

# Perioperative Hemorrhage or Hematoma Rate Technical Specifications

**Patient Safety Indicators 27 (PSI 27)**  
**AHRQ Quality Indicators™, Version 4.5a, July 2014**  
**Area-Level Indicator**  
**Type of Score: Rate**

## Description

Perioperative hemorrhage or hematoma cases with control of perioperative hemorrhage, drainage of hematoma, or a miscellaneous hemorrhage- or hematoma-related procedure following surgery per 100,000 population ages 18 years and older. Excludes cases with a diagnosis of coagulation disorder and obstetric cases.

*[NOTE: The software provides the rate per population. However, common practice reports the measure as per 100,000 population. The user must multiply the rate obtained from the software by 100,000 to report events per 100,000 population.]*

## Numerator

Discharges, for patients ages 18 years and older, with either:

- any secondary ICD-9-CM diagnosis codes for perioperative hemorrhage and any-listed ICD-9-CM procedure codes for control of perioperative hemorrhage; or
- any secondary ICD-9-CM diagnosis codes for perioperative hemorrhage and any-listed ICD-9-CM procedure codes for drainage of hematoma; or
- any secondary ICD-9-CM diagnosis codes for perioperative hemorrhage and any-listed ICD-9-CM procedure codes for miscellaneous hemorrhage- or hematoma-related procedure; or
- any secondary ICD-9-CM diagnosis codes for perioperative hematoma and any-listed ICD-9-CM procedure codes for control of perioperative hemorrhage; or
- any secondary ICD-9-CM diagnosis codes for perioperative hematoma and any-listed ICD-9-CM procedure codes for drainage of hematoma; or
- any secondary ICD-9-CM diagnosis codes for perioperative hematoma and any-listed ICD-9-CM procedure codes for miscellaneous hemorrhage or hematoma-related procedure

**ICD-9-CM Perioperative hemorrhage diagnosis code:**  
99811      HEMORRHAGE COMPLIC PROC

**ICD-9-CM Perioperative hematoma diagnosis code:**

99812 HEMATOMA COMPLIC PROC

**ICD-9-CM Control of perioperative hemorrhage procedure codes:**

287	HEMORR CONTROL POST T & A	3887	OCCLUDE ABD VEIN NEC
3880	SURG VESSEL OCCLUS NEC	3888	OCCLUDE LEG ARTERY NEC
3881	OCCLUS INTRACRAN VES NEC	3889	OCCLUDE LEG VEIN NEC
3882	OCCLUS HEAD/NECK VES NEC	3941	POSTOP VASC OP HEM CONTR
3883	OCCLUDE ARM VESSEL NEC	3998	HEMORRHAGE CONTROL NOS
3884	OCCLUDE AORTA NEC	4995	CONTROL ANAL HEMORRHAGE
3885	OCCLUDE THORACIC VES NEC	5793	CONTROL BLADD HEMORRHAGE
3886	OCCLUDE ABD ARTERY NEC	6094	CONTROL PROSTATE HEMORR

**ICD-9-CM Drainage of hematoma procedure codes:**

1809	EXTERNAL EAR INCIS NEC	7014	VAGINOTOMY NEC
540	ABDOMINAL WALL INCIS	7109	INCIS CULCA/PERINEUM NEC
5412	REOPEN RECENT LAP SITE	7591	EVAC OB INC HEMAT PERIN
5919	PERIVESICAL INCISION NEC	7592	EVAC OB HEMAT VULVA/VAG
610	SCROTUM & TUNICA I & D	8604	OTHER SKIN & SUBQ I & D
6998	UTERINE SUPPORT OP NEC		

**ICD-9-CM Miscellaneous hemorrhage- or hematoma-related procedure codes:**

0121	CRANIAL SINUS I & D	2021	MASTOID INCISION
0124	OTHER CRANIOTOMY	2022	PETRUS PYRAM AIR CEL INC
0131	INCISE CEREBRAL MENINGES	2023	MIDDLE EAR INCISION
0139	OTHER BRAIN INCISION	2079	INC/EXC/DESTR IN EAR NEC
0213	MENINGE VESSEL LIGATION	2100	CONTROL OF EPISTAXIS NOS
0239	VENT SHUNT EXTRACRAN NEC	2101	ANT NASAL PACK FOR EPIST
0241	IRRIGATE/EXPL VENT SHUNT	2102	POST NASAL PAC FOR EPIST
0309	SPINAL CANAL EXPLOR NEC	2103	CAUTERY TO STOP EPISTAX
0401	EXCISION ACOUSTC NEUROMA	2104	ETHMOID ART LIGAT-EPIST
0404	PERIPH NERVE INCIS NEC	2105	MAX ART LIG FOR EPISTAX
0443	CARPAL TUNNEL RELEASE	2106	EXT CAROT ART LIG-EPIST
0444	TARSAL TUNNEL RELEASE	2107	NASAL SEPT GRFT-EPISTAX
0602	REOPEN THYROID FIELD WND	2109	EPISTAXIS CONTROL NEC
0609	INCIS THYROID FIELD NEC	211	INCISION OF NOSE
0692	THYROID VESSEL LIGATION	2121	RHINOSCOPY
0700	ADRENAL EXPLORATION NOS	2219	NASAL SINUS DX PROC NEC
0701	UNILAT ADRENAL EXPLORAT	2239	EXT MAXILLARY ANTROT NEC
0702	BILAT ADRENAL EXPLORAT	2241	FRONTAL SINUSOTOMY
0741	ADRENAL INCISION	2251	ETHMOIDOTOMY
0743	ADRENAL VESSEL LIGATION	2252	SPHENOIDOTOMY
0751	PINEAL FIELD EXPLORATION	260	INCIS SALIVARY GLND/DUCT
0752	PINEAL GLAND INCISION	270	DRAIN FACE & MOUTH FLOOR
0771	PITUITARY FOSSA EXPLORAT	280	PERITONSILLAR I & D
0772	PITUITARY GLAND INCISION	2911	PHARYNGOSCOPY
0791	THYMUS FIELD EXPLORATION	313	INCIS LARYNX TRACHEA NEC
0792	OTHER INCISION OF THYMUS	3141	TRACHEOSCOPY THRU STOMA
0795	THORAC INCISION THYMUS	3142	LARYGNOSCOPY/TRACHEOSCO
0809	OTHER EYELID INCISION	330	INCISION OF BRONCHUS
090	LACRIMAL GLAND INCISION	331	INCISION OF LUNG
0953	LACRIMAL SAC INCISION	3321	BRONCHOSCOPY THRU STOMA
1244	EXCISE CILIARY BODY LES	3322	FIBER-OPTIC BRONCHOSCOPY
1289	SCLERAL OPERATION NEC	3323	OTHER BRONCHOSCOPY
149	OTHER POST SEGMENT OPS	3324	CLOSED BRONCHIAL BIOPSY
1609	ORBITOTOMY NEC	3402	EXPLORATORY THORACOTOMY
1802	EXT AUDITORY CANAL INCIS	3403	REOPEN THORACOTOMY SITE
1809	EXTERNAL EAR INCIS NEC	3409	OTHER PLEURAL INCISION
1811	OTOSCOPY	341	INCISION OF MEDIASTINUM
2001	MYRINGOTOMY W INTUBATION	3421	TRANSPLEURA THORACOSCOPY
2009	MYRINGOTOMY NEC	3422	MEDIASTINOSCOPY

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3582	TOTAL REPAIR OF TAPVC	4516	EGD WITH CLOSED BIOPSY
3639	OTH HEART REVASCULAR	4521	TRANSAB LG BOWEL ENDOSC
3699	HEART VESSEL OP NEC	4522	ENDOSC LG BOWEL THRU ST
370	PERICARDIOCENTESIS	4523	COLONOSCOPY
3711	CARDIOTOMY	4524	FLEXIBLE SIGMOIDOSCOPY
3799	OTHER HEART/PERICARD OPS	4543	ENDOSC DESTRU LG INT LES
3800	INCISION OF VESSEL NOS	4549	DESTRUC LG BOWEL LES NEC
3801	INTRACRAN VESSEL INCIS	480	PROCTOTOMY
3802	HEAD/NECK VES INCIS NEC	4821	TRANSAB PROCTOSIGMOIDOSC
3803	UPPER LIMB VESSEL INCIS	4822	PROCTOSIGMOIDOSC THRU ST
3804	INCISION OF AORTA	4823	RIGID PROCTOSIGMOIDOSCPY
3805	THORACIC VESSEL INC NEC	4921	ANOSCOPY
3806	ABDOMEN ARTERY INCISION	4945	HEMORRHOID LIGATION
3807	ABDOMINAL VEIN INCISION	500	HEPATOTOMY
3808	LOWER LIMB ARTERY INCIS	5110	ENDOSC RETRO CHOLANGIOPA
3809	LOWER LIMB VEIN INCISION	5111	ENDOSC RETRO CHOLANGIO
3850	VARICOSE V LIG-STRIP NOS	5141	CDE FOR CALCULUS REMOV
3851	INTCRAN VAR V LIG-STRIP	5142	CDE FOR OBSTRUCTION NEC
3852	HEAD/NECK VAR V LIG-STR	5149	INCIS OBSTR BILE DUC NEC
3853	ARM VARICOSE V LIG-STRIP	5151	COMMON DUCT EXPLORATION
3855	THORAC VAR V LIG-STRIP	5159	BILE DUCT INCISION NEC
3857	ABD VARICOS V LIGA-STRIP	5184	ENDOSC DILATION AMPULLA
3859	LEG VARICOS V LIGA-STRIP	5188	ENDOSC REMOVE BILE STONE
387	INTERRUPTION VENA CAVA	5196	PERC EXTRAC COM DUC CALC
3930	SUTURE OF VESSEL NOS	5198	OTH PERC PROC BIL TRCT
3931	SUTURE OF ARTERY	5209	PANCREATOTOMY NEC
3932	SUTURE OF VEIN	5213	ENDOSC RETRO PANCREATOG
3952	ANEURYSM REPAIR NEC	5411	EXPLORATORY LAPAROTOMY
3953	ARTERIOVEN FISTULA REP	5419	LAPAROTOMY NEC
3972	ENDOVASC EMBOL HD/NK VES	5421	LAPAROSCOPY
3979	OTH ENDO PROC OTH VESSEL	5495	PERITONEAL INCISION
398	CARTD BODY/SINUS/VASC OP	5501	NEPHROTOMY
400	INCIS LYMPHATIC STRUCTUR	5511	PYELOTOMY
412	SPLENOTOMY	5521	NEPHROSCOPY
4209	ESOPHAGEAL INCISION NEC	5522	PYELOSCOPY
4221	ESOPHAGOSCOPY BY INCIS	562	URETEROTOMY
4222	ESOPHAGOSCOPY THRU STOMA	5631	URETEROSCOPY
4223	ESOPHAGOSCOPY NEC	5719	CYSTOTOMY NEC
4233	ENDOSC DESTRUC ESOPH LES	5731	CYSTOSCOPY THRU STOMA
4239	DESTRUCT ESOPHAG LES NEC	5732	CYSTOSCOPY NEC
4291	LIGATION ESOPH VARIX	580	URETHROTOMY
430	GASTROTOMY	5822	URETHROSCOPY NEC
4341	ENDOSC DESTR STOMACH LES	5909	PERIREN/URETER INCIS NEC
4411	TRANSABDOMIN GASTROSCOPY	600	INCISION OF PROSTATE
4412	GASTROSCOPY THRU STOMA	6081	PERIPROSTATIC INCISION
4413	GASTROSCOPY NEC	620	INCISION OF TESTES
4440	SUTURE PEPTIC ULCER NOS	631	EXC SPERMATIC VARICOCELE
4441	SUT GASTRIC ULCER SITE	636	VASOTOMY
4442	SUTURE DUODEN ULCER SITE	6372	SPERMATIC CORD LIGATION
4443	ENDOSC CONTROL GAST HEM	6392	EPIDIDYMOTOMY
4444	TRANSCATH EMBO GAST HEM	6393	SPERMATIC CORD INCISION
4449	OTHER CONTROL GAST HEM	6492	INCISION OF PENIS
4491	LIGATE GASTRIC VARICES	6501	LAPAROSCOPIC OOPHOROTOMY
4500	INTESTINAL INCISION NOS	6509	OTHER OOPHOROTOMY
4501	DUODENAL INCISION	6601	SALPINGOTOMY
4502	SMALL BOWEL INCISION NEC	680	HYSTEROTOMY
4503	LARGE BOWEL INCISION	6811	DIGITAL EXAM OF UTERUS
4511	TRANSAB SM BOWEL ENDOSC	6812	HYSTEROSCOPY
4512	ENDOSC SM BOWEL THRU ST	6995	INCISION OF CERVIX
4513	SM BOWEL ENDOSCOPY NEC	700	CULDOCENTESIS

7012	CULDOTOMY	8301	TENDON SHEATH EXPLORAT
7021	VAGINOSCOPY	8302	MYOTOMY
7022	CULDOSCOPY	8303	BURSOTOMY
757	MANUAL EXPLOR UTERUS P/P	8309	SOFT TISSUE INCISION NEC
7710	OTHER BONE INCISION NOS	850	MASTOTOMY
8010	OTHER ARTHROTOMY NOS	8603	INCISION PILONIDAL SINUS
8201	EXPLOR TEND SHEATH-HAND	8609	SKIN & SUBQ INCISION NEC
8202	MYOTOMY OF HAND	9621	DILAT FRONTONASAL DUCT
8203	BURSOTOMY OF HAND	9925	INJECT CA CHEMOTHER NEC
8204	I & D PALMAR/THENAR SPAC	9929	INJECT/INFUSE NEC
8209	INC SOFT TISSUE HAND NEC		

Exclude cases:

1. with any-listed ICD-9-CM diagnosis codes for coagulation disorder
2. MDC 14 (pregnancy, childbirth, and puerperium)
3. with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), principal diagnosis (DX1=missing), or county (PSTCO=missing)

**ICD-9-CM Coagulation disorder diagnosis codes:**

2860	CONG FACTOR VIII DISORDER	28652	ACQUIRED HEMOPHILIA
2861	CONG FACTOR IX DISORDER	28659	OT HEM D/T CIRC ANTICOAG
2862	CONG FACTOR XI DISORDER	2866	DEFIBRINATION SYNDROME
2863	CONG DEF CLOT FACTOR NEC	2867	ACQ COAGUL FACTOR DEF
2864	VON WILLEBRAND'S DISEASE	2869	COAGUL DEFECT NEC NOS

## Denominator

Population ages 18 years and older in metropolitan area† or county. Discharges in the numerator are assigned to the denominator based on the metropolitan area or county of the patient residence, not the metropolitan area or county of the hospital where the discharge occurred.

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† The term “metropolitan area” (MA) was adopted by the U.S. Census in 1990 and referred collectively to metropolitan statistical areas (MSAs), consolidated metropolitan statistical areas (CMSAs) and primary metropolitan statistical areas (PMSAs). In addition, “area” could refer to either 1) FIPS county, 2) modified FIPS county, 3) 1999 OMB Metropolitan Statistical Area or 4) 2003 OMB Metropolitan Statistical Area. Micropolitan Statistical Areas are not used in the QI software.