<table>
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<th><strong>eCQM Title</strong></th>
<th>International Prostate Symptom Score (IPSS) or American Urological Association-Symptom Index (AUA-SI) Change 6-12 Months After Diagnosis of Benign Prostatic Hyperplasia</th>
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<tr>
<td><strong>eCQM Identifier</strong></td>
<td>771</td>
</tr>
<tr>
<td><strong>eCQM Version number</strong></td>
<td>1.4.000</td>
</tr>
<tr>
<td><strong>NQF Number</strong></td>
<td>Not Applicable</td>
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<tr>
<td><strong>GUID</strong></td>
<td>1c05c6c0-8099-4270-83ce-292cf6e35c51</td>
</tr>
<tr>
<td><strong>Measurement Period</strong></td>
<td>January 1, 20XX through December 31, 20XX</td>
</tr>
<tr>
<td><strong>Measure Steward</strong></td>
<td>Large Urology Group Practice Association (LUGPA)</td>
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<tr>
<td><strong>Measure Developer</strong></td>
<td>Large Urology Group Practice Association (LUGPA)</td>
</tr>
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<td><strong>Endorsed By</strong></td>
<td>None</td>
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<td><strong>Description</strong></td>
<td>Percentage of patients with an office visit within the measurement period and with a new diagnosis of clinically significant Benign Prostatic Hyperplasia who have International Prostate Symptoms Score (IPSS) or American Urological Association (AUA) Symptom Index (SI) documented at time of diagnosis and again 6-12 months later with an improvement of 3 points</td>
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</tbody>
</table>

**Rationale**

Benign prostatic hyperplasia (BPH) is one of the most common conditions affecting older men, with a prevalence of 50% by age 60 years and 90% by the ninth decade of life (Medina, Parra, & Moore, 1999). The enlarged gland had been proposed to contribute to the overall lower urinary tract symptoms (LUTS) complex (McVary et al., 2014). Although LUTS secondary to BPH is not often a life-threatening condition, the impact of LUTS/BPH on quality of life can be significant (Wei, Calhoun, & Jacobsen, 2005). The American Urological Association Symptom Index (AUA-SI) and the International Prostate Symptom Score (IPSS) were developed to measure outcomes in studies of different treatments for BPH (Wuerstle et al., 2011). The IPSS uses the same questions as the AUA-SI, but also adds a disease-specific quality of life question (OLeary, 2005). The IPSS was adopted in 1993 by the World Health Organization. It is a reproducible, validated index designed to determine disease severity and response to therapy (D'Silva, Dahm, & Wong, 2014). It includes 3 storage symptom questions (frequency, nocturia, urgency) and four voiding symptoms (feeling of incomplete emptying, intermittency, straining, and a weak stream) as well as a Bother question: If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that? A three-point improvement in the score is considered meaningful (McVary et al., 2014).

**Clinical Recommendation**

The symptoms of BPH are LUTS symptoms. There are other disorders with similar symptoms and need to be excluded. History, physical examination, and testing are required prior to a diagnosis of BPH. IPSS by itself is not a reliable
diagnostic tool for LUTS suggestive of BPH, but serves as a quantitative measure of LUTS after the diagnosis is established (D'Silva, Dahm, & Wong, 2014). Medical and surgical interventions for BPH recommend a follow up IPSS evaluation to determine effectiveness of treatment. IPSS should be evaluated at the time of diagnosis and after definitive treatment.

Improvement Notation
A meaningful improvement is a negative 3 point change in the urinary symptom score. The quality improves when a higher proportion of people meet the meaningful improvement definition.

Reference

Reference

Reference

Reference

Reference

Reference

Definition
Clinically significant Benign Prostatic Hyperplasia (BPH) is BPH with lower urinary tract symptoms (LUTS).

Guidance
The IPSS is inclusive of the symptom index score and the quality of life score. The AUA-SI is the symptom index score alone and must be added to the QOL score. The AUA-SI with the QOL equals the IPSS. Both of these are the urinary symptom score.

Hospitalization within 30 days of Initial BPH Diagnosis refers to a 30 day period between the end of the hospitalization and the clinical office setting BPH diagnosis. This is due to aggravating factors from hospitalization, such as bed rest, medications, surgery, and altered body functions.

Transmission Format
TBD

Initial Population
Male patients with an initial diagnosis of benign prostatic hyperplasia 6 months prior to, or during the measurement period, and a urinary symptom score assessment within 1 month of initial diagnosis and a follow-up urinary symptom score assessment within 6-12 months, who had a qualifying visit during the measurement period.

Denominator
Equals initial population

Exclusions
Patients with urinary retention that starts within 1 year of initial BPH diagnosis
Patients with an initial BPH diagnosis that starts during, or within 30 days of hospitalization
Patients with a diagnosis of morbid obesity, or with a BMI Exam >40 before the follow up urinary symptom score.

Numerator
Patients with a documented improvement of at least 3 points in their urinary symptom score during the measurement period.
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Population Criteria

▲ Initial Population

( "Patient is Male" )
and exists ( "Qualifying Encounter" )
and exists ( "Initial BPH Diagnosis Within 6 Months Before or After Start of Measurement Period" )
and "Urinary Symptom Score Within 1 Month after Initial BPH Diagnosis" is not null
and "Urinary Symptom Score 6 to 12 Months After Initial BPH Diagnosis" is not null

▲ Denominator

"Initial Population"

▲ Denominator Exclusions

exists ( "Urinary Retention Diagnosis Starts Within 1 Year After Initial BPH Diagnosis" )
or exists ( "Initial BPH Diagnosis Starts During or Within 30 Days After End of Hospitalization" )
or ( "Morbid Obesity Diagnosis or BMI Exam Result Greater Than 40 Starts On or Before Follow Up USS Assessment" )

▲ Numerator

"Urinary Symptom Score Improvement Greater Than or Equal To 3"

▲ Numerator Exclusions

None

▲ Denominator Exceptions

None

▲ Stratification

None

Definitions

▲ AUA Symptom Index and Quality of Life Assessment Result
International Prostate Symptom Score (IPSS) or American Urological Association-Symptom Index (AUA-SI) Change 6-12 Months After Diagnosis of Benign Prostatic Hyperplasia

from

["Assessment, Performed": "American Urological Association Symptom Index [AUASI]""] AUASIAssessment,
["Assessment, Performed": "If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that [IPSS]""] QOLAssessment

let AUASIAssessmentResult: ( AUASIAssessment.result as Integer ) + ( QOLAssessment.result as Integer )

where AUASIAssessment.authorDatetime same day as QOLAssessment.authorDatetime

and AUASIAssessment.result is not null
and QOLAssessment.result is not null

return {
  authorDatetime: AUASIAssessment.authorDatetime,
  result: AUASIAssessmentResult
}

BMI Exam Result Greater Than 40 During Measurement Period and On or Before Follow Up USS Assessment

["Physical Exam, Performed": "Estimated BMI greater than 40"] BMIExam

with "Urinary Symptom Score 6 to 12 Months After Initial BPH Diagnosis" FollowUpUSSAssessment

such that ( BMIExam.authorDatetime during "Measurement Period"
and BMIExam.authorDatetime on or before FollowUpUSSAssessment.authorDatetime
)

and BMIExam.result > 40 'kg/m2'

Denominator

"Initial Population"

Denominator Exclusions

exists ( "Urinary Retention Diagnosis Starts Within 1 Year After Initial BPH Diagnosis" )
or exists ( "Initial BPH Diagnosis Starts During or Within 30 Days After End of Hospitalization" )
or ( "Morbid Obesity Diagnosis or BMI Exam Result Greater Than 40 Starts On or Before Follow Up USS Assessment" )

Documented IPSS Assessment Result

["Assessment, Performed": "International Prostate Symptom Score [IPSS]""] IPSSAssessment

where IPSSAssessment.result is not null

return {
  authorDatetime: ( IPSSAssessment.authorDatetime ),
  result: ( IPSSAssessment.result as Integer )
}

Initial BPH Diagnosis Starts During or Within 30 Days After End of Hospitalization

"Initial BPH Diagnosis Within 6 Months Before or After Start of Measurement Period" InitialBPHDiagnosis

with ["Encounter, Performed": "Hospital Services for urology care"] InHospitalServices

such that InitialBPHDiagnosis.prevalencePeriod starts during Interval[start of InHospitalServices.relevantPeriod, (end of InHospitalServices.relevantPeriod) + 31 days]

Initial BPH Diagnosis Within 6 Months Before or After Start of Measurement Period

["Diagnosis": "Benign prostatic hyperplasia with lower urinary tract symptoms"] NewBPHDiagnosis

where NewBPHDiagnosis.prevalencePeriod starts during Interval[start of "Measurement Period" - 6 months, end of "Measurement Period"]

Initial Population
( "Patient is Male" )
and exists ( "Qualifying Encounter" )
and exists ( "Initial BPH Diagnosis Within 6 Months Before or After Start of Measurement Period" )
and "Urinary Symptom Score Within 1 Month after Initial BPH Diagnosis" is not null
and "Urinary Symptom Score 6 to 12 Months After Initial BPH Diagnosis" is not null

▲ Morbid Obesity Diagnosis On or Before Follow Up USS Assessment

["Diagnosis": "Morbid Obesity"] MorbidObesity
with "Urinary Symptom Score 6 to 12 Months After Initial BPH Diagnosis" FollowUpUSSAssessment
such that ( MorbidObesity.prevalencePeriod overlaps "Measurement Period"
and MorbidObesity.authorDatetime on or before FollowUpUSSAssessment.authorDatetime )

▲ Morbid Obesity Diagnosis or BMI Exam Result Greater Than 40 Starts On or Before Follow Up USS Assessment

exists "Morbid Obesity Diagnosis On or Before Follow Up USS Assessment"
or exists "BMI Exam Result Greater Than 40 During Measurement Period and On or Before Follow Up USS Assessment"

▲ Numerator

"Urinary Symptom Score Improvement Greater Than or Equal To 3"

▲ Patient is Male

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

▲ Qualifying Encounter

["Encounter, Performed": "Office Visit"] ValidEncounter
where ValidEncounter.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"]

▲ Urinary Retention Diagnosis Starts Within 1 Year After Initial BPH Diagnosis

["Diagnosis": "Urinary retention"] UrinaryRetention
with "Initial BPH Diagnosis Within 6 Months Before or After Start of Measurement Period" InitialBPHDiagnosis
such that UrinaryRetention.prevalencePeriod starts 1 year or less on or after day of start of InitialBPHDiagnosis.prevalencePeriod

▲ Urinary Symptom Score
"Documented IPSS Assessment Result"
union "AUA Symptom Index and Quality of Life Assessment Result"

**Urinary Symptom Score 6 to 12 Months After Initial BPH Diagnosis**

```
Last("Urinary Symptom Score" LastUSSAssessment
    with "Initial BPH Diagnosis Within 6 Months Before or After Start of Measurement Period" InitialBPHDiagnosis
    such that months between start of InitialBPHDiagnosis.prevalencePeriod and LastUSSAssessment.authorDatetime in Interval[6, 12]
    sort by authorDatetime
)
```

**Urinary Symptom Score Improvement**

```
from "Urinary Symptom Score Within 1 Month after Initial BPH Diagnosis" FirstUSSAssessment,
"Urinary Symptom Score 6 to 12 Months After Initial BPH Diagnosis" FollowUpUSSAssessment
let USSChange: FirstUSSAssessment.result - FollowUpUSSAssessment.result
return USSChange
```

**Urinary Symptom Score Improvement Greater Than or Equal To 3**

```
( "Urinary Symptom Score Improvement" USSImprovement
    where USSImprovement >= 3
) is not null
```

**Urinary Symptom Score Within 1 Month after Initial BPH Diagnosis**

```
First("Urinary Symptom Score" InitialUSSAssessment
    with "Initial BPH Diagnosis Within 6 Months Before or After Start of Measurement Period" InitialBPHDiagnosis
    such that InitialUSSAssessment.authorDatetime 1 month or less on or after day of start of InitialBPHDiagnosis.prevalencePeriod
    sort by authorDatetime
)
```

**Functions**

None

**Terminology**

- code "American Urological Association Symptom Index [AUASI]" ("LOINC Code (80883-2)"
- code "Benign prostatic hyperplasia with lower urinary tract symptoms" ("ICD10CM Code (N40.1)"
- code "Estimated BMI greater than 40" ("LOINC Code (88087-2)"
- code "If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that [IPSS]" ("LOINC Code (81090-3)"
- code "International Prostate Symptom Score [IPSS]" ("LOINC Code (80976-4)"
- code "Male" ("AdministrativeGender Code (M)"
- valueset "Ethnicity" (2.16.840.1.114222.4.11.837)
- valueset "Hospital Services for urology care" (2.16.840.1.113762.1.4.1164.64)
- valueset "Morbid Obesity" (2.16.840.1.113762.1.4.1164.65)
- 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 "Payer" (2.16.840.1.114222.4.11.3591)
- valueset "Race" (2.16.840.1.114222.4.11.836)
- valueset "Urinary retention" (2.16.840.1.113762.1.4.1164.52)

**Data Criteria (QDM Data Elements)**

code "American Urological Association Symptom Index (AUASI) Change 6-12 Months After Diagnosis of Benign Prostatic Hyperplasia"
International Prostate Symptom Score (IPSS) or American Urological Association-Symptom Index (AUA-SI) Change 6-12 Months After Diagnosis of Benign Prostatic Hyperplasia

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

Measure Set

None