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**Cumberland
Council**

Community Infection Prevention and Control Policy for Care Home settings

Specimen collection

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This guidance document has been adopted as a policy document by:

Organisation:	Cumberland Council
Signed:	
Name:	Alison Glanville
Job Title:	Assistant Director
Directorate:	Adult Social Care and Housing
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For further information and advice regarding infection prevention and control please contact:

Jane Mastin Public Health Manager (Health Protection) Public Health and Communities Cumberland Council Cumbria House 107-117 Botchergate Carlisle CA1 1RZ Jane Mastin Mob: 07919 058855 Email: jane.mastin@cumberland.gov.uk	Sarah Todd and Naomi Harvey IPC Practitioners Public Health and Communities Cumberland Council Cumbria House 107-117 Botchergate Carlisle CA1 1RZ Sarah Todd Mob: 07384 241462 Email: sarah.todd@cumberland.gov.uk Naomi Harvey Mob: 07919 398953 Email: naomi.harvey@cumberland.gov.uk
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Your local UK Health Security Agency Team:

UKHSA	Tel: 0344 225 0562
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Community Infection Prevention and Control
Harrogate and District NHS Foundation Trust
Gibraltar House, Thurston Road
Northallerton, North Yorkshire. DL6 2NA
Tel: 01423 557340
email: infectionprevention.control@nhs.net
www.infectionpreventioncontrol.co.uk

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SPECIMEN COLLECTION

1. Introduction

A specimen is a sample of body fluid, e.g. urine, faeces, sputum. All specimens are a potential infection risk and must be collected using 'Standard infection control precautions' (SICPs). 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.

When urinary tract infection (UTI) is suspected, urine should be dipsticked for nitrites and leukocytes only when specific criteria are met (see Section 6).

Always use SICPs and, where required, 'Transmission based precautions' (TBPs), refer to the 'SICPs and TBPs Policy for Care Home Settings'.

When caring for residents in relation to any new or emerging infections, staff should refer to national infection prevention and control guidance.

2. Specimens, containers and transport bags

The person who obtains the specimen should ensure:

- SICPs are always applied and appropriate personal protective equipment (PPE) is worn
- Care is taken to avoid contaminating specimens
- The container is appropriate for the purpose. If there is leakage or an inappropriate container is used, the specimen will not be processed by the laboratory due to the infection risk
- The specimen container is correctly labelled
- Care is taken to avoid spilling the specimen (see Section 9)
- 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. The transport bag should be 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 residents should be transported to GP surgeries in a rigid

wipeable container. This should be cleaned and disinfected after each use, refer to the 'Safe management of care equipment Policy for Care Home settings'

3. 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 ear/wound is dry, moisten the swab with sterile 0.9% sodium chloride or sterile water
Eye swab	Moisten a swab in sterile saline. Hold the swab parallel to the cornea and gently rub the conjunctiva in the lower lid	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	Resident opens bowel into a receptacle, e.g. commode. Scoop a sample of faeces into the specimen container using the container spoon provided until the container is at least 1/3-1/2 full. NB: Faecal specimens can be taken even if contaminated with urine, note this on the request form	Diarrhoea, increase in frequency, presence of blood, abdominal pain	Stool specimen container (blue top*) 
	Note: If the resident has had antibiotic treatment in the past 12 weeks, request <i>Clostridioides difficile</i> 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 nasal swab	Advised to provide an MRSA screen	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.
Penile swab	Retract foreskin. Rotate swab gently in the urethral meatus. Replace foreskin	Discharge, UTI	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation

Sample	Key information	Indication	Container
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 (white top*) 
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 throat swab	MRSA screening, tonsillitis, pharyngitis	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation
Urine: suspected UTI in catheterised adults or those over 65 years			
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	New onset dysuria (pain on urination) alone Or 2 or more: - History/presence of fever or rigors (temperature 1.5°C above normal twice in the last 12 hours) - New urinary frequency or urgency - New incontinence - New or worsening delirium/debility (new onset confusion) - New suprapubic (lower abdominal) pain - Visible haematuria (blood in urine) - MSUs cannot be submitted if contaminated with faeces	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 off any organisms 
Mid-stream specimen of urine (MSU)	For females, wash the genital area with soap and warm water, wiping from front to back. For males, retract the foreskin (unless circumcised) and wash the area with soap and warm water. Advise both females and males to pass urine, first part into the toilet, collecting the middle part of the urine flow into a sterile bowl. Pass the remainder into the toilet. For males, replace the foreskin		

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 specimen container type and colour top may vary depending on the manufacturer.			

4. How to take a nasal swab (not for COVID-19)

	- 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 resident details on the container and specimen form. If for MRSA, request 'MRSA screening' under clinical details on the form.

5. Catheter specimen of urine

A routine catheter specimen of urine (CSU) is **not** necessary from catheterised residents. A specimen should only be obtained:

- If there is a clinical indication for treatment, see table below

Symptoms of a catheter associated UTI (CAUTI)

In a resident with a urinary catheter, a UTI is likely if the resident has 2 or more of the following:

- History/presence of fever (temperature 1.5°C above normal twice in the last 12 hours) or rigors (shivering, chills)
- New pain or tenderness in the lower back or abdomen
- New or worsening delirium/debility (new onset confusion)
- Visible haematuria (blood in urine)

Offensive smelling or cloudy urine is not a symptom of CAUTI.

It is important to check the catheter for blockage and consider removal or replacement.

- Following catheterisation for retention of urine
- Samples must be obtained from the self-sealing sampling port of the drainage tubing. Never collect a sample of urine from the drainage bag as this does not represent the bacteria in the bladder and could lead to over prescribing of antibiotics
- **Never** disconnect the closed system to obtain a urine specimen
- Before taking the sample, clean the sampling port with a wipe containing 70% alcohol and allow to dry. Use a sterile syringe to access the sampling port and obtain specimen
- Transfer the specimen into a sterile 30 ml universal container containing boric acid preservative (red top) which prevents bacteria from multiplying in the container. If the 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 off any microorganisms
- Wipe the sampling port again with a wipe containing 70% alcohol **and allow to dry**
- Dispose of the empty syringe as infectious waste
- Label the specimen container and complete the specimen request form, including details of the type of specimen, clinical details, any antibiotic treatment and symptoms. Refer to Section 8
- The specimen must be sent to the laboratory as soon as possible. If delivery is delayed, the specimen may need to be placed in a 'specimen only' fridge. Your local Microbiology Department will advise

6. Dipsticking urine

Urine should not be dipsticked for nitrites and leukocytes unless there are clinical signs of a urinary tract infection (see 'Diagnosing suspected UTI in adults' below), treating a dipstick which is positive for nitrites and leukocytes without clinical signs of an infection may result in inappropriate prescribing of antibiotics.

Urine should not be dipsticked for nitrites and leukocytes in residents >65 years old or

those with urinary catheters. Urine dipsticks are unreliable in diagnosing urinary tract infection (UTI) in the over 65s and residents with catheters. Bacteria are present in the bladder/urine without an infection in 50% of over 65s and almost all residents with catheters. This is 'asymptomatic bacteriuria' and does not need treating with antibiotics. Using urine dipsticks in these resident groups can lead to harm through unnecessary antibiotic use and missed alternative diagnoses.

UTI diagnosis in adults: Guide for Care Homes

		UTI diagnosis in adults: Guide for Care Homes	
		This guide is an adaptation of the UK Health Security Agency quick reference tools 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
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	X	X Only if risk of antibiotic resistance* of pregnant
	2 or 3 key symptoms (UTI likely) 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 nitrite leukocyte and RBC or if positive leukocyte 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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7. Storage

- Wherever possible, obtain a fresh specimen and take the specimen at a time when it can be transported to the GP Practice in a timely manner.
- For the most accurate results, specimens should be received by the laboratory as soon as possible or at least within 24 hours. After this time, any dominant or more virulent microorganisms, such as bacteria and viruses, will flourish and weaker ones will die off, which can lead to inaccurate results.
- Consult your local guidelines about storage of specimens.
- If delivery is delayed, the specimen may need to be placed in a 'specimen only' fridge. Your local Microbiology Department will advise. Regular cleaning of the specimen refrigerator is required and temperature should be documented.

8. 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 resident identification labels on forms, ensure that the copy section also has a label.

All specimens must be clearly labelled with the correct resident's details which include:

- Resident's full name
- Resident's address
- Male or female
- Resident's date of birth and NHS number
- Type of specimen, e.g. catheter or mid-stream urine sample
- Relevant clinical details, symptoms and their duration, e.g. description of the wound, pain on passing urine, increased confusion
- Relevant medication history, e.g. recent antibiotic history, current antibiotics, relevant medications
- If viral gastroenteritis is suspected, request virology screening and add iLog number of the outbreak
- Date and time of sample collection
- Signature (unless electronic form)
- GP and GP Practice details for destination of the report
- 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

9. Spillages of specimens

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

- Spillages of blood or body fluids should be dealt with immediately and in accordance with SICPs. Refer to the 'Safe management of blood and body fluid spillages Policy for Care Home settings'.
- Should the container leak, a new specimen should be obtained. If this is not possible, wearing appropriate 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. Refer to the 'Safe management of blood and body fluid spillages Policy for Care Home settings'. If the specimen form is contaminated, a new form should be used.

10. Infection Prevention and Control resources, education and training

See Appendix 1 for the 'Specimen collection: Quick reference guide'.

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

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

- 30 IPC Policy documents for Care Home settings
- Preventing Infection Workbook: Guidance for Care Homes
- IPC CQC inspection preparation Pack for Care Homes
- IPC audit tools, posters, leaflets and factsheets
- IPC Bulletin for Care Homes

In addition, we hold IPC educational training events in North Yorkshire.

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

11. References

Department of Health and Social Care (Updated December 2022) *Health and Social Care Act 2008: code of practice on the prevention and control of infections and related guidance*

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

NHS England (2019) *Risk of death and severe harm from ingesting superabsorbent polymer gel granules*

Public Health England (Updated March 2021) *Guidance: COVID-19: safe handling and processing for samples in laboratories*

Public Health England (Updated 2020) *Urinary tract infection: diagnostic tools for primary care*

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

UK Health Security Agency (May 2024) *Diagnosis of urinary tract infections: quick reference tools for primary care*

12. Appendices

Appendix 1: Specimen collection: Quick reference guide

Specimen collection: Quick reference guide

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 ear/wound is dry, moisten the swab with sterile 0.9% sodium chloride or sterile water
Eye swab	Moisten a swab in sterile saline. Hold the swab parallel to the cornea and gently rub the conjunctiva in the lower lid	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	Resident opens bowel into a receptacle, e.g. commode. Scoop a sample of faeces into the specimen container using the container spoon provided until the container is at least 1/3-1/2 full. NB: Faecal specimens can be taken even if contaminated with urine, note this on the request form	Diarrhoea, increase in frequency, presence of blood, abdominal pain	Stool specimen container (blue top*) 
Note: If the resident has had antibiotic treatment in the past 12 weeks, request <i>Clostridioides difficile</i> 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 nasal swab	Advised to provide an MRSA screen	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.
Penile swab	Retract foreskin. Rotate swab gently in the urethral meatus. Replace foreskin	Discharge, UTI	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 (white top*) 
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 throat swab	MRSA screening, tonsillitis, pharyngitis	Sterile cotton swab in transport medium. Charcoal medium increases survival of bacteria during transportation

26 Appendix 1: Specimen collection: Quick reference guide

Sample	Key information	Indication	Container
Urine: suspected UTI in catheterised adults or those over 65 years			
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	- New onset dysuria (pain on urination) alone Or 2 or more: - History/ presence of fever or rigors (temperature 1.5°C above normal twice in the last 12 hours)	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 off any organisms
Mid-stream specimen of urine (MSU)	For females, wash the genital area with soap and warm water, wiping from front to back. For males, retract the foreskin (unless circumcised) and wash the area with soap and warm water. Advise both females and males to pass urine, first part into the toilet, collecting the middle part of the urine flow into a sterile bowl. Pass the remainder into the toilet. For males, replace the foreskin	- New urinary frequency or urgency - New incontinence - New or worsening delirium/debility (new onset confusion) - New suprapubic (lower abdominal) pain - Visible haematuria (blood in urine) - MSUs cannot be submitted if contaminated with faeces	
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 specimen container type and colour top may vary depending on the manufacturer.			

For further information, please refer to the full Policy which can be found at www.infectionpreventioncontrol.co.uk/care-homes/policies/

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