

BEST PRACTICE RECOMMENDATIONS FOR URINE CULTURE

KEYPOINTS

Urine is more likely to be contaminated by commensals from the lower part of the urethra and the perineum. Therefore, quantitative urine culture is mandatory.

Consider rejection of the following samples (as likelihood of false positive results):

Delayed receipt of more than two hours without refrigeration or boric acid; 24 hours collected urine; Foley catheter tips, urine from the bag of catheterised patient; Urine from bed pans; Sample received in non-sterile or leaking containers

LIKELY PATHOGENS

Gram-negative bacteria

Enterobacterales: *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Enterobacter spp*, *Morganella morganii*, *Providencia stuartii*, *Pseudomonas spp*.
Other non-fermenting gram-negative rods

Gram-positive bacteria

Staphylococcus saprophyticus, *Enterococcus spp*, *Staphylococcus aureus*, *Streptococcus agalactiae*.

Ref: National Institute for Health and Care Excellence (NICE) Guidelines
Protocol for surveillance of antimicrobial-resistant bacteria causing community-acquired urinary tract infections in low-income countries

WHEN TO SAMPLE

It is recommended to request a urinalysis test prior to urine culture.

Consider urine culture:

- In patients with new onset dysuria or 2 or more signs and symptoms suggestive of UTI with pyuria or nitrites on dipstick or microscopy
- In patients with recurrent UTI (≥ 2 UTIs in 6 months, or ≥ 3 UTIs in 12 months) or in the presence of complicating factors.
- In symptomatic pregnant women and asymptomatic pregnant women, as part of maternity checks.
- Obtain a **pre-treatment** urine specimen (see SOS checklist)

INTERPRETATION & WHEN TO TREAT

Treat in accordance with local/national guidelines - use microscopy, culture & clinical details to make diagnostic decision

- Request a urinalysis test prior to urine culture.
- Bacterial growth in the absence of pus cells = likely contamination or colonisation (caution if immunosuppressed)
- Results will be interpreted as the number of Colony Forming Units (CFU) /ml of the urine sample and the pathogen isolated will be recorded. i.e., 10^5 CFU/ml, *E. coli* isolated.
- The significance of CFU/ml may vary according to the type of sample e.g., clean catch mid-stream urine (10^5 CFU/ml) vs. invasive procedure (cystoscopy: 10^3 - 10^5 CFU/ml).
- **MSU/ CSU**: pure / predominant growth - treat;
mixed growth - likely contaminant (NB mixed growth from sterile urine sample, e.g. SPA likely to be significant and requires treatment).