Dorset County Hospital
NHS Foundation Trust

COLLECTION OF MICROBIOLOGICAL SPECIMENS

Policy Title	Collection of Microbiological Specimens		
Policy Number	**0323**	**Policy Version Number**	**10**
Applicable to	All Trust staff or a particular specialty or department		
Aim of the Policy	Guidance on obtaining microbiology specimens		
Next Review Due Date	**01 October 2024**		
Author/ Reviewer	Paul Davies, Head of Laboratories		
Policy Sponsor	Emma Hoyle, Deputy CNO-IPC Associate Director		
Expert Group	Infection Prevention Group		
Date Approved	December 2007		
Primary Specialty	Infection Control		
Secondary Specialties	Microbiology		

Document Management	
Previous Version Number: 9	
Changes Requested/ Dictated by: Julie Park-IPC Nurse	Year: 2021
Description of Changes Since Last Version: Page 17, hyperlink added for COVID testing.	

This document reflects the consensus of the Dorset Infection Control Forum and contains local amendments to the main document that is available on request from the Infection Prevention and Control Team.

Contents

1. GENERAL INFORMATION

1.1 It is intended that the majority of Pathology requests are made using the ICE system. Where this is not possible there is a single blue Pathology request form for in-patients and white forms for GP locations.

If using a manual form the following information is required:
The destination from where the sample is being requested
Who is making the request
Date and time of request
Relevant clinical details
Sample type
Tests required

Please refer to point 4 for essential information.

1.2 **Always** ensure the lids of specimen pots are securely replaced so leakage does not occur during transport. Leaking samples may be refused.

1.3 Always put the specimen in its sealed bag and place the request form in the SEPARATE pocket. Do not place the form in the sealed bag with the sample.

1.4 In accordance with Pathology Directorate policy, all request forms and sample labels SHOULD have the following three points of reference or at least 1. and 2. or just 3.

1. Patients full name or unique code identifier where this applies
2. Patients date of birth
3. Hospital, NHS, HMBI, ICE, GUM or IRCV number

At the discretion of the laboratory, samples failing to meet the above criteria may **NOT** be processed.

1.5 Always indicate the type of sample collected e.g. MSU, CSU, Suprapubic aspirate rather than ‘urine sample’.

1.6 Always indicate on the request form the time and date of collection.

1.7 Always give relevant clinical details including site of wound**;** appropriate tests may not be done if this is not included**. This must include recent antibiotic history. For virology investigations always give relevant clinical details including a date of onset of signs/ symptoms, travel history, vaccination history where appropriate.** Relevant tests may not be done if this is not included or the sample may only be stored.

1.8 **For needlestick injury investigations always indicate whether the sample is from the donor or the recipient.** This information determines the tests performed.

1.9 **In cases where the patient has been in contact with an infectious disease e.g. Varicella in pregnancy - please give the date of contact.** This aids in the interpretation of the results.

1.10 **PLEASE NOTE that specimen processing time guides are based on laboratory time and reflects the electronic reporting function.**

1.11 If in doubt about how or when to take a sample or whether a particular test is relevant see guidelines on the intranet.

1.12 **For information or clinical advice contact laboratory staff telephone: 01305 25(4343)**

2. URINE

2.1 FOR ROUTINE BACTERIAL CULTURE

Sample container required:

Green top Boric acid monovette (yellow top monovette can be processed but they contain no preservative and, thus, need to be transported to the laboratory within 4 hours. If this is not possible green top boric acid monovettes should be used).

Optimal time of specimen collection	Before antimicrobial therapy where possible.
Correct specimen type and method of collection Handy Hint: • **Prevent contamination of specimen by using asepsis.** • **Do not carry uncovered containers – they will lead to contamination by aerosols.** • **Do not send a contaminated specimen** • **Send immediately, refrigerate if unavoidable delay.** • **Date and Time MUST be on form.** **Make sure the lid is on TIGHT**	**Midstream urine (MSU):** Recommended method for routine use. The first part of voided urine is discarded and without interrupting the flow, approximately 10ml is collected into a sterile container. The remaining urine is discarded. **Clean catch urine:** A reasonable alternative to MSU. Thorough periurethral cleaning is recommended. The whole specimen is collected into a sterile container and then sent for examination. **Suprapubic aspirate (SPA):** Urine is obtained aseptically, directly from the bladder by aspiration with a needle and syringe. The use of this invasive procedure is usually reserved for clarification of equivocal results from voided urine (e.g. in infants and small children). **Catheter urine (CSU):** **Catheter urine samples should only be sent if there is clinical indication that the patient is unwell and the cause may be a urinary tract infection. Routine CSU samples must NOT be sent. Clinical information must be included or the sample may be refused.** May be obtained either from a transient (“in and out”) catheterisation or from an indwelling catheter. In the latter, the specimen is obtained aseptically from a sample port in the catheter tubing or by aseptic aspiration of the tubing. The specimen should not be obtained from the collection bag. **Bag urine:** Used commonly for infants and young children. The sterile bags are taped over the genitalia and the collected urine is transferred to a sterile leak proof container. There are frequent problems of contamination with this method of collection. **Pad urine:** An alternative collection method to bag urine for infants and young children. After washing the nappy area thoroughly, a pad is placed inside the nappy. As soon as the pad is wet with urine (but no faecal soiling), push the tip of a syringe into the pad and draw urine into the syringe. Transfer specimen to a sterile urine container. If difficulty is experienced in withdrawing urine, the wet fibres may be inserted into the syringe barrel and the urine squeezed directly into the container with the syringe plunger. **Ileal conduit – urostomy urine:** Urine is obtained via a catheter passed aseptically into the stomal opening after removal of the external appliance. **Cystoscopy urine:** Urine is obtained directly from the bladder using a cystoscope.

Correct specimen type and method of collection.	**Ureteric urine:** Paired urine samples are obtained from each ureter during cystoscopy via ureteric catheters inserted from the bladder. Urines may also be sent following nephrostomy, surgery or bladder washout.
Adequate quantity and appropriate number of specimens	Samples of >1ml should be sent in a green top boric acid monovette. Samples of <1ml should be sent in a yellow top monovette but may not be processed if insufficient volume.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed within 4 hours.
Special considerations to minimise deterioration	If transportation is delayed storage at 2-8°C for up to 48 hours is essential.

2.2 CULTURE FOR ACID FAST BACILLI FROM URINE/ SPUTUM SAMPLES

Sample containers required:

Sputum samples - white top universal
Urine samples - 250ml containers obtained from laboratory
Any other sample - in container appropriate for sample type

It is possible to arrange for rapid culture or PCR on samples on a named patient basis. Please discuss clinical situation with Consultant Microbiologist on ext 4343.

Optimal time of specimen collection	All specimens should be fresh and taken when possible before anti-tuberculous treatment is started. The first voided urine in the morning is recommended taken on 3 consecutive days. Early morning sputums collected before consumption of food, on 3 consecutive days.
Correct specimen type and method of collection	The first voided morning urine obtained by clean catch or catheterisation, in an appropriate container (minimum 250ml). Special large urine containers can be obtained from the laboratory on ext 4338. Samples MUST be double bagged. They MUST NOT be transported through the POD vacuum system.
Appropriate quantity and number of specimens	Urine Early morning specimens (minimum volume 250ml) should ideally be collected on 3 consecutive days. Sputum collected before consumption of food, on 3 consecutive days.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible. Samples MUST be double bagged. They MUST NOT be transported through the POD vacuum system.
Special considerations to minimise deterioration	Samples should be stored at 2-8°C if transport to the laboratory is delayed for more than 4 hours.

AFB positive microscopy or culture results will be telephoned

It is possible to arrange for rapid culture or PCR on samples on a named patient basis. Please discuss with Consultant Microbiologist on ext 4343.

2.3 CHLAMYDIA TRACHOMATIS DETECTION FROM URINE/ URETHRAL SWAB SAMPLES

Sample container required:
Chlamydia swabs for urethral or cervical samples – telephone the lab on ext 4343
Male and female urines – Yellow topped collection tube.

Optimal time of specimen collection	Before commencing a course of treatment.
Correct specimen type and method of collection	**Urines:** The patient should not have urinated for at least 1 hour prior to specimen collection. 15 – 20 ml of the first voided urine (NOT the midstream) should be collected in a sterile, plastic, preservative free collection cup. **Swabs:** Collect swabs from urethra and/or cervix as appropriate.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported to the laboratory as soon as possible. If a delay should occur, store the specimen at 2-8°C.

2.4 CYTOMEGALOVIRUS (CMV) ANTIGEN DETECTION FROM URINE SAMPLES

Sample container required:
Urine - white top universal

Optimal time of specimen collection	No special requirements.
Correct specimen type and method of collection	The first part of voided urine is discarded and without interrupting the flow, approximately 10 ml is collected into a sterile container. The remaining urine is discarded.
Appropriate quantity and number of specimens	10 mls (single specimen).

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	It is ESSENTIAL that the specimen should be transported to the laboratory as soon as possible. It is advisable in all instances to contact the Virology Laboratory ext 4349 before commencing this investigation.

3. FAECES

3.1 BACTERIAL CULTURE

Sample container required:
Blue top universal with spoon
NB: 1 half-full container is sufficient material for culture, parasites and *Clostridium difficile* testing.

Special requirements:
Additional information required: Always include foreign travel information including exact travel destination and how long ago. Include any high risk employment information eg food handler, sewer working, any contact with animals.

Optimal time of specimen collection	As soon as possible after onset of symptoms.
Correct specimen type and method of collection **Handy Hint:** • **<u>If carrying sample to dirty utility to transfer to specimen pot the sample should be covered during transportation.</u>** • **<u>Use</u> specimens that contain urine – this does NOT contaminate faeces.**	Specimen may be passed into a clean dry, disposable bedpan or similar container and transferred into a faeces container. The specimen is unsatisfactory if there remains any residual soap, detergent or disinfectant in the pan.
Adequate quantity and appropriate number of specimens	1/3 to ½ full faeces pot is sufficient for routine culture. If more than one specimen is taken on the same day, then the specimens may be pooled.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens of faeces should be transported to the laboratory and processed as soon as possible, as a number of important pathogens such as *Shigella* species may not survive the pH changes that occur in stool specimens which are not promptly delivered to the laboratory, even if stored at 2-8°C If delayed store at 2-8°C for up to 48hrs.

3.2 MICROSCOPY FOR PARASITES, CYSTS AND OVA

Sample container required:
Blue top universal with spoon

Special requirements:
Additional information required: Always include foreign travel information including exact travel destination and how long ago. Include any high risk employment information eg food handler, sewer working, any contact with animals.

Optimal time of specimen collection	Before antimicrobial or antidiarrhoeal therapy where possible.
Correct specimen type and method of collection	Fresh faeces specimens are essential for the examination of trophozoites. Faeces may be passed into a clean, dry bedpan or similar container and transferred into a sterile faeces container.
Adequate quantity and appropriate number of specimens	Ideally 3 stool specimens collected over no more than a 10 day period. It is usually recommended that specimens are collected every other day. Unless the patient has severe diarrhoea or dysentery, no more than 1 specimen should be examined within a single 24 hour period, as shedding of cysts and ova tends to be intermittent. If *E. histolytica* or *G. lamblia* are suspected and the first 3 specimens are negative, ideally, 3 additional specimens should be submitted at weekly intervals.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Faeces - fresh, unpreserved specimens should be transported immediately. Protozoan trophozoites will not survive if the specimen dries out. Cysts will not form once the specimen has been passed. If the specimen is liquid it should be examined ideally within 30 minutes from the time of collection. Soft stools should preferably be examined within 1hour of passage. If delayed store at 2-8°C for up to 48hrs.

3.3 SELLOTAPE SLIDE/ PERIANAL SWAB FOR THREADWORM OVA

Sample container required:

Plastic slide box

Optimal time of specimen collection	Between 22.00h and midnight, or early in the morning, before defecation or bathing.
Correct specimen type and method of collection	**Sellotape slide:** Apply sellotape to the perianal region, pressing the adhesive side of the tape firmly against the left and right perianal folds several times. A tongue depressor can be used to wrap the tape around. Smooth the tape back on the slide, adhesive side down. **Perianal swab** - cotton wool swab in dry container. Spread buttocks apart, and rub the moistened cotton wool swab over the area around the anus, but do not insert into the anus. Place cotton wool swab back into its container (no transport medium required). Occasionally, an adult worm may be collected from a patient and sent in saline or water for identification.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Transport to the laboratory as soon as possible. Can be stored at room temperature.

3.4 EXAMINATION FOR CLOSTRIDIUM DIFFICILE (*C. diff)* TOXIN

Sample container required:
Blue top universal with spoon

PLEASE NOTE:
All inpatients aged over 2 years are routinely tested for C. *diff* toxin. For outpatients, all persons over the age of 65 are routinely tested for *C. diff* toxin, as well as those with supporting clinical information (e.g. recent hospital stay and/or recent course of antibiotics).
No tests will be undertaken on any formed stool samples.

Optimal time of specimen collection	As soon as possible after onset of symptoms. **DO NOT SEND REPEAT SPECIMENS WITHIN 28 DAYS OF A PREVIOUS POSITIVE RESULT. Repeat samples will not be tested.**

Correct specimen type and method of collection **Handy Hint:** • **<u>If carrying sample to dirty utility to transfer to specimen pot the sample should be covered during transportation.</u>** • **<u>Use</u> specimens that contain urine – this does NOT contaminate faeces**	Specimen may be passed into a clean dry, disposable bedpan or similar container and transferred into a faeces container. The specimen is unsatisfactory if there remains any residual soap, detergent or disinfectant in the pan.
Adequate quantity and appropriate number of specimens	¼ - ½ full faeces pot containing the <u>most liquid</u> portion of the stool passed **FORMED STOOLS WILL NOT BE TESTED.**

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens of faeces should be transported to the laboratory and processed as soon as possible. If delayed store at 2-8°C for up to 72hrs.

3.5 VIRAL CULTURE OF STOOL SAMPLES

Sample container required:
Blue top universal with spoon

Optimal time of specimen collection	5 – 7 days after onset of symptoms.
Correct specimen type and method of collection	Specimen may be passed into a clean dry, disposable bedpan or similar container and transferred into a faeces container. The specimen is unsatisfactory if there remains any residual soap, detergent or disinfectant in the pan.
Adequate quantity and appropriate number of specimens	1/3 to ½ full faeces pot is sufficient for viral culture. If more than 1 specimen is taken on the same day, then the specimens may be pooled.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens of faeces should be transported to the laboratory and processed as soon as possible. If delayed store at 2-8°C for up to 48hrs.

3.6 EIA FOR NOROVIRUS

PLEASE NOTE:
Diagnosis is made mainly on **clinical grounds** – a negative result does not exclude a viral cause.

Sample container required:
Blue top universal with spoon

Optimal time of specimen collection	Within 48 hours of the onset.
Correct specimen type and method of collection **Handy Hint:** • **<u>If carrying sample to dirty utility to transfer to specimen pot the sample should be covered during transportation.</u>** • **<u>Use</u> specimens that contain urine – this does NOT contaminate faeces** • **<u>Staff</u> specimens are only processed under the guidance of Occupational Health.**	Specimen may be passed into a clean dry, disposable bedpan or similar container and transferred into a faeces container. The specimen is unsatisfactory if there remains any residual soap, detergent or disinfectant in the pan.
Adequate quantity and appropriate number of specimens	1/3 to ½ full faeces pot is sufficient for examination. If more than one specimen is taken on the same day, then the specimens may be pooled **Request form <u>must</u> state clinical symptoms.**

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens of faeces should be transported to the laboratory and processed as soon as possible. If delayed store at 2-8°C for up to 48hrs.

3.7 EXAMINATION FOR VIRUS DETECTION (ROTAVIRUS AND ADENOVIRUS)

PLEASE NOTE:
This test is only routinely tested on patients aged 5 years or under.

Sample container required:
Blue top universal with spoon

Optimal time of specimen collection	Within 72 hours of the onset of symptoms.
Correct specimen type and method of collection	Specimen may be passed into a clean dry, disposable bedpan or similar container and transferred into a faeces container. The specimen is unsatisfactory if there remains any residual soap, detergent or disinfectant in the pan.
Adequate quantity and appropriate number of specimens	As much as is available

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens of faeces should be transported to the laboratory and processed as soon as possible. If delayed store at 2-8°C for up to 48hrs.

4. SPUTUM

4.1 ROUTINE CULTURE

Sample container required:
Plain white universal

Optimal time of specimen collection	All specimens should be fresh and taken before antimicrobial treatment is started.
Correct specimen type and method of collection **Handy Hint:** • **IF TB suspected use <u>mask and do not carry out sputum inducing procedures in an unenclosed environment</u> *see TB guidelines*** • **<u>Tighten</u> screw top to avoid spillage** • **<u>Send promptly</u>**	The material required is sputum from the lower respiratory tract expectorated by deep coughing. When the cough is dry, physiotherapy, postural drainage or inhalation of an aerosol before expectoration may be helpful. Saliva and postnasal secretions are not suitable.
Adequate quantity and appropriate number of specimens	Ideally, a minimum volume of 1ml.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible. Sputum may be refrigerated for up to 2 - 3hours without an appreciable loss of pathogens. Any delay beyond this time may allow overgrowth of Gram-negative bacilli while *Haemophilus* species and *S. pneumoniae* may die. Where transport is difficult, specimens may be cultured up to 48 hours after collection. If specimens are not processed on the same day as they are collected interpretation of results should be made with care.
Special considerations to minimise deterioration	If transportation is delayed, storage at 2-8^{o}C is preferable to storage at ambient temperature. Delays of over 48 hours are undesirable.

4.2 CULTURE FOR MYCOBATERIUM SP

PLEASE NOTE:
It is possible to arrange for rapid culture or PCR on samples on a named patient basis. Please discuss with Consultant Microbiologist on ext 4343.

Sample container required:
Plain white universal

Optimal time of specimen collection	All specimens should be fresh and taken before anti-tuberculous treatment is started. Early morning freshly expectorated sputum is recommended.
Correct specimen type and method of collection **Handy Hints:** • **Refer to TB guidelines** • **Use <u>Mask</u> when collecting** • **Send <u>Promptly</u>** • **<u>Tighten lid</u>**	Expectorated from the lower respiratory tract by deep coughing. When the cough is dry, physiotherapy, postural drainage or inhalation of nebulised saline before expectoration may be helpful. **NOTE:** Saliva and postnasal secretions are not suitable. Specimens collected on 3 consecutive days should not be pooled. This may be important if Mycobacteria other than tuberculosis are isolated as interpretation is based on repeated isolation.
Adequate quantity and appropriate number of specimens	Ideally, a minimum volume of 5ml. Early morning specimens are preferable and should be collected on at least 3 consecutive days. Please send form with each sample submitted.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible.
Special considerations to minimise deterioration	Specimens should be stored at 2-8^{o}C if transport to the laboratory is delayed for more than 4 hours.

4.3 EXAMINATION FOR PNEUMOCYSTIS CARINII (PERFORMED BY CYTOLOGY DEPT)

Sample container required:

Plain white universal

Optimal time of specimen collection	Before commencing treatment
Correct specimen type and method of collection	Expectorated sputum is <u>NOT</u> a suitable specimen for the detection of *Pneumocystis carinii*. An induced sputum sample using nebulised saline or a bronchoalveolar lavage is required.
Adequate quantity and appropriate number of specimens	Ideally, a minimum volume of 1ml.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible.

4.4 EXAMINATION FOR VIRAL CULTURE (CYTOMEGALOVIRUS ONLY)

Sample container required:
Plain white universal

Correct specimen type and method of collection	Expectorated sputum is NOT a suitable specimen for the detection of cytomegalovirus. A bronchoalveolar lavage is required.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	It is ESSENTIAL that the specimen should be transported to the laboratory as soon as possible. It is advisable in all instances to contact the Virology Laboratory ext 4249 before commencing this investigation.

4.5 EXAMINATION FOR OTHER RESPIRATORY VIRUSES, RESPIRATORY SYNCYTIAL VIRUS (RSV), INFLUENZAE VIRUS, 'FLU'

Sample container required:
Plain white universal

Correct specimen type and method of collection **NPA collection kit is available from Kingfisher ward**	Nasopharyngeal or tracheal aspirate may be suitable. Discuss with Consultant Microbiologist.

5. GENITAL SWABS AND ASSOCIATED SPECIMENS

5.1 BACTERIAL CULTURE

Optimal time of specimen collection	Before antimicrobial therapy where possible.
Correct specimen type and method of collection **Handy Hint:** • **You <u>MUST</u> identify the SITE of the swab – 'wound' is not sufficient identification.**	**Genital Tract Swabs:** Cervical and high vaginal swabs should be taken with the aid of a speculum. It is important to avoid vulval contamination of the swab. For *Trichomonas*, the posterior fornix, including any obvious candidal plaques should be swabbed. If pelvic infection, including gonorrhoea, is suspected, the cervix should be swabbed. Separate samples should be collected into appropriate transport media for detection of viruses or *C. trachomatis.* **High Vaginal Swabs:** After the introduction of the speculum, the swab should be rolled firmly over the surface of the vaginal vault. The swab should then be placed in Amies transport medium with charcoal. **Cervical Swabs:** After the introduction of the speculum, the swab should be rotated inside the endocervix. The swab should then be placed in Amies transport medium with charcoal. **Urethral Swabs:** Contamination with micro-organisms from the vulva or the foreskin should be avoided. Thin swabs are available for collection of specimens. The patient should not have passed urine for at least 1 hour. For males, if a discharge is not apparent, attempts should be made to "milk" exudate from the penis. The swab is gently passed through the urethral meatus and rotated. Place the swab in Amies transport medium with charcoal. **Intrauterine Contraceptive Devices (IUCDs):** The entire device should be sent in a white top universal. **Rectal Swabs:** Rectal swabs are taken via a proctoscope. **Throat Swabs:** Throat swabs should be taken from the tonsillar area and/or posterior pharynx avoiding the tongue and uvula. **Fluids and Pus:** These are taken from the fallopian tubes, tubo-ovarian and Bartholin's abscesses etc during surgery and should be sent in a white top universal.
Adequate quantity and appropriate number of specimens	Fluids and pus – preferably a minimum volume of 1ml.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible.
Special considerations to minimise deterioration	Swabs should be transported in Amies transport medium with charcoal If processing is delayed, storage at 2-8^{o}C is preferable to storage at ambient temperature, except for cervical swabs, that should be incubated at room temperature. Delays of over 48 hours are undesirable. Samples for gonorrhoea culture should be received within 24 hours.

5.2 DETECTION OF CHLAMYDIA TRACHOMATIS BY MOLECULAR METHOD

Optimal time of specimen collection	Before the commencement of anti-chlamydial treatment.
Correct specimen type and method of collection	It is ESSENTIAL that the correct procedures for specimen collection, for the detection of *Chlamydia trachomatis*, are followed. Failure to follow the correct procedures will invalidate the investigation. A collection kit specifically for use in the detection of *Chlamydia trachomatis* is available from the laboratory on ext 4343. Failure to use this kit or to follow the instructions given with it will invalidate the investigation. Female patients – cervical and / or urethral swabs may be collected for examination. Male patients –urine samples (see under urines) may be collected for examination. Urethral swabs may also be submitted and should be taken using the appropriate swab.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported to the laboratory as soon as possible. If a delay should occur store the specimen at 2 - 8°C.

APPROXIMATE PROCESSING TIME:

5.3 EXAMINATION FOR HERPES SIMPLEX VIRUS (HSV PCR)

Sample container:
Green virus isolation swab

Optimal time of specimen collection	Before anti-viral therapy commences where possible.
Correct specimen type and method of collection	Swabs should preferably be taken during the vesicular stage of the lesion. If crusting has occurred carefully remove the scab and swab the basal epithelium of the lesion. Collect using a (green) virus collection swab. Bacterial collection swabs (black) are not suitable for virus isolation.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported to the laboratory and processed as soon as possible. If a delay should occur store the specimen at between 2 - 8°C.

6. VIROLOGY

6.1 SPECIMEN COLLECTION

Sample type:
Brown gel tube for serum collection
Red top rimel swab for COVID swabs-see COVID action cards and information

Optimal time of specimen collection **Handy Hint:** • **Most antibodies can take 10 – 14 days to become detectable. Consider sending an acute phase sample and then a convalescent sample to exclude a rising titre.** • **Antibodies to Borrelia burgdorferi (Lymes disease) may not appear until 6 weeks after the onset of symptoms.** • **Antibodies to Legionella pneumophila may take up to 4 weeks to become detectable.**	Dependant on clinical details.
Correct specimen type and method of collection. **Handy Hint:** • **Patient consent must be documented on the microbiology form**	Clotted blood sample – may be taken at the same time as blood for other investigations. Most serology investigations require a clotted blood sample. The current exceptions are: • HIV viral load EDTA blood • CMV PCR EDTA blood • EBV PCR EDTA blood • Adenovirus PCR EDTA blood When in doubt telephone the virology department for advice. 01305 254343
Adequate quantity and appropriate number of specimens. **Handy Hint:** • **REMEMBER we store all our serum samples for 18 months and forward serum to reference facilities. The more serum we receive the greater the likelihood that we will be able to perform all the tests requested and also be able to go back to the sample should the need arise.** • **This also means that we are able to retrospectively examine serum for immunity status e.g. in cases of contact with Varicella. This can give a clearer indication of the patients status and avoids the need to bleed the patient.**	**Adults –** 1 x 10 mls gold gel tube for clotted blood is usually adequate. **Children and neonates:** As small sample volume is collected prioritise the test order on the request form or contact the department for advice.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/322688/Viral_rash_in_pregnancy_guidance.pdf	

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing.	Specimens should be transported to the laboratory as soon as possible. Blood samples should be stored between 2 - 8°C if there is a delay in transport.

APPROXIMATE PROCESSING TIME:

6.2 LESION SWABS

EXAMINATION FOR HERPES SIMPLEX VIRUS (HSV PCR)

Sample container:

Virus transport media (telephone ext 4343)

Optimal time of specimen collection	Before anti-viral therapy commences where possible.
Correct specimen type and method of collection. **Handy Hint:** • **You <u>MUST</u> identify the SITE of the swab – 'wound' is not sufficient identification.** • **Enter relevant clinical identification e.g. vesicular, crusted etc.** • **Include ALL antiviral and antibiotic history.**	Swabs should preferably be taken during the vesicular stage of the lesion. If crusting has occurred carefully remove the scab and swab the basal epithelium of the lesion. Collect using a (green) virus collection swab. Bacterial collection swabs (black) are not suitable for virus isolation.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported to the laboratory and processed as soon as possible. If a delay should occur store the specimen at between 2-8°C.

7. BLOOD CULTURES

SPECIAL BLOOD CULTURE BOTTLES ARE AVIBLE FROM THE LABORATORY ON 01305 254343.
THEY ARE SENT OUT IN PAIRS:

- Blue and purple pair are for patients **not on** antibiotics.
- Blood from patients **on** antibiotics should be collected into a green and purple combination.

If in doubt use the green / purple combination.
Paediatric (yellow) bottles are available.

Optimal time of specimen collection	Before antimicrobial therapy where possible. As soon as possible after a spike of fever.
Correct specimen type and method of collection	NOTE: If blood for other tests such as blood gases or ESR is to be taken at the same venepuncture, the blood culture bottles must be inoculated first to avoid contamination. It is preferable to take blood for culture separately.
Correct specimen type and method of collection **SEE POLICY FOR TAKING BLOOD CULTURES**	**For diagnosis of bacteraemia:** Withdraw blood from a peripheral vein and divide the sample equally amongst both blood culture bottles. Samples should not be taken through an intravenous catheter or other access device unless no other access is available. If possible line infection is being investigated samples from both peripheral vein and individual lumen samples must be sent. Ensure line identification is clear. If line removed, send tip to laboratory **Children and neonates:** Consider the use of a single paediatric bottle appropriate for small volumes of blood. If necrotising enterocolitis is suspected and sufficient blood is obtained, inoculate a paediatric and an anaerobic bottle.
Adequate quantity and appropriate number of specimens	**Adults:** Preferably, a volume of 5 - 10mls per bottle of each blood culture set. **Children and neonates:** Preferably, a volume of 1 - 2ml in neonates, 2 - 3ml in infants and pre-teen children for each blood culture set. NOTE: Do not exceed the manufacturer's recommended maximum volume for each bottle. **General:** Take 2 sets during any 24 hour period for each septic episode (a single set is adequate for neonates).

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Blood cultures should be transported to the laboratory and incubated or loaded on to the automated system **IMMEDIATELY**. IF SAMPLES ARE DELAYED **DO NOT** REFRIGERATE
Special considerations to minimise deterioration	There is an incubator available in the Pathology laboratory for cultures collected outside normal laboratory hours. Blood cultures should be incubated at 35 – 37°C as soon as possible after inoculation.

ALL POSITIVE CULTURE RESULTS WILL BE TELEPHONED AS THEY BECOME POSITIVE

7.1 FOR CYTOMEGALOVIRUS (CMV) DETECTION

PCR preferred – discuss with laboratory

Correct specimen type and method of collection	2 x 3.5 mls EDTA (purple or pink top) samples are required for either culture or PCR.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	It is ESSENTIAL that the specimen should be transported to the laboratory as soon as possible. It is advisable in all instances to contact the Virology laboratory ext 4343 before commencing this investigation.

8. WOUND SWABS

8.1 SPECIMEN COLLECTION

Sample Container: Black charcoal swab

Optimal time of specimen collection	Before antimicrobial therapy where possible.
Correct specimen type and method of collection **Handy Hint:** • **You <u>MUST</u> identify the SITE of the swab – 'wound' is not sufficient identification.** • **If more than 1 swab from the wound, identify AREA/s.** • **Include ALL antibiotic therapy** • **DO NOT routinely swab ulcers/wounds – send swabs if INFECTION suspected.** • **DO NOT swab healthy skin margins** • **If blistering, sample exudates for immediate lab transfer.**	Samples of pus, if present, are preferred to swabs - send 1ml in a universal container – send IMMEDIATELY. Send swabs in charcoal transport medium to minimise the risk of drying during transport. Sample a representative part of the lesion – using a zig-zag motion to cover as much of the affected area as possible. Swabbing dry crusted areas are unlikely to be helpful as significant amount of skin flora will be present. **<u>Ulcer swabs</u>:** Royal College of Nursing guidelines state: "Routine bacteriological swabbing is unnecessary unless there is evidence of clinical infection such as inflammation/ redness/evidence of cellulitis; increased pain; purulent exudate; rapid deterioration of ulcer or pyrexia."
Adequate quantity and appropriate number of specimens	Ideally, a minimum volume of 1ml of pus. Swabs should be well soaked in pus.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible.
Special considerations to minimise deterioration	Swabs should be transported in Amies transport medium (black charcoal) Biopsies should be placed in a sterile, leakproof container with a small amount of sterile normal saline to prevent desiccation. If processing is delayed, storage at between 2-8°C is preferable to storage at ambient temperature. Delays of over 48 hours are undesirable.

9. CHRONIC WOUNDS

Sample type: pus, tissue or swabs

NB: Pus or tissue in a sterile plain universal is always preferred to a swab

Optimal time of specimen collection	Collect specimens before the start of new course of antimicrobial treatment
Correct specimen type and method of collection **Handy Hint:** **This "scalpel technique" is aimed at specialist areas. This must only be undertaken by staff competent to do so.**	Pus from the base of the wound can be collected in the normal way previously mentioned (see Wound Swabs) With chronic wounds, (following de-bridement if appropriate) gently remove superficial cells from base of the wound using a sterile scalpel blade. The material on the scalpel blade can be flushed into a labelled sterile universal container containing sterile saline, which will stop the specimen drying out. Send with the appropriate paperwork. **Ulcer swabs:** Royal College of Nursing guidelines state: “Routine bacteriological swabbing is unnecessary unless there is evidence of clinical infection such as inflammation/ redness/evidence of cellulitis; increased pain; purulent exudate; rapid deterioration of ulcer or pyrexia.”
Adequate quantity and appropriate number of specimens	Remember to provide enough sample to be divided for both microscopy and culture.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible. If transport is delayed storage should be between 2-8°C.

10. MRSA SWABS

SAMPLE COLLECTION: Use black charcoal swab

NB: If MRSA screen is requested, routine culture will not be performed unless there is specific clinical information indicating infection. It is best to collect MRSA screening swabs separately from those for routine culture.
Routine culture can be performed on the same samples that are tested for MRSA, but, only if the test is correctly requested. Please do not put the request into the clinical comments.

Correct specimen type and method of collection **Handy Hint:** ▪ **<u>Staff Screening</u> will not be undertaken routinely. Staff screening is instigated by the Infection Prevention & Control Team, who will advise Occupational Health Department. Occupational Health will carry out any necessary screening and initiate treatment as required.** **Staff MUST NOT carry out own screening as it can be difficult to distinguish between transient carriage and prolonged carriage** ▪ **Asepsis is critical whilst taking swabs from IV devices.**	**Where to Screen and Procedure:** **Nose:** Take 1 swab and dampen in sterile normal saline or sterile water. Direct the swab upward to the tip of the nose (anterior nares) and gently rotate around the nostril. Repeat with same swab in the other nostril. **Groin:** Dampen a swab with sterile normal saline or sterile water and rotate over the skin in both groins. **Wound/Lesion/significant skin breaks :** If dry, dampen the swab in sterile, normal saline or sterile water and gently swab the suture line. Use a separate swab for any drain sites. It is NOT recommended that wound dressings are disturbed to take routine swabs. **Chronic wounds:** Pressure sores and leg ulcers: If exudate present ensure the swab is taken as deeply into the wound edge as possible. Even if the wound is large, 1 swab taken from the wound edge should be adequate. Irrigate wound with a gentle stream of normal saline at body temperature. Moisten swab with normal saline. Using a zigzag motion across wound, rotating swab between fingers, sample whole wound surface area. **IV line sites:** Dampen a swab with sterile normal saline or sterile water and rotate over the peripheral intravenous catheter site. **Sputum:** If productive cough present **Urinary catheter:** If in situ (collect urine specimen)

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible.
Special considerations to minimise deterioration	Swabs should be transported in Amies transport medium with charcoal. If processing is delayed storage between 2-8°C. is preferable to storage at ambient temperature. Delays of over 48h are undesirable.

11. THROAT SWABS

For investigation of viral infection use green virus transport swab.

For bacterial screen use black charcoal swab.

Optimal time of specimen collection	Before anti-viral therapy commences where possible.
Correct specimen type and method of collection **Handy Hint:** **Consider blood specimen at the same time for serology – consult laboratory.**	Swab the back of the throat and tonsil area with sterile swab. • Depress the patient's tongue with a spatula and illuminate his throat with a penlight to check for inflamed areas. • If the patient starts to gag, withdraw the spatula and tell him to breathe deeply. • Once the patient is relaxed, reinsert the spatula but not as deeply as before. • Using the cotton-tipped swab, wipe the tonsillar areas from side to side, including any inflamed or purulent sites. • Make sure that you do not touch the tongue, cheeks or teeth with the swab to avoid contaminating it with oral bacteria. • Withdraw the swab and immediately place it in the virus transport medium tube to keep the swab moist. Then close the tube tightly. • Remove and discard your gloves and wash your hands. For investigation of viral infection use green virus transport swab. For bacterial screen use black charcoal swab.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible.
Special considerations to minimise deterioration	Specimens should be transported to the laboratory and processed as soon as possible. If a delay should occur store the specimen at between 2-8°C.

12. SKIN SCRAPPING and NAILS

Nail samples for fungal culture:
Samples should be collected into plain sterile universal or dark paper folded and inserted into a universal.

Optimal time of specimen collection	Collect specimens before the start of antifungal treatment.
Correct specimen type and method of collection	Nail material should be taken as proximally as possible, using clippers or scissors, or from the material present under the nail plate, subungual debris. In patients with superficial white onymychosis, (fungal infection) the surface of the affected part of the nail should be scraped with a blunted scalpel blade and nail material removed sent for processing. All specimens should be sent in a labelled sterile universal container along with the appropriate paperwork.
Adequate quantity of specimens	Sufficient material should be sent for two culture plates i.e. enough material to cover a 5p coin.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible. Storage can be at ambient temperature.

SKIN SAMPLES FOR FUNGAL CULTURE:

Samples should be collected into plain sterile universal or dark paper folded and inserted into a universal

Optimal time of specimen collection	Collect specimens before the start of antimicrobial or antifungal treatment
Correct specimen type and method of collection. **Handy Hint:** **Only remove loose skin do not tear skin**	Use forceps to remove loose skin or squames. Attached skin that has a free edge can be used if removed very carefully with a sterile scalpel. All specimens should be sent in a labelled sterile universal container along with the appropriate paperwork.
Adequate quantity of specimen	Remember to provide enough sample to be divided for both microscopy and culture

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible. Storage can be at ambient temperature.

13. BONE SAMPLES

These can be found in foot ulcers and sending them can be beneficial in determining the treatment for osteomyelitis.

SAMPLE COLLECTION:

Into sterile plain universal.

Optimal time of specimen collection	Collect specimens before the start of antimicrobial treatment, if possible.
Correct specimen type and method of collection. **Handy Hint:** **Do not forcefully remove bone as this can create extensive bleeding which may be difficult to stop.**	Remove only loose bone or bone chips with sterile forceps. All specimens should be sent in a labelled sterile universal container with a small amount of sterile saline to prevent the sample drying out along with the appropriate paperwork
Adequate quantity of specimen	Only provide what is loose and easy to remove.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible.

14. EYE UNIT

14.1 INTRA OCULAR FLUID PROCEDURE

SPECIMEN COLLECTION

Optimal time of specimen collection	Before antimicrobial therapy where possible.
Correct specimen type and method of collection	Samples from these sites should be inoculated directly onto the surface of agar plates. Laboratory staff will attend REI, OPD or theatre when corneal scrapes and for other procedures when tiny samples are produced. Telephone ext 4343 or call out the duty “on-call “staff to attend. Ideally they would have 30 minutes notice of the need to attend. This is particularly important out of normal hours where staff will not be on site. During normal working hours ring the laboratory on ext 4343 **Please note:** Microbiology at DCH is open from 9 am until 5 pm on weekdays and from 8.30 am until 12 noon on weekends. Outside these hours please contact the Microbiology “On Call” BMS at Dorchester via switchboard.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible. Kits are available from microbiology.

14.2 CORNEAL SCRAPE PROCEDURE

SAMPLE TYPE:

SCRAPE MATERIAL INOCULATED DIRECT TO CULTURE PLATE (see below).
Corneal swabs black for bacteriology/green for virus isolation
If patient is a contact lens wearer consider sending the lenses and cleaning fluid.

SPECIMEN COLLECTION

Optimal time of specimen collection	Before antimicrobial therapy where possible.
Correct specimen type and method of collection	Samples from these sites should be inoculated directly onto the surface of agar plates. Laboratory staff will attend REI, OPD or theatre when corneal scrapes and other procedures when tiny samples are produced. Telephone ext 4343 or call out the duty “on-call “staff to attend. Ideally they would have 30 minutes notice of the need to attend. This is particularly important out of normal hours where staff will not be on site. A request form must be submitted with the following detail included: a) Contact lens wearer

	b) Foreign body injury c) Trauma / surgery d) Previous keratitis e) Previous antibiotic therapy **If a contact lens wearer sends lens / case / fluid for culture.** If *Acanthamoeba sp*. or fungi are suspected please signify such on the request form. Any problems ring the laboratory on ext 4343. **Please note:** Microbiology at DCH is open from 9 am until 5 pm on weekdays and from 8.30 am, until 12 noon on weekends. Outside these hours please contact the Microbiology "On Call" BMS at Dorchester via switchboard.

SPECIMEN TRANSPORT AND STORAGE

Time between specimen collection and processing	Specimens should be transported and processed as soon as possible.

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15. TRANSPORTATION OF SPECIMENS

Any person responsible for handling specimens has duties under the Health and Safety at Work Act and the Control of Substances Hazardous to Health (COSHH) Regulations.

- Standard precautions apply to all patients and specimens
- Transport specimens to the laboratory promptly, ideally within 2 hours
- Refrigerate specimens that cannot be delivered immediately (at 2-8ºC). The refrigerator must not contain food or medicine
- Blood cultures must be sent to the laboratory immediately. Do not refrigerate.
- Personnel transporting specimens must be trained in safe handling practices and trained to deal with spillages
- Ensure that specimens are transported in accordance with the Carriage of Dangerous Goods Regulations, 2004

Use the designated container for transporting specimens from general practices or clinics to the laboratory.