# Acute Otitis Media – Adult
## Clinical Care Pathway (CCP)

- For Pediatric client see Pediatric Acute Otitis Media CCP (Ears, Nose, Throat and Mouth Chapter)

**Purpose of this Document**

- Outlines key elements of the clinical care process for acute otitis media in the Adult population
- Provides a *condition-specific* pathway of assessment and care for diagnosed or suspected acute otitis media. Refer to the **Introduction - General Assessment** (Adult Ears, Nose, Throat and Mouth), for complete general assessment
- Supports the assessment, Physician/Nurse Practitioner consultation, and documentation for the clinical encounter within the primary health care setting, in remote and isolated Indigenous communities

## ASSESSMENT [1-18]

**Consult Physician/Nurse Practitioner promptly:**

- **For severe presentation that may require medical evacuation**
- **For any febrile infant**

☐ Refer to the **Introduction - General Assessment** (Adult Ears, Nose, Throat and Mouth), for complete general assessment

### Red Flags

☐ Altered mental status
☐ Toxic appearance
☐ Pain and edema over mastoid bone
☐ Cranial nerve palsies
☐ Severe and/or persistent headache
☐ Vertigo
☐ Tinnitus
☐ Cholesteatoma
☐ Persistent unilateral hearing loss

**Note:** Complications of acute otitis media may include **meningitis** and **mastoiditis**. If these are suspected, consult the Mastoiditis e-CCP (Ears, Nose, Throat and Mouth) and/or Meningitis CPG (Adult – Central Nervous System Chapter)

## Health History

*Provide trauma-informed care and ensure an approach based on cultural safety and humility, at all stages of the nursing encounter.*

### General

- ☐ Fever
- ☐ Recent or current upper respiratory tract infection (URTI)
- ☐ Recent exacerbation of seasonal allergic rhinitis

### HEENT

- ☐ Otalgia
- ☐ Aural fullness
- ☐ Hearing loss
- ☐ New onset otorrhea (often associated with sudden relief of otalgia)
- ☐ Vertigo

### Risk Factors

- ☐ Recent or current URTI symptoms
- ☐ Recent exacerbation of seasonal allergic rhinitis
- ☐ Eustachian tube dysfunction or obstruction
- ☐ Chronic sinusitis
- ☐ Craniofacial abnormalities
- ☐ Immunosuppression

### Social History

- ☐ Exposure to tobacco smoke

**Record Allergies**

## Physical Exam

### General

- ☐ Fever

### HEENT

**If unable to visualize the tympanic membrane (TM):**

- Wax and other debris should be removed from the ear canal to allow a clear view of the TM
- This procedure should be performed by a health care professional with adequate skills and knowledge
- Gently remove cerumen when possible, avoiding trauma to the ear canal and tympanic membrane, using a curette

- ☐ Bulging of the TM
- ☐ Opacification of the TM – can be recognized by:
  - TM cloudy, yellowish or opaque
  - Bony landmarks obscured or absent
  - Air fluid level

- Bubbles
- Erythema of the TM (not always associated with infection, may be due to coughing, crying, etc.)
- Possible perforation of the TM
- Purulent otorrhea in the auditory canal
- Decreased mobility of the TM (as observed with pneumatic otoscope if available)
- Peri-auricular and anterior cervical lymphadenopathy

**Image 1: Erythema and superior opacification of the tympanic membrane**

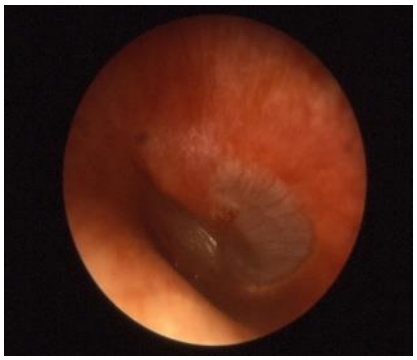
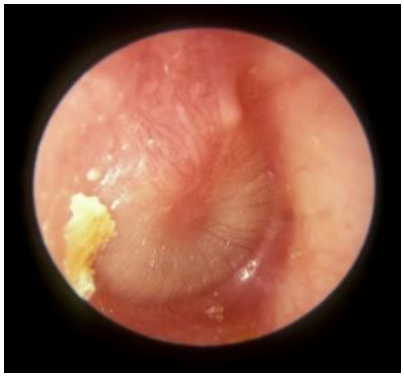


**Image 2: Bulging of the tympanic membrane with opacification; bony landmarks are absent**



**Ensure vital signs are recorded and within normal values**

**Normal adult values**

| Age | Heart rate (beats/min) | Blood pressure (mmHg) | Respiratory rate (breaths/min) | Oxygen saturation | Temperature |
|---|---|---|---|---|---|
| All Ages | 60-100 | SBP 90-140 DBP 60-90 | 12-20 | >94% | **Oral:** 36.4-37.6°C |

- Refer to the **Introduction - General Assessment** (Adult Respiratory System), for additional information on measurement of vital signs, if required

## Clinical Pearls and Tools

- Accurate diagnosis requires otoscopy
- Pneumatic otoscopy (if available), can provide additional diagnostic information

**Table 1: Clinical Features of Various Types of Otitis**

| Clinical Features | Acute Otitis Media (AOM) | Serous Otitis Media or Otitis Media with Effusion | Chronic Suppurative Otitis | Otitis Externa |
|---|---|---|---|---|
| **Onset** | ☐ Sudden | ☐ Chronic<br>☐ Often occurs after AOM | ☐ Chronic > 2 weeks | ☐ Variable |
| **Fever** | ☐ Present | ☐ None | ☐ None | ☐ None |
| **Otalgia** | ☐ Yes if TM not perforated<br>☐ Sudden relief when TM perforation occurs | ☐ None | ☐ None | ☐ Yes when manipulating pinna or when applying pressure on tragus |
| **Tympanic Membrane** | ☐ Bulging<br>☐ Opacification<br>☐ Erythema<br>☐ May develop perforation<br>☐ Decreased mobility | ☐ Visible air-fluid level behind the TM<br>☐ Bubbles behind TM<br>☐ Retraction<br>☐ Decreased mobility | ☐ Perforation | ☐ Usually intact unless perforated prior to otitis externa (secondary to trauma, infection, etc.) |
| **Otorrhea** | ☐ New onset if TM perforation<br>☐ Purulent | ☐ None | ☐ Otorrhea > 2 weeks<br>☐ Purulent<br>☐ Intermittent or persistent | ☐ Present (colour and texture vary)<br>☐ Can be associated with debris |
| **Hearing Loss** | ☐ Yes | ☐ Yes | ☐ Yes | ☐ Yes possible |
| **Other Signs and Symptoms** | ☐ Increased fussiness (child)<br>☐ Aural fullness<br>☐ Vertigo | ☐ Aural fullness<br>☐ “Popping” sounds in the ear<br>☐ Loss balance/ clumsiness | ☐ Recent URTI symptoms or AOM | ☐ Ear canal swollen<br>☐ Pruritus |

## Differential Diagnoses

- Otitis media with effusion (serous otitis media)
- Chronic suppurative otitis media
- Otitis externa
- Mastoiditis
- Common cold
- Ceruminosis
- Pharyngotonsillitis (Viral) (Bacterial)
- Barotrauma
- Bullous myringitis
- Trauma or foreign-body irritation
- Referred ear pain from dental abscess
- Temporomandibular joint dysfunction
- Herpes zoster
- Deep space head/neck infections

Refer to the **Introduction - General Assessment – Common Presentations section** (Adult Ears, Nose, Throat and Mouth), to review other potential differential diagnoses for common presentations.

## Diagnostic Tests and Investigations

Diagnosis of acute otitis media is based on clinical presentation. Diagnostic tests are not generally indicated for this condition.

# MANAGEMENT, INTERVENTIONS AND MONITORING [1, 10, 15, 19-25]

## Goals of Management

- Client feels safe, listened to, and involved in management and care decisions
- Eliminate infection
- Relieve pain
- Prevent complications
- Restore normal middle ear pressure
- Restore hearing

### Considerations

- Use a client-centred, collaborative approach based on **respect, empathy, dignity, compassion, and shared-decision making**
- Consider the client's individual, community and cultural context in management decisions and care planning
- Discuss supports available to the client, and ensure the client and/or caregiver can manage the care plan after discharge
- Consider determinants of health such as access to basic amenities (clean, potable water), phone and means of transportation, and any other financial or environmental limitations that may affect the care plan
- **AOM is rare in the adult population and can have serious complications: it is strongly recommended to treat adults with antibiotic therapy (as opposed to a "watchful waiting" approach)**

## Non-Pharmacological Interventions

**Client-Centred Learning**

- Provide education and instructions to the client/caregiver
- Recommend increased rest and good hydration in the acute febrile phase
- Advise client/caregiver of appropriate use of medications to treat current condition
- Discuss with client/caregiver any concerns or limitations they may have in relation to the care plan and work to identify strategies to address them
- **Air Travel:** avoid flying while acute otitis media is present in order to prevent pain and/or barotrauma from occurring. If it is necessary to fly, chewing gum or autoinsufflation may be helpful to alleviate symptoms of pain. Decongestants may be ordered as a preventative measure.
- If the TM is perforated, it is important to avoid submersion in water
- Antihistamines and decongestants have no proven efficacy in the treatment of acute otitis media and should be avoided
- Provide client/caregiver with clear education on the course and expected outcomes of the illness

## Pharmacological Interventions

Review and document current medications, including over-the-counter, complementary, alternative, and traditional Indigenous medicines, as well as chemical or substance intake which may impact management, prior to initiating treatment.

Review the drug monograph, the FNIHB Nursing Station Formulary and/or provincial/territorial formulary prior to initiating treatment.

**Consult Physician/Nurse Practitioner** when practice is outside legislated scope and without authorized delegation.

**Antipyretics/Analgesics**

| **Acetaminophen: Adult usual dosage** |
|---|
| Acetaminophen 325 to 650 mg PO every 4 to 6 hours PRN |
| **Maximum dose**: From all sources Acetaminophen 4000 mg in 24 hours<br>**Caution:** hepatic, INR, renal |
| **Ibuprofen: Adult usual dosage** |
| Ibuprofen 200 to 400 mg PO every 4 to 6 hours PRN |
| **Maximum dose:** From all sources Ibuprofen 1200 mg in 24 hours. Under physician/nurse practitioner supervision, daily doses up to 2400 mg may be used.<br>**Caution:** cardiac, geriatric, hepatic, INR, pregnancy, renal |

**Antibiotic Therapy**

Review antibiotics prescribed for any type of infection in the previous three months and determine whether there has been significant exposure to a particular antibiotic class.

- Choice and duration of antibiotic may vary depending on severity, or whether there has been previous treatment failure. Duration treatment may be up to ten days

| Targeted Population | Medication |
|---|---|
| **AOM with or without acute perforation** | Amoxicillin 500 mg PO TID for 5 to 7 days<br><br>**Caution:** renal |
| **If antibiotics have been used in the last 30 days**<br>**OR**<br>**Failure of treatment with single ingredient amoxicillin after 48 to 72 hours** | Amoxicillin 875 mg / Clavulanate 125 mg PO BID for 5 to 7 days<br><br>**Caution:** hepatic, INR, renal |
| **Suspected penicillin allergy (non-life-threatening reaction)** | Cefuroxime axetil 500 mg PO BID for 5 to 7 days<br><br>**Caution:** INR, renal |
| **Documented anaphylactic type penicillin allergy** | Azithromycin 500 mg PO as a single dose on the first day, followed by 250 mg PO once daily, on days 2 through 5<br><br>**Caution:** cardiac, INR |

**Note:** Management of an AOM in client with a history of chronic perforated tympanic membrane may include topical drops with or without oral antibiotics, depending on the clinical presentation and severity of the illness.

**Immunizations**

- Ensure immunizations are up to date
- Annual influenza vaccine
- COVID vaccine

### Monitoring

- Monitor cardiorespiratory status and vital signs as indicated by the client's condition
- Monitor for signs of complications
- Before considering discharge home, ensure that client is stable / does not have any of the following:
  - Meningeal symptoms
  - Cranial nerve palsies
  - Signs of mastoiditis
  - Uncontrolled fever

## DISCHARGE AND FOLLOW-UP PLAN [1]

- Before discharge home, ensure that the client/caregiver:
  - Understands instructions provided (interpreter may be needed in case of language differences)
  - Understands and is able to recognize the clinical signs of potential complications of AOM, such as meningitis or mastoiditis
  - Is able to provide/take the medication as prescribed
  - Understands and is aware of when to return for re-evaluation
  - Has no concerns or limitations that may prevent their return for re-evaluation if required
- Follow-up should take place at any time if the client is not improving or their condition deteriorates or if red flag symptoms develop
- 24-48 hours after initial visit, follow up with the client/caregiver by telephone or schedule a follow-up visit as necessary
  - In case of treatment failure after 48-72 hours, consult the Physician/Nurse Practitioner and consider treatment with a second-line antibiotic

- **Follow-up monitoring:** consult and consider referring to otolaryngology/audiology:
  - Clients with recurrent AOM (>2 episodes in a six-month period)
  - Persistent hearing loss following AOM
  - Chronic tympanic membrane perforation following AOM (>12 weeks)

Record discharge plan and date of follow-up

### Referral and/or Consultation

- Coordinate referral request(s) as required, within or outside the community (e.g., otolaryngology; audiology)
- Arrange for medical evacuation if indicated
- Emergency travel outside of the community can be stressful for clients and their families: provide open and clear information on the reasons for the transfer, what is needed and what may be expected

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