

Idaho Drug Utilization Review Program  
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## WHAT'S INSIDE!

Management of Acute Otitis Media In Children  
 Treatment of Acute Uncomplicated Cystitis  
 Initial Treatment of Depression

The last Pharmacy and Therapeutics (P&T) Committee Meeting held by Idaho Medicaid was October 19, 2007. Recommendations from the meeting can be found on the Medicaid website at: [www.healthandwelfare.idaho.gov](http://www.healthandwelfare.idaho.gov) Follow the Medical link to Prescription Drugs and then P&T Committee.

The next P&T Meeting will be held on January 18, 2008, at Idaho Medicaid, 3232 Elder Street, Boise, ID 83705

Table 3: Cost Comparison of Commonly Used Antidepressants

Drug	Retail Cost*	Medicaid Cost†
<b>SSRIs</b>		
Citalopram (Celexa) ☺	\$39.99 - \$77.98	\$
Escitalopram (Lexapro)	\$74.99 - \$80.31	\$\$\$\$
Fluoxetine (Prozac) ☺	\$24.99 - \$40.99	\$\$
Fluoxetine Weekly (Prozac Weekly)	\$104.99	\$\$\$\$
Fluvoxamine (Luvox) ☺	\$53.87 - \$175.99	\$\$\$
Paroxetine (Paxil) ☺	\$30.99 - \$38.99	\$\$\$
Paroxetine (Paxil CR)	\$97.64 - \$204.82	\$\$\$\$
Sertraline (Zoloft) ☺	\$67.99 - \$137.98	\$
<b>SNRIs</b>		
Duloxetine (Cymbalta)	\$113.30 - \$212.44	\$\$\$\$
Venlafaxine (Effexor) ☺	\$104.98 - \$190.99	\$\$\$\$
Venlafaxine XR (Effexor XR)	\$95.52 - \$236.58	\$\$\$\$
<b>Miscellaneous Agents</b>		
Bupropion (Wellbutrin) ☺	\$49.99 - \$66.99	\$\$
Bupropion SR (Wellbutrin SR) ☺	\$69.99 - \$124.99	\$\$
Bupropion XL (Wellbutrin XL) ☺	\$105.28 - \$267.53	\$\$\$\$
Mirtazapine (Remeron) ☺	\$39.99 - \$45.99	\$\$
Mirtazapine ODT (Remeron SolTab) ☺	\$82.76 - \$91.94	\$\$\$\$
Selegiline (Emsam)	\$453.67 - \$462.19	\$\$\$\$

\*Approximate 30-day cost for usual dosage range for generic (if available) from [www.drugstore.com](http://www.drugstore.com). Accessed June 2007

†Relative cost to Idaho Medicaid including supplemental rebate adjustments

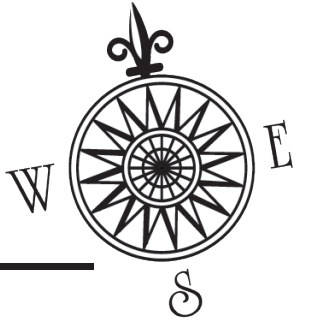
☺Generic formulation available

ODT: orally disintegrating tablet

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# The DUR Discovery



Exploring ways to improve pharmacotherapy

## Management of Acute Otitis Media In Children

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Acute otitis media (AOM) accounts for approximately 30 million office visits in the US annually and is the most common reason for which antibiotics are prescribed in the pediatric population.<sup>1,2</sup> Although viral sources are believed responsible for many cases of AOM in children, antibiotic therapy is often prescribed for common suspected bacterial pathogens including *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis*.<sup>3,4</sup>

The so-called "watch-and-wait approach" has been formally advocated since 2000. This approach includes withholding antibiotic therapy for 48-72 hours but initiating treatment if no symptom improvement is noted after that time. Many advocate providing parents with a written prescription for an antibiotic at the time of initial evaluation to then be filled if needed after 48-72 hours. Utilization of this practice has compared favorably to antibiotic treatments with potential for the added benefits of decreasing the development of antibiotic resistance and reducing the overall cost of care.<sup>5,6,7</sup> Clinicians should also provide and/or recommend symptomatic treatment for patients with pain including acetaminophen, ibuprofen, and topical benzocaine drops (Auralgan).

Current guidelines recommend the use of high-dose amoxicillin (80-90 mg/kg per day) or the watch-and-wait approach as first-line therapy for children 2 months to 12 years of age diagnosed with AOM. These recommendations are for otherwise healthy children without co-morbid conditions that may affect progression or other complications. If antibiotic therapy is indicated in a child who has had exposure to daycare or hospital settings or if resistance is otherwise suspected, amoxicillin with clavulanate should be considered.<sup>5,6</sup>

Amoxicillin-allergic patients may be prescribed azithromycin or clarithromycin if the past reaction to an amoxicillin-class agent was indicative of severe anaphylaxis. If the reaction was less severe, use of cefdinir (Omnicef), cefpodoxime (Vantin), or cefuroxime (Cefzil) is appropriate. According to current guidelines, trimethoprim/sulfamethoxazole may likewise be considered as an alternative to amoxicillin or macrolides in allergic patients. The recommended antibiotic treatment duration for AOM is 5-7 days for children ≥6 years of age and 10 days for children <6 years.<sup>5,6</sup> Costs for antibiotics used in the treatment of AOM are shown in Table 1.

1. McCaig LF, Besser RE, Hughes JM. Trends in antimicrobial prescribing rates for children and adolescents. JAMA. 2002; 287:3096-102.
2. Schappert SM. Office visits for otitis media: United States, 1975-90. Adv Data. 1992; 214:1-18.
3. Rosenfeld RM, Vertrees JE, Carr J, et al. Clinical efficacy of antimicrobial drugs for acute otitis media: meta-analysis of 5400 children from thirty-three randomized trials. J Pediatr. 1994; 124:355-67.
4. Del Mar C, Glasziou P, Hayem M. Are antibiotics indicated as initial treatment for children with acute otitis media? A meta-analysis. BMJ. 1997; 314:1526-9.
5. Glasziou PP, Del Mar CB, Hayem M, Sanders SL. Antibiotics for acute otitis media in children. Cochrane Database Syst Rev. 2000; 4:CD000219.
6. Subcommittee on management of acute otitis media. Diagnosis and management of acute otitis media. Pediatrics. 2004; 113:1451-65.
7. Spiro DM, Tay KY, Arnold DH, et al. Wait-and-see prescription for the treatment of acute otitis media: a randomized controlled trial. JAMA. 2006; 296:1235-41.

Table 1: Cost Comparison of Antibiotics for Acute Otitis Media

Generic Name	Brand Name	Retail Cost*	Medicaid Cost†
Amoxicillin liquid	Amoxil	\$7.99 - \$15.97	\$
Amoxicillin / clavulanate liquid	Augmentin	\$35.99 - \$70.56	\$\$\$
Azithromycin liquid	Zithromax	\$32.27 - \$62.57	\$\$\$\$
Clarithromycin liquid	Biaxin	\$39.73 - \$71.38	\$
Cefdinir liquid	Omnicef	\$84.19 - \$160.26	\$\$
Cefpodoxime tabs	Vantin	\$108.33	\$\$
Cefuroxime tabs	Cefzil	\$70.99	\$\$
Trimethoprim / sulfamethoxazole liquid	Septra	\$21.99 - \$40.28	\$

\*Approximate 10-day cost for generic (if available) from www.drugstore.com. Accessed May 2007

†Relative cost to Idaho Medicaid including supplemental rebate adjustments

## Treatment of Acute Uncomplicated Cystitis

By Brooke Pugmire and Kathy Eroschenko

Acute cystitis is frequently encountered in the outpatient setting and generally considered uncomplicated when it occurs in otherwise healthy young adult non-pregnant women. *Escherichia coli* is the primary organism in acute uncomplicated cystitis (80-85%); however, *Staphylococcus saprophyticus*, *Klebsiella pneumoniae*, *Proteus mirabilis*, and other uropathogens account for a small number of cases.

Guidelines published by the Infectious Diseases Society of America and a report from the Alliance for the Prudent Use of Antibiotics recommend trimethoprim-sulfamethoxazole, TMP-SMX, (Septra, Bactrim) as first-line treatment for acute uncomplicated cystitis in patients without risk factors for drug-resistant pathogens.<sup>1,2,3</sup>

Nitrofurantoin (Macrobid, Macrochantin) has been used in patients with mild-moderate symptoms and in those who have either a TMP-SMX allergy or live in an area where *E. coli* resistance to TMP-SMX exceeds 20% in women with uncomplicated cystitis.<sup>1</sup> In a recent study, clinical and microbiological cure rates after a 5-day course of nitrofurantoin were similar to a 3-day course of TMP-SMX.<sup>4</sup> Nitrofurantoin should be considered an effective fluoroquinolone-sparing agent.

Fluoroquinolones are most appropriately used in patients with severe symptoms and in those who have either a TMP-SMX allergy or live in an area where *E. coli* resistance to TMP-SMX is known to exceed 20% in women with uncomplicated cystitis.<sup>1</sup> Ciprofloxacin (Cipro) is the preferred quinolone due to its high concentration in the urine and lowest cost.

When selecting appropriate antibiotic treatment one must consider that, although TMP-SMX resistance has increased over the past several years, most *E. coli* strains isolated from uncomplicated cystitis cases remain susceptible.<sup>5,6</sup> Although local antibiograms report *E. coli* resistance to TMP-SMX of 15-20% around the state; resistance of uropathogens from uncomplicated cases is likely much lower.<sup>1</sup> Among Idaho Medicaid patients with uncomplicated cystitis treated initially with TMP-SMX in the last year, 8% appeared to be treatment failures (received another UTI antibiotic or were admitted to the hospital within 14 days). Clinicians must also consider that, due to widespread use, resistance is increasing for fluoroquinolones as well, and routine use in uncomplicated cystitis may lead to community resistance.<sup>7</sup> Selected agents for the treatment of acute uncomplicated cystitis are listed in Table 2.

- Hooton T, Besser R, Foxman B, et al. Acute uncomplicated cystitis in an era of increasing antibiotic resistance: a proposed approach to empirical therapy. *Clin Infect Dis*. 2004; 39:75-80.
- Warren J, Abrutyn E, Hebel R, et al. Guidelines for antimicrobial treatment of uncomplicated acute bacterial cystitis and acute pyelonephritis in women. *Clin Infect Dis*. 1999; 29:745-58.
- Kallen A, Welch H, Sirovich B. Current antibiotic therapy for isolated urinary tract infections in women. *Arch Intern Med*. 2006; 166:635-39.
- Gupta K, Hooton TM, Roberts PL, et al. Short-Course Nitrofurantoin for the Treatment of Acute Uncomplicated Cystitis in Women. *Arch Intern Med*. 2007; 167:2207-12.
- Gupta K, Hooton T, Stamm W. Increasing antimicrobial resistance and the management of uncomplicated community-acquired urinary tract infections. *Ann Intern Med*. 2001; 135:41-50.
- Nicolle L. A practical guide to the management of complicated urinary tract infection. *Drugs*. 1997; 53:583-92.
- Karlowsky J, Thornsberry C, Jones E, Sahm D. Susceptibility of antimicrobial-resistant urinary *Escherichia coli* isolates to fluoroquinolones and nitrofurantoin. *Clin Infect Dis*. 2003; 36:1.

Table 2: Selected Agents Used in the Treatment of Acute Uncomplicated Cystitis

Drug	Typical Dose	Duration	Retail Cost*	Medicaid Cost†
<b>First-Line Agents</b>				
Trimethoprim / sulfamethoxazole (Septra DS, Bactrim DS) ∩	160 / 800 mg q 12 hrs	3 days	\$8.99	\$
Trimethoprim (Primisol) ∩	100 mg q 12 hrs	3 days	\$7.99	\$
<b>Second-Line Agents</b>				
Nitrofurantoin Macrocrystals (Macrochantin) ∩	50 mg q 6 hrs	7 days	\$25.99	\$\$
Nitrofurantoin Monohydrate (Macrobid) ∩	100 mg q 12 hrs	7 days	\$26.99	\$\$
Fosfomycin (Monurol)	3 grams once	1 day	\$42.82	\$\$\$
Ciprofloxacin (Cipro) ∩	250 mg q 12 hrs	3 days	\$22.73	\$
<b>Alternative Agents</b>				
Levofloxacin (Levaquin)	250 mg q 24 hrs	3 days	\$29.77	\$\$
Amoxicillin / clavulanate (Augmentin) ∩	500 mg q 12 hrs	7 days	\$45.98	\$\$
Cefpodoxime proxetil (Vantin) ∩	100 mg q 12 hrs	7 days	\$114.03	\$\$\$\$

\*Approximate cost for generic (if available) from www.drugstore.com. Accessed September 2007

†Relative cost to Idaho Medicaid including supplemental rebate adjustments

∩Generic formulation available

## Initial Treatment of Depression

By Chris Owens and Kathy Eroschenko

Depression is a common condition encountered in the primary care setting and drug therapy is the mainstay of treatment. Selective serotonin reuptake inhibitors (SSRIs) have become predominant in the management of depression and have largely replaced older agents, such as tricyclic antidepressants (TCAs) and monoamine oxidase inhibitors (MAOIs). A number of newer antidepressants have been introduced in recent years, including the serotonin-norepinephrine reuptake inhibitors (SNRIs) venlafaxine and duloxetine. In addition, bupropion and mirtazapine are agents unrelated to SSRIs or SNRIs. An MAOI patch, transdermal selegiline (Emsam), is the newest agent approved for depression.

The clinical picture of depression is often complicated, and the exact choice of antidepressant drug therapy can be heavily influenced by patient specific factors including the depression subtype and symptoms, concurrent medical conditions, drug-drug interaction potential, adverse effect profile, and cost of therapy. However, in many cases generic SSRIs (citalopram [Celexa], fluoxetine [Prozac], paroxetine [Paxil], sertraline [Zoloft]) are reasonable initial therapy for depression based on efficacy and cost. It is important to note that a drug should not be considered a failure unless it is used at a full therapeutic dose for at least 6-8 weeks without adequate response or unless intolerable adverse effects occur. In addition, some patients who fail one SSRI may respond to another, and after failure of two SSRIs, another drug from a different class may be tried.<sup>1,2,3</sup>

Although existing practice guidelines for the management of depression are largely based on clinical consensus and head-to-head trial data comparing different antidepressants are limited, the recently published Sequenced Treatment Alternatives to Relieve Depression (STAR\*D) trial was the first to evaluate the effectiveness of a sequenced approach to treatment and demonstrated that regardless of the initial antidepressant chosen, success rates were comparable between SSRIs, SNRIs, and bupropion.<sup>1,2</sup> Costs for commonly used antidepressants are shown in Table 3.

- Rush AJ, et al. Acute and longer-term outcomes in depressed outpatients requiring one or several treatment steps: a STAR\*D report. *Am J Psychiatry*. 2006 Nov;163(11):1905-17.
- Rush AJ, et al. Bupropion-SR, sertraline, or venlafaxine-XR after failure of SSRIs for depression. *N Engl J Med*. 2006;354:1231-42.
- Ruhe HG, et al. Switching antidepressants after a first selective serotonin reuptake inhibitor in major depressive disorder: a systematic review. *J Clin Psychiatry*. 2006 Dec;67(12):1836-55.