

Appendix A: ICD-9 and ICD-10 codes used to define the study cohort

Condition	ICD-9 Code	ICD-10 Code
Lower GI bleed		
Overeasles of colon with hemorrhage	582.12	K57.31
Overeasles of colon with hemorrhage	582.13	K57.32
Angiodysplasia of intestine with hemorrhage	589.25	K58.21
Hemorrhage of medium and anus	589.3	K62
Internal hemorrhoids with other complication	455.2	I24.228A I24.228A
External hemorrhoids with other complication	455.5	I24.228A I24.228A
Unspecified hemorrhoids with other complication	455.3	K64.3
Source c-bleed		
Malignant neoplasm of small intestine including duodenum		
Jejunum	152.1	C17.0
Ileum	152.2	C17.1
Mechafa duodenum	152.3	C17.2
Other specified sites of small intestine	152.8	C17.3
Small intestine unspecified	152.9	C17.9
Malignant neoplasm of colon		
Transverse colon	153	C18.0
Descending colon	153.1	C18.1
Sigmoid colon	153.2	C18.2
Cecum	153.3	C18.3
Appendix	153.4	C18.4
Ascending colon	153.5	C18.5
Splenic flexure	153.6	C18.6
Other specified sites of large intestine	153.7	C18.7
Colon unspecified	153.9	C18.9
Malignant neoplasm of medium esophagus junction and anus		
Redesigned junction	154	C19
Rectum	154.2	C21.0
Anus	154.3	C21.1
Anus cancer	154.3	C21.2
Other	154.3	C21.3
Carotina in situ of digestive organs	230	D00.0
Esophagus	230.1	D00.1
Stomach	230.2	D00.2
Colon	230.3	D00.3
Rectum	230.4	D00.4
Anus	230.5	D00.5
Anus unspecified	230.6	D00.6
Other and unspecified parts of intestine	230.7	D00.7
Liver and biliary system	230.8	D00.8
Other and unspecified digestive organs	230.9	D00.9
Benign neoplasm of colon	211.3	D12.0
Benign neoplasm of rectum and anal canal	211.4	D12.1
Regional enteritis		
Large intestine	555.1	K50.0
Small intestine with large intestine	555.2	K50.1
Unspecified site	555.9	K50.9
Ulcerative colitis		
Ulcerative colitis unspecified	558	K51.00
Ulcerative colitis proctosigmoiditis	558.1	K51.01
Ulcerative colitis proctitis	558.2	K51.02
Ulcerative colitis proctosigmoiditis	558.3	K51.03
Pseudopolypos of colon	558.4	K51.04
Left-sided ulcerative colitis	558.5	K51.05
Universal ulcerative colitis	558.6	K51.06
Other ulcerative colitis	558.8	K51.08
Ulcerative colitis unspecified	558.9	K51.09
Isolated intestinal fistulas		
Colitis enteritis and gastroenteritis of presumed infectious origin	9	A09
Infectious diarrhea	9.2	A09.2
Diarrhea of presumed infectious origin	9.3	A09.3
Colitis		
Toxic gastroenteritis and colitis	552.1	K52.0
Large gastroenteritis and colitis	552.2	K52.1
Small gastroenteritis and colitis	552.3	K52.2
Sigmoid colitis	552.4	K52.3
Other and unspecified noninfectious gastroenteritis and colitis	552.9	K52.9
Ulceration of intestine	557.00	K53
Vasculitis of intestine	557.01	K53.01
Chronic vasculitis of intestine	557.02	K53.02
Unspecified vascular insufficiency of intestine	557.03	K53.03
Angiodysplasia of intestine	557.04	K53.04
Gastrointestinal vascular anomaly	557.05	K53.05
Ulcer of anus and rectum	557.1	K53.1
Anus fissure and fistula	557.2	K53.2
Rectum		
Hemorrhage of gastrointestinal tract unspecified	579.9	K52.9
Acute gastrointestinal anemia	285.1	D62
Esophagus		
Chronic anemia	280	D60
Occult blood positive stool	792.1	R59
Melena	573.1	K52.1
Hematemesis	573.2	K52.2
Esophageal varices with hemorrhage	438.0-438.3	K53.11
Esophageal ulcer	530.1	K20.0
Esophageal ulcer	530.2	K20.1
Mallory-Weiss tear	530.7	K20.7
Esophageal hemorrhage unspecified	530.9	K20.9
Gastroesophageal reflux disease with hemorrhage & perforation	531.0-531.2	K20.0-20.2
Gastroesophageal reflux disease unspecified with hemorrhage & perforation	531.3-531.8	K20.3-20.8
Duodenal ulcer chronic or unspecified with hemorrhage & perforation	532.0-532.2	K20.0-20.2
Duodenal ulcer chronic or unspecified with hemorrhage & perforation	532.3-532.8	K20.3-20.8
Peptic ulcer acute with hemorrhage & perforation	533.0-533.2	K20.0-20.2
Peptic ulcer chronic or unspecified with hemorrhage & perforation	533.3-533.8	K20.3-20.8
Colitis enteritis and gastroenteritis of presumed infectious origin	534.0-534.2	K20.9-20.1
Gastrointestinal ulcer chronic or unspecified with hemorrhage & perforation	534.3-534.8	K20.0-20.8
Gastrointestinal ulcer chronic or unspecified with hemorrhage & perforation	535	K20.9
Angiodysplasia of the stomach or duodenum with hemorrhage	537.00	K21.01
Overeasles or diverticula of the small intestine with hemorrhage	582.22-582.03	K57.1-57.3
Small intestinal cancer	152	C17.0
Procedures		
Endoscopic control of esophageal bleeding	42.22	73C.10
Suture of laceration of the esophagus	42.22	73C.10
Surgical ligation of esophageal varices	42.21	73C.10
Endoscopic ligation of esophageal varices	42.22	73C.10
Partial gastrectomy	43	73C.10
Partial gastrectomy	43	73C.10
Partial gastrectomy	43	73C.10
Partial gastrectomy	43	73C.10
Vegetomy	44	73C.10
Pyloroplasty	44	73C.10
Suture of gastric or duodenal ulcer for bleeding control	44.1	73C.10
Suture of gastric or duodenal ulcer for bleeding control	44.1	73C.10
Suture of gastric or duodenal ulcer for bleeding control	44.1	73C.10
Suture of gastric or duodenal ulcer for bleeding control	44.1	73C.10
Endoscopic control of gastric or duodenal bleeding	44.2	73C.10
Transcatheter embolization of gastric or duodenal ulcer	44.3	73C.10
Other control of hemorrhage of stomach or duodenum	44.4	73C.10
Suture of laceration of the stomach	44.4	73C.10
Surgical ligation of gastric varices	44.4	73C.10
Incision of transverse colon for esophageal variceal ligation	44.4	73C.10