

GUIDELINES & PROTOCOLS

ADVISORY COMMITTEE

Macroscopic and Microscopic Urinalysis and the Investigation of Urinary Tract Infections

Effective Date: April 22, 2009

Scope

The purpose of this protocol is to avoid unnecessary testing in routine cases of urinary tract infection (UTI) while supporting physicians to order tests justified by the patient's clinical condition in special cases.

This protocol applies to:

- samples analysed in a physician's office or referred to a laboratory for routine analysis of urine; and
- midstream samples referred for urine culture or conditional requests for culture in patients with suspected urinary tract infections.

This protocol does not apply to individuals under 19 years of age, catheter or bagged specimens, or suprapubic aspirations.

Diagnosis/Investigation

Negative macroscopic-screened urines (dipsticks) do not routinely require microscopic examination of urine sediment. However, microscopic examination of urine sediment may be warranted under the following conditions:^{1,2}

- a) when macroscopic examination is positive for any of the following: blood (Hb), protein (greater than trace), nitrite, leukocyte esterase, turbidity, or glucose concentration greater than 55 mmol/l;
- b) special case: patients presenting with a condition where the clinical record justifies further investigation such as³:
 - diabetes
 - pregnancy
 - genitourinary problems
 - requests by consultant physicians for the investigation of urinary tract problems
 - established kidney disease/ transplant
 - recent urological surgery/cystoscopy
 - neurogenic bladder
 - spinal cord injury or disease

Testing

Choices for urinalysis on the lab requisition form in British Columbia include:

- Urine Culture only
- Macroscopic microscopic if dipstick positive
- Macroscopic urine culture if pyuria or nitrite present
- Macroscopic (dipstick) Microscopic
- Special Case (if ordered together)

Laboratories may perform a microscopic urinalysis without a preceding macroscopic urinalysis (dipstick) when:

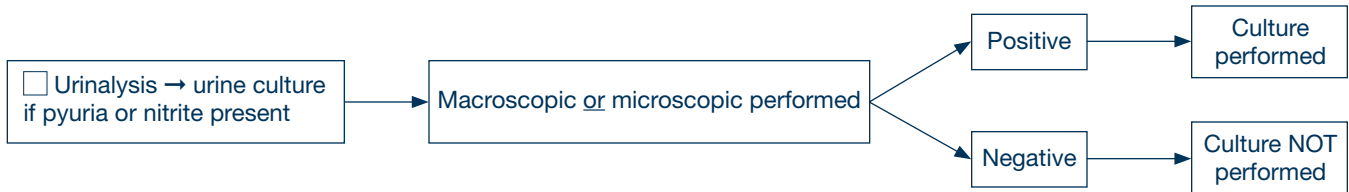
- 'positive macroscopic result' was obtained in the physician's office; or,
- the physician has requested an order for a urine culture, conditional on the results of the microscopic analysis.

Urinary Tract Infection (UTI) Suspected

If an uncomplicated UTI is suspected in a patient with classic symptoms and treatment is not conditional on culture or sensitivity results (i.e. if antibiotics have been prescribed), then no further testing is necessary.^{4,5,6,7} If an uncomplicated UTI is suspected in a patient with classic symptoms and treatment is conditional on culture or sensitivity, then 'urine culture' alone should be requested.

If 'urine culture' and any combination of macroscopic and/or microscopic urinalysis are ordered, urinalysis and urine culture will be performed regardless of the results of macroscopic and/or microscopic urinalysis. If 'urine culture' is requested without an accompanying request for urinalysis, a urine culture will be performed.

UTI Suspected - Conditional Request for Culture



Rationale & Follow up Care

In uncomplicated community-acquired UTI, culture is rarely required when antibiotics are being prescribed. Furthermore, follow-up cultures are not routinely indicated in asymptomatic patients with uncomplicated urinary tract infections.

References

- 1 Jackson M. Evidence-based practice for evaluation and management of female urinary tract infections. *Urol Nur* 2007;27(2):133-136.
- 2 Ebell M. Treating Adult Women with Suspected UTI. *Am Fam Physician* 2006; 73(2):293-296.
- 3 Menhart-Kay S. Diagnosis and Management of Uncomplicated Urinary Tract Infections. *Am Fam Physician* 2005;72(3):451-456.
- 4 Nickel J. Management of Urinary Tract Infections: Historical Perspective and Current Strategies: Part 2- Modern Management. *J of Urol* 2005;173:27-32.
- 5 Conrad dos Santos J, Weber LP, Perez LRR. Evaluation of Urinalysis Parameters to Predict Urinary Tract Infection. *Braz J Infect Dis* 2007;11(5):479-481.
- 6 Car J. Urinary Tract Infection in Women: diagnosis and management in primary care. *BMJ* 2006;332:94-97.
- 7 Grude N, Tventen Y, Jenkins A. et al. Uncomplicated urinary tract infections: Bacterial findings and efficacy of empirical antibacterial treatment. *Scand J Prim Health Care* 2005;23:115-119.

This protocol is based on scientific evidence current as of the Effective Date.

This protocol was developed by the Guidelines and Protocols Advisory Committee, approved by the British Columbia Medical Association and adopted by the Medical Services Commission.

The principles of the Guidelines and Protocols Advisory Committee are to:

- encourage appropriate responses to common medical situations
- recommend actions that are sufficient and efficient, neither excessive nor deficient
- permit exceptions when justified by clinical circumstances

Contact Information

Guidelines and Protocols Advisory Committee
PO Box 9642 STN PROV GOVT
Victoria BC V8W 9P1
Phone: 250 952-1347
Fax: 250 952-1417
E-mail: h1th.guidelines@gov.bc.ca
Web site: www.BCGuidelines.ca

DISCLAIMER

The Clinical Practice Guidelines (the "Guidelines") have been developed by the Guidelines and Protocols Advisory Committee on behalf of the Medical Services Commission. The Guidelines are intended to give an understanding of a clinical problem, and outline one or more preferred approaches to the investigation and management of the problem. The Guidelines are not intended as a substitute for the advice or professional judgment of a health care professional, nor are they intended to be the only approach to the management of clinical problems.