

ADULT CYSTITIS TREATMENT GUIDELINE (OUTPATIENT SETTINGS)

Algorithm applies to postmenopausal women, with acute cystitis with symptoms limited to the bladder **AND** no signs or symptoms suggestive of kidney involvement such as fever, chills, flank pain or costovertebral tenderness

DIAGNOSIS¹⁻⁵

- Urinary symptoms suggestive of cystitis include
 - Acute dysuria (most discriminating symptom for cystitis)
 - Acute frequency or urgency (new or worsening)
 - Acute hematuria
 - Suprapubic pain
- Laboratory tests to support the diagnosis of cystitis
 - Positive urine dipstick test (positive leukocyte esterase and a positive or negative nitrite-bacteria specific⁶) increases probability of cystitis in **symptomatic** patients.
 - Negative urine dipstick test (negative leukocyte esterase, negative nitrite⁶) **decreases** the probability of cystitis.
 - Nitrites are present in the urine when bacteria reduce nitrates to nitrites. Non nitrate reducing bacteria include pseudomonas, enterococcus, and *Staphylococcus saprophyticus*⁶
- Laboratory tests to confirm the diagnosis of cystitis
 - Positive urinalysis- pyuria (WBC \geq 10/HPF) **and**
 - Positive urine culture (10^5 CFU/mL)

CLINICAL CONSIDERATIONS

Bacteriuria with and without pyuria are common in asymptomatic older adults. An abnormal urinalysis and urine culture alone **without symptoms** is suggestive of asymptomatic bacteriuria and should not be a reason to treat for cystitis.⁷⁻⁹

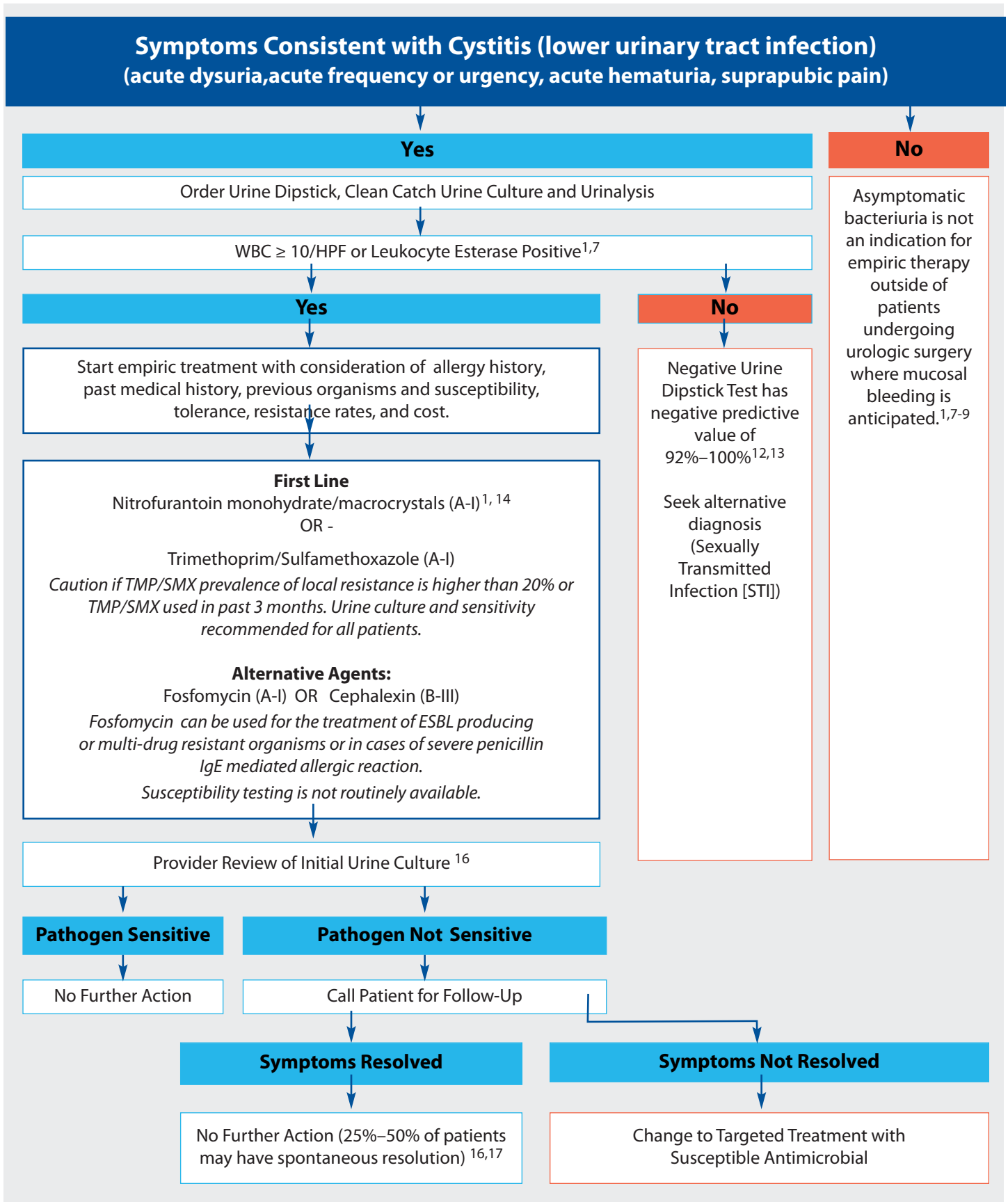
Asymptomatic bacteriuria should only be treated in postmenopausal women undergoing urologic surgery where mucosal bleeding is anticipated.

New onset delirium is NOT a symptomatic criterion of cystitis in patients without an indwelling catheter, however patients presenting with a Glasgow coma score < 15 should be evaluated for sepsis via qSOFA scoring.

Cystitis Treatment Algorithm Disclaimer

- This algorithm is intended for use by physicians and other clinical providers as an evidence-based resource.
- The strength of recommendations and quality of evidence is based on pre-menopausal, non-pregnant women with no known urologic abnormality or comorbidities.
- The use of this algorithm does NOT replace individual assessment of all risks and benefits for a given patient or exercise of the clinical provider's independent professional judgment in providing treatment for a given patient, and is NOT a substitute for consultation with other clinical providers familiar with the treatment of a given patient.
- This algorithm is to be used ONLY as a treatment guideline for acute cystitis infection not complicated by structural, functional or uncontrolled metabolic abnormalities.
- This evidenced-based algorithm may be updated or changed from time to time.
- The clinical provider retains all responsibility and liability for use of this algorithm in connection with any given patient.

Treatment Algorithm^{1, 10-18}



All empiric therapy choices should be made based on local (site specific) susceptibility data (hospital, laboratory or regional antibiogram). Across multiple counties in NYS (2016), *E coli* is the most common pathogen in women aged > 65 years (60%).

Characteristics of Antibiotics Utilized for the Treatment of Adult Cystitis

Antibiotic	Dose/Duration	Dose Adjustment	Cost*	Additional Considerations
Nitrofurantoin macrocrystals monohydrate (MacroBID) ^{1, 3, 15, 19}	100 mg PO BID x 5 days	CrCL < 30 mL/min: contraindicated	\$	<ul style="list-style-type: none"> • Best susceptibility profile in most NYS counties
Trimethoprim/ Sulfamethoxazole ^{1, 20}	1 DS (160/800mg) tablet PO BID x 3 days	CrCL 15 – 30 mL/min: 1SS (80/400mg) tablet PO BID CrCL < 15 mL/min: contraindicated	\$	<ul style="list-style-type: none"> • High (>20%) resistance rate in most NYS counties • Prone to clinically significant drug-drug interactions with multiple commonly prescribed drugs (warfarin, spironolactone, ACE, ARB)
Cephalexin ^{1, 22}	250mg PO q6h or 500mg PO q 6-12h x 5 – 7 days	CrCL 15 – 29 mL/min: 250 mg PO q 8 – 12h CrCL 5 – 14 mL/min: 250 mg PO q24h CrCL < 5 mL/min: 250 mg PO q48h	\$	<ul style="list-style-type: none"> • Higher failure rates compared to other agents, follow up for resolution of symptoms
Fosfomycin ^{1, 21}	3 g PO x 1 dose	None	\$\$\$	<ul style="list-style-type: none"> • Unknown susceptibility profile in NYS • Use for the treatment of ESBL producing or other multi-drug resistant organisms
Ciprofloxacin ^{1, 23}	250 mg PO q12h x 3 days	CrCL < 30 mL/min 500 mg PO q24h	\$	<ul style="list-style-type: none"> • High (> 20%) resistance rate in most NYS counties • Highest incidence and severity of adverse drug reactions compared to other agents
Levofloxacin ^{1, 24}	250 mg or 500 mg PO q24h x 3 days	CrCL < 30 mL/min 500 PO q24h x 1 dose then 250 mg PO q24h x 2 doses	\$	<ul style="list-style-type: none"> • “Black Box” warning for fluoroquinolone associated disability • Prone to clinically significant drug-drug interactions with multiple commonly prescribed drugs (warfarin, QT-prolonging agents) • Avoid use unless there are no other options and alternative agents are contraindicated

*Estimated cash price as of August 2018 \$ = 0-30, \$\$ = 30-60, \$\$\$ = 60+; refer to www.goodrx.com for estimated cash prices at local pharmacies in your area

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This material was created in January 2018 by a multidisciplinary advisory panel in collaboration with IPRO

Joseph J. Carreno Pharm. D. Infectious Disease (Project Lead), Assistant Professor Pharmacy Practice- Albany College of Pharmacy and Health Sciences, Albany NY

Lisa Avery Pharm. D. BCPS AQ-ID, Associate Professor, Wegmans School of Pharmacy/St John Fisher College, Rochester NY

Eve Bankert MT (ASCP) IPRO, Albany NY

Erica Dobson Pharm. D., BCPS, AQ-ID, Manager of Pharmacy Services, Accountable Health Partners, Rochester NY

Ghinwa Dumyati MD Infectious Disease, Infectious Disease Division and Center for Community Health and Prevention, University of Rochester Medical Center, Rochester NY

Stephen G. Hassett MD FACEP CPC , Chief Albany Med EmUrgent Care, Associate Professor, Department of Emergency Medicine, Albany Medical Center, Albany NY

Marina Keller MD Infectious Disease, Orange Regional Medical Center, Middletown NY

Thomas Lodise Pharm. D., Ph.D. Infectious Disease, Professor Pharmacy Practice- Albany College of Pharmacy and Health Sciences, Albany NY

Teresa J. Lubowski Pharm. D., B.S., Quality Improvement- Medication Safety IPRO, Albany NY

Matthew Pearsall Pharm. D. Infectious Disease, Antimicrobial Stewardship Pharmacist, Glens Falls Hospital, Glens Falls NY

Elliot L. Rank, Ph.D., D(ABMM) Quest Diagnostics, Technical Director, Microbiology, Teterboro NJ