

**Subject: Bunionectomy**

**Background:** Hallux valgus, also known as a bunion, is a deformity of the big toe (metatarsophalangeal joint) where the great toe is deviated in its alignment and points toward the lesser toes. When first-line therapies are insufficient to treat the condition, surgical intervention may be necessary. Bunionectomy procedures for hallux valgus are performed through an incision along the medial surface of the foot. Procedures may be open, through a large incision, or done arthroscopically through smaller incisions.

**Authorization:** Prior authorization is required for all the following bunionectomy procedures requested for members enrolled in commercial (HMO, POS, and PPO) products.

**Policy and Coverage Criteria:****General Criteria**

Harvard Pilgrim Health Care (HPHC) considers bunionectomy procedures as reasonable and medically necessary when documentation confirms ALL the following:

- Member has reached skeletal maturity; AND
- Symptoms are unresponsive to at least 6 months of conservative treatment for any TWO of the following:
  - Change in footwear, padding or orthotics (shoe inserts), OR
  - Nonsteroidal anti-inflammatory drugs (NSAIDs), OR
  - Local injections to the first metatarsophalangeal joint (e.g. local anesthetic or steroid)

**Simple Bunionectomy**

Harvard Pilgrim Health Care (HPHC) considers simple bunionectomy procedures (e.g. Silver Procedure, McBride) with soft tissue removal as reasonable and medically necessary when general criteria are met, diagnostic imaging procedures confirm a hallux valgus angle (HVA) of at least 15 degrees and documentation confirms ANY of the following:

- Member has diabetes and ulcers or infection originating from the bunion, OR
- Significant foot pain that limits everyday activities, including walking and wearing reasonable shoes, OR
- Chronic big toe inflammation and swelling that does not improve with rest or medications, OR
- Toe deformity that causes a drifting in of the big toe toward smaller toes, OR
- Toe stiffness that causes inability to bend and straighten the big toe.

**Bony Correction Bunionectomy**

Harvard Pilgrim Health Care (HPHC) considers bony correction bunionectomy (e.g. Akin, Chevron, Keller) as reasonable and medically necessary when general criteria are met, diagnostic imaging procedures confirm a hallux valgus angle (HVA) of at least 30 degrees and an intermetatarsal angle (IMA) of at least 13 degrees and documentation confirms ANY of the following:

- Significant foot pain that limits everyday activities, including walking and wearing reasonable shoes, OR
- Chronic big toe inflammation and swelling that does not improve with rest or medications, OR
- Toe deformity that causes a drifting in of the big toe toward smaller toes, OR
- Toe stiffness that causes inability to bend and straighten the big toe.

## **Bunionette**

Harvard Pilgrim Health Care (HPHC) considers surgical procedures for bunionettes (e.g. osteotomy) as reasonable and medically necessary when general criteria are met and diagnostic imaging procedures confirm a metatarsophalangeal angle (MTP) of at least 16 degrees and an intermetatarsal angle (IMA) of at least 10 degrees.

## **Exclusions:**

Harvard Pilgrim Health Care (HPHC) considers bunionectomy procedures as not medically necessary for all other indications. In addition, HPHC does not cover bunionectomy procedures solely to improve the appearance of the foot.

## **Supporting Information:**

Lui, et al. 2017 reported the result of endoscopic soft tissue procedure in correction of hallux valgus deformity in 94 feet. The hallux valgus angle improved from  $33^{\circ} \pm 7^{\circ}$  (range,  $20^{\circ}$ - $58^{\circ}$ ) to  $14^{\circ} \pm 5^{\circ}$  (range,  $4^{\circ}$ - $30^{\circ}$ ). The intermetatarsal angle improved from  $14^{\circ} \pm 3^{\circ}$  (range,  $10^{\circ}$ - $26^{\circ}$ ) to  $9^{\circ} \pm 2^{\circ}$  (range,  $5^{\circ}$ - $18^{\circ}$ ). Two patients with symptomatic recurrence had revision operation performed. The key to success for this surgery included adequate lateral release to achieve soft tissue balance around the first metatarsophalangeal joint with reduction of the sesamoid bones. Endoscopic soft tissue procedure has greater power of correction of intermetatarsal angle than proximal metatarsal osteotomy as the center of correction is at the first tarsometatarsal joint.

Bennett, et al. 2016 prospectively evaluated 57 consecutive patients who underwent distal chevron metatarsal osteotomy bunionectomy utilizing the intramedullary plate system. Patients were evaluated preoperatively, postoperatively, and at a final follow-up utilizing the American Orthopaedic Foot & Ankle Society (AOFAS) forefoot scoring system. 63 surgically corrected feet went on to heal the osteotomy site. There were no hardware failures. We had one patient that expressed mild discomfort over the plate, but all patients significantly improved their AOFAS scores compared with preoperative values. In conclusion, the distal chevron metatarsal osteotomy bunionectomy resulted in excellent function and pain relief. The new plate system was a reliable and stable implant with a low profile, good strength, and ease of use.

King, et al. 2014 studied presented a prospective study to evaluate the preoperative and postoperative plantar pressures after 2 specific bunionectomies: the chevron bunionectomy and Lapidus arthrodesis. A total of 68 subjects, 34 in each group, were included for radiographic and pedographic evaluation. Both procedures demonstrated radiographic improvements in the mean intermetatarsal and hallux abductus angles. The mean hallux plantar pressure decreased significantly in both procedure groups ( $p < .001$ ). However, Lapidus group exhibited an increase in the mean fifth metatarsal head plantar pressure ( $p = .008$ ) and pressure under the fifth metatarsal as a percentage of the total forefoot pressure ( $p = .01$ ). Furthermore, the pressure under the second metatarsal as a percentage of the total forefoot pressure decreased significantly ( $p = .01$ ). This study suggests that the Lapidus arthrodesis and chevron bunionectomy both provide correction for hallux valgus deformity, but when comparing forefoot load sharing pressures, the Lapidus arthrodesis appeared to have greater influence on the load sharing distribution of forefoot pressure than did the bunionectomy employing the chevron osteotomy.

Haddon, et al. 2013 presented a study that was designed to provide information on the mechanical strength of fifth metatarsal osteotomies. Five osteotomies were mechanically tested to failure using a material testing machine and compared with an intact fifth metatarsal using a hollow saw bone model with a sample size of 10 for each construct. The osteotomies tested were the distal reverse chevron fixated with a Kirschner wire, the long plantar reverse chevron osteotomy fixated with 2 screws, a mid-diaphyseal sagittal plane osteotomy fixated with 2 screws, the mid-diaphyseal sagittal plane osteotomy fixated with 2 screws, and an additional cerclage wire and a transverse closing wedge osteotomy fixated with a box wire technique. Analysis of variance was performed, resulting in a statistically significant difference among the data at  $p < .0001$ . The Tukey-Kramer honestly significant difference with least significant differences was performed post hoc to separate out the pairs at a minimum  $\alpha$  of 0.05. The chevron was statistically the strongest construct at 130 N, followed by the long plantar

### **HPHC Medical Policy**

#### **Bunionectomy**

**Page 2 of 5**

VA30MAY19P

*HPHC policies are based on medical science, and written to apply to the majority of people with a given condition. Individual members' unique clinical circumstances, and capabilities of the local delivery system are considered when making individual UM determinations.*

*Coverage described in this policy is standard under most HPHC plans. Specific benefits may vary by product and/or employer group. Please reference appropriate member materials (e.g. Benefit Handbook, Certificate of Coverage) for member-specific benefit information.*

osteotomy at 78 N. The chevron compared well with the control at 114 N, and they both fractured at the proximal model to fixture interface. The other osteotomies were statistically and significantly weaker than both the chevron and the long plantar constructs, with no statistically significant difference among them at 36, 39, and 48 N. In conclusion, the chevron osteotomy was superior in strength to the sagittal and transverse plane osteotomies and similar in strength and failure to the intact model.

Kadakia, et al. 2007 study looked at a case series where 83 patients (94 feet) reported recurrence of hallux valgus postoperatively in 2.1% (2/94) of feet. Both required revision surgery. A case series of 83 patients (90 feet) reported postoperative recurrence in 2.1% (1/47) of patients; 43.4% (36/83) of patients in this series were lost to follow-up. A case series of 82 patients (118 feet) reported postoperative recurrence in 0.8% (1/118) of feet, described as progressive and accompanied by pain and severe limitation in walking. A case series of 64 patients (98 feet) reported recurrence of hallux valgus in 1 patient requiring a further procedure<sup>6</sup>. In a case series of 13 patients (13 feet), hallux valgus recurred in 38.5% (5/13) of patients postoperatively, defined as a final angle <15°; one patient was treated with revision chevron osteotomy.

**Guidelines:**

The American Academy of Orthopaedic Surgeons (AAOS, 2016) guidelines state candidates for bunion surgery commonly have:

- Significant foot pain that limits their everyday activities, including walking and wearing reasonable shoes. They may find it hard to walk more than a few blocks (even in athletic shoes) without significant pain.
- Chronic big toe inflammation and swelling that does not improve with rest or medications
- Toe deformity—a drifting in of the big toe toward the smaller toes, creating the potential for the toes to cross over each other.
- Toe stiffness—the inability to bend and straighten the big toe
- Failure to obtain pain relief with changes in footwear
- Failure to obtain pain relief from nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen and naproxen. The effectiveness of NSAIDs in controlling toe pain varies greatly from person to person.

The American Orthopaedic Foot and Ankle Society (AOFAS, 2015) guidelines state a hallux valgus angle (HVA) that is greater than 15-18 degrees is considered abnormal. The intermetatarsal angle (IMA) is the angle created by the bisection of the longitudinal axes of the first and second metatarsals. This angle is normally less than 9 degrees.

According to Evidence-based Orthopaedics (2008) by James Gardner Wright, bunion deformities are divided into 3 stages:

| <b>Stage</b>                 | <b>IMA</b> | <b>HVA</b> |
|------------------------------|------------|------------|
| Mild Deformity               | <13°       | <30°       |
| Moderate-to-severe Deformity | >13°       | >30°       |
| Severe Deformity             | >20°       | >40°       |

Harvard Health Publishing (2014) states individuals should try a nonsteroidal anti-inflammatory drug to treat bunions or bunionettes, as well as hot and cold compresses for relief. If these steps don't work and significant pain interferes with daily activities, they state individuals should consider surgery to restore the toe to its normal position. Some recommended surgeries (based on the severity of the condition) include the modified McBride procedure to shave the enlarged portion of the bone. Moderate bunions may be treated with the chevron procedure, which cuts the bone close to the metatarsal head and then shifts it back into its proper position. A deeper cut made further down the metatarsal bone may be needed for severe bunions. Similar surgical procedures can be performed for bunionettes.

## Coding:

Codes are listed below for informational purposes only, and do not guarantee member coverage or provider reimbursement. The list may not be all-inclusive. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible.

| CPT® Codes | Description   |
|------------|---|
| 28292      | Correction, hallux valgus (bunion), with or without sesamoidectomy; Keller, McBride or Mayo type procedure  |
| 28295      | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with proximal metatarsal osteotomy, any method                           |
| 28296      | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with distal metatarsal osteotomy, any method                             |
| 28297      | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with first metatarsal and medial cuneiform joint arthrodesis, any method |
| 28298      | Correction, hallux valgus (bunionectomy), with sesamoidectomy, when performed; with proximal phalanx osteotomy, any method                              |
| 28899      | Unlisted procedure; foot or toes  |

## Billing Guidelines:

Member's medical records must document that services are medically necessary for the care provided. Harvard Pilgrim Health Care maintains the right to audit the services provided to our members, regardless of the participation status of the provider. All documentation must be available to HPHC upon request. Failure to produce the requested information may result in denial or retraction of payment.

## References:

1. Bennett G, Sabetta J. Evaluation of an Innovative Fixation System for Chevron Bunionectomy. *Foot & Ankle International*. 2016;37(2):205-209. doi:10.1177/1071100715607006.
2. Bunion Surgery. Orthoinfoaaosorg. 2016. Available at: <https://orthoinfo.aaos.org/en/treatment/bunion-surgery>.
3. Bunions (Hallux Valgus). 2017. Available at: <https://www.acfas.org/footankleinfo/bunions.htm>.
4. Bunions and bunionettes. 2014. Available at: <https://www.health.harvard.edu/bone-and-muscle-health/bunions-and-bunionettes-overview>. Accessed December 15, 2017.
5. Haddon T, LaPointe S. Relative Strength of Tailor's Bunion Osteotomies and Fixation Techniques. *The Journal of Foot and Ankle Surgery*. 2013;52(1):16-23. doi:10.1053/j.jfas.2012.05.019.
6. Hallux valgus deformity (bunion). UpToDate.com/login [via subscription only]. Accessed December 15, 2017.
7. Hallux Valgus. www.aofas.org. 2015. Available at: <http://www.aofas.org/PRC/conditions/Pages/Conditions/Hallux-Valgus.aspx>. Accessed December 15, 2017.
8. Kadakia AR, Smerek JP, and Myerson MS. (2007) Radiographic results after percutaneous distal metatarsal osteotomy for correction of hallux valgus deformity. *Foot & Ankle International* 28:355-360.
9. King C, Hamilton G, Ford L. Effects of the Lapidus Arthrodesis and Chevron Bunionectomy on Plantar Forefoot Pressures. *The Journal of Foot and Ankle Surgery*. 2014;53(4):415-419. doi:10.1053/j.jfas.2013.08.007.
10. Lui T. Correction of Recurred Hallux Valgus Deformity by Endoscopic Distal Soft Tissue Procedure. *Arthroscopy Techniques*. 2017;6(2):e435-e440. doi:10.1016/j.eats.2016.10.022.
11. Surgical correction of hallux valgus using minimal access techniques | Guidance and guidelines | NICE. Niceorg. 2009. Available at: <https://www.nice.org.uk/guidance/ipg332/evidence>.
12. Surgical procedures for treating Hallux Valgus foot deformities. ECRI.org/login [via subscription only].

**Summary of Changes:**

| <b>Date</b> | <b>Changes</b>            |
|-------------|---------------------------|
| <b>5/19</b> | Annual review, no changes |
| <b>3/18</b> | New policy                |

**Approved by Medical Policy Committee: 5/14/19**

**Approved by Clinical Policy Operational Committee: 3/18; 5/19**

**Policy Effective Date: 5/30/19**

**Initiated: 3/18**

*HPHC policies are based on medical science, and written to apply to the majority of people with a given condition. Individual members' unique clinical circumstances, and capabilities of the local delivery system are considered when making individual UM determinations.*

*Coverage described in this policy is standard under most HPHC plans. Specific benefits may vary by product and/or employer group. Please reference appropriate member materials (e.g. Benefit Handbook, Certificate of Coverage) for member-specific benefit information.*