

Death Rate among Surgical Inpatients with Serious Treatable Complications Technical Specifications

Patient Safety Indicators 04 (PSI 04)
AHRQ Quality Indicators™, Version 4.5a, July 2014
Provider-Level Indicator
Type of Score: Rate

Description

In-hospital deaths per 1,000 surgical discharges, among patients ages 18 through 89 years or obstetric patients, with serious treatable complications (deep vein thrombosis/ pulmonary embolism, pneumonia, , sepsis, shock/cardiac arrest or gastrointestinal hemorrhage/acute ulcer). Includes metrics for the number of discharges for each type of complication. Excludes cases transferred to an acute care facility.

[NOTE: The software provides the rate per hospital discharge. However, common practice reports the measure as per 1,000 discharges. The user must multiply the rate obtained from the software by 1,000 to report in-hospital deaths per 1,000 hospital discharges.]

Numerator

Overall:

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum 04A: DEEP VEIN THROMBOSIS / PULMONARY EMBOLISM (DVT/PE)

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum 04B: PNEUMONIA

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum 04C: SEPSIS

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum 04D: SHOCK / CARDIAC ARREST

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Stratum 04E: GASTROINTESTINAL (GI) HEMORRHAGE / ACUTE ULCER

Number of deaths (DISP=20) among cases meeting the inclusion and exclusion rules for the denominator.

Denominator

Overall:

Surgical discharges, for patients ages 18 through 89 years or MDC 14 (pregnancy, childbirth, and puerperium), with all of the following:

- any-listed ICD-9-CM procedure codes for an operating room procedure; and
- the principal procedure occurring within 2 days of admission or an admission type of elective (ATYPE=3); and
- meet the inclusion and exclusion criteria for Stratum A (deep vein thrombosis or pulmonary embolism), Stratum B (pneumonia), , Stratum C (sepsis), Stratum D (shock or cardiac arrest), or Stratum E (gastrointestinal hemorrhage or acute ulcer) defined below.

Surgical discharges are defined by specific DRG or MS-DRG codes.

See *Patient Safety Indicators Appendices*:

- Appendix A – Operating Room Procedure Codes
- Appendix D – Surgical Discharge DRGs
- Appendix E – Surgical Discharge MS-DRGs

Exclude cases:

- transferred to an acute care facility (DISP = 2)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

To ensure that the strata are mutually exclusive within each indicator, the strata were prioritized in order of their relative prevalence in the reference population data. In the event that a discharge record meets the denominator criteria for several strata, the software assigns the record to the one (and only one) candidate stratum whose outcome is most prevalent in the reference population. That is to say that if a record met the criteria to be in the denominator for strata C and D, and if the outcome in D were more prevalent than the one in C in the reference population dataset, then the software would only assign the record to stratum D, and would not assign it to C.

For PSI 04, prioritization to ensure mutual exclusivity for the strata is as follows:

STRATUM D: SHOCK/CARDIAC ARREST
 STRATUM C: SEPSIS
 STRATUM B: PNEUMONIA
 STRATUM A: DVT/PE
 STRATUM E: GI HEMORRHAGE/ACUTE ULCER

Stratum 04A: DEEP VEIN THROMBOSIS / PULMONARY EMBOLISM (DVT/PE)

Surgical discharges, for patients ages 18 through 89 years or MDC 14 (pregnancy, childbirth, and puerperium), with all of the following:

- any-listed ICD-9-CM procedure codes for an operating room procedure; and
- the principal procedure occurring within 2 days of admission or an admission type of elective (ATYPE=3); and
- any secondary ICD-9-CM diagnosis codes for deep vein thrombosis or pulmonary embolism.

Surgical discharges are defined by specific DRG or MS-DRG codes.

See *Patient Safety Indicators Appendices*:

- Appendix A – Operating Room Procedure Codes
- Appendix D – Surgical Discharge DRGs
- Appendix E – Surgical Discharge MS-DRGs

ICD-9-CM Pulmonary embolism or deep vein thrombosis diagnosis codes¹:

4151	<i>PULMON EMBOLISM/INFARCT (end 1995)</i>	4519	<i>THROMBOPHLEBITIS NOS (used with data prior to FY 2010)</i>
41511	IATROGEN PULM EMB/INFARC	45340	AC DVT/EMBL LOW EXT NOS
41513	SADDLE EMBOL PULMON ART	45341	AC DVT/EMB PROX LOW EXT
41519	PULM EMBOL/INFARCT NEC	45342	AC DVT/EMB DISTL LOW EXT
45111	FEMORAL VEIN PHLEBITIS	4538	<i>VENOUS THROMBOSIS NEC (end 2009)</i>
45119	DEEP PHLEBITIS-LEG NEC	4539	<i>VENOUS THROMBOSIS NOS (used with data prior to FY 2010)</i>
4512	THROMBOPHLEBITIS LEG NOS		
45181	ILIAC THROMBOPHLEBITIS		

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are either not active in Fiscal Year 2013 or no longer used in the algorithm beginning with ICD-9-CM version 27 (FY 2010 or October 1, 2009).

Exclude cases:

- with a principal ICD-9-CM diagnosis code for deep vein thrombosis or pulmonary embolism (see above)
- with a principal ICD-9-CM diagnosis code for abortion-related or postpartum obstetric pulmonary embolism
- transferred to an acute care facility (DISP = 2)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

ICD-9-CM Abortion-related or postpartum obstetric pulmonary embolism diagnosis codes:

63460	SPON ABORT W EMBOL-UNSP	63761	AB NOS W EMBOLISM-INC
63461	SPON ABORT W EMBOL-INC	63762	AB NOS W EMBOLISM-COMP
63462	SPON ABOT W EMBOL-COMP	6386	ATTEMP ABORT W EMBOLISM
63560	LEGAL ABORT W EMBOL-UNSP	6396	POSTABORTION EMBOLISM
63561	LEGAL ABORT W EMBOL-INC	67320	OB PULM EMBOL NOS-UNSPEC
63562	LEGAL AMOT W EMBOL-COMP	67321	PULM EMBOL NOS-DELIVERED
63660	ILLEG AB W EMBOLISM-UNSP	67322	PULM EMBOL NOS-DEL W P/P
63661	ILLEG AB W EMBOLISM-INC	67323	PULM EMBOL NOS-ANTEPART
63662	ILLEG AB W EMBOLISM-COMP	67324	PULM EMBOL NOS-POSTPART
63760	AB NOS W EMBOLISM-UNSP		

Stratum B: PNEUMONIA

Surgical discharges, for patients ages 18 through 89 years or MDC 14 (pregnancy, childbirth, and puerperium), with all of the following:

- any-listed ICD-9-CM procedure codes for an operating room procedure; and
- the principal procedure occurring within 2 days of admission or an admission type of elective (ATYPE=3); and
- any secondary ICD-9-CM diagnosis codes for pneumonia.

Surgical discharges are defined by specific DRG or MS-DRG codes.

See *Patient Safety Indicators Appendices*:

- Appendix A – Operating Room Procedure Codes
- Appendix D – Surgical Discharge DRGs
- Appendix E – Surgical Discharge MS-DRGs

ICD-9-CM Pneumonia diagnosis codes¹:

4820	K. PNEUMONIAE PNEUMONIA	48240	STAPHYLOCOCCAL PNEU NOS
4821	PSEUDOMONAL PNEUMONIA	48241	METH SUS PNEU D/T STAPH
4822	H. INFLUENZA PNEUMONIA	48242	METH RES PNEU D/T STAPH
4823	<i>PNEUMONIA DUE TO STREPTOCOCCUS (end 1992)</i>	48249	STAPH PNEUMONIA NEC
48230	STREPTOCOCCAL PNEUMM NOS	4828	<i>PNEUMONIA DUE TO OTHER SPECIFIED BACTERIA (end 1992)</i>
48231	PNEUMONIA STRPTOCOCCUS A	48281	PNEUMONIA ANAEROBES
48232	PNEUMONIA STRPTOCOCCUS B	48282	PNEUMONIA E COLI
48239	PNEUMONIA OTH STREP	48283	PNEUMO OTH DRM-NEG BACT
4824	<i>PNEUMONIA DUE TO STAPHYLOCOCCUS (end 1998)</i>	48284	LEGIONNAIRES' DISEASE
		48289	PNEUMONIA OTH SPCF BACT

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4829	BACTERIAL PNEUMONIA NOS	5070	FOOD/VOMIT PNEUMONITIS
485	BRONCHOPNEUMONIA ORG NOS	514	PULM CONGEST/HYPOSTASIS
486	PNEUMONIA, ORGANISM NOS		

¹The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

Exclude cases:

- with a principal ICD-9-CM diagnosis code for pneumonia (see above)
- with a principal ICD-9-CM diagnosis code for respiratory complications
- with any-listed ICD-9-CM diagnosis codes for viral pneumonia or influenza
- with any-listed ICD-9-CM diagnosis codes or any-listed ICD-9-CM procedure codes for immunocompromised state
- with any-listed ICD-9-CM procedure codes for lung cancer
- MDC 4 (diseases/disorders of respiratory system)
- transferred to an acute care facility (DISP = 2)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

See *Patient Safety Indicators Appendices*:

- Appendix I – Immunocompromised State Diagnosis and Procedure Codes

ICD-9-CM Respiratory complications diagnosis codes¹:

9973	<i>RESPIRATORY COMPLICATIONS (end 2008)</i>	99732	POSTPROC ASPIRATION PNEU
		99739	RESPIRATORY COMP NEC
99731	VENTLTR ASSOC PNEUMONIA		

¹The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

ICD-9-CM Viral pneumonia or influenza diagnosis codes¹:

4800	ADENOVIRAL PNEUMONIA	4870	INFLUENZA W/ PNEUMONIA
4801	RESP SYNCYT VIRAL PNEUM	4871	FLU W RESP MANIFEST NEC
4802	PARAINFLUENZA VIRAL PNEUM	4878	FLU W MANIFESTATION NEC
4803	PNEUMONIA DUE TO SARS	<i>488</i>	<i>FLU D/T AVIAN FLU VIRUS (end 2009)</i>
4808	VIRAL PNEUMONIA NEC	<i>4880</i>	<i>INFLUENZA DUE TO IDENTIFIED AVIAN INFLUENZA VIRUS (end 2010)</i>
4809	VIRAL PNEUMONIA NOS		
481	PNEUMOCOCCAL PNEUMONIA	48801	FLU DT IDEN AVIAN W PNEU
<i>483</i>	<i>PNEUMONIA ORGANISM NEC (end 1992)</i>	48802	FLU DT AVIAN W OTH RESP
4830	PNEU MYCPLSM PNEUMONIAE	48809	FLU DT AVIAN MANIFEST NEC
4831	PNEUMONIA D/T CHLAMYDIA	<i>4881</i>	<i>INFLUENZA DUE TO IDENTIFIED NOVEL H1N1 INFLUENZA VIRUS (end 2010)</i>
4838	PNEUMON OTH SPEC ORGNISM		
4841	PNEUM W CYTOMEG INCL DIS	48811	FLU DT 2009 H1N1 W PNEU
4843	PNEUMONIA IN WHOOP COUGH	48812	FLU-2009 H1N1 W OTH RESP
4845	PNEUMONIA IN ANTHRAX	48819	FLU-2009 H1N1 W OTH MAN
4846	PNEUMONIA IN ASPERGILLOSIS	48881	FLU DT NVL A VRS W PNEU
4847	PNEUMONIA IN OTH SYS MYCOSES	48882	FLU DT NVL A W OTH RESP
4848	PNEUMONIA IN INFECT DIS NEC	48889	FLU DT NOVEL A W OTH MAN

¹The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

ICD-9-CM Lung cancer procedure codes:

3239	OTH SEG LUNG RESECT NOS	3259	OTHER PNEUMONECTOMY NOS
3249	LOBECTOMY OF LUNG NEC		

Stratum 04C: SEPSIS

Surgical discharges, for patients ages 18 through 89 years or MDC 14 (pregnancy, childbirth, and puerperium), with all of the following:

- any-listed ICD-9-CM procedure codes for an operating room procedure; and
- the principal procedure occurring within 2 days of admission or an admission type of elective (ATYPE=3); and
- any secondary ICD-9-CM diagnosis codes for sepsis.

Surgical discharges are defined by specific DRG or MS-DRG codes.

See *Patient Safety Indicators Appendices*:

- Appendix A – Operating Room Procedure Codes
- Appendix D – Surgical Discharge DRGs
- Appendix E – Surgical Discharge MS-DRGs

ICD-9-CM Sepsis diagnosis codes¹:

0380	STREPTOCOCCAL SEPTICEMIA	03842	E. COLI SEPTICEMIA
<i>0381</i>	<i>STAPHYLOCOCCAL SEPTICEMIA (end 1997)</i>	03843	PSEUDOMONAS SEPTICEMIA
03810	STAPHYLOCOCCAL SEPTICEM NOS	03844	SERRATIA SEPTICEMIA
03811	METH SUSC STAPH AUR SEPT	03849	GRAM-NEG SEPTICEMIA NEC
03812	MRSA SEPTCEMIA	0388	SEPTICEMIA NEC
03819	STAPHYLOCOCC SEPTICEM NEC	0389	SEPTICEMIA NOS
0382	PNEUMOCOCCAL SEPTICEMIA	78552	SEPTIC SHOCK
0383	ANAEROBIC SEPTICEMIA	99591	SEPSIS
03840	GRAM-NEG SEPTICEMIA NOS	99592	SEVERE SEPSIS
03841	H. INFLUENAE SEPTICEMIA	99802	POSTOP SHOCK, SEPTIC

¹The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

Exclude cases:

- with a principal ICD-9-CM diagnosis code for sepsis (see above)
- with a principal ICD-9-CM diagnosis code for infection
- with any-listed ICD-9-CM diagnosis codes or any-listed ICD-9-CM procedure codes for immunocompromised state
- with a length of stay of less than 4 days
- transferred to an acute care facility (DISP = 2)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

See *Patient Safety Indicators Appendices*:

- Appendix F – Infection Diagnosis Codes
- Appendix I – Immunocompromised State Diagnosis and Procedure Codes

Stratum 04D: SHOCK/CARDIAC ARREST

Surgical discharges, for patients ages 18 through 89 years or MDC 14 (pregnancy, childbirth, and puerperium), with all of the following:

- any-listed ICD-9-CM procedure codes for an operating room procedure; and
- the principal procedure occurring within 2 days of admission or an admission type of elective (ATYPE=3); and
- any secondary ICD-9-CM diagnosis codes or any-listed ICD-9-CM procedure codes for shock or cardiac arrest.

Surgical discharges are defined by specific DRG or MS-DRG codes.

See *Patient Safety Indicators Appendices*:

- Appendix A – Operating Room Procedure Codes
- Appendix D – Surgical Discharge DRGs
- Appendix E – Surgical Discharge MS-DRGs

ICD-9-CM Shock or cardiac arrest diagnosis codes¹:

4275	CARDIAC ARREST	7991	RESPIRATORY ARREST
6395	POSTABORTION SHOCK	9950	OTHER ANAPHYLACTIC SHOCK
66910	OBSTETRIC SHOCK-UNSPEC	9954	SHOCK DUE TO ANESTHESIA
66911	OBSTETRIC SHOCK-DELIVER	<i>9980</i>	<i>POSTOPERATIVE SHOCK (end 2011)</i>
66912	OBSTET SHOCK-DELIV W P/P	99800	POSTOPERATIVE SHOCK, NOS
66913	OBSTETRIC SHOCK-ANTEPAR	99801	POSTOP SHOCK, CARDIOGENIC
66914	OBSTETRIC SHOCK-POSTPART	99809	POSTOP SHOCK, OTHER
7855	<i>SHOCK W/O MENTION OF TRAUMA (invalid 4-digit code)</i>	9994	<i>ANAPHYLACTIC SHOCK DUE TO SERUM (end 2011)</i>
78550	SHOCK NOS	99941	ANAPHYL D/T ADM BLD/PROD
78551	CARDIOGENIC SHOCK	99942	ANAPHYL REACT D/T VACCIN
78559	SHOCK W/O TRAUMA NEC	99949	ANAPH REACT D/T OT SERUM

¹ The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

ICD-9-CM Shock or cardiac arrest procedure codes:

9393	NONMECHAN RESUSCITATION	9963	CLOSED CHEST CARD MASSAG
9960	CARDIOPULM RESUSCITA NOS		

Exclude cases:

- with a principal ICD-9-CM diagnosis code for shock or cardiac arrest (see above)
- with a principal ICD-9-CM diagnosis code for trauma
- with a principal ICD-9-CM diagnosis code for hemorrhage
- with a principal ICD-9-CM diagnosis code for gastrointestinal hemorrhage
- with a principal ICD-9-CM diagnosis code for abortion-related shock
- with any-listed ICD-9-CM procedure codes for lung cancer
- MDC 4 (diseases/disorders of respiratory system)
- MDC 5 (diseases/disorders of circulatory system)
- transferred to an acute care facility (DISP = 2)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

See *Patient Safety Indicators Appendices:*

- Appendix G – Trauma Diagnosis Codes

ICD-9-CM Hemorrhage diagnosis codes:

2851	AC POSTHEMORRHAG ANEMIA	9582	SECONDARY/RECUR HEMORR
4590	HEMORRHAGE NOS	99811	HEMORHAGE COMPLIC PROC
56881	HEMOPERITONEUM		

ICD-9-CM Gastrointestinal hemorrhage diagnosis codes:

4560	ESOPHAG VARICES W BLEED	53400	AC MARGINAL ULCER W HEM
45620	BLEED ESOPH VAR OTH DIS	53401	AC MARGIN ULC W HEM-OBST
5307	MALLORY-WEISS SYNDROME	53420	AC MARGIN ULC W HEM/PERF
53082	ESOPHAGEAL HEMORRHAGE	53421	AC MARG ULC HEM/PERF-OBS
53100	AC STOMACH ULCER W HEM	53440	CHR MARGINAL ULCER W HEM
53101	AC STOMAC ULC W HEM-OBST	53441	CHR MARGIN ULC W HEM-OBS
53120	AC STOMAC ULC W HEM/PERF	53460	CHR MARGIN ULC HEM/PERF
53121	AC STOM ULC HEM/PERF-OBS	53461	CHR MARG ULC HEM/PERF-OB
53140	CHR STOMACH ULC W HEM	53501	ACUTE GASTRTIS W/O HMRHG
53141	CHR STOM ULC W HEM-OBSTR	53511	ATRPH GASTRITIS W HMRHG
53160	CHR STOMACH ULC HEM/PERF	53521	GSTR MCSL HYPRT W HMRG
53161	CHR STOM ULC HEM/PERF-OBST	53531	ALCHL GSTRITIS W/O HMRHG
53200	AC DUODENAL ULVER W HEM	53541	OTH SPF GASTRT W HMRHG
53201	AC DUODEN ULC W HEM-OBST	53551	GSTR/DDNTS NOS W H,RHG
53220	AC DUODEN ULC W HEM/PERF	53561	DUODENITIS W HMRHG
53221	AC DUOD ULC HEM/PERF-OBS	53783	ANGIO STM/DUDN W HMRHG
53240	CHR DUODEN ULCER W HEM	53784	DIEULAFOY LES,STOM&DUOD
53241	CHR DUODEN ULC HEM-OBSTR	56202	DVRTCLO SML INT W HMHRG
53260	CHR DUODEN ULC HEM/PERF	56203	DVRTCLI SML INT W HMRHG
53261	CHR DIOD ULC HEM/PERF-OB	56212	DVRTCLI COLON W HMRHG
53300	AC PEPTIC ULVER W HEMORR	56213	DVRTLCLI COLON W HMRG
53301	AC PEPTIC ULCER W HEM-OBST	5693	RECTAL & ANAL HEMORRHAGE
53320	AC PEPTIC ULC W HEM/PERF	56985	ANGIO INTES W HMRHG
53321	AC PEPT ULC HEM/PERF-OBS	56986	DIEULAFOY LES, INTESTING
53340	CHR PEPTIC ULCER W HEM	5780	HEMATEMESIS
53341	CHR PEPTIC ULC W HEM-OBS	5781	BLOOD IN STOOL
53360	CHR PEPT ULC W HEM/PERF	5789	GASTROINTEST HEMORR NOS
53361	CHR PEPT ULC HEM/PERF-OB		

ICD-9-CM Abortion-related shock diagnosis codes:

63450	SPON ABORT W SHOCK-UNSP	63651	ILLEG ABORT W SHOCK-INC
63451	SPON ABORT W SHOCK-INC	63652	ILLEG ABORT W SHOCK-COMP
63452	SPON ABORT W SHOCK-COMP	63750	ABORT NOS W SHOCK-UNSO
63550	LEGAL ABORT W SHOCK-UNSO	63751	ABORT NOS W SHOCK-INC
63551	LEGAL ABORT W SHOCK-INC	63752	ABORT NOS W SHOCK-COMP
63552	LEGAL ABORT W SHOCK-COMP	6385	ATTEM ABORTION W SHOCK
63650	ILLEG AB W SHOCK-UNSO		

ICD-9-CM Lung cancer procedure codes:

3239	OTH SEG LUNG RESECT NOS	3259	OTHER PNEUMONECTOMY NOS
3249	LOBECTOMY OF LUNG NEC		

Stratum 04E: GASTROINTESTINAL (GI) HEMORRHAGE / ACUTE ULCER

Surgical discharges, for patients ages 18 through 89 years or MDC 14 (pregnancy, childbirth, and puerperium), with all of the following:

- any-listed ICD-9-CM procedure codes for an operating room procedure; and
- the principal procedure occurring within 2 days of admission or an admission type of elective (ATYPE=3); and
- any secondary ICD-9-CM diagnosis codes for gastrointestinal hemorrhage or acute ulcer.

Surgical discharges are defined by specific DRG or MS-DRG codes.

See *Patient Safety Indicators Appendices*:

- Appendix A – Operating Room Procedure Codes
- Appendix D – Surgical Discharge DRGs
- Appendix E – Surgical Discharge MS-DRGs

ICD-9-CM Gastrointestinal hemorrhage or acute ulcer diagnosis codes:

4560	ESOPHAG VARICES W BLEEDING	53390	PEPTIC ULCER NOS
45620	BLEED ESOPH VAR OTH DIS	53391	PEPTIC ULCER NOS-OBSTRUCT
5307	MALLORY-WEISS SYNDROME	53400	AC MARGINAL ULCER W HEM
53082	ESOPHAGEAL HEMORRHAGE	53401	AC MARGINAL ULC W HEM-OBST
53100	AC STOMACH ULCER W HEM	53410	AC MARGINAL ULCER W PERF
53101	AC STOMAC ULC W HEM-OBST	53411	AC MARGIN ULC W PERF-OBS
53110	AC STOMACH ULCER W PERF	53420	AC MARGIN ULC W HEM/PERF
53111	AC STOM ULC W PERF-OBST	53421	AC MARG ULC HEM/PERF-OBS
53120	AC STOMAC ULC W HEM/PERF	53430	AC MARGINAL ULCER NOS
53121	AC STOM ULC HEM/PERF-OBS	53431	AC MARGINAL ULC NOS-OBST
53130	ACUTE STOMACH ULCER NOS	53490	GASTROJEJUNAL ULCER NOS
53131	AC STOMACH ULC NOS-OBSTR	53491	GASTROJEJUN ULC NOS-OBST
53190	STOMACH ULCER NOS	53501	ACUTE GASTRITS W HMRHG
53191	STOMACH ULCER NOS-OBSTR	53511	ATRPH GASTRITIS W HMRHG
53200	AC DUODENAL ULCER W HEM	53521	GSTR MCSL HYPRT W HMRG
53201	AC DIODEN ULC W HEM-OBST	53531	ALCHL GSTRITIS W HMRHG
53210	AC DIODENAL ULCER W PERF	53541	OTH SPF GASTRT W HMRHG
53211	AC DIODEN ULC PERF-OBSTR	53551	GSTR/DDNTS NOS W HMRHG
53220	AC DIODEN ULC W HEM/PERF	53561	DUIDENITIS W HMRHG
53221	AC DIOD ULC HEM/PERF-OBS	53783	ANGIO STM/DUDN W HMRHG
53230	ACUTE DUODENAL ULCER NOS	53784	DIEULAFOY LES,STOM&DUOD
53231	AC DIODENAL ULC NOS-OBST	56202	DVRTCLO SML INT W HMRHG
53290	DUIDENAL ULCER NOS	56203	DVRTCLI SML IN W HMRHG
53291	DUODENAL ULCER NOS-OBSTR	56212	DVRTCLO COLON W HMRHG
53300	AC PEPTIC ULCER W HEMORR	56213	DVRTCLI COLON W HMRHG
53301	AC EPTIC ULC W HEM-OBST	5693	RECTAL & ANAL HEMORRHAGE
53310	AC PEPTIC ULCER W PERFOR	56985	ANGIO INTES W HMRHG
53311	AC PEPTIC ULC W PERF-OBS	56986	DIEULAFOY LES, INTESTINE
53320	AC PEPTIC ULC W HEM/PERF	5780	HEMATEMESIS
53321	AC PEPT ULC HEM/PERF-OBS	5781	BLOOD IN STOOL
53330	ACUTE PEPTIC ULCER W HEM	5789	GASTROINTEST HEMORR NOS
53331	AC PEPTIC ULCER NOS-OBST		

Exclude cases:

- with a principal ICD-9-CM diagnosis code for gastrointestinal hemorrhage or acute ulcer

(see above)

- with a principal ICD-9-CM diagnosis code for trauma
- with a principal ICD-9-CM diagnosis code for alcoholism
- with a principal ICD-9-CM diagnosis code for anemia
- MDC 6 (diseases and disorders of the digestive system)
- MDC 7 (diseases and disorders of the hepatobiliary system and pancreas)
- transferred to an acute care facility (DISP = 2)
- with missing discharge disposition (DISP=missing), gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

See *Patient Safety Indicators Appendices*:

- Appendix G – Trauma Diagnosis Codes

ICD-9-CM Alcoholism diagnosis codes:

2910	DELERIUM TREMENS	30392	ALCOH DEP NEC/NOS-EPIBOD
2911	ALCOHOL AMNESTIC DISORDR	30393	ALCOH DEP NEC/NOS-REMISS
2912	ALCOHOL PERSIST DEMENTIA	30500	ALCOHOL ABUSE-UNSPEC
2913	ALCOH PSY DIS W HALLUCIN	30501	ALCOHOL ABUSE-CONTINUOUS
2914	PATHOLOGIC ALCOHOL INTOX	30502	ALCOHOL ABUSE-EPIBODIC
2915	ALCOH PSYCH DIS W DELUS	30503	ALCOHOL ABUSE-IN REMISS
29181	ALCOHOL WITHDRAWAL	4255	ALCOHOLIC CARDIOMYOPATHY
29182	ALCOH INDUCE SLEEP DISOR	53530	ALCHL GASTRTIS W/O HMRHG
29189	ALCOHOL MENTAL DISOR NEC	53531	ALCHL GSTRITIS W HMRHG
2919	ALCOHOL MENTAL DISOR NOS	5710	ALCOHOLIC FATTY LIVER
30300	AC ALCOHOL INTOX-UNSPEC	5711	AC ALCOHOLIC HEPATITIS
30301	AC ALCOHOL INTOX-CONTIN	5712	ALCOHOL CIRRHOBIS LIVER
30302	AC ALCOHOL INTOX-EPIBOD	5713	ALCOHOL LIVER DAMAGE NOS
30303	AC ALCOHOL INTOX-REMISS	9800	TOXIC EFF EHTYL ALCOHOL
30390	ALCOH DEP NEX/NOS-UNSPEC	9809	TOXIC EFFECT ALCOHOL NOS
30391	ALCOH DEP NEC/NOS-CONTIN		

ICD-9-CM Anemia diagnosis codes:

2800	CHR BLOOD LOSS ANEMIA	2851	AC POSTHEMORRHAG ANEMIA
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