January 16, 2024

Chiquita Brooks-LaSure

CMS Administrator

Centers for Medicare & Medicaid Services

**ATTN: Division of Practitioner Services, Potentially Misvalued Codes**

7500 Security Blvd.

Baltimore, MD 21244

Re: Potentially Misvalued Codes: Posterior spine osteotomies CPT 22210-22216

22210 Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; cervical

22212 Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; thoracic

22214 Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; lumbar

22216 Osteotomy of spine, posterior or posterolateral approach, 1 vertebral segment; each additional vertebral segment (List separately in addition to primary procedure)

Submitted electronically via [MedicarePhysicianFeeSchedule@cms.hhs.gov](mailto:MedicarePhysicianFeeSchedule@cms.hhs.gov).

Dear Administrator Brooks-LaSure,

We are writing to nominate a family of potentially misvalued CPT codes (posterior spine osteotomy 22210-22216) for review. This request focuses on the most common type of osteotomy and does not address other types of osteotomy (pedicle subtraction/3 column osteotomy CPT 22206-22208 or anterior osteotomies CPT 22220-22226).

Two types of osteotomies are performed from a posterior approach. The most common type and the focus of this nomination is also referred to as Ponte osteotomies (PONTE) or Schwab II osteotomies (SCHWAB) and Smith-Peterson by some. They require bilateral removal of the superior and inferior facet joints, interspinous ligament, lamina, and ligamentum flavum (LAUER, SCHWAB). They are different from the Schwab I osteotomies which only require soft tissue release and partial facet excision, and which are considered inclusive in the primary fusion procedure and not separately reportable (DEWALD). They are also different from pedicle subtraction osteotomies (CPT 22206-22208) which are also performed from a posterior approach, are much less common than Ponte/Schwab II osteotomies but require more extensive tissue removal including removal of the pedicles and part of the vertebral bodies in addition to the tissue removed as part of a Ponte osteotomy (DIEBO)

Rationale for mis-valuation

#1 Incorrect global period

Posterior osteotomies were valued as 90-day global services. They are always performed as an optional addition to a spinal fusion and should be valued as add- on services and not as a 90-day global service

#2 Incorrect inpatient days.

22210-22214 were valued by the RUC in 1995 and each have 7 inpatient days and a full discharge day. Practice has changed since these codes were valued and this length of stay is no longer correct. Average hospital stay for scoliosis fusion with osteotomy is currently 4-5 days (HALANSKI, FLOCARRI, BUCKLAND)

#3 Incorrect Intraservice work description.

The intra service work description for 22216 (there is none for 22210-22214) describes removal of the pedicle which is not a typical part of a Ponte/Schwab II osteotomy.

*“Intra-service includes: Skin, muscle, and fascial incisions are extended to provide adequate exposure for an additional osteotomy; the spinous process and lamina of the central vertebra of the area for additional osteotomy are removed; facets****, pedicles****, and lateral bone are removed to protect the nerve roots and the laminae above and below are undercut to protect the dura and central neural elements”.*

Pedicle removal is part of the family of pedicle subtraction osteotomy (22206-22208)

#4 intraservice times are overvalued. A typical scoliosis fusion in a child might occur from T3-L4 and might include 5 levels of osteotomy and would be reported with:

Intra service time

22804 240 minutes

22844 150 minutes

22214 210 minutes

22216x4 240 minutes (60x4)

**TOTAL 840 minutes = 14 hours**

Typical pediatric scoliosis surgery does not take 14 hours. Published total surgical times for scoliosis surgery (including fusion, osteotomies and instrumentation) reported in the literature average a total of 278 minutes [4.66 hours] (243-296 minutes) (Table 1.) (SAMDANI, FLOCARRI, BUCKLAND, PIZONES, FENG)

The intraoperative time estimates are even greater for adult degenerative scoliosis surgery. A T3-L4 fusion (13 levels) for degenerative scoliosis with two levels of decompression for stenosis and 4 separate levels of osteotomy for deformity correction would be reported with:

Intraservice time

22804 240

22844 150

63047 90

63048x1 45

22214 210

22216x3 180 (60x3)

**TOTAL 915 minutes= 15 ¼ hours**

**\*Some would argue that deformity correction for adult degenerative scoliosis fusion should be reported with individual level fusion codes (22612 + 22614x 12) instead of 22804 (we disagree with this approach). If so, then the fusion alone would take 630 minutes (150 + 40x12) instead of 240 minutes with a total time of 1305 minutes = 21 ¾ hours.**

HALANSKI reported the intraoperative time per level for patients undergoing scoliosis surgery both with and without a Ponte osteotomy. The time for fusion and instrumentation without osteotomy was 23 minutes per level. If osteotomies were performed the time was 31 minutes per level- 8 additional minutes per level for the osteotomy

Other authors have reported the total surgical times for patients treated with and without Ponte osteotomies (see Table 1). The unweighted average total time without Ponte osteotomies was 261 minutes and 278 minutes with osteotomies- a difference of 17 minutes. An average of 5.3 osteotomies were performed per case for an average time of 3.6 minutes per osteotomy (0.5 minutes weighted average).

Table 1.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Total time without Ponte (min) | Total time with Ponte (min) | Total Time difference with Ponte osteotomies | Average number of osteotomies performed | Time per osteotomy |
| Halinski |  | (18 pt) |  | 6.75\*\*\* | +8 minutes |
| Sandani 2015 | 295 (69 pt) | 278 (125 pt) | - 17 minutes | 4.3 | - 3.9 minutes |
| Flocarri 2021 | 286 (34pt) | 296 (34 pt) | + 10 minutes | 3.5 | +2.8 minutes |
| Buckland 2019 | 270 (599 pt) | 294 (1611 pt) | + 24 minutes | Not specified |  |
| Pizones 2015 | 260 (30 pt) | 280 (43 pt) | + 20 minutes | Approx 6\* | +3.3 minutes |
| Feng 2018 | 196 (33 pt) | 243 (32 pt) | + 47 minutes | Approx. 6\*\* | +7.8 minutes |
|  |  |  |  |  |  |
| Average  Weighted avg | **261 minutes**  266 minutes | **278 minutes**  292 minutes | + 17 minutes  + 26 minutes | **5.3 per case**  4.9per case | **+3.6 minutes**  +0.5 minutes |

\*PIZONES osteotomies performed at all levels of deformity except upper and lower foundational levels (estimate 6 per case)

\*\* FENG osteotomies performed at each segment of thoracic curve (estimate 6 per case)

\*\*\* Halinski osteotomies performed at 75% of levels fused

#5 Surgical practice has changed.

The osteotomy codes were valued by the RUC in 1995.  29 years ago, osteotomies were rarely performed and were used to address totally ankylosed/fused spinal segments. The Ponte Osteotomy was originally developed for thoracic hyperkyphosis. Dr. Ponte’s  average preoperative [kyphosis](https://www.sciencedirect.com/topics/medicine-and-dentistry/kyphosis) was 80° (range 61°-102°) (PONTE). The typical indication for posterior osteotomies today is to free up multiple stiff vertebral segments that are not totally fused to improve the degree of coronal correction and reduce thoracic hypokyphosis if present.

(SHAHEEN) reported that the use of posterior osteotomies increased from 17% to 35% of scoliosis cases between 2007 and 2015. The Medicare frequency (which does not capture all pediatric scoliosis increased 30% (7824 to 10,184) from 2015 to 2018. (BUCKLAND) in reviewing a large database of 2210 patients undergoing scoliosis surgery reported that 73% of patients (1611) also underwent posterior osteotomies.

#6 Incorrect use of posterior osteotomy codes. In some cases, facet/soft tissue release (Schwab type I osteotomies) are reported incorrectly with the posterior osteotomy codes. Isolated partial facetectomy and soft tissue release is considered part of spinal fusion and should not be separately reported with an osteotomy code. (DEWALD)

We further offer a suggestion for rewording or revision of the posterior osteotomy codes to prevent misuse or overuse of these procedures and present two options.

**Option #1**

22210 Osteotomy of spine, posterior or posterolateral approach, 1-4 vertebral segments; cervical

22210x1 Osteotomy of spine, posterior or posterolateral approach, more than 4 vertebral segments; cervical

22212 Osteotomy of spine, posterior or posterolateral approach, 1-4 vertebral segments; thoracic or lumbar

22212x2 Osteotomy of spine, posterior or posterolateral approach, more than 4 vertebral segments; thoracic or lumbar

**Option #2**

Delete the current posterior osteotomy codes and bundle osteotomies into new deformity fusion codes with and without osteotomy.

22800 Arthrodesis, posterior, for spinal deformity, with or without cast; up to 6 vertebral segments

22800x1 Arthrodesis, posterior, for spinal deformity, with posterior osteotomies (eg Ponte, Schwab II), with or without cast; up to 6 vertebral segments

22802 Arthrodesis, posterior, for spinal deformity, with or without cast; 7 to 12 vertebral segments

22802x1 Arthrodesis, posterior, for spinal deformity, with osteotomies, (eg Ponte, Schwab II), with or without cast; 7 to 12 vertebral segments

22804 Arthrodesis, posterior, for spinal deformity, with or without cast; 13 or more vertebral segments

22804x1 Arthrodesis, posterior, for spinal deformity, with osteotomies, (eg Ponte, Schwab II), with or without cast; 13 or more vertebral segments

Thank you for your consideration.

Sincerely

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