Urinary Symptom Score Change 6-12 Months After Diagnosis of Benign Prostatic Hyperplasia 2.2.000

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**Description**

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 Symptom 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.

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**Clinical Recommendation Statement**

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**


**Rationale**

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, & 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.

**Definition**

IPSS - International Prostate Symptom Score

AUA-SI - American Urological Association-Symptom Index

QOL - Quality of Life score

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 tract symptoms in men. Other disorders with similar symptoms need to be excluded. History, physical examination, and testing are required prior to a diagnosis of BPH.

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**Measure Scoring**

Proportion

**Measure Type**

Patient Reported Outcome Performance

**Stratification**

None

**Risk Adjustment**

None

**Rate Aggregation**

None

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 has 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 (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 (O'Leary, 2005). 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). 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**


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.

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.

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.
This eCQM is a patient-based measure. This version of the eCQM uses QDM version 5.5. Please refer to the eCQI resource center (https://ecqi.healthit.gov/qdm) for more information on the QDM.

**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

**Denominator 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

**Numerator Exclusions**
Not Applicable

**Denominator Exceptions**
None

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

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#### 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

- **AUA Symptom Index and Quality of Life Assessment Result**

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

https://ecqi.healthit.gov/sites/default/files/ecqm/measures/CMS771v2.html
BMI Exam Result Greater Than 40 During Measurement Period and On or Before Follow Up USS Assessment

```javascript
(["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.relevantDatetime during "Measurement Period"
  and BMIExam.result > 40 'kg/m2'
)
```

**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")

**Documented IPSS Assessment Result**

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

**Has 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 Prevalence 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]

**Has Qualifying BPH Diagnosis**

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

**Has Qualifying Encounter**

exists ["Encounter, Performed": "Office Visit"] ValidEncounter

where ValidEncounter.relevantPeriod during "Measurement Period"

**Initial BPH Diagnosis Within 6 Months Before or After Start of Measurement Period Prevalence 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"]

**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

**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.relevantDatetime

**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"]

**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 Prevalence Period"] InitialBPHDiagnosis
such that UrinaryRetention.prevalencePeriod starts 1 year or less on or after day of start of InitialBPHDiagnosis.prevalencePeriod

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[https://ecqi.healthit.gov/sites/default/files/ecqm/measures/CMS771v2.html](https://ecqi.healthit.gov/sites/default/files/ecqm/measures/CMS771v2.html)

#### 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 B8087-2)
- 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 B81090-3)
- 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" (2.16.840.1.113762.1.4.1164.52)
- valueset "Race" (2.16.840.1.113762.1.4.1164.52)
- valueset "Urinary retention" (2.16.840.1.113762.1.4.1164.52)

#### Data Criteria (QDM Data Elements)

- "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 B81090-3)"
- "Assessment, Performed: International Prostate Symptom Score [IPSS]" using "International Prostate Symptom Score [IPSS] (LOINC Code B80976-4)"
- "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 (2.16.840.1.113762.1.4.1164.67)"
- "Patient Characteristic Race: Race" using "Race (2.16.840.1.113762.1.4.1164.52)"
- "Physical Exam, Performed: Estimated BMI greater than 40" using "Estimated BMI greater than 40 (LOINC Code B8087-2)"

#### 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