

RESEARCH ARTICLE

Time-to-operation and hospital mortality in emergency general surgery: Evidence from 6.8 million admissions supporting dedicated emergency general surgery services

Supplementary File

Table S1. Emergency general surgery diagnoses identified using the American Association for the Surgery of Trauma Emergency General Surgery (AAST EGS) Disease Classification framework

Disease category	Example ICD-9 codes
Acute appendicitis	540.0, 540.1, 540.9
Intestinal obstruction	560.0, 560.1, 560.81, 560.89
Intestinal adhesions	560.81
Intestinal fistula	537.4
Acute gastric ulcer	531.0–531.9
Chronic duodenal ulcer	532.0–532.9
Gastrojejunal ulcer	534.0–534.9
Acute pancreatitis	577.0
Liver abscess	572.0
Ventral hernia	553.2, 553.3
Umbilical hernia	551.1, 551.9
Regional enteritis (Crohn disease)	555.0–555.9
Perforation of intestine	569.83
Acute vascular insufficiency of intestine	557.0
Anorectal abscess	566
Gastroparesis	536.3
Hemorrhoids	455.6
Empyema	510.0–510.9
Hematochezia	578.1
Acute gastritis with hemorrhage	535.01
Pneumothorax	512.xx
Other EGS conditions	Additional AAST EGS diagnosis codes

Note: The complete AAST EGS disease classification framework contains additional diagnostic codes. The present study included all EGS diagnoses meeting study inclusion criteria between 2005 and 2014.

Table S2. Univariable logistic regression analysis of factors associated with in-hospital mortality

Population	Variable	Approximate OR (95% CI)	p
Adults	Age (per year)	1.065 (1.063–1.067)	<0.001
	Female sex	0.68 (0.66–0.70)	<0.001
	Modified frailty index	1.60 (1.57–1.63)	<0.001
	Time-of-operation (per day)	1.065 (1.062–1.069)	<0.001
	Race	White [Ref]	–
		Black	0.68 (0.11, 1.78)
		Hispanic	1.69 (0.90, 2.70)
		Asian/Pacific Islander	0.79 (0.11, 4.77)
		Native American	2.57 (0.30, 19.99)
	Insurance	Private insurance [Ref]	–
		Medicare	0.77 (0.35, 1.31)
		Medicaid	1.11 (0.11, 4.99)
		Self-Pay	1.60 (0.44, 12.49)
		Other	1.76 (0.61, 7.44)
	Income quartile	Quartile 4 [Ref]	–
		Quartile 1	1.41 (0.78, 2.66)
		Quartile 2	1.55 (1.07, 2.97)
		Quartile 3	1.27 (0.72, 2.34)
	Hospital location	Rural [Ref]	–
		Urban: Non-Teaching	1.17 (0.67, 01.77)
		Urban: Teaching	0.91 (0.42, 1.93)
Elderly	Age (per year)	1.050 (1.049–1.052)	<0.001
	Female sex	0.83 (0.81–0.85)	<0.001
	Modified frailty index	1.28 (1.26–1.30)	<0.001
	Time-of-operation (per day)	1.050 (1.047–1.053)	<0.001
	Race	White [Ref]	0.5
		Black	0.59 (0.23, 1.47)
		Hispanic	1.53 (0.82, 2.85)
		Asian/Pacific Islander	0.69 (0.09, 5.16)
		Native American	2.67 (0.33, 21.81)
	Insurance	Private insurance [Ref]	–
		Medicare	0.79 (0.385, 1.261)
		Medicaid	1.04 (0.22, 4.86)
		Self-Pay	1.74 (0.20, 14.83)
		Other	1.88 (0.50, 7.06)
	Income quartile	Quartile 4 [Ref]	–
		Quartile 1	1.50 (0.86, 2.62)
		Quartile 2	1.78 (1.03, 3.07)
		Quartile 3	1.28 (0.72, 2.34)
	Hospital location	Rural [Ref]	–
		Urban: Non-teaching	1.1 (0.69, 01.70)

Note: Crude odds ratios were generated from univariable logistic regression models without adjustment for covariates.
Abbreviations: CI: Confidence interval; OR: Odds ratio.