<table>
<thead>
<tr>
<th><strong>eCQM Title</strong></th>
<th>Cataracts: Complications within 30 Days Following Cataract Surgery Requiring Additional Surgical Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>eCQM Identifier (Measure Authoring Tool)</strong></td>
<td>132</td>
</tr>
<tr>
<td><strong>eCQM Version number</strong></td>
<td>7.2.000</td>
</tr>
<tr>
<td><strong>NQF Number</strong></td>
<td>0564</td>
</tr>
<tr>
<td><strong>GUID</strong></td>
<td>9a0339c2-3d9b-11e1-8634-00237d5bf174</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>PCPI(R) Foundation (PCPI[R])</td>
</tr>
<tr>
<td><strong>Measure Developer</strong></td>
<td>American Medical Association (AMA)</td>
</tr>
<tr>
<td><strong>Measure Developer</strong></td>
<td>PCPI(R) Foundation (PCPI[R])</td>
</tr>
<tr>
<td><strong>Endorsed By</strong></td>
<td>National Quality Forum</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Percentage of patients aged 18 years and older with a diagnosis of uncomplicated cataract who had cataract surgery and had any of a specified list of surgical procedures in the 30 days following cataract surgery which would indicate the occurrence of any of the following major complications: retained nuclear fragments, endophthalmitis, dislocated or wrong power IOL, retinal detachment, or wound dehiscence</td>
</tr>
<tr>
<td><strong>Copyright</strong></td>
<td>Copyright 2018 PCPI(R) Foundation and American Medical Association. All Rights Reserved.</td>
</tr>
</tbody>
</table>
| **Disclaimer** | The Measure is not a clinical guideline, does not establish a standard of medical care, and has not been tested for all potential applications.  
The Measure, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes, eg, use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the Measure for commercial gain, or incorporation of the Measure into a product or service that is sold, licensed or distributed for commercial gain.  
Commercial uses of the Measure require a license agreement between the user and the PCPI(R) Foundation (PCPI[R]) or the American Medical Association (AMA). Neither the AMA, nor the former AMA-convened Physician Consortium for Performance Improvement(R) (AMA-PCPI), nor PCPI, nor their members shall be responsible for any use of the Measure.  
The National Committee for Quality Assurance's significant past efforts and contributions to the development and updating of the Measure is acknowledged.  
AMA and PCPI encourage use of the Measure by other health care professionals, where appropriate.  
The MEASURE AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. |
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. The AMA, PCPI, and its members and former members of the AMA-PCPI 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 2004-2017 American Medical Association. LOINC(R) is copyright 2004-2017 Regenstrief Institute, Inc. This material contains SNOMED Clinical Terms(R) (SNOMED CT[R]) copyright 2004-2017 International Health Terminology Standards Development Organisation. ICD-10 is copyright 2017 World Health Organization. All Rights Reserved.

Due to technical limitations, registered trademarks are indicated by (R) or [R].

<table>
<thead>
<tr>
<th>Measure Scoring</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure Type</td>
<td>Outcome</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>
</tbody>
</table>

**Rationale**

In the United States, cataracts affect more than 24 million adults over 40 years. (NEI, 2016) According to the American Academy of Ophthalmology (AAO), cataract surgery leads to favorable outcomes and improved vision. (AAO, 2016) Although uncommon, complications from cataract surgery do occur and may result in vision loss. (AAO, 2016)

1. **Scientific basis for assessing short-term complications following cataract surgery**
   
   This short-term outcome of surgery indicator seeks to identify those complications from surgery that can reasonably be attributed to the surgery and surgeon and which reflect situations which - if untreated - generally result in significant avoidable vision loss that would negatively impact patient functioning. Further, it seeks to reduce surgeon burden and enhance accuracy in reporting by focusing on those significant complications that can be assessed from administrative data alone and which can be captured by the care of another physician or the provision of additional, separately coded, post-operative services. Finally, it focuses on patient safety and monitoring for events that, while hopefully uncommon, can signify important issues in the care being provided. For example, the need to reposition or exchange an intraocular lens (IOL) reflects in part "wrong power" IOL placement, a major patient safety issue.

In order to achieve these ends, the indicator excludes patients with other known, pre-operative ocular conditions that could impact the likelihood of developing a complication. Based on the results of the Cataract Appropriateness Project at RAND, other published studies, and one analysis performed on a national MCO data base, the exclusion codes would preserve over 2/3 of all cataract surgery cases for analysis. Thus, this
provides a "clean" indicator that captures care for the large majority of patients undergoing cataract surgery.

2. Evidence for gap in care

The advances in technology and surgical skills over the last 30 years have made cataract surgery much safer and more effective although complications that threaten vision do occur. For example, a study of more than 220,000 Medicare beneficiaries who underwent cataract surgery between 1994 and 2006 found that more than 1,000, or about 0.5%, of patients had at least one severe post-operative complication. These severe complications were defined as endophthalmitis (0.16%), suprachoroidal hemorrhage (0.06%), and retinal detachment (0.26%). (Stein, 2011)

In a review, Taban et al. found a postoperative rate of endophthalmitis of 0.128%. (Taban, 2005)

The occurrence of one of these events is associated with a significant potential for vision loss that is otherwise avoidable.

<table>
<thead>
<tr>
<th>Clinical Recommendation Statement</th>
<th>This is an outcome measure. As such, there are no statements in the guideline specific to this measurement topic.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvement Notation</td>
<td>Lower score indicates better quality</td>
</tr>
<tr>
<td>Definition</td>
<td>None</td>
</tr>
<tr>
<td>Guidance</td>
<td>This is an episode-based measure, meaning there may be more than one reportable event for a given patient during the measurement period. The level of analysis for this measure is each cataract surgery during the measurement period. Every cataract surgery during the measurement period should be counted as a measurable denominator event for the measure calculation. The measure, as written, does not specifically require documentation of laterality. Coding limitations in particular clinical terminologies do not currently allow for that level of specificity (ICD-10-CM includes laterality, but ICD-9-CM and SNOMED-CT do not uniformly include this distinction). Therefore, at this time, it is not a requirement of this measure to indicate laterality of the diagnoses, findings or procedures. Available coding to capture the data elements specified in this measure has been provided. It is assumed that the eligible</td>
</tr>
</tbody>
</table>
A professional or eligible clinician will record laterality in the patient medical record, as quality care and clinical documentation should include laterality.

This measure is to be reported by the clinician performing the cataract surgery procedure. Clinicians who provide only preoperative or postoperative management of cataract patients are not eligible for this measure.

<table>
<thead>
<tr>
<th>Transmission Format</th>
<th>TBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Population</td>
<td>All patients aged 18 years and older who had cataract surgery and did not meet any exclusion criteria</td>
</tr>
<tr>
<td>Denominator</td>
<td>Equals Initial Population</td>
</tr>
<tr>
<td>Denominator Exclusions</td>
<td>Patients with any one of a specified list of significant ocular conditions that impact the surgical complication rate</td>
</tr>
<tr>
<td>Numerator</td>
<td>Patients who had one or more specified operative procedures for any of the following major complications within 30 days following cataract surgery: retained nuclear fragments, endophthalmitis, dislocated or wrong power IOL, retinal detachment, or wound dehiscence</td>
</tr>
<tr>
<td>Numerator Exclusions</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Denominator Exceptions</td>
<td>None</td>
</tr>
<tr>
<td>Supplemental Data Elements</td>
<td>For every patient evaluated by this measure also identify payer, race, ethnicity and sex</td>
</tr>
</tbody>
</table>

**Table of Contents**

- Population Criteria
- Definitions
- Functions
- Terminology
- Data Criteria (QDM Data Elements)
- Supplemental Data Elements
- Risk Adjustment Variables

**Population Criteria**

- Initial Population
  - "Performed Cataract Surgery" CataractSurgeryPerformed
    where exists ( ["Patient Characteristic Birthdate"] BirthDate
      where
      Global."CalendarAgeInYearsAt"(BirthDate.birthDatetome, start of
      "Measurement Period")>= 18
    )
• Denominator
  • "Initial Population"

• Denominator Exclusions
  • "Prior Pars Plana Vitrectomy Performed"
  • union "Currently Taking Systemic Sympathetic alpha 1a Antagonist Medication"
  • union "Cataract Surgery with Significant Ocular Condition"

• Numerator
  • "Performed Cataract Surgery" CataractSurgeryPerformed
    • with ( ["Procedure, Performed": "Aspiration and Injection Procedures"]
    • union ["Procedure, Performed": "Excision of Adhesions"]
    • union ["Procedure, Performed": "Lens Procedure"]
    • union ["Procedure, Performed": "Removal Procedures"]
    • union ["Procedure, Performed": "Retinal Repair Procedures"]
    • union ["Procedure, Performed": "Revision Procedures"]
    • union ["Procedure, Performed": "Scleral Procedures"]
    • union ["Procedure, Performed": "Vitreous Procedures"] )
    SurgicalComplicationProcedure
    • such that SurgicalComplicationProcedure.relevantPeriod starts 30 days or less after day of end of CataractSurgeryPerformed.relevantPeriod

• Numerator Exclusions
  • None

• Denominator Exceptions
  • None

• Stratification
  • None

Definitions
Cataract Surgery with Significant Ocular Condition

- "Performed Cataract Surgery"
- CataractSurgeryPerformed
- with ( [ "Diagnosis": "Acute and Subacute Iridocyclitis" ]
  union [ "Diagnosis": "Adhesions and Disruptions of Iris and Ciliary Body" ]
  union [ "Diagnosis": "Anomalies of Pupillary Function" ]
  union [ "Diagnosis": "Aphakia and Other Disorders of Lens" ]
  union [ "Diagnosis": "Burn Confined to Eye and Adnexa" ]
  union [ "Diagnosis": "Cataract Secondary to Ocular Disorders" ]
  union [ "Diagnosis": "Cataract, Congenital" ]
  union [ "Diagnosis": "Cataract, Mature or Hypermature" ]
  union [ "Diagnosis": "Cataract, Posterior Polar" ]
  union [ "Diagnosis": "Central Corneal Ulcer" ]
  union [ "Diagnosis": "Certain Types of Iridocyclitis" ]
  union [ "Diagnosis": "Chronic Iridocyclitis" ]
  union [ "Diagnosis": "Cloudy Cornea" ]
  union [ "Diagnosis": "Corneal Edema" ]
  union [ "Diagnosis": "Corneal Opacity and Other Disorders of Cornea" ]
  union [ "Diagnosis": "Cysts of Iris, Ciliary Body, and Anterior Chamber" ]
  union [ "Diagnosis": "Enophthalmos" ]
  union [ "Diagnosis": "Glaucoma" ]
  union [ "Diagnosis": "Hereditary Corneal Dystrophies" ]
  union [ "Diagnosis": "High Hyperopia" ]
  union [ "Diagnosis": "Hypotony of Eye" ]
  union [ "Diagnosis": "Injury to Optic Nerve and Pathways" ]
  union [ "Diagnosis": "Morgagnian Cataract" ]
  union [ "Diagnosis": "Open Wound of Eyeball" ]
  union [ "Diagnosis": "Pathologic Myopia" ]
  union [ "Diagnosis": "Posterior Lenticous" ]
  union [ "Diagnosis": "Pseudoexfoliation Syndrome" ]
  union [ "Diagnosis": "Retro lental Fibroplasias" ]
  union [ "Diagnosis": "Traumatic Cataract" ]
  union [ "Diagnosis": "Uveitis" ]
- union ["Diagnosis": "Vascular Disorders of Iris and Ciliary Body"]
- ComorbidDiagnosis
- such that
  ComorbidDiagnosis.prevalencePeriod overlaps before
  CataractSurgeryPerformed.relevantPeriod

- **Currently Taking Systemic Sympathetic alpha 1a Antagonist Medication**
  - "Performed Cataract Surgery"
  - CataractSurgeryPerformed
  - with ["Medication, Active": "Use of Systemic Sympathetic alpha-1a Antagonist Medication for Treatment of Prostatic Hypertrophy"]
  - ActiveSympatheticAlpha1aAntagonist
  - such that
    ActiveSympatheticAlpha1aAntagonist.relevantPeriod overlaps before
    CataractSurgeryPerformed.relevantPeriod

- **Denominator**
  - "Initial Population"

- **Denominator Exclusions**
  - "Prior Pars Plana Vitrectomy Performed"
  - union "Currently Taking Systemic Sympathetic alpha 1a Antagonist Medication"
  - union "Cataract Surgery with Significant Ocular Condition"

- **Initial Population**
  - "Performed Cataract Surgery"
  - CataractSurgeryPerformed
  - where exists ["Patient Characteristic Birthdate"] BirthDate
    - where
      Global."CalendarAgeInYearsAt"(BirthDate.birthDatetime, start of "Measurement Period") >= 18
    - )
Numerator

- "Performed Cataract Surgery"
  CataractSurgeryPerformed
  with ( [{"Procedure, Performed": "Aspiration and Injection Procedures"}]
  union [{"Procedure, Performed": "Excision of Adhesions"}]
  union [{"Procedure, Performed": "Lens Procedure"}]
  union [{"Procedure, Performed": "Removal Procedures"}]
  union [{"Procedure, Performed": "Retinal Repair Procedures"}]
  union [{"Procedure, Performed": "Revision Procedures"}]
  union [{"Procedure, Performed": "Scleral Procedures"}]
  union [{"Procedure, Performed": "Vitreous Procedures"}]
  such that
  SurgicalComplicationProcedure.relevantPeriod starts 30 days or less after day of end of
  CataractSurgeryPerformed.relevantPeriod

- **Performed Cataract Surgery**
  - [{"Procedure, Performed": "Cataract Surgery"}]
  CataractSurgery
  where CataractSurgery.relevantPeriod during "Measurement Period"

- **Prior Pars Plana Vitrectomy Performed**
  - "Performed Cataract Surgery"
    CataractSurgeryPerformed
    with [{"Procedure, Performed": "Prior Pars Plana Vitrectomy"}]
    ParsPlanaVitrectomy
    such that
    ParsPlanaVitrectomy.relevantPeriod starts before end of
    CataractSurgeryPerformed.relevantPeriod

- **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**

- Global.CalendarAgeInYearsAt(BirthDateTime DateTime, AsOf DateTime)
  - years between ToDate(BirthDateTime) and ToDate(AsOf)

- Global.ToDate(Value DateTime)
  - DateTime(year from Value, month from Value, day from Value, 0, 0, 0, timezone from Value)

**Terminology**

- valueset "Acute and Subacute Iridocyclitis" using "2.16.840.1.113883.3.526.3.1241"
- valueset "Adhesions and Disruptions of Iris and Ciliary Body" using "2.16.840.1.113883.3.526.3.1405"
- valueset "Anomalies of Pupillary Function" using "2.16.840.1.113883.3.526.3.1406"
- valueset "Aphakia and Other Disorders of Lens" using "2.16.840.1.113883.3.526.3.1407"
- valueset "Aspiration and Injection Procedures" using "2.16.840.1.113883.3.526.3.1408"
- valueset "Burn Confined to Eye and Adnexa" using "2.16.840.1.113883.3.526.3.1409"
- valueset "Cataract Secondary to Ocular Disorders" using "2.16.840.1.113883.3.526.3.1410"
- valueset "Cataract Surgery" using "2.16.840.1.113883.3.526.3.1411"
- valueset "Cataract, Congenital" using "2.16.840.1.113883.3.526.3.1412"
- valueset "Cataract, Mature or Hypermature" using "2.16.840.1.113883.3.526.3.1413"
- valueset "Cataract, Posterior Polar" using "2.16.840.1.113883.3.526.3.1414"
Data Criteria (QDM Data Elements)

- "Diagnosis: Acute and Subacute Iridocyclitis" using "Acute and Subacute Iridocyclitis (2.16.840.1.113883.3.526.3.1421)"
- "Diagnosis: Adhesions and Disruptions of Iris and Ciliary Body" using "Adhesions and Disruptions of Iris and Ciliary Body (2.16.840.1.113883.3.526.3.1405)"
- "Diagnosis: Anomalies of Pupillary Function" using "Anomalies of Pupillary Function (2.16.840.1.113883.3.526.3.1406)"
- "Diagnosis: Aphakia and Other Disorders of Lens" using "Aphakia and Other Disorders of Lens (2.16.840.1.113883.3.526.3.1407)"
- "Diagnosis: Burn Confined to Eye and Adnexa" using "Burn Confined to Eye and Adnexa (2.16.840.1.113883.3.526.3.1409)"
- "Diagnosis: Cataract Secondary to Ocular Disorders" using "Cataract Secondary to Ocular Disorders (2.16.840.1.113883.3.526.3.1410)"
- "Diagnosis: Cataract, Congenital" using "Cataract, Congenital (2.16.840.1.113883.3.526.3.1412)"
- "Diagnosis: Cataract, Mature or Hypermature" using "Cataract, Mature or Hypermature (2.16.840.1.113883.3.526.3.1413)"
• "Diagnosis: Cataract, Posterior Polar" using "Cataract, Posterior Polar (2.16.840.1.113883.3.526.3.1414)"
• "Diagnosis: Central Corneal Ulcer" using "Central Corneal Ulcer (2.16.840.1.113883.3.526.3.1428)"
• "Diagnosis: Certain Types of Iridocyclitis" using "Certain Types of Iridocyclitis (2.16.840.1.113883.3.526.3.1415)"
• "Diagnosis: Chronic Iridocyclitis" using "Chronic Iridocyclitis (2.16.840.1.113883.3.526.3.1416)"
• "Diagnosis: Cloudy Cornea" using "Cloudy Cornea (2.16.840.1.113883.3.526.3.1417)"
• "Diagnosis: Corneal Edema" using "Corneal Edema (2.16.840.1.113883.3.526.3.1418)"
• "Diagnosis: Corneal Opacity and Other Disorders of Cornea" using "Corneal Opacity and Other Disorders of Cornea (2.16.840.1.113883.3.526.3.1419)"
• "Diagnosis: Cysts of Iris, Ciliary Body, and Anterior Chamber" using "Cysts of Iris, Ciliary Body, and Anterior Chamber (2.16.840.1.113883.3.526.3.1420)"
• "Diagnosis: Enophthalmos" using "Enophthalmos (2.16.840.1.113883.3.526.3.1421)"
• "Diagnosis: Glaucoma" using "Glaucoma (2.16.840.1.113883.3.526.3.1423)"
• "Diagnosis: Hereditary Corneal Dystrophies" using "Hereditary Corneal Dystrophies (2.16.840.1.113883.3.526.3.1424)"
• "Diagnosis: High Hyperopia" using "High Hyperopia (2.16.840.1.113883.3.526.3.1425)"
• "Diagnosis: Hypotony of Eye" using "Hypotony of Eye (2.16.840.1.113883.3.526.3.1426)"
• "Diagnosis: Injury to Optic Nerve and Pathways" using "Injury to Optic Nerve and Pathways (2.16.840.1.113883.3.526.3.1427)"
• "Diagnosis: Morgagnian Cataract" using "Morgagnian Cataract (2.16.840.1.113883.3.526.3.1558)"
• "Diagnosis: Open Wound of Eyeball" using "Open Wound of Eyeball (2.16.840.1.113883.3.526.3.1430)"
• "Diagnosis: Pathologic Myopia" using "Pathologic Myopia (2.16.840.1.113883.3.526.3.1432)"
• "Diagnosis: Posterior Lenticonus" using "Posterior Lenticonus (2.16.840.1.113883.3.526.3.1433)"
• "Diagnosis: Pseudoexfoliation Syndrome" using "Pseudoexfoliation Syndrome (2.16.840.1.113883.3.526.3.1435)"
• "Diagnosis: Retrolental Fibroplasias" using "Retrolental Fibroplasias (2.16.840.1.113883.3.526.3.1438)"
• "Diagnosis: Traumatic Cataract" using "Traumatic Cataract (2.16.840.1.113883.3.526.3.1443)"
• "Diagnosis: Uveitis" using "Uveitis (2.16.840.1.113883.3.526.3.1444)"
• "Diagnosis: Vascular Disorders of Iris and Ciliary Body" using "Vascular Disorders of Iris and Ciliary Body (2.16.840.1.113883.3.526.3.1445)"
• "Medication, Active: Use of Systemic Sympathetic alpha-1a Antagonist Medication for Treatment of Prostatic Hypertrophy" using "Use of Systemic Sympathetic alpha-1a Antagonist Medication for Treatment of Prostatic Hypertrophy (2.16.840.1.113883.3.526.3.1442)"
• "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: ONC Administrative Sex" using "ONC Administrative Sex (2.16.840.1.113762.1.4.1)"
• "Procedure, Performed: Aspiration and Injection Procedures" using "Aspiration and Injection Procedures (2.16.840.1.113883.3.526.3.1408)"
• "Procedure, Performed: Cataract Surgery" using "Cataract Surgery (2.16.840.1.113883.3.526.3.1411)"
• "Procedure, Performed: Excision of Adhesions" using "Excision of Adhesions (2.16.840.1.113883.3.526.3.1422)"
• "Procedure, Performed: Lens Procedure" using "Lens Procedure (2.16.840.1.113883.3.526.3.1429)"
• "Procedure, Performed: Prior Pars Plana Vitrectomy" using "Prior Pars Plana Vitrectomy (2.16.840.1.113883.3.526.3.1434)"
• "Procedure, Performed: Removal Procedures" using "Removal Procedures (2.16.840.1.113883.3.526.3.1436)"
• "Procedure, Performed: Retinal Repair Procedures" using "Retinal Repair Procedures (2.16.840.1.113883.3.526.3.1437)"
• "Procedure, Performed: Revision Procedures" using "Revision Procedures (2.16.840.1.113883.3.526.3.1439)"
- "Procedure, Performed: Scleral Procedures" using "Scleral Procedures (2.16.840.1.113883.3.526.3.1440)"
- "Procedure, Performed: Vitreous Procedures" using "Vitreous Procedures (2.16.840.1.113883.3.526.3.1447)"

**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 |