

## Process for the management of suspected catheter associated urinary tract infection (CAUTI) in the community, care homes and hospital in-patients in Fife – September 2017

### This guidance has been developed for the following reasons

1. Reduce the number of culture of urine specimens from catheterised patients
2. To improve the identification of patients more likely to have a CAUTI
3. Improve the results reported by the laboratory
4. Improve the service the laboratory provide to its' users by providing rejection criteria

### Things you must know:

1. Urine from a catheterised people should never be dip stick tested to rule in/out infection. It will always be positive. Evidence that suggests a catheter sample of urine (CSU) was sent because of a positive dip stick test will automatically be discarded and no longer retrievable.
2. CSU specimens will only be processed if the clinical signs are documented which have prompted the investigation. Failure to provide clinical evidence to suggest a CAUTI will result in the sample being discarded and no longer retrievable.

Step	Consensus opinion	Rational
1	CAUTI should be suspected when two or more of the criteria listed overleaf are present	Only send urine samples for culture if the patient has clinical criteria suggestive of a CAUTI not because the appearance or smell of the urine which suggests catheter biofilm is present.
2	Sample urine from the 'sample port' at the top of the leg bag. Use the appropriate equipment to retrieve the sample - <b>Do not obtain specimens from the drainage bag</b>	Sampling from the urine bag will identify the organism(s) colonising the catheter bag or forming a biofilm lining the catheter. These organism(s) may or may not be the same pathogen(s) causing the cystitis. Sampling from the tubing is more likely to identify the offending pathogen(s).
3	<b>Start empirical antibiotic(s)</b>	<b>See antibiotic guidance (This is for the relevant medical staff to use)</b>
4	<b>If prescribing oral antibiotics change the catheter 24-48hr after starting the antibiotic. Or</b>  Where IV antibiotics are prescribed, remove/replace the catheter immediately after IV antibiotics	Changing the catheter after the antibiotics have been commenced has two effects: (1) It achieves source control by removing the focus of infection. (2) Reduces the risk of bacteraemia  <b>Oral Antibiotics:</b> Catheter change needs to be delayed when prescribing oral antibiotics. This allows time for the antibiotic to penetrate the urine and reduce the risk of bacteraemia. <b>IV antibiotics:</b> If the patient requires IV antibiotics the catheter can be replaced/removed shortly after the first dose of IV antibiotic given. IV antibiotics are distributed into urine more rapidly.
5	<b>Review patient 24hr after catheter removal.</b> If patient improved, complete originally prescribed course of antibiotics.  <b>Only</b> if symptoms persist 24hr after replacing the catheter, change antibiotic(s) according to culture results and take a second specimen from the new catheter	<b>+ve initial response to antibiotic:</b> The empirical choice of antibiotic and catheter change have controlled the infection.  <b>Ongoing symptoms:</b> If the culture result from the first urine sample indicates resistance to the empirical antibiotic then the reason for the failure may be due to the incorrect antibiotic. The second CSU if taken will demonstrate the organism causing the cystitis because the catheter should not be colonised by biofilm. Review the choice second line antibiotic with the culture results from the second urine sample

**NOTE: Do not give antibiotic prophylaxis for catheter changes unless a history of symptomatic UTI due to catheter change**

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**Clinical criteria which indicate the possibility of a CAUTI: Fever on two occasions in a catheterised patient or two or more of the following symptoms without fever (recognised acceptable criteria)**

Criteria	
Fever <36°C or ≥38°C on more than two occasions in a 12hr period	Fever without localising signs is a common occurrence in catheterised people and urinary tract infection accounts for about one third of these episodes. <i>Therefore in <b>two thirds of fever episodes</b> another cause for pyrexia should be identified</i>
Rigors	
New onset delirium	Refer to delirium information for presentation
Suprapubic or flank pain or back pain	Pain may not be specific to the suprapubic region
Malaise	
Lethargy	

**Some examples of why catheter specimens of urine (CSU) are not appropriate and will be rejected for testing**

Description	Rational
Blocked catheter	Obstructed catheters should be replaced. Culture is not helpful
Dip stick test positive	Evidence indicates dip stick testing of no value in catheterised people. It is always positive
By-passing urine	Mechanical failure due to obstructed catheter. Replace catheter, culture not helpful
?CAUTI	The patient may have a CAUTI but the laboratory can only make a judgement to process the sample if clinical symptoms are provided
Repeat specimen	We will reject a repeat specimen if it is not clear why you have sent a second specimen (see criteria above)
Doctors request	We will reject the specimen if clinical criteria are not provided
Clinic review	CSU specimens should only be sent if the patient is symptomatic and the laboratory need to know the symptoms on which the judgement was made – Please be clear on the form what symptoms are present.
Follow up specimen	Repeat samples should only be taken if the patient remains symptomatic. <b>“Test of cure” is not appropriate</b>
Absence of clinical details	The patient may or may not have clinical symptoms
Offensive smell	Smell and appearance without symptoms are suggestive of bacteriuria not infection. Change catheter
Appearance	The presence of crystals, drugs, haematuria can all alter the appearance and colour of urine. Consider catheter change
Clots	These usually due to crystal formation or fibrin and not a reason to send a culture. Change the catheter
“Pre operation request”	Catheter urine will always be positive on culture and patient undergoing surgical urogenital procedure receive prophylaxis

**Other useful information to help support the management of the person in your care and your request for release of second line antibiotics**

Description	Rational
Indicate any allergies	We can release alternative antibiotics
Indicate the antibiotic you intend to prescribe	We routinely only report a limited number of antibiotics, but if you explain why you are not using one of the first line antibiotics we can release second line antibiotics if appropriate
Reduced renal function with eGFR <40	We will release antibiotics which can be prescribed with eGFR <40
NG or PEG fed individual	We will release antibiotics which come as a liquid or can be dissolved

**In summary:**

If specimen rejection criteria are present in the clinical details of the specimen request form and there is also information highlighted that reflects the possibility of a CAUTI (recognised acceptable criteria of CAUTI), the sample is likely to be rejected. This makes it all the more important that the person obtaining the sample and completing the specimen form, completes is accurately and details all the appropriate information as prior to submission. This will ensure that an ‘acceptable’ sample is sent to the laboratory for testing.

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