected date of contact if appropriate.  VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| VZV Avidity/ IgM VZV PCR  (Referral tests) | Serum  CSF, AC tap, EDTA/citrated whole blood, corneal scrape, vesicle fluid, skin/eye/vesicle/lesion swab, tissue, any respiratory specimen (sputum, BAL, NPA, nasopharyngeal swab),  aqueous/vitreous humour. |  | Not applicable Not applicable |  |  | MICROPATHOLOGY, COVENTRY |
| **Molecular Testing** |  |  |  |  |  |  |
| SARs Cov-2 (Covid 19 testing)  ***(This test is not yet UKAS accredited).*** | Combined Nose and Throat swabs in viral transport media | Covid 19 RNA | Not applicable | Fridge (2-8°C) | 1 day | Sputum samples  /Bronchial washings  Sent to referral lab. |
| Chlamydia trachomatis / Neisseria gonorrhoeae  ***This test is UKAS accredited.*** | Urine in Cobas PCR urine collection kit.  Genital, throat and rectal specimens in Cobas PCR dual swab collection kit. | Detection of Chlamydia trachomatis  / Neisseria gonorrhoeae DNA. | Not applicable | Fridge (2-8°C) | Negative:5 days  Chlamydia trachomatis Confirmed positive:7 days  Neisseria gonorrhoeae: | Patient should not urinate for 1 hour prior to specimen collection.  Positive rectal sent for LGV investigation.  Samples positive for Neisseria |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  | Confirmed positive:10 days. | gonorrhoeae sent to referral laboratory for  confirmation. |
| Flu A/Flu B  ***This test is NOT UKAS accredited.*** | Combined Nose and Throat swabs in viral transport media.  Nasopharyngeal aspirate | Detection of Flu A/ Flu B RNA | Not applicable | Fridge (2-8°C) | 1 day | Respiratory PCR (extended panel)  MICROPATHOLOGY, COVENTRY |
| RSV  ***This test is NOT UKAS accredited.*** | Combined Nose and Throat swabs in viral transport media.  Nasopharyngeal aspirate collected in a 15mL screw capped conical tube. | Detection of RSV RNA | Not applicable | Fridge (2-8°C) | 1 day | Respiratory PCR (extended panel)  MICROPATHOLOGY, COVENTRY |
| **OSNA** |  |  |  |  |  |  |
| One step nucleic acid amplification (OSNA)  ***(This test is not yet UKAS accredited).*** | Skeletonised lymph nodes in a 70mL yellow screw cap container, placed on ice. DO NOT add fixative. Lymph nodes must be placed in individual specimen pots and numbered. | Detection and quantitation of Cytokeratin 19 (CK  19). | A result of ++ (>5000  copies/mL) macrometastic tumour will cause the surgeon to carry out an | Kept in ICE during transportation | 30 minutes  – 1 hour depending on size and number of nodes | Only lymph nodes taken intra- operatively are suitable for this assay.  If the weight of the lymph node is less than 25mg, |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  | axillary node clearance.  A result of + (250- 5000  copies/mL) micrometastic  A result of (<250  copies/mL) is Negative. |  |  | the sample will have to be sent to histology by theatre staff.  This test must be pre-booked with the laboratory in advance as the specimen must be tested immediately.  Telephone laboratory to inform that specimens are in transit. Send on ice direct to laboratory, immediately after collection.  Process performed on Wednesdays and Fridays unless prior arrangements |

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| **Test** | | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | |  |  |  |  |  | have been made. |
|  | **Other tests – sent to Reference Laboratories.** The below list contains the more common tests requested and is not a complete list of all tests performed. Further information for less common tests is available from the Laboratory. | | | | | | |
| Immunology including:  ACR  ANCA, ANA, | | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Various referred tests | ACR 0-0.25  nmol/L  Anti-CCP 1-7  U/mL  TTG <7U/mL  negative, 7- 10U/mL equivocal,  >10U/mL  positive | Fridge (2-8°C) | Up to 28 days | Further immunology tests are available on request.  Auto-antibody tests are sent to a referral laboratory who will carry out tests based on clinical information, so accurate clinical details are essential.  Some positive tests result in further investigations. |
| CCP | |  |  |  |  |
| Aquaporin-4 | |  |  |  |  |
| CASPR2 | |  |  |  |  |
| Diabetes abs | |  |  |  |  |
| DPPX, GAD, GPC | |  |  |  |  |
| IGLON5 | |  |  |  |  |
| Intrinsic factor | |  |  |  |  |
| LG1I | |  |  |  |  |
| LKM, MAG | |  |  |  |  |
| Mitochondrial | |  |  |  |  |
| MOG, MUSK | |  |  |  |  |
| Neuronal antibodies | |  |  |  |  |
| Smooth muscle | |  |  |  |  |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| TTG, VGCC |  |  |  |  |  |  |
| Adenovirus PCR | Respiratory samples  CSF in a 30mL white capped universal container. | Adenovirus DNA | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY |
|  | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. |  |  |  |  |  |
|  | Vitreous fluid, eye fluid, skin swab, Urine, Bronchial washing,  NPA, Pericardial fluid, Bone marrow |  |  |  |  |  |
| Antimicrobials | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Amikacin Ethambutol Itraconazole Posaconazole  Rifampicin | Varies per assay. Please contact reference lab for specific assay ranges. | Fridge (2-8°C) | 3 days  4 days  4 days  4 days  4 days | PHE, SOUTHMEAD, BRISTOL |
|  |  | Teicoplanin |  |  | 3 days |  |
|  |  | Tobramycin |  |  | 3 days |  |
|  |  | Ganciclovir |  |  | 4 days |  |
|  |  | Voriconazole |  |  | 4 days |  |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | Blood in 4ml grey Fluoride oxalate vacutainer | Isoniazid |  |  | 4 days |  |
|  | 1-2ml separated serum in gold top vacutainer | Moxifloxacin |  |  | 3 days | Severn Pathology (North Bristol) |
| Aspergillus Antibodies | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Aspergillus IgG | Not applicable  Not applicable | Fridge (2-8°C) | 10 days | PHE, SOUTHMEAD, BRISTOL |
| Aspergillus Antigen | Galactomannan | Fridge (2-8°C) | 5 days |
| Avian antibodies | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Avian IgG | Not applicable | Fridge (2-8°C) | 10 days | IMMUNOLOGY, ROYAL BROMPTON |
| Bartonella antibodies | Blood in a 5mL gold top vacutainer or 1.3mL  yellow top paediatric blood bottle. | Bartonella IgG/IgM for Cat Scratch disease | Not applicable | Fridge (2-8°C) | 10-14 days | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE |
| B- D Glucan | Blood in a 5mL gold top vacutainer or 1.3mL | Fungal marker | Not applicable | Fridge (2-8°C) | 5 days | PHE, SOUTHMEAD, |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | yellow top paediatric blood bottle. |  |  |  |  | BRISTOL |
| Brucella antibodies | Blood in a 5mL gold top vacutainer or 1.3mL  yellow top paediatric blood bottle. | Brucella IgG/IgM | Not applicable | Fridge (2-8°C) | 10-14 days | ROYAL LIVERPOOL |
| BK and JC Polyoma viruses PCR | Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle.  CSF 30mL white capped universal container. | BK and JC DNA | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY  Serology no longer available |
| Broad Range PCR | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle OR  Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle.  CSF, sterile fluid or tissue in a 30mL white | Bacterial/fungal detection  16s Bacterial PCR 18s Fungal PCR | Not applicable | Fridge (2-8°C) | 5-10 days | GREAT ORMOND STREET |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | capped universal container. |  |  |  |  |  |
| CJD | CSF in a 30mL white capped universal container. | TSE agents | Not applicable | Fridge (2-8°C)  On arrival to lab sample is kept at -80°C until collected by courier. | 10 days. | CJD SURVEILLANCE UNIT, WESTERN GENERAL HOSPITAL EDINBURGH – ARRANGE COURIER FOR DRY ICE  Discuss with Consultant Microbiologist before contacting Edinburgh Laboratory. Do not send sample out of core hours, weekends, Bank Holidays. Send in orange bag to alert CSR staff.  Telephone laboratory when sample has been taken. Results will  be returned directly |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  |  | to requesting Clinicians from referral laboratory. |
| CMV PCR | Urine  Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle. Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle.  CSF in a 30mL white capped universal container. | CMV DNA | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY |
| Coxiella burnetii antibodies | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Coxiella burnetii IgG/IgM | Not applicable | Fridge (2-8°C) | 10 days | RARE AND IMPORTED PATHOGENS LABORATORY, PORTON DOWN |
| Cryptococcus | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle.  CSF in a 30mL white capped universal | Cryptococcal antigen | Not applicable | Fridge (2-8°C) | 4 days | PHE, SOUTHMEAD, BRISTOL |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | container. |  |  |  |  |  |
| Dengue, chikungunya, tropical screen | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Dengue and chikungunya IgG, IgM and PCR.  Plus other organisms as appropriate to travel history | Not applicable | Fridge (2-8°C) | 10 days | RARE AND IMPORTED PATHOGENS LABORATORY, PORTON DOWN  Please give relevant clinical details including any history of foreign travel as other tests are performed based on this information. |
| EBV PCR | Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle.  Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle.  CSF in a 30mL white capped universal container. | EBV DNA | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY |
| Enterovirus PCR | CSF in a 30mL white | Enterovirus PCR | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | capped universal container.  Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle.  Viral swab, NPA |  |  |  |  | COVENTRY |
| Farmers lung | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Saccharopolyspora rectivirgula | Not applicable | Fridge (2-8°C) | 10-14 days | PHE, SOUTHMEAD, BRISTOL |
| Helicobacter pylori | Gastric biopsy in 3mL saline in a 30mL white capped universal container. | Helicobacter pylori Culture and sensitivity | Not applicable | Fridge (2-8°C) | 10-14 days | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  The sample must be received in the laboratory before 15:00pm on the day of collection (Monday to Thursday only). |
| Hepatitis A virus | Blood in a 5mL gold top vacutainer or 1.3mL | Detection of hepatitis A IgG antibody. | Not applicable | Fridge (2-8°C) | 10-14 days | Post vaccination only |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | yellow top paediatric blood bottle. |  |  |  |  | WILLIAM HARVEY HOSPITAL, ASHFORD-  **For : Hep A IgG (Immunity)**  VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE-  For: **Hep A IgM confirmation.** |
| Hepatitis B DNA | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle.  Plasma from a 4mL EDTA purple top vacutainer or 1.3mL EDTA purple top vacutainer. | Detection of Hepatitis B DNA | Not applicable  Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY  VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE |
| Hepatitis B genotype | Plasma from a 4mL EDTA purple top vacutainer or 1.3mL EDTA purple top vacutainer. | Identification of Hepatitis B genotype | Fridge (2-8°C) | 30 days |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Hepatitis C RNA/genotype | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle.  Or plasma from a 4mL EDTA purple top vacutainer or 1.3mL EDTA purple top vacutainer. | Detection of Hepatitis C RNA and identification of genotype | Not applicable | Fridge (2-8°C) | 5 days | MICROPATHOLOGY, COVENTRY |
| Hepatitis D | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Hepatitis D IgG and IgM | Not applicable | Fridge (2-8°C) | 18 days | VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE  Only performed on known Hepatitis B positive patients |
| Herpes simplex virus (HSV) antibodies | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric  blood bottle. | HSV 1 & 2 IgG | Not applicable | Fridge (2-8°C) | 10-14 days | PHE  ,SOUTHAMPTON |
| Herpes simplex virus (HSV) PCR | CSF in a 30mL white capped universal container. | HSV PCR. | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | Genital and oral swabs in viral transport medium.  Fluid from infected vesicle lesions from oral and genital areas can be collected using a sterile polyester/ flocked swab. |  |  |  |  |  |
| HIV Viral load | Blood in a 4mL EDTA purple top vacutainer | HIV viral load | Not applicable | Fridge (2-8°C) | 6 days | HIV-1 Viral load- MICROPATHOLOGY, COVENTRY **EDTA/**  **plasma/ CSF**  HIV-2 Viral load - THE DOCTORS LABORATORY - **EDTA** |
| HIV Pro-viral / maternal transmission | Blood in 1.3 mL EDTA purple top vacutainer | Detection of Pro-viral HIV DNA. | Not applicable | Fridge (2-8°C) | 10 -14 days | VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE  According to paediatric protocol |
| Hydatid antibodies | Blood in a 5mL gold top vacutainer or 1.3mL | Hydatid antibodies | Not applicable | Fridge (2-8°C) | 10-14 days | HOSPITAL for TROPICAL |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | yellow top paediatric blood bottle. |  |  |  |  | DISEASE, LONDON |
| Latent TB | Whole blood in 2x 5mL lithium heparin tubes. | Interferon Gamma Release Assay (IGRA) | Not applicable | Room temp | 4 days | OXFORD DIAGNOSTICS  Specimens must be received in laboratory before 3pm on the day specimen is collected. |
| Leptospira | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle.  Urine | Detection of Leptospira IgM/16s DNA | Not applicable | Fridge (2-8°C) | 7 days | RARE AND IMPORTED PATHOGENS LABORATORY, PORTON DOWN  State details of possible exposure to rat’s urine |
| Measles IgM | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Measles IgM | Not applicable | Fridge (2-8°C) | 7 days | VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Measles PCR | CSF in a 30mL white capped universal container.  Oral swab in viral transport media.  Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle | Measles RNA | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY  For confirmation of measles.  State suspected date of contact if appropriate |
| Meningococcus PCR | Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle.  CSF in a 30mL white capped universal container. | Meningococcal DNA plus Pneumococcal DNA | Not applicable | Fridge (2-8°C) | 5 days | PHE, MANCHESTER  Positive results are telephoned by the Reference Laboratory to the Consultant Microbiologist |
| Mumps serology | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Mumps IgG for immunity and mumps IgM for acute infection | Not applicable | Fridge (2-8°C) | 10-14 days | **Mumps IgG (immunity**)- MICROPATHOLOGY, COVENTRY  **Mumps IgM (? Mumps)** VIRUS REFERENCE DEPARTMENT, PHE, COLINDALE |
| Mumps PCR | Oral fluid, throat swab in viral transport media, | Mumps RNA | Fridge (2-8°C) |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  | CSF in a 30mL white capped universal container. |  | Not applicable |  |  | State clearly if Mumps is suspected or immunity testing is required. |
| Mycoplasma PCR | CSF in a 30mL white capped universal container.  Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle.  Sputum or BAL in a 70mL yellow capped specimen container | Mycoplasma genus  Mycoplasma Pneumoniae | Not applicable | Fridge (2-8°C) | 4 days  1 day | MICROPATHOLOGY, COVENTRY |
| Norovirus | Faeces in a 30mL capped universal container with spoon. | Norovirus | Not applicable | Fridge (2-8°C) | 2 days | WILLIAM HARVEY HOSPITAL, ASHFORD  Only performed if agreed with Consultant Microbiologist. |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Parasite serology | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Amoeba Cysticercosis Filaria Hydatid *Leishmania Schistosoma Strongyloides Toxocara Trichinella*  *Trypanosoma* | Not applicable | Fridge (2-8°C) | 10-14 days | HOSPITAL for TROPICAL DISEASE, LONDON  Please state clearly which parasite is being investigated |
| Parechovirus PCR | CSF in a 30mL white capped universal container.  Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Parechovirus RNA | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Parvovirus PCR | Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle.  CSF in a 30mL white capped universal container. | Parvovirus DNA | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY |
| PCP PCR | Sputum or BAL in a 70mL yellow capped specimen container | Pneumocystis jiroveci pneumonia DNA | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY |
| Pertussis antibodies | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Bordetella IgG | Not applicable  Not applicable | Fridge (2-8°C) | 10-14 days | BACTERIOLOGY REFERENCE DEPARTMENT, PHE, COLINDALE  Ideally sample should be taken after two weeks of coughing. |
| Nasopharyngeal swab or aspirate. | Bordetella PCR | Fridge (2-8°C) | 5 days | MICROPATHOLOGY, COVENTRY |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
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| Post vaccination screen | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Haemophilus influenzae b (Hib), pneumococcal, meningococcal, diphtheria and tetanus antibodies | Not applicable | Fridge (2-8°C) | Up to 6 weeks | PHE,MANCHESTER  Please state which antibodies require testing |
| Respiratory viruses (Extended screen) | Upper respiratory swabs in virus transport medium.  Sputum or BAL in a 70mL yellow capped specimen container | Respiratory viruses PCR – Flu A/Flu B/RSV/Parainfluenza/  Metapneumovirus/ Rhinovirus/Enterovirus/ Adenovirus/Bocavirus/  Coronaviruses/SARS- CoV-2 | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY  MERS requests must be discussed with the Consultant Microbiologist |
| Rickettsia (spotted fever & epidemic typhus) | Blood in a 5mL gold top vacutainer or 1.3mL yellow top paediatric blood bottle. | Rickettsia IgG/IgM/PCR | Not applicable | Fridge (2-8°C) | 10 days | RARE AND IMPORTED PATHOGENS LABORATORY, PORTON DOWN |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
|  |  |  |  |  |  | Please give relevant clinical details including any history of foreign travel because other tests may be performed based on this information. |
| Varicella zoster virus (VZV) PCR | CSF in a 30mL white capped universal container.  Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle  Skin swabs in viral transport medium.  Fluid from infected vesicle lesions can be collected using a sterile polyester/ flocked swab. | VZV PCR | Not applicable | Fridge (2-8°C) | 4 days | MICROPATHOLOGY, COVENTRY |

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| **Test** | **Specimen type and method of collection** | **What test is used for** | **Reference Range** | **Pre – analytic storage conditions** | **Turnaround times (TAT) (Working days)** | **Comments/ Referral Laboratory** |
| Whipples PCR | CSF in a 30mL white capped universal container.  Tissue in a 30mL white capped universal container.  Blood in a 4mL EDTA purple top vacutainer or  1.3mL purple top paediatric blood bottle | Tropheryma whipplei DNA | Not applicable | Fridge (2-8°C) | 10 days | MICROPATHOLOGY, COVENTRY  **DO NOT SEND SERUM.** |

## Referral Laboratories

A number of specialist tests are referred to other Laboratories (see below) and these may change from time to time considering service provided.

Specimens must be sent to Microbiology for referral - we cannot accept responsibility for specimens sent directly to Referral Laboratories by users.

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| **Referral Laboratory** | **Address** | **UKAS**  **reference number** |
| Anaerobic Reference Laboratory | Public Health Wales Microbiology Division Microbiology  University Hospital of Wales Heath Park  Cardiff CF14 4XW | 9510 |
| Animal & Plant Health Agency | New Haw Addlestone Surrey KT15 3NB | 1769 |
| Antimicrobial Reference Laboratory, Severn Pathology | Antimicrobial Reference Laboratory Southmead Hospital  Westbury-on-Trym Bristol  BS10 5NB | 8099 |
| Brucella Reference Unit | Liverpool Clinical Laboratories  Royal Liverpool & Broadgreen University Hospitals NHS Trust  Duncan Building Prescot Street L7 8XP | 9755 |
| Cardiff Toxicology | The Academic Centre University Hospital Llandough Penarth  Vale of Glamorgan CF64 2XX | 8989 |
| CJD Surveillance Unit | NHS Lothian University Hospitals Division Western General Hospital  Edinburgh EH4 2XU | 1378 |
| East Kent Hospital | Microbiology  William Harvey Hospital Kennington Road Willesborough  Ashford TN24 0LZ | 9399 |
| Great Ormond Street | Camelia Botnar Laboratories Great Ormond Street Hospital Great Ormond Street | 8675 |

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|  | London, WC1N 3JH |  |
| Heartlands Hospital | Microbiology / Immunology Heart of England Trust Bordesley Green East Birmingham  B9 5SS | 8213 |
| UKHSA  Meningococcal Reference Unit | Clinical Science Building  Central Manchester University Hospital NHS Foundation Trust  Manchester Royal Infirmary Oxford Road  Manchester M13 9WZ | 8393 |
| Micropathology Ltd | University of Warwick Science Park Venture Centre  Sir William Lyons Road Coventry  CV4 7EZ | 9622 |
| UKHSA  National Mycobacterium Reference Laboratory | NMRS South  National Infection Service 61 Colindale Avenue London  NW9 5HT | 10080 |
| Oxford Diagnostic Laboratories | 94C Milton Park Abingdon  Oxfordshire OX14 4 RY | 4066 |
| Hospital for Tropical Diseases | Department of Clinical Parasitology UCL Hospitals NHS Foundation Trust Mortimer Market  London WC1E 6JB | 9362 |
| Infection Sciences, Severn Pathology (UKHSA South West) | Pathology Sciences Building Science Quarter Southmead Hospital  Bristol BS10 5NB | 8043 |
| UKHSA  Virus Reference Department | Virus Reference Department 61 Colindale Avenue London  NW9 5HT | 8825 |
| UKHSA  Bacteriology Reference Department | Bacteria Reference Department 61 Colindale Avenue  London NW9 5HT | 8197 |

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| UKHSA Rare and Imported Pathogens Laboratory (RIPL) | Rare and Imported Pathogens Laboratory Manor Farm Road  Porton Down Salisbury Wiltshire SP4 0JG | 9304 |
| University Hospital Southampton | Department of Microbiology Southampton General Hospital Southampton  Tremona Road SO16 6YD | 8403 |
| Royal Brompton Hospital | Immunology  Royal Brompton and Harefield NHS Foundation Trust  Sydney Street London  SW3 6NP | 8826 |
| The Royal London | Virology Clinical Group  Pathology and Pharmacy Building Barts Health NHS Trust  80 Newark Street London  E1 2ES | 8285 |
| St George’s Hospital | Department of Microbiology  St George’s University Hospitals NHS Foundation Trust  Blackshaw Rd Tooting London SW17 0QT | 9810 |
| The Doctors Laboratory | The Halo Building 1 Mabledon Place London WC1H 9AX | 8812 |
| Toxoplasma Reference Laboratory | Microbiology Division  Public Health Wales NHS Trust Public Health Wales  Singleton Hospital Swansea  SA2 8QA | 9510 |
| Synnovis, King’s College Hospital | South London Specialist Virology Centre King's College Hospital NHS Foundation Trust Department of Liver Pathology  Cheyne Wing, 2nd Floor Denmark Hill  London SE5 9RS | 9863 |

# INSTRUCTIONS FOR PATIENTS

### How to collect urine for culture

Collect urine sample using the collection cup provided (preferably mid-stream, DO NOT collect first or last part of urine).

Remove cap from tube and pour urine from collection cup into tube. Replace cap on tube securing tightly, dispose of collection cup.

Ensure that the container is correctly labelled with forename, surname, date of birth, NHS number / hospital number and the date that the sample was taken. Please ensure if request form is required, that this is completed with all patient identifiers and accompanies sample.

Return sample in tube to your GP / Hospital as soon as possible. The GP will then forward the sample to the Pathology laboratory for analysis.

**How to take a sample for threadworm (*Enterobius vermicularis*)**

It is important that the sample is taken first thing in the morning and before washing. Lightly moisten the swab in saline.

Swab around the perianal area which is just at the entrance of your anus. Break off the swab into the container and replace cap finger tight.

Ensure that the container is correctly labelled with forename, surname, date of birth, NHS number / hospital number and the date that the sample was taken. Please ensure if request form is required, that this is completed with all patient identifiers and accompanies sample.

Return the labelled container to your GP practice. The GP will then forward the sample to the Pathology laboratory for analysis.

### How to collect urine for TB

If your Doctor has requested a urine test for TB, the laboratory requires 3 consecutive early morning samples of urine (EMU).

Collecting urine

Your doctor may provide you with the necessary containers and labels, if not these are available from the Microbiology Department at Darent Valley Hospital.

Collect the whole of the first urine of the day – first thing in the morning when you get up.

You may pass the urine directly into the plastic container provided, but if this is difficult then you may do the following:

Thoroughly clean a wide-necked container (a jam jar for example) with detergent and rinse well with boiling water to remove any environmental bacteria. Allow the empty container to

dry, if you can put a lid on this then it can be prepared the night before the sample collection. Make sure that the container has cooled down before you use it.

Pass the whole of first urine of the day into this container

Pour the collected urine into the plastic container provided for the test. Labelling containers

Each of the plastic specimen containers MUST have the provided labels stuck onto them (sellotape is fine but make sure that they are stuck down firmly)

Complete the information required on the labels fully, writing clearly your surname, forename, date of birth, either your NHS number or hospital number (these are available from your GP) and the date the sample was collected.

Storing and transporting samples

The samples may be taken to the laboratory or your GP surgery each day or the samples may be kept refrigerated and taken all together.

How to collect urine for *Schistosoma*

Either collect the total urine between 10am and 2pm or collect the terminal portion of urine, each time you pass urine, over a 24 hour period. Sterile containers are available from your GP or the Microbiology Department at Darent Valley Hospital. Once a specimen has been collected it must be taken the Microbiology Department as soon as possible.

How to collect samples for *Chlamydia*

Urine – when you start to pass urine collect the first portion in the container provided by your GP. This must be at least 2 hours after the last time you passed urine.

Self-taken vaginal swabs must be collected using the kit provided by your clinic or GP surgery. Try to avoid external skin contact as much as possible.

Samples must be transported to the Microbiology Department at Darent Valley Hospital as soon as possible for Chlamydia and Gonorrhoea testing. The laboratory uses the Roche Cobas test kits.

## Instructions to Patients for Infertility and Post-Vasectomy Analysis

1. You should abstain from sexual intercourse or masturbation for a minimum of two days and no more than seven days before production of the sample. This will ensure the best quality sample is produced for testing.
2. The sample should be produced by masturbation into a sterile toxicity tested container - this is provided by your GP/Consultant for infertility analysis. No other container is suitable for this test. It is important not to use either a condom or any type of lubricant as these will seriously affect test results.

It is important the whole sample is collected in the sample container. If any sample is spilt then it will not be suitable for assessment and a further sample will be required on another occasion. If this is the case please contact the laboratory on the telephone number below.

1. The container must be labelled with:

Your full name Your date of birth

Your NHS number and / or Hospital number (if known) The Date and Time of production of sample

### The laboratory will not accept unlabelled or incompletely labelled specimens.

Please ensure the lid is properly secured to stop leakage of sample from the sample container.

Care should be taken when transporting the specimen container to the hospital. Excessive heat or excessive cold must be avoided as either will affect the test results.

**Arranging Semen Analysis:** We now operate an appointment system for semen analysis. Please phone and book an appointment date and time on

### 01322 428100 x4344 between: 8:30 am – 4 pm (analysis is performed on Tuesday and Thursday only).

**For Infertility Analysis:**

The form and pot should be brought, **via appointment ONLY**, to the **Pathology Reception on Level 3 Unit 2 Darent Valley Hospital, Darenth Wood Road, Dartford, Kent DA2 8DA within 1 hour of production.**

The samples will only be accepted on the **date and time slot** allocated to the patient.

### Post-Vasectomy Analysis:

The form and pot should be brought, **via appointment ONLY**, to the **Pathology Reception on Level 3 Unit 2 Darent Valley Hospital, Darenth Wood Road, Dartford, Kent DA2 8DA within 1 hour of production.**

The samples will only be accepted on the **date and time slot** allocated to the patient.

### Location

Enter the hospital through the main entrance and take the stairs, directly opposite the entrance to Level 3. At the top of the stairs turn left into East Block Level 3 and continue to Junction 2 where Pathology is on the left side of the building.

1. Please note there are no facilities at the hospital site to produce semen samples.