CLINICAL SPECIMENS - POLICY ON THE COLLECTION, HANDLING AND TRANSPORT

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Document Control Sheet

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Revision History

Revision Date	Summary of changes	Author(s)	Version Number
March 2011	Updated reference	IPCT	5
December 12	No changes	IPCT	6
December 14	Lab details changed	IPCT	7
December 15	Labelling specimen details added, more information on specifics of sample collection added, requirement for designated fridge for samples included, section on transportation of specimens' adapted, clinical specimens audit added, swabbing of leg ulcers added.	IPCT	8
February 17	Removed clinical specimen audit tool. Adjustments for requests using ICE forms etc.	IPCT	9
December 18	Policy reviewed and minor changes	IPCT	10
March 2021	Policy reviewed, added collection and transport of SARS- COV -2 samples.	IPCT	11

Approvals

This document requires the following approvals either individual(s), group(s) or board.

Name	Title	Date of Issue	Version Number
	JICC	8/3/2011	5
	IPACC	18/2/2013	6
	IPACC	02/12/2014	7
	IPACC	08/12/2015	8
	IPACC	23/02/2017	9
	IPACC	14/12/2018	10
	IPACC	03/2021	11

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1. Introduction

This policy applies to all staff that is required to handle and transport specimens.

2. Purpose and scope

This policy is for all staff employed or contracted by East Coast Community Healthcare CIC, to enable them to understand the principles of safe collection, handling and transportation of clinical specimens.

3. Policy Statement

This policy will be implemented to ensure adherence to safe practice.

4. Responsibilities

It is the responsibility of all staff to ensure that they adhere to best practice.

5. Policy monitoring

It is the responsibility of all department heads/professional leads to ensure that the staff they manage adhere to this policy.

6. Review

This policy will be reviewed by the Infection Prevention and Control Team.

7. Collection, handling and transport of clinical specimens.

7.1 Clinical specimens include any substance, solid or liquid, removed from the patient for the purpose of analysis.

7.2 Staff handling clinical specimens must have received instruction in the safe handling of specimens and must be immunised according to Occupational Health Policy.

7.3 Staff must be trained in methods of dealing with specimen spillages. Spillage kits must be available for staff to use. Any accident or leakage must be instantly reported to a senior member of staff and Datix completed if necessary.

7.4 All specimens must be accompanied by an ICE request form or a fully completed Microbiology request form and must have the minimum identification criteria of:

Patient Preparation:
Verify the patients identity against the laboratory requisition, using a minimum of four identification details (surname, forename, date of birth and NHS number), confirmed with the patient wristband if present and where possible with the patient themselves verbally.
Review the clinician’s request and the patient’s written or verbal consent and that any special requirements have been met.
Review the procedure with the patient. Inform him or her about the tests for which the samples are being collected and allow the patient to ask questions.

Please contact the laboratory if there is any doubt about the best sample to take or concerning the availability of a test.

A request form must accompany all specimens sent to the laboratory. It should clearly state the following information:

If possible requests should be made using ICE which limits errors in patient identification and speeds up workflow in the laboratory. When making a request please ensure that all the relevant patient identification, clinical details and locations are provided, including the name of the requesting physician. Contact information must be supplied when an urgent request is made.

- Patient name and address
- NHS number
- Date of birth / age if DOB not known
- Sex
- Ward/GP name and number/address for report/bleep number
- Type of specimen
- Date and time specimen taken
- Investigations required
- All relevant clinical details including any antimicrobial treatment (recent, current and intended) and foreign travel
- Risk status if applicable
- Date of onset and duration of illness, particularly for serology
- Specify anatomical site from which "wound" specimens were taken
- Useful epidemiological information, e.g. date of contact if relevant.
- Priority level

7.5 Leaking or incorrectly labelled specimens will routinely be discarded by the receiving laboratory. Specimens in inappropriate containers will be similarly discarded. See appendix 1 for further details regarding list of appropriate containers for samples and more details for the collection of specific samples.
If samples are rejected every effort is made to inform the requesting doctor first.

7.6 Stool samples for Norovirus or C. difficile must be Bristol Stool Chart type 6 or 7 (see appendix 2).

7.7 An adequate quantity of material should be obtained for complete examination but bottles and pots should not be overfilled, each specimen is no more than 500ml (liquid) or 500g (solid) and all containers should be securely closed. See appendix 1 for specific details regarding the volume needed for specimens.

7.8 Clear (preferably printed) instructions and laboratory approved containers should always be given to patients collecting their own specimens for laboratory examination. Patients should be encouraged to place their specimen container directly into an individual plastic specimen bag. If staffs need to handle an unwrapped specimen container, they must wear disposable nitrile gloves.

7.9 When obtaining specimens, staff must use Standard Principles of Infection Control (i.e. wear appropriate personal protective equipment and wash and dry hands thoroughly before and after the procedure). This is to protect yourself and avoid contamination of the specimen.

7.10 When preparing your specimen for transport, place the labelled specimen container in the bag, remove protective strip above the bag, fold onto the bag and press firmly to seal, remove second protective strip on the reverse and secure specimen bag to the request form by affixing the adhesive strip to the form as per instructions.

7.11 Ideally samples for microbiological investigations, particularly cultures, should be transported to the Laboratory on the day of collection however, this is not always possible. Appendix 1 provides information on how samples can be stored and for how long to ensure that quality and integrity is maintained between collection and transportation. Specimens awaiting collection in healthcare settings should be kept in suitable containers, which are leak proof, robust and washable. Specimens need refrigerating in a designated fridge for specimens only whilst awaiting collection to allow for greater reliability of results.

7.12 Specimen fridges should be lockable and have a minimum and maximum temperature recorded daily. It is recommended when a specimen is placed in the fridge a laminated note is placed in the collection box so the transport staff collecting are aware they need to check the fridge.

7.13 Urine specimens tested in the healthcare setting must not be discarded into sinks. They should be disposed of into a sluice, or lavatory, and the plastic collection containers, must be disposed of in a sharps bin rather than clinical waste sack.

Sars-Cov-2 specimens.

All swabs taken for Sars-Cov-2 must be double bagged before being transported to the laboratory. The swab tube must be placed inside a plastic bag with an absorbent material inside such as gauze or paper towel. This must then be placed into a second bag and sealed.

Collecting Urine Samples and avoiding contamination

Around 700 urine samples are sent to the microbiology department at the Norfolk and Norwich University Hospital (NNUH) daily for testing, but only 40% are positive and a proportion are contaminated, thereby giving false positives. There is a large variation in how samples are collected, particularly within the care home sector.
The best results are obtained when an appropriate, well taken specimen, in the proper container, is delivered to the laboratory promptly and relevant clinical information is provided on the request form. Delays can render the samples unusable, if immediate transportation to the laboratory is not possible urine specimens for microbiology should be stored at 2-8°C, in the green topped bottle until transported to the laboratory. (NNUH)

Urines for UTI

The “gold standard” for the diagnosis of urinary tract infection is culture, which requires 18 -24 hours before a result is available. Microscopy or dipstick testing often provides preliminary information in appropriate patient groups, E.g. Dipstick testing is not suitable for Catheterised patients or those >65 years old. (NICE 2018)
It is important that the specimens of urine are still sent for examination and the microscopy

Healthcare professionals should ask patients about the severity and frequency of their symptoms before considering antibiotics for lower urinary tract infections (UTIs) and should send a midstream urine sample for antibiotic susceptibility testing in most cases.

Eastern Pathology Alliance NHS

Urine Container with Collection Device – Instructions for Use

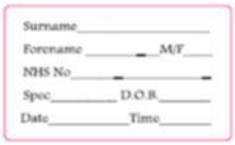
Clean the hands thoroughly before use.
Open cap by unscrewing anti-clockwise.

Lay the cap upside down on a firm surface.

Do Not Touch Internal Surfaces of the container and cap.

Collect mid-stream urine. Fill container up to ¾ of the capacity.

Turn the cap tightly in a clockwise direction to seal.



If giving to healthcare professional complete and attach label.

Gently shake the sample.

Partially raise the protective label(Do not remove it completely).

Do not put finger in the sampling hole.

Insert the tube. Gently apply pressure. Keep the tube in place until flow is complete.

Label the sample tube with the patients' details.

Remove the tube and fully re stick the protective label. Return both the tube and container to the GP practice.

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7.14 All specimens from patients who are known or strongly suspected of having the conditions below must be double bagged into plastic transit bags to reduce the danger of leakage.

- HIV
- Hepatitis B&C
- Viral Haemorrhagic fever (VHF) of any type
- Microorganisms, (biological agents) in Hazard Group 3 or 4 eg TB, Brucella, Salmonella typhi/paratyphi, Transmissible Spongiform Encephalopathy (TSE)
- Pyrexia of unknown origin (PUO) recently returned from Africa

GP's should also ensure that appropriate information including relevant travel history is provided in order to alert laboratory staff to potential dangers
If there is any doubt about the hazard level of any specimens, the Microbiologist at the receiving laboratory should be contacted.

8. Transportation of clinical specimens by community staff

Staff must only transport specimens in their vehicles in appropriate United Nations (UN) approved containers (UN 3373).
Staff need to ensure that the containers are:

- not used for any other purpose;
- never overfilled, contain a total of no more than 4 litres (liquid) or 4kg (solid);
- cleaned and disinfected weekly, and whenever contaminated.
- This outer packaging must be clearly labelled and durably marked with the words 'DIAGNOSTIC SPECIMENS'.
- transported in the **'boot' compartment** of their vehicle.

Should any substance be spilled or leak in a vehicle or container, it must not be used until appropriately decontaminated and the specimen should be appropriately disposed of.

9. Urgent specimens (from community hospitals)

There is no routine collection or testing of specimens from the community at weekends or bank holidays. During an outbreak, alternative collection service may be arranged. Please contact IPCT for details. Patients who are suspected to have an infection should be treated on symptoms and the next working day contact the Infection Prevention and Control Team who will assess the situation.

Ideally a fresh sample should be sent for testing however if over the weekend or bank holiday samples can be collected and refrigerated for sending to the lab next working day. Please send the freshest sample.

10. For further information regarding specimen collection and transportation please refer to The Norfolk and Norwich Microbiology department User's Manual, see link below:

For further information regarding LEG ULCER swabbing see appendix 3.

Collection Times are:

JPUH to NNUH	Mon-Fri	08:30, 13:15, 17:00
	Sat/Sun/BH	09:00, 12:00, 17:00

11. Author

Infection Prevention and Control Team

12. References:

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment regulations 2004 HMSO London.
HSE 2004 *Working with ADR: an introduction to the carriage of dangerous goods by road.* Health and Safety Executive, London.

Department of Health (2015) The Health and Social Care Act 2008. Code of Practice for the Prevention and Control of Healthcare Associated Infections. DoH London

Department of Health (2015) Health and Social Care (Safety and Quality) Act 2015 http://www.legislation.gov.uk/ukpga/2015/28/contents DoH London (accessed 28/01/2021)

Health and Safety Executive (HSE) (2003) Safe working and the prevention of infection in clinical laboratories and similar facilities. http://www.hse.gov.uk/pubns/clinical-laboratories.pdf (assessed 28/01/2021)

https://www.nice.org.uk/guidance/conditions-and-diseases/urological-conditions/urinary-tract-infection (accessed 28/01/2021)

Microbiology Department Norfolk and Norwich University Hospital (2018) Users Manual Version 4.

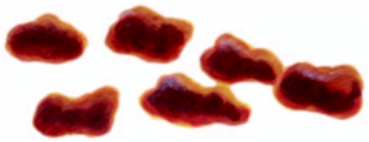
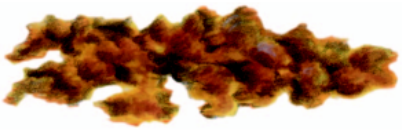
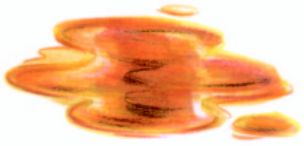
13. Appendix 1 Storage of microbiology samples

Investigations	Specimen	Containers	Storage condition Post sample collection and maximum time from collection to transportation	Further specific information and Volume of Specimen matter required
Culture & Sensitivity (MC&S) MRSA Screen	Black topped swab with bacteriological transport medium (Amies) in a pack.		Fridge @ 2-8° C 72 hours	For dry areas moisten with sterile water
For routine urine culture and microscopy – both MSUs and CSUs (MC&S)	Green topped bottle (Boric Acid) Use Yellow topped collection cup	 	Fridge @ 2-8°C preferable (Can be stored at room temp if fridge not available) 72 hours	Very small amounts are not appropriate but over generous filling makes the specimen very unpleasant to deal with.
Urine for Viral PCR eg CMV	White topped 30ml plain universal container		Fridge @ 2-8° C 72 hours	
Sputum samples for Culture & Sensitivity (MC&S) Mycobacterial testing (AAFB) Viral PCR	White topped 30ml plain universal container		Fridge @ 2-8° C 72 hours	5mls of sputum required and the sample ideally collected in the morning.

Skin/Hair/Nails for mycology	White topped 30ml plain universal container. Alternatively use the Dermapak system. Details in the User Manual. These are not supplied by the trust		Room Temperature Up to 96 hours	
Faeces samples for eg Culture & Sensitivity (MC&S) Viral Detection Viral PCR inc Norovirus Parasitology	Blue topped 30ml universal container with spoon		Fridge @ 2-8° C 72 hours	Fill to 1/4 to 1/2
Joint Fluids & other Aspirates for culture & sensitivity (MC&S) or virus detection	White topped 30ml plain universal container		Fridge @ 2-8° C 72 hours	
Serology eg rubella, BBV screen, syphilis etc Blood for tests PCR	Yellow topped SST vacutainer for serology. Purple topped EDTA vacutainer for PCR		Fridge @ 2-8° C 72 hours	
Blood - Culture & Sensitivity (MC&S)	The blue/green and purple topped comprise one blood culture set for all adult patients (Yellow Paediatric)		Needs to be transported to Lab on day of collection	If blood cultures required patients should be in an Acute Hospital
Virological swabs including covid	Green topped liquid virus transport medium and swab.		Fridge @ 2-8° C 72 hours	

14. Appendix 2

THE BRISTOL STOOL FORM SCALE

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces ENTIRELY LIQUID

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15. Appendix 3

Swabbing Leg Ulcers

About one person in every fifteen hundred has leg ulcers. There are many contributing causes of this often chronic condition, but venous disease is prominent.

Severe, acute bacterial infection of leg ulcers, exacerbated by conditions such as diabetes, is uncommon but potentially serious. Diagnosis of the bacterial causes in these cases is not difficult, and such patients are commonly septicaemic. It is much more of a challenge to define the much commoner mild episodes of clinical infection. Conventional signs of sepsis may be unreliable because chronic leg ulcers are frequently sloughy with an offensive smell and copious discharge, none is sterile on culture, and affected legs are often chronically erythematous.

There is debate about the clinical significance of organisms isolated from ulcers of the lower limb, and also about the value of microbiological sampling. Laboratory data shows that many request forms carry limited or inappropriate clinical details. Hence we believe this review is timely, and summarises our view of the rational investigation and antimicrobial treatment of infected leg ulcers.

Summary

- Swab ulcers that you believe to be clinically infected
- Don't swab ulcers you don't believe to be infected
- Clean the ulcer with sterile saline, use a Transwab, and transport it to the laboratory promptly
- Think "why has this patient got a leg ulcer?"
- For first line "blind" therapy we recommend Flucloxacillin for mild infections, with metronidazole added for the severe, un-resolving group and for those with an offensive discharge

Which Bacteria Matter?

Any raw area of skin rapidly becomes colonised with organisms of dubious pathogenicity, and these bacteria contaminate all specimens taken from the surface. Only isolation of *Staph. aureus* from a sinus has been shown to correlate with true underlying infection, such as osteomyelitis. Culture of leg ulcer biopsies is impracticable and has not been shown to be helpful.

We consider that isolation of *Strep. pyogenes* (Lancefield Group A beta-haemolytic streptococcus) is always worth treating. *Strep. pyogenes* remains reliably sensitive to penicillin (hence Flucloxacillin). Erythromycin and tetracycline are reasonable alternatives for the penicillin hypersensitive patient.

Interpretation of the significance of almost every other common isolate from leg ulcers is difficult, and crucially dependent on the patient's clinical condition.

With the exception of *Strep. pyogenes*, we recommend that a clinical diagnosis of **probable** infection be reached before the particular organisms isolated are considered with a view to guiding or altering treatment.

When is Swabbing Helpful?

1. Swab ulcers only when you suspect they are clinically infected: It is impossible to define unequivocally infection in a leg ulcer, but useful pointers include the presence of **significant surrounding erythema, pain and purulent discharge**. Rapid increases in size, erythema or oedema, failure to respond to simple measures, and prolonged duration and pyrexia, are also clues to clinical infection. We recommend swabbing any ulcer before you decide to treat with systemic or topical antibiotics. It is unnecessary, and **may be misleading**, to swab ulcers merely because they have increased in size or developed a green or offensive discharge.

2. Swab ulcers when underlying osteomyelitis is suspected. In this case, we recommend referral to the orthopaedic surgeons.

How to Swab:

- Clean slough off the ulcer with sterile saline.
- Use a Transwab, which contains sterile preservative jelly, and rotate the swab firmly in the depths of the ulcer (this is easier with neuropathic ulcers!).
- If the ulcer is dry, the swab can be pre-moistened with sterile saline.
- Complete the request form with all relevant clinical details.
- Send the swab to the laboratory, ideally to arrive on the same day.
- If longer delay is inevitable, store the swab at 2-8°C.

General Enquiries	01603 288587 (Direct line)	Internal extensions 4587/4588

Normal Opening Hours Core Hours

Monday – Friday	09:00 – 17:30
Saturday	09:00 – 12:30

During these times the Department's telephones are fully manned and will be able to respond to most requests.
Special or unusual tests may have to be analysed in batches and may not be available outside the laboratory's core hours.

Laboratory Operational Hours

Monday – Friday	08:00 – 21:00
Saturday / Sunday / Bank Holidays	08:00 – 17:00

Outside Normal Opening Hours

Specimens will be processed outside normal laboratory hours if requested and agreed criteria are satisfied.
Outside of the operational hours the examination of urgent specimens is undertaken by a team drawn from the most experienced Biomedical Scientists (BMS) in the

department. A Medical Microbiologist and Consultant Virologist provide clinical cover at all times.
Specimens are accepted by arrangement with the on-call BMS who is reached via the **NNUH** switchboard for **NNUH** / Norwich GP specimens, and via the local Blood Sciences Laboratory for **JPUH.**

Microbiology Department Norfolk and Norwich University Hospital (2018) Users Manual.Version 4

16. EQUALITY AND DIVERSITY IMPACT ASSESSMENT

Impact Assessments must be conducted for:

- **All ECCH policies, procedures, protocols and guidelines (clinical and non-clinical)**
- **Service developments**
- **Estates and facilities developments**

Name of Policy / Procedure / Service	**Clinical Specimens –Policy for collection, handling and transport**
Manager Leading the Assessment	**Teresa Lewis**
Date of Assessment	**December 2014. Reviewed 2017**

STAGE ONE – INITIAL ASSESSMENT

Q1. Is this a new or existing policy / procedure / service? **☐ New** **√ Existing**
Q2. Who is the policy / procedure / service aimed at? **☐ Patients** **√ Staff** **☐ Visitors**
Q3. Could the policy / procedure / service affect different groups (age, disability, gender, race, ethnic origin, religion or belief, sexual orientation) adversely? **☐ Yes** **√ No** **If the answer to this question is NO please sign the form as the assessment is complete, if YES, proceed to Stage Two.**

Analysis and Decision-Making

Using all of the information recorded above, please show below those groups for whom an adverse impact has been identified.

	Adverse Impact Identified?
Age	No
Disability	No
Gender	No
Race/Ethnic Origin	No
Religion/Belief	No
Sexual Orientation	No

- Can this adverse impact be justified?
- Can the policy/procedure be changed to remove the adverse impact?

If your assessment is likely to have an adverse impact, is there an alternative way of achieving the organisation's aim, objective or outcome
What changes, if any, need to be made in order to minimise unjustifiable adverse impact?