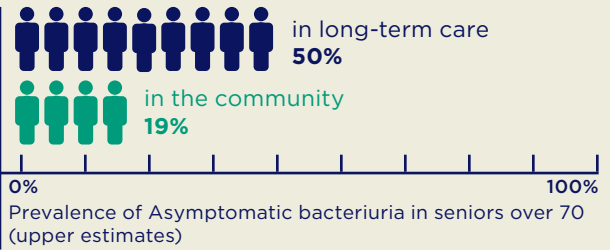


Treating Asymptomatic Bacteriuria: All harm, No Benefit

High Prevalence of Asymptomatic Bacteriuria

- > The bladder is normally colonized in many elderly people
- > A positive urinalysis or culture in the absence of symptoms reveals **colonization, which is the presence of bacteria without infection**
- > Treatment of asymptomatic bacteriuria is **not recommended**



It's Hard to Ignore A Positive Test

Habitual Testing + Prevalent Colonization = Unnecessary prescriptions & missing the real diagnosis



Unnecessary Rx and Missed Diagnoses Harm Patients

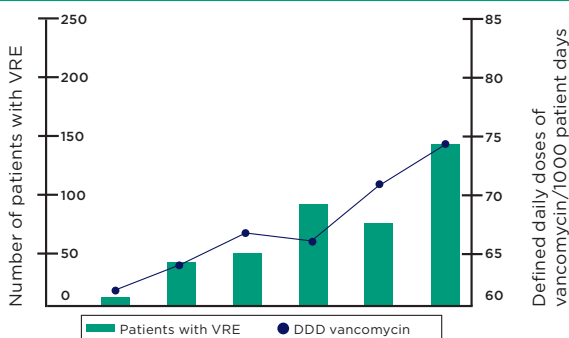
- > Drug-drug interactions
- > Renal & other complications
- > Drug resistant bacteria in your patient & the community
- > *C. difficile* infection
- > Nausea and vomiting
- > Drug allergies
- > Missing the real diagnosis



Myth	Fact
Abnormal urinalysis always indicates urinary tract infection.	<ul style="list-style-type: none"> • Urinalysis specimens are often contaminated in the elderly, except when collected by catheter. • Even when done by catheter and culture is positive, most cases are asymptomatic bacteriuria - that is, colonization - not infection.
Urinalysis should be ordered as a screening test at the time of hospital admission.	<ul style="list-style-type: none"> • The prevalence of asymptomatic bacteriuria means that these tests should NOT be done for screening purposes or as a matter of routine. • Test only when UTI symptoms are present.
An abnormal urinalysis is a good explanation for weakness, fatigue, change in mental status, or fever.	<ul style="list-style-type: none"> • Many elderly patients have asymptomatic bacteriuria. • It is unsafe to assume that bacteria in the urine can explain acute symptoms • Seek other causes (dehydration, viral syndrome, hypoxia, etc.).
White blood cells in the urine (pyuria) can differentiate asymptomatic bacteriuria vs. urinary tract infection.	<ul style="list-style-type: none"> • People with asymptomatic bacteriuria often have white blood cells in the urine.
Cloudy or malodorous urine is always diagnostic of a urinary tract infection.	<ul style="list-style-type: none"> • These changes may be seen in asymptomatic bacteriuria. Other causes can include dehydration, certain medications and diet.

Dangers of Unnecessary Antibiotics

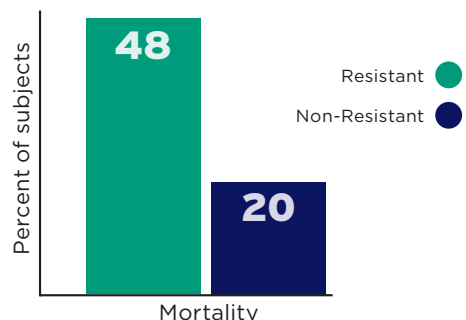
Using Antibiotics Breeds Resistance in Your Patients and the Community



(JID 1999; 179:163)

Infection with Resistant Bacteria Increases Risk of Death

Antibiotic-resistant vs. non-resistant *Klebsiella* bacteria



(ICHE 2008;29:1009-1106)

Do Not Test, Do Not Treat Asymptomatic Bacteriuria¹



No symptoms of UTI

- > Do not test urine
- > Do not treat if a urine test was done by someone else or for “routine”

Weakness, delirium, or fever without a focus

- > Individualize care
- > Be mindful of the prevalence of asymptomatic bacteriuria
- > Seek other causes

Specific UTI symptoms

- > Test or treat as usual

Challenges

Strategies for Practice Change

I'm admitting the patient and the hospital team insist on urine tests.

- Be sure to get a cath or valid midstream clean-catch specimen.
- Specify that you do not suspect UTI on clinical grounds.
- Remind the team of asymptomatic bacteriuria's prevalence.
- Suggest that the team observe the patient without initiating antibiotics.

The patient's family wants a urine test and antibiotic treatment.

- Educate the family about asymptomatic bacteriuria.
- Explain that antibiotics are unnatural chemicals that put the patient at risk for diarrhea, including *C. difficile*, and other adverse effects.

The patient has dementia, so history is limited. I should do diagnostic testing as I would in a 2 month old.

- The difference is that small children normally have sterile urine.
- The elderly often do not have sterile urine, even when they are well.

I believe it is better to give an antibiotic even if I'm not sure it is needed. Better safe than sorry.

- Antibiotics can cause adverse drug reactions, *C. difficile* infection, multi-drug resistant organisms. They should not be administered unless clinically indicated.
- Consider how practice has changed for viral upper respiratory infections.
- If the patient has fever or signs of sepsis, you may need to treat presumptively, but that doesn't mean stable patients require antibiotics for possible colonization.

We've got this abnormal result and we don't even know why the test was done.

- Evaluate the patient clinically.
- All providers should communicate about why they are performing tests – especially tests with very high false positive rates.
- Observe the patient, rather than rushing to start antibiotics.

I'm not confident the patient will receive the appropriate follow up after returning to their long term care facility or home.

- Document discharge summary clearly regarding observation and follow up.
- A call to the resident's facility or provider will facilitate appropriate follow up care.
- If a urine test has been done and is abnormal and asymptomatic bacteriuria is suspected, be sure to notify patient and ongoing providers of this result and that no treatment is being given so they can monitor the patient for fever or other signs of urinary tract infection.

References:

¹ CID 2010;50:625-663; CID 2009;48:149-171; ICHE 2001;22:120-124 CID 2005;40:643-54 Can J Emerg Med 2007;9(2):87-92

Massachusetts Infection Prevention Partnership

Massachusetts Coalition for the Prevention of Medical Errors, Massachusetts Department of Public Health, Massachusetts Senior Care Association, Masspro

Clinical Advisors

Ruth Kandel MD, Director Infection Control, Hebrew Senior Life

Daniel Pallin MD, MPH, Director of Research Brigham & Women's Hospital Department of Emergency Medicine, and Chairman, Brigham and Women's Hospital Clinical Investigation Committee

Shira Doron MD, Antimicrobial Steward & Associate Hospital Epidemiologist, Tufts Medical Center

Questions or Copies

froberts@macoalition.org