GUIDELINES
This policy does not certify benefits or authorization of benefits, which is designated by each individual policyholder contract. Paramount applies coding edits to all medical claims through coding logic software to evaluate the accuracy and adherence to accepted national standards. This guideline is solely for explaining correct procedure reporting and does not imply coverage and reimbursement.

DESCRIPTION
**Electrical Bone Growth Stimulation** describes the use of a device (either implanted into the body or worn externally), that uses an electric field or current to stimulate the growth of bone tissue. These devices have been proven effective in the treatment of many conditions of failed bone growth.

- **Invasive**: The implantable current generator is surgically placed in an intramuscular or subcutaneous space, while an electrode is implanted within the fragments of bone graft at the targeted fusion site. The implanted device is usually functional for 6 to 9 months at which point the current generator is removed in a second surgical procedure, while the electrodes may or may not be removed. Implantable bone growth stimulators are used as an adjunct to spinal fusion surgery and implanted at the time of surgery. They have been investigated for use in the appendicular skeleton.

- **Non-Invasive**: An external power source generates a weak electrical current to the target sites using either pulsed electromagnetic fields, capacitive coupling or combined magnetic fields.

**Ultrasonic Bone Growth Stimulation** describes the use of a non-invasive device that emits low intensity, pulsed ultrasound to accelerate bone repair. The device is characterized by a main operating unit with an external power supply that is connected to a treatment head module affixed to a mounting fixture, and centered over the fracture site. This device is specifically programmed to promote accelerated fracture healing. It does not increase the temperature of the tissue; therefore, can be administered by the patient at home in one daily 20-minute treatment.

**POLICY**

<table>
<thead>
<tr>
<th>Bone Growth Stimulating Services/Devices (Osteogenic Stimulators) (E0747, E0748, E0749 &amp; E0760)</th>
<th>require prior authorization.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code E0749 is non-covered for Advantage &amp; Elite.</td>
<td></td>
</tr>
</tbody>
</table>

Bone Growth Stimulating Services/Devices (Osteogenic Stimulators) are considered covered services, applying the products to the member's Durable Medical Equipment (DME) benefit, and any related surgical procedure to the medical benefit.

**ELECTRICAL BONE GROWTH STIMULATOR: NON-SPINAL (HCPCS code E0747, E0749)**

A non-spinal electrical osteogenesis stimulator (20974, 20975, E0747, E0749) is covered only if any of the following criteria are met:
1. Nonunion of a long bone fracture (see Appendices section) defined as radiographic evidence that fracture healing has ceased for three or more months prior to starting treatment with the osteogenesis stimulator, or
2. Failed fusion of a joint other than in the spine where a minimum of nine months has elapsed since the last surgery, or
3. Congenital pseudarthrosis.

Nonunion of a long bone fracture must be documented by a minimum of two sets of radiographs obtained prior to starting treatment with the osteogenesis stimulator, separated by a minimum of 90 days, each including multiple views of the fracture site, and with a written interpretation by a physician stating that there has been no clinically significant evidence of fracture healing between the two sets of radiographs.

A non-spinal electrical osteogenesis stimulator will be denied as not medically necessary if none of the criteria above are met.

The use of an electrical bone growth stimulator (non-invasive or invasive) is non-covered for ANY other indication, including ANY of the following, because it is considered experimental, investigational or unproven:
• treatment of fresh fractures
• when used to enhance healing of fractures that are considered to be at high risk for delayed union or nonunion (e.g., smoking, diabetes, renal disease)
• stress fracture

ELECTRICAL BONE GROWTH STIMULATOR: SPINAL (HCPCS Codes E0748, E0749)
A spinal electrical osteogenesis stimulator (20974, 20975, E0748, E0749) is covered only if any of the following criteria are met:
1. Failed spinal fusion where a minimum of nine months has elapsed since the last surgery, or
2. Following a multilevel spinal fusion surgery (see Appendices section), or
3. Following spinal fusion surgery where there is a history of a previously failed spinal fusion at the same site.

A spinal electrical osteogenesis stimulator will be denied as not medically necessary if none of the criteria above are met.

ULTRASOUND BONE GROWTH STIMULATOR (HCPCS code E0760)
An ultrasonic osteogenesis stimulator (20974, E0760) is covered only if all of the following criteria are met:
1. Nonunion of a fracture documented by a minimum of two sets of radiographs obtained prior to starting treatment with the osteogenesis stimulator, separated by a minimum of 90 days. Each radiograph set must include multiple views of the fracture site accompanied by a written interpretation by a physician stating that there has been no clinically significant evidence of fracture healing between the two sets of radiographs; and
2. The fracture is not of the skull or vertebrae; and
3. The fracture is not tumor related.

An ultrasonic osteogenesis stimulator will be denied as not medically necessary if any of the criteria above are not met.

Use of an ultrasonic osteogenesis stimulator for the treatment of a fresh fracture or delayed union will be denied as not medically necessary.

Ultrasound conductive coupling gel is covered and separately payable if an ultrasonic osteogenesis stimulator is covered.

An ultrasonic osteogenesis stimulator will be denied as not medically necessary if it is used with other noninvasive osteogenesis stimulators.

An ultrasonic bone growth stimulator is non-covered for ANY other indication, including ANY of the following, because it is considered experimental, investigational or unproven:
• as part of the acute treatment (i.e., preoperative, immediately postoperative) of any fracture requiring open reduction and internal fixation (ORIF)
• fresh fractures (other than for the above listed indications)
• stress fracture

APPENDICES
A multilevel spinal fusion is one which involves 3 or more vertebrae (e.g., L3-L5, L4-S1, etc).

A long bone is limited to a clavicle, humerus, radius, ulna, femur, tibia, fibula, metacarpal, or metatarsal.

HMO, PPO, Individual Marketplace, Elite
The use of an electrical bone growth stimulator (spinal, non-spinal, invasive, non-invasive) is non-covered for ANY other indication, including the following, because it is considered experimental, investigational or unproven (this list may not be all inclusive):
• toe fracture
• sesamoid fracture
• avulsion fracture
• osteochondral lesion
• displaced fractures with malalignment
• synovial pseudoarthrosis
• the bone gap is either > 1cm or > one-half the diameter of the bone
• pars interarticularis defect (i.e., spondylolysis, spondylolisthesis)
as an adjunct to cervical spinal fusion surgery
stress fracture

**Advantage**
The use of an electrical bone growth stimulator (spinal, non-spinal, invasive, non-invasive) is non-covered for ANY other indication, including the following, because it is considered experimental, investigational or unproven (this list may not be all inclusive):
- toe fracture
- sesamoid fracture
- avulsion fracture
- osteochondral lesion
- displaced fractures with malalignment
- synovial pseudoarthrosis
- the bone gap is either > 1cm or > one-half the diameter of the bone
- pars interarticularis defect (i.e., spondylolysis, spondylolisthesis)
- stress fracture

**CODING/BILLING INFORMATION**
The appearance of a code in this section does not necessarily indicate coverage. Codes that are covered may have selection criteria that must be met. Payment for supplies may be included in payment for other services rendered.

<table>
<thead>
<tr>
<th>CPT CODES</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20974</td>
<td>Electrical stimulation to aid bone healing; non-invasive (non-operative); for both the osteogenic stimulator non-invasive, and osteogenic stimulator, non-invasive spinal application</td>
</tr>
<tr>
<td>20975</td>
<td>Electrical stimulation to aid bone healing; invasive (operative); surgical code for osteogenesis stimulator surgically implanted</td>
</tr>
<tr>
<td>20979</td>
<td>Low intensity ultrasound stimulation to aid bone healing, non-invasive (non-operative)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HCPCS CODES</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E0747</td>
<td>Osteogenesis stimulator, electrical, noninvasive, other than spinal applications</td>
</tr>
<tr>
<td>E0748</td>
<td>Osteogenesis stimulator, electrical, noninvasive, spinal applications</td>
</tr>
<tr>
<td>E0749</td>
<td>Osteogenesis stimulator, electrical, surgically implanted</td>
</tr>
<tr>
<td>E0760</td>
<td>Osteogenesis stimulator, low intensity ultrasound, noninvasive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICD-10-CM CODES</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>M96.0</td>
<td>Pseudarthrosis after fusion or arthrodesis</td>
</tr>
<tr>
<td>Q74.8</td>
<td>Other specified congenital malformations of limb(s)</td>
</tr>
<tr>
<td>S22.20Xa-S22.49xB</td>
<td>Fracture of rib(s) &amp; sternum</td>
</tr>
<tr>
<td>S32.301A-S32.9xxB</td>
<td>Fracture of pelvis</td>
</tr>
<tr>
<td>S42.001A-S42.92xB</td>
<td>Fracture of upper limb</td>
</tr>
<tr>
<td>S49.001A-S49.199A</td>
<td>Other and unspecified injuries of shoulder and upper arm</td>
</tr>
<tr>
<td>S52.001A-S52.92xC</td>
<td>Fracture of upper end of ulna</td>
</tr>
<tr>
<td>S59.001A-S59.299A</td>
<td>Other and unspecified injuries of elbow and forearm</td>
</tr>
<tr>
<td>S62.001A-S62.92xB</td>
<td>Fracture at wrist and hand level</td>
</tr>
<tr>
<td>S72.001A-S72.92xC</td>
<td>Fracture of femur</td>
</tr>
<tr>
<td>S79.001A-S79.199A</td>
<td>Other and unspecified injuries of hip and thigh</td>
</tr>
<tr>
<td>S82.001A-S82.899C</td>
<td>Fracture of lower leg, including ankle</td>
</tr>
<tr>
<td>S89.001A-S89.399A</td>
<td>Other and unspecified injuries of lower leg</td>
</tr>
<tr>
<td>S92.001A-S92.919B</td>
<td>Fracture of foot and toe, except ankle</td>
</tr>
<tr>
<td>Z98.1</td>
<td>Arthrodesis status</td>
</tr>
</tbody>
</table>

**TAWG REVIEW DATES:** 04/26/2018, 09/27/2018

**REVISION HISTORY EXPLANATION**
01/14/14: Removed ICD-9 procedure codes 78.9 & 99.86. ICD-10 Codes added from ICD-9 conversion. Policy reviewed and updated to reflect most current clinical evidence. Approved by Medical Policy Steering Committee as revised.
06/13/17: Procedure codes 20974-20979 do not require prior authorization. ICD-9 codes removed. Policy reviewed and updated to reflect most current clinical evidence per Medical Policy Steering Committee.
03/30/18: Added Appendices section as referenced in the criteria per CMS guidelines.
04/26/18: Reviewed and confirmed the use of an electrical bone growth stimulator (spinal, non-spinal, invasive, non-invasive) is non-covered as an adjunct to cervical spinal fusion surgery. Policy reviewed and updated to reflect most current clinical evidence per The Technology Assessment Working Group (TAWG).
09/27/18: Clarified that code E0749 is non-covered for Advantage & Elite per ODM & CMS guidelines. Effective 10/09/18 adjunct to cervical spinal fusion surgery is no longer a non-covered indication for Advantage per ODM guidelines. Policy reviewed and updated to reflect most current clinical evidence per The Technology Assessment Working Group (TAWG).

REFERENCES/RESOURCES
Centers for Medicare and Medicaid Services, CMS Manual System and other CMS publications and services
Ohio Department of Medicaid http://fis.ohio.gov/
American Medical Association, Current Procedural Terminology (CPT®) and associated publications and services
Centers for Medicare and Medicaid Services, Healthcare Common Procedure Coding System, HCPCS Release and Code Sets
Industry Standard Review
Hayes, Inc.