Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy

<table>
<thead>
<tr>
<th>eCQM Title</th>
<th>Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>eCQM Identifier (Measure Authoring Tool)</td>
<td>645</td>
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<tr>
<td>eCQM Version number</td>
<td>3.1.000</td>
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<tr>
<td>NQF Number</td>
<td>Not Applicable</td>
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<td>Measurement Period</td>
<td>January 1, 20XX through December 31, 20XX</td>
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<td>Measure Steward</td>
<td>Oregon Urology</td>
</tr>
<tr>
<td>Measure Developer</td>
<td>Oregon Urology</td>
</tr>
<tr>
<td>Endorsed By</td>
<td>None</td>
</tr>
<tr>
<td>Description</td>
<td>Patients determined as having prostate cancer who are currently starting or undergoing androgen deprivation therapy (ADT), for an anticipated period of 12 months or greater and who receive an initial bone density evaluation. The bone density evaluation must be prior to the start of ADT or within 3 months of the start of ADT.</td>
</tr>
<tr>
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<td>Limited proprietary coding is contained in the measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. Oregon Urology Institute (OUI) and Large Urology Group Practice Association (LUGPA) disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT- [R]) or other coding contained in the specifications. CPT(R) contained in the Measure specifications is copyright 2004-2018 American Medical Association. LOINC(R) copyright 2004-2018 Regenstrief Institute, Inc. This material contains SNOMED Clinical Terms(R) (SNOMED CT[R]) copyright 2004-2018 International Health Terminology Standards Development Organisation. ICD-10 copyright 2018 World Health Organization. All Rights Reserved.</td>
</tr>
<tr>
<td>Disclaimer</td>
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<td>Measure Scoring</td>
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<td>Stratification</td>
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<td>Risk Adjustment</td>
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<tr>
<td>Rate Aggregation</td>
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<td>Rationale</td>
<td>Androgen suppression as a treatment for prostate cancer can cause osteoporosis (Qaseem, 2008). Men undergoing prolonged androgen deprivation therapy (ADT) incur bone loss at a rate higher than menopausal women (Guise, 2007). In preserving bone health, the goal is to prevent or treat osteopenia/osteoporosis for the patient on ADT and to prevent or delay skeletal related events. The National Osteoporosis Foundation recommendations including a baseline assessment of bone density with a DEXA scan and daily calcium and Vitamin D supplementation (Watts, 2012). The DEXA scan is the gold standard for bone density screening. Men at risk for adverse bone consequences from chronic ADT do not always receive care according to evidence based guidelines. These findings call for improved processes that standardize evidence based practice including baseline and follow up bone density assessment (Watts, 2012).</td>
</tr>
<tr>
<td>Clinical Recommendation Statement</td>
<td>Bone density screening should be performed at the start of Androgen Deprivation Therapy (ADT) for prostate cancer. It should also be performed every 2 years for the patient with continued ADT or for patients with known osteoporosis. Current insurance practice is to possibly cover the cost of bone density screening if osteoporosis is known or if there is a high risk drug. Some patients choose to delay bone density screening until after ADT is started and they therefore have insurance authorization due to the administration of a high risk drug.</td>
</tr>
<tr>
<td>Improvement</td>
<td>A higher score indicates better quality</td>
</tr>
</tbody>
</table>
Bone density evaluation for patients with prostate cancer and receiving androgen deprivation therapy

**Definition**
Data Criteria Value Set 2.16.840.1.113762.1.4.1151.38 DEXA, Dual Energy X-ray Absorptiometry, Bone Density for Urology Care contains 2 LOINC codes identifying the axial and appendicular skeleton and will meet the measure intent.

**Guidance**
In order to capture the practitioner's intent of androgen deprivation therapy (ADT) for a period of 12 months or greater, the custom HCPCS code of J1950, cont was removed in 2019 from to the First Androgen Deprivation Therapy definition as Procedure, Order and replaced by SNOMEDCT 456381000124102 which is Injection of leuprolide acetate for twelve month period (regime/therapy).

**Transmission Format**
TBD

**Initial Population**
Male patients with a qualifying encounter in the measurement period AND with a diagnosis of prostate cancer AND with an order for ADT or an active medication of ADT with an intent for treatment greater than or equal to 12 months during the measurement period

**Denominator**
Equals Initial Population

**Denominator Exclusions**
None

**Numerator**
Patients with a bone density evaluation within the two years prior to the start of or less than three months after the start of ADT treatment

**Numerator Exclusions**
None

**Denominator Exceptions**
Patient refused recommendation for a bone density evaluation after the start of ADT therapy

**Supplemental Data Elements**
For every patient evaluated by this measure also identify payer, race, ethnicity and sex
Table of Contents

- Population Criteria
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Population Criteria

- **Initial Population**
  
  "Patient is Male"
  and exists "Qualifying Encounter"
  and "First Androgen Deprivation Therapy" is not null

- **Denominator**
  
  "Initial Population"

- **Denominator Exclusions**
  
  None

- **Numerator**
  
  exists "Baseline DEXA Scan Two Years Prior to the Start of or Less than Three Months After the Start of ADT"

- **Numerator Exclusions**
  
  None

- **Denominator Exceptions**
  
  exists ( "No Bone Density Scan Ordered Due to Patient Refusal" )
  or exists ( "No Bone Density Scan Performed Due to Patient Refusal" )

- **Stratification**
  
  None

Definitions

- **Baseline DEXA Scan Two Years Prior to the Start of or Less than Three Months After the Start of ADT**
  
  "Bone Density Scan Ordered or Performed" DEXAScan
  with "First Androgen Deprivation Therapy" FirstADT
  such that DEXAScan.authorDatetime 3 months or less after start FirstADT.relevantPeriod
  or DEXAScan.authorDatetime 2 years or less before start of FirstADT.relevantPeriod

- **Bone Density Scan Ordered or Performed**
  
  ["Diagnostic Study, Order": "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care"] DEXAOrdered
  union ( ["Diagnostic Study, Performed": "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care"] DEXAPerformed
  return "Diagnostic Study, Order" ( authorDatetime: start of DEXAPerformed.relevantPeriod ) )
Denominator

"Initial Population"

Denominator Exception

exists ( "No Bone Density Scan Ordered Due to Patient Refusal" )
or exists ( "No Bone Density Scan Performed Due to Patient Refusal" )

First Androgen Deprivation Therapy

First(["Medication, Active": "Androgen deprivation therapy for Urology Care"] InitialADTTherapy
  with "Prostate Cancer Diagnosis" ProstateCancer
  such that InitialADTTherapy.relevantPeriod starts on or after start of ProstateCancer.prevalencePeriod
  with ["Procedure, Order": "Injection of leuprolide acetate for twelve month period (regime/therapy)"] TwelveMonthADTTherapy
  such that InitialADTTherapy.relevantPeriod includes TwelveMonthADTTherapy.authorDatetime
  and InitialADTTherapy.relevantPeriod overlaps "Measurement Period"
  sort by start of relevantPeriod
)

Initial Population

"Patient is Male"
and exists "Qualifying Encounter"
and "First Androgen Deprivation Therapy" is not null

No Bone Density Scan Ordered Due to Patient Refusal

from
  "First Androgen Deprivation Therapy" FirstADTTherapy,
  ["Diagnostic Study, Not Ordered": "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care"] DEXANotOrdered
  where ( DEXANotOrdered.authorDatetime 3 months or less after start of FirstADTTherapy.relevantPeriod
  and DEXANotOrdered.negationRationale in "Patient Reason refused"
  )
  return FirstADTTherapy

No Bone Density Scan Performed Due to Patient Refusal

from
  "First Androgen Deprivation Therapy" FirstADTTherapy,
  ["Diagnostic Study, Not Performed": "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care"] DEXANotPerformed
  where ( DEXANotPerformed.authorDatetime 3 months or less after start of FirstADTTherapy.relevantPeriod
  and DEXANotPerformed.negationRationale in "Patient Reason refused"
  )
  return FirstADTTherapy

Numerator

exists "Baseline DEXA Scan Two Years Prior to the Start of or Less than Three Months After the Start of ADT"

Patient is Male

exists ["Patient Characteristic Sex": "Male"]

Prostate Cancer Diagnosis
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["Diagnosis": "Prostate Cancer"] ProstateCancer
where ProstateCancer.prevalencePeriod starts same day or before end "Measurement Period"

▲ Qualifying Encounter
["Encounter, Performed": "Office Visit"] Encounter
where Encounter.relevantPeriod during "Measurement Period"

▲ SDE Ethnicity
["Patient Characteristic Ethnicity": "Ethnicity"]

▲ SDE Payer
["Patient Characteristic Payer": "Payer"]

▲ SDE Race
["Patient Characteristic Race": "Race"]

▲ SDE Sex
["Patient Characteristic Sex": "ONC Administrative Sex"]

Functions
None

Terminology
- code "Injection of leuprolide acetate for twelve month period (regime/therapy)" ("SNOMEDCT Code (456381000124102)")
- valueset "Androgen deprivation therapy for Urology Care" (2.16.840.1.113762.1.4.1151.48)
- valueset "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care" (2.16.840.1.113762.1.4.1151.38)
- valueset "Ethnicity" (2.16.840.1.114222.4.11.837)
- valueset "Male" (2.16.840.1.113883.3.560.100.1)
- valueset "Office Visit" (2.16.840.1.113883.3.464.1003.101.12.1001)
- valueset "ONC Administrative Sex" (2.16.840.1.113762.1.4.1)
- valueset "Patient Reason refused" (2.16.840.1.113883.3.600.791)
- valueset "Payer" (2.16.840.1.114222.4.11.3591)
- valueset "Prostate Cancer" (2.16.840.1.113883.3.526.3.319)
- valueset "Race" (2.16.840.1.114222.4.11.836)

Data Criteria (QDM Data Elements)
- "Diagnosis: Prostate Cancer" using "Prostate Cancer (2.16.840.1.113883.3.526.3.319)"
- "Diagnostic Study, Not Ordered: DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care" using "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care (2.16.840.1.113762.1.4.1151.38)"
- "Diagnostic Study, Not Performed: DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care" using "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care (2.16.840.1.113762.1.4.1151.38)"
- "Diagnostic Study, Order: DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care" using "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care (2.16.840.1.113762.1.4.1151.38)"
- "Diagnostic Study, Performed: DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care" using "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care (2.16.840.1.113762.1.4.1151.38)"
- "Encounter, Performed: Office Visit" using "Office Visit (2.16.840.1.113883.3.464.1003.101.12.1001)"
- "Medication, Active: Androgen deprivation therapy for Urology Care" using "Androgen deprivation therapy for Urology Care (2.16.840.1.113762.1.4.1151.48)"
Supplemental Data Elements

- **SDE Ethnicity**
  
  
  - "Patient Characteristic Ethnicity: Ethnicity" using "Ethnicity (2.16.840.1.114222.4.11.837)"

- **SDE Payer**
  
  
  - "Patient Characteristic Payer: Payer" using "Payer (2.16.840.1.114222.4.11.3591)"

- **SDE Race**
  
  
  - "Patient Characteristic Race: Race" using "Race (2.16.840.1.114222.4.11.836)"

- **SDE Sex**
  
  
  - "Patient Characteristic Sex: Male" using "Male (2.16.840.1.113883.3.560.100.1)"
  
  
  - "Patient Characteristic Sex: ONC Administrative Sex" using "ONC Administrative Sex (2.16.840.1.113762.1.4.1)"
  
  
  - "Procedure, Order: Injection of leuprolide acetate for twelve month period (regime/therapy)" using "Injection of leuprolide acetate for twelve month period (regime/therapy) (SNOMEDCT Code 456381000124102)"

Risk Adjustment Variables

None

<table>
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<tr>
<th>Measure Set</th>
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