**Colorectal Cancer (CRC)**

**eMERGE-III Phenotype Algorithm Pseudo Code**

**Group Health/University of Washington**

**Version: May 31, 2017**

David Carrell (carrell.d@ghc.org, 206-287-2705, maintains this document)

Jane Grafton (grafton.j@ghc.org, 206-287-2885)

Aaron Scrol (scrol.a@ghc.org, 206-287-2150)

**Version Notes:**

May 31, 2017: Deleted some rare and/or extraneous codes from the code sets used to identify phenotype cases.

May 17, 2017: In response to a request from an implemenation site ICD-O-3 histology codes for excluded tumor histologies have been added to Table 5.1 (p. 10).

May 15, 2017: In response to a rare but easily identified clinical pattern that allowed a patient receiving Rituxan for treatment of thrombocytopenia who also had a prior “rule-out” diagnosis code for colorectal cancer (but no actual history of CRC) to be falsely classified as a case, we modified section 5.3 of the algorithm (“CRC case by diagnosis and chemotherapy or radiation therapy”) to exclude patients with this particular clinical pattern. See Section 5.3 for details.

January 30, 2017: Final version of the algorithm ready for network-wide implementation.

Table of Contents

[1. Introduction: 2](#_Toc482696838)

[2. Development and validation 3](#_Toc482696839)

[3. Data requirements 3](#_Toc482696840)

[4. General inclusion/exclusion criteria 3](#_Toc482696841)

[5. CRC cases 3](#_Toc482696842)

[6. CRC controls 5](#_Toc482696843)

[7. GH/UW cases, controls, and excluded subjects 7](#_Toc482696844)

[8. Data dictionary and covariates 7](#_Toc482696845)

[9. Flow diagram (Figure 1) 8](#_Toc482696846)

[10. Tables6 9](#_Toc482696847)

[Table 4.1. ICD-9 diagnosis codes used to exclude subjects with ulcerative enterocolitis or Crohn’s Disease 9](#_Toc482696848)

[Table 5.1. Tumor sites qualifying as colorectal cancers that qualify a subject as a CRC case based on evidence from a cancer registry 10](#_Toc482696849)

[Table 5.2.A ICD-9 diagnosis codes used to identify qualifying diagnoses of colorectal cancer 11](#_Toc482696850)

[Table 5.2.B Procedure codes used to identify surgical procedures to treat colorectal cancer and appearing in the record within 730 days (before or after) a qualifying CRC diagnosis (from Table 5.2.A) 12](#_Toc482696851)

[Table 5.3.A Procedure codes defining qualifying types of chemotherapy and radiation used to treat colorectal cancer 14](#_Toc482696852)

[Table 5.3.B ICD-9 codes1 used to identify non-CRC cancers that disqualify subjects from becoming a CRC case via the diagnosis plus chemotherapy or radiation therapy paths 23](#_Toc482696853)

[Table 6.1 Procedure codes identifying qualifying lower endoscopy procedures used to identify colon cancer screening (updated 9/7/2016). 25](#_Toc482696854)

[Table 6.2.A Logical Observation Identifiers Names and Codes (LOINC) useful for identifying laboratory studies related to fecal occult blood testing 27](#_Toc482696855)

[Table 6.2.B. For illustrative purposes, only, these are the lab codes used at Group Health to identify fecal occult blood laboratory studies 28](#_Toc482696856)

# 1. Introduction:

Approximately five percent of people born in the United States this year will be diagnosed with colorectal cancer (CRC) at some point during their during their lifetimes.[[1]](#footnote-1) In 2009 the median age of diagnosis was 69.

Evaluating the underlying pathogenic variants in individuals at risk of familial CRC could change medical management and prevent morbidity and mortality. Highly penetrant variants for CRC have been found in about ten genes, but the pathogenicity of most variants from these genes in the general population is poorly understood.

This document provides pseudocode for implementing the CRC phenotype in the eMERGE-III study.

# 2. Development and validation

This phenotype algorithm was developed and validated at Group Health/University of Washington (GH/UW) using all available eMERGE-III subjects from GH/UW. The algorithm relies exclusively on structured data; information extracted from clinical text is not used.

The CRC algorithm defines one category of CRC cases and two categories of CRC controls (distinguished by the presence/absence of clinical screening for CRC).

Initial validation by manual chart review for this phenotype was conducted at GH/UW. A secondary validation is being/was conducted at Northwestern University. Validation results are posted on PheKB.

# 3. Data requirements

To identify patients qualifying as cases or controls for this algorithm and to provide covariates needed for analyses the following types of data are required:

* Patient demographics
* Encounter history
* Diagnosis codes
* Procedure codes
* Medication records
* Simple string searches of pathology reports

If available the following data will also be used (but is *not required*):

* Cancer registry data (from local, regional, and/or national sources)

# 4. General inclusion/exclusion criteria

All eMERGE subjects are potentially eligible for inclusion in the CRC phenotype except for patients meeting the following exclusion criterion:

4.1. Exclude patients with any evidence, ever, of a diagnosis of ulcerative enterocolitis and/or Crohn’s Disease, operationalized using the ICD-9 diagnosis codes shown in Table 4.1.

As shown in Figure 1 below, 124 (1.6%) of 7,736 GH/UW subjects were excluded based on this criterion.

# 5. CRC cases

We define three, rank ordered paths by which a subject may be defined as a CRC case: 1) by evidence from their inclusion in a cancer registry, 2) by a combination of a diagnosis and surgical procedure for CRC in the medical record, and 3) by the combination of a diagnosis and chemotherapy or radiation treatment procedure for CRC in the medical record. As depicted in Figure 1 below, these three paths must be applied to each subject in the order given, and each subject is associated with the first path by which they qualify. For example, subjects qualifying by the cancer registry are defined as cases by that path and are not evaluated for the remaining two paths. Similarly, subjects failing to qualify by the first path are evaluated for the second path, and subjects failing to qualify for both the first and second paths are evaluated for the third path. Detailed descriptions of each of the three rank-ordered paths follow.

5.1. CRC case by inclusion in a cancer registry:

Classify the subject as a CRC case if there is evidence from a cancer registry that they have ever been diagnosed with a cancer of the colon (excluding cancer of the rectum).

To qualify as a case by this path the subject must meet the following condition:

5.1.1. Is represented in a cancer registry as having evidence of colorectal cancer (excluding cancer of the rectum) as defined by the tumor site codes in Table 5.1.

The rational for inclusion as a CRC case based on cancer registry membership is that cancer registries generally have very accurate information about the cancer histories of their patients.

At GH/UW, a total of 555 patients qualified as CRC cases based on evidence from the Seattle-Puget Sound region of the National Cancer Institute’s Surveillance, Epidemiology, and End Results (SEER) registry program. These 555 were 7.3% of all potentially qualifying GH/UW subjects (i.e., the 7,612 unaffected by exclusion 4.1), and 81% of all GH/.UW CRC cases.

5.2. CRC case by diagnosis and surgery:

Subjects who fail to qualify as cases by the cancer registry path (5.1) are eligible to be evaluated by the second path, based on information about CRC diagnoses and related surgeries.

To qualify as a case by this path the subject must meet each of the following conditions:

5.2.1. Has at least one CRC diagnosis code (Table 5.2.A), ever.

5.2.2. During the period spanning 365 days before through 365 days after the date of a qualifying CRC diagnosis code, has at least one procedure code indicating a surgical procedure to treat CRC (Table 5.2.B).

The rationale for requiring procedure codes indicating cancer surgery in combination with a CRC diagnosis code is that presence of the surgical procedures gives credibility to the CRC diagnosis code.

At GH/UW, a total of 117 (1.7% of the 7,057 eligible for evaluation) subjects qualified as CRC cases based on evidence of CRC diagnosis and surgery. These 117 were 17% of all GH/.UW CRC cases

5.3. CRC case by diagnosis and chemotherapy or radiation therapy:

Subjects who fail to qualify as cases by both the cancer registry path (5.1) and the diagnosis plus surgery path (5.2) are eligible to be evaluated for the third path, which uses information about CRC diagnoses in combination with evidence of chemotherapy and/or radiation therapy.

To qualify as a case by this path the subject must meet each of the following conditions:

5.3.1. Has at least one CRC diagnosis code (Table 5.2.A), ever..

5.3.2. During the period spanning 365 days before through 365 days after the date of a qualifying CRC diagnosis code, has at least one procedure code for chemotherapy or radiation therapy used to treat CRC (Table 5.3.A).

5.3.3. Has no evidence of any other cancer diagnosis (Table 5.3.B), ever.

5.3.4. Has no evidence of a diagnosis of thrombocytopenia (ICD-9: 287.5 or ICD-10: D69.6), ever (added May 16, 2017; see following rationale).

The rationale for requiring procedure codes indicating cancer therapy in combination with a CRC diagnosis code is that presence of the therapy procedures gives credibility to the CRC diagnosis code The rationale for exclude subject with other, non-CRC cancer diagnoses, is that the procedure codes used to indicated cancer therapy are not specific to CRC; by eliminating subjects with other cancers there is a high likelihood the therapy was used to treat CRC. The rational for excluding patients with a thrombocytopenia diagnosis is that a medication that may be used to treat thrombocytopenia (such as Rituxan) may also be used as chemotherapy for CRC. In such cases the thrombocytopenia medication could misleadingly give credibility to a CRC diagnosis code, even if the latter were a “rule out” code for a patient who had a suspicious polyp that turned out not to be cancerous. This could result in a false positive CRC case. Such a case was reported by Geisinger on May 15, 2017 during network-wide implementation of this phenotype.

At GH/UW, a total of 16 subjects (0.2% of the 6,940 eligible for evaluation) qualified as CRC cases based on evidence of CRC diagnosis and chemo/radiation therapy (path 5.3). These 117 were 2.3% of all GH/.UW CRC cases.

Beyond this step in the phenotype assignment process no additional subjects can qualify as CRC cases. The remaining steps in the algorithm are used to identify CRC controls.

# 6. CRC controls

Identification of CRC controls begins with the set of subjects not already excluded as ineligible or qualified as a case by any of the above paths (5.1, 5.2, or 5.3). Among the remaining subjects there are three ways to qualify as a control, and these controls are separated into two groups: 1) screened controls and 2) unscreened controls.

By our definition, subjects are ineligible for either control group if their medical record contains a diagnosis code for CRC at any time and for any reason (including a rule-out diagnosis). A preliminary step in identifying controls is therefore to exclude from the remaining pool of subjects anyone with one or more CRC diagnosis codes (Table 5.2.A). Applying this exclusion at GH/UW resulted in the exclusion of 160 (2.3%) of the 6,924 GH/UW subjects otherwise eligible for evaluation as potential controls, leaving 6,764 subjects to be considered for qualification as CRC controls (Figure 1).

6.1. CRC screened controls by negative colonoscopy:

The first of two paths to qualifying as a *screened* control is by evidence of a negative colonoscopy exam.

To qualify as a screened control by this path the subject must meet each of the following conditions:

6.1.1. Has no CRC diagnosis codes (Table 5.2.A), ever.

6.1.2. Has at least one procedure code for a colonoscopy (or similar procedure, see Table 6.1).

6.1.3. Has no surgical pathology reports containing the terms “colon,” “cecal,” or “cecum,” ever.

The rationale for requiring that there be no evidence of pathology reports containing colon-related terms is that positive colonoscopies result in specimen collection, and specimen collection results in pathology studies to assess possible cancer risk. By excluding patients with qualifying pathology reports we can safely conclude such patients’ colonoscopies did not detect evidence of potential disease, and we can do this *without processing or interpreting the pathology report* (beyond performing the simple term search). Since the vast majority pathology studies mentioning the colon result from colonoscopies, this rule provides an efficient way to identify qualifying control subjects without the burden of implementing an NLP system, and with minimal loss from the control group of disease-free subjects. The rational for not imposing temporal limitations on the pathology reports considered is that it provides additional assurance that qualified controls are disease free, is operationally simple to implement, and resulted in a minimal loss from the control group of disease-free subjects.

As shown in Figure 1, 2,034 (30.1%) of the 6,764 subjects eligible for consideration as potential CRC controls qualified for the screened control group by the negative colonoscopy path. These 2,034 comprised 68.6% of all qualifying *screened* controls (Figure 1).

6.2. CRC screened controls by negative fecal occult testing:

The second of two paths to qualifying as a screened control is by evidence of multiple negative fecal occult blood screening testing. Only subjects not qualifying by the negative colonoscopy path (6.1) are eligible for consideration by the negative fecal occult testing path.

We define fecal occult blood testing as the presence in the medical record of any of a set of laboratory findings (Table 6.2.A). We define negative labs as those for which the local interpretation of the test indicates it was negative, and we rely on the local site to implement an appropriate definition of negative test results. At GH/UW negative results were those for which the string “NEG” appeared in the appropriate results field for relevant lab results. For illustrative purpose (only) we present local GH/UW codes for fecal occult blood testing in Table 6.2.B.

To qualify as a screened control by this path the subject must meet each of the following conditions:

6.2.1. Has no positive fecal occult lab tests (Table 6.2.A), ever.

6.2.2. Has at least 2 negative fecal occult lab tests (Table 6.2.A).

6.2.3. The negative lab tests span a period of time ≥1,826 days
(i.e., the difference between the earliest and latest negative lab test is at least 1,826 days or five years).

The rational for excluding subjects with any positive lab tests, ever, is that a single positive test may indicate the presence of disease. Though a single positive test may be a false positive, we opted for conservativism in definition and simplicity of implementation in exchange for the small risk of omitting from this control group some subjects without CRC disease. The rationale for requiring negative tests spanning at least a five-year period is that subjects with negative tests over an extended period of time are highly likely to be disease free.

As shown in Figure 1, 933 subjects qualified for the screened control group by the negative fecal occult testing path. These 933 comprised 31.4% of all qualifying *screened* controls (Figure 1).

6.3. CRC unscreened controls by absence of CRC screening:

The remaining path to inclusion in the control group is by the absence of evidence of any CRC screening. Subjects qualifying by this path comprise the unscreened control group. Only subjects not qualifying by either of the paths to the screened control group (6.1 or 6.2) are eligible for consideration as unscreened controls.

We defined unscreened controls as those subjects whose meet each of the following conditions:

6.3.1. Has no evidence of having received a colonoscopy (or similar procedure, see Table 6.1), ever.

6.3.2. Has no evidence of having received fecal occult blood testing (Table 6.2), ever.

The rational for including these subjects as a separate control group is that they may represent substantial numbers of patients in some settings, and most of them may be disease free. The rationale for designating these subjects as a separate (unscreened) control group is that they may include a non-trivial rate of false negatives (i.e., patients who actually have CRC disease); segregating them as a defined control group creates the option of not including them in analyses if there is evidence they are different from screened controls.

As shown in Figure 1, 880 subjects qualified for the unscreened control group by the negative fecal occult testing path. These 880 comprised 22.9% of the 3,847 subjects qualifying for either control group (2967 = 880 = 3847,Figure 1).

# 7. GH/UW cases, controls, and excluded subjects

Figure 1 shows the frequency counts of GH/UW subjects qualifying as CRC cases, CRC controls, or who are excluded from the CRC phenotype. There were 688 cases representing 8.9% of subjects eligible for evaluation for this phenotype. A total of 3,847 subjects qualified as controls, representing 49.7% of subjects eligible for evaluation. These controls consisted of, 2,967 subjects with evidence of CRC screening, and 880 subjects with no evidence of CRC screening, representing 38.4% and 11.4% of subjects eligible for evaluation, respectively. A total of 3,204 subjects (41.4% of subjects eligible for evaluation) were excluded from the CRC phenotype because they failed to satisfy criteria for either cases or controls.

# 8. Data dictionary and covariates

The CRC phenotype data dictionaries containing detailed definitions of all required data elements are available on [PheKB](https://phekb.org). Covariates include demographics, personal history of diabetes, personal history of various cancers, family history of cancer, and exposure to baby aspirin and/or NSAID therapy.

# 9. Flow diagram (Figure 1)

The flow diagram below represents the logic used to define CRC cases and two categories of CRC controls. Also shown are the counts of GH/UW patients remaining at each step in the selection process.



Figure 1. Flow diagram of CRC phenotype logic for definition of cases and controls with
counts of GH/UW subjects at each point in the flow.

# 10. Tables6

All tables referenced in this document are provided here.

Table 4.1. ICD-9 diagnosis codes used to exclude subjects with ulcerative enterocolitis or Crohn’s Disease

|  |
| --- |
| Table 4.1. ICD-9 diagnosis codes used to exclude subjects with ulcerative enterocolitis or Crohn’s Disease. |
| Diagnosis code | Description |
| 556.\* | Ulcerative enterocolitis |
| 555.0 | Regional enteritis of small intestine |
| 555.1 | Regional enteritis of large intestine |
| 555.2 | Regional enteritis of small intestine with large intestine |
| 555.9 | Regional enteritis of unspecified site (Chron’s disease) |

Table 5.1. Tumor sites qualifying as colorectal cancers that qualify a subject as a CRC case based on evidence from a cancer registry

|  |
| --- |
| Table 5.1. Tumor sites qualifying as colorectal cancers that qualify a subject as a CRC case based on evidence from a cancer registry. |
| Tumor site | ICD-O-3 code | Notes |
| Cecum | C180 | Exclude if tumor histology\* is malignant mesothelioma (histology codes beginning with 905), Kaposi sarcoma (histology codes beginning with 914), or malignant lymphoma (histology codes beginning with 959) |
| ~~Appendix~~ | ~~C181~~\*\* |
| Ascending Colon | C182 |
| Hepatic Flexure | C183 |
| Transverse Colon | C184 |
| Splenic Flexure | C185 |
| Descending colon | C186 |
| Sigmoid colon | C187 |
| Large intestine NOS | C188–C189 |
| Large intestine NOS | C260 |
| \* Histology codes are from the ICD-O-3 SEER Site/Histology Validation List, released 09/18/2015 available here: <https://seer.cancer.gov/icd-o-3/>.\*\* This code deleted 5/31/2017. |

Table 5.2.A ICD-9 diagnosis codes used to identify qualifying diagnoses of colorectal cancer

| Table 5.2.A ICD-9 diagnosis codes used to identify qualifying diagnoses of colorectal cancer. |
| --- |
| Diagnosis code | Description |
| ~~152.0~~ | ~~Malignant neoplasm of duodenum~~\*\* |
| ~~152.1~~ | ~~Malignant neoplasm of jejunum~~\*\* |
| ~~152.2~~ | ~~Malignant neoplasm of ileum~~\*\* |
| ~~152.3~~ | ~~Malignant neoplasm of Meckel's diverticulum~~\*\* |
| ~~152.8~~ | ~~Malignant neoplasm of other specified sites of small intestine~~\*\* |
| ~~152.9~~ | ~~Malignant neoplasm of small intestine, unspecified site~~\*\* |
| ~~152~~ | ~~Note: Also accept the three-digit-only version of this ICD-9 code.~~ \*\* |
| 153.0 | Malignant neoplasm of hepatic flexure |
| 153.1 | Malignant neoplasm of transverse colon |
| 153.2 | Malignant neoplasm of descending colon |
| 153.3 | Malignant neoplasm of sigmoid colon |
| 153.4 | Malignant neoplasm of cecum |
| 153.5 | Malignant neoplasm of appendix vermiformis |
| 153.6 | Malignant neoplasm of ascending colon |
| 153.7 | Malignant neoplasm of splenic flexure |
| 153.8 | Malignant neoplasm of other specified sites of large intestine |
| 153.9 | Malignant neoplasm of colon, unspecified site |
| 153 | Note: Also accept the three-digit-only version of this ICD-9 code. |
| 154.0 | Malignant neoplasm of rectosigmoid junction1 |
| ~~209.0~~ | ~~Malignant carcinoid tumors of the small intestine~~~~2~~\*\* |
| ~~209.10~~ | ~~Malignant carcinoid tumors of the appendix, large intestine, and rectum~~\*\* |
| ~~209.11~~ | ~~Malignant carcinoid tumor of the appendix~~\*\* |
| ~~209.12~~ | ~~Malignant carcinoid tumor of the cecum~~\*\* |
| ~~209.13~~ | ~~Malignant carcinoid tumor of the ascending colon~~\*\* |
| ~~209.14~~ | ~~Malignant carcinoid tumor of the transverse colon~~\*\* |
| ~~209.15~~ | ~~Malignant carcinoid tumor of the descending colon~~\*\* |
| ~~209.16~~ | ~~Malignant carcinoid tumor of the sigmoid colon~~\*\* |
| ~~209~~ | ~~Note: Also accept three-digit-only versions of this ICD-9 code~~\*\* |
| ~~230.3~~ | ~~Carcinoma in situ of colon~~\*\* |
| 230.7 | Carcinoma in situ of other and unspecified parts of intestine |
| 1 Do not accept a three-digit-only version of ICD-9 code 154.2 Also accept ICD-9 codes with an additional digit to the right of this code.\*\* Deleted 5/31/2017. |

Table 5.2.B Procedure codes used to identify surgical procedures to treat colorectal cancer and appearing in the record within 730 days (before or after) a qualifying CRC diagnosis (from Table 5.2.A)

| Table 5.2.B Procedure codes used to identify surgical procedures to treat colorectal cancer and appearing in the record within 730 days (before or after) a qualifying CRC diagnosis (from Table 5.2.A). |
| --- |
| Procedure code | Description |
| CPT Procedure Codes |
| 44140 | Colectomy, Partial removal of colon (Open) |
| 44141 | Colectomy, partial; with skin level cecostomy or colostomy |
| 44143 | Colectomy, partial; with end colostomy and closure of distal segment |
| 44144 | Colectomy, partial; with resection, with colostomy or ileostomy and creation of mucofistula  |
| 44145 | Colectomy, partial; with coloproctostomy (low pelvic anastomosis)  |
| 44146 | Colectomy, partial; with coloproctostomy (low pelvic anastomosis), with colostomy  |
| 44147 | Colectomy, partial; abdominal and transanal approach 44150 Colectomy, total, abdominal, without proctectomy; with ileostomy or ileoproctostomy |
| 44150 | Colectomy, total; abdominal, without proctectomy; with ileostomy or ileoproctostomy |
| 44151 | Colectomy, total, abdominal, without proctectomy; with continent ileostomy  |
| 44152 | Colectomy, total, abdominal, without proctectomy; with rectal mucosectomy, ileoanal anastomosis, with or without loop ileostomy  |
| 44153 | Colectomy, total, abdominal, without proctectomy; with rectal mucosectomy, ileoanal anastomosis, creation of ileal reservoir (S or J), with or without loop ileostomy  |
| 44155 | Colectomy, total, abdominal, with proctectomy; with ileostomy |
| 44156 | 44156 Colectomy, total, abdominal, with proctectomy; with continent ileostomy |
| 44157 | 44157 Colectomy, total, abdominal, with proctectomy; with ileoanal anastomosis, includes loop ileostomy, and rectal mucosectomy, when performed |
| 44158 | 44158 Colectomy, total, abdominal, with proctectomy; with ileoanal anastomosis, creation of ileal reservoir (S or J), includes loop ileostomy, and rectal mucosectomy, when performed  |
| 44160 | Colectomy, partial, with removal of terminal ileum with ileocolostomy |
| ICD-9 Procedure Codes |
| 45.7 | Open And Other Partial Excision Of Large Intestine |
| 45.71 | Open And Other Multiple Segmental Resection Of Large Intestine |
| 45.72 | Open And Other Cecectomy |
| 45.73 | Open And Other Right Hemicolectomy |
| 45.74 | Open And Other Resection Of Transverse Colon |
| 45.75 | Open And Other Left Hemicolectomy |
| 45.76 | Open And Other Sigmoidectomy |
| 45.79 | Other And Unspecified Partial Excision Of Large Intestine |
| 45.8 | Total Intra-Abdominal Colectomy |
| 48.72 | Closure of proctostomy |

Table 5.3.A Procedure codes defining qualifying types of chemotherapy and radiation used to treat colorectal cancer

| Table 5.3.A Procedure codes defining qualifying types of chemotherapy and radiation used to treat colorectal cancer. |
| --- |
| Procedure code | Code type | Description |
| 61517 | CPT | Implantation of brain intracavitary chemotherapy agent (List separately in addition to code for primary procedure) |
| 77300 | CPT | Basic radiation dosimetry calculation, central axis depth dose calculation, TDF, NSD, gap calculation, off axis factor, tissue inhomogeneity factors, calculation of non-ionizing radiation surface and depth dose, as required during course of treatment, only when prescribed by the treating physician |
| 77301 | CPT | Intensity modulated radiotherapy plan, including dose-volume histograms for target and critical structure partial tolerance specifications |
| 77305 | CPT | Teletherapy, isodose plan (whether hand or computer calculated); simple (1 or 2 parallel opposed unmodified ports directed to a single area of interest) |
| 77310 | CPT | Teletherapy, isodose plan (whether hand or computer calculated); intermediate (3 or more treatment ports directed to a single area of interest) |
| 77315 | CPT | Teletherapy, isodose plan (whether hand or computer calculated); complex (mantle or inverted Y, tangential ports, the use of wedges, compensators, complex blocking, rotational beam, or special beam considerations) |
| 77321 | CPT | Special teletherapy port plan, particles, hemibody, total body |
| 77326 | CPT | Brachytherapy isodose plan; simple (calculation made from single plane, 1 to 4 sources/ribbon application, remote afterloading brachytherapy, 1 to 8 sources) |
| 77327 | CPT | Brachytherapy isodose plan; intermediate (multiplane dosage calculations, application involving 5 to 10 sources/ribbons, remote afterloading brachytherapy, 9 to 12 sources) |
| 77328 | CPT | Brachytherapy isodose plan; complex (multiplane isodose plan, volume implant calculations, over 10 sources/ribbons used, special spatial reconstruction, remote afterloading brachytherapy, over 12 sources) |
| 77331 | CPT | Special dosimetry (eg, TLD, microdosimetry) (specify), only when prescribed by the treating physician |
| 77399 | CPT | Unlisted procedure, medical radiation physics, dosimetry and treatment devices, and special services |
| 77401 | CPT | Radiation treatment delivery, superficial and/or ortho voltage |
| 77402 | CPT | Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks; up to 5 MeV |
| 77403 | CPT | Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks; 6-10 MeV |
| 77404 | CPT | Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks; 11-19 MeV |
| 77405 | CPT | (Other radiation) |
| 77406 | CPT | Radiation treatment delivery, single treatment area, single port or parallel opposed ports, simple blocks or no blocks; 20 MeV or greater |
| 77407 | CPT | Radiation treatment delivery, 2 separate treatment areas, 3 or more ports on a single treatment area, use of multiple blocks; up to 5 MeV |
| 77408 | CPT | Radiation treatment delivery, 2 separate treatment areas, 3 or more ports on a single treatment area, use of multiple blocks; 6-10 MeV |
| 77409 | CPT | Radiation treatment delivery, 2 separate treatment areas, 3 or more ports on a single treatment area, use of multiple blocks; 11-19 MeV |
| 77410 | CPT | (Other radiation) |
| 77411 | CPT | Radiation treatment delivery, 2 separate treatment areas, 3 or more ports on a single treatment area, use of multiple blocks; 20 MeV or greater |
| 77412 | CPT | Radiation treatment delivery, 3 or more separate treatment areas, custom blocking, tangential ports, wedges, rotational beam, compensators, electron beam; up to 5 MeV |
| 77413 | CPT | Radiation treatment delivery, 3 or more separate treatment areas, custom blocking, tangential ports, wedges, rotational beam, compensators, electron beam; 6-10 MeV |
| 77414 | CPT | Radiation treatment delivery, 3 or more separate treatment areas, custom blocking, tangential ports, wedges, rotational beam, compensators, electron beam; 11-19 MeV |
| 77415 | CPT | (Other radiation) |
| 77416 | CPT | Radiation treatment delivery, 3 or more separate treatment areas, custom blocking, tangential ports, wedges, rotational beam, compensators, electron beam; 20 MeV or greater |
| 77417 | CPT | Therapeutic radiology port film(s) |
| 77418 | CPT | Intensity modulated treatment delivery, single or multiple fields/arcs, via narrow spatially and temporally modulated beams, binary, dynamic MLC, per treatment session |
| 77419 | CPT | Weekly radiation therapy management; conformal |
| 77420 | CPT | Weekly radiation therapy management; simple |
| 77421 | CPT | Stereoscopic X-ray guidance for localization of target volume for the delivery of radiation therapy |
| 77422 | CPT | High energy neutron radiation treatment delivery; single treatment area using a single port or parallel-opposed ports with no blocks or simple blocking |
| 77423 | CPT | High energy neutron radiation treatment delivery; 1 or more isocenter(s) with coplanar or non-coplanar geometry with blocking and/or wedge, and/or compensator(s) |
| 77425 | CPT | Weekly radiation therapy management; intermediate |
| 77427 | CPT | Radiation treatment management, 5 treatments |
| 77430 | CPT | Weekly radiation therapy management; complex |
| 77431 | CPT | Radiation therapy management with complete course of therapy consisting of 1 or 2 fractions only |
| 77432 | CPT | Stereotactic radiation treatment management of cranial lesion(s) (complete course of treatment consisting of 1 session) |
| 77433 | CPT | (Other radiation) |
| 77435 | CPT | Stereotactic body radiation therapy, treatment management, per treatment course, to 1 or more lesions, including image guidance, entire course not to exceed 5 fractions |
| 77446 | CPT | (Other radiation) |
| 77447 | CPT | (Other radiation) |
| 77460 | CPT | (Other radiation) |
| 77465 | CPT | (Other radiation) |
| 77469 | CPT | (Other radiation) |
| 77470 | CPT | Special treatment procedure (eg, total body irradiation, hemibody radiation, per oral, endocavitary or intraoperative cone irradiation) |
| 77499 | CPT | Unlisted procedure, therapeutic radiology treatment management |
| 96400 | CPT | Chemotherapy administration, subcutaneous or intramuscular, with or without local anesthesia |
| 96401 | CPT | Chemotherapy administration, subcutaneous or intramuscular; non-hormonal anti-neoplastic |
| 96402 | CPT | Chemotherapy administration, subcutaneous or intramuscular; hormonal anti-neoplastic |
| 96405 | CPT | Chemotherapy administration; intralesional, up to and including 7 lesions |
| 96406 | CPT | Chemotherapy administration; intralesional, more than 7 lesions |
| 96408 | CPT | Chemotherapy administration, intravenous; push technique |
| 96409 | CPT | Chemotherapy administration; intravenous, push technique, single or initial substance/drug |
| 96410 | CPT | Chemotherapy administration, intravenous; infusion technique, up to one hour |
| 96411 | CPT | Chemotherapy administration; intravenous, push technique, each additional substance/drug (List separately in addition to code for primary procedure) |
| 96412 | CPT | Chemotherapy administration, intravenous; infusion technique, one to 8 hours, each additional hour (List separately in addition to code for primary procedure) |
| 96413 | CPT | Chemotherapy administration, intravenous infusion technique; up to 1 hour, single or initial substance/drug |
| 96414 | CPT | Chemotherapy administration, intravenous; infusion technique, initiation of prolonged infusion (more than 8 hours), requiring the use of a portable or implantable pump |
| 96415 | CPT | Chemotherapy administration, intravenous infusion technique; each additional hour (List separately in addition to code for primary procedure) |
| 96416 | CPT | Chemotherapy administration, intravenous infusion technique; initiation of prolonged chemotherapy infusion (more than 8 hours), requiring use of a portable or implantable pump |
| 96417 | CPT | Chemotherapy administration, intravenous infusion technique; each additional sequential infusion (different substance/drug), up to 1 hour (List separately in addition to code for primary procedure) |
| 96420 | CPT | Chemotherapy administration, intra-arterial; push technique |
| 96422 | CPT | Chemotherapy administration, intra-arterial; infusion technique, up to 1 hour |
| 96423 | CPT | Chemotherapy administration, intra-arterial; infusion technique, each additional hour (List separately in addition to code for primary procedure) |
| 96425 | CPT | Chemotherapy administration, intra-arterial; infusion technique, initiation of prolonged infusion (more than 8 hours), requiring the use of a portable or implantable pump |
| 96440 | CPT | Chemotherapy administration into pleural cavity, requiring and including thoracentesis |
| 96445 | CPT | Chemotherapy administration into peritoneal cavity, requiring and including peritoneocentesis |
| 96450 | CPT | Chemotherapy administration, into CNS (eg, intrathecal), requiring and including spinal puncture |
| 96500 | CPT | (Other chemotherapy) |
| 96501 | CPT | (Other chemotherapy) |
| 96504 | CPT | (Other chemotherapy) |
| 96505 | CPT | (Other chemotherapy) |
| 96508 | CPT | (Other chemotherapy) |
| 96509 | CPT | (Other chemotherapy) |
| 96510 | CPT | (Other chemotherapy) |
| 96511 | CPT | (Other chemotherapy) |
| 96512 | CPT | (Other chemotherapy) |
| 96524 | CPT | (Other chemotherapy) |
| 96526 | CPT | (Other chemotherapy) |
| 96535 | CPT | (Other chemotherapy) |
| 96538 | CPT | (Other chemotherapy) |
| 96540 | CPT | (Other chemotherapy) |
| 96542 | CPT | Chemotherapy injection, subarachnoid or intraventricular via subcutaneous reservoir, single or multiple agents |
| 96545 | CPT | Provision of chemotherapy agent |
| 96549 | CPT | Unlisted chemotherapy procedure |
| ~~96910~~ | ~~CPT~~ | ~~Photochemotherapy; tar and ultraviolet B (Goeckerman treatment) or petrolatum and ultraviolet B~~\*\* |
| ~~96912~~ | ~~CPT~~ | ~~Photochemotherapy; psoralens and ultraviolet A (PUVA)~~ \*\* |
| ~~96913~~ | ~~CPT~~ | ~~Photochemotherapy (Goeckerman and/or PUVA) for severe photoresponsive dermatoses requiring at least four to eight hours of care under direct supervision of the physician (includes application of medication and dressings)~~ \*\* |
| 99555 | CPT | Home infusion for chemotherapy, per visit |
| C8953 | HCPC | CHEMOTX ADM, IV PUSH  |
| C8954 | HCPC | CHEMOTX ADM, IV INF UP TO |
| C8955 | HCPC | CHEMOTX ADM, IV INF, ADDL |
| G0355 | HCPC | CHEMO SQ/IM NONHORMONL AN |
| G0359 | HCPC | CHEMO IV INFUS;UP TO 1 HR |
| G0360 | HCPC | CHEMO ADMIN IV INFUS; EA  |
| G0361 | HCPC | INIT PROLNG CHEMO INFUS R |
| G8371 | HCPC | CHEMOTHER NOT REC STG3 CO |
| G8372 | HCPC | CHEMOTHER REC STG3 COLON  |
| G8373 | HCPC | CHEMO PLAN DOCUMEN PRIOR  |
| G8374 | HCPC | CHEMO PLAN NOT DOC PRIOR  |
| G9021 | HCPC | CHEMO ASSESS NV LEVL 1: N |
| G9022 | HCPC | CHEMO ASSESS NV LEVL 2: L |
| G9023 | HCPC | CHEMO ASSESS NV LEVL 3: Q |
| G9024 | HCPC | CHEMO ASSESS NV LEVL 4: V |
| G9025 | HCPC | CHEMO ASSESS PAIN LVL 1:  |
| G9026 | HCPC | CHEMO ASSESS PAIN LVL 2:  |
| G9027 | HCPC | CHEMO ASSESS PAIN LVL 3:  |
| G9028 | HCPC | CHEMO ASSESS PAIN LVL 4:  |
| G9029 | HCPC | CHEMO ASSESS FATIGUE 1: N |
| G9030 | HCPC | CHEMO ASSESS FATIGUE LVL  |
| G9031 | HCPC | CHEMO ASSESS FATIGUE 3: Q |
| G9032 | HCPC | CHEMO ASSESS FATIGUE LVL  |
| J8510 | HCPC | ORAL BUSULFAN  |
| J8515 | HCPC | CABERGOLINE, ORAL 0.25MG  |
| J8520 | HCPC | CAPECITABINE, ORAL, 150 M |
| J8521 | HCPC | CAPECITABINE, ORAL, 500 M |
| J8530 | HCPC | CYCLOPHOSPHAMIDE ORAL 25  |
| J8540 | HCPC | ORAL DEXAMETHASONE  |
| J8560 | HCPC | ETOPOSIDE ORAL 50 MG  |
| J8565 | HCPC | GEFITINIB ORAL  |
| J8600 | HCPC | MELPHALAN ORAL 2 MG  |
| J8610 | HCPC | METHOTREXATE ORAL 2.5 MG  |
| J8650 | HCPC | NABILONE ORAL  |
| J8700 | HCPC | TEMOZOLOMIDE  |
| J8999 | HCPC | ORAL PRESCRIPTION DRUG CH |
| J9000 | HCPC | DOXORUBICIN HCL INJECTION |
| J9001 | HCPC | DOXORUBICIN HCL LIPOSOME  |
| J9010 | HCPC | ALEMTUZUMAB INJECTION  |
| J9015 | HCPC | ALDESLEUKIN INJECTION  |
| J9017 | HCPC | ARSENIC TRIOXIDE INJECTIO |
| J9020 | HCPC | ASPARAGINASE, NOS  |
| J9025 | HCPC | AZACITIDINE INJECTION  |
| J9027 | HCPC | CLOFARABINE INJECTION  |
| J9031 | HCPC | BCG LIVE INTRAVESICAL VAC |
| J9035 | HCPC | BEVACIZUMAB INJECTION  |
| J9040 | HCPC | BLEOMYCIN SULFATE INJECTI |
| J9041 | HCPC | BORTEZOMIB INJECTION  |
| J9045 | HCPC | CARBOPLATIN INJECTION  |
| J9050 | HCPC | CARMUSTINE INJECTION  |
| J9055 | HCPC | CETUXIMAB INJECTION  |
| J9060 | HCPC | CISPLATIN 10 MG INJECTION |
| J9062 | HCPC | CISPLATIN 50 MG INJECTION |
| J9065 | HCPC | INJ CLADRIBINE PER 1 MG  |
| J9070 | HCPC | CYCLOPHOSPHAMIDE 100 MG I |
| J9080 | HCPC | CYCLOPHOSPHAMIDE 200 MG I |
| J9090 | HCPC | CYCLOPHOSPHAMIDE 500 MG I |
| J9091 | HCPC | CYCLOPHOSPHAMIDE 1.0 GRM  |
| J9092 | HCPC | CYCLOPHOSPHAMIDE 2.0 GRM  |
| J9093 | HCPC | CYCLOPHOSPHAMIDE LYOPHILI |
| J9094 | HCPC | CYCLOPHOSPHAMIDE LYOPHILI |
| J9095 | HCPC | CYCLOPHOSPHAMIDE LYOPHILI |
| J9096 | HCPC | CYCLOPHOSPHAMIDE LYOPHILI |
| J9097 | HCPC | CYCLOPHOSPHAMIDE LYOPHILI |
| J9098 | HCPC | CYTARABINE LIPOSOME INJ  |
| J9100 | HCPC | CYTARABINE HCL 100 MG INJ |
| J9110 | HCPC | CYTARABINE HCL 500 MG INJ |
| J9120 | HCPC | DACTINOMYCIN INJECTION  |
| J9130 | HCPC | DACARBAZINE 100 MG INJ  |
| J9140 | HCPC | DACARBAZINE 200 MG INJ  |
| J9150 | HCPC | DAUNORUBICIN INJECTION  |
| J9151 | HCPC | DAUNORUBICIN CITRATE INJ  |
| J9160 | HCPC | DENILEUKIN DIFTITOX INJ  |
| J9165 | HCPC | DIETHYLSTILBESTROL INJECT |
| J9170 | HCPC | DOCETAXEL INJECTION  |
| J9175 | HCPC | ELLIOTTS B SOLUTION PER M |
| J9178 | HCPC | INJ, EPIRUBICIN HCL, 2 MG |
| J9180 | HCPC | EPIRUBICIN HYDROCHLORIDE  |
| J9181 | HCPC | ETOPOSIDE INJECTION  |
| J9182 | HCPC | ETOPOSIDE 100 MG INJ  |
| J9185 | HCPC | FLUDARABINE PHOSPHATE INJ |
| J9190 | HCPC | FLUOROURACIL INJECTION  |
| J9200 | HCPC | FLOXURIDINE INJECTION  |
| J9201 | HCPC | GEMCITABINE HCL INJECTION |
| J9202 | HCPC | GOSERELIN ACETATE IMPLANT |
| J9206 | HCPC | IRINOTECAN INJECTION  |
| J9208 | HCPC | IFOSFAMIDE INJECTION  |
| J9209 | HCPC | MESNA INJECTION  |
| J9210 | HCPC | HEXAMETHYLMELAMINE  |
| J9211 | HCPC | IDARUBICIN HCL INJECTION  |
| J9212 | HCPC | INTERFERON ALFACON-1 INJ  |
| J9213 | HCPC | INTERFERON ALFA-2A INJ  |
| J9214 | HCPC | INTERFERON ALFA-2B INJ  |
| J9215 | HCPC | INTERFERON ALFA-N3 INJ  |
| J9216 | HCPC | INTERFERON GAMMA 1-B INJ  |
| J9217 | HCPC | LEUPROLIDE ACETATE SUSPNS |
| J9218 | HCPC | LEUPROLIDE ACETATE INJECI |
| J9219 | HCPC | LEUPROLIDE ACETATE IMPLAN |
| J9225 | HCPC | VANTAS IMPLANT  |
| J9226 | HCPC | SUPPRELIN LA IMPLANT  |
| J9230 | HCPC | MECHLORETHAMINE HCL INJ  |
| J9240 | HCPC | MEDROXYPROGETERONE  |
| J9245 | HCPC | INJ MELPHALAN HYDROCHL 50 |
| J9250 | HCPC | METHOTREXATE SODIUM INJ  |
| J9260 | HCPC | METHOTREXATE SODIUM INJ  |
| J9261 | HCPC | NELARABINE INJECTION  |
| J9263 | HCPC | OXALIPLATIN  |
| J9264 | HCPC | PACLITAXEL PROTEIN BOUND  |
| J9265 | HCPC | PACLITAXEL INJECTION  |
| J9266 | HCPC | PEGASPARGASE INJECTION  |
| J9268 | HCPC | PENTOSTATIN INJECTION  |
| J9270 | HCPC | PLICAMYCIN (MITHRAMYCIN)  |
| J9280 | HCPC | MITOMYCIN INJECTION  |
| J9290 | HCPC | MITOMYCIN 20 MG INJ  |
| J9291 | HCPC | MITOMYCIN 40 MG INJ  |
| J9293 | HCPC | MITOXANTRONE HYDROCHL / 5 |
| J9295 | HCPC | POLYESTRADIOL PHOSPHATE  |
| J9300 | HCPC | GEMTUZUMAB OZOGAMICIN INJ |
| J9303 | HCPC | PANITUMUMAB INJECTION  |
| J9305 | HCPC | PEMETREXED INJECTION  |
| J9310 | HCPC | RITUXIMAB INJECTION  |
| ~~J9320~~ | ~~HCPC~~ | ~~STREPTOZOCIN INJECTION~~\*\* |
| J9340 | HCPC | THIOTEPA INJECTION  |
| J9350 | HCPC | TOPOTECAN INJECTION  |
| J9355 | HCPC | TRASTUZUMAB INJECTION  |
| J9357 | HCPC | VALRUBICIN INJECTION  |
| J9360 | HCPC | VINBLASTINE SULFATE INJ  |
| J9370 | HCPC | VINCRISTINE SULFATE 1 MG  |
| J9375 | HCPC | VINCRISTINE SULFATE 2 MG  |
| J9380 | HCPC | VINCRISTINE SULFATE 5 MG  |
| J9390 | HCPC | VINORELBINE TARTRATE INJ  |
| J9395 | HCPC | INJECTION, FULVESTRANT  |
| J9600 | HCPC | PORFIMER SODIUM INJECTION |
| J9999 | HCPC | CHEMOTHERAPY DRUG  |
| Q0081 | HCPC | INFUSION THER OTHER THAN  |
| Q0083 | HCPC | CHEMO BY OTHER THAN INFUS |
| Q0084 | HCPC | CHEMOTHERAPY BY INFUSION  |
| Q0085 | HCPC | CHEMO BY BOTH INFUSION AN |
| S5019 | HCPC | CHEMOTHERAPY ADMIN  |
| S5020 | HCPC | CHEMOTHERAPY ADMIN  |
| S9329 | HCPC | HIT CHEMO PER DIEM  |
| S9330 | HCPC | HIT CONT CHEM DIEM  |
| S9331 | HCPC | HIT INTERMIT CHEMO DIEM  |
| 00.10 | ICD-9 | Implantation of chemotherapeutic agent |
| \*\* Code deleted 5/31/2017 |

Table 5.3.B ICD-9 codes1 used to identify non-CRC cancers that disqualify subjects from becoming a CRC case via the diagnosis plus chemotherapy or radiation therapy paths

| Table 5.3.B ICD-9 codes1 used to identify non-CRC cancers that disqualify subjects from becoming a CRC case via the diagnosis plus chemotherapy or radiation therapy paths. |
| --- |
| Diagnosis code | Description |
| 140.\* | Lip cancers |
| 141.\* | Tongue cancers |
| 142.\* | Gland cancers (mouth) |
| 143.\* | Gum cancers (mouth) |
| 144.\* | Mouth cancers |
| 145.\* | Mouth cancers |
| 146.\* | Tonsil/oropharynx cancers |
| 147.\* | Nasal cancers |
| 148.\* | Sinus cancers (and similar) |
| 149.\* | Pharynx cancers (and similar) |
| 150.\* | Esophagus cancers |
| 151.\* | Stomach cancers |
| 155.\* | Liver cancers |
| 156.\* | Gallbladder cancers |
| 157.\* | Pancreas cancers |
| 158.\* | Peritoneum cancers |
| 159.\* | Other digestive organ cancers |
| 160.\* | Nasal/sinus cancers |
| 161.\* | Larynx cancers (and similar) |
| 162.\* | Trachea/bronchus/lung cancers |
| 163.\* | Parietal pleura cancers (and similar) |
| 164.\* | Thymus/heart/mediast cancers |
| 165.\* | Other resp/intrathor cancers |
| 170.\* | Bone & articular cart cancers |
| 171.\* | Soft tissue cancers  |
| 172.\* | Skin malignant melanoma  |
| 173.\* | Skin cancers NEC & NOS  |
| 174.\* | Female breast cancers  |
| 175.\* | Male breast cancers  |
| 176.\* | Kaposi's sarcoma  |
| 179.\* | Uterus cancers NOS  |
| 180.\* | Cervix uteri cancers  |
| 181.\* | Placenta cancers  |
| 182.\* | Uterus body cancers  |
| 183.\* | Ovary/uter adnexa cancers NEC |
| 184.\* | Other female genital cancers  |
| 185.\* | Prostate cancers  |
| 186.\* | Testis cancers  |
| 187.\* | Penis/male genital cancers  |
| 188.\* | Bladder cancers  |
| 189.\* | Kidney/urinary cancers NEC  |
| 190.\* | Eye cancers  |
| 191.\* | Brain cancers  |
| 192.\* | Other Nervous system cancers  |
| 193.\* | Thyroid cancers  |
| 194.\* | Oth endocrine gland cancers  |
| 195.\* | Other & ill-defined cancers  |
| 196.\* | 2nd & NOS lymph node cancers  |
| 197.\* | Secondary resp/digest cancers |
| 198.\* | Other secondary cancers  |
| 199.\* | Other cancers site NOS  |
| 200.\* | Lymphosarc/reticulosarc  |
| 201.\* | Hodgkin's disease  |
| 202.\* | Oth mal lymph/hist neopl |
| 203.\* | Multiple myeloma et al  |
| 204.\* | Lymphoid leukemia  |
| 205.\* | Myeloid leukemia  |
| 206.\* | Monocytic leukemia  |
| 207.\* | Other specified leukemia |
| 208.\* | Leukemia NOS cell type  |
| 1 Includes three-digit-only version of these ICD-9 codes. |

Table 6.1 Procedure codes identifying qualifying lower endoscopy procedures used to identify colon cancer screening (updated 9/7/2016).

| Table 6.1 Procedure codes identifying qualifying lower endoscopy procedures used to identify colon cancer screening (updated 9/7/2016) |
| --- |
| Code type | Code | Description |
| CPT | 44392 | Colonoscopy through stoma with removal/ablation of polyp(s) or other lesions(s)  |
| CPT | 44393 | Colonoscopy through stoma with removal/ablation of polyp(s) or other lesions(s)  |
| CPT | 44394 | Colonoscopy through stoma with removal/ablation of polyp(s) or other lesions(s)  |
| CPT | 44397 | Colonoscopy through stoma; with transendoscopic stent |
| CPT | 45305 | Proctosigmoidoscopy (LIMITED TO LOWER LARGE BOWEL) |
| CPT | 45308 | Proctosigmoidoscopy (LIMITED TO LOWER LARGE BOWEL) |
| CPT | 45309 | Proctosigmoidoscopy (LIMITED TO LOWER LARGE BOWEL) |
| CPT | 45315 | Proctosigmoidoscopy (LIMITED TO LOWER LARGE BOWEL) |
| CPT | 45320 | Proctosigmoidoscopy (LIMITED TO LOWER LARGE BOWEL) |
| CPT | 45330 | Sigmoidoscopy, flexible; diagnostic, with or without collection of specimen |
| CPT | 45331 | Sigmoidoscopy, flexible; with biopsy, |
| CPT | 45333 | Sigmoidoscopy, flexible; with removal of tumor(s), polyp(s) or other lesion(s) |
| CPT | 45334 | Sigmoidoscopy, flexible; with control of bleeding |
| CPT | 45338 | Sigmoidoscopy, flexible; with removal of tumor(s), polyp(s) or other lesion(s) |
| CPT | 45339 | Sigmoidoscopy, flexible; with ablation of tumor(s), polyp(s) or other lesion(s) |
| CPT | 45341 | Sigmoidoscopy, flexible; with endoscopic ultrasound examination |
| CPT | 45355 | Colonoscopy, rigid or flexible, transabdominal via colotomy |
| CPT | 45378 | Colonoscopy, flexible, proximal to splenic flexure; diagnostic |
| CPT | 45380 | Colonoscopy, flexible, proximal to splenic flexure; diagnostic, with biopsy |
| CPT | 45382 | Colonoscopy, flexible, proximal to splenic flexure; diagnostic, with control of bleeding |
| CPT | 45383 | Colonoscopy, flexible, proximal to splenic flexure; diagnostic, with ablation of tumor(s), |
| CPT | 45384 | Colonoscopy, flexible, proximal to splenic flexure; diagnostic, with removal of tumor(s) |
| CPT | 45385 |  Colonoscopy, flexible, proximal to splenic flexure; diagnostic, with removal of tumor(s) |
| CPT | 45391 | Colonoscopy, flexible; with endoscopic ultrasound examination limited to the rectum, sigmoid, descending, transverse, or ascending colon and cecum |
| CPT | 45392 | Colonoscopy, flexible; with transendoscopic ultrasound guided intramural or transmural fine needle aspiration/biopsy(s), |
| CPT | G0104 | Colorectal cancer screening; flexible sigmoidoscopy |
| CPT | G0105 | Colorectal cancer screening: Colonoscopy on individual at high risk |
| CPT | G0121 | Colorectal cancer screening: Colonoscopy on individual not meeting criteria for high risk |
| ICD-9 | 45.22 | Endoscopy of large intestine through artificial stoma |
| ICD-9 | 45.23 | Colonoscopy, flexible fiberoptic colonoscopy |
| ICD-9 | 45.24 | Flexible Sigmoidoscopy; Endoscopy of Descending Colon |
| ICD-9 | 45.25 | Closed [endoscopic] biopsy of large intestine |
| ICD-9 | 45.42 | Endoscopic polypectomy of large intestine |

Table 6.2.A Logical Observation Identifiers Names and Codes (LOINC) useful for identifying laboratory studies related to fecal occult blood testing

| Table 6.2.A Logical Observation Identifiers Names and Codes (LOINC) useful for identifying laboratory studies related to fecal occult blood testing. 1 |
| --- |
| Local code2 | Description |
| [12503-9](http://s.details.loinc.org/LOINC/12503-9.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool --4th specimen |
| [12504-7](http://s.details.loinc.org/LOINC/12504-7.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool --5th specimen |
| [14563-1](http://s.details.loinc.org/LOINC/14563-1.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool --1st specimen |
| [14564-9](http://s.details.loinc.org/LOINC/14564-9.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool --2nd specimen |
| [14565-6](http://s.details.loinc.org/LOINC/14565-6.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool --3rd specimen |
| [2335-8](http://s.details.loinc.org/LOINC/2335-8.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool |
| [27396-1](http://s.details.loinc.org/LOINC/27396-1.html?sections=Simple) | Hemoglobin.gastrointestinal [Mass/mass] in Stool |
| [27401-9](http://s.details.loinc.org/LOINC/27401-9.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool --6th specimen |
| [27925-7](http://s.details.loinc.org/LOINC/27925-7.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool --7th specimen |
| [27926-5](http://s.details.loinc.org/LOINC/27926-5.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool --8th specimen |
| [29771-3](http://s.details.loinc.org/LOINC/29771-3.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool by Immunologic method |
| [50196-5](http://s.details.loinc.org/LOINC/50196-5.html?sections=Simple) | Occult blood panel - Stool |
| [56490-6](http://s.details.loinc.org/LOINC/56490-6.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool by Immunologic method --2nd specimen |
| [56491-4](http://s.details.loinc.org/LOINC/56491-4.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool by Immunologic method --3rd specimen |
| [57803-9](http://s.details.loinc.org/LOINC/57803-9.html?sections=Simple) | Occult blood panel - Stool by Immunologic method |
| [57905-2](http://s.details.loinc.org/LOINC/57905-2.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool by Immunologic method --1st specimen |
| [58453-2](http://s.details.loinc.org/LOINC/58453-2.html?sections=Simple) | Hemoglobin.gastrointestinal [Mass/volume] in Stool by Immunologic method |
| [80372-6](http://s.details.loinc.org/LOINC/80372-6.html?sections=Simple) | Hemoglobin.gastrointestinal [Presence] in Stool by Rapid immunoassay |
| 1 This is a comprehensive set of LOINC codes used at Group Health as of July 2016 and may or may not be representative of all codes in use at other sites.2 Each code in this list contains a hyperlink to its description on the LOINC.org Web site. |

Table 6.2.B. For illustrative purposes, only, these are the lab codes used at Group Health to identify fecal occult blood laboratory studies

| Table 6.2.B. For illustrative purposes, only, these are the lab codes used at Group Health to identify fecal occult blood laboratory studies. THESE ARE NOT RELEVANT TO ANY OTHER EMERGE-3 SITE. |
| --- |
| Local code | Description |
| 1501 | OCCULT BLOOD #N |
| 2228 | OCCULT BLOOD #N |
| 2294 | OCCULT BLOOD BY FIT |
| 9159 | RESULT #N (SOS-FOBT STUDY) |
| 9171 | SOS-FOBT #N (SENSA) |
| 9172 | SOS-FOBT #N (INSURE) |
| 9173 | SOS-FOBT (POLYMEDCO) |
| 9174 | SOS-FOBT (POLYMEDCO) |

1. Howlader N, Noone AM, Krapcho M, Neyman N, Aminou R, Altekruse SF, Kosary CL, Ruhl J, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Chen HS, Feuer EJ, Cronin KA (eds). SEER Cancer Statistics Review, 1975-2009 (Vintage 2009 Populations). Bethesda, MD: National Cancer Institute. Based on November 2011 SEER data submission, posted to the SEER web site, 2012 [↑](#footnote-ref-1)