

<b>eCQM Title</b>	<b>Urinary Symptom Score Change 6-12 Months After Diagnosis of Benign Prostatic Hyperplasia</b>		
<b>eCQM Identifier (Measure Authoring Tool)</b>	771	<b>eCQM Version Number</b>	3.0.000
<b>NQF Number</b>	Not Applicable	<b>GUID</b>	1c05c6c0-8099-4270-83ce-292cf6e35c51
<b>Measurement Period</b>	January 1, 20XX through December 31, 20XX		
<b>Measure Steward</b>	Large Urology Group Practice Association (LUGPA)		
<b>Measure Developer</b>	Large Urology Group Practice Association (LUGPA)		
<b>Endorsed By</b>	None		
<b>Description</b>	<p>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</p> <p>Limited proprietary coding is contained in the measure specifications for user convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. Large Urology Group Practice Association (LUGPA) and Oregon Urology Institute (OUI) disclaim all liability for use or accuracy of any third party codes contained in the specifications.</p>		
<b>Copyright</b>	<p>CPT(R) contained in the Measure specifications is copyright 2007- 2020. American Medical Association. LOINC(R) copyright 2004-2020 Regenstrief Institute, Inc. This material contains SNOMED Clinical Terms(R) (SNOMED CT[R]) copyright 2004-2020 International Health Terminology Standards Development Organisation. ICD-10 copyright 2020 World Health Organization. All Rights Reserved.</p> <p>The performance measure is not a clinical guideline and does not establish a standard of medical care, and has not been tested for all potential applications.</p>		
<b>Disclaimer</b>	<p>THE MEASURE AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.</p> <p>Due to technical limitations, registered trademarks are indicated by (R) or [R], and unregistered trademarks are indicated by (TM) or [TM].</p>		
<b>Measure Scoring</b>	Proportion		
<b>Measure Type</b>	Patient Reported Outcome Performance		
<b>Stratification</b>	None		
<b>Risk Adjustment</b>	None		
<b>Rate Aggregation</b>	None		
<b>Rationale</b>	<p>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, &amp; 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, &amp; 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 (O'Leary, 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, &amp; 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).</p> <p>The symptoms of BPH are LUTS symptoms. There are other disorders with similar symptoms that 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, &amp; 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.</p>		
<b>Clinical Recommendation Statement</b>	<p>The symptoms of BPH are LUTS symptoms. There are other disorders with similar symptoms that 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, &amp; 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.</p>		
<b>Improvement Notation</b>	<p>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.</p> <p>Reference Type: CITATION</p>		
<b>Reference</b>	<p>Reference Text: 'D'Silva, K. A., Dahm, P., &amp; Wong, C. L. (2014). Does this man with lower urinary tract symptoms have bladder outlet obstruction? The Rational Clinical Examination: A systematic review. Journal of the American Medical Association, 312(5), 535-542. Retrieved from <a href="https://www.ncbi.nlm.nih.gov/pubmed/25096693">https://www.ncbi.nlm.nih.gov/pubmed/25096693</a>'</p> <p>Reference Type: CITATION</p>		
<b>Reference</b>	<p>Reference Text: 'McVary, K. T., Roehrborn, C. G., Avins, A. L., et al. (2014). Management of benign prostatic hyperplasia. Retrieved from <a href="http://www.auanet.org/guidelines/benign-prostatic-hyperplasia-(2010-reviewed-and-validity-confirmed-2014)">'http://www.auanet.org/guidelines/benign-prostatic-hyperplasia-(2010-reviewed-and-validity-confirmed-2014)'</a></p> <p>Reference Type: CITATION</p>		
<b>Reference</b>	<p>Reference Text: 'Medina, J. J., Parra, R. O., &amp; Moore, R. G. (1999). Benign prostatic hyperplasia (the aging prostate). Medical Clinics of North America, 83(5), 1213-1229. Retrieved from <a href="http://www.sciencedirect.com/science/article/pii/S0025712505701590">'http://www.sciencedirect.com/science/article/pii/S0025712505701590'</a></p> <p>Reference Type: CITATION</p>		
<b>Reference</b>	<p>Reference Text: 'O'Leary, M. P. (2005). Validity of the Bother Score in the evaluation and treatment of symptomatic benign prostatic hyperplasia. Reviews in Urology, 7(1), 1-10. Retrieved from <a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1477553/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1477553/</a>'</p> <p>Reference Type: CITATION</p>		
<b>Reference</b>	<p>Reference Text: 'Wei, J., Calhoun, E., &amp; Jacobsen, S. (2005). Urologic diseases in America project: Benign prostatic hyperplasia. Journal of Urology, 173(4), 1256-1261. Retrieved from <a href="https://www.ncbi.nlm.nih.gov/pubmed/15758764">https://www.ncbi.nlm.nih.gov/pubmed/15758764</a>'</p> <p>Reference Type: CITATION</p>		
<b>Reference</b>	<p>Reference Text: 'Wuerstle, M. C., Van Den Eeden, S. K., Poon, K. T., et al. (2011). Contribution of common medications to lower urinary tract symptoms in men. Archives of Internal Medicine, 171(18), 1680-1682. Retrieved from <a href="https://www.ncbi.nlm.nih.gov/pubmed/21987200">https://www.ncbi.nlm.nih.gov/pubmed/21987200</a>'</p>		

<b>Definition</b>	<p>Clinically significant Benign Prostatic Hyperplasia (BPH) is BPH with lower urinary tract symptoms (LUTS).  IPSS - International Prostate Symptom Score  AUA-SI - American Urological Association-Symptom Index  QOL - Quality of Life score</p> <p>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.</p> <p>The patient must have a urinary symptom score (USS) within 1 month after initial diagnosis. If more than one USS in the initial one month, then the first USS counts. The patient must have a USS again at 6-12 months after the initial diagnosis and if more than one USS in this time frame, then the last USS counts.</p>
<b>Guidance</b>	<p>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.</p> <p>This eCQM is a patient-based measure.</p> <p>Telehealth encounters are not eligible for this measure because the measure requires a clinical action that cannot be conducted via telehealth.</p> <p>This version of the eCQM uses QDM version 5.5. Please refer to the eCQI resource center (<a href="https://ecqi.healthit.gov/qdm">https://ecqi.healthit.gov/qdm</a>) for more information on the QDM.</p>
<b>Transmission Format</b>	TBD
<b>Initial Population</b>	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
<b>Denominator</b>	Equals Initial Population
<b>Denominator Exclusions</b>	<p>Patients with urinary retention that starts within 1 year of initial BPH diagnosis.</p> <p>Patients with an initial BPH diagnosis that starts during, or within 30 days of hospitalization.</p> <p>Patients with a diagnosis of morbid obesity, or with a BMI Exam &gt;40 before the follow up urinary symptom score.</p>
<b>Numerator</b>	Patients with a documented improvement of at least 3 points in their urinary symptom score during the measurement period
<b>Numerator Exclusions</b>	Not Applicable
<b>Denominator Exceptions</b>	None
<b>Supplemental Data Elements</b>	For every patient evaluated by this measure also identify payer, race, ethnicity and sex

**Table of Contents**

- [Population Criteria](#)
- [Definitions](#)
- [Functions](#)
- [Terminology](#)
- [Data Criteria \(QDM Data Elements\)](#)
- [Supplemental Data Elements](#)
- [Risk Adjustment Variables](#)

**Population Criteria**

**▲ Initial Population**

( "Patient is Male" )  
and "Has Qualifying Encounter"  
and "Has Qualifying BPH Diagnosis"  
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 ( "Has Initial BPH Diagnosis Starts During or Within 30 Days After End of Hospitalization" is not null )  
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**

#### 4 AUA Symptom Index and Quality of Life Assessment Result

```
["Assessment, Performed": "American Urological Association Symptom Index [AUASI]" ] AUASIAssessment
let LastQOLOnDate: Last(["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
where Global.EarliestOf(QOLAssessment.relevantDatetime, QOLAssessment.relevantPeriod) same day as Global.EarliestOf(AUASIAssessment.relevantDatetime,
AUASIAssessment.relevantPeriod)
and QOLAssessment.result is not null
sort by Global.EarliestOf(relevantDatetime, relevantPeriod)
)
where AUASIAssessment.result is not null
and LastQOLOnDate.result is not null
return Tuple {
assessmentDatetime: Global.EarliestOf ( AUASIAssessment.relevantDatetime, AUASIAssessment.relevantPeriod ),
result: ( AUASIAssessment.result as Integer ) + ( LastQOLOnDate.result as Integer )
}
```

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

```
Exists(["Physical Exam, Performed": "Body mass index (BMI) [Ratio]" ] BMIExam
with "Urinary Symptom Score 6 to 12 Months After Initial BPH Diagnosis" FollowUpUSSAssessment
such that BMIExam.result > 40 'kg/m2'
and Global.EarliestOf(BMIExam.relevantDatetime, BMIExam.relevantPeriod) during "Measurement Period"
and Global.EarliestOf(BMIExam.relevantDatetime, BMIExam.relevantPeriod) on or before FollowUpUSSAssessment.assessmentDatetime
return Global.EarliestOf(BMIExam.relevantDatetime, BMIExam.relevantPeriod)
)
```

#### 4 Denominator

"Initial Population"

#### 4 Denominator Exclusions

```
exists ( "Urinary Retention Diagnosis Starts Within 1 Year After Initial BPH Diagnosis" )
or ( "Has Initial BPH Diagnosis Starts During or Within 30 Days After End of Hospitalization" is not null )
or ( "Morbid Obesity Diagnosis or BMI Exam Result Greater Than 40 Starts On or Before Follow Up USS Assessment" )
```

#### 4 Documented IPSS Assessment Result

```
["Assessment, Performed": "International Prostate Symptom Score [IPSS]" ] IPSSAssessment
where IPSSAssessment.result is not null
return {
assessmentDatetime: Global.EarliestOf ( IPSSAssessment.relevantDatetime, IPSSAssessment.relevantPeriod ),
result: IPSSAssessment.result as Integer
}
```

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

```
"Initial BPH Diagnosis Starts 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 )
```

#### 4 Has Qualifying BPH Diagnosis

"Initial BPH Diagnosis Starts Within 6 Months Before or After Start of Measurement Period" is not null

#### 4 Has Qualifying Encounter

```
exists ["Encounter, Performed": "Office Visit" ] ValidEncounter
where ValidEncounter.relevantPeriod during "Measurement Period"
```

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

```
First(["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" ]
sort by start of prevalencePeriod
)
```

#### 4 Initial Population

```
( "Patient is Male" )
and "Has Qualifying Encounter"
and "Has Qualifying BPH Diagnosis"
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
```

#### 4 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.prevalencePeriod starts on or before FollowUpUSSAssessment.assessmentDatetime
```

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

#### 4 Numerator

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

#### 4 Patient is Male

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

#### 4 SDE Ethnicity

```
["Patient Characteristic Ethnicity": "Ethnicity"]
```

#### 4 SDE Payer

```
["Patient Characteristic Payer": "Payer"]
```

#### 4 SDE Race

```
["Patient Characteristic Race": "Race"]
```

#### 4 SDE Sex

```
["Patient Characteristic Sex": "ONC Administrative Sex"]
```

#### 4 Urinary Retention Diagnosis Starts Within 1 Year After Initial BPH Diagnosis

```
["Diagnosis": "Urinary retention"] UrinaryRetention  
with "Initial BPH Diagnosis Starts 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
```

#### 4 Urinary Symptom Score 6 to 12 Months After Initial BPH Diagnosis

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

#### 4 Urinary Symptom Score Assessment

```
"Documented IPSS Assessment Result"  
union "AUA Symptom Index and Quality of Life Assessment Result"
```

#### 4 Urinary Symptom Score Change

```
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 as Integer ) - ( FollowUpUSSAssessment.result as Integer )  
return USSChange
```

#### 4 Urinary Symptom Score Improvement Greater Than or Equal To 3

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

#### 4 Urinary Symptom Score Within 1 Month after Initial BPH Diagnosis

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

## Functions

#### 4 Global.Earliest(period Interval<DateTime>)

```
if ( HasStart(period)) then start of period  
else  
end of period
```

#### 4 Global.EarliestOf(pointInTime DateTime, period Interval<DateTime>)

```
Earliest(NormalizeInterval(pointInTime, period))
```

#### 4 Global.HasStart(period Interval<DateTime>)

```
not ( start of period is null  
or start of period = minimum DateTime  
)
```

#### 4 Global.NormalizeInterval(pointInTime DateTime, period Interval<DateTime>)

```
if pointInTime is not null then Interval[pointInTime, pointInTime]  
else if period is not null then period  
else null as Interval<DateTime>
```

## 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 "Body mass index (BMI) [Ratio]" ("LOINC Code (39156-5)")
- 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" (2.16.840.1.113762.1.4.1164.67)
- 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)**

- "Assessment, Performed: American Urological Association Symptom Index [AUASI]" using "American Urological Association Symptom Index [AUASI] (LOINC Code 80883-2)"
- "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]" using "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)"
- "Assessment, Performed: International Prostate Symptom Score [IPSS]" using "International Prostate Symptom Score [IPSS] (LOINC Code 80976-4)"
- "Diagnosis: Benign prostatic hyperplasia with lower urinary tract symptoms" using "Benign prostatic hyperplasia with lower urinary tract symptoms (ICD10CM Code N40.1)"
- "Diagnosis: Morbid Obesity" using "Morbid Obesity (2.16.840.1.113762.1.4.1164.67)"
- "Diagnosis: Urinary retention" using "Urinary retention (2.16.840.1.113762.1.4.1164.52)"
- "Encounter, Performed: Hospital Services for urology care" using "Hospital Services for urology care (2.16.840.1.113762.1.4.1164.64)"
- "Encounter, Performed: Office Visit" using "Office Visit (2.16.840.1.113883.3.464.1003.101.12.1001)"
- "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 (2.16.840.1.114222.4.11.836)"
- "Patient Characteristic Sex: Male" using "Male (AdministrativeGender Code M)"
- "Patient Characteristic Sex: ONC Administrative Sex" using "ONC Administrative Sex (2.16.840.1.113762.1.4.1)"
- "Physical Exam, Performed: Body mass index (BMI) [Ratio]" using "Body mass index (BMI) [Ratio] (LOINC Code 39156-5)"

**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
-------------	------