Teriparatide Products

Policy # 00239
Original Effective Date: 01/01/2010
Current Effective Date: 01/01/2021

Applies to all products administered or underwritten by Blue Cross and Blue Shield of Louisiana and its subsidiary, HMO Louisiana, Inc.(collectively referred to as the "Company"), unless otherwise provided in the applicable contract. Medical technology is constantly evolving, and we reserve the right to review and update Medical Policy periodically.

Note: abaloparatide (Tymlos™) is addressed separately in medical policy 00573.

When Services May Be Eligible for Coverage

Coverage for eligible medical treatments or procedures, drugs, devices or biological products may be provided only if:

- *Benefits are available in the member's contract/certificate, and*
- *Medical necessity criteria and guidelines are met.*

Postmenopausal Women with Osteoporosis

Based on review of available data, the Company may consider the use of teriparatide (Forteo®, Bonsity™, and Teriparatide authorized generic)‡ for the treatment of osteoporosis in postmenopausal women to be **eligible for coverage.****

Patient Selection Criteria

Coverage eligibility will be considered for the treatment of osteoporosis with teriparatide (Forteo, Bonsity, and Teriparatide authorized generic) when the following criteria are met:

- Patient is a postmenopausal woman who has central dual x-ray absorptiometry (DXA) bone mineral density (BMD) T-score less than or equal to -2.5 confirming osteoporosis, OR a fragility fracture [defined as a major osteoporotic fracture, sustained as a result of a low-level trauma (e.g., a fall from standing height or less) that is associated with low BMD, including vertebral (spine), hip, forearm (wrist/distal radius), and proximal humerus (shoulder) fractures]; AND
- Patient has not been on Forteo (or another parathyroid hormone product, e.g., Bonsity, Teriparatide authorized generic, or abaloparatide [Tymlos™]‡) for more than 2 years of cumulative therapy; AND
- Patient has or has had one of the following:
    - An inability to take bisphosphonates; OR

- A 12-month trial of bisphosphonates with documentation of new fractures or significant loss of bone mineral density; AND
  *(Note: This specific patient criterion is an additional Company requirement for coverage eligibility and will be denied as not medically necessary** if not met).*

- Patient has tried and failed (e.g., intolerance or inadequate response) Tymlos unless there is clinical evidence or patient history that suggests Tymlos will be ineffective or cause an adverse reaction to the patient.
  *(Note: This specific patient criterion is an additional Company requirement for coverage eligibility and will be denied as not medically necessary** if not met).*

Men with Primary or Hypogonadal Osteoporosis

Based on review of available data, the Company may consider the use of teriparatide (Forteo, Bonsity, and Teriparatide authorized generic) for the treatment of men with primary or hypogonadal osteoporosis to be **eligible for coverage.****

Patient Selection Criteria

Coverage eligibility will be considered for the treatment of men with primary or hypogonadal osteoporosis with teriparatide (Forteo, Bonsity, and Teriparatide authorized generic) when the following criteria are met:

- Patient is a male who has central dual x-ray absorptiometry (DXA) bone mineral density (BMD) T-score less than or equal to -2.5 confirming osteoporosis, OR a fragility fracture [defined as a major osteoporotic fracture, sustained as a result of a low-level trauma (e.g., a fall from standing height or less) that is associated with low BMD, including vertebral (spine), hip, forearm (wrist/distal radius), and proximal humerus (shoulder) fractures]; AND
- Patient has not been on Forteo (or another parathyroid hormone product, e.g., Bonsity, Teriparatide authorized generic, or abaloparatide [Tymlos™]‡) for more than 2 years of cumulative therapy; AND
- Patient has or has had one of the following:
  - An inability to take bisphosphonates; OR
  - A 12-month trial of bisphosphonates with documentation of new fractures or significant loss of bone mineral density; AND
    *(Note: This specific patient criterion is an additional Company requirement for coverage eligibility and will be denied as not medically necessary** if not met).*

- Patient has tried and failed (e.g., intolerance or inadequate response) Tymlos unless there is clinical evidence or patient history that suggests Tymlos will be ineffective or cause an adverse reaction to the patient.
  *(Note: This specific patient criterion is an additional Company requirement for coverage eligibility and will be denied as not medically necessary** if not met).*

Glucocorticoid Induced Osteoporosis

Based on review of available data, the Company may consider the use of teriparatide (Forteo, Bonsity, and Teriparatide authorized generic) for the treatment of men and women with glucocorticoid induced osteoporosis to be **eligible for coverage.****

Patient Selection Criteria

Coverage eligibility will be considered for the treatment of patients with glucocorticoid induced osteoporosis with teriparatide (Forteo, Bonsity, and Teriparatide authorized generic) when the following criteria are met:

- Patient has been on chronic systemic glucocorticoid therapy for at least 12 months; AND
- Patient has central dual x-ray absorptiometry (DXA) bone mineral density (BMD) T-score less than or equal to -2.5 confirming osteoporosis, OR a fragility fracture [defined as a major osteoporotic fracture, sustained as a result of a low-level trauma (e.g., a fall from standing height or less) that is associated with low BMD, including vertebral (spine), hip, forearm (wrist/distal radius), and proximal humerus (shoulder) fractures]; AND
- Patient has not been on Forteo (or another parathyroid hormone product, e.g., Bonsity, Teriparatide authorized generic, or abaloparatide [Tymlos™]‡) for more than 2 years of cumulative therapy; AND
- Patient has or has had one of the following:
  - An inability to take bisphosphonates; OR
  - A 12-month trial of bisphosphonates with documentation of new fractures or significant loss of bone mineral density; AND
    *(Note: This specific patient criterion is an additional Company requirement for coverage eligibility and will be denied as not medically necessary** if not met).*
- Patient has tried and failed (e.g., intolerance or inadequate response) Tymlos unless there is clinical evidence or patient history that suggests Tymlos will be ineffective or cause an adverse reaction to the patient.

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*(Note: This specific patient criterion is an additional Company requirement for coverage eligibility and will be denied as not medically necessary** if not met).*

When Services Are Considered Not Medically Necessary

Based on review of available data, the Company considers the use of teriparatide (Forteo, Bonsity, and Teriparatide authorized generic) in the absence of a 12-month trial of bisphosphonates and when the patient has not tried and failed Tymlos to be **not medically necessary.****

When Services Are Considered Investigational

Coverage is not available for investigational medical treatments or procedures, drugs, devices or biological products.

Based on review of available data, the Company considers the use of teriparatide (Forteo, Bonsity, and Teriparatide authorized generic) when patient selection criteria are not met to be **investigational*** (except for those denoted as **not medically necessary****)

Based on review of available data, the Company considers the use of teriparatide (Forteo, Bonsity, and Teriparatide authorized generic) when used for indications other than those approved by the U.S. FDA to be **investigational.***

Background/Overview

Teriparatide (Forteo, Bonsity, and Teriparatide) contains recombinant human parathyroid hormone. Parathyroid hormone regulates bone metabolism, renal tubular reabsorption of calcium and phosphate, and intestinal calcium absorption. These actions stimulate new bone formation on trabecular and cortical bone surfaces by preferential stimulation of osteoblastic activity over osteoclastic activity. Teriparatide has the same mechanism as abaloparatide (Tymlos), and both of these products are typically reserved for patients at very high risk for fractures or who cannot tolerate oral therapy. These two products have not been compared to each other in clinical trials, so no claims of superiority can be made.

Osteoporosis is characterized by decreased bone mass and increased fracture risk, most commonly at the spine, hip and wrist. DXA scans of patients with osteoporosis reveal a T-score less than or

equal to -2.5. In addition to those patients with a DXA score representing osteoporosis, treatment should be considered in those patients with a fragility fracture. A fragility fracture is a major osteoporotic facture, sustained as a result of a low-level trauma (e.g., a fall from standing height or less) that is associated with low BMD, including vertebral (spine), hip, forearm (wrist/distal radius), and proximal humerus (shoulder) fractures. While osteoporosis occurs in both men and women, it is most common among women following menopause. In healthy humans, bone formation and resorption are closely linked; old bone is resorbed and replaced by newly formed bone. In postmenopausal osteoporosis, bone resorption exceeds bone formation, leading to bone loss and increased risk of fracture. After menopause, the risk of fractures of the spine and hip increases; approximately 40% of 50-year old women will experience an osteoporosis-related fracture during their remaining lifetimes.

FDA or Other Governmental Regulatory Approval

U.S. Food and Drug Administration (FDA)

Forteo was approved for the treatment of postmenopausal osteoporosis and for men with primary or hypogonadal osteoporosis in late 2002. Forteo gained approval for the treatment of glucocorticoid induced osteoporosis in mid-2009.

Bonsity was approved in late 2019 for the same indications as Forteo, and its authorized generic was launched in late 2020.

Rationale/Source

This medical policy was developed through consideration of peer-reviewed medical literature generally recognized by the relevant medical community, U.S. Food and Drug Administration approval status, nationally accepted standards of medical practice and accepted standards of medical practice in this community, Blue Cross and Blue Shield Association technology assessment program (TEC) and other non-affiliated technology evaluation centers, reference to federal regulations, other plan medical policies, and accredited national guidelines.

The safety and efficacy of once-daily Forteo, median exposure of 19 months, were examined in a double-blind, multicenter, placebo-controlled clinical study of 1,637 postmenopausal women with osteoporosis (Forteo 20 mcg, n = 541). All women received 1000 mg of calcium and at least 400 IU of vitamin D per day. Baseline and endpoint spinal radiographs were evaluated using the

semiquantitative scoring. Ninety percent of the women in the study had one or more radiographically diagnosed vertebral fractures at baseline. The primary efficacy endpoint was the occurrence of new radiographically diagnosed vertebral fractures defined as changes in the height of previously undeformed vertebrae. Such fractures are not necessarily symptomatic. Forteo, when taken with calcium and vitamin D and compared with calcium and vitamin D alone, reduced the risk of 1 or more new vertebral fractures from 14.3% of women in the placebo group to 5.0% in the Forteo group. This difference was statistically significant ($p < 0.001$); the absolute reduction in risk was 9.3% and the relative reduction was 65%. Forteo was effective in reducing the risk for vertebral fractures regardless of age, baseline rate of bone turnover, or baseline BMD. Forteo significantly reduced the risk of any nonvertebral fracture from 5.5% in the placebo group to 2.6% in the Forteo group ($p < 0.05$). The absolute reduction in risk was 2.9% and the relative reduction was 53%. The incidence of new nonvertebral fractures in the Forteo group compared with the placebo group was ankle/foot (0.2%, 0.7%), hip (0.2%, 0.7%), humerus (0.4%, 0.4%), pelvis (0%, 0.6%), ribs (0.6%, 0.9%), wrist (0.4%, 1.3%), and other sites (1.1%, 1.5%), respectively. Forteo increased lumbar spine BMD in postmenopausal women with osteoporosis. Statistically significant increases were seen at 3 months and continued throughout the treatment period. Postmenopausal women with osteoporosis who were treated with Forteo had statistically significant increases in BMD from baseline to endpoint at the lumbar spine, femoral neck, total hip, and total body. Forteo treatment increased lumbar spine BMD from baseline in 96% of postmenopausal women treated. Seventy-two percent of patients treated with Forteo achieved at least a 5% increase in spine BMD, and 44% gained 10% or more.

The safety and efficacy of once-daily Forteo, median exposure of 10 months, were examined in a double-blind, multicenter, placebo-controlled clinical study of 437 men with either primary (idiopathic) or hypogonadal osteoporosis (Forteo 20 mcg, n = 151). All men received 1000 mg of calcium and at least 400 IU of vitamin D per day. The primary efficacy endpoint was change in lumbar spine BMD. Forteo increased lumbar spine BMD in men with primary or hypogonadal osteoporosis. Statistically significant increases were seen at three months and continued throughout the treatment period. Forteo was effective in increasing lumbar spine BMD regardless of age, baseline rate of bone turnover and baseline BMD. Forteo treatment for a median of ten months increased lumbar spine BMD from baseline in 94% of men treated. Fifty-three percent of patients treated with Forteo achieved at least a 5% increase in spine BMD, and 14% gained 10% or more.

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The efficacy of Forteo for treating glucocorticoid-induced osteoporosis was assessed in a randomized, double-blind, active-controlled trial of 428 patients (19% men, 81% women) aged 22 to 89 years (mean 57 years) treated with ≥ 5 mg/day prednisone or equivalent for a minimum of 3 months. The duration of the trial was 18 months with 214 patients exposed to Forteo. In the Forteo group, the baseline median glucocorticoid dose was 7.5 mg/day and the median duration of glucocorticoid use was 1.5 years. The mean standard deviation (SD) baseline lumbar spine BMD was 0.85 ± 0.13 g/cm2 and lumbar spine BMD T-score was –2.5 ± 1 (number of SDs below the mean BMD value for healthy adults). A total of 30% of patients had prevalent vertebral fracture(s) and 43% had prior non-vertebral fracture(s). The patients had chronic rheumatologic, respiratory or other diseases that required sustained glucocorticoid therapy. All patients received 1000 mg of calcium plus 800 IU of vitamin D supplementation per day. In patients with glucocorticoid-induced osteoporosis, Forteo increased lumbar spine BMD compared with baseline at 3 months through 18 months of treatment. In patients treated with Forteo, the mean percent change in BMD from baseline to endpoint was 7.2% at the lumbar spine, 3.6% at the total hip and 3.7% at the femoral neck ($p < 0.001$ all sites). The relative treatment effects of Forteo were consistent in subgroups defined by gender, age, geographic region, body mass index, underlying disease, prevalent vertebral fracture, baseline glucocorticoid dose, prior bisphosphonate use and glucocorticoid discontinuation during trial.

References

1. Forteo [Prescribing Information]. Indianapolis, IN: Eli Lilly Company. March 2012.
2. Bone Modifiers- Teriparatide Products PA Policy. Express Scripts. July 2020.

Policy History

Original Effective Date: 01/01/2010
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09/03/2009	Medical Policy Committee approval.
09/16/2009	Medical Policy Implementation Committee approval. New policy.
09/09/2010	Medical Policy Committee review
09/15/2010	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
09/01/2011	Medical Policy Committee review
09/14/2011	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.

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10/06/2011	Medical Policy Committee review
10/19/2011	Medical Policy Implementation Committee approval. Added a *Note* to the Boniva and Forteo criteria regarding the 12-month trial of oral bisphosphonates without documented improvement. Noted that the reason for denial will be not medically necessary if these criteria are not met. The not medically necessary denial statements for Boniva and Forteo are also incorporated into the Investigational and Not Medically Necessary coverage sections for each of these drugs.
10/11/2012	Medical Policy Committee review
10/31/2012	Medical Policy Implementation Committee approval. Policy statement updated with "oral" for clarification. Black box warning omitted.
10/03/2013	Medical Policy Committee review
10/16/2013	Medical Policy Implementation Committee approval. No change to coverage.
04/03/2014	Medical Policy Committee review
04/23/2014	Medical Policy Implementation Committee approval. Added fragility fracture as an option for treatment as an alternative for T score in treatment of osteoporosis.
04/02/2015	Medical Policy Committee review
04/20/2015	Medical Policy Implementation Committee approval. No change to coverage.
08/03/2015	Coding update: ICD10 Diagnosis code section added; ICD9 Procedure code section removed.
04/07/2016	Medical Policy Committee review
04/20/2016	Medical Policy Implementation Committee approval. No change to coverage.
01/01/2017	Coding update: Removing ICD-9 Diagnosis Codes
04/06/2017	Medical Policy Committee review
04/19/2017	Medical Policy Implementation Committee approval. No change to coverage.
01/01/2017	Coding update: Removing ICD-9 Diagnosis Codes
10/05/2017	Medical Policy Committee review
10/18/2017	Medical Policy Implementation Committee approval. Updated the definition of fragility fracture and added language to ensure that the patient has not been on any parathyroid hormone product for more than 2 years of cumulative therapy.
10/04/2018	Medical Policy Committee review
10/17/2018	Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
10/03/2019	Medical Policy Committee review

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10/09/2019 Medical Policy Implementation Committee approval. Title changed from "Parenteral Therapy for Osteoporosis" to "teriparatide (Forteo)"Removed criteria and background information for Boniva. Updated criteria for trial and failure of bisphosphonate therapy to align with standard of care.
10/01/2020 Medical Policy Committee review
10/07/2020 Medical Policy Implementation Committee approval. Title changed from "teripartide (Forteo)" to "Teriparatide Products" to reflect availability of Bonsity and its authorized generic. Updated criteria to require trial and failure of Tymlos prior to approval of teriparatide for all indications and to require failure of or inability to tolerate bisphosphonates for all indications.
Next Scheduled Review Date: 10/2021

*Investigational – A medical treatment, procedure, drug, device, or biological product is Investigational if the effectiveness has not been clearly tested and it has not been incorporated into standard medical practice. Any determination we make that a medical treatment, procedure, drug, device, or biological product is Investigational will be based on a consideration of the following:

A. Whether the medical treatment, procedure, drug, device, or biological product can be lawfully marketed without approval of the U.S. Food and Drug Administration (FDA) and whether such approval has been granted at the time the medical treatment, procedure, drug, device, or biological product is sought to be furnished; or
B. Whether the medical treatment, procedure, drug, device, or biological product requires further studies or clinical trials to determine its maximum tolerated dose, toxicity, safety, effectiveness, or effectiveness as compared with the standard means of treatment or diagnosis, must improve health outcomes, according to the consensus of opinion among experts as shown by reliable evidence, including:
    1. Consultation with the Blue Cross and Blue Shield Association technology assessment program (TEC) or other nonaffiliated technology evaluation center(s);
    2. Credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community; or
    3. Reference to federal regulations.

**Medically Necessary (or "Medical Necessity") - Health care services, treatment, procedures, equipment, drugs, devices, items or supplies that a Provider, exercising prudent clinical judgment,

would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury, disease or its symptoms, and that are:

A. In accordance with nationally accepted standards of medical practice;
B. Clinically appropriate, in terms of type, frequency, extent, level of care, site and duration, and considered effective for the patient's illness, injury or disease; and
C. Not primarily for the personal comfort or convenience of the patient, physician or other health care provider, and not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.

For these purposes, "nationally accepted standards of medical practice" means standards that are based on credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community, Physician Specialty Society recommendations and the views of Physicians practicing in relevant clinical areas and any other relevant factors.

‡ Indicated trademarks are the registered trademarks of their respective owners.

NOTICE: If the Patient's health insurance contract contains language that differs from the BCBSLA Medical Policy definition noted above, the definition in the health insurance contract will be relied upon for specific coverage determinations.

NOTICE: Medical Policies are scientific based opinions, provided solely for coverage and informational purposes. Medical Policies should not be construed to suggest that the Company recommends, advocates, requires, encourages, or discourages any particular treatment, procedure, or service, or any particular course of treatment, procedure, or service.