



NATIONAL GUIDELINE CLEARINGHOUSE™ (NGC) GUIDELINE SYNTHESIS

ACUTE OTITIS MEDIA

Guidelines

1. American Academy of Pediatrics, American Academy of Family Physicians (AAP/AAFP). [Diagnosis and management of acute otitis media](#). Pediatrics 2004; 113(5):1451-65. [135 references]
2. Cincinnati Children's Hospital Medical Center. [Evidence based clinical practice guideline for medical management of acute otitis media in children 2 months to 13 years of age](#). Cincinnati (OH): Cincinnati Children's Hospital Medical Center; 2004 Oct. 16 p. [113 references]
3. Scottish Intercollegiate Guidelines Network (SIGN). [Diagnosis and management of childhood otitis media in primary care. A national clinical guideline](#). Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2003 Feb. 18 p. (SIGN publication; no.66). [77 references]

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INTRODUCTION

A direct comparison of American Academy of Pediatrics, American Academy of Family Physicians (AAP/AAFP), Cincinnati Children's Hospital Medical Center (CCHMC), and Scottish Intercollegiate Guidelines Network (SIGN) recommendations for diagnosing and managing acute otitis media (AOM) in pediatric patients is provided in the tables, below.

The comparison focuses on the appropriate diagnosis and initial treatment of a child presenting with AOM; however, the scope of the guidelines and the populations they consider vary. For example, the AAP/AAFP and CCHMC guidelines address AOM only, while SIGN also addresses otitis media with effusion (OME). The topic of OME is addressed in separate guidelines by AAP/AAFP and CCHMC, and in another synthesis available on the National Guideline Clearinghouse (NGC) Web site.

All three guidelines included in this synthesis focus on the pediatric population. The AAP/AAFP and CCHMC guidelines apply to children age 2 months and older, while SIGN does not specify an age range, targeting children in general. All three guideline developers note that recommendations concerning children with underlying conditions that increase the risk for AOM or alter its natural course (such as cleft palate, Down syndrome, and immunodeficiencies) are beyond the guideline's scope. Two guidelines also explicitly exclude from consideration additional patient subgroups: AAP/AAFP excludes children with a clinical recurrence of AOM within 30 days, while CCHMC excludes children with pressure equalization (PE) tubes in place. In developing its recommendations, CCHMC considered the conclusions of AAP/AAFP.

[Table 1](#) compares the scope of each of the guidelines. [Table 2](#) compares recommendations for diagnosis, evaluation, and management of AOM in children. [Table 3](#) lists the potential benefits and harms associated with the implementation of each guideline.

Definitions for the levels of evidence used to support the guideline recommendations are given in [Table 4](#); references supporting selected recommendations of the CCHMC guideline are also provided in this table.

Following the content comparison tables, the areas of agreement and differences among the guidelines are discussed

Abbreviations

- AAFP, American Academy of Family Physicians
- AAP, American Academy of Pediatrics
- AOM, acute otitis media
- CCHMC, Cincinnati Children's Hospital Medical Center
- MEE, middle ear effusion
- OM, otitis media
- OME, otitis media with effusion
- PE, pressure equalization
- SIGN, Scottish Intercollegiate Guideline Network
- SNAP, safety-net antibiotic prescription

TABLE 1: COMPARISON OF SCOPE AND CONTENT

Objectives

AAP/AAFP (2004)	To provide recommendations to primary care clinicians for the management of children from 2 months through 12 years of age with uncomplicated AOM
CCHMC (2004)	<ul style="list-style-type: none"> • To improve the use of appropriate diagnostic criteria • To improve the use of appropriate antibiotic therapy • To improve symptom relief • To avoid medical complications • To improve parental involvement in decision-making around the management of AOM
SIGN (2003)	<ul style="list-style-type: none"> • To provide recommendations based on current evidence for best practice in the management of AOM and OME • To provide evidence about detection, management, referral, and follow-up of children with AOM and OME <p>Notes:</p> <ul style="list-style-type: none"> • This guideline excludes discussion of surgical management such as the insertion of grommets and does not address issues beyond childhood years. In addition, the needs of children with genetic or facial abnormalities are not considered. • Recommendations regarding OME are considered in a separate synthesis.
Target Population	
AAP/AAFP (2004)	<ul style="list-style-type: none"> • United States • Children from 2 months through 12 years of age with AOM seen in primary care settings
CCHMC (2004)	<ul style="list-style-type: none"> • United States • Children age 2 months up to 13 years of age who present with signs and symptoms of AOM <p>Note: Children with comorbid conditions increasing the risk or severity of otitis media, including immunodeficiencies, craniofacial or neurologic abnormalities, or sensory deficits, are excluded. Children with pressure equalization (PE) tubes in place are also excluded.</p>
SIGN (2003)	<ul style="list-style-type: none"> • Scotland • Children with AOM or OME <p>Note: The needs of children with genetic or facial abnormalities are not considered.</p>
Intended Users	

AAP/AAFP (2004)	Advanced Practice Nurses Allied Health Personnel Nurses Physician Assistants Physicians
CCHMC (2004)	Advanced Practice Nurses Allied Health Personnel Health Care Providers Nurses Patients Physician Assistants Physicians
SIGN (2003)	Advanced Practice Nurses Nurses Patients Physician Assistants Physicians Public Health Departments Social Workers Speech-Language Pathologists
Interventions And Practices Considered	
AAP/AAFP (2004)	<p>Diagnosis</p> <ol style="list-style-type: none"> 1. History and physical examination 2. Diagnostic testing <ul style="list-style-type: none"> • Otoscopy • Pneumatic otoscopy • Tympanometry • Acoustic reflectometry • Tympanocentesis <p>Treatment/Management</p> <ol style="list-style-type: none"> 1. Pain management 2. Observation without treatment 3. Antibiotic therapy <p>Education and Prevention</p> <ol style="list-style-type: none"> 1. Patient/parent education regarding reduction of risk factors <p><i>Considered but no recommendations offered:</i></p> <ul style="list-style-type: none"> • Complementary and alternative medicines (CAM)

<p>CCHMC (2004)</p>	<p>Diagnosis</p> <ol style="list-style-type: none"> 1. History and physical examination 2. Diagnostic testing <ul style="list-style-type: none"> • Pneumatic otoscopy • Tympanometry • Acoustic reflectometry <p>Treatment/Management</p> <ol style="list-style-type: none"> 1. Analgesia for pain (e.g., acetaminophen, ibuprofen, or analgesic ear drops) 2. Observation with or without safety-net antibiotic prescription (SNAP) 3. Antibiotic therapy 4. Follow-up evaluation <p>Consults and Referrals</p> <ol style="list-style-type: none"> 1. Referral for audiologic evaluation 2. Referral for otolaryngological evaluation <p>Education and Prevention</p> <ol style="list-style-type: none"> 1. Educating the family about AOM 2. Educating the family about preventable and non-preventable risk factors <p><i>Considered but not specifically recommended:</i></p> <ul style="list-style-type: none"> • Steroids, antihistamines, decongestants, and complementary or alternative treatments
<p>SIGN (2003)</p>	<p>Diagnosis</p> <ol style="list-style-type: none"> 1. History and physical examination 2. Diagnostic testing <ul style="list-style-type: none"> • Otoscopy • Pneumatic otoscopy • Audiometry • Tympanometry <p>Treatment/Management</p> <ol style="list-style-type: none"> 1. Analgesia for pain (i.e., paracetamol) 2. Observation without antibiotics 3. Delayed antibiotic therapy

	<p>4. Follow-up evaluation</p> <p>Consults and Referrals</p> <ol style="list-style-type: none"> 1. Referral for audiologic evaluation 2. Referral for otolaryngological evaluation <p>Education and Prevention</p> <ol style="list-style-type: none"> 1. Information for parents, teachers, and carers 2. Advice about risk factors <p><i>Considered but recommended against:</i></p> <ul style="list-style-type: none"> • Decongestants, antihistamines, mucolytics, oils • Steroids <p><i>Considered but no recommendations offered:</i></p> <ul style="list-style-type: none"> • Homeopathy <p>Note: This guideline also addresses diagnosis and treatment of OME (see related synthesis).</p>
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TABLE 2: COMPARISON OF RECOMMENDATIONS FOR THE DIAGNOSIS, MANAGEMENT, AND PREVENTION OF AOM IN PEDIATRIC PATIENTS	
Definition Of Acute Otitis Media (AOM)	
AAP/AAFP (2004)	<p>A diagnosis of AOM requires 1) a history of acute onset of signs and symptoms, 2) the presence of MEE, and 3) signs and symptoms of middle-ear inflammation.</p> <p>Elements of the definition of AOM are all of the following:</p> <ol style="list-style-type: none"> 1. Recent, usually abrupt, onset of signs and symptoms of middle-ear inflammation and MEE 2. The presence of MEE that is indicated by any of the following: <ol style="list-style-type: none"> a. Bulging of the tympanic membrane b. Limited or absent mobility of the tympanic membrane c. Air-fluid level behind the tympanic membrane d. Otorrhea 3. Signs or symptoms of middle-ear inflammation as indicated by either: <ol style="list-style-type: none"> a. Distinct erythema of the tympanic membrane, or b. Distinct otalgia (discomfort clearly referable to the

	<p>ear[s] that results in interference with or precludes normal activity or sleep)</p>
<p>CCHMC (2004)</p>	<p>Definitions used in this guideline:</p> <ul style="list-style-type: none"> • AOM: MEE with rapid onset of one or more of the following: otalgia, ear pulling, otorrhea, fever, irritability, anorexia, vomiting, or other symptoms • Sporadic AOM: AOM occurring more than 3 months after a prior episode of AOM • Recurrent AOM (otitis-prone condition): History of 6 episodes over a 12-month period, taking into account the severity of episodes, clustering of episodes, and persistence of OME <p>Requirements for diagnosis of AOM:</p> <ol style="list-style-type: none"> 1. History of acute onset of signs and symptoms 2. Presence of MEE indicated by one of the following: <ul style="list-style-type: none"> • Bulging tympanic membrane • Decreased mobility of tympanic membrane (ear drum) • Discharge from the ear (otorrhea) 3. Signs and symptoms of ME inflammation indicated by either: <ul style="list-style-type: none"> • Red tympanic membrane, or • Discomfort affecting normal activity and/or sleep (earache, otalgia)
<p>SIGN (2003)</p>	<p>The working definition of AOM in this Guideline is inflammation of the middle ear of rapid onset presenting most often with local symptoms (the two most common being earache and rubbing or tugging of the affected ear) and systemic signs (fever, irritability, and poor sleep, for example). There may be a preceding history of upper respiratory symptoms including cough and rhinorrhea.</p>
<p>Diagnosis Of AOM</p>	
<p>AAP/AAFP (2004)</p>	<ul style="list-style-type: none"> • To diagnose AOM, the clinician should confirm a history of acute onset, identify signs of MEE, and evaluate for the presence of signs and symptoms of middle-ear inflammation. (Recommendation) <p><i>Children with AOM usually present with a history of rapid onset of signs and symptoms such as otalgia (or pulling of the ear in an infant), irritability in an infant or toddler, otorrhea, and/or fever. These findings, other than otorrhea, are nonspecific and frequently overlap those of an uncomplicated viral upper respiratory infection. Other symptoms of a viral upper respiratory infection, such as cough and nasal discharge or stuffiness, often precede or accompany AOM and are</i></p>

	<p><i>nonspecific also. Accordingly, clinical history alone is poorly predictive of the presence of AOM, especially in younger children.</i></p> <p><i>The presence of MEE is commonly confirmed with the use of pneumatic otoscopy but can be supplemented by tympanometry and/or acoustic reflectometry. MEE also can be demonstrated directly by tympanocentesis or the presence of fluid in the external auditory canal as a result of tympanic membrane perforation.</i></p> <ul style="list-style-type: none"> • If the patient fails to respond to the initial management option within 48 to 72 hours, the clinician must reassess the patient to confirm AOM and exclude other causes of illness. <p>(Recommendation)</p>
<p>CCHMC (2004)</p>	<p>General</p> <ul style="list-style-type: none"> • Signs and symptoms of AOM are often nonspecific and overlap with those of upper respiratory infections. Clinical diagnosis is especially less reliable in the child under 2 years of age. This contributes to difficulty in accurately diagnosing AOM and in evaluating results of clinical trials (Dagan & McCracken, 2002 [S]; Fromm et al., 1990 [O]; Wald, 2003 [E]). <p>History and Physical Examination</p> <ul style="list-style-type: none"> • It is recommended that the components to assess for AOM in the history and physical include history of acute onset of symptoms, presence of MEE, and signs and symptoms of middle ear inflammation (American Academy of Pediatrics [AAP] Subcommittee, 2004 [S]). (See table titled "Requirements for Diagnosis of AOM" under "Definition of Acute Otitis Media (AOM)," above.) • It is recommended that pneumatic otoscopy and/or tympanometry be used to enhance accuracy when diagnosing AOM (Spiro et al., 2004 [A]; Karma et al., 1989 [D]; Brookhouser, 1998 [S]; Pelton, 1998 [S]; Jones & Kaleida, 2003 [O]; Pichichero, 2002 [O]; Pichichero & Poole, 2001 [O]). <p>Note: Acoustic reflectometry is not often used nor readily available in the Cincinnati area, though the procedure is acceptable for determining the presence of MEE (Block et al., 1999 [C]; Barnett et al., 1998 [C]; Block et al., 1998 [C]; Kimball, 1998 [S]).</p> <ul style="list-style-type: none"> • It is recommended that ear pain (otalgia) be assessed, as determined by discomfort affecting normal activity and/or sleep (Kontiokari et al., 1998 [C]; "The assessment and

	<p>management," 2001 [S]).</p> <ul style="list-style-type: none"> • It is recommended that, for patients with recurrent AOM, additional attention be paid to parental concerns about hearing loss, speech delay, or language delay (Roberts, Rosenfeld, & Zeisel, 2004 [M]).
SIGN (2003)	<ul style="list-style-type: none"> • AOM is a purulent middle ear process and, as such, otoscopic signs and symptoms consistent with a purulent MEE in association with systemic signs of illness are required. Ear related symptoms may include earache, tugging or rubbing of the ear, irritability, restless sleep, and fever. Children may also have a history of cough and rhinorrhea, symptoms which are reported to increase the risk of AOM. Earache, however, is the single most important symptom. <i>(Evidence level 2+,3,4)</i> • Otitoscopic appearances typical of AOM include bulging tympanic membrane with loss of the normal landmarks, change in colour (typically red or yellow), and poor mobility. <i>(Evidence level 2+)</i> • Systemic signs of illness with a MEE are not sufficient to make the diagnosis, and similarly neither is the finding of an incidental effusion in an otherwise well patient. • It should be borne in mind that the typical symptoms and signs (see Table 1 in the original guideline document) may have resolved by perforation of the tympanic membrane and discharge of pus. Additionally, AOM may leave a MEE for a variable period of time following resolution of the acute symptoms - the two forms of otitis media should be considered part of a disease continuum. <i>(Evidence level 1+,4)</i>
Observation Without Treatment In Patients With AOM	
AAP/AAFP (2004)	<ul style="list-style-type: none"> • Observation without use of antibacterial agents in a child with uncomplicated AOM is an option for selected children based on diagnostic certainty, age, illness severity, and assurance of follow-up. (Option) • If the patient fails to respond to the initial management options within 48 to 72 hours, the clinician must reassess the patient to confirm AOM and exclude other causes of illness. If AOM is confirmed in the patient initially managed with observation, the clinician should begin antibacterial therapy. (Recommendation)
CCHMC (2004)	<p>AOM is a disease with a high spontaneous resolution rate (78 to 80% resolve within 7 to 14 days), and routine antibiotic therapy of all children with suspected AOM results in the treatment of many children in whom there may be either modest benefit and/or modest adverse outcomes from antibiotic therapy (Glasziou et al., 2003 [M]; Marcy et al., 2001 [M]; Rosenfeld et al., 1994 [M]);</p>

	<p>Dowell et al., "Otitis media," 1998 [S]). Moreover, the decision to use antibiotics and the specific choice of antibiotics must take into account the increasing emergence of bacterial resistance (Doern et al., 1998 [C]; Jacobs et al., 2003 [O]; Mason et al., 2003 [O]).</p> <p>Note: While it is suggested in general that children under two years of age with AOM be treated with antibiotics, it is recognized that in certain situations observation without antibiotics or with a safety-net antibiotic prescription (SNAP) may be reasonable. (See Table 5 in original guideline.) If observation or SNAP is utilized, both the clinician and the parents are advised to be aware of the higher relapse/recurrence rate in this age group, and close follow-up must be assured (Siegel et al., 2003 [C]).</p> <ul style="list-style-type: none"> • It is recommended that in children over age 2 years with AOM and who are well-appearing the treatment options be discussed with the family and that the family be involved in the decision making. The options include: <ul style="list-style-type: none"> • Treatment with a SNAP to be filled after 48 to 72 hours if symptoms do not resolve with observation • Treatment with a 5-day course of antibiotics (see treatment recommendation #2 and Table 4 in the original guideline document for discussion of antibiotic selection and doses) <p>Note 1: There is inadequate evidence to say that antibiotic therapy is or is not beneficial to most children with AOM (Wald, 2003 [E]).</p> <p>Note 2: No antibiotic prescription, with follow-up within 48 to 72 hours, is also an option in the specific case when a practitioner would like to control the observation option more closely.</p>
<p>SIGN (2003)</p>	<ul style="list-style-type: none"> • Children diagnosed with AOM should not routinely be prescribed antibiotics as the initial treatment. (Grade B) • Delayed antibiotic treatment (antibiotic to be collected at parents' discretion after 72 hours if the child has not improved) is an alternative approach which can be applied in general practice. (Grade B)
<p>Use Of Analgesics In Patients With AOM</p>	
<p>AAP/AAFP (2004)</p>	<ul style="list-style-type: none"> • The management of AOM should include an assessment of pain. If pain is present, the clinician should recommend treatment to reduce pain. (Strong Recommendation) • The clinician should select a treatment based on a consideration of benefits and risks and, when possible,

	<p>incorporate parent or caregiver and patient preference:</p> <ul style="list-style-type: none"> • Acetaminophen, ibuprofen <ul style="list-style-type: none"> • Effective analgesia for mild to moderate pain. Readily available. Mainstay of pain management for AOM. • Home remedies (distraction, external application of heat or cold, oil) <ul style="list-style-type: none"> • No controlled studies that directly address effectiveness • May have limited effectiveness • Topical agents (benzocaine [Auralgan®, Americaine Otic®] and naturopathic agents [Otikon Otic Solution®]) <ul style="list-style-type: none"> • Additional, but brief, benefit over acetaminophen in patients older than 5 years • Comparable to ametoacaine/phenazone drops (Anaesthetic®) in patients older than 6 years • Homeopathic agents <ul style="list-style-type: none"> • No controlled studies that directly address pain. • Narcotic analgesia with codeine or analogs <ul style="list-style-type: none"> • Effective for moderate or severe pain. Requires prescription, risk of respiratory depression, altered mental status, gastrointestinal upset, and constipation. • Tympanostomy/myringotomy <ul style="list-style-type: none"> • Requires skill and entails potential risk
<p>CCHMC (2004)</p>	<ul style="list-style-type: none"> • It is recommended that all children with AOM who have a positive assessment for pain be treated with an appropriate analgesic (AAP Subcommittee, 2004 [S]; "The assessment and management," 2001 [S]). <p>Note 1: Ear pain in AOM is self-limiting and time is the greatest factor in pain reduction (Sarrell, Cohen, & Kahan, 2003 [A]). Therefore, the immediate availability of a safe and effective analgesic is more important than which agent is used. These include oral agents (acetaminophen or ibuprofen) or topical ear drops (anesthetic or Naturopathic Herbal Extract Ear Drops) (Perrott et al., 2004 [M]; Sarrell, Cohen, & Kahan, 2003 [A]; Sarrell, Mandelberg, & Cohen, 2001 [A]; Bertin et al., 1996 [A]; Hoberman et al., "Efficacy of Auralgan," 1997 [B]; "The assessment and management," 2001 [S]).</p> <p>Note 2: In patients with a perforated eardrum and/or discharge from the ear, avoid topical analgesic ear drops as their use will likely result in severe dizziness and vomiting.</p>
<p>SIGN (2003)</p>	<ul style="list-style-type: none"> • Parents should give paracetamol for analgesia but should be advised of the potential danger of overuse. (Grade D) • Insertion of oils should not be prescribed for reducing pain in

	children with AOM. (Grade B)
Antimicrobial Therapy In Patients With AOM	
AAP/AAFP (2004)	<ul style="list-style-type: none"> • If a decision is made to treat with an antibacterial agent, the clinician should prescribe amoxicillin for most children. (Recommendation) <ul style="list-style-type: none"> • When amoxicillin is used, the dose should be 80 to 90 mg/kg/day. (Option) • If the patient fails to respond to the initial management option within 48 to 72 hours, the clinician must reassess the patient to confirm AOM and exclude other causes of illness. If AOM is confirmed in the patient initially managed with observation, the clinician should begin antibacterial therapy. If the patient was initially managed with an antibacterial agent(s), the clinician should change the antibacterial agent(s). (Recommendation) <p>See Table 6 in the original guideline document for recommended antibacterial agents for patients who are being treated initially with antimicrobial agents or have failed 48 to 72 hours of observation or initial management with antimicrobial agents.</p>
CCHMC (2004)	<ul style="list-style-type: none"> • It is recommended that treatment with a 10-day course of antibiotics be given to children less than 2 years of age with AOM (Cohen et al., 2000 [A], 1998 [A]; AAP Subcommittee, 2004 [S]). <p>Amoxicillin, in the dose range of 80 to 90 mg/kg/day, is effective in the treatment of a first episode of AOM or for a recurrence more than 1 month since recovery from a prior episode of AOM (Rosenfeld et al., 1994 [M]; Piglansky et al., 2003 [C]; AAP Subcommittee, 2004 [S]). (See Table 4 in original guideline document for recommended doses for first-line therapy). In cases when the clinician has a high suspicion for concurrent conjunctivitis-otitis media syndrome, commonly caused by a beta-lactamase producing organism, it is reasonable to consider a second-line antibiotic (Wald, 1997 [S]).</p> <p>For children with allergies to penicillin, or other reasons to consider alternative antibiotics, consider a second-line antibiotic. In a child less than 1 year of age with a history of a penicillin allergy, a careful review of the reported reaction is prudent (Rosenfeld et al., 1994 [M]). [NGC note: see extended list of antibiotic options, dosages, and preparations in Appendix 3 of original guideline].</p> <p>Note: While it is suggested in general that children under two years of age with AOM be treated with antibiotics, it is</p>

recognized that in certain situations observation without antibiotics or with a SNAP may be reasonable. (See Table 5 in original guideline document concerning SNAP definition and management.) If observation or SNAP is utilized, both the clinician and the parents are advised to be aware of the higher relapse/recurrence rate in this age group, and close follow-up must be assured (Siegel et al., 2003 [C]).

- It is recommended that in children over age 2 years with AOM and who are well-appearing, that the treatment options be discussed with the family and that the family be involved in the decision making. The options include:
 - Treatment with a SNAP to be filled after 48 to 72 hours if symptoms do not resolve with observation.
 - Treatment with a 5-day course of antibiotics (See treatment recommendation 2 and Table 4 in the original guideline document for discussion of antibiotic selection and doses)

Note 1: There is inadequate evidence to say that antibiotic therapy is or is not beneficial to most children with AOM (Wald, 2003 [E]).

Note 2: No antibiotic prescription, with follow-up within 48 to 72 hours, is also an option in the specific case when a practitioner would like to control the observation option more closely.

- It is recommended that children over age 2 years with AOM and with severe illness (see Table 6 in original guideline document) be treated with a 5-day course of antibiotics (See treatment recommendation 2 and Table 4 in the original guideline document for discussion of antibiotic selection and doses) (Kozyrskyj et al., 2000 [M], 1998 [M]).
- It is recommended, for a child with a recurrence of AOM in less than 1 month from completion of antibiotic therapy from a prior episode of AOM, or for a child who has recently been on antibiotics for other reasons, that antibiotic choices other than amoxicillin be considered (Leibovitz et al., 2003 [C]; Carlin et al., 1987 [C]; Dowell et al., "Principles of judicious use," 1998 [S]; Klein, 1998 [S]). (For an extended list of antibiotic options, doses, and preparations, see Appendix 3 of the original guideline document.)

Note: There is no strong evidence to support prolonged or prophylactic antibiotic therapy in recurring AOM (Williams et al., 1993 [M]; Koivunen et al., 2004 [A]). Persistent MEE is common, and parents may be counseled to expect fluid to take several weeks to months to clear (Rosenfeld & Kay, 2003 [M]; AAP Subcommittee, 2004 [S]).

	<ul style="list-style-type: none"> • It is recommended, for the first or a sporadic episode of AOM, that when the initial management approach fails, the clinician reevaluate the antibiotic decision. <p>If symptoms worsen at any time or if symptoms do not improve during a waiting period of 48 to 72 hours of initial presentation with AOM, and reexamination continues to suggest that AOM is the appropriate diagnosis, then start amoxicillin if not already initiated or change to an alternative antibiotic if the child is already on a first line drug.</p> <p>Note: Options for alternative antibiotics include:</p> <ul style="list-style-type: none"> • Amoxicillin/clavulanate: efficacy has been shown for AOM and may be used when resistance is likely (Hoberman et al., "Equivalent efficacy," 1997 [A]; Dagan et al., 2001 [C]) • Ceftriaxone intramuscularly (IM): 3 consecutive daily doses is efficacious in nonresponsive AOM for children with vomiting or otherwise unable to tolerate oral dosing (Leibovitz et al., 2000 [A]). <p>For children with allergies to penicillin, or other reasons to consider another antibiotic choice, see extended list of antibiotic options, doses, and preparations in Appendix 3 of the original guideline document.</p>
<p>SIGN (2003)</p>	<ul style="list-style-type: none"> • If an antibiotic is to be prescribed, the conventional five day course is recommended at dosage levels indicated in the British National Formulary. (Grade B) <p>With <i>Streptococcus pneumoniae</i> and <i>Haemophilus influenzae</i>, broad spectrum antibiotics such as amoxicillin, or amoxicillin with clavulanic acid, are the drugs of choice if an antibiotic is to be used. Cefaclor, cotrimoxazole, trimethoprim and erythromycin can be effective, but are less safe than amoxicillin.</p>
<p align="center">Patient Education And Preventive Counseling In AOM</p>	
<p>AAP/AAFP (2004)</p>	<ul style="list-style-type: none"> • Clinicians should encourage the prevention of AOM through reduction of risk factors. (Recommendation) <p>During infancy and early childhood, reducing the incidence of respiratory tract infections by altering child care center attendance patterns can reduce the incidence of recurrent AOM significantly. The implementation of breastfeeding for at least the first 6 months also seems to be helpful against the development of early episodes of AOM. Avoiding supine bottle feeding ("bottle propping"), reducing or eliminating pacifier use in the second 6 months of life, and eliminating exposure to passive tobacco smoke have been</p>

	postulated to reduce the incidence of AOM in infancy; however, the utility of these interventions is unclear.
CCHMC (2004)	<ul style="list-style-type: none"> • It is recommended that the family be educated regarding the natural history of AOM, signs and symptoms of clinical deterioration, and appropriate follow-up. • It is recommended that the practitioner discuss with the parent that persistent MEE is common, and parents may expect fluid to take several weeks to months to clear (Rosenfeld & Kay, 2003 [M]; AAP Subcommittee, 2004 [S]). • It is recommended that the family be educated about preventable risk factors. These include: <ul style="list-style-type: none"> • Exposure to others (especially family members) with upper respiratory tract infections (Uhari, Mantysaari, & Niemela, 1996 [M]) • Parental smoking or other sources of second-hand smoke (Uhari, Mantysaari, & Niemela, 1996 [M]; Ilicali et al., 1999 [C]) • Daycare attendance (Uhari, Mantysaari, & Niemela, 1996 [M]; Bradley, 2003 [C]) <ul style="list-style-type: none"> • Note: Though daycare attendance may not be preventable, options to reduce risk of AOM include delaying daycare, selecting a setting with fewer children, and/or verifying the daycare facility's hand washing practices and availability of sinks. • Excessive pacifier use, limiting use to when the child is falling asleep (Uhari, Mantysaari, & Niemela, 1996 [M]; Niemela et al., 2000 [A]) • Breastfeeding duration less than 3 months (Uhari, Mantysaari, & Niemela, 1996 [M]) • Bottlefeeding with the child on his/her back: assure that infants are offered bottle feedings while sitting in upright positions (Tully, Bar-Haim, & Bradley, 1995 [B]) <p>Parents may also benefit by understanding nonpreventable risk factors or common misconceptions.</p> <ul style="list-style-type: none"> • Anatomy of the eustachian tube in young children • It is not always known why a child gets AOM. • Allergies do not cause AOM.
SIGN (2003)	No specific recommendations are given for patient education or preventive counseling for AOM.
Recommendations For Referral	
AAP/AAFP (2004)	No recommendations offered

<p>CCHMC (2004)</p>	<ul style="list-style-type: none"> • It is recommended that a practitioner have a low threshold for referral for an audiologic evaluation by a pediatric audiologist if concerns around hearing, speech, or language are raised by parents, clinician, or other caregivers because of recurrent AOM (Mandel et al., 1991 [A]; Hsu, Levine, & Giebink, 1998 [C]; Teele et al., 1990 [C]; Bachmann & Arvedson 1998 [S]). • It is recommended that a child be referred for an otolaryngological evaluation for: <ul style="list-style-type: none"> • Recurrent AOM (history of 6 episodes over a 12-month period taking into account the severity of episodes, clustering of episodes, and persistence of OME) • Persistent otorrhea • Concerns about mastoiditis, or other complications of AOM • Perceived need for tympanocentesis and/or myringotomy (e.g., acute episode not responsive to medical therapy) • Abnormal audiologic evaluation <p>(Froom et al., 1993 [C])</p>
<p>SIGN (2003)</p>	<ul style="list-style-type: none"> • Children who require hearing loss assessment should be referred to an audiologist (Good practice point). • Children with frequent episodes (more than four in six months) of AOM, or complications, should be referred to an otolaryngologist (Grade D). <ul style="list-style-type: none"> • Complications of AOM such as mastoiditis or facial nerve paresis require referral.
<p>Use Of Complementary And Alternative Medicine For AOM</p>	
<p>AAP/AAFP (2004)</p>	<p>There is insufficient evidence to make a recommendation regarding the use of complementary and alternative medicine for AOM. (No Recommendation)</p>
<p>CCHMC (2004)</p>	<p>It is not recommended that other therapies be used in the treatment of AOM (AAP 2004[S]).</p> <p>Note: Steroids, antihistamines, decongestants, and complementary or alternative treatments have not been documented to be efficacious in the treatment of AOM (Butler & Van Der Voort, 2002 [M]; Flynn, Griffin, & Tudeviver, 2002 [M]; Barnett et al., 2000 [C]; AAP Subcommittee, 2004 [S]. Antihistamines may prolong the duration of MEE.</p> <p>Note: It is recognized that use of complementary and alternative medicine (CAM) is common and its use is often not reported to the primary care physician (PCP) (Eisenberg et al., 1998 [O], Spigelblatt et al., 1994 [O]). The PCP may take the AOM visit as an</p>

	opportunity to begin a respectful discussion regarding the safety and efficacy of CAM with families who report its use.
SIGN (2003)	While homeopathy was considered, due to lack of evidence, no recommendation can be made at this time.

TABLE 3: BENEFITS AND HARMS	
Benefits	
AAP/AAFP (2004)	<ul style="list-style-type: none"> • Appropriate diagnosis and initial treatment of a child presenting with AOM • Improved adherence to a consistent definition of AOM • Appropriate use of antibacterial agent(s) including improved decision making when an alternative to amoxicillin is indicated
CCHMC (2004)	<ul style="list-style-type: none"> • Effective medical management of AOM in children 2 months to 13 years of age • Improved use of appropriate diagnostic criteria • Improved use of appropriate antibiotic therapy • Improved symptom relief • Avoidance of medical complications • Improved parental involvement in decision-making around the management of AOM
SIGN (2003)	<ul style="list-style-type: none"> • Antibiotics in comparison to placebo and observational treatment may have a modest benefit on symptom resolution and failure rates, as variously defined, in children over the age of two years with AOM. The available evidence on natural history of AOM shows that in studies with close follow up, very few episodes of mastoiditis or other suppurative complications are reported in children with AOM not initially treated with antibiotics.
Harms	
AAP/AAFP (2004)	<p>General Antibiotic Therapy</p> <ul style="list-style-type: none"> • Antibacterial agent treatment might mask mastoiditis signs and symptoms, producing a subtle presentation that can delay diagnosis. • Antibiotics may lead to diarrhea, rash, anaphylaxis, and symptoms of hematologic, cardiovascular, central nervous,

	<p>renal, hepatic, and respiratory systems.</p> <ul style="list-style-type: none"> • Antimicrobial drug resistance may increase with increased use of antibiotics. <p>Analgesic Therapy</p> <ul style="list-style-type: none"> • Narcotic analgesia with codeine or analogs has a risk of respiratory depression, altered mental status, gastrointestinal upset, and constipation.
CCHMC (2004)	None stated
SIGN (2003)	<p>Analgesic Therapy</p> <ul style="list-style-type: none"> • Although non-steroidal anti-inflammatory drugs (NSAIDs) are frequently used by parents, caution should be exercised because of the side effect profile.

TABLE 4: EVIDENCE RATING SCHEMES AND REFERENCES

AAP/AAFP (2004)	<p>Recommendations Rating Scheme:</p> <p>Strong Recommendation - A strong recommendation in favor of a particular action is made when the anticipated benefits of the recommended intervention clearly exceed the harms (as a strong recommendation against an action is made when the anticipated harms clearly exceed the benefits) and the quality of the supporting evidence is excellent. In some clearly identified circumstances, strong recommendations may be made when high-quality evidence is impossible to obtain and the anticipated benefits strongly outweigh the harms. Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present.</p> <p>Recommendation - A recommendation in favor of a particular action is made when the anticipated benefits exceed the harms, but the quality of evidence is not as strong. Again, in some clearly identified circumstances, recommendations may be made when high-quality evidence is impossible to obtain but the anticipated benefits outweigh the harms. Clinicians would be prudent to follow a recommendation, but should remain alert to new information and sensitive to patient preferences.</p>
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	<p>Option - Options define courses that may be taken when either the quality of evidence is suspect or carefully performed studies have shown little clear advantage to one approach over another. Clinicians should consider the option in their decision making, and patient preference may have a substantial role.</p> <p>No Recommendation - No recommendation indicates that there is a lack of pertinent published evidence and that the anticipated balance of benefits and harms is presently unclear. Clinicians should be alert to new published evidence that clarifies the balance of benefit versus harm.</p>
<p>CCHMC (2004)</p>	<p>The type of evidence is identified and classified for each recommendation using the following scheme:</p> <p>Evidence Based Grading Scale</p> <p>A: Randomized controlled trial: large sample B: Randomized controlled trial: small sample C: Prospective trial or large case series D: Retrospective analysis E: Expert opinion or consensus F: Basic laboratory research S: Review article M: Metal analysis Q: Decision analysis L: Legal requirement O: Other evidence X: No evidence</p> <p>References Supporting the Recommendations</p> <ul style="list-style-type: none"> • American Academy of Pediatrics Subcommittee on Management of Acute Otitis Media. Diagnosis and management of acute otitis media. <i>Pediatrics</i> 2004 May;113(5):1451-65. PubMed • Bachmann KR, Arvedson JC. Early identification and intervention for children who are hearing impaired. <i>Pediatr Rev</i> 1998 May;19(5):155-65. [7 references] PubMed • Barnett ED, Klein JO, Hawkins KA, Cabral HJ, Kenna M, Healy G. Comparison of spectral gradient acoustic reflectometry and other diagnostic techniques for detection of middle ear effusion in children with middle ear disease. <i>Pediatr Infect Dis J</i> 1998 Jun;17(6):556-9; discussion 580. PubMed • Barnett ED, Levatin JL, Chapman EH, Floyd LA, Eisenberg D, Kaptchuk TJ, Klein JO. Challenges of evaluating homeopathic treatment of acute otitis media. <i>Pediatr Infect Dis J</i> 2000 Apr;19(4):273-5. PubMed • Bertin L, Pons G, d'Athis P, Duhamel JF, Maudelonde C, Lasfargues G, Guillot M, Marsac A, Debregeas B, Olive G. A randomized, double-blind, multicentre controlled trial of ibuprofen versus acetaminophen and placebo for symptoms of

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<p>SIGN (2003)</p>	<p>Grades of Recommendations</p> <p>A - At least one meta-analysis, systematic review of randomised controlled trials (RCTs), or randomised controlled trial rated as 1++ and directly applicable to the target population; or</p> <p>A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results</p> <p>B - A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; or</p> <p>Extrapolated evidence from studies rated as 1++ or 1+</p> <p>C - A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; or</p> <p>Extrapolated evidence from studies rated as 2++</p> <p>D - Evidence level 3 or 4; or</p> <p>Extrapolated evidence from studies rated as 2+</p>

	<p>Levels of Evidence</p> <p>1++ - High quality meta-analyses, systematic reviews of randomised controlled trials (RCTs), or RCTs with a very low risk of bias</p> <p>1+ - Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias</p> <p>1- - Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias</p> <p>2++ - High quality systematic reviews of case control or cohort studies. High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal</p> <p>2+ - Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal</p> <p>2- - Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal</p> <p>3 - Non-analytic studies, e.g., case reports, case series</p> <p>4 - Expert opinion</p>
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GUIDELINE CONTENT COMPARISON

The American Academy of Pediatrics/American Academy of Family Physicians (AAP/AAFP), Cincinnati Children's Hospital Medical Center (CCHMC), and Scottish Intercollegiate Guidelines Network (SIGN) present recommendations for the diagnosis and management of AOM in pediatric patients based on evidence available at the time of each report and provide explicit reasoning behind their judgments, ranking the level of evidence for each major recommendation. CCHMC also offers literature citations to support its major recommendations.

Each guideline develops a working definition for AOM, but the focus of the guidelines and their respective target populations vary. For example, the AAP/AAFP and CCHMC guidelines are limited to a discussion of recommendations for the diagnosis and treatment of uncomplicated AOM, with both groups presenting recommendations for OME in separate guidelines. The SIGN guideline considers the diagnosis and treatment of both AOM and OME.

Areas of Agreement

Diagnosis of AOM

AAP/AAFP, CCHMC, and SIGN are in general agreement regarding the definition and requirements for diagnosing AOM. All of the groups agree that the diagnosis of AOM should be based on an acute onset of signs and symptoms (e.g., earache, tugging of the ears, irritability, fever), evidence of MEE (e.g., bulging of the tympanic membrane, limited or absent mobility of the tympanic membrane), and evidence of acute inflammation (e.g., bulging tympanic membrane with loss of normal landmarks, change in color, and poor mobility). Furthermore, both AAP/AAFP and SIGN agree that systemic signs of illness with a MEE or clinical history alone are not sufficient to make a diagnosis of AOM.

Observation of AOM without Treatment

All three guidelines provide a delayed treatment option in which antibacterial treatment of selected children is deferred for 48 to 72 hours. The guidelines differ regarding the subgroups of patients for which this approach should be used in (See "Areas of Differences" below).

Comparison of Recommendations for the Use of Analgesics in Patients with AOM

AAP/AAFP, CCHMC, and SIGN all recommend analgesic use in AOM, particularly acetaminophen and ibuprofen (or other non-steroidal anti-inflammatory drugs [NSAIDs]). The SIGN guideline warns that although NSAIDs are frequently used by parents, caution should be used because of their side effect profile.

Comparison of Recommendations for Antimicrobial Therapy in Patients with AOM

Amoxicillin as First-Line Therapy. Each of the three guidelines identifies *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis* as the most common etiologies for AOM and recommends amoxicillin for first-line therapy (when the use of antibiotics is warranted). SIGN also recommends amoxicillin/clavulanate for first-line therapy. According to AAP/AAFP, the justification to use amoxicillin as first-line therapy in most patients with AOM relates to its general effectiveness when used in sufficient doses against susceptible and intermediate resistant pneumococci, as well as its safety, low cost, acceptable taste, and narrow microbiologic spectrum.

Amoxicillin Dose. The guidelines are in general agreement about the amount of amoxicillin that should be prescribed. AAP/AAFP and CCHMC recommend 80 to 90 mg/kg/day. AAP/AAFP's recommendation of 80 to 90 mg/kg/day is based on extrapolation from microbiologic studies and expert opinion, with a preponderance of benefit over risk. The SIGN guidelines do not provide amoxicillin doses, but refer the reader to the British National Formulary.

Duration of Therapy. AAP/AAFP and SIGN indicate that the optimal duration of amoxicillin therapy for patients with AOM has not been established. AAP/AAFP states that several studies that examined outcomes and duration of treatment had significant limitations, including inadequate sample size and lack of age-stratified analyses of outcomes. They note, however, that results of several more recent studies favor 10-day therapy in children younger than 2 years and in children

aged 2 to 5 years. The SIGN guideline cites a Cochrane review, which found that 5 days is an effective treatment period for uncomplicated ear infections in children.

In spite of the uncertainty concerning the optimal duration of therapy, the guidelines are in general agreement that a course of 5 to 10 days is appropriate. In addition, AAP/AAFP and CCHMC recommendations are in agreement that children younger than 2 years should receive a 10-day course of therapy. See "Areas of Differences" below, for a discussion of differences in the recommendations concerning children older than 2 years.

Amoxicillin Alternatives. Two guidelines, AAP/AAFP and CCHMC discuss alternative antimicrobials in some detail. They are in agreement that when amoxicillin is not an appropriate choice (because of allergy, vomiting, or other reasons), second-line antibiotics should be used, such as cephalosporins (including cefdinir, cefuroxime, ceftriaxone). AAP/AAFP and CCHMC also include macrolides/azalides (azithromycin, clarithromycin), and AAP/AAFP includes erythromycin-sulfisoxazole or sulfamethoxazole-trimethoprim as options. SIGN does not specifically address the issue of allergy to amoxicillin, but states that cefaclor, cotrimoxazole, trimethoprim, and erythromycin can be effective, but are less safe than amoxicillin. Additional issues related to amoxicillin alternatives are discussed below under "Areas of Differences."

Clinical Failure. For patients initially treated with amoxicillin as first-line therapy who have not improved within 72 hours, AAP/AAFP and CCHMC agree that amoxicillin/clavulanate is the preferred second-line therapy. AAP/AAFP bases its recommendation on observational studies and a preponderance of benefit over risk and states that choice of antibacterial agent should be based on the likely pathogen(s) present and on clinical experience. AAP/AAFP and CCHMC also agree that patients with beta-lactamase producing organisms should be treated with high-dose amoxicillin-clavulanate. SIGN does not specifically address the issue of treatment failure, but in the context of discussing antibiotic therapy states that cefaclor, cotrimoxazole, trimethoprim, and erythromycin can be effective, but are less safe than amoxicillin or amoxicillin/clavulanate.

Comparison of the Use of Patient Education and Preventive Counseling in AOM

While the SIGN guideline makes recommendations concerning prevention of OME, it does not provide specific recommendations concerning prevention of AOM. In contrast, the AAP/AAFP and CCHMC guidelines encourage clinicians to counsel parents concerning preventable risk factors for AOM.

AAP/AAFP and CCHMC agree that day care attendance, pacifier use, and exposure to tobacco smoke significantly increase the risk of AOM. AAP/AAFP states that, during infancy and early childhood, reducing the incidence of respiratory tract infections by altering child care center attendance patterns can significantly reduce the incidence of AOM. AAP/AAFP and CCHMC include short duration of breastfeeding and bottlefeeding with the child on his/her back as additional preventable risk factors.

AAP/AAFP and CCHMC agree that administration of the pneumococcal conjugate vaccines reduces the risk of ear infections slightly. AAP/AAFP and CCHMC cite a study that showed medical office visits for otitis media were reduced by 7.8% and

antibiotic prescriptions by 5.7% in a large clinical practice after administration of the pneumococcal conjugate vaccine. AAP/AAFP also suggests the influenza vaccine may be useful for the prevention of AOM. According to AAP/AAFP, immunoprophylaxis with killed or live-attenuated intranasal influenza vaccines reduced AOM by 30% during the respiratory illness season in two studies; most of the children in these studies were older than 2 years. A controlled study among infants and toddlers aged 6 to 23 months failed to demonstrate any efficacy of killed vaccine in preventing AOM. AAP/AAFP states that pneumococcal conjugate vaccines have proven effective in preventing vaccine-serotype pneumococcal otitis media, but their overall benefit is small, with only a 6% reduction in the incidence of AOM. CCHMC agrees that the effectiveness of influenza vaccination in preventing AOM remains unclear.

Comparison of Recommendations for Referral

Concerning referral to an audiologist, CCHMC recommends that the practitioner have a low threshold for referral for an audiologic evaluation if concerns around hearing, speech, or language are raised by parents, clinicians, or other caregivers because of recurrent AOM. SIGN recommends referral to an audiologist when audiometry is required for assessment of hearing thresholds and middle ear function. AAP/AAFP makes no recommendation concerning the need for an audiology referral for AOM patients.

CCHMC and SIGN recommend referral to an otolaryngologist in cases of complicated or persistent AOM. CCHMC recommends referral for recurrent AOM, persistent otorrhea, concerns about mastoiditis or other complications, evaluation for surgery, and an abnormal audiologic evaluation. SIGN identified no studies concerning when AOM patients should be referred and therefore adopts the recommendation of the National Institute for Clinical Excellence (NICE) that children with frequent episodes of AOM (more than four in six months) should be referred to an otolaryngologist. SIGN also recommends referral for complications of AOM such as mastoiditis or facial nerve paresis. AAP/AAFP makes no recommendations concerning referrals to an otolaryngologist.

Comparison of Recommendations for the Use of Complementary and Alternative Medicine (CAM) for AOM

Both AAP/AAFP and SIGN agree that no recommendations can be made due to an absence of evidence of effectiveness in the literature. CCHMC specifically recommends against CAM and certain other therapies to treat AOM. Recognizing that use of CAM is common, however, CCHMC encourages providers to respectfully discuss its safety and efficacy with families who report its use.

Areas of Differences

Observation of AOM without Treatment

Although the guidelines agree that observation without treatment is a recommended approach to AOM, they differ concerning the patient groups to which this option applies. AAP/AAFP and CCHMC use both age and symptom criteria to determine if observation without treatment is appropriate, while SIGN does not limit the option based on either age or symptoms.

AAP/AAFP recommends that deferred treatment can be used in otherwise healthy children aged 6 months to 2 years whose diagnosis is certain or whose diagnosis is uncertain and their illness is non-severe when follow-up can be ensured. AAP/AAFP also recommends this approach for children age 2 years and older with either non-severe illness or an uncertain diagnosis. To support their recommendations, the guideline developers cite studies that compared outcomes associated with initial antibacterial therapy or initial observation.

CCHMC on the other hand, citing two articles by Cohen (1998 and 2000) and the 2004 AAP/AAFP guideline, recommend in general, a 10 day course of antibiotics for children less than 2 years of age, noting that in certain circumstances observation and/or a safety-net antibiotic prescription (SNAP) may be reasonable. For children over age 2 years who are well-appearing, CCHMC recommend that treatment options be discussed with the family. These options include SNAP or a 5-day course of antibiotics

SIGN recommends that in general antibiotics should not be prescribed for the initial management of AOM. Delayed antibiotic treatment (antibiotic to be collected at parents' discretion after 72 hours if child has not improved) is recommended as an alternative approach.

Use of Analgesics other than NSAIDs

While all three guideline developers recommend the use of analgesics, particularly acetaminophen and ibuprofen for the treatment of pain in AOM, they differ in their recommendations about the use of other analgesics. SIGN considered two randomized controlled trials that showed no benefit of oil in reducing pain in AOM and therefore recommended against its use. In contrast, AAP/AAFP noted that home remedies including oil, distraction, and external application of heat or cold may have limited effectiveness although there have been no controlled studies that directly addressed their effectiveness. AAP/AAFP further notes that topical agents including benzocaine and naturopathic agents may provide additional, but brief, benefit over acetaminophen in patients older than 5 years. AAP/AAFP also notes that narcotic analgesia with codeine or analogs is effective for moderate or severe pain. In addition to acetaminophen and ibuprofen, CCHMC also recommends topical ear drops (anesthetic or naturopathic herbal extract), but cautions against their use in patients with a perforated eardrum and/or discharge from the ear, as their use will likely result in severe dizziness and vomiting.

Comparison of Recommendations for the Use of Antimicrobial Therapy in Patients with AOM

Duration of Therapy. As noted above under "Areas of Agreement," AAP/AAFP and CCHMC generally agree that a 10 day course of antibiotics is preferred in children under 2 years of age. However, AAP/AAFP differs from CCHMC concerning the recommended duration of amoxicillin therapy for children older than 2 years. CCHMC recommends that children older than 2 years receive a 5-day course of therapy, while AAP/AAFP recommends that only children age 6 years and older with mild to moderate disease receive a 5- to 7-day course of therapy; younger children and/or those with severe disease are recommended to receive the standard 10-day course.

Amoxicillin Alternatives

As discussed above under "Areas of Agreement," AAP/AAFP, but not CCHMC, includes erythromycin-sulfisoxazole and sulfamethoxazole-trimethoprim as acceptable options for children with allergy to amoxicillin. AAP/AAFP states, however, that resistance to erythromycin-sulfisoxazole and sulfamethoxazole-trimethoprim is substantial and use of these agents is not optimal.

Some guidelines address topics not addressed by the other guidelines. For example, AAP/AAFP states clindamycin may be used in the penicillin-allergic patient with AOM secondary to penicillin-resistant *S. pneumoniae*. Additional discussion concerning approaches to antimicrobial therapy is contained in the original guideline documents of AAP/AAFP and CCHMC.

This Synthesis was prepared by ECRI on November 4, 2005. The information was verified by AAP on April 6, 2006; by CCHMC on May 1, 2006; by SIGN on April 5, 2006; and by UMHS on April 28, 2006. This synthesis was revised on December 6, 2007 to remove recommendations from UMHS.

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