Uncomplicated Urinary Tract Infection (UTI) in Adult Women 18-65 Guideline

These clinical guidelines are designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients. They are not intended to replace a clinician's judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.

GUIDELINE HISTORY and APPROVAL

ACTION	SEED GUIDELINE and/or MAIN INFORMATION & GROUP SOURCE(S)	DATE	ORGANIZATION
Guideline Reviewed, Revised, and Approved	ICSI Uncomplicated Urinary Tract Infection in Women (May 2001 version) www.icsi.org ICSI Uncomplicated Urinary	December 11, 2002	Geisinger Health Plan Guideline Review Conference
Guideline Reviewed and Approved	Same as above	January 2, 2003	Geisinger Health Plan/ Clinical Guideline Committee
Guideline Reviewed and Approved	Same as above	January 22, 2003	Geisinger Health Plan/ Quality Improvement Committee
Guideline Reviewed, Revised, and Approved	1. January 2003 GHP UTI Guideline 2. ICSI Uncomplicated UTI Urinary Tract Infection in Women Guideline (July 2004 version) www.icsi.org	March 01 March 18, 2005	Geisinger Health Plan UTI Guideline Team
Guideline Reviewed, Revised, and Approved	Same as above	March 07 March 14, 2005	Geisinger Health Plan Pharmacy
Guideline Reviewed, Revised, and Approved	Same as above	March 19 - 22, 2005	Geisinger Health Plan Guideline Committee
Guideline Reviewed, Revised, and Approved	Same as above	March 23 March 28, 2005	Geisinger Health Plan Medical Management Committee
Guideline Reviewed, Revised, and Approved	Same as above	March 29 - April 02, 2005	Geisinger Health Plan Medical Directors and GHP QIC physicians
Guideline Reviewed, Revised, and Approved	Same as above	April 27, 2005	Geisinger Health Plan/ Quality Improvement Committee
Guideline Reviewed, Revised and Approved	1. January 2005 GHP UTI Guideline 2. ICSI Uncomplicated UTI Urinary Tract Infection in Women Guideline (July 2006 version) www.icsi.org	Nov.1, 2006; Jan. 15, 2007	Geisinger Health Plan Guideline Committee
Guideline Reviewed, Revised and Approved	Same as above	Dec. 15-18, 2006	Geisinger Health Plan Pharmacy
Guideline Reviewed	Same as above	Jan. 15-22, 2007	Geisinger Health Plan Medical Directors

Guideline Reviewed	Same as above	Apr. 16, 2007	Geisinger Health Plan Medical Management Committee
Guideline Reviewed	Same as above	Apr. 25, 2007	Geisinger Health Plan/ Quality Improvement Committee
Guideline reviewed	1. January 2007 GHP UTI Guideline 2. ICSI Uncomplicated UTI Urinary Tract Infection in Women Guideline (July 2006 version) www.icsi.org	Aug.18 - ,2008	Geisinger Health Plan Guideline Committee
Guideline Reviewed	Same as above	Aug 21-22, 2008	Geisinger Health Plan Pharmacy
Guideline Reviewed	Same as above	Mar. 9-13, 2009	Geisinger Health Plan Medical Directors
Guideline Reviewed	Same as above	Mar. 16, 2009	Geisinger Health Plan Medical Management Committee
Guideline Reviewed	Same as above	Apr. 22, 2009	Geisinger Health Plan/ Quality Improvement Committee
Guideline Reviewed	ICSI Uncomplicated UTI Urinary Tract Infection in Women Guideline (July 2009 version) www.icsi.org	Dec 2010-Mar 2011	Geisinger Health Plan Guideline Committee
Guideline Approved	Same as above	Apr. 27, 2011	Geisinger Health Plan/ Quality Improvement Committee

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OVERVIEW

Acute uncomplicated urinary tract infection, or cystitis, is common among women, accounting for > 7 million office visits annually in the United States and affecting at least half of women at least once in their lifetime. In aggregate, the direct costs have been estimated at $1 billion yearly in the United States.

One might anticipate that management of acute, uncomplicated cystitis would be relatively uniform, because the causative agents and in vitro susceptibilities are known, and therapeutic responses to antimicrobials have been carefully studied. However, the evaluation and treatment of uncomplicated cystitis in woman varies substantially among physicians.

This guideline does not attempt to mandate any particular evaluation or treatment. The clinician is expected to use his/her clinical judgment in applying the algorithm to a particular patient. Several decision points in the algorithm in fact rely on the clinician's assessment of the patient. It is expected that individual patients may require deviation from the algorithm path.

An abbreviated form of the algorithm is listed first. The vast majority of patients are expected to 'flow' through the abbreviated version from BOX 1 through BOX 12. Antibiotic choices are then listed for short and long course therapies followed by antibiotics recommended for pregnancy. After the abbreviated form, the full guideline is presented. Annotations are given following the guidelines. These annotations provide additional information for many of the algorithm boxes. They are listed according to the algorithm box number. Finally, references for the algorithm are given.

The committee only considered empiric treatment therapies with a 90% or greater success rate. No single dose regimen met this threshold and so therefore was not included. In selected situations, the patient and physician may choose single dose therapy despite the lower efficacy in more diverse patient groups.

Phone management is included in this algorithm. Telephone management may be appropriate for a subset of patients with classic symptoms and without risk factors for complication, depending on physician comfort with this practice. Therefore, empiric treatment of uncomplicated urinary tract infection is at the discretion of the physician based on guideline criteria. The manual includes the UTI phone triage sheet used by telephone management nurses.

SEED GUIDELINE

Geisinger Health Plan Uncomplicated Urinary Tract Infection Guideline (January 2007 version).

Institute for Clinical Systems Integration (ICSI) Uncomplicated Urinary Tract Infection Guideline (July 2006~~6~~9 version). Available at http://www.icsi.org/

GOALS

1. To guide the clinician in the evaluation and treatment of outpatients presenting with the signs and symptoms of urinary tract infection.

2. To appropriately identify patients for phone management.

3. To increase provider understanding of appropriate antibiotic usage for uncomplicated urinary tract infection by ensuring that first line medications are prescribed for patients when indicated.

4. To educate providers about appropriate use of urine cultures and urine analysis.

5. To provide educational tools and triage guidelines for health care providers that covers the use of diagnostic tests, the selection of initial therapy, the management of and prevention of recurrences, and the criteria for subspecialty referral.

6. To change patient expectations regarding the need for an office visit and diagnostics for uncomplicated urinary tract infection.

FAST FACTS

- Many women with dysuria or urgency have an uncomplicated urinary tract infection.
- Whether a urinary tract infection is uncomplicated or not can be determined over the telephone.
- Empiric treatment of uncomplicated urinary tract infection is safe and effective and is at the discretion of the physician based on guideline criteria.
- Women with an uncomplicated urinary tract infection do not require urinalysis or urine culture to confirm the diagnosis.
- A three-day course of an antibiotic is as effective as treatment with an antibiotic for a longer duration.

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Stamm W: An epidemic of urinary tract infections? N Engl J Med 2001;345:1055-1057.

NAME:

MEDICAL RECORD #:

AGE:

UNCOMPLICATED URINARY TRACT INFECTION IN ADULT WOMEN (Ages 18-65)
SYMPTOMS OF DYSURIA OR FREQUENCY OR URGENCY

	Yes	No		Yes	No
Symptoms:					
> 7 days duration			Currently Pregnant		
Rigors (shaking chills)			Immunosuppressed (e.g., steroids, chemotherapy)		
Flank pain: mid-back, severe, new occurring with onset of these symptoms			Renal calculi or renal insufficiency		
Nausea, vomiting, or abdominal pain			Known functional or structural urologic abnormalities		
Temperature > 100° F			Urinary tract catheterization (or other urologic procedure or instrumentation within last 2 weeks		
Recent onset of or change in vaginal discharge, odor, itching or dyspareunia			Discharge from hospital or nursing home within last 2 weeks		
History:			> 4 UTI's within last 12 months		
Never seen in our office before			Failure of antibiotic treatment for UTI within last 3 months		
Age <18 years or > 65 years			Acute Pyelonephritis within last 3 months		
Diabetes			Contact with a partner infected with an STD		

If any questions of the above questions are '<u>YES</u>', <u>PROVIDER VISIT INDICATED</u>

If all questions of the above questions are 'NO', the patient may be treated with a short course antibiotic therapy.

If the patient wishes to be seen, schedule appointment.
Yes (schedule appointment) ____ No (accepts telephone treatment) ____

ALLERGIES:_____

PATIENT ON COUMADIN: YES _____ NO _____

PHARMACY:_____

PLEASE CHECK (U) FOR PREFERRED SHORT COURSE THERAPY:

_____ Trimethoprim Sulfamethoxazole DS 1 BID x 3 days (CAUTION: CAN INCREASE THE AFFECT OF WARFARIN. NOTIFY MD THAT MEDICATION STARTED)

IF ALLERGIC TO SULFA:
_____ Nitrofurantoin (Macrodantin) 100 mg QID x 7 days or Macrobid 100 mg BID x 7 days

IF ALLERGIC TO SULFA AND MACRODANTIN
_____ Ciprofloxacin 250 mg BID x 3 days (This therapy is significantly more expensive and more efficacious) (CAUTION: CAN INCREASE THE EFFECT OF WARFARIN IF USED MORE THAN THREE DAYS. NOTIFY MD THAT MEDICATION STARTED)

ADDITIONAL THERAPIES:
_____ Pyridium 200 mg PO tid x 3 days

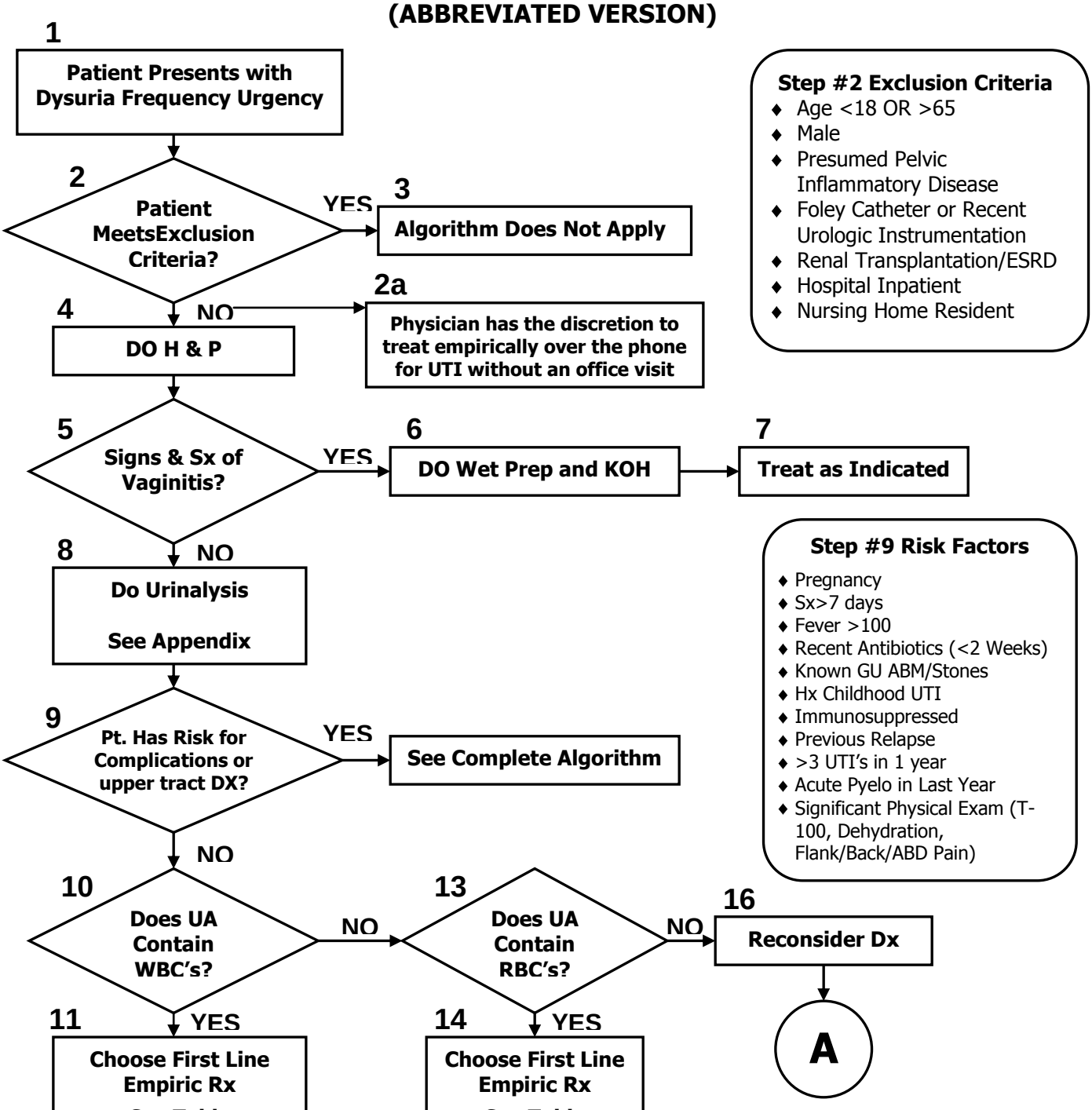
NURSE SIGNATURE: _____

PHYSICIAN SIGNATURE:_____

DATE:_____

Adult Urinary Tract Infection (UTI) in Adult Women Ages 18-65

(ABBREVIATED VERSION)



Step #2 Exclusion Criteria

- Age <18 OR >65
- Male
- Presumed Pelvic Inflammatory Disease
- Foley Catheter or Recent Urologic Instrumentation
- Renal Transplantation/ESRD
- Hospital Inpatient
- Nursing Home Resident

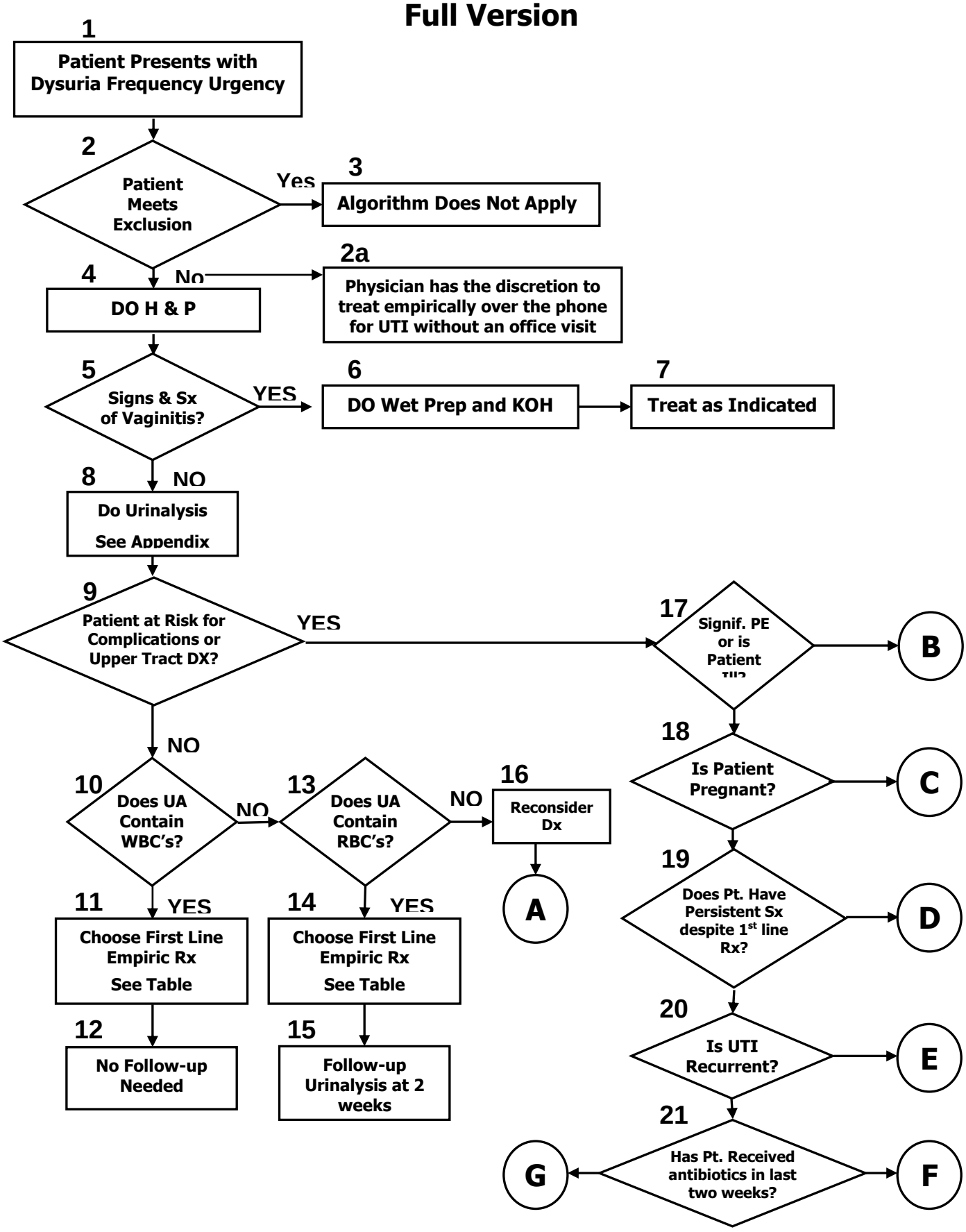
Step #9 Risk Factors

- Pregnancy
- Sx>7 days
- Fever >100
- Recent Antibiotics (<2 Weeks)
- Known GU ABM/Stones
- Hx Childhood UTI
- Immunosuppressed
- Previous Relapse
- >3 UTI's in 1 year
- Acute Pyelo in Last Year
- Significant Physical Exam (T-100, Dehydration, Flank/Back/ABD Pain)

Step #11 Short Course Therapy

Drug	Dose	Duration
Trimethoprim/ sulfamethoxazole	1 DS BID	3 Days
Macrobid	100 mg BID	7 Days
Ciprofloxacin	250 mg BID	3 Days

Uncomplicated Urinary Tract Infection Guideline (UTI)
Full Version



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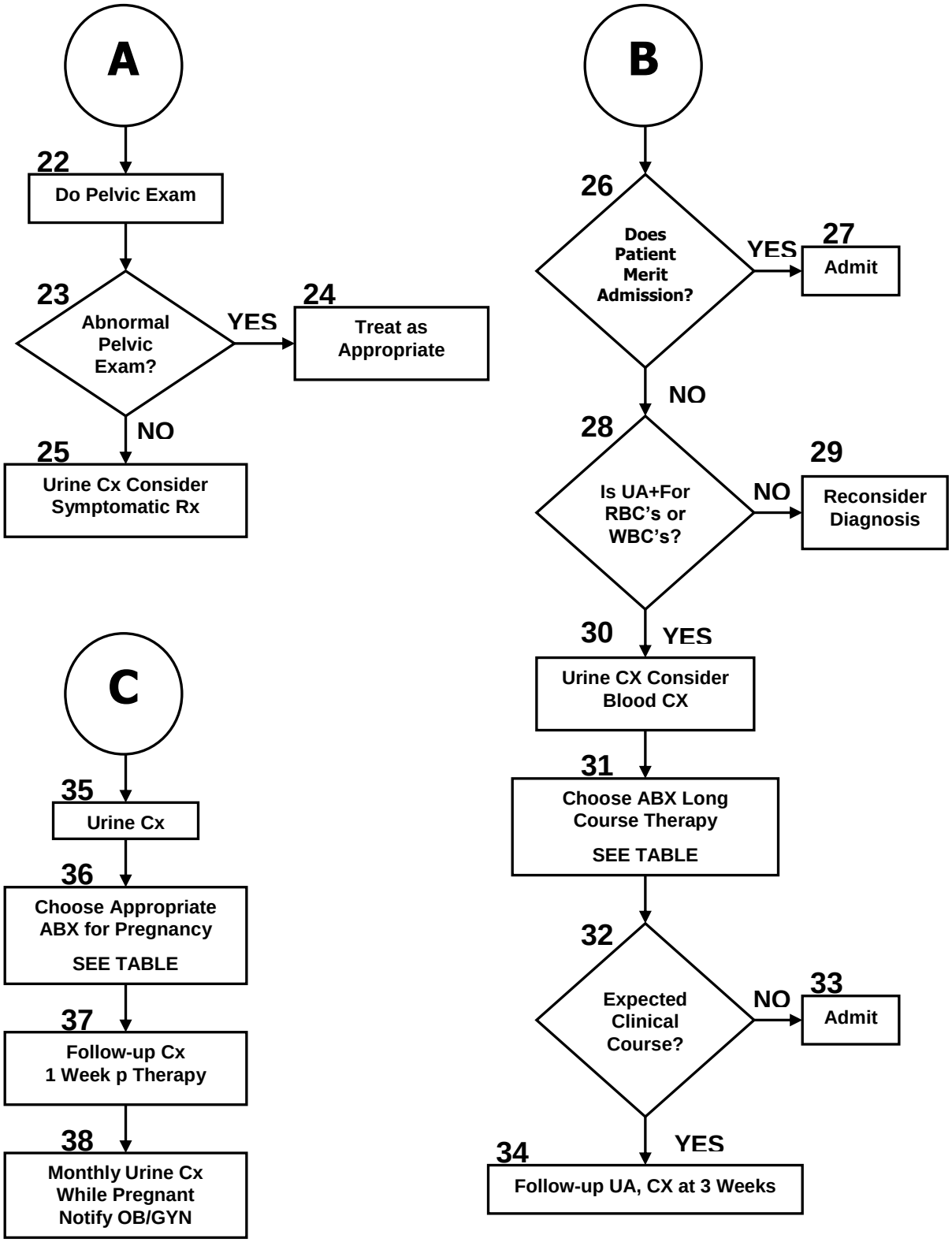
Full Version (Continued)



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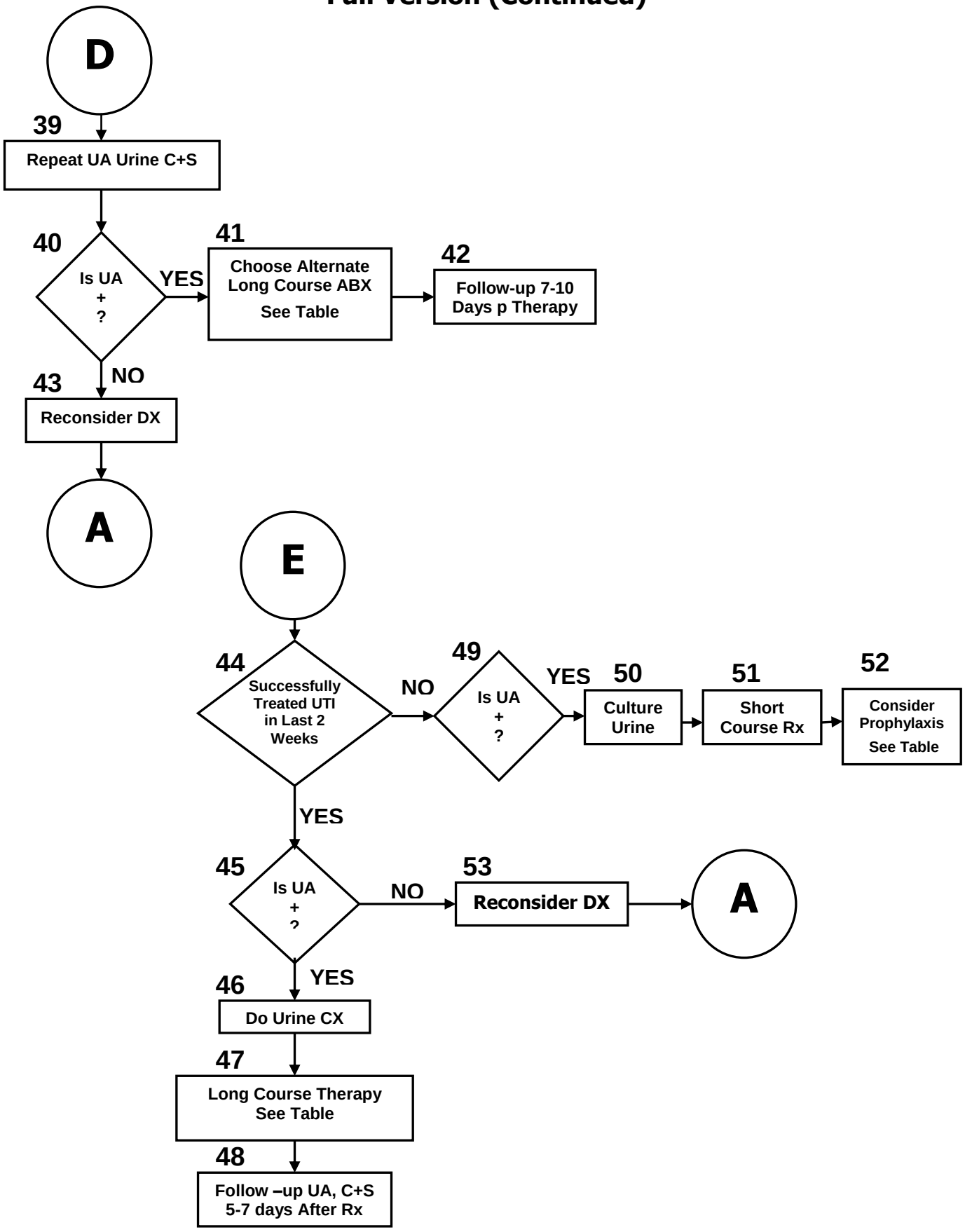
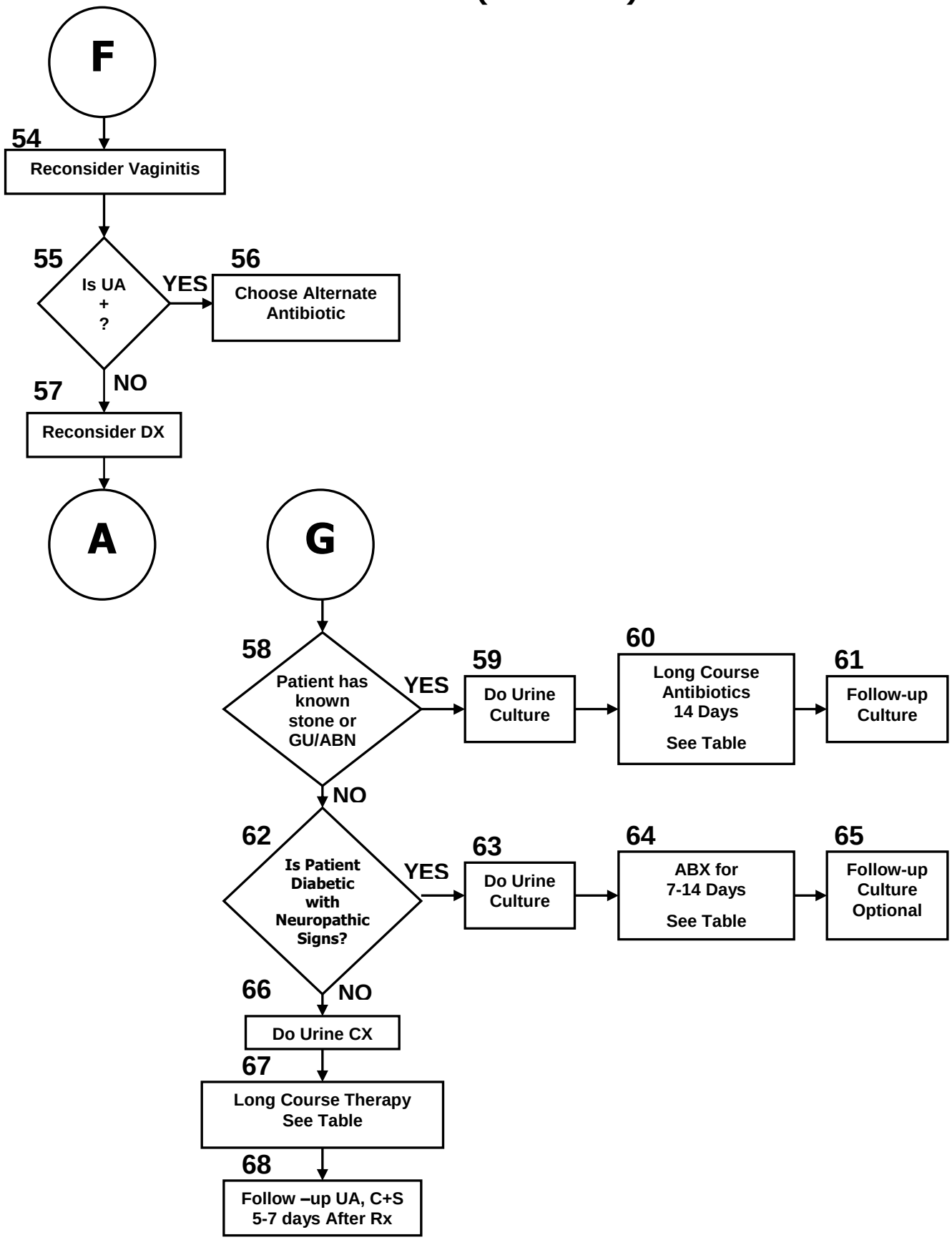


Uncomplicated Urinary Tract Infection Guideline (UTI)
Full Version (Continued)



ANNOTATIONS

ANNOTATION 1
An adult woman who meets our exclusions criteria and presents with dysuria has a high probability (>70%) of urinary tract infection (UTI). Frequency and/or urgency support the diagnosis of UTI, however in their own right, can be the only presenting symptoms in this population. Other, less specific symptoms (e.g. suprapubic pain) and signs (e.g. gross hematuria) offer too broad a differential diagnosis to be included in this narrowly focused guideline. Please note the focus of this guideline and that it does not include the evaluation of asymptomatic hematuria, bacteriuria or pyuria.

ANNOTATION 2
Exclusion Criteria:
Age < 18 or > 65, Foley catheter or recent instrumentation, renal transplant / ESRD, chemotherapy, hospital inpatients, nursing home residents, resumed pelvic inflammatory disease, men.

ANNOTATION 2a
Physicians have the discretion to treat empirically over the phone for UTI without an office visit.

ANNOTATION 4
The comprehensiveness of the history and physical exam depends on the clinical presentation. Sufficient history should be obtained to determine whether the patient is at risk for complications or upper tract disease, as outlined in box 9 and its footnote. The physical exam should be complete enough to exclude other likely etiologies that warrant more aggressive therapy. In straightforward cases, the exam may be brief.

ANNOTATION 5
Urinary tract infections do not generally produce vaginal discharge or labial irritation. When these symptoms are present, a pelvic exam and evaluation of vaginal secretions should be performed.

ANNOTATION 9
Risk Factors for Complications/Upper Tract Ds:
Pregnancy, diabetes, Sx > 7 Days, fever >100, recent antibiotics (< 2 weeks), known Gu ABN/Stones, Hx childhood UTI, immunosuppressed. Previous relapse, >3 UTIs in 1 year, acute pyelo in last year, significant PE (T > 100, dehydrated, significant flank, back, abd pain.)

ANNOTATION 10
The criteria for a positive microscopic urinalysis is 2-5 WBCs/HPF. A positive leukocyte esterase test alone is also sufficient for diagnosis of pyuria. Large studies demonstrate a 95% specificity and 70% sensitivity of the leukocyte esterase test for pyuria. In the narrow population defined by this guideline these parameters show the predictive value of a positive test to be about 98%. (See References 7,11)

ANNOTATIONS 11, 12, and 14
In the absence of complicating factors, the microbiology and general susceptibility patterns for the causative bacteria are predictable. Therefore, empirical therapy (i.e., without urine culture and sensitivity) is appropriate. Numerous studies have been done to attempt to define optimal antimicrobial choices and duration of treatments. Three-day regimens appear best in terms of efficacy, side effects, and recurrences. Trimethoprim/sulfamethoxazole, trimethoprim, and the flouroquinolones are effective as three-day regimens in uncomplicated cystitis. Because of its low cost, comparable efficacy and side effect profile

TMP/ Sulfa is the drug of choice. Macrobid is also recommended as a first-line choice, but for 7 days. Flouroquinolones such as ciprofloxacin should be reserved for individuals with allergy, treatment failure or known resistant strains. Betalactams are less effective in three-day courses and up to one-third of strains of E.coli may be amoxicillin resistant. Therefore, Amoxicillin is not a recommended choice. Recommendations are summarized in the table. No follow-up visit or urine studies are necessary unless symptoms persist or recur. (See Reference 5)

Note: Pharmaceutical coverage is dependent upon individual pharmacy benefit design and certain drugs may require prior authorization. Providers are encouraged to review the GHP formulary at http://www.thehealthplan.com, or contact the GHP Pharmacy Department at 1-800-988-4861.

ANNOTATION 15

A more expanded differential for persistent isolated hematuria on follow-up urinalysis should be considered and guided by the patient's age. Causes would be identified with a work up of cystoscopy and IVP. Most common causes include: UTI's, congenital anatomic abnormalities, renal calculus, sickle cell disease, and tumors.

ANNOTATION 19

Persistent symptoms imply that the patient's symptoms remain present throughout and beyond the therapeutic course.

ANNOTATION 20

Recurrent urinary tract infection implies that the patient had a recent urinary tract infection that resolved symptomatically but has now recurred. A urinary tract infection diagnosed in the last two weeks or less implies a relapse because of a partially treated infection. This could be due to a resistant organism or noncompliance. A patient with three or more urinary tract infections per year may be a candidate for prophylactic therapy.

ANNOTATION 25

In a patient with symptoms suggestive of a urinary tract infection but having a normal urinalysis, one should also consider urethritis. Some of the most common organisms include Chlamydia, gonorrhea, herpes simplex virus, and Trichomonas. One could consider empiric therapy.

ANNOTATION 31

This algorithm does not deal specifically with the treatment of pyelonephritis yet pyelonephritis can present as a cystitis-like illness with mild flank discomfort. In the absence of nausea and vomiting and if overall illness is mild, oral outpatient therapy can be safely used. Trimethoprim/sulfamethoxazole and ciprofloxacin are agents of first choice. 20-30% of organisms causing pyelonephritis are resistant to amoxicillin and first generation cephalosporins making these agents poor choices for monotherapy. (See References 5, 40a)

Note: Pharmaceutical coverage is dependent upon individual pharmacy benefit design and certain drugs may require prior authorization. Providers are encouraged to review the GHP formulary at http://www.thehealthplan.com, or contact the GHP Pharmacy Department at 1-800-988-4861.

ANTIBIOTIC CHOICES

LONG COURSE

DRUG	DOSE	DURATION
TRIMETHOPRIM/SULFAMETHOXAZOLE	1 DS BID	7-14 DAYS
AMOXICILLIN	250mg TID	7-14 DAYS
CEPHALEXIN	250mg QID	7-14 DAYS
TETRACYCLINE	250mg QID	7- 14 DAYS
DOXYCYCLINE	100mg BID	7-14 DAYS
CIRPOFLOXACIN	250mg BID	7-14 DAYS
NITROFURANTOIN	100mg QID	10-14 DAYS

- NOTE: ISSUES OF COMPLIANCE, COST, SIDE EFFECTS MAY INFLUENCE CHOICE OF ANTIBIOTIC. This is not meant to be an all-inclusive list.

ANNOTATION 36
Antibiotic choices during pregnancy See table.

DRUG	DOSE	DURATION
AMOXICILLIN	250-500 mg TID	7-10 DAYS
CEPHALEXIN	250mg QID	7-10 DAYS
NITROFURANTOIN	100mg QID	7-10 DAYS
MACROBID	100mg BID	7-10 DAYS
TRIMETHOPRIM/SULFAMETHOXAZOLE	1 DS BID	7-10 DAYS

*NOTE: Sulfamethoxazole should not be given to pregnant women who are near term or to lactating women because of the risk of producing kernicterus in the newborn. Sulfamethoxazole is listed as a pregnancy category C drug. This means that there have been no human studies and that the potential benefits must outweigh the potential risks.

ANNOTATION 44
Recurrent documented UTI within 2 weeks of successful treatment MAY indicate relapse (i.e., persistence of the organisms in the GU tract) or inadequate initial therapy. Such potential relapses should have pre-therapy urine cultures with a 7-10 day course of an appropriate antimicrobial based on urine culture and sensitivity. Persistence of the organism or abnormal U/A on follow-up (obtained 5-7 days after therapy) may indicate a potential urologic abnormality (e.g., renal calculi). Additional evaluation (e.g., renal ultrasound) and/or urologic referral of such patients should be considered.

ANNOTATION 52a

Recurrent uncomplicated UTI arbitrarily defined as > 3 episodes per year occur in about 3% of adult women. Almost all of these recurrences represent re-infection rather than persistence of the organism in the GU tract (relapse). Accordingly, the majority or women with recurrent uncomplicated UTI's do not have anatomic or functional abnormalities and do not need an evaluation of their urinary tract. Studies of the value of excretory urography and cystoscopy in women with recurrent UTI have demonstrated that abnormalities may be identified in < 5% of patients and that few lesions are correctable. Urethral dilation has not been proven effective in the management of recurrent uncomplicated UTI in women.

ANNOTATION 52b

Women with frequent uncomplicated recurrences should be evaluated for possible risk factors such as intercourse-related UTI, diaphragm/spermicide use, or atrophic vaginitis. Potential strategies include continuous low dose antimicrobial prophylaxis, post-coital prophylaxis or intermittent self-therapy (see Table). Recently, intravaginal estrogen therapy has been shown to be efficacious in reducing recurrent UTI in come post-menopausal women. The appropriate management will depend on the frequency of recurrences, the individual pattern of recurrences and associated risk factors.

Antimicrobial Prophylaxis Regimens for Women with Recurrent Urinary Tract Infections

CONTINUOUS PROPHYLAXIS

Nitrofurantoin 50 mg daily
Nitrofurantoin macrocrystals 100 mg daily
Trimethoprim-sulfamethoxazole 40mg/200mg daily
Trimethoprim 100 mg daily
Cephalexin 125 mg daily
Cephalexin 250 mg daily
Sulfamethoxazole 500 mg daily
Ciprofloxacin 100-250mg daily

POSTCOITAL PROPHYLAXIS

Trimethoprim-sulfamethoxazole 40mg/200mg
Nitrofurantoin 50 mg or 100 mg
Cephalexin 250 mg
Fluoroquinolones

ANNOTATION 61

A follow-up urine culture to document cure is recommended for these patients. It is not clear that obtaining a urinalysis in addition is necessary.

MEASURES

- Denominator-GHP female members 18 years of age to 65 years of age. >Use Primary ICD9 Codes 595.0 (Acute cystitis), 599.0 (Urinary tract infection, site not specified) to identify UTI as the primary diagnosis. >No claims for the last 3 months with one of these diagnoses.

- Numerator ->Percent of patients given first line antibiotic (Trimethoprim-Sulfa, trimethoprim alone, macrodantin). >Percent of patients receiving Urine Cultures. CPT codes 87086-87088. >Percent of patients receiving Urine Analysis CPT codes 81000, 81001, 81002, 81003.