

Postoperative Physiologic and Metabolic Derangement Rate Technical Specifications

Patient Safety Indicators 10 (PSI 10)

AHRQ Quality Indicators™, Version 4.5a, July 2014

Provider-Level Indicator

Type of Score: Rate

Description

Postoperative physiologic and metabolic derangements (secondary diagnosis) or acute renal failures (secondary diagnosis) with dialysis per 1,000 elective surgical discharges for patients ages 18 years and older. Excludes cases with principal diagnosis for physiologic and metabolic derangement or acute renal failure; cases with secondary diagnosis for physiologic and metabolic derangement or 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 derangement and diabetes; 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 physiologic and metabolic derangements;
or
- any secondary ICD-9-CM diagnosis codes for acute renal failure and any-listed ICD-9-CM procedure codes for dialysis

ICD-9-CM Physiologic and metabolic derangements diagnosis codes:

24910	SEC DM KETO NT ST UNCNTR	25013	DMI KETOACD UNCONTROLD
24911	SEC DM KETOACD UNCNRD	25020	DMII HPRSM NT ST UNCNTRL
24920	SEC DM HPROS NT ST UNCNTR	25021	DMI HPRSM NT ST UNCNTRD
24921	SEC DM HPROSMLR UNCNTRD	25022	DMII HPROSMLR UNCONTROLD
24930	SEC DM OT CMA NT ST UNCN	25023	DMI HPROSMLR UNCONTROLD
24931	SEC DM OTH COMA UNCNTRD	25030	DMII O CM NT ST UNCNTRD
25010	DMII KETO NT ST UNCNTRD	25031	DMI I CM NT ST UNCNTRD
25011	DMI KETO NT ST UNCNTRD	25032	DMII OTH COMA INCONTROLD
25012	DMII KETOACD UNCONTROLD	25033	DMI OTH COMA UNCONTROLD

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 admission) for physiologic and metabolic derangements (see above)
- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission[†]) for acute renal failure (see above)
- with any secondary ICD-9-CM diagnosis codes for acute renal failure (see above) and a dialysis procedure (see above) occurs before or on the same day as the first operating room procedure[‡]
- with any secondary ICD-9-CM diagnosis codes for physiologic and metabolic derangements (see above) and a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission) for diabetes
- 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 acute myocardial infarction
- 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 cardiac arrhythmia
- 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 cardiac arrest
- 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 shock

[†] Only for cases that otherwise qualify for the numerator

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

- 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 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 Diabetes diagnosis codes:

24900	SEC D, WP CMP NT ST UNCN	25022	DMII HPROSMLR UNCONTROLD
24901	SEC DM WO COMP UNCONTRLD	25023	DMI HPROSMLR UNCONTROLD
24910	SEC DM KETO NT ST UNCNTR	25030	DMII O CM NT ST UNCNTRLD
24911	SEC DM KETOACD UNCONTRLD	25031	DMI O CM NT ST UNCNTRLD
24920	SEC DM HPROS NT ST UNCNR	25032	DMII OTH COMA UNCONTROLD
24921	SEC DM HPROSMLR UNCNTRLD	25033	DMI OTH COMA UNCONTROLD
24930	SEC DM OT CMA NT ST UNCN	25040	DMII RENL NT ST UNCNTRLD
24931	SEC DM OTH COMA UNCNTRLD	25041	DMI RENL NT ST UNCNTRLD
24940	SEC DM RENT NT ST UNCNTR	25042	DMII RENAL UNCNTRLD
24941	SEC DM RENAL UNCONTRLD	25043	DMI RENAL UNCNTRLD
24950	SEC DM OPHTH NT ST UNCN	25050	DMII OPHTH NT ST UNCNTRL
24951	SEC DM OPHTH UNCONTRLD	25051	DMI OPHTH NT ST UNCNTRLD
24960	SEC DM NEURO NT ST UNCN	25052	DMII OPHTH UNCNTRLD
24961	SEC DM NEURO UNCONTRLD	25053	DMI OPHTH UNCNTRLD
24970	SEC DM CIRC NT ST UNCNTR	25060	DMII NEURO NT ST UNCNTRL
24971	SEC DM CIRC UNCONTRLD	25061	DMI NEURO NT ST UNCNTRLD
24980	SEC DM OTH NT ST UNCONTR	25062	DMII NEURO UNCNTRLD
24981	SEC DM OTHER UNCONTRLD	25063	DMI NEURO UNCNTRLD
24990	SEC DM UNSP NT ST UNCON	25070	DMII CIRC NT ST UNCNTRLD
24991	SEC DM UNSP UNCONTROLD	25071	DMI CIRC NT ST UNCNTRLD
25000	DMII WO CMP NT ST UNCNTR	25072	DMII CIRC UNCNTRLD
25001	DMI WO CMP NT ST UNCNTRL	25073	DMI CIRC UNCNTRLD
25002	DMII WO CMP UNCNTRLD	25080	DMII OTH NT ST UNCNTRLD
25003	DMI WO CMP UNCNTRLD	25081	DMI OTH NT ST UNCNTRLD
25010	DMII KETO NT ST UNCNTRLD	25082	DMII OTH UNCNTRLD
25011	DMI KETO NT ST UNCNTRLD	25083	DMI OTH UNCNTRLD
25012	DMII KETOACD UNCONTROLD	25090	DMII UNSPF NT ST UNCNTRL
25013	DMI KETOACD UNCONTROLD	25091	DMI UNSPF NT ST UNCNTRLD
25020	DMII HPRSM NT ST UNCNTRL	25092	DMII UNSPF UNCNTRLD
25021	DMI HPRSM NT ST UNCNTRLD	25093	DMI UNSPF UNCNTRLD

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, UNSPECT
41011	AMI ANTERIOR WALL, INIT	41061	TRY POST INFARC, INIT
41020	AMI INFEROLATERAL, UNSPEC	41070	SUBENDO INFARCT, UNSPEC
41021	AMI INFEROLATERAL, INIT	41071	SUBENDO INFARC, 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
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
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ICD-9-CM Shock diagnosis codes¹:

63450	SPON ABORT W SHOCK-UNSP	66914	OBSTETRIC SHOCK-POSTPART
63451	SPON ABORT W SHOCK-INC	<i>7855</i>	<i>SHOCK W/O MENTION OF TRAUMA (invalid 4-digit code)</i>
63452	SPON ABORT W SHOCK-COMP		
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	<i>9994</i>	<i>ANAPHYLACTIC SHOCK, DUE TO SERUM (end 2011)</i>
66910	OBSTETRIC SHOCK-UNPSEC		
66911	OBSTETRIC SHOCK-DELIVER	99941	ANAPHYL D/T ADM BLD/PROD
66912	OBSTET SHOCK-DELIB W P/P	99942	ANAPHYL REACT D/T VACCIN
66913	OBSTETRIC SHOCK-ANTEPAR	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 Hemorrhage diagnosis codes:

2851	AC POSTHEMMORHAG ANEMIA	9582	SECONDARY/RECUR HEMORR
4590	FARMERS' LUNG	99811	HEMORRHAGE COMPLIC PROC
56881	HEMOPERITONEUM		

ICD-9-CM Gastrointestinal hemorrhage diagnosis codes:

4560	ESOPHAG VARICES W BLEED	53320	AC PEPTIC ULC W HEM/PERF
45620	BLEED ESOPH VAR OTH DIS	53321	AC PEPT ULC HEM/PERF OBS
5307	MALLORY-WEISS SYNDROME	53340	CHR PEPTIC ULCER W HEM
53082	ESOPHAGEAL HEMORRHAGE	53341	CHR PEPTIC ULC W HEM-OBS
53100	AC STOMACH ULCER W HEM	53360	CHR PEPT ULC W HEM/PERF
53101	AC STOMAC ULC W HEM-OBST	53361	CHR PEPT ULC HEM/PERF-OB
53120	AC STOMAC ULC W HEM/PERF	53400	AC MARGINAL ULCER W HEM
53121	AC STOM ULC HEM/PERF-OBS	53401	AC MARGIN ULC W HEM-OBST
53140	CHR STOMACH ULC W HEM	53420	AC MARGIN ULC W HEM/PERF
53141	CHR STOM ULC W HEM-OBSTR	53421	AC MARG ULC HEM/PERF-OBS
53160	CHR STOMACH ULC HEM/PERF	53440	CHR MARGINAL ULCER W HEM
53161	CHR STOM ULC HEM/PERF-OB	53441	CHR MARGIN ULC W HEM-OBS
53200	AC DUODENAL ULCER W HEM	53460	CHR MARGIN ULC HEM/PERF
53201	AC DUODEN ULC W HEM-OBST	53461	CHR MARG ULC HEM/PERF-OB
53220	AC DUODEN ULC W HEM/PERF	53501	ACUTE GASTRITIS W HRHRG
53221	AC DUOD ULC HEM/PERF-OBS	53511	ATRPH GASTRITIS W HMRHG
53240	CHR DIODEN ULCER W HEM	53521	GSTR MCSL HYPRT W HMRH
53241	CHR DIODEN ULC HEM-OBSTR	53531	ALCHL GSTRITIS W HMRHG
53260	CHR DUODEN ULC W PERF	53541	OTH SPG GASTRT W HMRHG
53261	CHR DUOD ULC HEM/PERF-OBS	53551	GSTR/DDNTS NOS W HMRHG
53300	AC PEPTIC ULCER W HEMORR	53561	DUODENITIS W HMRHG
53301	AC PEPTIC ULC W HEM-OBST	53783	ANGIO STM/DUDN W HMRHG

**AHRQ QI™ Version 4.5a, Patient Safety Indicators 10, Technical Specifications,
Postoperative Physiologic and Metabolic Derangement Rate
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53784	DIEULAFOY LES,STOM&DUOD	56985	ANGIO INTES W HMRHG
56202	DVRTCLO SML INT W HMRHG	56986	DIEULAFOY LES, INTESTINE
56203	DVRTCLI SML INT W HMRHG	5780	HEMATEMESIS
56212	DVRTCLO COLON W HMRHG	5781	BLOOD IN STOOL
56213	DVRTCLI COLON W HMRHG	5789	GASTROINTEST HEMORR NOS
5693	TECTAL & ANAL SENOSIS		

ICD-9-CM Chronic renal failure diagnosis codes¹:

40300	MAL HYP KID W CR KID I-IV	40411	BEN HYP HT/KD I-IV W HF
40301	MAL HYP KID W CR KID V	40412	BEN HY HT/KD ST V W/O HF
40310	BEN HY KID W CR KID I-IV	40413	BEN HY HT/KD STG V W HF
40311	BEN HYP KID W CR KID V	40490	HY HT/KD NOS I-IV W/O HF
40390	HY KID NOS W CR KID I-IV	40491	HYP HT/KD NOS I-IV W HF
40391	HYP KID NOS W CR KID V	40492	HY HT/KD NOS ST V W/O HF
40400	MAL HY HT/KD I-IV W/OHF	40493	HYP HT/KD NOS ST V W HF
40401	MAL HYP HT/KD I-IV W HF	<i>585</i>	<i>CHRONIC RENAL FAILURE (end 2005)</i>
40402	MAL HY HT/KD ST V W/O HF	5855	CHRON KIDNEY DIS STAGE V
40403	MAL HYP HT/KD STG V W HF	5856	END STAGE RENAL DISEASE
40410	BEN HY HT/KD I-IV W/O HF		

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