Appendix 2: Interpretation of urine testing results reported by laboratories in BC[1,2]

Finding	Positive result indicates[1,2]
Urine Dipstick	
Specific Gravity	Indicates relative hydration/dehydration.
pH	Alkaline urine suggests presence of urea-splitting organism.
Leukocytes, white blood cells, pyuria	Measured by Leukocyte Esterase. Dipstick is positive in the presence of > 5-15 WBC/high-power field.
Nitrite	Detects presence of certain bacteria that convert nitrates into nitrites. Dipstick is positive when bacteria > 10^5 CFU/mL.
Protein	Proteinuria is defined as 10-20 mg per dL. 1+ = approximately 30 mg protein per dL 2+ = 100 mg per dL 3+ = 300 mg per dL 4+= 10000 mg per dL
Glucose	Presence indicates glycosuria.
Ketones	Measured by acetic acid. Presence indicates ketonuria.
Blood	Detects presence of hemoglobin. Urine dipsticks can detect low levels of blood in urine (correlates with > 1-4 RBC/high-power field).
Urine Microscopy	
Red Blood Cells (RBCs)	Urinary tract inflammation or glomerular bleeding (0-2 RBC/high power field (hpf) normal value, ≥3 RBC/hpf significant for microscopic hematuria). For a list of other causes, see Urinalysis: A Comprehensive Review.[19] In the case of isolated microscopic hematuria, refer to BCGuidelines.ca: Microscopic Hematuria.
White Blood Cells (WBCs)	Infection, interstitial nephritis.
Hyaline casts	Normal when found absence of other casts.
Granular casts	Acute tubular necrosis (ATN).
RBC casts	Glomerulonephritis.
WBC casts	Acute interstitial nephritis or pyelonephritis.
Waxy casts	Non-specific, acute or chronic kidney impairment.
Fatty casts	Marked proteinuria or nephrotic syndromes.
Renal tubular epithelial cells	Acute tubular necrosis (ATN).
Bacteria	Infection, contamination and/or overgrowth.
Schistosome ova/miracidia	Detection of *Schistosoma haematobium* requires a special request.
Urate or other crystals	Interpret based on crystal found.
Urine Culture	
Organism(s)	The report only includes organisms suspected to be uropathogens (e.g. *E. coli*). This depends on patient demographics, concentration (i.e. colony count) of the specific organism(s) and the specific laboratory protocol. In urine with multiple (or mixed) organisms, identification may not be performed as it may produce misleading results that are not related to the UTI.
Antibiotic susceptibilities	The report only includes antibiotics that can be used for UTI. The specific antibiotics listed depend on the patient demographics, documented antibiotics and allergies, organism(s) identified, colony count of the organism(s) and the specific laboratory protocol.

References

1. Chu CM, Lowder JL. Diagnosis and treatment of urinary tract infections across age groups. Am J Obstet Gynecol. 2018 Jul;219(1):40–51.
2. Simerville JA, Maxted WC, Pahira JJ. Urinalysis: A Comprehensive Review. Am Fam Physician. 2005 Mar 15;71(6):1153–62