

Infants and Children: Acute Management of Sore throat

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Summary The Infants and Children, Acute Management of Sore Throat, clinical practice guideline reflects what is currently regarded as a safe and appropriate approach to the acute management of sore throat in infants and children.

Replaces Doc. No. Children and Infants with Sore Throats - Acute Management [PD2006_019]

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Applies to Local Health Districts, Board Governed Statutory Health Corporations, Chief Executive Governed Statutory Health Corporations, Specialty Network Governed Statutory Health Corporations, Affiliated Health Organisations, Public Health System Support Division, Community Health Centres, NSW Ambulance Service, Ministry of Health, Public Health Units, Public Hospitals

Audience Emergency Departments, nursing, medical, clinicians

Distributed to Divisions of General Practice, Government Medical Officers, NSW Ambulance Service, Ministry of Health, Private Hospitals and Day Procedure Centres, Tertiary Education Institutes

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INFANTS AND CHILDREN: ACUTE MANAGEMENT OF SORE THROAT

PURPOSE

The *Infants and Children: Acute Management of Sore Throat, third edition* Clinical Practice Guideline has been revised to provide direction to clinicians and is aimed at achieving the best possible paediatric care in all parts of the state. The Clinical Practice Guideline was prepared for the NSW Ministry of Health by an expert clinical reference group under the auspice of the state wide Paediatric Clinical Practice Guideline Steering Group.

KEY PRINCIPLES

This guideline applies to all facilities where paediatric patients are managed. It requires the Chief Executives of all Local Health Districts and specialty health networks to have local guidelines / protocols based on the attached Clinical Practice Guideline in place in all hospitals and facilities required to assess or manage children with sore throat.

The clinical practice guideline reflects what is currently regarded as a safe and appropriate approach to the acute management of sore throat in infants and children. However, as in any clinical situation there may be factors which cannot be covered by a single set of guidelines. This document should be used as a guide, rather than as a complete authoritative statement of procedures to be followed in respect of each individual presentation. **It does not replace the need for the application of clinical judgement to each individual presentation.**

USE OF THE GUIDELINE

Chief Executives must ensure:

- Local protocols are developed based on the *Infants and Children: Acute Management of Sore Throat: third edition* Clinical Practice Guideline
- Local protocols are in place in all hospitals and facilities likely to be required to assess or manage paediatric patients with sore throat
- Ensure that all staff treating paediatric patients are educated in the use of the locally developed paediatric protocols.

Directors of Clinical Governance are required to inform relevant clinical staff treating paediatric patients of this new guideline.

REVISION HISTORY

Version	Approved by	Amendment notes
December 2014 GL2014_021	Deputy Secretary, Population and Public Health	Revised policy Assessment and management flowchart removed; Inclusion of clinical scoring system to estimate risk of GAS; information on use of antibiotics in high risk populations; Inclusion of discharge and follow up section; Link to the parent fact sheet replace the actual fact sheet.
March 2006	Director-General	Revised policy

(PD2006_019)		
January 2005 (PD2005_390)	Director-General	New policy

ATTACHMENT

1. *Infants and children: Acute Management of Sore Throat: third edition* Clinical Practice Guideline.

INFANTS AND CHILDREN



Acute Management of Sore Throat: third edition

CLINICAL PRACTICE GUIDELINE

Issue date: December 2014

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A revision of this document is due in 2019

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1 BACKGROUND

1.1 Purpose

These guidelines are aimed at achieving the best possible paediatric care in all parts of the NSW. The document should not be seen as a stringent set of rules to be applied without the clinical input and discretion of the managing professionals. Each patient should be individually evaluated and a decision made as to appropriate management in order to achieve the best clinical outcome.

Field, M.J. & Lohr, K.N. (1990) define clinical practice guidelines as:

*'systematically developed statements to **assist** practitioner and patient decisions about appropriate health care for specific clinical circumstances.'*

(Field MJ, Lohr KN (Eds). Clinical Practice Guidelines: Directions for a New Program, Institute of Medicine, Washington, DC: National Academy Press).

It should be noted that this document reflects what is currently regarded as a safe and appropriate approach to care. However, as in any clinical situation there may be factors which cannot be covered by a single set of guidelines, this document should be used as a guide, rather than as a complete authoritative statement of procedures to be followed in respect of each individual presentation. It does not replace the need for the application of clinical judgment to each individual presentation.

This document represents basic clinical practice guidelines for the acute management of a sore throat. Further information may be required in practice; suitable widely available resources are provided as appendix 2.

Each Local Health District (LHD) and Specialty Health Network is responsible for ensuring that local protocols based on these guidelines are developed. Local Health Districts and Specialty Health Networks are also responsible for ensuring that all staff treating paediatric patients are educated in the use of the locally developed paediatric guidelines and protocols.

In the interests of patient care it is critical that contemporaneous, accurate and complete documentation is maintained during the course of patient management from arrival to discharge.

Parental anxiety should not be discounted:

it is often of significance even if the child does not appear especially unwell.

1.2 Changes from previous clinical practice guideline

The following outlines changes to the guideline:

- Information on Group A beta haemolytic streptococci (GAS) infection
- Overview relevant to the Aboriginal and Torres Strait Islander population
- The assessment and management flowchart has been removed from the guideline
- Current information on viral pharyngitis/tonsillitis and bacterial pharyngitis has been added
- The *Centor Clinical Scoring System* is included to inform clinicians about how to estimate the risk of underlying GAS infection information on the use of antibiotics in high risk populations
- Information on the limited effectiveness of the use of corticosteroids for the routine treatment of acute pharyngitis/tonsillitis
- A discharge and follow up section is now included
- The parent factsheet has been removed from the guideline, replaced with links to the online documents.

1.3 Overview

Sore throat is a common complaint in infants and children and more common during winter months⁹. Sore throat may be the result of pharyngitis or tonsillitis, and the cause may be viral infection or, less commonly, bacterial infection. In children older than five years Group A beta haemolytic streptococci (GAS) infection should be considered as it may be carried in the nasopharyngeal regions of up to 30% of non- indigenous and up to 60% of indigenous children¹².

Streptococcal infections are a common cause of bacterial tonsillitis/pharyngitis and may be associated with very serious complications including scarlet fever, toxic shock syndrome, acute glomerulonephritis and acute rheumatic fever¹. Aboriginal and Torres Strait Islander people have one of the highest incidences of rheumatic fever and acute glomerulonephritis in the world^{3,4}.

A number of other serious conditions need to be considered in children presenting with sore throat:

- Tonsillitis due to Epstein-Barr Virus (EBV)
- Peritonsillar abscess
- Retropharyngeal abscess
- Foreign body
- Epiglottitis
- Toxic ingestion
- Diphtheria.

2 PRINCIPLES OF PRACTICE

2.1 Assessment and management

The taking of a thorough history together with a complete physical examination may give some indication as to the cause of the sore throat but no single clinical finding will determine whether the sore throat is viral or bacterial. It is important to differentiate tonsillitis from pharyngitis as the management may be different.

The age appropriate Standard Paediatric Observation Chart (SPOC) should be used as part of the assessment to aid the clinician in determining how unwell the infant, child or adolescent is & the severity of their illness. Escalating the child's care to increasing the frequency of observations, Clinical Review or Rapid Response according to the local CERS policy should be followed accordingly.

Clinical features which may suggest the infant or child is suffering from a more serious condition include:

- Stridor or respiratory distress
- Muffled voice
- Drooling
- Torticollis
- Asymmetric pharyngeal swelling
- Grey-white pharyngo-tonsillar membrane
- Bruising, petechial or other rash
- Toxic appearance
- Dehydration
- Cervical lymphadenopathy > 2cms
- Child with persistent fever for >48 hours
- Trismus
- Hot potato voice.

If any of above features are present review with a senior colleague/paediatrician. Consider whether hospital admission is required.

2.2 Viral pharyngitis/tonsillitis

Viral infection is more common than bacterial and usually associated with overt viral features such as rhinorrhea, cough (especially hoarse or croupy type), conjunctivitis, oral ulceration and skin rash¹⁰. Viral pathogens may include Adenovirus, Rhinovirus, Enterovirus, Cytomegalovirus (CMV), Coxsackie virus, EBV, Herpes Simplex virus, Parainfluenzae and Influenza A and B.

Vesiculation and ulceration suggest Herpes virus or Coxsackie virus. Conjunctivitis is associated with Adenovirus. Viral cultures are rarely helpful.

2.3 Bacterial pharyngitis/tonsillitis

Group A beta haemolytic streptococci (GAS) is the most common cause of bacterial infection of the pharynx and tonsils in children. It is the most serious infection due to complications of rheumatic fever and acute glomerulonephritis^{1,4}. Though these complications are rare in non-Indigenous Australian children, they remain significant among Indigenous children⁴.

Individual elements of the history and physical examination are not useful predictors of the likelihood of GAS and various clinical scoring systems have been developed to improve accuracy.

The *Centor Clinical Scoring System* can help to identify those children who have a greater chance of having GAS infection. Although the *Centor Score* was developed for adult diagnosis it has been modified and is useful for estimating the risk underlying GAS infection in children.

To calculate the *Modified Centor Score*, assign points using the following criteria⁹.

Table 1: Modified Centor Score

Criteria	Points
Temperature > 38°	1
No cough	1
Tender anterior cervical adenopathy	1
Tonsillar swelling or exudate	1
Age 3 – 14 years	1
Age 15 – 44 years	0
Age > 44 years	-1

The risk of GAS is determined by the total score as follows;

Table 2: Risk of GAS Infection

Total Modified Centor Score	Risk of GAS infection (%)
Score ≥ 4	51 – 53
Score = 3	28 – 35
Score = 2	11 – 17
Score = 1	5 – 10
Score ≤ 0	1 – 2.5

Antibiotic treatment is indicated for scores three and above.

The modified *Centor Clinical Score* can be applied to patients greater than three years of age to assist the clinician regarding the prescription of antibiotics and if this is likely to be beneficial. A person with a history of exposure to another person with proven GAS infection should have antibiotics prescribed⁹.

In practice the majority of children with sore throat do not require any laboratory testing¹¹.

Stomatitis is inflammation of the interior region of the oropharynx (tongue, gums and palate), and should be distinguished from inflammation of the posterior pharynx and tonsils. Stomatitis may be caused by:

- Trauma
- Viruses - including Herpes Simplex and Coxsackie
- Fungi such as candida

- Bacteria
- Unknown causes as in aphthous ulceration.

Pain relief may be needed. If fluid intake is reduced, admission for nasogastric or intravenous hydration may be necessary.

2.4 Testing

Throat swabs

Throat swabs in general are not very useful: the diagnosis takes a few days, some patients are GAS carriers, giving false positive results, and infection within the tonsil may not represent organisms on the surface. Throat or tonsil swabs may be undertaken in children suspected of having a bacterial infection (GAS infection with 3-4 on the *Modified Centor Score*) and may support antibiotic therapy¹².

Serological Testing

The value of serological confirmation of GAS infection (ASOT and anti DNase) in the acute settings is limited because positive results indicate prior infection⁹. Testing may be of clinical significance, particularly for Aboriginal and Torres Strait Islander children³.

Monospot or EBV serology

Epstein Barr Virus (EBV) may present as tonsillitis. Clinically the patient may have a thickened membrane of exudate over the medial tonsillar surface. The monospot test may confirm EBV. It has a sensitivity of over 70% and specificity of over 95%. IgM EBV titre is the most sensitive test used to confirm acute EBV infection.

Rapid Antibody Testing

Currently there are a range of rapid antigen detection tests (RADT) available for the diagnosis of Group A streptococcal infections⁷. 'Point of care' rapid antigen tests for the presence of Group A streptococci in infected throats have been developed overseas where they have been judged useful¹¹. They have not yet been trialed in Australia but are available¹².

2.5 Treatment

Symptomatic treatment

Paracetamol orally 15mg/kg/dose (maximum 1g) QID for 1 -2 days PRN
(max 60mg/kg/DAY, max 4g/24hours)

Refer to the Policy Directive on [Paracetamol \(PD2009_009\)](#)

Ibuprofen orally 5mg/kg/dose (maximum 400mg) TDS PRN for 1-2days

- Avoid use in patients with pre-existing illnesses that may contribute to development of renal failure such as **children with suspected or proven *Gr A streptococcal* infection**.
- Use with caution in patients with asthma.

Encourage oral fluid intake.

Topical anaesthetic (e.g. Xylocaine Viscous ®) is generally not recommended.

Antibiotics

If there is bacterial infection, antibiotics may reduce the duration of symptoms by about a day when compared with simple symptomatic management¹¹. In non-high risk populations complications of GAS infection are rare and often antibiotics are not required. Antibiotics are useful in patients who have symptoms that do not resolve rapidly despite symptomatic treatment¹⁰. High risk populations such as Aboriginal and Torres Strait Islander children are more prone to suppurative and non-suppurative complications of GAS infection and antibiotics can help prevent these complications^{1,4}.

Phenoxymethylpenicillin (Penicillin V) is the antibiotic of choice. An appropriate dose should be used, 15 mg/kg/dose 12 hourly for an appropriate time (10 days)⁶ to eradicate streptococcal infection.

- Maximum dose for children less than 10 years 250mg per dose
- Maximum dose for children greater than 10 years 500mg per dose

Roxithromycin 4mg/kg/dose 12 hourly for 10 days is useful for those allergic to Penicillin⁶.

- Maximum 150mg per dose.

Steroids

Several studies have reviewed the effectiveness of corticosteroid treatment in acute pharyngitis/tonsillitis^{1,5}. Corticosteroid treatment for acute pharyngitis/tonsillitis produces only limited pain relief. Decision making should be individualised to determine the risks and benefits, however corticosteroids should not be used as routine treatment for acute pharyngitis/tonsillitis⁵.

2.6 Admission

Hospital admission is indicated for children with:

- Significant airway obstruction
- Inability to tolerate oral fluids
- Presence of dehydration due to inability to tolerate oral fluids
- Toxicity suggestive of systemic sepsis² (Note: [Refer to CEC Sepsis Kills program](#)).

2.7 Complications to consider

Peritonsillar abscess

Should be considered when there is a history of increasingly sore throat on one side and dysphagia. The tonsil and uvula are displaced to the opposite side and the palate appears swollen on the affected side. Treatment with antibiotics and surgical drainage may be necessary.

Obstructive sleep apnoea

Children with a past history of sleep problems and snoring may experience a worsening of symptoms in the presence of a respiratory infection or tonsillitis. The obstruction is evident by loud snoring, laboured breathing and possible apnoea. Airway support may be required in extreme cases.

2.8 Discharge and follow up

Although a child may be non-toxic when seen, no test can exclude the child becoming toxic and unwell. Parent/caregivers should be advised that if their child's symptoms of sore throat persist for longer than 48 hours, or other symptoms develop to complicate the illness of sore throat, then they should seek urgent medical review. Parent/caregivers should be provided with a parent fact sheet on discharge from the Emergency Department together with written follow-up arrangements for review.

3 APPENDICES

3.1 Appendix 1 - Parent information

The [‘Sore Throat’ Fact Sheet](#) was jointly developed by staff from The Sydney Children’s Hospitals Network and John Hunter Children’s Hospital/ Kaleidoscope.

3.2 Appendix 2 - References

1. Australian Institute of Health and Welfare. Rheumatic Heart Disease: all but forgotten in Australia except among Aboriginal and Torres Strait Islander peoples. Canberra. Australian Institute of Health and Welfare Bulletin 2004 (August). Issue 16.
2. Ayanruoh S, Wasseem M, Quee F, Humphrey A, Reynolds T. Impact of rapid streptococcal test on antibiotic use in a paediatric emergency department. *Paediatric Emergency Care*. 2009; 25(11): 748-50.
3. Carapetis J, Brown A, Maguire G, Walsh W, Noonan S, Thompson, D, Rémond M, Remenyi B, Steer A, Lennon, et al. The Australian Guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease. (2nd Edition.) Canberra: Menzies School of Health Research; 2012.
4. Department of Health and Families. Northern Territory Guidelines for Acute Post-Streptococcal Glomerulonephritis. Darwin; Northern Territory Government; 2010.
5. Hayward G, Thompson M, Heneghan C, Perera R, Del Mar C, Glasziou P. Corticosteroids for pain relief in sore throat: systematic review and meta-analysis. *BMJ*, 2009 6th August; 339:b2976.
6. Kilham H, Alexander S, Wood N, Isaacs D. The Children's Hospital at Westmead: Handbook (2nd Edition). Sydney: McGraw-Hill Australia PTY LTD; 2009.
7. Maltezou HC, Tsagris V, Antoniadou A, Galani L, Douros C, Katsarolis I, Maragos A, Raftopoulos V, Biskini P, Kanellakopoulou K, Fretzayas A, Papadimitriou T, Nicolaidou P, Giamarellou H. Evaluation of a rapid antigen detection test in the diagnosis of streptococcal pharyngitis in children and its impact on antibiotic prescription. *Journal of Antimicrobial Chemotherapy*. 2008; 62(6):1407-12.
8. NSW Health. Paracetamol Use (Policy Directive PD2009_009) [internet]. 2009 [updated 26 Feb 2009; cited 24 Jan 2013]. Available from: http://www0.health.nsw.gov.au/policies/pd/2009/pdf/PD2009_009.pdf
9. Pelucchi C, Ginoryan L, Galeone, Esposito S, Huovinen P, Little P, Verheij T. ESMID: Guidelines for the Management of Acute Sore Throat. *Clinical Microbiology and Infection*. 2012 (April); 18(Supplement 1):1-28.
10. Scottish Intercollegiate Guideline Network. Management of Sore Throat and Indications for Tonsillectomy – A National Clinical Guideline [internet]. 2010 [updated April 2010; cited 24 Jan 2013]. Available from; <http://www.sign.ac.uk/pdf/sign117.pdf>
11. Spinks A, Glasziou PP, Del Mar CB. Antibiotics for sore throat. *Cochrane Database of Systematic Reviews* [internet] 2010 [cited 24 Jan 2013]. Available from <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD000023.pub3/abstract>
12. Stanford T, Bisno A, ET AL. Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Disease Society of America- IDSA Guidelines. *Clinical Infectious Diseases*. 2012: September 9 91-17).
13. Therapeutic Guidelines (eTG Complete). Antibiotics Therapeutic Guidelines [internet] 2012 [cited 24 Jan 2013]. Available from <http://etg.hcn.com.au/?acc=36422>

3.3 Appendix 3 - Expert Working Group

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