INSTRUCTIONS FOR USE
This Dental Coverage Policy provides assistance in interpreting UnitedHealthcare dental benefit plans. When deciding coverage, the member specific benefit plan document must be referenced. The terms of the member specific benefit plan document [e.g., Certificate of Coverage (COC), Schedule of Benefits (SOB), and/or Summary Plan Description (SPD)] may differ greatly from the standard benefit plan upon which this Dental Coverage Policy is based. In the event of a conflict, the member specific benefit plan document supersedes this Dental Coverage Policy. All reviewers must first identify member eligibility, any federal or state regulatory requirements, and the member specific benefit plan coverage prior to use of this Dental Coverage Policy. Other Clinical Policies and Coverage Guidelines may apply. UnitedHealthcare reserves the right, in its sole discretion, to modify its Policies and Guidelines as necessary. This Dental Coverage Policy is provided for informational purposes. It does not constitute medical advice.

BENEFIT CONSIDERATIONS
Before using this policy, please check the member specific benefit plan document and any federal or state mandates, if applicable.

Essential Health Benefits for Individual and Small Group
For plan years beginning on or after January 1, 2014, the Affordable Care Act of 2010 (ACA) requires fully insured non-grandfathered individual and small group health plans (inside and outside of Exchanges) to provide coverage for Pediatric Dental Essential Health Benefits ("EHBs"). Large group plans (both self-funded and fully insured), and small group ASO plans, are not subject to the requirement to offer coverage for Pediatric Dental EHBs. However, if such plans choose to provide coverage for benefits which are deemed Pediatric Dental EHBs, the ACA requires all dollar limits on those benefits to be removed on all Grandfathered and Non-Grandfathered plans. The determination of which benefits constitute Pediatric Dental EHBs is made on a state by state basis. As such, when using this policy, it is important to refer to the member specific benefit plan document to determine benefit coverage.

COVERAGE RATIONALE

Oroantral Fistula Closure
Oroantral fistula closure is indicated for the closure of an oroantral fistula not related to cleft palate repair surgery.

Primary Closure of a Sinus Perforation
Primary closure of a sinus perforation is generally indicated for large (> 2mm) defects resulting from routine tooth extraction, retrieval of root tips, or implant placement.

Primary closure of a sinus perforation is generally not indicated for defects less than 2mm in diameter.
Tooth Reimplantation and/or Stabilization of Accidentally Evulsed or Displaced Tooth

Tooth reimplantation and/or stabilization of accidentally evulsed or displaced tooth are indicated for the following:

- Subluxation injuries to permanent teeth
- Lateral luxation injuries of primary and permanent teeth
- Extrusion injuries of <3mm in an immature developing primary tooth
- Avulsion of permanent teeth

Tooth reimplantation and/or stabilization of accidentally evulsed or displaced tooth are not indicated for the following, and extraction is recommended:

- For primary teeth if injury is severe or tooth is near exfoliation
- For intrusion injuries to primary teeth when the apex is displaced toward the permanent tooth germ
- For extrusion injuries to primary teeth > 3mm, or primary tooth is fully formed, mobile, near exfoliation, or the child is unable to cope with an emergency situation
- For avulsion of primary teeth
- When a tooth has been out of the oral cavity for 60 minutes or more
- For patients with unmanaged medical conditions that result in excessive or uncontrolled bleeding, reduced resistance to infection, or poor healing response
- Lack of alveolar integrity

Surgical Repositioning of Teeth

Surgical repositioning of teeth is indicated for the following:

- For the treatment of intrusion injuries to permanent teeth
- Extrusion of teeth with crown/root fractures to prepare for restoration of permanent teeth

Surgical repositioning of teeth is not indicated for the treatment of injuries to primary teeth.

Bone Replacement Graft for Ridge Preservation

Bone replacement graft for ridge preservation is indicated for the following:

- When bone has been lost in extraction site, or site of implant removal to prepare for new implant
- When there has been loss of alveolar ridge needed to support a removable prosthesis or fill space under the pontic of a fixed partial denture

Bone replacement graft for ridge preservation is not indicated for the following:

- As a routine procedure to fill extraction sites
- For patients with unmanaged medical conditions that result in excessive or uncontrolled bleeding, reduced resistance to infection, or poor healing response

Collection and Application of Autologous Blood Concentrate Product

Evidence in the published scientific literature is inconsistent and does not lend strong support to the clinical utility of using platelet rich plasma (PRP) to augment bone or soft tissue healing for oral surgery applications.

Sinus Augmentation Procedures

Sinus augmentation or sinus lift is a procedure associated with implant placement. For most plans, implants are not covered, but for those plans that do have coverage, the following identify guidelines for this procedure.

Sinus augmentation is indicated for the following:

- To prevent the displacement of dental implants in the posterior maxilla due to pneumatization of the maxillary sinus
- When there is poor bone quality that prevents adequate initial stability during implant placement

Sinus augmentation is not indicated for the following:

- Conditions blocking the ventilation and clearance of the maxillary sinus. (Many of these causes are reversible and should be treated before the sinus lift procedure, and include, but are not limited to: history of smoking; allergic rhinitis; previous nasal surgery or trauma; a history of chronic and/or recurrent sinusitis; chronic nasal obstruction and/or rhinorrhea; chronic hyposmia and/or hypogeusia; previous treatment for head and neck neoplasms; and comorbidities, particularly systemic diseases and pathologies that interfere with mucosal composition or ciliary movements)
- For patients with unmanaged medical conditions that result in excessive or uncontrolled bleeding, reduced resistance to infection, or poor healing response
Coverage Limitations and Exclusions

- Any dental procedure performed solely for cosmetic/aesthetic reasons. (Cosmetic procedures are those procedures that improve physical appearance.)
- Reconstructive surgery, regardless of whether or not the surgery is incidental to a dental disease, injury, or congenital anomaly, when the primary purpose is to improve physiological functioning of the involved part of the body.
- Fixed or removable prosthodontic restoration procedures for complete oral rehabilitation or reconstruction. Procedures related to the reconstruction of a patient's correct vertical dimension of occlusion (VDO).
- Clinical situations that can be effectively treated by a less costly, dental appropriate alternative procedure will be assigned a benefit based on the least costly procedure.

Definitions

**Avulsion**: Complete displacement of the tooth out of socket; the periodontal ligament is severed and fracture of the alveolus may occur.

**Extrusion**: Partial displacement of the tooth axially from the socket; partial avulsion.

**Intrusion**: Apical displacement of tooth into the alveolar bone. The tooth is driven into the socket, compressing the periodontal ligament and commonly causes a crushing fracture of the alveolar socket.

**Lateral Luxation**: Displacement of the tooth in a direction other than axially. The periodontal ligament is torn and contusion or fracture of the supporting alveolar bone occurs.

**Oroantral Fistula**: A pathologic communication between the oral cavity and the maxillary sinus, most commonly a complication of maxillary premolar molar tooth extraction.

**Perforation**: Abnormal opening in a hollow organ or viscus.

**Sinus Augmentation**: A surgical procedure wherein the membrane lining of the maxillary sinus is elevated away from the bony floor of the sinus and the intervening space so created is filled with bone. The purpose of the operation is usually to create an increased alveolar height to facilitate placement of a dental implant. Synonym(s): sinus lift.

**Subluxation**: Injury to tooth-supporting structures with abnormal loosening but without tooth displacement.

Applicable Codes

The following list(s) of procedure and/or diagnosis codes is provided for reference purposes only and may not be all inclusive. Listing of a code in this policy does not imply that the service described by the code is a covered or non-covered health service. Benefit coverage for health services is determined by the member specific benefit plan document and applicable laws that may require coverage for a specific service. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment. Other Clinical Policies and Coverage Guidelines may apply.

<table>
<thead>
<tr>
<th>CDT Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D7260</td>
<td>Oroantral fistula closure</td>
</tr>
<tr>
<td>D7261</td>
<td>Primary closure of a sinus perforation</td>
</tr>
<tr>
<td>D7270</td>
<td>Tooth reimplantation and/or stabilization of accidentally evulsed or displaced tooth</td>
</tr>
<tr>
<td>D7272</td>
<td>Tooth transplantation (includes reimplantation from one site to another and splinting and/or stabilization)</td>
</tr>
<tr>
<td>D7290</td>
<td>Surgical repositioning of teeth</td>
</tr>
<tr>
<td>D7921</td>
<td>Collection and application of autologous blood concentrate product</td>
</tr>
<tr>
<td>D7951</td>
<td>Sinus augmentation with bone or bone substitutes via a lateral open approach</td>
</tr>
<tr>
<td>D7952</td>
<td>Sinus augmentation via a vertical approach</td>
</tr>
<tr>
<td>D7953</td>
<td>Bone replacement graft for ridge preservation - per site</td>
</tr>
<tr>
<td>D7999</td>
<td>Unspecified oral surgery procedure, by report</td>
</tr>
</tbody>
</table>

*CDT® is a registered trademark of the American Dental Association*
These procedures involve the treatment of various conditions that may be inherent or iatrogenically related to dental infections, osteomyelitis, radiation therapy or trauma. Some oral surgery procedures may be covered under the member’s medical benefit when determined to be medical in nature. Refer to the member’s Certificate of Coverage and/or health plan documentation for specific coverage guidelines. These include, but are not limited to the following:

- Procedures related to transplant preparation (including the initiation of immunosuppressives)
- Simple and compound fracture management due to traumatic injury
- Treatment of cancer & cleft lip/palate
- Management of temporomandibular disorders
- Orthognathic surgeries
- Procedures performed on salivary glands

**CLINICAL EVIDENCE**

Barone et al (2008) conducted a randomized clinical trial to compare the bone dimensional changes following tooth extraction with extraction plus ridge preservation using corticocancellous porcine bone and a collagen membrane; and to analyze and compare histologic and histomorphometric aspects of the extraction-alone sites to the grafted sites. Forty subjects who required tooth extraction and implant placement were enrolled in this study. Using a computer-generated randomization list, the subjects were randomly assigned to the control group (EXT; extraction alone) or to the test group (RP; ridge-preservation procedure with corticocancellous porcine bone and collagen membrane). The following parameters were assessed immediately after extraction and 7 months prior to implant placement: plaque index, gingival index, bleeding on probing, horizontal ridge width, and vertical ridge changes. A bone biopsy was taken from the control and test sites 7 months after the surgical treatment. Histologic and histomorphometric analyses were also performed. A significantly greater horizontal reabsorption was observed at EXT sites compared to RP sites. The ridge height reduction at the buccal side and vertical change at lingual sites were also significantly reduced for the ridge-preservation group. The biopsies harvested from the grafted sites revealed the presence of trabecular bone, which was highly mineralized and well structured. Particles of the grafted material could be identified in all samples. The bone formed in the control sites was also well structured with a minor percentage of mineralized bone. The amount of connective tissue was significantly higher in the extraction-alone group than in the ridge-preservation group. The authors concluded that the ridge-preservation approach using porcine bone in combination with collagen membrane significantly limited the resorption of hard tissue ridge after tooth extraction compared to extraction alone, as well as a significantly higher percentage of trabecular bone and total mineralized tissue.

Del Fabbro et al (2014) conducted a systematic review to evaluate the efficacy of platelet concentrates for alveolar socket healing after tooth extraction. Autologous platelet concentrates are claimed to enhance hard and soft tissue healing due to the considerable amount of growth factors that are released after application in the surgical site. However, their actual efficacy for improving tissue healing and regeneration in oral surgery applications is controversial. Medline, Embase and Cochrane Central Register of Controlled Trials were searched as well as manual searching of the relevant journals and of the reference lists of reviews and all identified randomised controlled trials. Randomised controlled trials evaluating the effect of a platelet concentrate on fresh extraction sockets were included. Further inclusion criteria were that at least 10 patients were treated (at least 5 per group) and there was a minimum follow-up duration of 3 months. Primary outcomes were postoperative complications, patient satisfaction and postoperative discomfort. Secondary outcomes were any clinical, radiographic, histological and histomorphometric variables used to assess hard and soft tissue healing. Six articles met the inclusion criteria (199 teeth in 156 patients). Three studies were considered at high risk of bias, two at medium risk and one at low risk. A large heterogeneity in study characteristics and outcome variables used to assess hard tissue healing was observed. A meta-analyses of two studies reporting histomorphometric evaluation of bone biopsies at 3 months' follow-up showed greater bone formation when platelet concentrates were used, as compared to control cases (P <0.001; mean difference 20.41%, 95% C.I. 13.29%, 27.52%). Beneficial effects of platelet concentrates were generally but not systematically reported in most studies; however, the effects on soft tissue healing and the patients' reported postoperative symptoms like pain and swelling, although no meta-analysis could be done for such parameters. The authors concluded that although the results of the meta-analysis of the present review are suggestive for a positive effect of platelet concentrates on bone formation in post-extraction sockets, due to the limited amount and quality of the available evidence, they need to be cautiously interpreted. A standardization of the experimental design is needed.
necessary for a better understanding of the true effects of the use of platelet concentrates for enhancing post-extraction socket healing.

Falah et al (2016) conducted a study to evaluate the feasibility of bone formation following graftless sinus lifting with the simultaneous placement of dental implants. Thirty graftless sinus lifting procedures were performed and 72 dental implants placed in 18 consecutive patients, using the lateral window approach. Clinical and radiological follow-up was conducted throughout the 6-month healing period. Biopsies of 30 cases were collected at 6 months post-treatment: 15 biopsies were taken from the newly formed bone near the basal floor and 15 from the newly formed bone near the elevated membrane. New bone consolidation in the maxillary sinus was apparent radiologically and histologically at 6 months after sinus augmentation, providing an average 6.14±1.34mm of bone-gain. Based on histological analysis and histomorphometric data, the consolidated bone in the augmented sinus comprised 56.7±11.9% to 59.9±13.4% vital bone tissue. Out of the 72 implants placed, only four failed, indicating a 94% overall implant survival rate. The authors concluded that based on this case series, blood clot can be considered autologous osteogenic graft material, to which osteoprogenitors can migrate, differentiate, and regenerate bone.

Friberg, Bertil (2016) conducted a literature review to analyze data on bone augmentation at single-tooth implants with regard to the type of graft materials, the stability of grafts over time, reported time span towards implant placement, implant survival rates, implant marginal bone maintenance and possible complications. Analyses of article titles and abstracts resulted in 93 studies, which were subsequently full-text analyzed. After the final selection, a total of 24 studies were included, of which 13 reported on single implants and horizontal/vertical augmentation (onlay), 10 focused on single implants and sinus augmentation (inlay), and one study presented the outcome of single implants and distraction osteogenesis. All bone materials, i.e. autografts, allografts, xenografts, and alloplasts, were used with comparable satisfactory results, allowing for placement of 7 to 10 mm-long implants. Stability of bone graft volume over time was sparsely documented. Some onlay autografts tended to resorb early i.e. prior to implant placement, but minor bone resorption was also seen for other grafts over time. A continuous but small bone resorption of inlay autografts and alloplasts was seen over time for the few sites recorded. A staged approach predominated for the onlay grafts, with implants placed 3 to 6 months post-grafting, and overall a majority of these implants (347/363) were submerged. For the inlay graft procedures almost all implants were immediately inserted at the time of grafting, and the majority of these implants (253/256) were submerged. A total of five and two implant failures were registered during the various study periods for the onlays and inlays, respectively. Marginal bone conditions, around implants in grafted sites, were comparable to what has generally been reported for non-grafted sites. The authors concluded that the literature shows bone augmentation for the single-tooth implant is a viable treatment option with predictable graft and implant outcomes.

Kelly et al (2016) conducted a systematic review and meta-analysis of recombinant human bone morphogenetic protein-2 in localized alveolar ridge and maxillary sinus augmentation. The primary outcome variable was bone formation measured as change in bone height on computed tomogram. Continuous variables were calculated using the standardized mean difference and 95% confidence intervals (CIs) comparing improvement from baseline of the experimental group with that of the control group. Change in bone height was calculated using logarithmic odds ratio. Ten studies met the criteria for systematic review; 8 studies were included in the meta-analysis. Five studies assessed localized alveolar ridge augmentation and resulted in an overall standardized mean difference of 0.56 (C1, 0.20-0.92) in favor of BMP. Three studies assessed maxillary sinus floor augmentation and resulted in an overall standardized mean difference of -0.50 (C1, -0.93 to -0.09), which was meaningfully different in favor of the control group. For localized alveolar ridge augmentation, this meta-analysis showed that rhBMP-2 substantially increases bone height. However, rhBMP-2 does not perform as well as the autograft or allograft in maxillary sinus floor augmentation. Long-term clinical success and adverse events need to be reported with more consistency before definitive conclusions can be made.

Lemos et al (2016) conducted a systematic review to evaluate the effect on bone formation and implant survival of combining platelet-rich plasma (PRP) with bone grafts in maxillary augmentation. A comprehensive review of articles listed in the PubMed/MEDLINE, Embase, and Cochrane Library databases covering the period January 2000 to January 2015 was performed. The meta-analysis was based on bone formation for which the mean difference (MD, in millimeters) was calculated. Implant survival was assessed as a dichotomous outcome and evaluated using the risk ratio (RR) with 95% confidence interval (CI). After inclusion and exclusion criteria were applied, 17 studies were selected for qualitative analysis and 13 for quantitative analysis. A total of 369 patients (mean age 51.67 years) and 621 maxillary sinus augmentations were evaluated. After the data analysis, additional analyses were performed of the implant stability quotient, marginal bone loss, and alveolar bone height measured by MD. The results showed no significant difference in implant stability, marginal bone loss, alveolar bone height, implant survival, or bone formation. In conclusion, this meta-analysis indicates no influence of PRP with bone graft on bone formation and implant survival in maxillary sinus augmentation.

Pocaterra et al (2016) conducted a systematic review and meta-analysis of randomized controlled clinical trials to assess the scientific evidence on the effectiveness of platelet rich plasma (PRP) as an adjunctive material in the sinus
floor elevation technique. Only randomized controlled clinical trials comparing a group receiving PRP as an adjunctive material to a control group without PRP, involving adult human subjects (age >18 years) with no systemic disease, were included. Of the studies identified, only one reported a significant difference in bone augmentation in favour of the adjunctive use of PRP, while four studies did not find any significant difference. None of the studies included reported a significant difference in the implant survival rate. The authors concluded that further randomized clinical trials are needed to clarify the effectiveness of adjunctive PRP.

Thor et al (2005) conducted a controlled clinical study to evaluate whether platelet rich plasma (PRP) in conjunction with grafting of particulated autogenous bone to the maxilla could improve the integration and clinical function of dental implants. An additional aim was to compare block bone grafts without PRP with PRP-treated particulated bone. Nineteen consecutive patients were included in the study and treated with iliac bone grafts and dental implants in the maxilla according to a split-mouth design. In the anterior maxilla, particulated bone mixed with PRP (test) was compared with onlay block grafts without additional PRP (control). In the posterior maxilla, particulated bone grafts with (test) or without (control) PRP were placed as sinus inlay grafts. After 6 months of healing, 152 implants were placed. Test (PRP; 76 implants) and non-PRP (76 implants) sides were evaluated and compared by implant survival rate, marginal bone level, and implant stability using resonance frequency analysis (RFA) during 1 year in function during which two control implants in control sites of two patients were lost at abutment connection. After 1 year in function, no further implants were lost, giving an overall survival rate of 98.7%. The marginal bone level measurements showed no significant differences, although there was a tendency toward less resorption on PRP sides. RFA measurements showed statistically significantly higher implant stability quotient values for PRP sites at abutment connection in the anterior but not in the posterior regions. The authors concluded that this clinical study showed a high implant survival rate and stable marginal bone conditions can be achieved after 1 year of loading in the maxilla following autogenous bone grafting whether or not PRP is used. RFA measurements revealed differences at abutment connection, which could be explained by the type of graft rather than as an effect of PRP. Although no obvious positive effects of PRP on bone graft healing could be demonstrated, the handling of the particulated bone grafts was improved.

U.S. FOOD AND DRUG ADMINISTRATION (FDA)

Bone graft products and delivery methods are extensive. See the following website for more information and search by product name in device name section: [http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pm.cfm](http://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfPMN/pm.cfm) (Accessed June 22, 2016)

Administration of platelet-rich plasma (PRP) is a procedure and is, therefore, not subject to regulation by the FDA. Devices for the preparation of platelet concentration systems do require FDA approval. See the following website for more information and search in device name section [http://www.fda.gov/MedicalDevices/default.htm](http://www.fda.gov/MedicalDevices/default.htm) (Accessed June 22, 2016)

REFERENCES


POLICY HISTORY/REVISION INFORMATION

<table>
<thead>
<tr>
<th>Date</th>
<th>Action/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/01/2016</td>
<td>• New policy</td>
</tr>
</tbody>
</table>