

**Policy #: 105**

**Original policy date: 6/95  
Revised date: 11/1/09**

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**Title**

**Percutaneous Vertebroplasty and Percutaneous Kyphoplasty**

**Description**

Percutaneous vertebroplasty is an interventional procedure involving the radiologically-guided injection of bone cement (i.e. polymethylmethacrylate {PMMA}) into an osteolytic or osteoporotic vertebral body. The bone cement is intended to stabilize the vertebra and prevent further compression or collapse. This technique may be used in all levels of the vertebrae, i.e., cervical, thoracic, or lumbar. Percutaneous vertebroplasty (PV) is usually performed under local anesthesia combined with sedation and may be performed on an outpatient basis or may require a short hospital stay. The procedure has been performed in patients with osteolytic metastases, frequently those associated with multiple myeloma, and also as a therapy for vertebral collapse related to osteoporosis, or as a treatment of a painful vertebral hemangioma.

Spinal compression fractures are a common problem with osteoporosis and occur in more than 25% of women over the age of 50. Approximately one third of vertebral fractures are diagnosed clinically and most symptomatic fractures heal with a few weeks or a month. Some patients will exhibit chronic symptoms that do not respond to medical management strategies, such as bed rest, immobilization/bracing device and analgesic medications. These fractures may cause persistent pain, spinal deformity, and the potential loss of sensation, mobility and continence.

Percutaneous kyphoplasty, also known as balloon-assisted vertebroplasty, is an interventional radiological procedure for treatment of compression fractures of the vertebral body. It combines vertebroplasty with an additional step to restore vertebral height using a specialized bone tamp with an inflatable balloon. Under local or general anesthesia with X-ray or fluoroscopic guidance, a small incision is made in the skin creating a path to the fractured vertebra. The specialized bone tamp is placed in the channel. It is inflated to expand the compressed or collapsed vertebral body to create a cavity, as close as possible to natural height of the vertebra. After balloon removal, the cavity is filled with liquid bone cement (PMMA) creating a permanent, internal cast. This may help restore height to the bone, thus reducing deformity of the spine.

Percutaneous vertebroplasty and kyphoplasty procedures are performed with the goals of pain relief, increased mobility and prevention of further collapse of the bone.

**When services are covered for commercial products (excluding Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx)**

We cover **percutaneous vertebroplasty<sup>1</sup> or kyphoplasty<sup>2</sup> for commercial products** for the following conditions and criteria for coverage:

**I. Symptomatic Osteoporotic Vertebral Fractures<sup>1,2</sup>**

**Criteria for Osteoporotic Vertebral Fractures**

**All of the following must be met:**

- Failure to respond to conservative treatment for at least 6 weeks (analgesics, physical therapy, and rest)  
**and**

- There is a high degree of certainty through targeted, documented physical exam and ancillary studies (e.g., x-ray, MRI, CT, fluoroscopy, bone scan) that pain is caused by a non-healing fracture, **and**
- The procedure is not being performed on a prophylactic basis, either for osteoporosis of the spine or chronic back pain, even if associated with old, healed compression fractures.

## **II. Severe Pain due to Osteolytic Lesions of the Spine related to Multiple Myeloma or Metastatic Malignancies**<sup>1,2</sup>

### **Criteria for Severe Pain due to Osteolytic Lesions of the Spine related to Multiple Myeloma or Metastatic Malignancies**

#### **All of the following must be met:**

- Severe back pain related to the destruction of a vertebral body that does not involve the major part of the cortical bone, **and**
- There is a high degree of certainty through targeted, documented physical exam and ancillary studies (e.g., x-ray, MRI, CT, fluoroscopy, bone scan) that pain is caused by a non-healing fracture, **and**
- The procedure is not being performed on a prophylactic basis, either for osteoporosis of the spine or chronic back pain, even if associated with old, healed compression fractures.

**Note:** Coverage of percutaneous vertebroplasty and/or percutaneous kyphoplasty for commercial products (excluding Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx) for the two indications noted above, *effective 6/09*.

**Note:** For diagnoses that are considered medically necessary for commercial non managed care products, see footnote 4, *effective 11/09*.

#### **When services are not covered for commercial products (excluding Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx)**

We **do not cover percutaneous vertebroplasty<sup>1</sup> or kyphoplasty<sup>2</sup> for other indications**, as it is considered investigational as it does not meet our Medical Technology Assessment Guidelines, [#350](#).

#### **When services are covered for Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx**

We cover **percutaneous vertebroplasty or kyphoplasty (balloon-assisted vertebroplasty)<sup>3</sup>** for our **Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx members**, in accordance with local Medicare guidelines<sup>3</sup>, as follows:

### **I. Osteoporotic Vertebral Collapse**<sup>3</sup>

Patients must have **one** of the following conditions:

- Failure to respond to an accepted standard medical treatment (PT, bed rest, bracing, and analgesics) for at least 6 weeks, **OR**
- Hospitalization due to incapacitating pain, **OR**
- Narcotics for at least 2 weeks for incapacitating pain.

### **Criteria for Osteoporotic Vertebral Collapse**

For **any** of the 3 indications, **all** of the following must be met:

- There is a high degree of certainty through targeted, documented physical exam and ancillary studies (e.g., x-ray, MRI, CT, fluoroscopy, bone scan) that pain is caused by a non-healing fracture, **and**
- The procedure is not being performed on a prophylactic basis, either for osteoporosis of the spine or chronic back pain, even if associated with old, healed compression fractures.

### **II. Severe Back Pain due to Osteolytic Vertebral Metastasis or Myeloma**<sup>3</sup>

#### **Criteria for Severe Pain due to Osteolytic Vertebral Metastasis or Myeloma related to Multiple Myeloma or Metastatic Malignancies**

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**All of the following must be met:**

- Severe back pain related to the destruction of a vertebral body that does not involve the major part of the cortical bone, **and**
- There is a high degree of certainty through targeted, documented physical exam and ancillary studies (e.g., x-ray, MRI, CT, fluoroscopy, bone scan) that pain is caused by a non-healing fracture, **and**
- The procedure is not being performed on a prophylactic basis, either for osteoporosis of the spine or chronic back pain, even if associated with old, healed compression fractures.

**III. Vertebral Hemangioma with Aggressive Clinical Signs <sup>3</sup>**

**Criteria for Vertebral Hemangioma with Aggressive Clinical Signs**

**All of the following criteria must be met:**

- Pain and/or neurologic deficits, **and**
- There is a high degree of certainty through targeted, documented physical exam and ancillary studies (e.g., x-ray, MRI, CT, fluoroscopy, bone scan) that pain and/or neurologic deficits are caused by the hemangioma, **and**
- The procedure is not being performed on a prophylactic basis, either for osteoporosis of the spine or chronic back pain, even if associated with old, healed compression fractures.

**Note:** For diagnoses that are considered medically necessary for Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx, see footnote 3.

**When services are not covered for Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx**

We do not cover percutaneous vertebroplasty or kyphoplasty for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx for conditions not listed above.<sup>3</sup>

**Individual consideration**

All our medical policies are written for the majority of people with a given condition. Each policy is based on medical science. For many of our medical policies, each individual's unique clinical circumstances may be considered in light of current scientific literature. For consideration of an individual patient, physicians may send relevant clinical information to:

**For services already billed**

Blue Cross Blue Shield of Massachusetts  
Provider Appeals  
P. O. Box 986065  
Boston, MA 02298

**Prior to performance of service**

Blue Cross Blue Shield of Massachusetts  
Case Creation/Medical Policy  
One Enterprise Drive  
Quincy, MA 02171  
Tel: 1-800-327-6716  
Fax: 1-888-641-5330

**Authorization Information**

**For Managed Care members:**

- Authorizations are required for these services; see *Managed Care Guidelines* for additional requirements.

**For Indemnity and PPO members:**

- No authorizations are required for these services; see *Indemnity and PPO Guidelines* for additional requirements.

**Managed Care Guidelines**

All authorization requirements are determined by the individual's subscriber certificate, explanation of coverage, or summary plan description, however;

- **For Medicare HMO Blue members:** The service must meet the criteria for coverage noted in this policy, be medically necessary, prescribed by a plan physician and provided by a network provider.
- **For Medicare HMO Blue members:** Referrals are required for all visits to a specialist.
- For all other Managed Care plans, any specialist visit requires a referral, except for visits performed by OB/GYN specialists.
- Authorization is required for an inpatient admission.

### **Indemnity and PPO Guidelines**

**All authorization requirements are determined by the individual's subscriber certificate, explanation of coverage, or summary plan description, however;**

- Authorization is required for an inpatient admission.
- Authorizations are not required for most outpatient services as determined by the individual's subscriber certificate.
- Referrals to a specialist are not required.

### **Coding information**

*Procedure codes are from current CPT, HCPCS Level II, Revenue Code, and/or ICD-9-CM manuals, as recommended by the American Medical Association, Centers for Medicare and Medicaid Services and American Hospital Associations. Blue Cross Blue Shield Association national codes may be developed when appropriate.*

*The following codes are included below for informational purposes. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.*

#### **CPT codes:**

- **22520:** percutaneous vertebroplasty, one vertebral body, unilateral or bilateral injection; thoracic
- **22521:** percutaneous vertebroplasty, one vertebral body, unilateral or bilateral injection; lumbar
- **22522:** percutaneous vertebroplasty, one vertebral body, unilateral or bilateral injection; each additional thoracic or lumbar vertebral body (List separately in addition to code for primary procedure)
- **22523:** percutaneous vertebral augmentation, including cavity creation (fracture reduction and bone biopsy included when performed) using mechanical device, one vertebral body, unilateral or bilateral cannulation (e.g., kyphoplasty); thoracic
- **22524:** percutaneous vertebral augmentation, including cavity creation (fracture reduction and bone biopsy included when performed) using mechanical device, one vertebral body, unilateral or bilateral cannulation (e.g., kyphoplasty); lumbar
- **22525:** percutaneous vertebral augmentation, including cavity creation (fracture reduction and bone biopsy included when performed) using mechanical device, one vertebral body, unilateral or bilateral cannulation (e.g., kyphoplasty); each additional thoracic or lumbar vertebral body (List separately in addition to code for primary procedure)
- **72291:** radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under fluoroscopic guidance
- **72292:** radiological supervision and interpretation, percutaneous vertebroplasty or vertebral augmentation including cavity creation, per vertebral body; under CT guidance

**Note:** CPT codes 22520-22525; and CPT codes 72291-72292 will deny, leaving no patient balance if submitted with a diagnosis other than the covered listed conditions *for commercial non managed products, effective 11/09, and for our Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx products.*

**Note:** See footnote 3 for medically necessary diagnoses *for Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx only.*

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**HCPCS codes:**

- **S2360:** percutaneous vertebroplasty, one vertebral body, unilateral or bilateral injection; cervical
- **S2361:** percutaneous vertebroplasty, one vertebral body, unilateral or bilateral injection; each additional cervical vertebral body (List separately in addition to code for primary procedure)

**Note:** HCPCS Level II national codes S2360-S2361 will deny, leaving no patient balance if submitted with a diagnosis other than the covered listed conditions *for commercial non managed care products only. Effective 11/09.*

**Note:** See footnote 4 for medically necessary diagnoses *for commercial non managed care products only. Effective 11/09.*

**Facility coding****ICD-9 CM procedure codes:**

- **81.65:** percutaneous vertebroplasty
- **81.66:** percutaneous vertebral augmentation (i.e., kyphoplasty)

**Other information**

- For our Medical Technology Assessment Guidelines, see document #[350](#).

**Policy update history**

Issued 1991. Revised 8/96 to include scientific background information. Reviewed 3/97, additional scientific references were added, no changes in coverage. Reviewed 7/98; no changes in coverage were made. Reviewed 7/99; no changes in coverage were made. Updated 10/00 to exclude coverage for percutaneous vertebroplasty. Updated 12/00 to include coverage for percutaneous vertebroplasty for Medicare HMO Blue members only, effective 12/1/00. Reviewed 7/01, no changes in coverage were made. Reviewed 1/02, no changes in coverage were made. Updated 2/02 to exclude coverage for percutaneous kyphoplasty. Reviewed July 2002, (paper review), by representatives of the Massachusetts Orthopedic Association. No changes in coverage were made. Reviewed 1/03 MPG Neurology, no changes in coverage were made. Updated 6/03 to clarify medically necessary diagnoses for percutaneous vertebroplasty for Medicare HMO Blue members only. Reviewed 1/04 MPG neurology, no changes were made. Updated 6/04 with new CPT codes effective 7/1/04. Reviewed 7/04 MPG Orthopedic, no changes in coverage were made. Updated 5/05 to clarify Medicare HMO Blue coverage and billing information related to kyphoplasty (balloon-assisted vertebroplasty). Reviewed 7/05 MPG-Orthopedic, no changes in coverage were made. Updated 9/05 based on review of BCBSA national policy issued 6/05 specific to percutaneous vertebroplasty, no change in policy statement. Updated 9/05 based on national policy issued 6/05 specific to percutaneous kyphoplasty, no change in policy statement. Reviewed 1/06 MPG-Neurology, no changes in coverage were made. Updated 3/06 billing information to include new and deleted CPT and HCPCS Level II codes effective 1/1/06 and 3/31/06. Reviewed 7/06 MPG - Orthopedic/Rheumatology, no changes in coverage were made. Updated 12/06 to include 2 additional references for percutaneous vertebroplasty based on BCBSA national policy issued 10/06, no change in policy in statement and updated Coding Information section with 1/1/07 CPT codes. Updated 12/06 to include 3 additional references for percutaneous kyphoplasty based on BCBSA national policy issued 10/06, no change in policy statement. Reviewed 1/07 MPG Neurology, no changes in coverage were made. Reviewed 1/08 MPG-Neurology, no changes in coverage were made. Reviewed 7/08 MPG- orthopedics, no changes in coverage were made. Updated 11/08 after comparative review of BCBSMA's policy with Local Medicare LCD specific to percutaneous vertebroplasty; updated coding information section, and footnote 16 with web link to Local Medicare LCD and additional medically necessary ICD-9 CM diagnosis of 203.02. Updated 12/08 to implement editing to support coverage of percutaneous vertebroplasty and kyphoplasty when billed with CPT codes 22520-22525; and 72291-72292 for our Medicare Advantage Products only; editing is effective 1/1/09 and noted under footnote 16. New Policy, effective 6/1/09, percutaneous vertebroplasty and kyphoplasty are now covered for commercial products for identified indications. Reviewed 7/09 MPG - Orthopedics, Rehabilitation Medicine, and Rheumatology, no changes in coverage were made. Updated 9/09 to

implement editing to support coverage of percutaneous vertebroplasty and kyphoplasty when billed with CPT codes 22520-22525 and 72291-72292; national codes S2361-S2362 for our commercial non managed care products only; editing is effective 11/1/09 and is noted under footnote 4.

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## Footnotes

<sup>1</sup> Based upon BCBSA national policy 6.01.25 Percutaneous Vertebroplasty issued 10/08

<sup>2</sup> Based upon BCBSA national policy 6.01.38 Percutaneous Kyphoplasty issued 10/08.

<sup>3</sup> Based upon Local Medicare LCD. Percutaneous vertebroplasty and kyphoplasty (balloon-assisted vertebroplasty) is covered for Medicare HMO Blue, Medicare PPO Blue and Blue Medicare PFFS PlusRx members in accordance with local Medicare guidelines. For more information see:

[http://www.cms.hhs.gov/mcd/viewlcd.asp?lcd\\_id=11417&lcd\\_version=30&show=all](http://www.cms.hhs.gov/mcd/viewlcd.asp?lcd_id=11417&lcd_version=30&show=all)

**Procedure to diagnosis editing is effective 1/1/09 for Percutaneous Vertebroplasty (CPT codes 22520-22525; and 72291-72292) for Medicare Advantage Products only.**

### **ICD-9 CM diagnoses codes that support medical necessity for Medicare HMO Blue, Medicare PPO Blue, and Blue Medicare PFFS PlusRx products only include:**

- 170.2 Malignant neoplasm of vertebral column excluding sacrum and coccyx
- 198.5 Secondary malignant neoplasm of bone and bone marrow
- 203.00 Multiple myeloma without remission
- 203.01 Multiple myeloma in remission
- 203.02 Multiple myeloma, in relapse
- 228.09 Hemangioma of other sites
- 238.0 Neoplasm of uncertain behavior of bone and articular cartilage
- 238.6 Neoplasm of uncertain behavior of plasma cells
- 239.2 Neoplasm of unspecified nature of bone, soft tissue, and skin
- 277.7 Dysmetabolic syndrome X
- 277.81 Primary carnitine deficiency
- 277.82 Carnitine deficiency due to inborn errors of metabolism
- 277.83 Iatrogenic carnitine deficiency
- 277.84 Other secondary carnitine deficiency
- 277.89 Other specified disorders of metabolism
- 733.01 Senile osteoporosis
- 733.02 Idiopathic osteoporosis
- 733.09 Other osteoporosis
- 733.13 Pathological fracture of vertebrae
- 733.82 Nonunion of fracture
- 805.2 Closed fracture of dorsal (thoracic) vertebra without spinal cord injury
- 805.4 Closed fracture of lumbar vertebra without spinal cord injury

- 805.8 Closed fracture of unspecified part of vertebral column without spinal cord injury

<sup>4</sup> **Procedure to diagnosis editing is effective 11/1/09 for percutaneous vertebroplasty and kyphoplasty procedures (CPT codes 22520-22525; and 72291-72292; national codes S2360-S2361) for commercial non managed care products only.**

**ICD-9 CM diagnoses codes that support medical necessity for commercial non managed care products only:**

- 170.2 Malignant neoplasm of vertebral column excluding sacrum and coccyx
- 198.5 Secondary malignant neoplasm of bone and bone marrow
- 203.00 Multiple myeloma without remission
- 203.01 Multiple myeloma in remission
- 203.02 Multiple myeloma, in relapse
- 238.0 Neoplasm of uncertain behavior of bone and articular cartilage
- 238.6 Neoplasm of uncertain behavior of plasma cells
- 239.2 Neoplasm of unspecified nature of bone, soft tissue, and skin
- 733.01 Senile osteoporosis
- 733.02 Idiopathic osteoporosis
- 733.09 Other osteoporosis
- 733.13 Pathological fracture of vertebrae
- 805.2 Closed fracture of dorsal (thoracic) vertebra without spinal cord injury
- 805.4 Closed fracture of lumbar vertebra without spinal cord injury