

Quality Measures for Colonoscopy, CORI v4

The Excellence Reports will report individual performance on a set of quality measures for colonoscopy derived from published recommendations. In addition to the quality measures, total number of colonoscopies performed in this time period, average age of those patients and the proportion of patients of each gender will be reported. All reports will include patients ≥ 18 years of age only unless otherwise specified.

#1. SCREENING INTERVAL. For average risk patients ≥ 50 years of age with no abnormal findings on screening colonoscopy the recommended screening interval is 10 years.

a. Screening procedures are identified from the Indications screen, where "Screening (no prior pathology): Average risk" is checked, but no other indications are selected. Only patients age 50 or greater at the time of the examination are included.

Note: A patient is at higher than average screening risk if they have a FH of FAP or HNPCC, a history of adenomatous polyps or CRC in a first degree relative, a history of ovarian or endometrial cancer (onset age < 50).

- Family syndrome of FAP or HNPCC are other indications, such that cases will be considered higher risk using the stated rule.
- For non-FAP FH of polyps and non-HNPCC FH of CRC, the quality measure should consider higher risk only those with FH of either in a first degree relative. CORI does capture some relative information for CRC but not for polyps, however, so this report will consider high risk any cases where either of the FH items is selected.
- The quality measure considers high risk cases those with a FH of adenomas. CORI captures only the FH of polyps, so the report will consider high risk any cases where FH of polyps is selected.
- The history of ovarian or endometrial cancer should be at age < 50 to be considered high risk. CORI doesn't discretely collect any data on either type of cancer.

b. Procedures are then removed from this denominator if there were problems with the procedure that would change the recommended screening interval, or if a biopsy or polypectomy was performed during the examination.

- Problems with the procedure are defined as no cecal intubation, inadequate prep on the current exam, or incomplete examination
 - CORI has 4 choices for "Prep results"; the report will consider 'poor' as representing an inadequate prep.
 - Cecal intubation is documented in "Depth of insertion : Actually reached" by values 'Cecum' or 'Terminal ileum'; any other values indicate no cecal intubation.
 - Incomplete examination is noted on the Procedure screen by answering "No" to "Was the procedure completed?"

- Biopsy for any finding or polypectomy of a single polyp or within a polyp cluster excludes procedures from the denominator.

c. The numerator for the quality measure is the number of procedures with recommended followup interval, categorized as > 10 years, = 10 years, < 10 years, or no documentation of followup. This data is found on the Assessment/Plan screen: "Recommended next exam in"

d. Documentation of reason for not following guidelines is not available at this time.

#2. RISK ASSESSMENT. Preprocedure risk assessment is documented.

a. The denominator for this measure is the number of procedures performed during the time period

b. The numerator for this measure is the number of procedures with documentation of ASA classification.

c. In addition, the proportion of procedures in each class will be reported.

#3. ANTICOAGULATION PLAN. A management plan is documented for patients on oral anticoagulants.

a. The denominator for this measure is the number of procedures in which the patients are currently on (or have been on within 7 days prior to the procedure) oral anticoagulants.

- Patients on oral anticoagulants are identified in CORI v4 in the History when "Within the last 30 days...." is answered "Yes", and "Coumadin" is answered "Yes".
- While this does not identify patients on Coumadin at the time of the procedure (or within a week of the procedure) it will be used as an approximation.

b. The numerator for this measure is the number of these patients who have an anticoagulation plan; in CORI v4, this means a value in the field "Anticoagulation plan".

#4. SEDATION MEDICATIONS. Sedation medication(s) used and dosages are documented.

- a. The denominator for this measure is the number of procedures performed during the time period.
- b. The numerator for this measure is the number of procedures for which sedation medications are documented. This includes procedures where no sedation medications were used, where there was residual sedation from a prior procedure, or where anesthesia was general or managed by a nurse anesthetist or anesthesiologist.
 - No sedation medications were used is documented by the checkbox "No sedation medications given" (Preprocedure screen),
 - The presence of residual sedation from a prior procedure is documented by the checkbox "Residual sedation from prior procedure present" (Preprocedure screen),
 - If there is documentation of general anesthesia (Level of sedation = "general anesthesia") or that an anesthesiologist or nurse anesthetist managed the case (Managed by = "Nurse Anesthetist" or "Anesthesiologist") it is assumed that documentation of sedation is performed in another manner.
- c. For any medication listed, the percent with documentation of dosage given will also be reported.
- d. If "No sedation medications given" is checked and sedation medications are documented, then an error in documentation has occurred and will be reported.

#5. BOWEL PREP QUALITY. Quality of bowel prep is documented.

- a. The denominator for this measure is the number of procedures performed during the time period.
- b. The numerator for this measure is the number of procedures where the results of the prep are documented. This can be documented in the "Prep results" field (Preprocedure screen).
- c. In addition, the proportion of documented procedures with prep results adequate to detect a polyp > 5 mm will be reported.
 - Adequate prep results are determined if the value for "Prep results" is either 'excellent', 'good', or 'fair'.
 - Inadequate prep results are determined if the value is 'poor'.

#6. DEPTH OF INSERTION.

6 a. Depth of insertion is documented.

6 b. The cecum is reached unless there are documented reasons for not reaching this depth of insertion.

a. The denominator for this measure is the number of procedures performed during the time period.

b. The numerator for the measure is the number of procedures with documentation of depth reached

- Depth reached is documented on the Procedure screen, "Depth of insertion: Actually reached"

c. The numerator now becomes the denominator of the second part of the measure. Procedures are then removed from this denominator when the quality of the bowel prep is poor, when severe colitis is present, when the procedure is incomplete, when there is a history of bowel resection, or when the procedure is being performed for treatment of a benign or malignant stricture or for removal of a large polyp.

- Quality of bowel prep is considered poor when the value for "Prep results" is either 'Poor'.
- Severe colitis is considered present when there is a Finding of Mucosal abnormality and the "Activity" is 'severe'.
- The procedure is known to be incomplete when "Was the procedure complete?" is checked 'No'.
- History of colon resection is identified from the History screen when, under "Surgical History" one of the following is chosen: Colostomy, Left hemicolectomy, Right hemicolectomy, Segmental colectomy, Total colectomy.
- Performance for stricture or polyp is considered present when there is an Indication of "Therapeutic Intervention" for 'Dilation of stricture' or 'Polypectomy of known polyp.'
 - Known polyp size is not recorded, so "large" size will be assumed..

d. Of those procedures that remain (i.e. have documentation of depth reached and no exclusions), a secondary measure is the percent of records in which there is documentation that the cecum is reached (cecal intubation rate)

e. When options are available, method of documentation will be measured: by simple statement, by identification of anatomical landmarks, or by photodocumentation.

- A simple statement that the cecum is reached means that "Depth of insertion: Actually reached" is either 'cecum' or 'terminal ileum'.
- Identification of anatomical landmarks cannot be documented in CORi v4 at this time.
- Photodocumentation of the cecum is not available in CORi v4 at this time.

#7. EXAMINATION TIME. Average examination time for endoscope withdrawal is ≥ 6 minutes for screening colonoscopies where no biopsies or polypectomies are performed.

- a. All procedures performed for screening colonoscopy (regardless of risk) during the time period are included in this measure
 - Screening colonoscopies are identified by inclusion of any screening indication (average risk or not) or by inclusion of a familial syndrome, and by the absence of other indications.

- b. Procedures removed from this denominator include those in which there is a history of colon resection, where the cecum was not reached, or those in which polypectomy or biopsy were performed during the procedure.
 - History of colon resection is identified from the History screen when, under Past Surgical History, when any Lower GI procedure is indicated.
 - The cecum has been reached if "Depth of insertion: Actually reached" is 'cecum' or 'terminal ileum'.
 - Polypectomy or biopsy of a polyp or multiple polyps is documented by the Finding Polyp or Polyp cluster with any selection chosen under Diagnostics.
 - Biopsy is documented for other findings by checking "Biopsy taken" when available.

- c. Of procedures not excluded, the number with documentation of withdrawal time will be reported.

- d. Average time of withdrawal from cecum to completion of procedure is then measured, aggregating over all procedures.
 - Withdrawal time is determined by the "Time from cecum to scope removal" (Procedure screen).

- e. Finally, the proportion of withdrawal times documented in this group to be < 6 minutes, 6-8 minutes and >8 minutes will be reported.

8. RECTAL BLEEDING. When rectal bleeding is present, type and extent of bleeding is documented.

a. Rectal bleeding is noted to be present when the indication "Hematochezia" is selected, regardless of other indications. All procedures with this indication are the denominator of the measure.

b. The numerator for this quality measure is documentation of the type and extent of bleeding.

- Type and extent of bleeding are documented on the Hematochezia detail screen, which is viewed after checking Hematochezia in the indications screen. Any choice for the field "Type of bleeding" meets this measure.

#9. POLYP DOCUMENTATION.

9 a. Details of polyps are documented.

9 b. Details of polyp removal and retrieval are documented.

a. The denominator for this measure is the number of polyps removed for all procedures during the time period.

- Only polyps documented using the Finding: Polyp will be considered for this measure; the finding of Polyp cluster will not be used.

b. The numerator is the number of these polyps for which location, size and morphology are documented. All details can be found on the Polyp detail screen, which is available after checking Finding: Polyp.

- Location is documented by choosing a "Location" on the Polyp detail screen; this should be automatically populated in CORI v4.
- Size is documented by either entering a numeric value for "Max size" or by checking the "Diminutive polyp (<=5 mm)" checkbox.
- Morphology is documented choosing any "Type".

c. Additional measures reported include the proportion of all polyps removed and, of these, the proportion retrieved and, of these, the proportion sent to pathology.

- Polyp removal is documented by choosing for "Polyp removed?" either 'Totally removed', 'Partially removed', or 'Removed piecemeal'.
- Polyp retrieval is documented by checking 'Yes' for "Tissue retrieved?"
- Sending polyps to pathology is documented by entering a pathology ID.

d. For each polyp removed, the proportion where completeness of removal is documented will be reported

- Piecemeal removal can be documented by choosing the "Removed piecemeal" option for "Polyp removed?"
- For CORI v4, all polyps removed will have documentation of completeness if removal is documented by use of the "Polyp removed?" menu

e. For polyps not removed, the proportion that were biopsied will be reported and, for each of these, proportion for which a tattoo was placed will be reported.

- For Polyps where "Polyp removed?" is 'Not removed' or when "Polyp removed?" is not answered, biopsy will be determined by selecting "Biopsy without cautery" or "Biopsy with cautery"
- Placement of a tattoo is documented by checking "Placement of tattoo" on the same screen.

#10. ADENOMA DETECTION RATE. Adenoma detection rate in first time screening exams can be determined.

- a. The denominator for this measure is all first time screening procedures.
 - Screening procedures are identified from the Indications screen: at least one item under "Screening (no prior pathology)" or "Familial syndrome" must be chosen but no other indications may be chosen.
 - First time screening examinations will be determined by absence of prior colonoscopies documented in CORI for the patient.

- b. The numerator for the measure is the number of procedures where an adenomatous polyp is detected.
 - For each first time screening, a value of 'Adenoma', 'Adenocarcinoma' or 'Carcinoma' in the Results field of the Pathology list on the Postprocedure page contains the will indicate detection of an adenomatous polyp.
 - If no pathology is documented, documentation of a polyp with "Size (mm)" > 9 will be accepted as evidence of an adenoma

#11. COMPLICATIONS. Intra- and immediate postprocedural complications (to include serious events such as perforation or bleeding requiring intervention) and interventions are documented.

a. The denominator for this measure is the number of procedures performed during the time period. Results will be stratified by screening vs. non-screening examinations.

- Screening examinations are identified from the Indications screen by selection of any choice from the options for "Screening (no prior pathology)" or "Familial syndrome" without other indications.

b. The first measure is of documentation of intra- or immediate postprocedural complications and interventions (including lack of complications and interventions)

- These complications and interventions are documented on the Events page.
- A complication is considered present if
 - "Were there any unplanned events?" is answered 'No', or
 - "Were there any unplanned events?" is answered 'Yes' and one or more events is selected. In addition,
 - "Interventions required?" is checked 'No', or
 - "Interventions required?" is checked 'Yes and one or more interventions is selected.

c. Of those procedures with documentation, the number of procedures which document a serious complication (bleeding or perforation requiring intervention) will be counted.

- Serious complications are identified by selection of "Bleeding", "Perforation", or "Death" and, for the first two "Interventions required?" is answered "Yes"

#12. FOLLOWUP. Recommendations for followup colonoscopy are documented.

- a. The denominator for this measure is the number of procedures performed during the time period.
- b. The numerator for this measure is the number of procedures with documentation of recommended followup interval.
 - Recommended interval may be documented in one of two places in CORI v4: either on the Assessment/Plan screen ("Recommended next exam in...") or on the Postprocedure screen ("Based on pathology, recommended next exam in")

#13. PATHOLOGY. Review of pathology report OR results of pathology reports are documented.

- a. The denominator for this measure is the number of procedures with documentation that specimens were sent to pathology.
 - Documentation of pathology specimens requires the user to enter, on a Findings screen, a Pathology ID, and "Add" to the list of IDs for the procedure.
 - Specimen information will then appear on the Postprocedure page, where pathology results can be documented and/or pathology reports can be imported.
- b. The numerator for this measure will be the number of procedures where the pathology results are documented. The measure states that pathology results must be viewed and it is assumed that if documented, or imported into a procedure report, these results have been reviewed.
 - Results are documented on the Postprocedure page under Pathology – Results (± Modifier and Description) and/or the report may be imported as text or a formatted report.

#14. SURVEILLANCE INTERVAL (no new pathology) For post-polypectomy patients undergoing surveillance colonoscopy, if no new polyps are discovered the recommended surveillance interval is 5-10 years.

a. Surveillance colonoscopies in post-polypectomy patients are identified in Indications by the selection of "Adenomatous Polyps" under "Surveillance of known prior disease" and absence of other procedure indications. From these cases are removed any procedures where new polyps were found (Findings of either Polyp or Polyp Cluster).

b. Procedures are removed from this denominator if there is a history of HNPCC, if there were problems with the procedure that would change the recommended screening interval, or if there were certain abnormal findings on the examination.

- History of HNPCC is identified on the Indications screen by Familial syndrome: Hereditary Nonpolyposis Colorectal Cancer
- Problems with the procedure are defined as no cecal intubation, inadequate prep on the current exam, or incomplete examination
 - CORI has 4 choices for "Prep results"; the report will consider 'poor' as representing an inadequate prep.
 - Cecal intubation is documented in "Depth of insertion : Actually reached" by values 'Cecum' or 'Terminal ileum'; any other values indicate no cecal intubation.
 - Incomplete examination is noted on the Procedure screen by answering "No" to "Was the procedure completed?"
- Tumor/Cancer and Mucosal Abnormality/Colitis/IBD are the only Findings to be considered abnormal findings for purposes of this measure.

c. The numerator for the quality measure is the number of procedures with recommended followup interval, categorized as < 5 years, 5 - 10 years, > 10 years, or no documentation of followup. This data is found on the Assessment/Plan plan ("Recommended next exam in:").

#15 SURVEILLANCE INTERVAL (following polypectomy). For patients undergoing polypectomy during a screening or post-polypectomy surveillance colonoscopy the recommended surveillance interval is based on worst pathological finding from the current polyp(s), as follows

- 1-2 tubular adenomas of < 1 cm (5-10 years)
- 3-10 adenomas (3 years)
- >10 adenomas (<3 years)
- adenoma with villous features (3 years)
- adenoma \geq 1 cm (3 years)
- adenoma with high grade dysplasia (3 years)
- sessile adenoma \geq 2 cm, removed piecemeal (2-6 mos)
- hyperplastic polyp (10 years for screening, 5-10 years for surveillance)

a. Screening colonoscopies and surveillance colonoscopies following polypectomy are identified in Indications by any selection under "Screening" or by selection of "Adenomatous Polyps" under "Surveillance", and by the absence of other procedure indications. Polypectomies during the current procedure are identified by the Findings of either "Polyp" or "Polyp cluster" along with a detail that indicates polypectomy

- A single polypectomy, regardless of number of polyps documented in the procedure, qualifies the case for this quality measure.
- Details that indicate polypectomy may include choosing 'Totally removed' or 'Removed piecemeal' for "Polyp removed?" on the Polyp detail screen, 'Yes' to "Polyp removed?" on the Polyp cluster detail screen.

b. Procedures are removed from this denominator if there is a history of HNPCC, if there were problems with the procedure that would change the recommended screening interval, if there were certain abnormal findings on the examination, or if there was incomplete removal of one or more polyps.

- History of HNPCC is identified on the Indications screen by Familial syndrome: Hereditary Nonpolyposis Colorectal Cancer .
- Problems with the procedure are defined as no cecal intubation, inadequate prep on the current exam, or incomplete examination
 - CORI has 4 choices for "Prep results"; the report will consider 'poor' as representing an inadequate prep.
 - Cecal intubation is documented in "Depth of insertion : Actually reached" by values 'Cecum' or 'Terminal ileum'; any other values indicate no cecal intubation.
 - Incomplete examination is noted on the Procedure screen by answering "No" to "Was the procedure completed?"
- Tumor/Cancer and Mucosal Abnormality/Colitis/IBD are the only Findings to be considered abnormal findings for purposes of this measure.
- Incomplete removal of polyps is documented on the Polyp detail screen by selecting 'partially removed' from the "Polyp removed?" menu. This criteria is met if there is incomplete removal of any polyp during this examination.

c. Of cases in the denominator, measure first the number for which pathology is reported on at least one polyp or polyp cluster specimen. Note that this is different from Quality

measure #13 in that only documentation of pathology in discrete data fields will be included.

- Results are documented on the Postprocedure page under Pathology – Results (± Modifier and Description)
- Results must be either Adenoma or Hyperplasia; no other polyp results will be considered in this measure.

d. Of these, measure the number that have the recommended followup interval documented.

- Recommended followup can be found either on the Assessment/Plan screen ("Recommended next exam in:") or on the Postprocedure screen ("Based on pathology, next exam in:"). If both are present, consider only the Postprocedure interval.

e. Of these, the appropriate followup interval must be determined; for procedures with more than one polyp or polyp cluster, only the worst pathology is used.

- Morphology is determined as in Quality measure #9
- Appropriate followup interval is defined as

Polyp	Appropriate	Inappropriate
Adenoma with morphology of 'sessile' and size ≥ 2 cm, if removed piecemeal	≤ 6 months	> 6 months
Total number of adenomas > 10	≤ 3 years	> 3 years
A single adenoma which is either villous or tubulovillous, or ≥ 1 cm or if there are 3 – 10 adenomas found.	2.5 – 3.5 years (3 years)	< 2.5 years or > 3.5 years
Adenoma (all others)	4.5 – 10.5 years (5-10)	< 4.5 or > 10.5 years
Hyperplasia (no adenomas) –surveillance	4.5 – 10.5 years (5-10)	< 4.5 or > 10.5 years
Hyperplasia (no adenomas) - screening	≥ 9.5 years (> 10)	< 9.5 years