Supplementary Table 1 ICD-9 codes defining upper and unspecified gastrointestinal bleeding

ICD-9 code	ICD-9 code description
456.0	Esophageal varices with bleeding
456.20	Esophageal varices in diseases classified elsewhere, with bleeding
530.82	Esophageal hemorrhage
531.00	Acute gastric ulcer with hemorrhage, without mention of obstruction
531.10	Acute gastric ulcer with perforation, without mention of obstruction
531.11	Acute gastric ulcer with perforation, with obstruction
531.20	Acute gastric ulcer with hemorrhage and perforation, without mention of obstruction
531.21	Acute gastric ulcer with hemorrhage and perforation, with obstruction
531.40	Chronic or unspecified gastric ulcer with hemorrhage, without mention of obstruction
531.41	Chronic or unspecified gastric ulcer with hemorrhage, with obstruction
531.50	Chronic or unspecified gastric ulcer with perforation, without mention of obstruction
531.51	Chronic or unspecified gastric ulcer with perforation, with obstruction
531.60	Chronic or unspecified gastric ulcer with hemorrhage and perforation, without mention of obstruction
531.61	Chronic or unspecified gastric ulcer with hemorrhage and perforation, with obstruction
531.70	Chronic gastric ulcer without mention of hemorrhage or perforation, without mention of obstruction
531.71	Chronic gastric ulcer without mention of hemorrhage or perforation, with obstruction

532.00	Acute duodenal ulcer with hemorrhage, without mention of obstruction
532.01	Acute duodenal ulcer with hemorrhage, with obstruction
532.10	Acute duodenal ulcer with perforation, without mention of obstruction
532.11	Acute duodenal ulcer with perforation, with obstruction
532.20	Acute duodenal ulcer with hemorrhage and perforation, without mention of obstruction
532.21	Acute duodenal ulcer with hemorrhage and perforation, with obstruction
532.40	Chronic or unspecified duodenal ulcer with hemorrhage, without mention of obstruction
532.41	Chronic or unspecified duodenal ulcer with hemorrhage, with obstruction
532.50	Chronic or unspecified duodenal ulcer with perforation, without mention of obstruction
532.51	Chronic or unspecified duodenal ulcer with perforation, with obstruction
532.60	Chronic or unspecified duodenal ulcer with hemorrhage and perforation, without mention of obstruction
532.61	Chronic or unspecified duodenal ulcer with hemorrhage and perforation, with obstruction
533.00	Acute peptic ulcer of unspecified site with hemorrhage, without mention of obstruction
533.01	Acute peptic ulcer of unspecified site with hemorrhage, with obstruction
533.10	Acute peptic ulcer of unspecified site with perforation, without mention of obstruction
533.11	Acute peptic ulcer of unspecified site with perforation, with obstruction
533.20	Acute peptic ulcer of unspecified site with hemorrhage and perforation, without mention of obstruction
533.21	Acute peptic ulcer of unspecified site with hemorrhage and perforation, with obstruction

533.40	Chronic or unspecified peptic ulcer of unspecified site with hemorrhage, without mention of obstruction
533.41	Chronic or unspecified peptic ulcer with hemorrhage, with obstruction
533.50	Chronic or unspecified peptic ulcer of unspecified site with perforation, without mention of obstruction
533.51	Chronic or unspecified peptic ulcer with perforation with obstruction
533.60	Chronic or unspecified peptic ulcer with hemorrhage and perforation, without obstruction
533.61	Chronic or unspecified peptic ulcer with hemorrhage and perforation, with obstruction
534.00	Acute gastrojejunal ulcer with hemorrhage, without mention of obstruction
534.20	Acute gastrojejunal ulcer with hemorrhage and perforation, without mention of obstruction
534.40	Chronic or unspecified gastrojejunal ulcer with hemorrhage, without mention of obstruction
534.41	Chronic or unspecified gastrojejunal ulcer, with hemorrhage, with obstruction
534.50	Chronic or unspecified gastrojejunal ulcer with perforation, without mention of obstruction
534.51	Chronic or unspecified gastrojejunal ulcer with perforation, with obstruction
534.60	Chronic or unspecified gastrojejunal ulcer with hemorrhage and perforation, without mention of obstruction
534.61	Chronic or unspecified gastrojejunal ulcer with hemorrhage and perforation, with obstruction
535.11	Atrophic gastritis, with hemorrhage
535.21	Gastric mucosal hypertrophy, with hemorrhage
535.31	Alcoholic gastritis, with hemorrhage

535.41	Other specified gastritis, with hemorrhage
535.51	Unspecified gastritis and gastroduodenitis, with hemorrhage
535.61	Duodenitis, with hemorrhage
535.71	Eosinophilic gastritis, with hemorrhage
537.83	Angiodysplasia of stomach and duodenum with hemorrhage
537.84	Dieulafoy lesion (hemorrhagic) of stomach and duodenum
543.01	Acute gastrojejunal ulcer, with hemorrhage, with obstruction
543.10	Acute gastrojejunal ulcer, with perforation, without obstruction
543.11	Acute gastrojejunal ulcer, with perforation, with obstruction
543.21	Acute gastrojejunal ulcer, with hemorrhage and perforation, with obstruction
562.02	Diverticulosis of small intestine with hemorrhage
562.03	Diverticulitis of small intestine with hemorrhage
578.0	Hematemesis
578.1	Blood in stool
578.9	Hemorrhage of gastrointestinal tract, unspecified

Supplementary Table 2 ICD-9-CM procedure codes

Table S2. ICD-9-CM procedure codes	Survived (*n* = 19124)	Died (*n* = 404)	*P* value
39.92 Injection of sclerosing agent	4 (0.02%)	0 (0.00%)	0.99
42.24 Closed biopsy of esophagus	14 (0.07%)	0 (0.00%)	0.99
44.14 Closed biopsy of stomach	16 (0.08%)	0 (0.00%)	0.99
42.91 Ligation of esophageal varices	4 (0.02%)	1 (0.25%)	0.09
42.33 Endoscopic excision or destruction of lesion or tissue of esophagus	389 (2.03%)	8 (1.98%)	0.99
43.41 Endoscopic excision or destruction of lesion or tissue of stomach	46 (0.24%)	3 (0.74%)	0.08
45.30 Endoscopic excision or destruction of lesion or tissue of duodenum	14 (0.07%)	0 (0.00%)	0.09
44.43 Endoscopic control of bleeding	308 (1.61%)	10 (2.47%)	0.16
45.11-.14 Endoscopic Px small intestine	985 (5.15%)	38 (9.41%)	0.0002
45.16 EGD	4569 (23.89%)	52 (12.87%)	< 0.0001