

**Measure #389: Cataract Surgery: Difference Between Planned and Final Refraction - National Quality Strategy Domain: Effective Clinical Care**

**2017 OPTIONS FOR INDIVIDUAL MEASURES:**  
**REGISTRY ONLY**

**MEASURE TYPE:**  
Outcome

**DESCRIPTION:**  
Percentage of patients aged 18 years and older who had cataract surgery performed and who achieved a final refraction within +/- 1.0 diopters of their planned (target) refraction

**INSTRUCTIONS:**  
This measure is to be calculated **each time** a cataract procedure is performed during the performance period. This measure is intended to reflect the quality of services provided for the patient receiving cataract surgery.

*Note: This is an outcome measure and will be calculated solely using registry data.*

- For patients who receive the surgical procedures specified in the denominator coding, it should be reported whether or not the patient had a difference between planned and final refraction.
- Include only procedures performed through **September 30** of the *performance period*. This will allow the post-operative period to occur before registries must submit data to CMS.

**Measure Reporting:**

The listed denominator criteria is used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions allowed by the measure. The quality-data codes listed do not need to be submitted for registry-based submissions; however, these codes may be submitted for those registries that utilize claims data.

**DENOMINATOR:**

All patients aged 18 years and older who had cataract surgery

**Denominator Criteria (Eligible Cases):**

Patients aged  $\geq 18$  years on date of encounter

**AND**

**Patient encounter during the performance period (CPT):** 66840, 66850, 66852, 66920, 66930, 66940, 66982, 66983, 66984

**WITHOUT**

**Modifier:** 56 or 55

**NUMERATOR:**

Patients who achieved a final refraction (spherical equivalent) of +/- 1.0 diopters of their planned (target) refraction (spherical equivalent) within 90 days following cataract surgery. The refraction planned and final refraction values should correspond to the eye that underwent the cataract procedure

**Numerator Options:**

*Performance Met:*

Patient achieves final refraction (spherical equivalent) +/- 1.0 Diopters of their planned refraction within 90 days of surgery (**G9519**)

**OR**

**Performance Not Met:**

Patient does not achieve final refraction (spherical equivalent) +/- 1.0 Diopters of their planned refraction within 90 days of surgery (**G9520**)

**RATIONALE**

Refractive Outcome is important to the patient and to the surgeon. Planned refraction is something the surgeon and patient discuss at the time of assessment for cataract surgery and is a way to align patient and surgeon expectations of the outcome. Comparing actual outcome to predicted outcome is a valuable measure of success.

Results of multiple large studies of cataract surgery have repeatedly demonstrated positive outcomes. The ASCRS National Cataract Database reported that at 3 months postoperatively 74.6% of patients were within  $\pm 1.0$  D of target spherical equivalent. The American Academy of Ophthalmology National Eyecare Outcomes Network (NEON) database (n=7626) also found similar rates of success, with seventy-eight percent of patients were within  $\pm 1.0$  D of target spherical equivalent. Kugelberg and Lundstrom published outcomes data from the Swedish registry and found in routine cataract surgeries 75% to 90% of patients ended up with refraction within 1 Diopter of the target refraction. The study describes factors that influenced refractive outcome as older age and use of a clear corneal incision. Another 2009 study by Gale and colleagues reported outcomes improving from 79.7% to 87% within 3 measurement cycles and the authors suggested that a benchmark standard of 85% be established.

References:

American Academy of Ophthalmology Cataract and Anterior Segment Panel. Preferred Practice Pattern® Guidelines. Cataract in the Adult Eye. San Francisco, CA: American Academy of Ophthalmology; 2011. Available at: [AAO Website](#)

Lum F, Schein O, Schachat AP, Abbott RL, Hoskins HD, Steinberg EP. Initial two years of experience with the AAO Nation Eyecare Outcomes Network (NEON) cataract surgery database. Ophthalmology 2000;107:691-97

Gale, RP, Johnston, RL, Zuberbuhler, B, McKibbin, M, Benchmark Standards for refractive Outcomes After Cataract Surgery, Eye (London) 2009 Jan;23 (1) 149-52

Kugelberg M, Lundstrom M. Factors related to the degree of success in achieving target refraction in cataract surgery. J Cat Refr Surg 2008;34(11):1935-39

**CLINICAL RECOMMENDATION STATEMENTS:**

This is an outcome measure. As such, no clinical recommendations are included.

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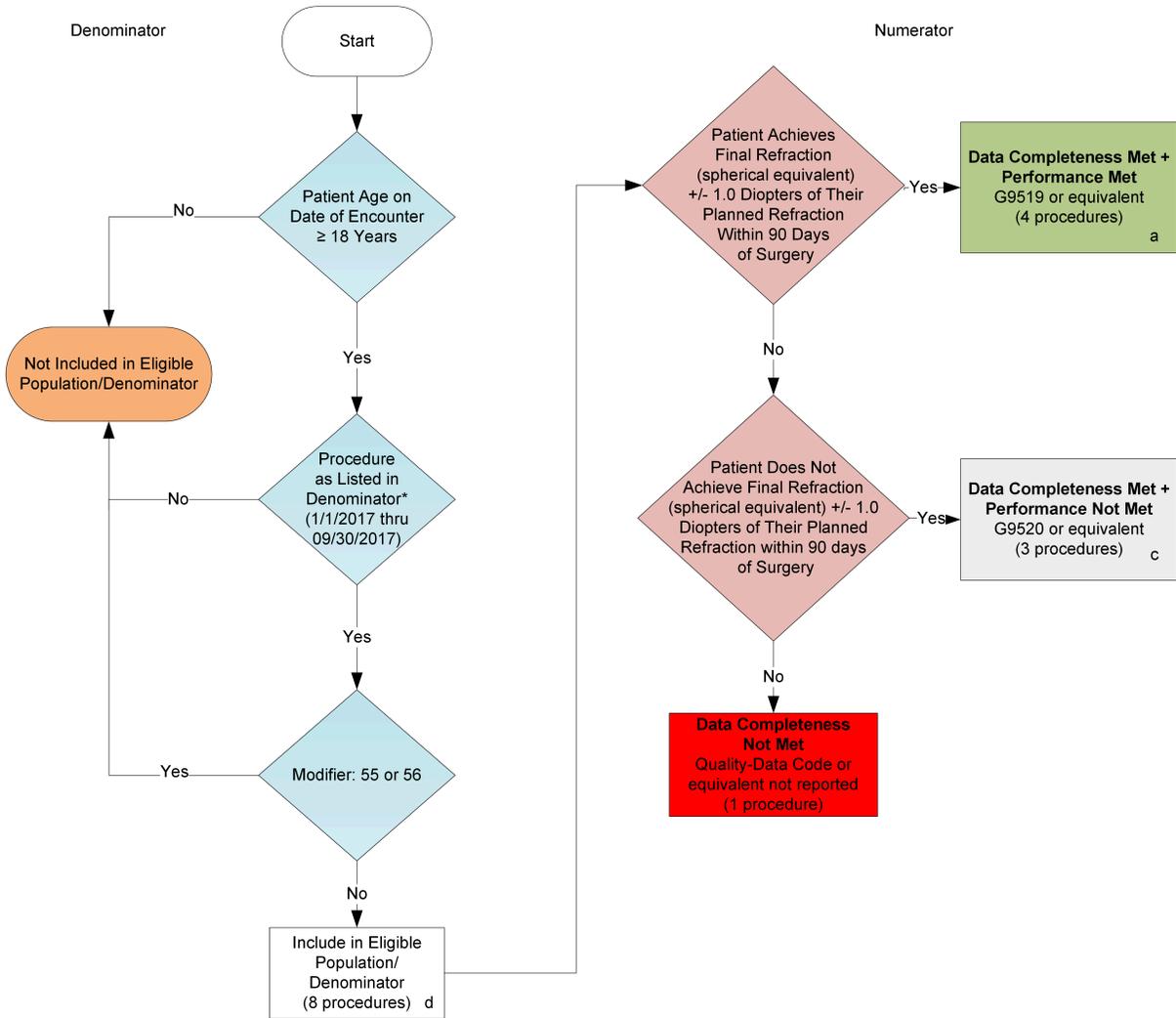
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**2017 Registry Individual Measure Flow  
#389: Cataract Surgery: Difference Between Planned and Final Refraction**



**SAMPLE CALCULATIONS:**

**Data Completeness=**  

$$\frac{\text{Performance Met (a=4 procedures)} + \text{Performance Not Met (c=3 procedures)}}{\text{Eligible Population / Denominator (d=8 procedures)}} = \frac{7 \text{ procedures}}{8 \text{ procedures}} = 87.50\%$$

**Performance Rate=**  

$$\frac{\text{Performance Met (a=4 procedures)}}{\text{Data Completeness Numerator (7 procedures)}} = \frac{4 \text{ procedures}}{7 \text{ procedures}} = 57.14\%$$

\*See the posted Measure Specification for specific coding and instructions to report this measure  
 NOTE: Reporting Frequency: Procedure

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 The measure diagrams were developed by CMS as a supplemental resource to be used in conjunction with the measure specifications. They should not be used alone or as a substitution for the measure specification.

**2017 Registry Individual Measure Flow**  
**#389: Cataract Surgery: Difference Between Planned and Final Refraction**

Please refer to the specific section of the Measure Specification to identify the denominator and numerator information for use in reporting this Individual Measure.

1. Start with Denominator
2. Check Patient Age:
  - a. If Patient Age is greater than or equal to 18 Years on the Date of Service equals No, do not include in Eligible Patient Population. Stop Processing.
  - b. If Patient Age is greater than or equal to 18 Years on the Date of Service equals Yes, proceed to check One Month Follow-Up.
3. Check Encounter Performed:
  - a. If Encounter as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
  - b. If Encounter as Listed in the Denominator equals Yes, proceed to check Without Modifier 55 or 56.
4. Check Modifier 55 or 56:
  - a. If Modifier 55 or 56 (Post or Pre-Operative Only) equals Yes, do not include in Eligible Patient Population. Stop Processing.
  - b. If Modifier 55 or 56 (Post or Pre-Operative Only) equal No, include in Denominator Eligible Population.
5. Denominator Population:
  - a. Denominator population is all Eligible Patients in the denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 8 procedures in the sample calculation.
6. Start Numerator
7. Check Patient Achieves Refraction +- 1.0 D for the Eye that Underwent Cataract Surgery, Measured at the One Month Follow-Up Visit:
  - a. If Patient Achieves Refraction +- 1.0 D for the Eye that Underwent Cataract Surgery, Measured at the One Month Follow-Up Visit equals Yes, include in Data Completeness Met and Performance Met.
  - b. Data Completeness Met and Performance Met letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 4 procedures in Sample Calculation.
  - c. If Patient Achieves Refraction +- 1.0 D for the Eye that Underwent Cataract Surgery, Measured at the One Month Follow-Up Visit equals No, proceed to check Patient Does Not Achieve Refraction +- 1D for the Eye that Underwent Cataract Surgery, Measured at the One Month Follow-Up Visit.
8. Check Patient Does Not Achieve Refraction +- 1.0 D for the Eye that Underwent Cataract Surgery, Measured at the One Month Follow-Up Visit:

- a. If Patient Does Not Achieve Refraction +/- 1.0 D for the Eye that Underwent Cataract Surgery, Measured at the One Month Follow-Up Visit equals Yes, include in Data Completeness Met and Performance Not Met.
  - b. Data Completeness Met and Performance Not Met letter is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c equals 3 procedures in the Sample Calculation.
  - c. If Patient Does Not Achieve Refraction +/- 1.0 D for the Eye that Underwent Cataract Surgery, Measured at the One Month Follow-Up Visit equals No, proceed to proceed to Data Completeness Not Met.
9. Check Data Completeness Not Met
- a. If Data Completeness Not Met equals No, Quality Data Code or equivalent was not reported. 1 procedure has been subtracted from data completeness numerator in the sample calculation.

**SAMPLE CALCULATIONS:**

**Data Completeness=**

$$\frac{\text{Performance Met (a=4 procedures)} + \text{Performance Not Met (c=3 procedures)}}{\text{Eligible Population / Denominator (d=8 procedures)}} = \frac{7 \text{ procedures}}{8 \text{ procedures}} = 87.50\%$$

**Performance Rate=**

$$\frac{\text{Performance Met (a=4 procedures)}}{\text{Data Completeness Numerator (7 procedures)}} = \frac{4 \text{ procedures}}{7 \text{ procedures}} = 57.14\%$$