<table>
<thead>
<tr>
<th>Measure 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>
</tr>
<tr>
<td>eCQM Version number</td>
<td>2.1.000</td>
</tr>
<tr>
<td>NQF Number</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Measurement Period</td>
<td>January 1, 20XX through December 31, 20XX</td>
</tr>
<tr>
<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 (indicated by HCPCS code) 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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</tr>
<tr>
<td>Disclaimer</td>
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</tr>
<tr>
<td>Measure Scoring</td>
<td>Proportion</td>
</tr>
<tr>
<td>Measure Type</td>
<td>Process</td>
</tr>
<tr>
<td>Stratification</td>
<td>None</td>
</tr>
<tr>
<td>Risk Adjustment</td>
<td>None</td>
</tr>
<tr>
<td>Rate Aggregation</td>
<td>None</td>
</tr>
<tr>
<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 included 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 therefore have insurance authorization due to the administration of a high risk drug.</td>
</tr>
<tr>
<td>Improvement Notation</td>
<td>A higher score indicates better quality</td>
</tr>
</tbody>
</table>
Numerator

None

Denominator

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"

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"

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 Leuprolide Acetate"] 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

(["Diagnostic Study, Not Ordered": "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care"] DEXANotOrdered

where DEXANotOrdered.negationRationale in "Patient Reason refused"

)

union (["Diagnostic Study, Not Performed": "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care"] DEXANotPerformed

where DEXANotPerformed.negationRationale in "Patient Reason refused"

)

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

Qualifying Encounter
["Encounter, Performed": "Office Visit"]
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
- valueset "Androgen deprivation therapy for Urology Care" using "2.16.840.1.113762.1.4.1151.48"
- valueset "DEXA Dual Energy Xray Absorptiometry, Bone Density for Urology Care" using "2.16.840.1.113762.1.4.1151.38"
- valueset "Injection Leuprolide Acetate" using "2.16.840.1.113762.1.4.1151.16"
- valueset "Male" using "2.16.840.1.113762.1.4.1151.100.1"
- valueset "Office Visit" using "2.16.840.1.113762.1.4.1151.1003.101.12.1001"
- valueset "ONC Administrative Sex" using "2.16.840.1.113762.1.4.1151.100.1"
- valueset "Patient Reason refused" using "2.16.840.1.113762.1.4.1151.1003.101.12.1001"
- valueset "Prostate Cancer" using "2.16.840.1.113762.1.4.1151.100.1"
- valueset "Race" using "2.16.840.1.113762.1.4.1151.100.1"
- valueset "Race" using "2.16.840.1.113762.1.4.1151.100.1"

Data Criteria (QDM Data Elements)
- "Diagnosis: Prostate Cancer using "Prostate Cancer (2.16.840.1.113762.1.4.1151.326.3.319)"
- "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)"
- "Medication, Active: Androgen deprivation therapy for Urology Care using "Androgen deprivation therapy for Urology Care (2.16.840.1.113762.1.4.1151.48)"
- "Patient Characteristic Ethnicity: Ethnicity" using "Ethnicity (2.16.840.1.114222.4.11.837)"
- "Patient Characteristic Payer: Payer" using "Payer (2.16.840.1.114222.4.11.3591)"
- "Patient Characteristic Race: Race" using "Race (2.16.840.1.113762.1.4.1151.326.3.319)"
- "Patient Characteristic Sex: Male" using "Male (2.16.840.1.113762.1.4.1151.100.1)"
- "Patient Characteristic Sex: ONC Administrative Sex" using "ONC Administrative Sex (2.16.840.1.113762.1.4.1151.100.1)"
- "Procedure, Order: Injection Leuprolide Acetate using "Injection Leuprolide Acetate (2.16.840.1.113762.1.4.1151.16)"

Supplemental Data Elements

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"]

Risk Adjustment Variables
None