COLORECTAL CANCER

Includes Invasive and Primary Cancer Only; Does Not Include Carcinoma In Situ, Metastatic Cancer or Endoscopic Polypectomy

Background

This case definition was developed by the Armed Forces Health Surveillance Division (AFHSD) for the purpose of descriptive epidemiological reports on invasive cancers among active duty Service members.[1]

Clinical Description

Colorectal cancer is cancer that occurs in the colon or rectum. The colon is the large intestine or large bowl. The rectum is the passageway that connects the colon to the anus. Colorectal cancer affects men and women of all racial and ethnic groups and is most often found in people aged 50 years or older. In the United States, it is the third most common cancer for men and women.[2] The U.S. Preventive Services Task Force recommends "colorectal cancer screening using fecal occult blood testing, sigmoidoscopy or colonoscopy in adults, beginning at age 50 years and continuing until age 75 years." Evidence suggests that these methods are effective in detecting early-stage colon cancer and adenomatous polyps.[3]

Case Definition and Incidence Rules

For surveillance purposes, a case of colorectal cancer is defined as:

- *One hospitalization* with a case defining diagnosis of colorectal cancer (see ICD9 and ICD10 code lists below) in the *first* diagnostic position; or
- *One hospitalization with a V or Z-code* indicating a radiotherapy, chemotherapy, or immunotherapy treatment procedure (see ICD9 and ICD10 code lists below) in the *first* diagnostic position; AND a case defining diagnosis of colorectal cancer (see ICD9 and ICD10 code lists below) in the *second* diagnostic position; or
- *Three or more outpatient or Theater Medical Data Store (TMDS) medical encounters*, occurring *within a 90-day period*, with a case defining diagnoses of colorectal cancer (see ICD9 and ICD10 code lists below) in the *first or second* diagnostic position.

Incidence rules:

For individuals who meet the case definition:

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[1] Armed Forces Health Surveillance Center. Incident diagnoses of cancers and cancer-related deaths, active component, U.S. Armed Forces, 2005-2014. *MSMR* 2016; 23(7): 23-31.

[2] Colorectal (Colon) Cancer. Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/cancer/colorectal/basic_info/index.htm. Accessed November 2022.

[3] Screening for Colorectal Cancer. U.S. Preventive Services Task Force. Available at: https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/colorectal-cancer-screening2 Accessed November 2022.

Case Definition and Incidence Rules *(continued)*

- For hospitalizations, the incidence date is considered the date of the first medical encounter that includes a case defining diagnosis of colorectal cancer.
- For outpatient medical encounters, the incidence date is considered the first of the three encounters occurring *within* the 90-day period (*see Case Definition and Incidence Rule Rationale* below) that includes a case defining diagnosis of colorectal cancer.
- An individual is considered an incident case *once per lifetime*.

Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Colorectal cancer	*C18 (malignant neoplasm of colon)*	*153 (malignant neoplasm of colon)*
	- C18.0 (malignant neoplasm of cecum)	- 153.4 (malignant neoplasm of cecum)
	- C18.1 (malignant neoplasm of appendix)	- 153.5 (malignant neoplasm of appendix)
	- C18.2 (malignant neoplasm of ascending colon)	- 153.6 (malignant neoplasm of ascending colon)
	- C18.3 (malignant neoplasm of hepatic flexure)	- 153.0 (malignant neoplasm of hepatic flexure)
	- C18.4 (malignant neoplasm of transverse colon)	- 153.1 (malignant neoplasm of transverse colon)
	- C18.5 (malignant neoplasm of splenic flexure)	- 153.7 (malignant neoplasm of splenic flexure)
	- C18.6 (malignant neoplasm of descending colon)	- 153.2 (malignant neoplasm of descending colon)
	- C18.7 (malignant neoplasm of sigmoid colon)	- 153.3 (malignant neoplasm of sigmoid colon)
	- C18.8 (malignant neoplasm of overlapping sites of colon)	- 153.8 (malignant neoplasm of other specified sites of large intestine)
	- C18.9 (malignant neoplasm of colon, unspecified)	- 153.9 (malignant neoplasm of colon, unspecified)
	--	*154 Malignant neoplasm of rectum and rectosigmoid junction*
	C19 (malignant neoplasm of rectosigmoid junction)	- 154.0 (malignant neoplasm of rectosigmoid junction)

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	C20 (malignant neoplasm of rectum)	- 154.1 (malignant neoplasm of rectum)
	C26.0 (malignant neoplasm of intestinal tract, part unspecified)	- 159.0 (malignant neoplasm of intestinal tract, part unspecified)

Procedures	**ICD-10-CM Codes**	**ICD-9-CM Codes**
Related treatment procedures *(Radiotherapy, chemotherapy, immunotherapy)*	Z51.0 (encounter for antineoplastic radiation therapy)	V58.0 (radiotherapy)
	Z51.1 (encounter for antineoplastic chemotherapy and immunotherapy)	V58.1 (encounter for chemotherapy and immunotherapy for neoplastic conditions)
	- Z51.11 (encounter for antineoplastic chemotherapy)	- V58.11 (encounter for antineoplastic chemotherapy)
	- Z51.12 (encounter for antineoplastic immunotherapy)	- V58.12 (encounter for antineoplastic immunotherapy)

Development and Revisions

- In September of 2015 the case definition was updated to include ICD10 codes.

- This case definition was developed in 2010 by the Armed Forces Health Surveillance Center (AFHSC) in collaboration with a working group of subject matter experts from the Office of the Assistant Secretary of Defense for Health Affairs (ASDHA), the United States Army Public Health Command (USAPHC) and the United States Military Cancer Institute. The case definition was developed based on reviews of the ICD9 codes, the scientific literature and previous AFHSC analyses.

- This case definition was developed for a report on ten different invasive cancers. The same case finding criteria are used for all types of cancer in the report. This broad application of a single case definition may affect the sensitivity and specificity in varying ways for the individual cancers. Furthermore, surgical treatment procedures such as hysterectomy, mastectomy, prostatectomy, and other procedures unique to certain types of cancer are not included in the code sets for individual cancers.

Case Definition and Incidence Rule Rationale

- Case finding criteria for this definition requires one hospitalization record with a case defining ICD9 or ICD10 code for colorectal cancer in the *first* diagnostic position *unless* a code for a related treatment procedure is in the *first* diagnostic position; then the case defining ICD9 or ICD10 code for colorectal cancer is allowed in the *second* diagnostic position.

- The case finding criterion of *three or more outpatient medical encounters, within a 90-day period,* is used to identify cases that do not meet the other criteria in the definition. For outpatient encounters, the incident date is considered the first of the three encounters occurring within the 90-day period, (e.g., if a woman has four colorectal cancer codes on 1-Jan-12, 1-Dec-15, 8-Dec-15, and 15-Dec-15, the incident date would be 1-Dec-15. 1-Jan-12 would be considered a screening encounter and dropped). Exploratory analysis of the Defense Medical Surveillance System

(DMSS) data revealed that this criterion yielded optimal specificity.[4] The period of 90 days was established to allow for the likelihood that "true" cases of colorectal cancer would have second and third encounters within that interval.

- For the purposes of counting new incident cases, AFHSD uses a *once per lifetime* incidence rule unless a specific timeframe is more appropriate and is specified, (e.g., individuals may be counted as an incident case once every 365 days). Historically, a *once per surveillance period* incidence rule was used due to limited data in the Defense Medical Surveillance System (DMSS), but that is no longer necessary.

Code Set Determination and Rationale

- This case definition was designed to capture cases of invasive colorectal cancer; therefore, the following codes for carcinoma in situ and endoscopic polypectomy are not included in the code set: ICD9 codes 230.3 (carcinoma in situ of the colon) and 230.4 (carcinoma in situ of the rectum); procedure codes 45.42 (endoscopic polypectomy of large intestine), 45.43 (endoscopic destruction of other lesion or tissue of large intestine), and 48.36 (endoscopic polypectomy of rectum).

- Codes ICD9 153.5/ ICD10 C18.1 (malignant neoplasm of appendix) is included in this code set. The code is included in the code set for colon cancer in both single level and multilevel clinical classifications software for ICD-9-CM developed by the Agency for Healthcare Research and Quality.[5] Some investigators may choose to analyze cancer of the appendix independent from colon cancer.

- Codes ICD9 159.06 / ICD10 C26.0 (intestinal tract, part unspecified) are included in the code set based on the inclusion of the code in the Agency for Health Research and Quality's clinical classification software ICD-9-CM code set for "cancer of the colon."[6]

Reports

The AFHSD reports on colon cancer in the following reports:

- Periodic *Medical Surveillance Monthly Report (MSMR)* articles on cancers and cancer-related deaths.

Review

Nov 2022	Case definition reviewed and updated by the AFHSD Surveillance Methods and Standards (SMS) working group
Jul 2019	Case definition reviewed and updated by the AFHSD SMS working group.
Sep 2015	Case definition reviewed and updated by the Armed Forces Health Surveillance Branch (AFHSB) SMS working group.
Jun 2012	Case definition reviewed and adopted by the AFHSC SMS working group.

[4] Detailed information on this analysis is available through AFHSD *Medical Surveillance Monthly Report (MSMR)* staff; reference DMSS Requests #R080127, #R080159, #R090184, #R090302, #R090341, #R100181, and #R100303 (DoD Cancer Incidence), 2008-2009.

[5] Healthcare Cost and Utilization Project (HCUP). Clinical Classifications Software (CCS) for ICD-9-CM. https://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp. Accessed November 2022.

[6] Data Innovations – ICD-10-CM/PCS Resources). Agency for Healthcare Research and Quality. Available at: https://www.hcup-us.ahrq.gov/datainnovations/icd10_resources.jsp. Accessed November 2022.

Jun 2010	Case definition developed by the Armed Forces Health Surveillance Center (AFHSC), ASDHA, USAPHC and the United States Military Cancer Institute.

Comments

None