

Postoperative Physiologic and Metabolic Derangement Rate Technical Specifications

Patient Safety Indicators 10 (PSI 10)

AHRQ Quality Indicators™, Version 5.0

March 2015

Provider-Level Indicator

Type of Score: Rate

Description

Postoperative acute renal failure (secondary diagnosis) with dialysis per 1,000 elective surgical discharges for patients ages 18 years and older. Excludes cases with principal diagnosis for acute renal failure; cases with secondary diagnosis for acute renal failure present on admission; cases with secondary diagnosis of acute renal failure and dialysis before or on the same day as the first operating room procedure; cases with acute renal failure and acute myocardial infarction, cardiac arrhythmia, cardiac arrest, shock, hemorrhage, gastrointestinal hemorrhage or chronic renal failure; and obstetric cases.

[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 events per 1,000 hospital discharges.]

Numerator

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with either:

- any secondary ICD-9-CM diagnosis codes for acute renal failure and any-listed ICD-9-CM procedure codes for dialysis

ICD-9-CM Acute renal failure diagnosis codes:

5845	AC KIDNY FAIL, TUBR NECR	5849	ACUTE KIDNEY FAILURE NOS
5846	AC KIDNY FAIL, CORT NECR	586	RENAL FAILURE NOS
5847	AC KIDNY FAIL, MEDU NECR	9975	SURG COML-URINARY TRACT
5848	ACUTE KIDNEY FAILURE NEC		

ICD-9-CM Dialysis procedure codes:

3995	HEMODIALYSIS	5498	PERITONEAL DIALYSIS
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Denominator

Elective surgical discharges, for patients ages 18 years and older, with any-listed ICD-9-CM procedure codes for an operating room procedure. Elective surgical discharges are defined by specific DRG or MS-DRG codes with admission type recorded as elective (SID ATYPE=3).

See *Patient Safety Indicators Appendices*:

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

Exclude cases:

- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission¹) for acute renal failure (see above)
- with any dialysis procedure (see above) occurs before or on the same day as the first operating room procedure²
- with a principal ICD-9-CM diagnosis code for (or secondary diagnosis present on admission) acute myocardial infarction
- with a principal ICD-9-CM diagnosis code for (or secondary diagnosis present on admission) cardiac arrhythmia
- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission) for cardiac arrest
- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission) for shock
- with any a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission) for hemorrhage
- with any secondary ICD-9-CM diagnosis codes for acute renal failure (see above) and a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission) for gastrointestinal hemorrhage
- with any secondary ICD-9-CM diagnosis codes for acute renal failure (see above) and a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission) for chronic renal failure
- MDC 14 (pregnancy, childbirth and the puerperium)
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), or principal diagnosis (DX1=missing)

ICD-9-CM Acute myocardial infarction diagnosis codes:

41000	AMI ANTEROLATERAL, UNSPEC	41050	AMI LATERAL NEC, UNSPEC
41001	AMI ANTEROLATERAL, INIT	41051	AMI LATERAL NEC, INITIAL
41010	AMI ANTERIOR WALL, UNSPEC	41060	TRY POST INFARCT, UNSPEC
41011	AMI ANTERIOR WALL, INIT	41061	TRY POST INFARCT, INIT
41020	AMI INFEROLATERAL, UNSPEC	41070	SUBENDO INFARCT, UNSPEC
41021	AMI INFEROLATERAL, INIT	41071	SUBENDO INFARCT, INITIAL
41030	AMI INFEROPOST, UNSPEC	41080	AMI NEC, UNSPECIFIED
41031	AMI INFEROPOST, INITIAL	41081	AMI NEC, INITIAL
41040	AMI INFERIOR WALL, UNSPEC	41090	AMI NOS, UNSPECIFIED

¹ Only for cases that otherwise qualify for the numerator

² If day of procedure is not available in the input data file, the rate may be slightly lower than if the information was available

41041 AMI INFERIOR WALL, INIT 41091 AMI NOS, INITIAL

ICD-9-CM Cardiac arrhythmia diagnosis codes:

4260	ATRIOVENT BLOCK COMPLETE	42732	ATRIAL FLUTTER
4270	PAROX ATRIAL TACHYCARDIA	42741	VENTRICULAR FIBRILLATION
4271	PAROX VENTRIC TACHYCARD	42742	VENTRICULAR FLUTTER
4272	PAROX TACHYCARDIA NOS	4279	CARDIAC DYSRHYTHMIA NOS
42731	ATRIAL FIBRILLATION		

ICD-9-CM Cardiac arrest diagnosis code:

4275 CARDIAC ARREST

ICD-9-CM Shock diagnosis codes:

63450	SPON ABORT W SHOCK-UNSP	66913	OBSTETRIC SHOCK-ANTEPAR
63451	SPON ABORT W SHOCK-INC	66914	OBSTETRIC SHOCK-POSTPART
63452	SPON ABORT W SHOCK-COMP	7855	SHOCK W/O MENTION OF TRAUMA (invalid 4-digit code)
63550	LEGAL ABORT W SHOCK-UNSP	78550	SHOCK NOS
63551	LEGAL ABORT W SHOCK-INC	78551	CARDIOGENIC SHOCK
63552	LEGAL ABORT W SHOCK-COMP	78552	SEPTIC SHOCK
63650	ILLEG ABORT W SHOCK-UNSP	78559	SHOCK W/O TRAUMA NEC
63651	ILLEG ABORT W SHOCK-INC	9950	OTHER ANAPHYLACTIC REACT
63652	ILLEG ABORT W SHOCK-COMP	9954	SHOCK DUE TO ANESTHESIA
63750	ABORT NOS W SHOCK-UNSP	99800	POSTOPERATIVE SHOCK, NOS
63751	ABORT NOS W SHOCK-INC	99801	POSTOP SHOCK,CARDIOGENIC
63752	ABORT W SHOCK-COMP	99802	POSTOP SHOCK, SEPTIC
6385	ATTEM ABORTION W SHOCK	99809	POSTOP SHOCK, OTHER
6395	POSTABORTION SHOCK	9994	ANAPHYLACTIC SHOCK, DUE TO SERUM (end 2011)
66910	OBSTETRIC SHOCK-UNPSEC	99941	ANAPHYL D/T ADM BLD/PROD
66911	OBSTETRIC SHOCK-DELIVER	99942	ANAPHYL REACT D/T VACCIN
66912	OBSTET SHOCK-DELIB W P/P	99949	ANAPH REACT D/T OT SERUM

ICD-9-CM Hemorrhage diagnosis codes:

2851	ACUTE POSTHEMORRHAGIC ANEMIA	9582	CERTAIN EARLY COMPLICATIONS OF TRAUMA, SECONDARY AND RECURRENT HEMORRHAGE
4590	OTHER DISORDERS OF CIRCULATORY SYSTEM, HEMORRHAGE, UNSPECIFIED	99811	HEMORRHAGE COMPLICATING A PROCEDURE
56881	HEMOPERITONEUM		

ICD-9-CM Gastrointestinal hemorrhage diagnosis codes:

4560	ESOPHAGEAL VARICES WITH BLEEDING	53361	PEPTIC ULCER, SITE UNSPECIFIED, CHRONIC OR UNSPECIFIED WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION
45620	ESOPHAGEAL VARICES IN DISEASES CLASSIFIED ELSEWHERE WITH BLEEDING	53400	GASTROJEJUNAL ULCER, ACUTE WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION
5307	GASTROESOPHAGEAL LACERATION- HEMORRHAGE SYNDROME	53401	GASTROJEJUNAL ULCER, ACUTE WITH HEMORRHAGE - WITH OBSTRUCTION
53021	ULCER OF ESOPHAGUS WITH BLEEDING	53420	GASTROJEJUNAL ULCER, ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION
53082	ESOPHAGEAL HEMORRHAGE	53421	GASTROJEJUNAL ULCER, ACUTE WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION
53100	GASTRIC ULCER ACUTE WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION	53440	GASTROJEJUNAL ULCER, CHRONIC OR UNSPECIFIED WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION
53101	GASTRIC ULCER ACUTE WITH HEMORRHAGE - WITH OBSTRUCTION	53441	GASTROJEJUNAL ULCER, CHRONIC OR UNSPECIFIED WITH HEMORRHAGE -

53120	GASTRIC ULCER ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53460	WITH OBSTRUCTION GASTROJEJUNAL ULCER, CHRONIC OR UNSPECIFIED WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION
53121	GASTRIC ULCER, ACUTE WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION	53461	GASTROJEJUNAL ULCER, CHRONIC OR UNSPECIFIED WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION
53140	GASTRIC ULCER CHRONIC OR UNSPECIFIED WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION	53501	GASTRITIS AND DUODENITIS, ACUTE GASTRITIS WITH HEMORRHAGE
53141	GASTRIC ULCER CHRONIC OR UNSPECIFIED WITH HEMORRHAGE - WITH OBSTRUCTION	53511	GASTRITIS AND DUODENITIS, ATROPHIC GASTRITIS WITH HEMORRHAGE
53160	GASTRIC ULCER CHRONIC OR UNSPECIFIED WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53521	GASTRITIS AND DUODENITIS, GASTRIC MUCOSAL HYPERTROPHY, WITH HEMORRHAGE
53161	GASTRIC ULCER CHRONIC OR UNSPECIFIED WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION	53531	GASTRITIS AND DUODENITIS, ALCOHOLIC GASTRITIS, WITH HEMORRHAGE
53200	DUODENAL ULCER ACUTE WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION	53541	GASTRITIS AND DUODENITIS, OTHER SPECIFIED GASTRITIS - WITH HEMORRHAGE
53201	DUODENAL ULCER ACUTE WITH HEMORRHAGE - WITH OBSTRUCTION	53551	GASTRITIS AND DUODENITIS, UNSPECIFIED GASTRITIS AND GASTRODUODENITIS - WITH HEMORRHAGE
53220	DUODENAL ULCER ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	53561	GASTRITIS AND DUODENITIS, DUODENITIS - WITH HEMORRHAGE
53221	DUODENAL ULCER ACUTE WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION	53783	OTHER SPECIFIED DISORDERS OF STOMACH AND DUODENUM, ANGIODYSPLASIA OF STOMACH AND DUODENUM - WITH HEMORRHAGE
53240	DUODENAL ULCER CHRONIC OR UNSPECIFIED WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION	53784	DIEULAFOY LESION (HEMORRHAGIC) OF STOMACH AND DUODENUM
53241	DUODENAL ULCER CHRONIC OR UNSPECIFIED WITH HEMORRHAGE - WITH OBSTRUCTION	56202	DIVERTICULOSIS OF SMALL INTESTINE -WITH HEMORRHAGE
53260	DUODENAL ULCER CHRONIC OR UNSPECIFIED WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	56203	DIVERTICULITIS OF SMALL INTESTINE - WITH HEMORRHAGE
53261	DUODENAL ULCER CHRONIC OR UNSPECIFIED WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION	56212	DIVERTICULOSIS OF COLON - WITH HEMORRHAGE
53300	PEPTIC ULCER, SITE UNSPECIFIED ACUTE WITH HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION	56213	DIVERTICULITIS OF COLON - WITH HEMORRHAGE
53301	PEPTIC ULCER, SITE UNSPECIFIED, ACUTE WITH HEMORRHAGE - WITH OBSTRUCTION	5693	HEMORRHAGE OF RECTUM AND ANUS
53320	PEPTIC ULCER, SITE UNSPECIFIED, ACUTE WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	56985	ANGIODYSPLASIA OF INTESTINE - WITH HEMORRHAGE
53321	PEPTIC ULCER, SITE UNSPECIFIED, ACUTE WITH HEMORRHAGE AND PERFORATION - WITH OBSTRUCTION	56986	DIEULAFOY LESION (HEMORRHAGIC) OF INTESTINE
53340	PEPTIC ULCER, SITE UNSPECIFIED CHRONIC OR UNSPECIFIED WITH	5780	GASTROINTESTINAL HEMORRHAGE, HEMATEMESIS

	HEMORRHAGE - WITHOUT MENTION OF OBSTRUCTION		
53341	PEPTIC ULCER, SITE UNSPECIFIED, CHRONIC OR UNSPECIFIED WITH HEMORRHAGE - WITH OBSTRUCTION	5781	GASTROINTESTINAL HEMORRHAGE, BLOOD IN STOOL
53360	PEPTIC ULCER, SITE UNSPECIFIED, CHRONIC OR UNSPECIFIED WITH HEMORRHAGE AND PERFORATION - WITHOUT MENTION OF OBSTRUCTION	5789	GASTROINTESTINAL HEMORRHAGE, HEMORRHAGE OF GASTROINTESTINAL TRACT, UNSPECIFIED

ICD-9-CM Chronic renal failure diagnosis codes:

40301	MAL HYP KIDNEY W CHR KID	40413	BEN HYP HT/KID W HF/KID
40311	BEN HYP KIDNEY W CHR KID	40492	HYP HT/KID NOS W CHR KID
40391	HYP KIDNEY NOS W CHR KID	40493	HYP HRT/KID NOS W HF/KID
40402	MAL HY HRT/KID W CHR KID	5855	CHRON KIDNEY DIS STAGE V
40403	MAL HYP HRT/KID W HF/KID	5856	END STAGE RENAL DISEASE
40412	BEN HYP HT/KID W CHR KID		