Implantable Hormone Pellets

Policy #  00073
Original Effective Date:  01/26/2004
Current Effective Date:  05/01/2020

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.

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.

Based on review of available data, the Company may consider implantable testosterone pellets for use in males for the treatment of primary or secondary hypogonadism OR delayed puberty to be eligible for coverage.**

Patient Selection Criteria

Coverage eligibility will be considered for implantable testosterone pellets when the following criteria are met:

- An established diagnosis of hypogonadism with androgen deficiency (see Policy Guidelines section) when all of the following criteria are met:
  - Persistently low testosterone levels; AND
  - Multiple symptoms of hypogonadism including at least 1 “more specific” symptom (see Policy Guidelines section); AND
  - NO dual therapy with another testosterone product; AND
  - Dosing does not exceed upper limit of the dosing range, i.e. 450 mg every 3 months or 6 pellets every 3 months (see Policy Guidelines section),
  - OR

- Hormone pellet implantation is being used for treatment of delayed male puberty, dosing does not exceed upper limit of the dosing range, i.e. 450 mg every 3 months or 6 pellets every 3 months (see Policy Guidelines section) and pellets are not used in addition to another testosterone product.
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Note: For treatment of delayed male puberty a six-month-or-shorter course of androgen may be indicated for induction of puberty in patients with familial delayed puberty, a condition characterized by spontaneous, nonpathologic, late-onset puberty.

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 implantable hormone testosterone pellets when patient selection criteria are not met, including but not limited to older men with type 2 diabetes mellitus and androgen deficiency or low testosterone levels in the absence of clinical signs and symptoms of hypogonadism, to be investigational.*

Based on review of available data, the Company considers the use of implantable hormone testosterone pellets for non-U.S. Food and Drug Administration (FDA) approved indications to be investigational.*

Based on review of available data, the Company considers the use of implantable hormone estradiol pellets to be investigational.*

Policy Guidelines
This policy only addresses testosterone replacement therapy; it does not apply to treatments for gender transition.

Diagnosis of Androgen Deficiency
An established diagnosis of hypogonadism with androgen deficiency includes appropriate evaluation and diagnostic workup of a man who presents with symptoms of hypogonadism. Clinical practice guidelines recommend measuring serum testosterone only in men with consistent clinical manifestations of hypogonadism. Screening in asymptomatic populations is not recommended. Measurement of serum total testosterone is initially used; serum-free testosterone levels can be measured when total testosterone is in the low-normal range, and alterations of serum hormone-binding globulin are suspected Bhasin et al [2018]). Once a persistently low testosterone level has been established, diagnostic testing of the hypothalamic-pituitary axis should be performed to
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distinguish primary hypogonadism from secondary hypogonadism. When secondary hypogonadism is identified, the underlying etiology should be identified and any reversible causes treated appropriately before consideration of testosterone replacement.

Men on chronic steroid treatment would be receiving ongoing treatment for a chronic condition as opposed to episodic treatment for an acute condition or acute flare of a chronic condition. The length of acute episodic steroid treatment may vary from several days to several months, but, in most cases, will be less than 4 to 6 weeks.

Persistently low testosterone levels refer to serum levels below the lower limit of normal on at least 2 occasions when measured in the early morning (~8:00 A.M.). The threshold lower limit for serum testosterone levels is not standardized. The Endocrine Society has recommended a lower limit for normal levels of 300 ng/dL for total testosterone and 9.0 ng/dL for free testosterone (Bhasin et al [2018]). Joint guidelines from several European and American specialty societies have recommended that replacement therapy be considered at serum total testosterone levels less than 350 ng/dL.

“More specific” symptoms of hypogonadism, as classified by the Endocrine Society, include the following (Bhasin et al [2018]):

- Incomplete or delayed sexual development
- Decreased libido
- Decreased spontaneous erections
- Breast discomfort, gynecomastia
- Loss of axillar and/or pubic body hair
- Very small (<5 mL) or shrinking testes
- Infertility due to low sperm count
- Height loss due to vertebral fractures, low trauma fractures, low bone density
- Hot flushes, sweats.

Testosterone Dosage Guidelines
Dosing of testosterone varies, depending on age, baseline testosterone levels, comorbid disease, response to initial replacement levels, and adverse reactions. General dosing guidelines are provided by Endocrine Society (see Practice Guidelines and Position Statements section). Specific dosing
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guidelines for a few of the more commonly used preparations, taken from the product prescribing information, follow:

- **Testopel**: The recommended dosing range is 150 to 450 mg every 3 to 6 months. For 75-mg pellets, this would correspond to the implantation of 2 to 6 pellets every 3 to 6 months. The dosing interval is individualized because some patients will require redosing as early as every 3 months while others may not require redosing for up to 6 months.

Monitoring of testosterone replacement should be performed beginning 3 to 6 months after replacement is initiated to ascertain whether serum levels are restored to the normal range, to determine whether clinical symptoms have improved, and to monitor for adverse events. The goal of testosterone replacement is to raise levels into the mid-normal range. Higher replacement levels are unlikely to improve symptoms further and may increase the incidence and/or severity of adverse events.

**Monitoring Strategies for Patients on Testosterone Therapy**

Recommendations for monitoring for testosterone-related adverse events have been provided by Endocrine Society guidelines on testosterone therapy in men with androgen deficiency (see Practice Guidelines and Position Statements section) (Bhasin et al [2018]). These recommendations include:

- Determine hematocrit levels at baseline, at 3 to 6 months, and then annually. If the hematocrit level is above 54%, stop therapy until the hematocrit level decreases to a safe level, evaluate the patient for hypoxia and sleep apnea, and reinitiate therapy at a reduced dose.

- Repeating bone mineral density of the lumbar spine, femoral neck, and hip after 1 to 2 years of testosterone therapy in hypogonadal men with osteoporosis.

- For men 55 to 69 years of age, and for men 40 to 69 years of age who are at increased risk for prostate cancer, conduct a digital examination of the prostate and prostate-specific antigen (PSA) measurement before initiating treatment, at 3 to 2 months after initiating treatment, and then in accordance with evidence-based guidelines for prostate cancer screening, depending on the age and race of the patient.

- Obtain urologic consultation if there is:
  - An increase in serum or plasma PSA concentration greater than 1.4 ng/mL within 12-months of initiating testosterone treatment.
  - A confirmed PSA of more than 4 ng/mL at any time.
  - Detection of a prostatic abnormality on digital rectal examination.
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- Substantial worsening of lower urinary tract symptoms.

**Background/Overview**
Hormone pellets contain either estrogen (estradiol) or testosterone and are implanted subcutaneously to provide hormone replacement therapy (HRT). The pellets provide a slow, continuous release of hormone into the bloodstream and, unlike oral hormone replacement, are not metabolized by the liver. The pellets can last up to six months, but are more typically replaced every three to four months. Frequently, this is the last resort being used after traditional methods of administration (oral, injection or dermal patch) have failed or been poorly tolerated due to side effects.

**FDA or Other Governmental Regulatory Approval**
U.S. Food and Drug Administration (FDA)

Numerous preparations of testosterone have been approved by FDA for use in testosterone replacement therapy. They include intramuscular, oral, topical, subcutaneous, and buccal preparations.

In March 2015, FDA issued a drug safety communication for prescription testosterone products. The communication stated: “We are requiring that the manufacturers of all approved prescription testosterone products change their labeling to clarify the approved uses of these medications. We are also requiring these manufacturers to add information to the labeling about a possible increased risk of heart attacks and strokes in patients taking testosterone. Health care professionals should prescribe testosterone therapy only for men with low testosterone levels caused by certain medical conditions and confirmed by laboratory tests.”

The communication also stated: “FDA has concluded that there is a possible increased cardiovascular risk associated with testosterone use. These studies included aging men treated with testosterone. Some studies reported an increased risk of heart attack, stroke, or death associated with testosterone treatment, while others did not.”

In March 2019, the FDA approved an oral testosterone product, Jatenzo® (testosterone undecanoate), for testosterone replacement therapy in adult males with conditions associated with a deficiency or absence of endogenous testosterone. More specifically, the product is approved for replacement therapy in primary hypogonadism (congenital or acquired): testicular failure due to...
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conditions such as cryptorchidism, bilateral torsion, orchitis, vanishing testis syndrome, orchectomy, Klinefelter’s syndrome, chemotherapy, or toxic damage from alcohol or heavy metals and hypogonadotrophic hypogonadism (congenital or acquired): gonadotropin or luteinizing hormone-releasing hormone deficiency or pituitary-hypothalamic injury from tumors, trauma, or radiation. It is not intended to be used in men with age-related hypogonadism. Jatenzo (testosterone undecanoate) carries a boxed warning within the label that the product is associated with an increase in blood pressure, thereby increasing heart attack, stroke, and cardiovascular death risks. Physicians are advised to periodically monitor their patients’ blood pressure during treatment.

Rationale/Source

Testosterone
Androgen deficiency, also known as hypogonadism, results from the sub-normal production of testosterone by the testes. Testicular failure may have a genetic or a developmental basis, or may be acquired. Hypogonadotropic (secondary) hypogonadism may result from either acquired or congenital defects in pituitary or hypothalamic function. The efficacy of long acting subcutaneous testosterone pellets as a form of maintenance treatment in hypogonadal males has been proven through randomized clinical trials.

The aging male population in the United States is expected to significantly increase between 2000 and 2030. The normal aging process in men is associated with a slow and irregular decline in blood testosterone levels. This testosterone deficiency produces symptoms similar to those associated with aging, such as loss of energy, depression, decreased libido, erectile dysfunction, loss of bone and muscle mass with decreased muscle strength, increased fat mass and frailty. Several randomized placebo-controlled studies of androgen therapy indicated that testosterone replacement can improve some of these symptoms. However, the studies have not assessed potential risks associated with testosterone replacement, in particular, cardiovascular or prostatic disease. TRT is not recommended in healthy older men due to the uncertainty of the benefit/risk ratio.

Estradiol
There were several randomized controlled trials evaluating the efficacy of estrogen pellet implants, along with a number of uncontrolled prospective clinical trials, case series reports and retrospective studies. In some studies, estrogen implant therapy was compared with placebo, while in others it was compared with oral or transdermal estrogen replacement therapy. Most of the studies identified for
review involved relatively small numbers of subjects, especially considering the numbers of women who are potential candidates for HRT. Additionally, most of the studies did not involve any kind of blinding, and none were completely blinded. Moreover, the effect of estrogen implants on climacteric symptoms was determined largely with subjective and patient-reported measures. Therefore, these studies may be subject to bias due to a significant placebo effect. Evaluation of the ability of estrogen implants to reduce or prevent the development of osteoporosis involved objective measures of bone density, and was likely subject to fewer biases. Only three of the studies reported on the effect of estrogen implants on lipoprotein profiles, and none provided sufficient long term data to evaluate the impact of estrogen implant therapy on risk of future cardiac events. Duration of follow-up was generally one to three years, although a few studies provided data on patients who had received estrogen implant therapy for more than 10 years.

**Supplemental Information**

*Practice Guidelines and Position Statements*

**Endocrine Society**

The Endocrine Society published clinical practice guidelines on testosterone therapy in men with androgen deficiency in 2018 (see Table 1).

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>SOR</th>
<th>QOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>“We recommend testosterone therapy in hypogonadal men to induce and maintain secondary sex characteristics and correct symptoms of testosterone deficiency.”</td>
<td>Recommend</td>
<td>Moderate</td>
</tr>
<tr>
<td>“We recommend against testosterone therapy in men planning fertility in the near term or in men with breast or prostate cancer, a palpable prostate nodule or induration, a prostate-specific antigen level &gt; 4 ng/mL, a prostate-specific antigen level &gt; 3 ng/mL combined with a high risk of prostate cancer (without further urological evaluation), elevated hematocrit, untreated severe obstructive sleep apnea, severe lower urinary tract symptoms, uncontrolled heart failure, myocardial infarction or stroke within the last 6 months, or thrombophilia”</td>
<td>Recommend</td>
<td>Low</td>
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</table>

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<tbody>
<tr>
<td>“In hypogonadal men 55 to 69 years old, who are being considered for testosterone therapy and have a life expectancy &gt;10 years, we suggest discussing the potential benefits and risks of evaluating prostate cancer risk and prostate monitoring and engaging the patient in shared decision making regarding prostate cancer monitoring. For patients who choose monitoring, clinicians should assess prostate cancer risk before starting testosterone treatment and 3 to 12 months after starting testosterone.”</td>
<td>Suggest</td>
<td>Very low</td>
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<tr>
<td>“In hypogonadal men being considered for testosterone therapy who are 40 to 69 years old and at increased risk of prostate cancer (e.g., African Americans and men with a first-degree relative with diagnosed prostate cancer), we suggest discussing prostate cancer risk with the patient and offering monitoring options.”</td>
<td>Suggest</td>
<td>Very low</td>
</tr>
</tbody>
</table>

Adapted from Bhasin et al (2018).

SOR: strength of recommendation; QOE: quality of evidence.

References
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11/18/2003 Medical Policy Committee review
01/26/2004 Managed Care Advisory Council approval
12/07/2004 Medical Director review
12/21/2004 Medical Policy Committee review. Format revision. No substance change to policy.
01/31/2005 Managed Care Advisory Council approval
02/01/2006 Medical Director review
02/15/2006 Medical Policy Committee review. Format revision, including addition of FDA and or other governmental regulatory approval and rationale/source. Coverage eligibility unchanged.
02/23/2006 Quality Care Advisory Council approval
03/14/2007 Medical Director review
03/21/2007 Medical Policy Committee approval
03/12/2008 Medical Director review
03/19/2008 Medical Policy Committee approval. No change to coverage eligibility.
03/04/2009 Medical Director review
03/18/2009 Medical Policy Committee approval. No change to coverage.
12/04/2009 Medical Policy Committee approval.
12/16/2009 Medical Policy Implementation Committee approval. Deleted the When Services are not covered section. Added statement to deny investigational for off label use. Deleted the requirement of second line therapy.
06/03/2010 Medical Policy Committee Approval. Policy revised to add back statement concerning estradiol pellets coverage eligibility; non-covered.
06/16/2010 Medical Policy Implementation Committee approval
06/02/2011 Medical Policy Committee approval.
06/15/2011 Medical Policy Implementation Committee approval. No change to coverage.
06/14/2012 Medical Policy Committee review.
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06/20/2012  Medical Policy Implementation Committee approval. No change to coverage.
06/06/2013  Medical Policy Committee review.
06/25/2013  Medical Policy Implementation Committee approval. No change to coverage.
06/05/2014  Medical Policy Committee review
06/18/2014  Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
06/04/2015  Medical Policy Committee review
06/17/2015  Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
08/03/2015  Coding update: ICD10 Diagnosis code section added; ICD9 Procedure code section removed.
06/02/2016  Medical Policy Committee review
06/20/2016  Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
01/01/2017  Coding update: Removing ICD-9 Diagnosis Codes
06/01/2017  Medical Policy Committee review
06/21/2017  Medical Policy Implementation Committee approval. Added policy guidelines and practice guidelines sections. Revised first coverage indication to include criteria.
10/01/2017  Coding update
06/07/2018  Medical Policy Committee review
06/20/2018  Medical Policy Implementation Committee approval. Added “including but not limited to older men with low testosterone levels in the absence of clinical signs and symptoms of hypogonadism” to the investigational statement for use of implantable hormone testosterone pellets when patient selection criteria are not met. Added sections from BCBSA Policy Guidelines for “Diagnosis Of Androgen Deficiency”, “Testosterone Dosage Guidelines” and “Monitoring Strategies For Patients On Testosterone Therapy”.
06/06/2019  Medical Policy Committee review
06/19/2019  Medical Policy Implementation Committee approval. Coverage eligibility unchanged.
09/05/2019  Medical Policy Committee review
09/11/2019  Medical Policy Implementation Committee approval. Added a criteria bullet for dosing does not exceed upper limit of the dosing range with specific dosing guidelines. Added the same dosing limits and guidelines to the last criteria bullet
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regarding hormone pellet implantation for treatment of delayed male puberty. Investigational statement revised to include older men with type 2 diabetes mellitus and androgen deficiency.

02/06/2020 Medical Policy Committee review
02/12/2020 Medical Policy Implementation Committee approval. Added that implantable testosterone pellets should not be used as dual therapy with other testosterone products to the criteria where applicable to track FEP medical policy language.

Next Scheduled Review Date:  02/2021

Coding

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<td>HCPCS</td>
<td>J3490, S0189</td>
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</tr>
</tbody>
</table>

*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;
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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.

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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.

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