

UTIs and Medicine Residents

Thank you for your time!

You have been invited to participate in a survey of medical and medicine-pediatric residents, that will help us understand your perceptions and management of bacteriuria and urinary tract infections.

The results of this survey will assist us in developing tools to improve your education and future patient care.

Your answers are voluntary and confidential. Please answer the best you can and only take the survey once.

Thank you!

Please tell us your age

Please tell us your gender

- Female
- Male

Please select your residency track

- Internal Medicine
- Medicine-Pediatrics

What is your current level of training?

- PGY1
- PGY2
- PGY3
- Chief Resident

UTIs and Medicine Residents

An 80 y/o man with long-standing moderate dementia is sent to the Emergency Department from a long-term care facility because of “lethargy”.

Nursing notes show that he has been less interactive and not eating well, finishing less than 50% of meals and beverages.

He is mildly confused, but able to complete most of the review of systems. He denies cough, fever, abdominal or back pain, and dysuria. Physical exam is notable for a blood pressure of 120/60 (baseline, 135-155/80-90), heart rate of 85 (baseline, 65-80), temperature of 98.0, flat neck veins, and dry oral mucosa. No other abnormal findings are found.

Labs obtained in the emergency department are: white blood count of 6.0 (normal differential), hemoglobin of 17 (baseline 15), platelets of 320. BUN is 68 and creatinine is 2.2 (baseline, 1.8 & 1.1). A CRP is 1.98 (normal range- 0 to 5)

Should a urinalysis and culture be ordered on this patient?

- Yes. Urinary tract infections are common in the elderly. This confused patient may have urinary tract infection as the cause of his confusion, and may not be able to report symptoms due to confusion.
- Yes. These are easy tests to obtain; little harm can come from ordering them.
- No. The patient has no complaints attributable to his urinary tract; his confusion is explainable by his dehydration, which is where treatment should be focused.
- Yes. As a patient who resides in a long-term care facility, he is at high risk for infections with resistant organisms, and testing should be performed.
- No. Ordering both tests is unnecessary. A urinalysis should be obtained first; urine culture should then be added if there are any of the following: leukocyte esterase, nitrites, or an elevated number of white blood cells under microscopy.
- Other

Other (please specify)

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The same patient is seen the next morning.

He is more alert and interactive after receiving 2 liters of normal saline overnight, vital signs have returned to baseline, and his BUN and creatinine have improved.

Urinalysis and urine culture were ordered, and show: moderate leukocyte esterase, large nitrites, >180 white cells/high-powered field, and >100,000 colony forming units/mL of a Gram-negative rod.

- Treat now with an empirically selected antibiotic because of the high-level of growth, along with evidence of inflammation on urinalysis, adjust antibiotic based on susceptibility testing.
- Wait for identification and susceptibility testing to be completed before treating, since the patient is doing well clinically.
- Do not treat with an antibiotic, regardless of identification and susceptibility testing, since the patient is doing well clinically.
- Other

Other (please specify)

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The next day, the patient is at baseline per family who visits.

The culture result is finalized: *Pseudomonas aeruginosa*, susceptible only to imipenem/cilastatin and gentamicin. The family is asking about the significance of the urine culture.

- Treat with an antibiotic, since urine normally should be sterile and the patient has a virulent urine organism with significant resistance.
- Do not treat, since the patient has no signs or symptoms of infection.
- Do not treat, since only intravenous drugs are available and the risks of using them are greater than the potential benefits.
- Treat with an antibiotic, because even if the patient is asymptomatic currently, eradication may prevent future symptomatic episodes.
- Treat with an antibiotic, since you are suspicious that this urinary infection may have precipitated the worsened confusion which led to dehydration and admission.
- Other

Other (please specify)

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A 70 y/o woman comes into your continuity clinic saying that she was asked to see you to follow-up on labs that were ordered pre-operatively in anticipation of her left hip replacement, scheduled for 3 days later.

Reviewing the chart, you see that her surgeon requested a pre-operative urine culture, which grew 70,000 colony forming units/mL of a Gram-negative rod. No urinalysis was sent, and the microbiology lab did not work up the culture any further.

The surgeon's note reads: "UTI--to be addressed by primary MD before surgery." The patient reports being in excellent health and denies any complaints other than her chronic hip pain.

- Call the lab and ask them to run an identification and susceptibility profile on the organism, in order to decide whether and how to treat.
- Tell the surgeon that this low-level growth likely reflects contamination, and should not be treated.
- Collect a repeat culture, with a urinalysis, and only treat if the culture is positive again and there is inflammation shown on urinalysis
- Discuss with the surgeon that the patient has no signs of an infection, and that no antimicrobials are needed beyond the usual prophylaxis around the surgery.
- Treat empirically with a standard urinary tract infection antibiotic such as ciprofloxacin, without additional laboratory testing.
- Tell the surgeon that a full treatment course is not needed, but that in addition to the usual prophylactic antibiotics for this procedure (this facility uses cefazolin), a single dose of ciprofloxacin should be administered 1 hour prior to incision.
- Other. Please describe

Other (please specify)

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The same patient's surgeon calls you- he obtained a repeat culture, which now has grown >100,000 colony-forming units/mL of an Escherichia coli that is resistant to cefazolin and trimethoprim/sulfamethoxazole.

You call the patient, who is still asymptomatic, but is getting concerned about the potential risk of infecting her hip after reading about joint infections online.

- Reassure the patient and surgeon that in the absence of symptoms, no treatment is needed, and the surgery can proceed as planned.
- Ask that the surgeon change the peri-operative prophylactic regimen to ciprofloxacin (to which the organism is susceptible), but otherwise no further action is needed.
- Postpone the surgery until you have begun treatment, since now there is high-level growth on culture, and prosthetic joint infections can be devastating.
- Other. Please specify:

Other (please specify)

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A thoracic surgeon in your area is unwilling to proceed with any valve-replacement surgery without having a sterile pre-operative urine culture.

In the past, she has managed this on her own, but now is asking that this be made part of the pre-operative evaluation, which you normally perform for the patients you refer.

- Agree to do this, since prosthetic material is being placed that is exceedingly difficult, if not impossible, to remove, and anything that can be done to reduce the possibility of infection is warranted.
- Suggest that instead of trying to ensure a sterile pre-operative urine culture, you should only treat cultures that have > 100,000 colony forming units/mL.
- Suggest that treatment is not needed unless clinical manifestations of infection are present.
- Suggest that as long as the isolated organism is susceptible to the planned peri-operative prophylactic therapy, no other action is needed, whereas if the organism is resistant, you will recommend an alternative or additional prophylactic agent.
- Other. Please describe:

Other (please specify)

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You follow a 58 y/o man who is going to have a trans-urethral resection of the prostate (TURP) in 2 days because of difficulty voiding.

A pre-operative urine culture grows >100,000 colony-forming units/mL of an extended-spectrum beta-lactamase-producing *E. coli*.

The patient has no complaints, and no urinalysis was obtained. The only antimicrobials to which the organism is susceptible are gentamicin and imipenem/cilastatin.

The urologists at this facility use ciprofloxacin for prophylaxis prior to all TURPs.

- Recommend that surgery be postponed until the urine is rendered sterile with either of the 2 active drugs.
- Recommend that surgery proceed with the standard prophylaxis, since the patient is asymptomatic and ciprofloxacin is concentrated within the urinary tract, thereby overcoming in vitro resistance.
- Recommend that an active drug be used for prophylaxis, but that the surgery can proceed as planned.
- Other. Please describe:

Other (please specify)

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You are admitting a patient with long-standing paraplegia (T-10 level) for treatment of an infected sacral decubitus ulcer.

Symptoms include increasing ulcer size, malodorous drainage, and low-grade fevers. The patient has no sensation below the level of his umbilicus. Physical exam is notable for normal vital signs, an inflamed-looking, 10 cm diameter pre-sacral ulcer that probes to bone, with associated foul-smelling yellow drainage and a 3-cm wide zone of surrounding skin erythema, and a Foley catheter with cloudy appearing urine in the collecting bag.

- Do not obtain a urine culture.
- Send urine for culture because of the inability of the patient to report urinary symptoms.
- Send urine for culture based on the cloudy appearance.
- Send urine for culture based on the history of low-grade fevers
- Send urine for culture because of B, C, and D.
- Other. Please describe:

Other (please specify)

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A 60 year-old man presents to clinic with 3 days of dysuria and feeling feverish.

On exam he has a temperature of 101.2 F; his blood pressure and his heart rate are normal and at his baseline.

There is no costo-vertebral angle tenderness, but mild supra-pubic tenderness is present. The prostate is mildly enlarged and non-tender. Labs are ordered, including a urinalysis showing 112 white cells/high-powered field and large leukocyte esterase and nitrates; culture is pending.

Renal function is normal. You would:

- Treat for 3 days with oral ciprofloxacin
- Await culture results before starting an antimicrobial
- Treat with ciprofloxacin for 10-14 days regardless of resistance, since in the absence of pyelonephritis urine concentrations will overwhelm in-vitro resistance
- Initiate treatment with ciprofloxacin, adjusting if the organism is resistant, and plan for a 10-14 day treatment course
- Other. Please describe:

Other (please specify)

UTIs and Medicine Residents

A 65 year old man with few medical problems (osteoarthritis, hypertension) presents for his annual physical.

He feels perfectly well. A urinalysis was obtained with his routine labs a few days prior to the appointment; it was normal other than 22 white cells/high-powered field and trace leukocyte esterase and nitrites.

The laboratory automatically performed a culture because of the abnormal urinalysis. The culture has grown >100,000 colony forming units/mL of a pan-susceptible Klebsiella species; he denies any voiding symptoms and has a normal physical exam, including a normal-sized and non-tender prostate gland.

- Treat with trimethoprim-sulfamethoxazole for 3 days for an uncomplicated urinary tract infection.
- Treat with ciprofloxacin for 10-14 days for a urinary tract infection in a man, given the possibility of prostate involvement.
- Treat with ciprofloxacin for 3 days for an uncomplicated urinary tract infection in a man with possible, but unlikely, prostate involvement.
- Do not treat with antibiotics now, but repeat the culture in a month. If still present, initiate an investigation for occult prostatitis, renal stones, or other potential nidus of infection
- Do not treat with antibiotics and do not repeat the culture.
- Other. Please describe:

Other (please specify)

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At this point in your medical career, please rate for each of the following options how confident are you between Very Confident and Not Confident at all.

	Not confident at all	Not confident	Neutral	Confident	Very confident
Your ability to correctly differentiate between asymptomatic bacteriuria and a urinary tract infection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your ability to determine when a patient with a positive urine culture needs antimicrobial treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your overall knowledge regarding antimicrobial use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Did you have a rotation (at least 2 weeks) on an Infectious Disease consult service in the past 12 months?

- Yes
- No

How many patients with urinary tract infections have you managed in the past 3 months?

- 0
- 1-3
- 4-10
- >10

Thank you for your time and collaboration!

Please feel free to leave any comments about our survey