Clinical Policy Title: Orthognathic surgery

Clinical Policy Number: 14.03.01

Effective Date: September 1, 2013
Initial Review Date: May 13, 2013
Most Recent Review Date: June 15, 2016
Next Review Date: June 2016

Related Policies:

CP#14.02.02 Temporomandibular joint disorder

ABOUT THIS POLICY: Arbor Health Plan has developed clinical policies to assist with making coverage determinations. Arbor Health Plan’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 Arbor Health Plan 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. Arbor Health Plan’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. Arbor Health Plan’s clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, Arbor Health Plan will update its clinical policies as necessary. Arbor Health Plan’s clinical policies are not guarantees of payment.

Coverage policy

Arbor Health Plan considers the correction of facial skeletal deformities by orthognathic surgery to be a covered benefit when the following criteria are met (AAOMS, 2013):

Anatomic criteria for orthognathic surgery:

- Antero-posterior discrepancies ≥ 2 standard deviations from norm (norm = 2mm):
  - Maxillary/mandibular incisors horizontal overjet ≥ 5mm; or zero to negative.
  - Molar relation discrepancy ≥ 4mm.

- Vertical discrepancies ≥ 2 standard deviations from norm:
  - Open bite:
    - No vertical overlap of anterior teeth.
    - Uni-or-bilateral posterior open bite > 2mm.
  - Deep overbite:
    - Impingement or irritation of soft tissues.
    - Supereruption of dentoalveolar segment due to lack of occlusion.
  - Transverse discrepancies ≥ 2 standard deviations from norm.
  - Asymmetries > 3mm with corresponding occlusal asymmetry.
Functional criteria and documentation requirements:

Along with preauthorization requests, providers must submit a written explanation of the patient’s clinical course, including dates, nature and outcomes of previous treatments; pre-treatment imaging studies; and detailed descriptions of functional impairments considered to be direct results of anatomic abnormalities.

For example:

- Sleep apnea documented by sleep studies and failure of non-surgical treatments.
- Persistent chewing and swallowing difficulties where other causes have been ruled out.
- Malnutrition, significant weight loss or failure to thrive attributable to facial skeletal deformity.
- Speech dysfunction attributed to deformity by speech or language pathologist.

Limitations:

Arbor Health Plan considers the correction of facial skeletal deformities by orthognathic surgery to be medically unnecessary for individuals not meeting the anatomical and functional criteria listed above, however these may be reviewed on a case by case.

Three-dimensional virtual planning of orthognathic surgery is considered experimental and investigational, and is not a covered benefit.

Alternative covered services:

None.

Background

Orthognathic surgical procedures are used to correct improper alignment of upper and lower jaws when such misalignment cannot be corrected by movement of teeth (orthodontics) within existing configurations of bone alone. Jaw misalignment problems can be evidenced as functional (chewing, speech or swallowing problems; difficulty breathing during sleep [sleep apnea]) or esthetic (open bite, protruding or receding chin).

The surgeon chooses from among available and often eponymously named specific procedures (e.g., Le Fort I, II and III maxillary osteotomies; mandibular genioplasty) for a variety of technical, anatomical and other patient-related reasons.

Orthognathic surgery is an invasive and complex intervention reserved for defects not amenable to less drastic measures.

Searches

Arbor Health Plan searched PubMed and the following databases:

- UK National Health Services Center for Reviews and Dissemination.
**Findings**

- Systematic review evidence for orthognathic surgery is very limited; all reviewers cite insufficient evidence for definitive answers to their review questions.
- As for any invasive procedure, surgery should be limited to anatomic or functional defects unable to be corrected by less drastic measures such as orthodontics.

**Policy updates:**

Brignardello-Petersen (2015) conducted a systematic review of 11 trials that assessed the effects of antibiotic prophylaxis for preventing surgical site infection (SSI) in people undergoing orthognathic surgery. Long-term antibiotic prophylaxis reduced the risk of SSI (plausible effects range between a 76% to a 0.26% relative reduction in SSI with long-term antibiotic prophylaxis) (472 participants; RR 0.42, 95% CI 0.24 to 0.74; moderate-quality evidence). There was uncertainty surrounding the relative effects of short-term antibiotics compared with a single dose (220 participants; RR 0.34, 95% CI 0.09 to 1.22; low-quality evidence). No reports described adverse effects associated with the drugs in those trials that reported in this outcome. None of the trials assessed or reported data regarding other outcomes, and information was insufficient to show whether a specific antibiotic is better than another. The authors concluded that for people undergoing orthognathic surgery, long term antibiotic prophylaxis decreases the risk of SSI compared with short-term antibiotic prophylaxis.
### Summary of Clinical Evidence

<table>
<thead>
<tr>
<th>Citation</th>
<th>Content, Methods, Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brignardello-Petersen (Cochrane, 2015)</td>
<td><strong>Key points:</strong>&lt;br&gt;• Systematic review to assess the effects of antibiotic prophylaxis for preventing surgical site infection (SSI) in people undergoing orthognathic surgery.&lt;br&gt;• A total of 11 trials were included in this review.&lt;br&gt;• Seven of these trials provided evidence for the main comparison and the primary outcome and these were pooled.&lt;br&gt;• Overall, long-term antibiotic prophylaxis probably reduces the risk of SSI (plausible effects range between a 76% to a 0.26% relative reduction in SSI with long-term antibiotic prophylaxis) (472 participants; RR 0.42, 95% CI 0.24 to 0.74; moderate-quality evidence).&lt;br&gt;• There is uncertainty surrounding the relative effects of short-term antibiotics compared with a single dose (220 participants; RR 0.34, 95% CI 0.09 to 1.22; low-quality evidence).&lt;br&gt;• No reports described adverse effects associated with the drugs in those trials that reported in this outcome.&lt;br&gt;• None of these trials assessed or reported data regarding other outcomes and information was insufficient to show whether a specific antibiotic is better than another.&lt;br&gt;• Authors’ conclusions:&lt;br&gt;  o For people undergoing orthognathic surgery, long term antibiotic prophylaxis decreases the risk of SSI compared with short-term antibiotic prophylaxis and there is uncertainty of whether short-term antibiotic prophylaxis decreases SSI risk relative to a single preoperative dose of prophylactic antibiotics.</td>
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<tr>
<td>Minami-Sugaya (Cochrane; 2012)</td>
<td><strong>Key points:</strong>&lt;br&gt;• Treatments for adults with prominent lower front teeth.&lt;br&gt;• RCTs or quasi-.&lt;br&gt;• 1980 – 2012.&lt;br&gt;• Insufficient evidence for superiority of one procedure over another.</td>
</tr>
<tr>
<td>Mattos (2011)</td>
<td><strong>Key points:</strong>&lt;br&gt;• Effects on oropharyngeal airway&lt;br&gt;• – 2010.&lt;br&gt;• Study designs not specified beyond “moderate or high methodological soundness”.&lt;br&gt;• Insufficient evidence to determine effects.</td>
</tr>
<tr>
<td>Hunt (2001)</td>
<td><strong>Key points:</strong>&lt;br&gt;• Psychosocial impact&lt;br&gt;• Relevant articles, – 2000.&lt;br&gt;• Insufficient and inconsistent evidence.</td>
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</tbody>
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### Glossary

**Arthrocentesis** — Using a needle to puncture, irrigate or remove fluid from a joint; sometimes accompanied by manipulation and usually with local anesthesia.

**Corrective jaw surgery** — A wide range of minor and major skeletal and dental procedures, including the correction of misalignment of jaws and teeth. Surgery can improve chewing, speaking and breathing.

**Facial skeletal deformities** — A diverse group of deformities in the growth of the head and facial bones. Anomaly is a medical term meaning "irregularity" or "different from normal." These abnormalities are
congenital (present at birth) and there are numerous variations—some are mild and some are severe and require surgery.

**Genioplasty** — The reduction and addition of material to a patient's chin. This can take the form of chin height reduction or chin rounding by osteotomy, or chin augmentation using implants.

**Le Fort osteotomy** — A commonly used procedure to correct midface deformities.

### References

**Professional society guidelines/other:**


**Peer-reviewed references:**


**Clinical trials:**

Searched clinicaltrials.gov on May 13, 2016 using terms “orthognathic surgery” | Open Studies. 43 studies found, 5 relevant.
CMS National Coverage Determinations (NCDs)

No NCDs were identified as of the writing of this policy.

Local Coverage Determinations (LCDs):

Local Coverage Determination (LCD): Dental Services (L31598) S.C., http://www.cms.gov/medicare-coverage-database/details/lcd-details.aspx?LCDId=31598&ContrId=225&ver=22&ContrVer=1&SearchType=Advanced&CoverageSelection=Both&NCSelection=NCA%7cCAL%7cNCD%7cMEDCAC%7cTA%7cMCD&ArticleType=SAD%7cEd&PolicyType=Final&s=All&KeyWord=jaw+surgery&KeyWordLookUp=Doc&KeyWordSearchType=And&kq=true&bc=IAAA ABAAAAAAA%3d%3d&.

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>
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<tbody>
<tr>
<td>21100</td>
<td>Application of halo type appliance for maxillofacial fixation, includes removal (separate procedure)</td>
</tr>
<tr>
<td>21110</td>
<td>Application of interdental fixation device for conditions other than fracture or dislocation, includes removal</td>
</tr>
<tr>
<td>21125</td>
<td>Augmentation, mandibular body or angle; prosthetic material</td>
</tr>
<tr>
<td>ICD-10 Code</td>
<td>Description</td>
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<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>M26.00</td>
<td>Unspecified anomaly of jaw size</td>
</tr>
<tr>
<td>M26.10</td>
<td>Unspecified anomaly of jaw-cranial base relationship</td>
</tr>
<tr>
<td>M26.12</td>
<td>Other jaw asymmetry</td>
</tr>
<tr>
<td>M26.51</td>
<td>Abnormal jaw closure</td>
</tr>
<tr>
<td>M95.2</td>
<td>Other acquired deformity of head</td>
</tr>
<tr>
<td>M89.38</td>
<td>Hypertrophy of bone, other site</td>
</tr>
<tr>
<td>M89.8x8</td>
<td>Other specified disorders of bone, other site</td>
</tr>
<tr>
<td>M95.2</td>
<td>Other acquired deformity of head</td>
</tr>
<tr>
<td>Q18.9</td>
<td>Congenital malformation of face and neck, unspecified</td>
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</tbody>
</table>