Clinical Policy Title: Tonsillectomy and (or) adenoidectomy in children less than 5 years old

Clinical Policy Number: 11.03.04

Effective Date: October 1, 2014
Initial Review Date: April 16, 2014
Most Recent Review Date: May 18, 2016
Next Review Date: May 2017

Related policies:
None.

ABOUT THIS POLICY: Keystone First has developed clinical policies to assist with making coverage determinations. Keystone First’s clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies, along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of “medically necessary,” and the specific facts of the particular situation are considered by Keystone First when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. Keystone First’s clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. Keystone First’s clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Keystone First will update its clinical policies as necessary. Keystone First’s clinical policies are not guarantees of payment.

Coverage policy

Keystone First considers the tonsillectomy and/or adenoidectomy to be clinically proven and, therefore, medically necessary when the following criteria are met:

I. **Tonsillectomy** is medically necessary for:
   A. Members with the following history:
      1. Seven or more episodes (lifetime) of throat infections.
      2. Five or more episodes of throat infections in each of the preceding two years.
      3. Three or more episodes of sore throat in each of the preceding three years caused by bacteria, evidenced by temperature greater than 101°F, swollen or tender neck glands, coating on the tonsils or a positive test for strep throat adenotonsillitis.
B. Members with well-documented medical records of clinical features (strep throat plus the presence of one or more qualifies as a counting episode):
   1. Temperature greater than 100.94°F (38.3°C).
   2. Cervical lymph nodes (1 cm tender/enlarged or >1.5 cm if nontender).
   3. Coating on the tonsils.

C. Members with recurrent throat infection not meeting ANY of the criteria stated in this policy should be assessed for modifying factors:
   1. Antibiotic allergy/intolerance.
   2. History of peritonsillar abscess.
   3. Periodic fever, aphthous stomatitis (PFAPA).
   4. Pharyngitis and adenitis.

D. Members with obstructive tonsillar hypertrophy with:
   1. 3+/4+ tonsillar enlargement by physical examination.
   2. Normal palate by physical examination with one of the following:
      i. Hyponasal/hypernasal speech.
      ii. Snoring/mouth breathing ≥12 weeks.
      iii. Sleep apnea.
      iv. Persistent drooling.
   3. Swallowing impairment ≥six months, with one of the following:
      i. Weight loss.
      ii. Failure to thrive.
      iii. Dysphagia with solids.

E. Members with diagnosis of sleep-disordered breathing (SDB) for a child less than 3 years old with documentation of all of the following:
   1. Tonsillar hypertrophy.
   2. Chronic SDB (more than three months in duration).
   3. Reports by child's parent or caregiver of regular episodes of nocturnal choking, gasping, apnea or breath-holding.

F. Members with diagnosis of obstructive sleep apnea (OSA) with documentation of all of the following:
   1. Tonsillar hypertrophy.
   2. A polysomnogram with an apnea-hypopnea index (AHI) greater than 1.0.

G. Suspected tonsillar malignancy.
   - Tonsillar asymmetry is the most frequent sign of a malignancy; asymmetry is often benign. Signs of malignancy include fever, night sweats, weight loss, dysphagia and adenopathy.

H. Tonsillar hemorrhage.
   - Often a result of recurrent tonsillitis or tonsillar hyperplasia in pediatric patients.
II. Keystone First considers adenoidectomy medically necessary for members with the following conditions:
   A. Members diagnosed with chronic (≥12 weeks in duration) adenoiditis with rhinorrhea, despite a minimum of three weeks of appropriate antibiotic treatment.

   B. Members diagnosed with chronic (≥12 weeks in duration) rhinosinusitis, despite a minimum of three weeks of appropriate antibiotic treatment and one or more of the following:
      1. Cat Scan (CT) findings suggestive of obstruction or infection, including, but not limited to, air fluid levels, air bubbles, significant mucosal thickening, inflammation of all sinuses or diffuse opacification.
      2. Nasal endoscopy findings suggestive of significant disease.
      3. Physical exam findings suggestive of chronic/recurrent disease (i.e., mucopurulence, erythema, edema, inflammation).

   C. Four or more episodes of recurrent adenoiditis with purulent rhinorrhea in the prior 12 months in a child less than 12 years old. At least one episode should be documented by intranasal examination or diagnostic imaging.

   D. Members diagnosed with adenoid hypertrophy and chronic otitis media with effusion (OME) in children 4 years old or older with a history of prior failed tube tympanostomy, when done in conjunction with either a) myringotomy or b) tube tympanostomy, when there is no nasal obstruction, recurrent sinusitis or chronic sinusitis.

   E. Children with abnormal polysomnography with SDB and tonsil hypertrophy. Adenoid hypertrophy documented by imaging (for example, lateral neck X-ray), nasopharyngoscopy or endoscopy with symptomatic airway obstruction as demonstrated by any of the following:
      1. SDB with documentation of abnormalities of respiratory pattern or the adequacy of ventilation during sleep, including, but not limited to, snoring, mouth breathing and pauses in breathing.*
      2. A condition related to SDB (including, but not limited to, growth retardation, poor school performance, enuresis and behavioral problems) that is likely to improve after adenoidectomy.
      3. SDB in a child less than 3 years old with documentation of symptoms for more than three months in duration and the child's parent or caregiver reports regular episodes of nocturnal choking, gasping, apnea or breath-holding.
      4. OSA as diagnosed by polysomnogram with an AHI greater than 1.0.
      5. Adenoidectomy is considered medically necessary for individuals of any age for suspected adenoid tumor based on imaging (for example, CT), nasopharyngoscopy or endoscopy.

*Note: Documentation of SDB can be made on the basis of physical and history only and does not require polysomnography. A history of snoring alone is not sufficient to make a diagnosis of SDB.

III. Anesthesia guidelines

<table>
<thead>
<tr>
<th>Recommendations for anesthesia evaluation in children under age 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a. Severe OSA:</strong></td>
</tr>
<tr>
<td>1. In general, sedative premedication and long-acting opioids</td>
</tr>
<tr>
<td>are best avoided in patients with severe OSA. Inhalation</td>
</tr>
<tr>
<td>induction is preferred, as airway obstruction commonly</td>
</tr>
<tr>
<td>occurs during induction, and children with associated</td>
</tr>
<tr>
<td>craniofacial anomalies may prove to be difficult to</td>
</tr>
<tr>
<td>intubate.</td>
</tr>
<tr>
<td>2. Consideration should be given to the use of a small dose</td>
</tr>
<tr>
<td>of fentanyl to supplement simple analgesia,</td>
</tr>
</tbody>
</table>
b. Anesthesia guidelines for members with sleep apnea:

- The most common indication for tonsillectomy in children younger than 3 or 4 years old is severe upper airway obstruction with or without sleep apnea. Children in this category have altered control of respiration because of chronic nocturnal hypoxia and hypercarbia, and respond in an unpredictable fashion to residual anesthetics and opioid medications in the recovery room. Furthermore, while one would expect airway obstruction and sleep apnea to rapidly resolve after removal of the tonsils, virtually all patients in this category have residual significant upper airway obstruction in the postoperative period that resolves over several days, and as many as 35 percent of children will ultimately not have significant improvement in sleep airway obstruction. These children are therefore not candidates for ambulatory surgery. Recently, a study from The Johns Hopkins Hospital demonstrated that children (1) with mild sleep apnea, (2) over the age of 4 and (3) without complicating conditions, such as trisomy 21 or craniofacial anomalies, could be discharged home after tonsillectomy, while children outside of this group generally required electronic monitoring overnight after tonsillectomy.

Note: In Pennsylvania, case-by-case determinations will be made for requests for adenoidectomy in children less than 12 years old with fewer than four episodes of adenoiditis with purulent rhinorrhea in the past year.

Requests for adenoidectomy in adolescents and adults will be assessed on a case-by-case basis since such requests are so rare and there are no evidence-based guidelines in this age group.

Request for adenoidectomy for recurrent otitis media with effusion (OME) in children under 4 years old will be reviewed on a case-by-case basis weighing the anesthesia risks and the surgical benefits.

Limitations:

All other indications for tonsillectomy and/or adenoidectomy are not medically necessary. American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) guidelines state the following:

- The above criteria pertain only to complete tonsillectomy, with or without adenoidectomy, and do not apply to tonsillotomy, intracapsular surgery, or any partial removal of a tonsil because of the relatively sparse high-quality published evidence on these techniques and limited long-term follow-up.

- Children with diabetes mellitus, cardiopulmonary disease, craniofacial disorders, congenital anomalies of the head and neck region, sickle cell disease, and other coagulopathies or immunodeficiency disorders.

These recommendations are widely accepted as the standard of care for this procedure in children and are supported by extensive clinical trial data.
Alternative covered services:

Physician visits with watchful waiting, close monitoring and accurately documenting episodes of pharyngotonsillitis in children with seven episodes in the past year, five per year in the past two years, or three per year in the past three years.

Background

Tonsillectomy is the second most common ambulatory surgical procedure performed on children in the United States. In 2006, there were 530,000 tonsillectomies performed in children younger than 15 years old, constituting 16 percent of all ambulatory surgery in this age group. The only procedure with greater frequency was myringotomy with insertion of tube, for which 667,000 procedures were reported the same year.

Between 1915 and the 1960s, tonsillectomy was the most frequently performed surgical procedure in the United States. Data in 1993 from the National Hospital Discharge Survey, however, noted a decrease of more than 50 percent in inpatient tonsillectomy rates from 1977 to 1989. Similar reports from 1978 to 1986 showed the rate of tonsillectomy for treatment of throat infections declined; however, the frequency of SDB as the primary indication for the procedure increased. A recent study reported the overall incidence rates of tonsillectomy have significantly increased in the past 35 years, with SDB being the primary indication for surgery.

The two most common indications for tonsillectomy are recurrent throat infections and SDB. Throat infections are a common reason to see a primary care physician and often result in antibiotic treatment. The costs of outpatient visits and the medications prescribed for sore throats, including antibiotics, are substantial. Indirect costs associated with throat infections and SDB are substantial due to missed school and loss of time from work for caregivers.

Treatment of SDB is associated with an increase in health care utilization and cost. Children with SDB, compared with controls, have a significantly higher rate of antibiotic use, 40 percent more hospital visits, and an overall elevation of 215 percent in health care usage, mostly from increased respiratory tract infections. Children with tonsillar disease, including children with throat infections and SDB, also showed significantly lower scores on several quality of life (QoL) subscales including general health, physical functioning, behavior, bodily pain and caregiver impact when compared with healthy children.

SDB represents a spectrum of disorders ranging in severity from primary snoring to OSA. The prevalence of OSA in the pediatric population is 1 percent to 4 percent; as many as 10 percent of children have primary snoring. Up to 30 percent to 40 percent of children with clinically diagnosed SDB exhibit behavioral problems that include enuresis, hyperactivity, aggression, anxiety, depression and somatization. OSA is also associated with poor school performance and a decrease in QoL. The QoL of children with OSA is similar to children with chronic conditions such as asthma and juvenile rheumatoid arthritis.

A common complication of tonsillectomy is bleeding during or after the surgery. In published reports, the rate of primary hemorrhage (within 24 hours of surgery) has ranged from 0.2 percent to 2.2 percent and the rate of secondary hemorrhage (more than 24 hours after surgery) from 0.1 percent to 3 percent. Hemorrhage after tonsillectomy may result in readmission for observation or in further surgery to control bleeding.
The palatine tonsils are lymphoepithelial organs located at the junction of the oral cavity and the oropharynx. They are strategically positioned to serve as secondary lymphoid organs, initiating immune responses against antigens entering the body through the mouth or nose. The greatest immunological activity of the tonsils is found between the ages of 3 and 10. As a result, the tonsils are most prominent during this period of childhood and subsequently demonstrate age-dependent involution.

The importance of tonsillectomy as an intervention relates to its documented benefit to child QoL. For example, when compared with healthy children, children with recurrent throat infections have more bodily pain and poorer general health and physical functioning. Tonsillectomy may improve QoL by reducing throat infections, health care provider visits and the need for antibiotic therapy. Similarly, SDB is associated with cognitive and behavioral impairment in children that usually improves after tonsillectomy, along with QoL, sleep disturbance and vocal quality.

Tonsillar and adenoid hypertrophy is recognized as the most common cause of SDB in children. Upper airway obstruction is a consequence of abnormal upper airway anatomy, upper airway dysfunction or both. Abnormal airway anatomy can be congenital, as in Pierre Robin syndrome, or acquired, as in adenotonsillar hypertrophy. Adenotonsillar hypertrophy is the primary cause of obstructive sleep apnea syndrome (OSAS) in children ages 2 to 6. Obesity, with increased airway soft tissue, is frequently responsible for OSAS in teenagers. Airway dysfunction may be the result of central nervous system dysfunction, neuromuscular diseases or hypotonia. Children with OSAS commonly have a combination of obstructive and central components. Decreased upper airway muscle tone and an inadequate ventilatory response to hypercarbia and hypoxemia are responsible for this central component. The acute airway inflammation that accompanies upper respiratory tract infection (URTI) in addition to residual amounts of inhaled anesthetic agents can significantly aggravate a child's baseline level of airway obstruction.

Children with OSAS undergoing adenotonsillectomy have a 10 percent to 30 percent incidence of perioperative complications. These complications include laryngospasm, pulmonary edema, postoperative airway obstruction and respiratory arrest. Risk factors for these complications include the following: age younger than 3 years, severe OSAS on polysomnography, infants born prematurely, right-ventricle hypertrophy, pulmonary hypertension, recent URTI, signs of respiratory distress, trisomy 21, craniofacial anomalies, neuromuscular disease, failure to thrive and obesity. An oxygen saturation nadir of less than 80 percent during the sleep study has been noted to increase a child's probability of postoperative complications to 50 percent. Children undergoing urgent, as opposed to elective, tonsillectomy have a two-fold increased risk of postoperative complications. Many studies have shown that children younger than 3 years have a high rate of post adenotonsillectomy airway obstruction and respiratory complications, and therefore should be admitted overnight for observation and monitoring, including cardiorespiratory monitoring and continuous pulse oximetry.

The goal of the perioperative evaluation of children with OSAS is to determine whether these risk factors for postoperative morbidity exist. Significant upper airway obstruction may lead to snoring, failure to thrive and cyanosis during sleep, daytime somnolence, or any combination of these. Because many children who snore do not have OSAS, snoring cannot be used as a predictor of morbidity. Right-ventricular dysfunction can cause jugular venous distention, hepatomegaly, peripheral edema and failure to thrive. Preoperatively, these children should have laboratory testing, including electrolytes (looking for high bicarbonate as a metabolic response to chronic hypercarbia), baseline room-air oxygen saturation (pulse oximetry) and a hematocrit (looking for elevation as a response to chronic hypoxia). Most surgeons also request prothrombin time, partial thromboplastin time and international normalized ratio to identify patients at increased risk of perioperative bleeding. Although a chest radiographic, ECG and echocardiographic evaluation may be performed, only the findings of a high-velocity tricuspid regurgitant jet or abnormal
in the right ventricle is predictive of right ventricle hypertension. The presence and severity of right-ventricular dysfunction and pulmonary hypertension have profound implications on the anesthetic approach to these patients. Finally, the details of the sleep study, if performed, should be reviewed. Because of the expense of sleep studies and the unavailability of facilities and scarcity of pediatric sleep centers, many children undergoing adenotonsillectomy have the diagnosis of OSAS made on clinical grounds.

Postoperatively, these high-risk children, especially those younger than 3 years, should be admitted to the pediatric intensive care unit or other highly monitored locations because the incidence of obstructive events and pulmonary complications may increase during the first 24 hours after surgery because of narrowing of the airway caused by edema, secretions, or both.

**Searches**

Keystone First searched PubMed and the databases of:

- UK National Health Services Centre for Reviews and Dissemination.
- Agency for Healthcare Research and Quality’s National Guideline Clearinghouse and other evidence-based practice centers.
- The Centers for Medicare & Medicaid Services (CMS).

Searches were conducted in April 28, 2016, using the terms “tonsillectomy,” “adenoidectomy,” “tonsillitis,” “OSA” and “sleep-disordered breathing” (MeSH).

We included:

- **Systematic reviews**, which pool results from multiple studies to achieve larger sample sizes and greater precision of effect estimation than in smaller primary studies. Systematic reviews use predetermined transparent methods to minimize bias, effectively treating the review as a scientific endeavor, and are thus rated highest in evidence-grading hierarchies.
- **Guidelines based on systematic reviews**.
- **Economic analyses**, such as cost-effectiveness, and benefit or utility studies (but not simple cost studies), reporting both costs and outcomes — sometimes referred to as efficiency studies — which also rank near the top of evidence hierarchies.

**Findings**

A growing body of evidence indicates tonsillectomy is an effective treatment for SDB, based on the idea that tonsillar hypertrophy is a principal cause. A meta-analysis of case series and a recent study showed tonsillectomy was effective at improving or resolving SDB in most children. There is also evidence that behavioral parameters, school performance and QoL improve after resolution of this sleep disorder. Adenotonsillectomy to treat OSAS is associated with a significantly higher rate of postoperative respiratory complication in children younger than 3 years old, compared with children ages 3 to 5 years. Our results support hospital admission for all patients younger than 3 years undergoing adenotonsillectomy for treatment of OSAS.

Adenotonsillectomy is effective in reducing the number of episodes of sore throat and days with sore throats in children, the gain being more marked in those most severely affected. The size of the effect is modest, but there may be a benefit to knowing the precise timing of one episode of pain lasting several days — it occurs immediately after surgery as a direct consequence of it.
It is clear some children get better without any surgery, and while removing the tonsils will always prevent “tonsillitis,” the impact of the procedure on “sore throats” due to pharyngitis is much less predictable.

Policy updates:

1. Updated clinical trials.
2. Changed wording in section b, #2. Cervical lymph nodes (-1 cm tender/enlarged or -2 >1.5 cm tender/enlarged)

Summary of clinical evidence:

<table>
<thead>
<tr>
<th>Citation</th>
<th>Content, Methods, Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shapiro NL et al. (1999)</td>
<td></td>
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<tr>
<td>Adenotonsillectomy in the very young patient — Cost analysis of two methods of postoperative care</td>
<td>Key points:</td>
</tr>
<tr>
<td></td>
<td>• Postoperative management of the patient younger than 36 months undergoing adenotonsillectomy has been the subject of many debates.</td>
</tr>
<tr>
<td></td>
<td>• Concerns for early postoperative complications, such as airway obstruction, emesis, dehydration and hemorrhage, have led many physicians to consider overnight hospitalization following adenotonsillectomy in very young children.</td>
</tr>
<tr>
<td></td>
<td>• Trends in health care management have increasingly focused on cost-effective means of treating patients to limit unnecessary expenditures on the part of the patient, physician and hospital facility.</td>
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<tr>
<td></td>
<td>• The purpose of this retrospective review was to analyze two methods of early postoperative management in children less than 36 months old undergoing adenotonsillectomy at the Children's Hospital, San Diego, from 1992 to 1997.</td>
</tr>
<tr>
<td></td>
<td>• The review consisted of 307 cases. Same-day discharge was compared with overnight inpatient observation based on the cost analysis of these two methods of postoperative care.</td>
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<td></td>
<td>• Postoperative care was based on length of stay in the recovery room and as an inpatient.</td>
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<tr>
<td></td>
<td>• Expense of postoperative care was based on cost calculation for the recovery room and overnight hospitalization. Of the 307 patients, 194 went home the day of surgery and 113 were observed overnight in the hospital. Average hospital cost was higher in the outpatient group than in the inpatient group (P &lt; 0.001).</td>
</tr>
<tr>
<td></td>
<td>• This difference reflects longer recovery room stay (350 min.) in the outpatient group compared to the inpatient group (108 min.) (P &lt; 0.001).</td>
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<tr>
<td></td>
<td>• Outpatient adenotonsillectomy in the patient under 36 months may be safe; however, prolonged recovery room stays may actually make outpatient surgery less cost-effective than overnight admission. Recovery room costs are significantly higher per unit time than costs of inpatient hospitalization. Further investigation of cost-effective outpatient observation units may improve cost containment in the outpatient surgical setting.</td>
</tr>
<tr>
<td>Werle AH et al. (2003)</td>
<td></td>
</tr>
<tr>
<td>A retrospective study of tonsillectomy in the under 2-year-old child: Indications, perioperative management and complications. To</td>
<td>Key points:</td>
</tr>
<tr>
<td></td>
<td>• The medical records of 94 patients under 2 years old undergoing tonsillectomy between May 1, 1995, and May 31, 2000, were reviewed. The methods of tonsil and adenoid excision were noted, as was the use of perioperative steroids, antibiotics and antiemetics. Outcome measures studied included the duration of postoperative inpatient observation, complications, time to first oral intake, prevalence of postoperative vomiting, type and duration of respiratory support, and improvement relative to operative indications.</td>
</tr>
</tbody>
</table>
Citation: Abolahassen F et al. (2009). Prevalence of post-tonsillectomy bleeding as day-case surgery with combination method; cold dissection tonsillectomy and bipolar diathermy hemostasis

Content, Methods, Recommendations

Eighty-two patients (87%) underwent tonsillectomy and adenoidectomy (T&A). Twelve patients (13%) underwent tonsillectomy without adenoidectomy. Patient ages ranged from 12 months to 23 months (mean 19.6+/-3.1). Indications included OSA in 51 patients (54%), chronic or recurrent tonsillitis in 30 (32%), both OSA and infection in 11 (12%), and acute tonsillitis with airway obstruction in two (2%). Comorbid conditions were numerous. Preoperative polysomnograms were obtained for eight patients (8%). Hospital stays ranged from four hours to 16 days. Complications included hemorrhage in four patients (4%) and pneumonia in two (2%). Oxygen was required after discharge from the recovery room in 27 patients (29%), with seven more (7%) requiring reintubation, continuous positive airway pressure or nasopharyngeal airways. Of the 88 patients on oral diets, only five (5%) took longer than 24 hours to resume oral intake. Two patients (2%) experienced significant emesis after surgery. Four patients (4%) required treatment for dehydration after discharge.

Tonsillectomy is a procedure with low morbidity in the otherwise healthy child under 2 years old. However, we advocate routine postoperative overnight inpatient observation in this age group. We found that young children with comorbid conditions had a higher incidence of complications and required special postoperative management strategies.

Key points:

- Post-tonsillectomy hemorrhage remains an important factor in determining the safety of performing tonsillectomy as a day-case procedure. The aim of this study was to determine the safety of day-case tonsillectomy (DCT) by using combination method, cold dissection tonsillectomy and bipolar diathermy hemostasis.
- A prospective randomized clinical study was conducted on the patients who had undergone DCT. There were two groups (DCT and control group) with each group consisting of 150 cases. The mean age was 15.97 (range 3–26) years for the former and 15 years (range 2–48 years) for the latter. Tonsillectomy was performed by using combination method; cold dissection and hemostasis were achieved by ligation of vessels with bipolar electocautery.
- We found three cases of post-tonsillectomy bleeding in the DCT group and four cases in the control group. There was no statistically significant difference in the rate of post-operative hemorrhage between the two groups.
- The findings suggest the safety of the combination of cold dissection tonsillectomy and bipolar diathermy hemostasis as DCT.

Table Relationship of age to American Society of Anesthesiologists physical status and mortality

<table>
<thead>
<tr>
<th></th>
<th>All ages</th>
<th>&lt;1 month</th>
<th>1–5 months</th>
<th>6–12 months</th>
<th>&gt;12 months</th>
<th>Mortality by ASA status</th>
</tr>
</thead>
<tbody>
<tr>
<td>++ Data from Pediatric Perioperative Cardiac Arrest Registryα</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of casesβ</td>
<td>262</td>
<td>65</td>
<td>64</td>
<td>32</td>
<td>101</td>
<td>—</td>
</tr>
</tbody>
</table>

β: Number of cases is from 262 to 101, with a notable drop in cases over time.
<table>
<thead>
<tr>
<th>ASA PS</th>
<th>1–2</th>
<th>3</th>
<th>4–5</th>
<th>Mortality by Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50</td>
<td>6</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>ASA PS</td>
<td>76</td>
<td>5</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>ASA PS</td>
<td>136</td>
<td>54</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td>Mortality by Age</td>
<td>122 (47%)</td>
<td>43 (66%)</td>
<td>25 (39%)</td>
<td>12 (38%)</td>
</tr>
</tbody>
</table>

ASA PS, American Society of Anesthesiologists physical status.

a Data from Pediatric Perioperative Cardiac Arrest (POCA) Registry.
b Number of cases of cardiac arrest submitted to the POCA Registry.
c Number reported (or percentage of deaths reported) for age group.
d Fewer than expected by chance alone (p < 0.01 by Chi square).
e More than expected by chance alone (p < 0.01 by Chi square).


**Glossary**

**Adenitis** — A general term for an inflammation of a gland or lymph node.

**Adenoids** — Organs of the lymphatic system located in the nasal cavity above the roof of the mouth. The purpose of the adenoids is to capture germs entering the body through the mouth and nose.

**Aphthous stomatitis** — The medical term for "canker sores."

**Cervical adenopathy** — Enlargement of the cervical lymph nodes, located on both sides of the neck.

**Group A β-hemolytic streptococcus (GABHS)** — Bacteria commonly associated with serious throat infections in children.

**Medically Necessary** — A service or benefit is Medically Necessary if it is compensable under the Medical Assistance (MA) Program and if it meets any one of the following standards:

- The service or benefit will, or is reasonably expected to, prevent the onset of an illness, condition or disability.
- The service or benefit will, or is reasonably expected to, reduce or ameliorate the physical, mental or developmental effects of an illness, condition, injury or disability.
- The service or benefit will help the member achieve or maintain maximum functional capacity in performing daily activities, taking into account both the functional capacity of the member and those functional capacities that are appropriate for members of the same age.

**Obstructive sleep apnea (OSA)** — A condition characterized by cessation of breathing during sleep, caused by temporary collapse of the upper airway.

**PFAPA** — A medical condition characterized by recurrent episodes of periodic fever, aphthous stomatitis, pharyngitis and adenitis.

**Pharyngitis** — The medical term for a "sore throat."
**Polysomnography** — Also known as a "sleep study." A test used to diagnose sleep disorders.

**Sleep-disordered breathing (SDB)** — Condition characterized by abnormalities of respiratory pattern or the adequacy of ventilation during sleep, including snoring, mouth breathing and pauses in breathing.

**Throat infection** — A sore throat caused by viral or bacterial infection of the pharynx, palatine tonsils or both, which may or may not be culture positive for group A streptococcus. This includes strep throat and acute tonsillitis, pharyngitis, adenotonsillitis, or tonsillopharyngitis.

**Tonsillectomy** — A surgical procedure performed with or without adenoidectomy that completely removes the tonsil, including its capsule, by dissecting the peritonsillar space between the tonsil capsule and the muscular wall.

**Tonsils** — Organs of the lymphatic system located at the back of the throat. The purpose of the tonsils is to capture germs entering the body through the mouth and nose.

**References**

**Professional society guidelines/other:**


**Peer-reviewed references:**


Clinical trials:

Searched clinicaltrials.gov on April 28, 2016, using terms “tonsillectomy,” “adenoidectomy,” “tonsillitis,” “OSA” and “sleep-disordered breathing.” | Open Studies. Seven studies found, two relevant.


CMS National Coverage Determinations (NCDs):

No NCDs identified as of the writing of this policy.

Local Coverage Determinations (LCDs):

No LCDs identified as of the writing of this policy.

Commonly submitted codes

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

<table>
<thead>
<tr>
<th>CPT Code</th>
<th>Description</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>42820</td>
<td>Tonsillectomy and adenoidectomy; younger than age 12.</td>
<td></td>
</tr>
<tr>
<td>42821</td>
<td>Tonsillectomy and adenoidectomy; age 12 or over.</td>
<td></td>
</tr>
<tr>
<td>42825</td>
<td>Tonsillectomy, primary or secondary; younger than age 12.</td>
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<tr>
<td>42826</td>
<td>Tonsillectomy, primary or secondary; age 12 or over.</td>
<td></td>
</tr>
<tr>
<td>42830</td>
<td>Adenoidectomy, primary; younger than age 12.</td>
<td></td>
</tr>
<tr>
<td>42835</td>
<td>Adenoidectomy, secondary, younger than age 12.</td>
<td></td>
</tr>
<tr>
<td>42870</td>
<td>Excision or destruction lingual tonsil, any method (separate procedure).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICD-10 Code</th>
<th>Description</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>G47.33</td>
<td>Obstructive sleep apnea (adult) (pediatric).</td>
<td></td>
</tr>
<tr>
<td>J03.90</td>
<td>Acute tonsillitis, unspecified.</td>
<td></td>
</tr>
<tr>
<td>J03.91</td>
<td>Acute recurrent tonsillitis, unspecified.</td>
<td></td>
</tr>
<tr>
<td>J34.01</td>
<td>Chronic tonsillitis.</td>
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</tr>
<tr>
<td>J35.01</td>
<td>Chronic adenoiditis.</td>
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</tr>
<tr>
<td>J35.1</td>
<td>Hypertrophy of tonsils.</td>
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</tr>
<tr>
<td>J35.2</td>
<td>Hypertrophy of adenoids.</td>
<td></td>
</tr>
<tr>
<td>J35.3</td>
<td>Hypertrophy of tonsils with hypertrophy of adenoids.</td>
<td></td>
</tr>
<tr>
<td>J35.8</td>
<td>Other chronic disease of tonsils and adenoids.</td>
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</tr>
<tr>
<td>J35.9</td>
<td>Chronic disease of tonsils and adenoids, unspecified.</td>
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<tr>
<td>J36</td>
<td>Peritonsillar abscess</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HCPCS Level</th>
<th>Description</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>No applicable codes</td>
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</tr>
</tbody>
</table>

**Note:** The American Academy of Otolaryngology-Head and Neck Surgery has published a multidisciplinary, evidence-based clinical practice guideline, "Tonsillectomy in Children.” The new guideline provides evidence-based recommendations on the preoperative, intraoperative and postoperative care and management of children ages 1 to 18 years under consideration for tonsillectomy and is intended for all clinicians in any setting who care for these patients. This guideline also addresses practice variation in medicine and the significant public health implications of tonsillectomy (Hayes, Jan. 5, 2011).