

Death Rate among Surgical Inpatients with Serious Treatable Complications

Technical Specifications

Patient Safety Indicators 04 (PSI 04)

AHRQ Quality Indicators™, Version 5.0

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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 codes:

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

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 codes:

4820	K. PNEUMONIAE PNEUMONIA	48249	STAPH PNEUMONIA NEC
4821	PSEUDOMONAL PNEUMONIA	4828	BACTERIAL PNEUMONIA NEC
4822	H.INFLUENZAE PNEUMONIA	48281	PNEUMONIA ANAEROBES
4823	STREPTOCOCCAL PNEUMONIA	48282	PNEUMONIA E COLI
48230	STREPTOCOCCAL PNEUMN NOS	48283	PNEUMO OTH GRM-NEG BACT
48231	PNEUMONIA STRPTOCOCCUS A	48284	LEGIONNAIRES DISEASE
48232	PNEUMONIA STRPTOCOCCUS B	48289	PNEUMONIA OTH SPCF BACT
48239	PNEUMONIA OTH STREP	4829	BACTERIAL PNEUMONIA NOS
4824	STAPHYLOCOCCAL PNEUMONIA	485	BRONCHOPNEUMONIA, ORGANISM UNSPECIFIED
48240	STAPHYLOCOCCAL PNEU NOS	486	PNEUMONIA, ORGANISM UNSPECIFIED
48241	METH SUS PNEUM D/T STAPH	5070	DUE TO INHALATION OF FOOD OR VOMITUS
48242	METH RES PNEU D/T STAPH	514	PULMONARY CONGESTION AND HYPOSTASIS

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 codes:

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

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

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	488	FLU D/T AVIAN FLU VIRUS (end 2009)
4808	VIRAL PNEUMONIA NEC	4880	FLU D/T IDENTIF AVIAN FLU (end 2010)
4809	VIRAL PNEUMONIA NOS	48801	FLU DT IDEN AVIAN W PNEU
481	PNEUMOCOCCAL PNEUMONIA	48802	FLU DT AVIAN W OTH RESP
483	PNEUMONIA ORGANISM NEC (end 1992)	48809	FLU DT AVIAN MANFEST NEC
4830	PNEU MYCPLSM PNEUMONIAE	4881	FLU DT NOVEL H1N1 FLU (end 2010)
4831	PNEUMONIA D/T CHLAMYDIA	48811	FLU DT 2009 H1N1 W PNEU
4838	PNEUMON OTH SPEC ORGNISM	48812	FLU-2009 H1N1 W OTH RESP
4841	PNEUM W CYTOMEG INCL DIS	48819	FLU-2009 H1N1 W OTH MAN
4843	PNEUMONIA IN WHOOP COUGH	48881	FLU DT NVL A VRS W PNEU
4845	PNEUMONIA IN ANTHRAX	48882	FLU DT NVL A W OTH RESP
4846	PNEUMONIA IN ASPERGILLOSIS	48889	FLU DT NOVEL A W OTH MAN
4847	PNEUMONIA IN OTH SYS MYCOSES		
4848	PNEUMONIA IN INFECT DIS NEC		

ICD-9-CM Lung cancer procedure codes:

3230	THORACOSCOPIC SURGERY	3249	LOBECTOMY OF LUNG NEC
3239	OTH SEG LUNG RESECT NOS	3250	THORACOSCOPIC SURGERY
3241	THORACOSCOPIC SURGERY	3259	OTHER PNEUMONECTOMY NOS

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 codes:

0380	STREP SEPTICEMIA	03842	ESCHERICHIA COLI
0381	STAPH SEPTICEMIA	03843	PSEUDOMONAS
03810	STAPH SEPTICEMIA, UNSPEC	03844	SERRATIA
03811	METH SUSC STAPH AUR SEPT	03849	SEPTICEM DT OTHER GRAM-NEG ORG
03812	MRSA SEPTICEMIA	0388	OTHER SPECIFIED SEPTICEMIAS
03819	OTHER STAPH SEPTICEMIA	0389	UNSPECIFIED SEPTICEMIA
0382	PNEUMOCL SEPTICEMIA	78552	SEPTIC SHOCK
0383	SEPTICEMIA DUE TO ANAEROBES	99591	SIRS DT INFECT WO ORGAN DYSFUN
03840	GRAM-NEGATIVE ORG, UNSPEC	99592	SIRS DT INFECT W ORGAN DYSFUN
03841	HEMOPHILUS INFLUENZAE	99802	POSTOPERATIVE SHOCK, SEPTIC

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

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- Appendix I – Immunocompromised State Diagnosis and Procedure Codes

ICD-9-CM pressure ulcer codes (for discharges prior to 2008)

7070	DECUBITUS ULCER	70704	PRESSURE ULCER, HIP
70700	PRESSURE ULCER, SITE NOS	70705	PRESSURE ULCER, BUTTOCK
70701	PRESSURE ULCER, ELBOW	70706	PRESSURE ULCER, ANKLE
70702	PRESSURE ULCER, UPR BACK	70707	PRESSURE ULCER, HEEL
70703	PRESSURE ULCER, LOW BACK	70709	PRESSURE ULCER, SITE NEC

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
63450	SPONTANEOUS ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63451	SPONTANEOUS ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63452	SPONTANEOUS ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63550	LEGALLY INDUCED ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63551	LEGALLY INDUCED ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63552	LEGALLY INDUCED ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63650	ILLEGAL ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63651	ILLEGAL ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63652	ILLEGAL ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63750	LEGALLY UNSPECIFIED TYPE OF ABORTION UNSPECIFIED COMPLICATED BY SHOCK
63751	LEGALLY UNSPECIFIED ABORTION INCOMPLETE COMPLICATED BY SHOCK
63752	LEGALLY UNSPECIFIED ABORTION COMPLETE COMPLICATED BY SHOCK
6385	FAILED ATTEMPTED ABORTION COMPLICATED BY SHOCK
6395	COMPLICATIONS FOLLOWING ABORTION AND ECTOPIC AND MOLAR PREGNANCIES, SHOCK
66910	OBSTETRIC SHOCK-UNSPEC
66911	OBSTETRIC SHOCK-DELIVER
66912	OBSTET SHOCK-DELIV W P/P
66913	OBSTETRIC SHOCK-ANTEPAR
66914	OBSTETRIC SHOCK-POSTPART
7855	SHOCK NOS
78550	SHOCK, UNSPECIFIED
78551	CARDIOGENIC SHOCK
78559	SHOCK WITHOUT MENTION OF TRAUMA, OTHER
7991	RESPIRATORY ARREST
9950	OTHER ANAPHYLACTIC SHOCK
9954	SHOCK DUE TO ANESTHESIA
9980	POSTOPERATIVE SHOCK
99800	POSTOPERATIVE SHOCK, UNSPECIFIED
99801	POSTOPERATIVE SHOCK, CARDIOGENIC
99809	POSTOPERATIVE SHOCK, OTHER
9994	ANAPHYLACTIC SHOCK DUE TO SERUM
99941	ANAPHYLACTIC REACTION DUE TO ADMINISTRATION OF BLOOD AND BLOOD PARTICLES
99942	ANAPHYLACTIC REACTION DUE TO VACCINATION
99949	ANAPHYLACTIC REACTION DUE TO OTHER SERUM

ICD-9-CM Shock or cardiac arrest (resuscitation) 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 resection
- 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	ESOPH VARICES W BLEED	53361	PEPTIC ULC, SITE UNSPEC, CHR OR UNSPEC W HEM AND PERF W OBST
45620	ESOPH VARICES IN DISEASES CLASSIFIED ELSEWHERE W BLEED	53400	GASTROJEJ ULC, AC W HEM WO MENTION OF OBST
5307	GASTROESOPH LACERATION- HEM SYNDROME	53401	GASTROJEJ ULC, AC W HEM W OBST
53021	ULC OF ESOPH W BLEED	53420	GASTROJEJ ULC, AC W HEM AND PERF WO MENTION OF OBST
53082	ESOPH HEM	53421	GASTROJEJ ULC, AC W HEM AND PERF W OBST
53100	GAST ULC AC W HEM WO MENTION OF OBST	53440	GASTROJEJ ULC, CHR OR UNSPEC W HEM WO MENTION OF OBST
53101	GAST ULC AC W HEM W OBST	53441	GASTROJEJ ULC, CHR OR UNSPEC W HEM W OBST
53120	GAST ULC AC W HEM AND PERF WO MENTION OF OBST	53460	GASTROJEJ ULC, CHR OR UNSPEC W HEM AND PERF WO MENTION OF OBST
53121	GAST ULC, AC W HEM AND PERF W OBST	53461	GASTROJEJ ULC, CHR OR UNSPEC W HEM AND PERF W OBST
53140	GAST ULC CHR OR UNSPEC W HEM - WO MENTION OF OBST	53501	GAST AND DUOD, AC GASTRITIS W HEM
53141	GAST ULC CHR OR UNSPEC W HEM W OBST	53511	GAST AND DUOD, ATROPHIC GASTRITIS W HEM
53160	GAST ULC CHR OR UNSPEC W HEM AND PERF WO MENTION OF OBST	53521	GAST AND DUOD, GAST MUCOSAL HYPERTROPHY, W HEM
53161	GAST ULC CHR OR UNSPEC W HEM AND PERF W OBST	53531	GAST AND DUOD, ALCOHOLIC GASTRITIS, W HEM
53200	DUODENAL ULC AC W HEM WO MENTION OF OBST	53541	GAST AND DUOD, OTHER SPECIFIED GASTRITIS W HEM
53201	DUODENAL ULC AC W HEM W OBST	53551	GAST AND DUOD, UNSPEC GASTRITIS AND GASTDUODENITIS W HEM

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53220	DUODENAL ULC AC W HEM AND PERF WO MENTION OF OBST	53561	GAST AND DUOD, DUODENITIS W HEM
53221	DUODENAL ULC AC W HEM AND PERF W OBST	53783	OTH SPEC DIS STOM AND DUOD, ANGIODYSPLASIA W HEM
53240	DUODENAL ULC CHR OR UNSPEC W HEM WO MENTION OF OBST	53784	DIEULAFOY LESION (HEMORR) OF STOMACH AND DUODENUM
53241	DUODENAL ULC CHR OR UNSPEC W HEM W OBST	56202	DIVERTICULOSIS OF SMALL INTESTINE -W HEM
53260	DUODENAL ULC CHR OR UNSPEC W HEM AND PERF WO MENTION OF OBST	56203	DIVERTICULITIS OF SMALL INTESTINE - W HEM
53261	DUODENAL ULC CHR OR UNSPEC W HEM AND PERF W OBST	56212	DIVERTICULOSIS OF COLON W HEM
53300	PEPTIC ULC, SITE UNSPEC AC W HEM WO MENTION OF OBST	56213	DIVERTICULITIS OF COLON W HEM
53301	PEPTIC ULC, SITE UNSPEC, AC W HEM W OBST	5693	HEM OF RECTUM AND ANUS
53320	PEPTIC ULC, SITE UNSPEC, AC W HEM AND PERF WO MENTION OF OBST	56985	ANGIODYSPLASIA OF INTESTINE W HEM
53321	PEPTIC ULC, SITE UNSPEC, AC W HEM AND PERF W OBST	56986	DIEULAFOY LESION (HEMORRHAGIC) OF INTESTINE
53340	PEPTIC ULC, SITE UNSPEC CHR OR UNSPEC W HEM WO MENTION OF OBST	5780	GI HEM, HEMATEMESIS
53341	PEPTIC ULC, SITE UNSPEC, CHR OR UNSPEC W HEM W OBST	5781	GI HEM, BLOOD IN STOOL
53360	PEPTIC ULC, SITE UNSPEC, CHR OR UNSPEC W HEM AND PERF -WO MENTION OF OBST	5789	GI HEM, HEM OF GI TRACT, UNSPEC

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 resection procedure codes:

3230	THORACOSCOPIC SURGERY
3239	OTH SEG LUNG RESECT NOS
3241	THORACOSCOPIC SURGERY
3249	LOBECTOMY OF LUNG NEC
3250	THORACOSCOPIC SURGERY
3259	OTHER PNEUMONECTOMY NOS

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	ESOPHAGEAL VARICES WITH BLEEDING	53390	SITE UNSPECIFIED UNSPECIFIED AS ACUTE OR CHRONIC, WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITHOUT MENTION OF OBSTRUCTION
45620	ESOPHAGEAL VARICES IN DISEASES CLASSIFIED ELSEWHERE WITH BLEEDING	53391	SITE UNSPECIFIED UNSPECIFIED AS ACUTE OR CHRONIC, WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITH OBSTRUCTION
5307	GASTROESOPHAGEAL LACERATION-HEMORRHAGE SYNDROME	53400	ACUTE WITH HEMORRHAGE -WITHOUT MENTION OF OBSTRUCTION
53082	ESOPHAGEAL HEMORRHAGE	53401	ACUTE WITH HEMORRHAGE - WITH OBSTRUCTION
53100	ACUTE WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION	53410	ACUTE WITH PERFORATION - WITHOUT MENTION OF OBSTRUCTION
53101	ACUTE WITH HEMORRHAGE - WITH OBSTRUCTION	53411	ACUTE WITH PERFORATION - WITH OBSTRUCTION
53110	ACUTE WITH PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53420	ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION
53111	ACUTE WITH PERFORATION - WITH OBSTRUCTION	53421	ACUTE WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION
53120	ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53430	ACUTE WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITHOUT MENTION OF OBSTRUCTION
53121	ACUTE WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION	53431	ACUTE WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITH OBSTRUCTION
53130	ACUTE WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53490	UNSPECIFIED AS ACUTE OR CHRONIC, WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITHOUT MENTION OF OBSTRUCTION
53131	ACUTE WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITH OBSTRUCTION	53491	UNSPECIFIED AS ACUTE OR CHRONIC, WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITH OBSTRUCTION
53190	UNSPECIFIED AS ACUTE OR CHRONIC, WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53501	ACUTE GASTRITIS - WITH HEMORRHAGE

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53191	UNSPECIFIED AS ACUTE OR CHRONIC, WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITH OBSTRUCTION	53511	ATROPHIC GASTRITIS - WITH HEMORRHAGE
53200	ACUTE WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION	53521	GASTRIC MUCOSAL HYPERTROPHY - WITH HEMORRHAGE
53201	ACUTE WITH HEMORRHAGE - WITH OBSTRUCTION	53531	ALCOHOLIC GASTRITIS - WITH HEMORRHAGE
53210	ACUTE WITH PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53541	OTHER SPECIFIED GASTRITIS - WITH HEMORRHAGE
53211	ACUTE WITH PERFORATION - WITH OBSTRUCTION	53551	UNSPECIFIED GASTRITIS AND GASTRODUODENITIS - WITH HEMORRHAGE
53220	ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53561	DUODENITIS - WITH HEMORRHAGE
53221	ACUTE WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION	53783	ANGIODYSPLASIA OF STOMACH AND DUODENUM WITH HEMORRHAGE
53230	ACUTE WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53784	DIEULAFOY LESION (HEMORRHAGIC) OF STOMACH AND DUODENUM
53231	ACUTE WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITH OBSTRUCTION	56202	DIVERTICULOSIS OF SMALL INTESTINE WITH HEMORRHAGE
53290	UNSPECIFIED AS ACUTE OR CHRONIC, WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITHOUT MENTION OF OBSTRUCTION	56203	DIVERTICULITIS OF SMALL INTESTINE WITH HEMORRHAGE
53291	UNSPECIFIED AS ACUTE OR CHRONIC, WITHOUT MENTION OF HEMORRHAGE OR PERFORATION - WITH OBSTRUCTION	56212	DIVERTICULOSIS OF COLON WITH HEMORRHAGE
53300	SITE UNSPECIFIED ACUTE WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION	56213	DIVERICULITIS OF COLON WITH HEMORRHAGE
53301	SITE UNSPECIFIED ACUTE WITH HEMORRHAGE - WITH OBSTRUCTION	5693	HEMORRHAGE OF RECTUM AND ANUS
53310	SITE UNSPECIFIED ACUTE WITH PERFORATION - WITHOUT MENTION OF OBSTRUCTION	56985	ANGIODYSPLASIA OF INTESTINE WITH HEMORRHAGE
53311	SITE UNSPECIFIED ACUTE WITH - PERFORATION WITH OBSTRUCTION	56986	DIEULAFOY LESION (HEMORRHAGIC) OF INTESTINE
53320	SITE UNSPECIFIED ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	5780	HEMATEMESIS
53321	SITE UNSPECIFIED ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	5781	BLOOD IN STOOL
53330	SITE UNSPECIFIED ACUTE WITHOUT MENTION OF HEMORRHAGE AND PERFFORATION - WITHOUT MENTION OF OBSTRUCTION	5789	HEMORRHAGE OF GASTROINTESTINAL TRACT, UNSPECIFIED
53331	SITE UNSPECIFIED ACUTE WITHOUT MENTION OF HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION		

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	ALCOHOL WITHDRAWAL DELIRIUM
2911	ALCOHOL AMNESTIC SYNDROME
2912	OTHER ALCOHOLIC DEMENTIA
2913	ALCOHOL WITHDRAWAL HALLUCINOSIS
2914	IDIOSYNCRATIC ALCOHOL INTOXICATION
2915	ALCOHOLIC JEALOUSY
29181	OTHER SPECIFIED ALCOHOLIC PSYCHOSES, ALCOHOL WITHDRAWAL
29182	ALCOH INDUCE SLEEP DISOR
29189	OTHER SPECIFIED ALCOHOLIC PSYCHOSES, OTHER
2919	UNSPECIFIED ALCOHOLIC PSYCHOSIS
30300	ACUTE ALCOHOL INTOXICATION
30301	ACUTE ALCOHOLIC INTOXICATION
30302	ACUTE ALCOHOLIC INTOXICATION
30303	ACUTE ALCOHOLIC INTOXICATION
30390	OTHER AND UNSPECIFIED ALCOHOL DEPENDENCE
30391	OTHER AND UNSPECIFIED ALCOHOL DEPENDENCE
30392	OTHER AND UNSPECIFIED ALCOHOL DEPENDENCE
30393	OTHER AND UNSPECIFIED ALCOHOL DEPENDENCE
30500	NONDEPENDENT ABUSE OF DRUGS, ALCOHOL ABUSE
30501	NONDEPENDENT ABUSE OF DRUGS, ALCOHOL ABUSE
30502	NONDEPENDENT ABUSE OF DRUGS, ALCOHOL ABUSE
30503	NONDEPENDENT ABUSE OF DRUGS, ALCOHOL ABUSE
4255	ALCOHOLIC CARDIOMYOPATHY
5710	ALCOHOLIC FATTY LIVER
5711	ACUTE ALCOHOLIC HEPATITIS
5712	ALCOHOLIC CIRRHOSIS OF LIVER
5713	ALCOHOLIC LIVER DAMAGE, UNSPECIFIED
53530	ALCOHOLIC GASTRITIS, WITHOUT MENTION OF HEMORRHAGE
53531	ALCOHOLIC GASTRITIS, WITH HEMORRHAGE
9800	TOXIC EFFECT OF ALCOHOL, ETHYL ALCOHOL
9809	TOXIC EFFECT OF ALCOHOL, UNSPECIFIED ALCOHOL

ICD-9-CM Anemia diagnosis codes:

2800	CHR BLOOD LOSS ANEMIA	2851	AC POSTHEMORRHAG ANEMIA
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