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აშშ-ის საერთაშორისო  
დახმარების აგენტობა

ჯანდაცვის  
განვითარების  
პროექტი

**Improvement objective: decrease morbidity and mortality due to acute upper (rhinitis, sinusitis, pharyngitis) and lower (bronchitis, pneumonia) respiratory infections through improved case management (amb/hosp)**

## Essential Care Elements

### Diagnosis

*History of illness:* Duration of cough, fever; any sick exposures

*Past Medical History:* any relevant history (e.g. asthma, prior pneumonia, immune-compromised status, etc)

*Review of Systems:*

- Fever (extent & duration)
- Fluid intake and urination (especially infants/young children)
- Breathing trouble

*Physical Exam:*

- Respiratory status recorded (RR, accessory muscle use, pulseoximetry if available)
- Pulmonary auscultation exam: Location and extent of any rales, rhonchi or wheezes
- Pharyngoscopy, otoscopy if needed

### Severity Classification & Decision for Ambulatory versus Hospital Management

*Ambulatory Treatment all children with suspected pneumonia unless:*

- Infant < 2 months
- Pulseoximetry < 94-95% room air
- Significant respiratory distress (Increased RR (age-specific), accessory muscle use, etc.)

*if age < 12 month*

- Temperature >38.5°C
- Respiratory rate >70 breaths/min,
- Cyanosis
- Intermittent apnea
- Moderate to severe recession
- Nasal flaring
- Grunting respiration
- Not feeding
- Tachycardia HR >160\*
- Capillary refill time >2 sec

*If age at the time of diagnosis is > 12 month:*

- Temperature >38.5°C
- Respiratory rate >50 breaths/min
- Cyanosis
- Severe difficulty in breathing
- Nasal flaring
- Grunting respiration
- Signs of dehydration
- Tachycardia HR >140 under age 5, >115 for age 5-15, >90 for age 15-18



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- Capillary refill time >2 sec
- Dehydration or lethargy
- Inability to take oral medication
- Significant co-morbid conditions or uncertain diagnosis (e.g. congenital heart disease, HIV, T.B.)

In case of bronchitis ambulatory treatment of all children unless:

- Co-morbid conditions (congenital heart disease, chronic lung disease, neurologic impairment);
- Social problems – lack of care in family, absence of transportation ability
- Duration of symptoms more than 2-3 weeks;
- Signs of toxicosis (bacterial tracheitis or pneumonia suspected)
- Presence of dangerous signs;
- Inability to take food and liquids.

In case of pharyngitis:

- Stridor or shortness of breath with pain.

In case of sinusitis:

1. Complications of sinusitis:

**a. Orbital:**

Orbital cellulites.

**b. Local:**

Mucocelle or mucopyocelle.

**c. Intracranial:**

- Bacterial meningitis;
- Cerebral abscesses;
- Epidural abscesses;
- Osteomyelitis e.c.



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2. Ineffective treatment with medications of second choice;
3. Recurrence of disease (more than 3 episodes per year);
4. Congenital anomaly of upper respiratory tract

In case of otitis:

- Appearance of purulent discharge, especially if pulsating
- Development of complications such as facial paralysis or mastoiditis.
- Three or more episodes of acute otitis during 6 months or four episodes during 12 months.
- Suspicion on hearing deficiency after treatment.

**In case of ambulatory management of respiratory infection:**

**Treatment and follow up**

Treatment of pneumonia:

-Age appropriate antibiotic with appropriate dose:

< 2 months: hospitalization

2 months -5 years: High dose of Amoxicillin (90 mg/kg/day 2-3 times per day)

>2 years: Macrolide e.g. Azithromycin (10mg/kg daily)

Antipyretic: Acetaminophen or Ibuprofen with age appropriate dose.

Chest X-ray referral if:

- If symptoms not improving within 2-3 days on antibiotics
- Known T.B. exposure or risk factor
- Suspected foreign body (e.g. child swallowed something)

Follow up:

- Specific follow-up specified (time and place)
- Medication & dehydration prevention instructions documented (esp. infants/young children)
- Danger sign & urgent follow-up counseling documented
- Sequential visits or parent communication documented in chart per follow up plan)



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#### Treatment of bronchitis:

- Calmness;
- Additional liquids;
- Antipyretics;
- Effectiveness and benefit of mucolytics in children not proven;
- Cough medications do not decrease duration of disease in children, meanwhile if the phlegm evacuation depressed, bacterial complications may develop;
- There is no evidence for effectiveness of  $\beta_2$ -agonists in case of acute bronchitis;
- Antihistamines are not recommended because they can cause dryness of phlegm and therefore reinforce cough.

Consider antibiotic therapy if:

- General condition worsens;
- Fever duration more than one week;
- “Second wave” of fever present;
- Profuse or purulent phlegm;
- Mycoplasma, Chlamydia infection or Pertussis suspected due to epidemiologic situation;
- Sinusitis or Otitis at the same time with bronchitis present.
- Co-morbid conditions that may increase risk of pneumonia (immunodeficiency, chronic heart failure, chronic pulmonary disease)

#### Treatment of pharyngitis:

- Adequate analgesia (Acetaminophen)
- High probability of bacterial infection and begin antibiotic therapy If tonsillar exudates, enlargement and pain of cervical lymph nodes in case of absence of fever and cough.
- In case of bacterial pharyngitis first choice antibiotic is amoxicillin due to its preferential effect on resistant microbes.
- Amoxicillin 40mg/kg/daily divided by 2– or 3 times during 10 days or
- Penicillin G (Benzathyn Penicillin) single dose i/m, 1.200.000U in adults, and 600.000U in children with body weight under 27kg.
- Severe pharyngitis and enlargement of cervical lymph nodes could be sign of infectious mononucleosis. Therefore avoid use of Ampicillin as first line treatment.
- In case of Penicillin allergy macrolide (e.g. Azithromycin).



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#### Treatment of sinusitis:

Antibiotic therapy if following clinical symptoms:

- Persistent symptoms (e.g. if clinical symptoms continue more than 7-10 days);
- Severe symptoms e.g. profuse purulent nasal discharge, facial pain and signs of system impairment) ;
- Deterioration of patients' symptoms and condition.

Amoxicillin is antibiotic of first choice, if allergy to penicillin's present, alternative drug is Azithromycin or Clarithromycin. Duration of antibiotic treatment 10-14 days. If after initial 10-14 day treatment patients' condition improved minimally or ineffective at all, broad spectrum antibiotic: amoxicillin-clavulanic acid or cephalosporin should be administered.

#### Treatment of otitis:

- Assessment of pain in case of acute otitis and if pain, use of appropriate analgesic (Acetaminophen, ibuprofen).
- Avoid ear drops if perforation of tympanic membrane suspected.
- Routine use of antibiotics in children under 6 months;
- From 6 months to 2 years antibiotic should be prescribed if bilateral otitis present.
- Children over 2 years should receive antibiotics if diagnosis clear and severe condition. If diagnosis is not clear, or clear but condition not severe, observation during 72 hours and use of analgesics is reasonable.
- Antibiotic of first choice is Amoxicillin (80-90mg/kg/day divided by 2 times). If child's age over 2 years, he/she not organized in collective and antibiotic has not been used during past 3 months, recommended dose is 40mg/kg/day.
- If treatment ineffective after 72 hours, or allergic reaction to first choice antibiotic, amoxicillin/clavulanic acid or cephalosporins are recommended.
- If symptoms persist after amoxicillin/clavulanic acid, or child unable to take oral medication, intramuscular injections of cephalosporins (cephuroxim, cephtriaxon) are reasonable.
  
- *Follow up:*
- -Specific follow-up specified (time and place)
- -Medication & dehydration prevention instructions documented (esp. infants/young children)
- -Danger sign & urgent follow-up counseling documented
- -Sequential visits or parent communication documented in chart per follow up plan
- -Specific immunization advice documented



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### **If Hospital Care:**

#### **Referral & Stabilization in Clinic prior to Hospital transfer**

- Standard referral form completed according to protocol including: reason for referral, treatments given in ambulatory center
- Communication with hospital documented in chart
- Transport plan documented in chart
- Age-appropriate Oxygen applied by face mask if pulsoximetry < 95% or if significant respiratory distress and no pulsoximetry measure
- Follow up plan documented in chart as communicated to family
- Follow up of patient documented in chart (e.g. phone call to family or hospital)