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SPECIMEN COLLECTION

Community Infection Prevention and Control Policy for General Practice

(also suitable for adoption by other healthcare providers, e.g. Dental Practice, Podiatry)

Specimen collection

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SPECIMEN COLLECTION

Please note that the internet version is the only version that is maintained. Any printed copies should, therefore, be viewed as 'uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

This document has been adopted as a Policy by:

Organisation: .....

Signed: .....

Job Title: .....

Date Adopted: .....

Review Date: .....

If your organisation would like to exclude or include any additional points to this document, please include below. Please note, the Community IPC Team cannot endorse or be held responsible for any addendums.

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1. Introduction

All specimens are a potential infection risk, therefore, all specimens must be collected using standard infection control precautions. Specimens should be transported in a rigid container in accordance with the *Carriage of Dangerous Goods and Use of Transportable Pressure Equipment* (2009).

Taking routine specimens, with the exception of blood samples, should be avoided to help reduce inappropriate prescribing of antibiotic treatment. Specimens should only be taken if there are indications of a clinical infection.

Urine dipstick for nitrites and leukocytes should not be performed unless there is clinical evidence of a urinary tract infection. Treating a patient with a positive dipstick in the absence of signs or symptoms of infection may result in inappropriate prescribing of antibiotics (see section 6).

Always use standard infection control precautions and, where required, transmission based precautions (SICPs and TBPs), refer to the 'SICPs and TBPs Policy for General Practice'.

When caring for patients in relation to COVID-19 or any other new emerging infections, staff should refer to national infection prevention and control guidance.

2. Specimen containers and transport bags

Wherever possible, reception staff should avoid handling specimens due to the risk of infection.

Patient specimen collected by staff (in the Practice or Community)

The person who obtains the specimen should ensure:

- Standard infection control precautions are always applied when obtaining or handling specimens and appropriate personal protective equipment (PPE) is worn
- The container is appropriate for the purpose. If there is leakage or an inappropriate container is used, the specimen should be rejected as it will not be processed by the laboratory due to the infection risk
- Care is taken to avoid contaminating the specimen
- The lid is securely closed
- There is no external contamination of the outer container by the contents

- Specimens are placed inside the plastic transport bag attached to the request form after they have been labelled (see section 7)
- The transport bag is sealed using the integral sealing strip (not stapled, etc)
- For large specimens, e.g. 24 hour urine, specimens may be enclosed in individual clear plastic bags tied at the neck. The request form must not be placed in the bag, but securely tied to the neck of the bag

Patients specimens brought into the Practice

The following is recommended:

- Staff should apply standard infection control precautions when handling specimens and appropriate personal protective equipment (PPE) is worn
- Staff should ensure the container is appropriate for the purpose. If there is leakage or an inappropriate container is used, the specimen should be rejected as it will not be processed by the laboratory due to the infection risk
- The lid is securely closed
- There is no external contamination of the outer container by the contents
- Specimens are placed inside the plastic transport bag attached to the request form after they have been labelled (see section 7)
- The transport bag is sealed using the integral sealing strip (not stapled, etc)
- For large specimens, e.g. 24 hour urine, specimens may be enclosed in individual clear plastic bags tied at the neck. The request form must not be placed in the bag, but securely tied to the neck of the bag
- Specimens received from patients should be placed in a rigid wipeable container. This should be cleaned on a regular basis with a disinfectant wipe

3. Specific information on microbiology specimen collection

Sample	Key information	Indication	Container
Ear swab	No antiseptic or antibiotic should have been placed in the ear prior to taking the swab.	Swelling, redness, heat, a yellow or green discharge.	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation. If the wound is dry, moisten the swab with sterile 0.9% sodium chloride or sterile water.

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Sample	Key information	Indication	Container
Eye swab	Moisten a swab in sterile saline. Hold the swab parallel to the cornea and gently rub the conjunctiva in the lower lid. If for chlamydia testing, send in special commercial chlamydia swab.	Swelling, redness, heat, a yellow or green discharge.	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation. Moisten the swab with sterile 0.9% sodium chloride or sterile water.
Faeces	Open bowel into a receptacle (a container, e.g. ice cream, can be used if washed and dried, or a carrier bag can be used positioned under the toilet seat). Scoop a sample of faeces into the specimen container using the container spoon provided. NB: Faecal specimens can be submitted even if contaminated with urine.	Diarrhoea, increase in frequency, presence of blood, abdominal pain.	Stool specimen container* (at least 1/4 full). 
	Note: • Request ova, cysts and parasites if history of foreign travel • If the patient has had antibiotic treatment in the past 12 weeks, request *Clostridioides difficile* testing		
Nasal swabs	Gently rotate the swab ensuring it is touching the inside of the nostril. Repeat the process using the same swab for the other nostril (see section 4). Follow manufacturer's instructions for COVID-19 test.	Advised to provide an MRSA screen.	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation. If the wound is dry, moisten the swab with sterile 0.9% sodium chloride or sterile water. **Do not moisten nasal swabs for COVID-19 testing.**
Penile swab	Retract foreskin. Rotate swab gently in the urethral meatus.	Discharge, UTI, suspected sexually transmitted infection.	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation.
Sputum	Sputum should be expectorated directly into a sterile container. Early morning specimens taken before eating provide the best results.	Productive cough (green or yellow) or presence of blood in sputum.	Plain universal container*. 

Sample	Key information	Indication	Container
Throat swab	When collecting a throat swab, care should be taken to depress the tongue using a spatula, this avoids touching the buccal mucosa or tongue with the swab. Take the specimen from any area of exudate or inflammation, or over the tonsils and the posterior pharynx. Follow manufacturer's instructions for COVID-19 test.	MRSA screening, tonsillitis, pharyngitis.	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation.
Saliva	For the diagnosis of mumps, saliva swabs should be taken as per the instructions supplied in the sample kit.	Swollen parotid glands.	Sample kit which is obtainable from your local UK Health Security Agency (UKHSA) Team.
Catheter specimen of urine (CSU)	Wipe sampling port with 2% chlorhexidine in 70% isopropyl alcohol swab, allow to dry for 30 seconds. Insert syringe into centre sampling port, aspirate urine and remove syringe. Wipe the sampling port with an alcohol wipe.	See Section 6 for UTI diagnosis and Appendices 1 and 2.	Universal container with boric acid preservative (red top)* which prevents bacteria from multiplying in the container. If sample is less than 5 ml, a white top universal container must be used as the preservative in the red topped bottle will be too potent for a urine sample of less than 5 ml and may kill any organisms. 
Mid-stream specimen of urine (male)	Ask the patient to retract the foreskin and clean the surrounding urethral meatus with soap and warm water. Then urinate first part of the flow into the toilet, collecting the middle part of the flow into a sterile bowl. Pass the remainder into the toilet. Replace foreskin.		
Mid-stream specimen of urine (female)	Ask the patient to clean the genitalia with soap and warm water, wiping from front to back. Then urinate, first part into the toilet, collecting the middle part of the flow into a sterile bowl. Pass the remainder into the toilet.		
Vaginal/ cervical swabs	**Low vaginal swab*:*** Insert the swab into the lower part of the vagina and rotate gently but firmly. **High vaginal/ cervical swab**: should be collected using a vaginal speculum. Wipe away any excess cervical mucus with a cotton swab. Using a sterile swab, sample as high as possible in the vaginal vault, taking care not to touch the lower vagina or perineum.	Routine screening, discharge, bleeding.	Use a sterile swab in transport medium. Chlamydia swab - use a specific swab for Chlamydia specimens and note handling information.

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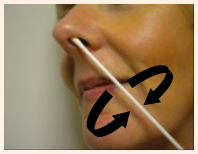
Sample	Key information	Indication	Container
Wound swabs	A sample of aspirated pus is preferred to a swab. However, if there is not enough pus to provide a sample, take a swab of any pus or exudate present. If the swab is to be taken from an ulcer, clean away any debris with saline before taking the swab. Swabbing of dry crusted areas is unlikely to be helpful.	Swelling, redness, heat, a yellow or green discharge, increased discharge of fluid, wound deterioration, fever.	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation. If the wound is dry, moisten the swab with sterile 0.9% sodium chloride or sterile water.

Note: *
The colour of the specimen container top may vary depending on the manufacturer.

4. How to take MRSA nasal swab

	• Wash hands and apply apron and non-sterile gloves. • Place a few drops of either sterile 0.9% sodium chloride or sterile water onto the swab taking care not to contaminate the swab.
	• Place the tip of the swab inside the nostril at the angle shown. • It is not necessary to insert the swab too far into the nostril.
	• Gently rotate the swab ensuring it is touching the inside of the nostril. • Repeat the process using the same swab for the other nostril.
	• Place the swab into the container. • Dispose of gloves and apron and clean hands after removing PPE. • Complete patient details on the container and specimen form. If for MRSA, request ‘MRSA screening’ under clinical details on the form.

5. Storage

Wherever possible, obtain a fresh specimen and take the specimen at a time when it can be transported to the laboratory in a timely manner.

For the most accurate results, specimens should be dispatched to the laboratory as soon as possible or at least within 24 hours. After this time, any dominant or more virulent microorganisms will flourish and weaker ones will die which can lead to inaccurate results.

Specimens that are to be stored overnight may require refrigeration in a specimen fridge, check with your local laboratory for storage requirements.

Specimens should be stored in a temperature-controlled refrigerator which is not used for vaccine/medication or staff food/drink storage.

6. UTI diagnosis

UTI (urinary tract infection) accounts for at least 23% of all infections and of these, 80% are due to the use of urinary catheters.

Accurate diagnosis of UTI is complex, with symptoms varying between different patient groups.

A 'Diagnosis of urinary tract infections: Quick reference tool for primary care for consultation and local adaptation' is available at www.gov.uk. Appendix 1 'UTI diagnosis in adults: Guide for General Practice' is an adaptation highlighting when to perform a urine dipstick test and when to send urine for culture from each adult patient group.

In response to the impact of UTI on catheterised adults or those over 65 years, see a further adaptation, Appendix 2 'General Practice guide: diagnosing suspected UTI in catheterised adults OR those over 65 years', which provides additional information on interpretation of symptoms and indications for treatment, as well as reinforcing the unreliability of urine dipstick results.

These diagnostic tools below are available to download at www.infectionpreventioncontrol.co.uk.

7. Labelling

Specimens must be labelled correctly to prevent misdiagnosis and wastage. The specimen request form and the specimen container label must be completely filled in. If using patient identification labels on forms, ensure that the copy section also has a label.

All specimens must be clearly labelled with the correct patient details which include:

- Full name
- Address

- Male or female
- Date of birth and NHS number
- Type of specimen, e.g. catheter or mid-stream urine sample
- Relevant clinical details, e.g. pyrexia, increased confusion, description of the wound, recent foreign travel, recent antibiotics
- Date and time of sample collection
- GP details
- Signature (unless electronic form)
- Hazardous groups 3 and 4 organisms, i.e. blood-borne viruses, TB, must have a 'Danger of Infection' label applied to both the container and request form
- Wherever possible, obtain a fresh specimen and take the specimen at a time when it can be transported to the laboratory in a timely manner

8. Disposal of urine samples

Specimens of urine not submitted to the laboratory for further investigation can be disposed of in the following ways:

- Empty the urine into a toilet; appropriate PPE should be worn including eye and face protection to protect against splashes. The container should then be disposed of as contaminated/infectious waste, refer to the 'Safe Management of Waste Policy for General Practice'
- Check with your local waste contractor to see if they accept solidified liquid waste. If so, solidifying crystals can be added to the container to solidify the urine to prevent accidental spillage. Secure the lid of the urine specimen container and place into an infectious waste bag

Do not contaminate handwash basins or sinks by disposing of urine samples in them.

9. Spillages of specimens

Spillage kits may contain solidifying polymer granules. A National Patient Safety Alert issued in 2017, following a number of deaths and incidents related to patients ingesting the product, advises a risk assessment and procedures in place to ensure supplies are securely stored away from the general public.

- Spillages of blood or body fluids should be dealt with immediately, refer to the 'Safe Management of Blood and Body Fluids Policy for General Practice'.
- Should the container leak, a new specimen should be obtained. If this is not possible, wearing appropriate personal protective equipment (PPE), carefully

decant the specimen into a clean container.

- If the outside of the container is contaminated, it should be wiped immediately with paper towels, then cleaned and disinfected with an appropriate wipe. If the specimen form is contaminated, a new form should be used.

10. Transportation

Specimens should be transported to the laboratory in a secure rigid container with a biohazard label.

11. Infection Prevention and Control resources, education and training

The Community Infection Prevention and Control (IPC) Team have produced a wide range of innovative educational and IPC resources designed to assist your Practice in achieving compliance with *The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance* and CQC registration requirements.

These resources are either free to download from the website or available at a minimal cost covering administration and printing:

- 25 IPC Policy documents for General Practice
- 'Preventing Infection Workbook: Guidance for General Practice'
- 'IPC CQC inspection preparation Pack for General Practice'
- IPC audit tools, posters, leaflets and factsheets
- 'IPC Bulletin for GP Practice Staff'

In addition, we hold educational study events in North Yorkshire and York and can arrange bespoke training packages and 'Mock IPC CQC Inspections'. Prices vary depending on your requirements and location.

Further information on these high quality evidence-based resources is available at www.infectionpreventioncontrol.co.uk.

12. References

Department of Health (2015) *The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance*

Department of Health (2007) *Transport of Infectious Substances – Best Practice Guidance for Microbiology Laboratories*

Health and Safety (2009) *Carriage of Dangerous Goods and Use of Transportable Pressure Equipment*

NHS England (2017) *Risk of death and severe harm from ingesting superabsorbent polymer gel granules* NatPSA/2019/002/NHSPS www.england.nhs.uk/wp-content/uploads/2020/02/PS_Alert_Polymer_28_Nov_2019_FINAL.pdf

Public Health England (July 2020, updated March 2021) *Guidance COVID-19: safe handling and processing for samples in laboratories* www.gov.uk/government/publications/wuhan-novel-coronavirus-guidance-for-clinical-diagnostic-laboratories/wuhan-novel-coronavirus-handling-and-processing-of-laboratory-specimens

Public Health England (May 2020, updated October 2020) *Diagnosis of urinary tract infections: quick reference tool for primary care*

Royal Marsden NHS Foundation Trust (2020) *The Royal Marsden Hospital Manual of Clinical and Cancer Nursing Procedures 10th Edition*

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UTI diagnosis in adults: Guide for General Practice

This guide is an adaptation of the PHE quick reference tool for primary care available at www.gov.uk, highlighting when to perform a urine dipstick test and when to send urine for culture. Although use of urine dipsticks can help in the diagnosis of UTI for specific patient presentations, they are unreliable for many patients and are not recommended to rule out UTI. Refer to National and Local guidelines for antimicrobial prescribing.

Patient group	Patient presentation	Urine dipstick	Urine for culture
Pregnant women	With suspected sepsis or pyelonephritis	X	✓
	With any of the 3 key diagnostic symptoms; **dysuria, new nocturia, urine cloudy to naked eye**		
	• 2 or more key symptoms	X	✓
	• 1 key symptom	✓	✓
	• No key symptoms, but presence of; **severe urgency, frequency, visible haematuria, suprapubic tenderness**	✓	✓
Women 16 - 65 years Excludes women with recurrent UTI or urinary catheter	With suspected sepsis or pyelonephritis	X	✓
	With any of the 3 key diagnostic symptoms; **dysuria, new nocturia, urine cloudy to naked eye**		
	• 2 or more key symptoms (UTI likely)	X	X **Proceed with empirical therapy**
	• 1 key symptom (UTI equally likely to other diagnosis) ***or*** No key symptoms, but presence of; **severe urgency, frequency, visible haematuria, suprapubic tenderness** (UTI less likely)	✓	✓ **only if positive** leukocyte ***or*** if positive nitrite and RBC ***or*** positive leukocyte and RBC ***or*** risk of antibiotic resistance*
Men 16 - 65 years	With urinary symptoms (asymptomatic bacteriuria is rare)	✓	✓
Women and men over 65 years	With suspected sepsis or pyelonephritis	X	✓
	With new onset dysuria ***or*** 2 or more other urinary symptoms; **temperature 1.5°C above normal twice in the last 12 hours, new frequency or urgency, new incontinence, new or worsening delirium/debility, new suprapubic pain, visible haematuria**	X	✓
Catheterised patient	With suspected sepsis or pyelonephritis	X	✓
	2 or more other urinary symptoms; **temperature 1.5°C above normal twice in the last 12 hours, new or worsening delirium/debility, new suprapubic pain, visible haematuria** Check for catheter blockage **and** consider removal or replacement. The threshold for a change of catheter should be very low as it is the most effective therapeutic intervention for catheter associated UTI.	X	✓

* Risk factors for antibiotic resistance include genitourinary tract abnormalities, renal impairment, care home resident, hospitalisation > 7 days in last 6 months, recent travel to a country with increased resistance, previous UTI resistant

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Appendix 2: General Practice guide – diagnosing suspected UTI in catheterised adults OR those over 65 years

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General Practice guide: diagnosing suspected UTI in catheterised adults OR those over 65 years

(Please refer to the 'Diagnosis of UTIs quick reference tools for Primary Care' at www.gov.uk for other patient groups)

First Think Sepsis: follow NICE guidance for management.

Check for Pyelonephritis: kidney pain/tenderness in back or under ribs, new/different myalgia, flu-like illness, nausea/vomiting, shaking chills (rigors) OR temp over 37.9° C OR 36°C or below.
Follow NICE Pyelonephritis (acute): antimicrobial prescribing for management.
Then check for all new signs/symptoms of UTI.

Signs and symptoms of UTI:

- New onset dysuria (pain on urination) alone

OR 2 or more from the following criteria:

- Temperature 1.5°C above normal twice in the last 12 hours
- New frequency or urgency
- New incontinence
- New or worsening delirium/debility/confusion
- New suprapubic (lower abdominal) pain
- Visible haematuria (blood in urine)

If fever and delirium/debility only consider other causes before treating for UTI.

If catheterised, also check for catheter blockage and consider catheter removal or replacement.

Do the right thing… 'ditch the dipstick' in catheterised adults and the over 65s!

Urine dipsticks are unreliable in diagnosing UTIs. 50% of over 65s and almost all catheterised adults have bacteria present in the bladder/urine without an infection.

This is 'asymptomatic bacteriuria' and **does not need treating with antibiotics.**

Using urine dipsticks in these groups can lead to harm through unnecessary antibiotic use and missed alternative diagnoses.

- ✓ Only treat based on clinical signs and symptoms.
- ✓ Send a CSU (catheter specimen of urine) or MSU (mid-stream specimen of urine), if feasible, before antibiotics are taken.
- ✓ Prescribers should refer to their local Antimicrobial guidelines for antibiotic choice and duration.
- ✓ Advise continued monitoring for signs of deterioration and escalate if necessary.

Check for other causes of delirium if relevant (PINCH ME):

P	Pain	M	other Medication
I	other Infection	E	Environment change
N	poor Nutrition		
C	Constipation		
H	poor Hydration		

Public Health England (2018, last updated October 2020 Version 3.0) Diagnosis of urinary tract infections: quick reference tool for primary care
Adapted with kind permission of Dr Shaun O'Connell, GP Lead for Acute Service Transformation, NHS Vale of York CCG, and Dr Neil Todd, Consultant Microbiologist, York and Scarborough Teaching Hospitals NHS Foundation Trust

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