



## THE NEW ZEALAND MICROBIOLOGY NETWORK

The New Zealand Microbiology Network consists of over 30 representatives from diagnostic and public health laboratories in New Zealand. The majority of the members are clinical microbiologists.

### 1. Urinalysis or culture should not be performed if there is no clinical evidence of urinary tract infection (UTI). Pregnant women and prior to urological surgery are the two exceptions to this rule.

*Asymptomatic bacteriuria is common and does not generally require treatment unless prior to urological surgery. Urinalysis and culture are not able to differentiate between asymptomatic bacteriuria and urinary tract infection. Clinical features of urinary tract infection include: dysuria, frequency, urgency, loin pain, polyuria, suprapubic tenderness, flank or loin pain and fever (in the absence of an alternative source for fever).*

*Symptoms of UTI do NOT include cloudy or smelly urine.*

#### Supporting Evidence

- SIGN 88 Management of suspected bacterial urinary tract infection in adults. <https://www.sign.ac.uk/assets/sign88.pdf>
- Wilson MP et al; Laboratory Diagnosis of Urinary Tract Infections in Adult Patients, *Clinical Infectious Diseases*, Volume 38, Issue 8, 15 April 2004, Pages 1150–1158, <https://doi.org/10.1086/383029>
- Jump, R. L. P. et al; Cloudy, Foul Smelling Urine Not a Criteria for Diagnosis of Urinary Tract Infection in Older Adults. *Journal of the American Medical Directors Association*, 2016: 17(8), 754. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5849433/>

### 2. Appropriate clinical details should be sent with all microbiology samples, including urine specimens.

*The inclusion of appropriate clinical details allows the laboratory to ensure that urine culture is indicated, and to optimise laboratory workup, culture interpretation and susceptibility reporting.*

#### Supporting Evidence

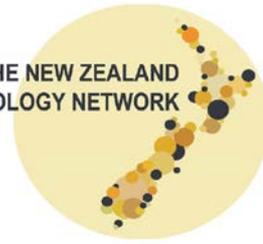
- Miller et al; A Guide to Utilization of the Microbiology Laboratory for Diagnosis of Infectious Diseases: 2018 Update by the **Infectious Diseases Society of America and the American Society for Microbiology**.
- *Clinical Infectious Diseases*, Volume 67, Issue 6, 31 August 2018, Pages e1–e94, <https://doi.org/10.1093/cid/ciy381>

### 3. Follow-up testing of positive urine cultures after treatment is not indicated in the absence of persistent clinical symptoms.

*Sending a urine culture following antibiotics is not necessary if symptoms have resolved. There may be residual asymptomatic bacteriuria present which may lead to unnecessary antibiotic treatment.*

#### Supporting Evidence

- Wilson MP et al; Laboratory Diagnosis of Urinary Tract Infections in Adult Patients, *Clinical Infectious Diseases*, Volume 38, Issue 8, 15 April 2004, Pages 1150–1158, <https://doi.org/10.1086/383029>
- BPAC: Laboratory investigation of UTI <https://bpac.org.nz/Supplement/2006/July/uti.aspx>



#### 4. Dipstick urinalysis is not an appropriate pre-laboratory investigation for suspected UTI in older patients.

*Asymptomatic bacteriuria is relatively common in older patients, particularly those who reside in long term care facilities. As a result, dipstick urinalysis has poor positive predictive value in diagnosing infection in this cohort and may lead to unnecessary urine cultures and antibiotic treatment.*

##### Supporting evidence

- Ninan S et al; Investigation of suspected urinary tract infection in older people BMJ 2014; 349 :g4070  
<https://www.bmj.com/content/349/bmj.g4070>

#### 5. Alternative causes for behavioural change or delirium (e.g. dehydration, medication interactions) should be excluded prior to urine culture or empiric antibiotics in frail older patients without specific symptoms relating to the urinary tract.

*Patients who have underlying dementia, cognitive impairment have high rates of asymptomatic bacteriuria. Patients with acutely worsened confusion who are otherwise clinically stable should have other causes excluded before considering UTI. Rehydrate and monitor in those without acute urinary symptoms. Urine culture is only indicated if the baseline confusion becomes acutely worse. Urine cultures on patients with longstanding baseline confusion is likely to lead to unnecessary antibiotic treatment.*

##### Supporting evidence

- Sundvall et al. Urine culture doubtful in determining etiology of diffuse symptoms among elderly individuals: a cross-sectional study of 32 nursing homes; BMC Family Practice 2011, 12:36  
<https://bmcfampract.biomedcentral.com/articles/10.1186/1471-2296-12-36>
- The Development of a Decision Tool for the Empiric Treatment of Suspected Urinary Tract Infection in Frail Older Adults: A Delphi Consensus Procedure. J Am Med Dir Assoc. 2018 Sep;19(9):757-764.  
<https://www.sciencedirect.com/science/article/pii/S1525861018302378?via%3Dihub>

#### How was this list created?

We discussed a range of potential areas of diagnostic microbiology which might be suitable for a Choosing Wisely initiative and decided that urine testing could have the largest potential impact on antimicrobial stewardship and should therefore be prioritised. A shortlist of seven recommendations in this area was drafted, all of which had some evidence to back their inclusion. This list was then narrowed down to five after extensive discussions amongst the network. The list has been reviewed by numerous professional bodies, including the RCPA, ASID, & ANZSGM.