AHRQ

AHRQ QUALITY INDICATORS

Prevention Quality Indicators

Technical Specifications

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About the Prevention Quality Indicators

This module of the Agency for Healthcare Research and Quality (AHRQ) Quality Indicators (QI) was designed to capitalize on the availability of administrative data on inpatient stays to produce information about 14 Prevention Quality Indicators (PQIs): *potentially avoidable hospitalizations for ambulatory care sensitive condition* (ACSC) indicators, which involve admissions that evidence suggest could have been avoided, at least in part, through better access to high-quality outpatient care.

This document provides all ICD-9-CM codes included in or excluded from the numerator and denominator for each indicator in the Prevention Quality Indicators Version 3.1 of the AHRQ PQIs reflects changes in indicators associated with ICD-9-CM coding updates for FY 2007 (effective 10-1-2006). Information about the development of the indicators and their definitions is contained in the companion document *Guide to the Prevention Quality Indicators,* which includes information. See Appendix B: for links to these and other documents as well as Web sites that may be of interest to PQI users.

Software to calculate the PQI rates is available for download from the AHRQ Quality Indicators Web site in two formats:

- A set of SAS® programs and accompanying documentation
- QI Windows Application

The SAS version requires the SAS® statistical program distributed by the SAS Institute, Inc. The company may be contacted directly regarding the licensing of its products: http://www.sas.com

The Windows version calculates rates for all of the AHRQ Quality Indicators modules. Users do not need to purchase any additional software to run this program.

Both versions of the software:

- Assign and calculate PQIs from hospital discharge abstracts or UB (uniform billing) claims data.

- Provide options for stratifying rates by geographic areas.

- Calculate rates using either the hospital location or the county of patient residence.

- Create risk-adjusted rates that adjust for casemix differences.

- Create smoothed rates that reduce fluctuations over time due to random variation.

- Provide the option to generate condition-specific rates (diabetes) by state and age.

The FY2007 release includes enhancements to the functionality of the risk-adjustment module.

- Version 3.1 provides the option to select either risk-adjustment based on age, gender, SES, and disease prevalence or risk-adjustment based on age and gender only.

- Parameter files of risk adjustment covariates have been computed using a logistic regression model with an area random effect instead of the existing simple logistic model. Because the covariates are computed on such a large dataset with thousands of hospitals and millions of patients, the adoption of the hierarchical model will be relatively transparent to current users of the indicators. In other words, the hierarchical model does not change the values of the coefficients very much.

Population figures through 2007 for use with AHRQ Quality Indicator software were derived from U. S. Census Bureau data using estimates for 2000 through 2005 and modified projections for 2006 and 2007. The 2007 file uses the same inter-censal estimates for the years 1995 through 1999 as the 2006 file, so counts for these years did not change.

Prevention Quality Indicators Detailed Indicator Definitions

Definitions use ICD-9-CM codes valid from October 1, 1994 to September 30, 2007. For ICD-9-CM codes introduced after October 1995, the date of introduction is indicated after the code label. For example, "OCT96-" indicates the ICD-9-CM code was introduced in October 1996.

Diabetes Short-term Complications Admission Rate (PQI 1)

Numerator:

All non-maternal/non-neonatal discharges of age 18 years and older with ICD-9-CM principal diagnosis code for short-term complications (ketoacidosis, hyperosmolarity, coma) (see below).

Include ICD-9-CM diagnosis codes:

25010	DM KETO T2, DM CONT	25022	DM W/ HYPROSM T2, DM UNCNT
25011	DM KETO T1, DM CONT	25023	DM W/ HYPROSM T1, DM UNCNT
25012	DM KETO T2, DM UNCONT	25030	DM COMA NEC TYP II, DM CNT
25013	DM KETO T1, DM UNCONT	25031	DM COMA NEC T1, DM CONT
25020	DM W/ HYPROSM T2, DM CONT	25032	DM COMA NEC T2, DM UNCONT
25021	DM W/ HYPROSM T1, DM CONT	25033	DM COMA NEC T1, DM UNCONT

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)

Denominator:

Population in Metro Area or county, age 18 years and older.

Perforated Appendix Admission Rate (PQI 2)

Numerator:

Discharges with ICD-9-CM diagnosis code for perforations or abscesses of appendix (see below) in any field among cases meeting the inclusion rules for the denominator.

Include ICD-9-CM diagnosis codes (outcome of interest):

5400	AC APPEND W PERITONITIS	5401	ABSCESS OF APPENDIX

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)

Perforated Appendix Admission Rate (PQI 2)

Denominator:

All non-maternal discharges of age 18 years and older in Metro Area or county with diagnosis code for appendicitis in any field.

Include ICD-9-CM diagnosis codes (population at risk):

5400	AC APPEND W PERITONITIS	5409	ACUTE APPENDICITIS NOS
5401	ABSCESS OF APPENDIX	541	APPENDICITIS NOS

Diabetes Long-term Complications Admission Rate (PQI 3)

Numerator:

Discharges age 18 years and older with ICD-9-CM principal diagnosis code for long-term complications (renal, eye, neurological, circulatory, or complications not otherwise specified) (see below).

Include ICD-9-CM diagnosis codes:

25040	DM RENAL COMP T2 CONT	25070	DM CIRCU DIS T2 CONT
25041	DM RENAL COMP T1 CONT	25071	DM CIRCU DIS T1 CONT
25042	DM RENAL COMP T2 UNCNT	25072	DM CIRCU DIS T2 UNCNT
25043	DM RENAL COMP T1 UNCNT	25073	DM CIRCU DIS T1 UNCNT
25050	DM EYE COMP T2 CONT	25080	DM W COMP NEC T2 CONT
25051	DM EYE COMP T1 CONT	25081	DM W COMP NEC T1 CONT
25052	DM EYE COMP T2 UNCNT	25082	DM W COMP NEC T2 UNCNT
25053	DM EYE COMP T1 UNCNT	25083	DM W COMP NEC T1 UNCNT
25060	DM NEURO COMP T2 CONT	25090	DM W COMPL NOS T2 CONT
25061	DM NEURO COMP T1 CONT	25091	DM W COMPL NOS T1 CONT
25062	DM NEURO COMP T2 UNCNT	25092	DM W COMPL NOS T2 UNCNT
25063	DM NEURO COMP T1 UNCNT	25093	DM W COMPL NOS T1 UNCNT

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)

Denominator:

Population in Metro Area or county, age 18 years and older.

Chronic Obstructive Pulmonary Disease (COPD) Admission Rate (PQI 5)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM principal diagnosis code for COPD.

Include ICD-9-CM diagnosis codes:

490	BRONCHITIS NOS*	4919	CHRONIC BRONCHITIS NOS
4660	AC BRONCHITIS*	4920	EMPHYSEMATOUS BLEB
4910	SIMPLE CHR BRONCHITIS	4928	EMPHYSEMA NEC
4911	MUCOPURUL CHR BRONCHITIS	494	BRONCHIECTASIS OCT00-
49120	OBS CHR BRNC W/O ACT EXA	4940	BRONCHIECTAS W/O AC EXAC OCT00-
49121	OBS CHR BRNC W ACT EXA	4941	BRONCHIECTASIS W AC EXAC OCT00-
4918	CHRONIC BRONCHITIS NEC	496	CHR AIRWAY OBSTRUCT NEC

*Qualifies only if accompanied by secondary diagnosis of 491.xx, 492.x, 494.x or 496 (i.e., any other code on this list).

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)

Denominator:

Population in Metro Area or county, age 18 years and older.

Hypertension Admission Rate (PQI 7)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM principal diagnosis code for hypertension (see below).

ICD-9-CM hypertension diagnosis codes:

4010	MALIGNANT HYPERTENSION	40310	BEN HYP REN W/O REN FAIL
4019	HYPERTENSION NOS	40390	HYP REN NOS W/O REN FAIL
40200	MAL HYPERTEN HRT DIS NOS	40400	MAL HY HT/REN W/O CHF/RF
40210	BEN HYPERTEN HRT DIS NOS	40410	BEN HY HT/REN W/O CHF/RF
40290	HYPERTENSIVE HRT DIS NOS	40490	HY HT/REN NOS W/O CHF/RF
40300	MAL HYP REN W/O REN FAIL		

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)
- with cardiac procedure codes in any field

    See Appendix A: Cardiac Procedure Codes

    Control-click (Word) or click (PDF) to view an Appendix. Links are provided to return to the PQI Detailed Definition.

Hypertension Admission Rate (PQI 7)

Denominator:

Population in Metro Area or county, age 18 years and older.

Congestive Heart Failure (CHF) Admission Rate (PQI 8)

Numerator:

All non-maternal/non-neonatal discharges of age 18 years and older with ICD-9-CM principal diagnosis code for CHF.

Include ICD-9-CM diagnosis codes:

39891	RHEUMATIC HEART FAILURE	42821	AC SYSTOLIC HRT FAILURE OCT02-
40201	MAL HYPERT HRT DIS W CHF	42822	CHR SYSTOLIC HRT FAILURE OCT02-
40211	BENIGN HYP HRT DIS W CHF	42823	AC ON CHR SYST HRT FAIL OCT02-
40291	HYPERTEN HEART DIS W CHF	42830	DIASTOLC HRT FAILURE NOS OCT02-
40401	MAL HYPER HRT/REN W CHF	42831	AC DIASTOLIC HRT FAILURE OCT02-
40403	MAL HYP HRT/REN W CHF/RF	42832	CHR DIASTOLIC HRT FAIL OCT02-
40411	BEN HYPER HRT/REN W CHF	42833	AC ON CHR DIAST HRT FAIL OCT02-
40413	BEN HYP HRT/REN W CHF/RF	42840	SYST/DIAST HRT FAIL NOS OCT02-
40491	HYPER HRT/REN NOS W CHF	42841	AC SYST/DIASTOL HRT FAIL OCT02-
40493	HYP HT/REN NOS W CHF/RF	42842	CHR SYST/DIASTL HRT FAIL OCT02-
4280	CONGESTIVE HEART FAILURE	42843	AC/CHR SYST/DIA HRT FAIL OCT02-
4281	LEFT HEART FAILURE	4289	HEART FAILURE NOS
42820	SYSTOLIC HRT FAILURE NOS OCT02-		

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)
- with cardiac procedure codes in any field

    See Appendix A: Cardiac Procedure Codes

    Control-click (Word) or click (PDF) to view an Appendix. Links are provided to return to the PQI Detailed Definition.

Denominator:

Population in Metro Area or county, age 18 years and older.

Low Birth Weight Rate (PQI 9)

Numerator:

Number of births with ICD-9-CM diagnosis code for less than 2500 grams in any field among cases meeting the inclusion and exclusion rules for the denominator.

Include ICD-9-CM diagnosis codes:

76400	LIGHT-FOR-DATES WTNOS	76490	FET GROWTH RETARD WTNOS
76401	LIGHT-FOR-DATES <500G	76491	FET GROWTH RETARD <500G
76402	LT-FOR-DATES 500-749G	76492	FET GROWTH RET 500-749G
76403	LT-FOR-DATES 750-999G	76493	FET GROWTH RET 750-999G
76404	LT-FOR-DATES 1000-1249G	76494	FET GRWTH RET 1000-1249G
76405	LT-FOR-DATES 1250-1499G	76495	FET GRWTH RET 1250-1499G
76406	LT-FOR-DATES 1500-1749G	76496	FET GRWTH RET 1500-1749G
76407	LT-FOR-DATES 1750-1999G	76497	FET GRWTH RET 1750-1999G
76408	LT-FOR-DATES 2000-2499G	76498	FET GRWTH RET 2000-2499G
76410	LT-FOR-DATE W/MAL WTNOS	76500	EXTREME IMMATUR WTNOS
76411	LT-FOR-DATE W/MAL <500G	76501	EXTREME IMMATUR <500G
76412	LT-DATE W/MAL 500-749G	76502	EXTREME IMMATUR 500-749G
76413	LT-DATE W/MAL 750-999G	76503	EXTREME IMMATUR 750-999G
76414	LT-DATE W/MAL 1000-1249G	76504	EXTREME IMMAT 1000-1249G
76415	LT-DATE W/MAL 1250-1499G	76505	EXTREME IMMAT 1250-1499G
76416	LT-DATE W/MAL 1500-1749G	76506	EXTREME IMMAT 1500-1749G
76417	LT-DATE W/MAL 1750-1999G	76507	EXTREME IMMAT 1750-1999G
76418	LT-DATE W/MAL 2000-2499G	76508	EXTREME IMMAT 2000-2499G
76420	FETAL MALNUTRITION WTNOS	76510	PRETERM INFANT NEC WTNOS
76421	FETAL MALNUTRITION <500G	76511	PRETERM NEC <500G
76422	FETAL MALNUTR 500-749G	76512	PRETERM NEC 500-749G
76423	FETAL MAL 750-999G	76513	PRETERM NEC 750-999G
76424	FETAL MAL 1000-1249G	76514	PRETERM NEC 1000-1249G
76425	FETAL MAL 1250-1499G	76515	PRETERM NEC 1250-1499G
76426	FETAL MAL 1500-1749G	76516	PRETERM NEC 1500-1749G
76427	FETAL MALNUTR 1750-1999G	76517	PRETERM NEC 1750-1999G
76428	FETAL MALNUTR 2000-2499G	76518	PRETERM NEC 2000-2499G

Exclude cases:

- transferring from another institution (SID ASOURCE=2)

Denominator:

The definition of **newborn** is any neonate with either 1) an ICD-9-CM diagnosis code for an in-hospital live birth or 2) an admission type of newborn (ATYPE=4), age in days at admission equal to zero, and not an ICD-9-CM diagnosis code for an out-of-hospital birth. A **neonate** is defined as any discharge with age in days at admission between zero and 28 days (inclusive). If age in days is missing, then a neonate is defined as any DRG in MDC 15, an admission type of newborn (ATYPE=4), an ICD-9-CM diagnosis code for neonate observation and evaluation, or an ICD-9-CM diagnosis code for an in-hospital live birth.

Newborn in Hospital Live Birth Codes

V3000	SINGLE LB IN-HOSP W/O CS OCT05-	V3401	OTH MULT LB-IN HOSP W CS OCT05-
V3001	SINGLE LB IN-HOSP W CS OCT05-	V3500	OTH MULT SB-HOSP W/O CS OCT05-
V3100	TWIN-MATE LB-HOSP W/O CS OCT05-	V3501	OTH MULT SB-IN HOSP W CS OCT05-
V3101	TWIN-MATE LB-IN HOS W CS OCT05-	V3600	MULT LB/SB-IN HOS W/O CS OCT05-
V3200	TWIN-MATE SB-HOSP W/O CS OCT05-	V3601	MULT LB/SB-IN HOSP W CS OCT05-

Low Birth Weight Rate (PQI 9)			
V3201	TWIN-MATE SB-HOSP W CS OCT05-	V3700	MULT BRTH NOS-HOS W/O CS OCT05-
V3300	TWIN-NOS-IN HOSP W/O CS OCT05-	V3701	MULT BIRTH NOS-HOSP W CS OCT05-
V3301	TWIN-NOS-IN HOSP W CS OCT05-	V3900	LIVEBORN NOS-HOSP W/O CS OCT05-
V3400	OTH MULT LB-HOSP W/O CS OCT05-	V3901	LIVEBORN NOS-HOSP W CS OCT05-

Newborn out of Hospital Birth codes:

V301	SINGL LIVEBRN-BEFORE ADM OCT05-	V342	OTH MULTIPLE NB-NONHOSP OCT06-
V302	SINGLE LIVEBORN-NONHOSP OCT05-	V351	OTH MULT SB-BEFORE ADM OCT05-
V311	TWIN, MATE LB-BEFORE ADM OCT05-	V352	OTH MULTIPLE SB-NONHOSP OCT05-
V312	TWIN, MATE LB-NONHOSP OCT05-	V361	MULT NB/SB-BEFORE ADM OCT05-
V321	TWIN, MATE SB-BEFORE ADM OCT05-	V362	MULTIPLE NB/SB-NONHOSP OCT05-
V322	TWIN, MATE SB-NONHOSP OCT05-	V371	MULT BRTH NOS-BEFORE ADM OCT05-
V331	TWIN NOS-BEFORE ADMISSN OCT05-	V372	MULT BIRTH NOS-NONHOSP OCT05-
V332	TWIN NOS-NONHOSP OCT05-	V391	LIVEBORN NOS-BEFORE ADM OCT05-
V341	OTH MULT NB-BEFORE ADM OCT05-	V392	LIVEBORN NOS-NONHOSP OCT05-

Neonate Observation and Evaluation codes:

V290	NB OBSRV SUSPCT INFECT	V293	NB OBS GENETC/METABL CND
V291	NB OBSRV SUSPCT NEURLGCL	V298	NB OBSRV OTH SUSPCT COND
V292	OBSRV NB SUSPC RESP COND	V299	NB OBSRV UNSP SUSPCT CND

Dehydration Admission Rate (PQI 10)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM principal diagnosis code for hypovolemia.

Include ICD-9-CM diagnosis code:

27650	VOL DEPLETION, UNSPECIFIED OCT06-	27652	HYPOVOLEMIA OCT06-
27651	DEHYDRATION 0CT06-	2765	HYPOVOLEMIA

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)

Denominator:

Population in Metro Area or county, age 18 years and older.

Bacterial Pneumonia Admission Rate (PQI 11)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM principal diagnosis code for bacterial pneumonia.

Include ICD-9-CM diagnosis codes:

481	PNEUMOCOCCAL PNEUMONIA	4829	BACTERIAL PNEUMONIA NOS
4822	H.INFLUENZAE PNEUMONIA	4830	MYCOPLASMA PNEUMONIA
48230	STREP PNEUMONIA UNSPEC	4831	CHLAMYDIA PNEUMONIA OCT96-
48231	GRP A STREP PNEUMONIA	4838	OTH SPEC ORG PNEUMONIA
48232	GRP B STREP PNEUMONIA	485	BRONCOPNEUMONIA ORG NOS
48239	OTH STREP PNEUMONIA	486	PNEUMONIA, ORGANISM NOS

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)
- With diagnosis code for sickle cell anemia or HB-S disease

Exclude ICD-9-CM diagnosis codes:

28241	THLASEMA HB-S W/O CRISIS OCT03-	28263	SICKLE-CELL/HB-C DISEASE
28242	THLASSEMIA HB-S W CRISIS OCT03-	28264	HB-S/HB-C DIS W CRISIS OCT03-
28260	SICKLE-CELL ANEMIA NOS	28268	HB-S DIS W/O CRISIS NEC OCT03-
28261	HB-S DISEASE W/O CRISIS	28269	SICKLE-CELL ANEMIA NEC
28262	HB-S DISEASE WITH CRISIS		

Denominator:

Population in Metro Area or county, age 18 years and older.

Urinary Tract Infection Admission Rate (PQI 12)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM principal diagnosis code of urinary tract infection (see below).

Include ICD-9-CM diagnosis codes:

59010	AC PYELONEPHRITIS NOS	59081	PYELONEPHRIT IN OTH DIS
59011	AC PYELONEPHR W MED NECR	5909	INFECTION OF KIDNEY NOS
5902	RENAL/PERIRENAL ABSCESS	5950	ACUTE CYSTITIS
5903	PYELOURETERITIS CYSTICA	5959	CYSTITIS NOS
59080	PYELONEPHRITIS NOS	5990	URIN TRACT INFECTION NOS

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)
- with diagnosis code of kidney/urinary tract disorder
- with diagnosis code of immunocompromised state
- with immunocompromised state procedure code

ICD-9-CM kidney/urinary tract disorder diagnosis codes

59000	CHR PYELONEPHRITIS NOS	75317	MEDULLARY SPONGE KIDNEY
59001	CHR PYELONEPH W MED NECR	75319	CYSTIC KIDNEY DISEAS NEC
59370	VESCOURETRL RFLUX UNSPCF	75320	OBS DFCT REN PLV&URT NOS
59371	VESICOURETERAL REFLUX UNILTRL	75321	CONGEN OBST URTROPLV JNC
59372	VESICOURETERAL REFLUX NPHT BLTRL	75322	CONG OBST URETEROVES JNC
59373	VESICOURETERAL REFLUX W NPHT NOS	75323	CONGENITAL URETEROCELE
7530	RENAL AGENESIS	75329	OBST DEF REN PLV&URT NEC
75310	CYSTIC KIDNEY DISEAS NOS	7533	KIDNEY ANOMALY NEC
75311	CONGENITAL RENAL CYST	7534	URETERAL ANOMALY NEC
75312	POLYCYSTIC KIDNEY NOS	7535	EXSTROPHY OF URNIARY BLADDER
75313	POLYCYST KID-AUTOSOM DOM	7536	ATRESIA AND STENOSIS OF URETHRA AND BLADDER NECK
75314	POLYCYST KID-AUTOSOM REC	7538	CYSTOURETHRAL ANOM NEC
75315	RENAL DYSPLASIA	7539	URINARY ANOMALY NOS
75316	MEDULLARY CYSTIC KIDNEY		

ICD-9-CM Immunocompromised States diagnosis codes:

042	HUMAN IMMUNODEFICIENCY VIRUS DISEASE	28953	NEUTROPENIC SPLENOMEGALY OCT06-
1363	PNEUMOCYSTOSIS	28983	MYELOFIBROSIS OCT06-
23873	HI GRDE MYELODYS SYN LES OCT06-	40301	MAL HYP KIDNEY W CHR KID OCT06-
23876	MYELOFI W MYELO METAPLAS OCT06-	40311	BEN HYP KIDNEY W CHR KID OCT06-
260	KWASHIORKOR OCT05-	40391	HYP KIDNEY NOS W CHR KID OCT06-
261	NUTRITIONAL MARASMUS OCT05-	40402	MAL HY HRT/KID W CHR KID OCT06-
262	OTH SEVERE MALNUTRITION OCT05-	40403	MAL HYP HRT/KID W HF/KID OCT06-
27900	HYPOGAMMAGLOBULINEM NOS	40412	BEN HYP HT/KID W CHR KID OCT06-
27901	SELECTIVE IGA IMMUNODEF	40413	BEN HYP HT/KID W HF/KID OCT06-
27902	SELECTIVE IGM IMMUNODEF	40492	HYP HT/KID NOS W CHR KID OCT06-
27903	SELECTIVE IG DEFIC NEC	40493	HYP HRT/KID NOS W HF/KID OCT06-

Urinary Tract Infection Admission Rate (PQI 12)

27904	CONG HYPOGAMMAGLOBULINEM	5793	INTEST POSTOP NONABSORB OCT06-
27905	IMMUNODEFIC W HYPER-IGM	585	CHRONIC KIDNEY DISEASE OCT05-
27906	COMMON VARIABL IMMUNODEF	5855	CHRON KIDNEY DIS STAGE V OCT05-
27909	HUMORAL IMMUNITY DEF NEC	5856	END STAGE RENAL DISEASE OCT06-
27910	IMMUNDEF T-CELL DEF NOS	9968	COMPLICATIONS OF TRANSPLANTED ORGAN
27911	DIGEORGES SYNDROME	99680	COMP ORGAN TRANSPLNT NOS
27912	WISKOTT-ALDRICH SYNDROME	99681	COMPL KIDNEY TRANSPLANT
27913	NEZELOFS SYNDROME	99682	COMPL LIVER TRANSPLANT
27919	DEFIC CELL IMMUNITY NOS	99683	COMPL HEART TRANSPLANT
2792	COMBINED IMMUNITY DEFICIENCY	99684	COMPL LUNG TRANSPLANT
2793	UNSPECIFIED IMMUNITY DEFICIENCY	99685	COMPL MARROW TRANSPLANT
2794	AUTOIMMUNE DISEASE, NOT ELSEWHERE CLASSIFIED	99686	COMPL PANCREAS TRANSPLNT
2798	OTHER SPECIFIED DISORDERS INVOLVING THE IMMUNE MECHANISM	99687	COMP INTESTINE TRANSPLNT
2799	UNSPECIFIED DISORDER OF IMMUNE MECHANISM	99689	COMP OTH ORGAN TRANSPLNT
28409	CONST APLASTC ANEMIA NEC OCT06-	V420	KIDNEY REPLACED BY TRANSPLANT
2841	PANCYTOPENIA OCT06-	V421	HEART REPLACED BY TRANSPLANT
2880	AGRANULOCYTOSIS OCT05-	V426	LUNG REPLACED BY TRANSPLANT
28800	NEUTROPENIA NOS OCT06-	V427	LIVER REPLACED BY TRANSPLANT
28801	CONGENITAL NEUTROPENIA OCT06-	V428	OTHER SPECIFIED ORGAN OR TISSUE
28802	CYCLIC NEUTROPENIA OCT06-	V4281	BONE MARROW SPECIFIED BY TRANSPLANT
28803	DRUG INDUCED NEUTROPENIA OCT06-	V4282	PERIPHERAL STEM CELLS REPLACED BY TRANSPLANT
28809	NEUTROPENIA NEC OCT06-	V4283	PANCREAS REPLACED BY TRANSPLANT
2882	GENETIC ANOMALY LEUKOCYT OCT06-	V4284	INTESTINES REPLACE BY TRANSPLANT
2884	HEMOPHAGOCYTIC SYNDROMES OCT06-	V4289	OTHER REPLACED BY TRANSPLANT
28850	LEUKOCYTOPENIA NOS OCT06-	V451	RENAL DIALYSIS STATUS OCT06-
28851	LYMPHOCYTOPENIA OCT06-	V560	RENAL DIALYSIS ENCOUNTER OCT06-
28859	DECREASED WBC COUNT NEC OCT06-	V561	FT/ADJ XTRCORP DIAL CATH OCT06-
		V562	FIT/ADJ PERIT DIAL CATH OCT06-

ICD-9-CM Immunocompromised States procedure codes:

0018	INFUS IMMUNOSUP ANTIBODY OCT05-	4105	ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT W/O PURGING
335	LUNG TRANSPLANTATION	4106	CORD BLOOD STEM CELL TRANSPLANT
3350	LUNG TRANSPLANTATION, NOS	4107	AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANT W/ PURGING
3351	UNILATERAL LUNG TRANSPLANTATION	4108	ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT W/ PURGING
3352	BILATERAL LUNG TRANSPLANTATION	4109	AUTOLOGOUS BONE MARROW TRANSPLANT W/ PURGING
336	COMBINED HEART-LUNG TRANSPLANTATION	5051	AUXILARY LIVER TRANSPLANT
375	HEART TRANSPLANTATION	5059	LIVER TRANSPLANT, NEC
3751	HEART TRANSPLANTATION (OCT 03)	5280	PANCREATIC TRANSPLANT, NOS
410	OPERATIONS ON BONE MARROW AND SPLEEN	5281	REIMPLANTATION OF PANCREATIC TISSUE
4100	BONE MARROW TRANSPLANT, NOS	5282	HOMOTRANSPLANT OF PANCREAS

Urinary Tract Infection Admission Rate (PQI 12)

4101	AUTOLOGOUS BONE MARROW TRANSPLANT W/O PURGING	5283	HETEROTRANSPLANT OF PANCREAS
4102	ALLOGENEIC BONE MARROW TRANSPLANT W/ PURGING	5285	ALLOTRANSPLANTATION OF CELLS OF ISLETS OF LANGERHANS
4103	ALLOGENEIC BONE MARROW TRANSPLANT W/O PURGING	5286	TRANSPLANTATION OF CELLS OF ISLETS OF LANGERHANS, NOS
4104	AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANT W/O PURGING	5569	OTHER KIDNEY TRANSPLANTATION

Denominator:

Population in Metro Area or county, age 18 years and older.

Angina without Procedure Admission Rate (PQI 13)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM principal diagnosis code for angina.

Include ICD-9-CM diagnosis codes:

4111	INTERMED CORONARY SYND	4130	ANGINA DECUBITUS
41181	CORONARY OCCLSN W/O MI	4131	PRINZMETAL ANGINA
41189	AC ISCHEMIC HRT DIS NEC	4139	ANGINA PECTORIS NEC/NOS

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)
- with a code for cardiac procedure in any field

    See Appendix A: Cardiac Procedure Codes

    Control-click (Word) or click (PDF) to view an Appendix. Links are provided to return to the PQI Detailed Definition.

Denominator:

Population in Metro Area or county, age 18 years and older.

Uncontrolled Diabetes Admission Rate (PQI 14)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM principal diagnosis code for uncontrolled diabetes, without mention of a short-term or long-term complication.

Include ICD-9-CM diagnosis codes:

25002	DM, T2, UNCONT
25003	DM, T1, UNCONT

Uncontrolled Diabetes Admission Rate (PQI 14)
Exclude cases: • transferring from another institution (SID ASOURCE=2) • MDC 14 (pregnancy, childbirth, and puerperium) • MDC 15 (newborn and other neonates)
Denominator: Population in Metro Area or county, age 18 years and older. May be combined with diabetes short-term complications as a single indicator as a simple sum of the rates to form the Health People 2010 indicator (note that the AHRQ QI excludes transfers to avoid double counting cases).

Adult Asthma Admission Rate (PQI 15)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM principal diagnosis code of asthma.

Include ICD-9-CM diagnosis codes:

49300	EXT ASTHMA W/O STAT ASTH	49321	CH OB ASTHMA W STAT ASTH
49301	EXT ASTHMA W STATUS ASTH	49322	CH OBS ASTH W ACUTE EXAC OCT00-
49302	EXT ASTHMA W ACUTE EXAC OCT00-	49381	EXERCSE IND BRONCHOSPASM OCT03-
49310	INT ASTHMA W/O STAT ASTH	49382	COUGH VARIANT ASTHMA OCT03-
49311	INT ASTHMA W STATUS ASTH	49390	ASTHMA W/O STATUS ASTHM
49312	INT ASTHMA W ACUTE EXAC OCT00-	49391	ASTHMA W STATUS ASTHMAT
49320	CH OB ASTH W/O STAT ASTH	49392	ASTHMA W ACUTE EXACERBTN OCT00-

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)
- with any diagnosis code of cystic fibrosis and anomalies of the respiratory system

ICD-9-CM diagnosis codes of cystic fibrosis and anomalies of the respiratory system

27700	CYSTIC FIBROS W/O ILEUS	7485	AGENESIS OF LUNG
27701	CYSTIC FIBROS W ILEUS	74860	LUNG ANOMALY NOS
27702	CYSTIC FIBROS W PUL MAN	74861	CONGEN BRONCHIECTASIS
27703	CYSTIC FIBROSIS W GI MAN	74869	LUNG ANOMALY NEC
27709	CYSTIC FIBROSIS NEC	7488	RESPIRATORY ANOMALY NEC
74721	ANOMALIES OF AORTIC ARCH	7489	RESPIRATORY ANOMALY NOS
7483	LARYNGOTRACH ANOMALY NEC	7503	CONG ESOPH FISTULA/ATRES
7484	CONGENITAL CYSTIC LUNG	7593	SITUS INVERSUS
		7707	PERINATAL CHR RESP DIS

Denominator:

Population in Metro Area or county, age 18 years and older.

Rate of Lower-extremity Amputation among Patients with Diabetes (PQI 16)

Numerator:

All non-maternal discharges of age 18 years and older with ICD-9-CM procedure code for lower-extremity amputation in any field and diagnosis code of diabetes in any field.

ICD-9-CM procedure codes for lower-extremity amputation:

8410	LOWER LIMB AMPUTAT NOS	8415	BELOW KNEE AMPUTAT NEC
8411	TOE AMPUTATION	8416	DISARTICULATION OF KNEE
8412	AMPUTATION THROUGH FOOT	8417	ABOVE KNEE AMPUTATION
8413	DISARTICULATION OF ANKLE	8418	DISARTICULATION OF HIP
8414	AMPUTAT THROUGH MALLEOLI	8419	HINDQUARTER AMPUTATION

ICD-9-CM diagnosis codes for diabetes:

25000	DMII WO CMP NT ST UNCNTR	25050	DMII OPHTH NT ST UNCNTRL
25001	DMI WO CMP NT ST UNCNTRL	25051	DMI OPHTH NT ST UNCNTRLD
25002	DMII WO CMP UNCNTRLD	25052	DMII OPHTH UNCNTRLD
25003	DMI WO CMP UNCNTRLD	25053	DMI OPHTH UNCNTRLD
25010	DMII KETO NT ST UNCNTRLD	25060	DMII NEURO NT ST UNCNTRL
25011	DMI KETO NT ST UNCNTRLD	25061	DMI NEURO NT ST UNCNTRLD
25012	DMII KETOACD UNCONTROLD	25062	DMII NEURO UNCNTRLD
25013	DMI KETOACD UNCONTROLD	25063	DMI NEURO UNCNTRLD
25020	DMII HPRSM NT ST UNCNTRL	25070	DMII CIRC NT ST UNCNTRLD
25021	DMI HPRSM NT ST UNCNTRLD	25071	DMI CIRC NT ST UNCNTRLD
25022	DMII HPROSMLR UNCONTROLD	25072	DMII CIRC UNCNTRLD
25023	DMI HPROSMLR UNCONTROLD	25073	DMI CIRC UNCNTRLD
25030	DMII O CM NT ST UNCNTRLD	25080	DMII OTH NT ST UNCNTRLD
25031	DMI O CM NT ST UNCNTRL	25081	DMI OTH NT ST UNCNTRLD
25032	DMII OTH COMA UNCONTROLD	25082	DMII OTH UNCNTRLD
25033	DMI OTH COMA UNCONTROLD	25083	DMI OTH UNCNTRLD
25040	DMII RENL NT ST UNCNTRLD	25090	DMII UNSPF NT ST UNCNTRL
25041	DMI RENL NT ST UNCNTRLD	25091	DMI UNSPF NT ST UNCNTRLD
25042	DMII RENAL UNCNTRLD	25092	DMII UNSPF UNCNTRLD
25043	DMI RENAL UNCNTRLD	25093	DMI UNSPF UNCNTRLD

Exclude cases:

- transferring from another institution (SID ASOURCE=2)
- MDC 14 (pregnancy, childbirth, and puerperium)
- MDC 15 (newborn and other neonates)
- with trauma diagnosis code in any field

ICD-9-CM trauma diagnosis codes:

8950	AMPUTATION TOE	8971	AMPUTAT BK, UNILAT-COMPL
8951	AMPUTATION TOE-COMPLICAT	8972	AMPUT ABOVE KNEE, UNILAT
8960	AMPUTATION FOOT, UNILAT	8973	AMPUT ABV KN, UNIL-COMPL
8961	AMPUT FOOT, UNILAT-COMPL	8974	AMPUTAT LEG, UNILAT NOS
8962	AMPUTATION FOOT, BILAT	8975	AMPUT LEG, UNIL NOS-COMP
8963	AMPUTAT FOOT, BILAT-COMP	8976	AMPUTATION LEG, BILAT
8970	AMPUT BELOW KNEE, UNILAT	8977	AMPUTAT LEG, BILAT-COMPL

Denominator:

Population in Metro Area or county, age 18 years and older.

Appendix A: Cardiac Procedure Codes

These codes are used by the following PQIs:

PQI	How Used
Hypertension Admission Rate (PQI 7) - Page 5	Numerator Exclusion - Page 5
Congestive Heart Failure (CHF) Admission Rate (PQI 8) - Page 6	Numerator Exclusion - Page 6
Angina without Procedure Admission Rate (PQI 13) - Page 12	Numerator Exclusion - Page 12

In the table above, control-click (Word) or click (PDF) the **PQI** name to go to the start of that detailed definition. Click the link in the **How Used** column to go to where the cardiac procedure codes are referenced within the PQI detailed definition.

0050	IMPL CRT PACEMAKER SYS OCT02-	3555	PROS REP VENTRC DEF-CLOS OCT06-
0051	IMPL CRT DEFIBRILLAT OCT02-	3560	GRFT REPAIR HRT SEPT NOS
0052	IMP/REP LEAD LF VEN SYS OCT02-	3561	GRAFT REPAIR ATRIAL DEF
0053	IMP/REP CRT PACEMKR GEN OCT02-	3562	GRAFT REPAIR VENTRIC DEF
0054	IMP/REP CRT DEFIB GENAT OCT02-	3563	GRFT REP ENDOCAR CUSHION
0056	INS/REP IMPL SENSOR LEAD OCT06-	3570	HEART SEPTA REPAIR NOS
		3571	ATRIA SEPTA DEF REP NEC
0057	IMP/REP SUBCUE CARD DEV OCT06-	3572	VENTR SEPTA DEF REP NEC
		3573	ENDOCAR CUSHION REP NEC
0066	PTCA OCT06-	3581	TOT REPAIR TETRAL FALLOT
3500	CLOSED VALVOTOMY NOS	3582	TOTAL REPAIR OF TAPVC
3501	CLOSED AORTIC VALVOTOMY	3583	TOT REP TRUNCUS ARTERIOS
3502	CLOSED MITRAL VALVOTOMY	3584	TOT COR TRANSPOS GRT VES
3503	CLOSED PULMON VALVOTOMY	3591	INTERAT VEN RETRN TRANSP
3504	CLOSED TRICUSP VALVOTOMY	3592	CONDUIT RT VENT-PUL ART
3510	OPEN VALVULOPLASTY NOS	3593	CONDUIT LEFT VENTR-AORTA
3511	OPN AORTIC VALVULOPLASTY	3594	CONDUIT ARTIUM-PULM ART
3512	OPN MITRAL VALVULOPLASTY	3595	HEART REPAIR REVISION
3513	OPN PULMON VALVULOPLASTY	3596	PERC HEART VALVULOPLASTY
3514	OPN TRICUS VALVULOPLASTY	3598	OTHER HEART SEPTA OPS
3520	REPLACE HEART VALVE NOS	3599	OTHER HEART VALVE OPS
3521	REPLACE AORT VALV-TISSUE	3601	PTCA-1 VESSEL W/O AGENT
3522	REPLACE AORTIC VALVE NEC	3602	PTCA-1 VESSEL WITH AGNT
3523	REPLACE MITR VALV-TISSUE	3603	OPEN CORONRY ANGIOPLASTY
3524	REPLACE MITRAL VALVE NEC	3604	INTRCORONRY THROMB INFUS
3525	REPLACE PULM VALV-TISSUE	3605	PTCA-MULTIPLE VESSEL
3526	REPLACE PULMON VALVE NEC	3606	INSERT OF COR ART STENT OCT95-
3527	REPLACE TRIC VALV-TISSUE	3607	INS DRUG-ELUT CORONRY ST OCT02-
3528	REPLACE TRICUSP VALV NEC		
3531	PAPILLARY MUSCLE OPS	3609	REM OF COR ART OBSTR NEC
3532	CHORDAE TENDINEAE OPS	3610	AORTOCORONARY BYPASS NOS
3533	ANNULOPLASTY	3611	AORTOCOR BYPAS-1 COR ART
3534	INFUNDIBULECTOMY	3612	AORTOCOR BYPAS-2 COR ART
3535	TRABECUL CARNEAE CORD OP	3613	AORTOCOR BYPAS-3 COR ART
3539	TISS ADJ TO VALV OPS NEC	3614	AORTCOR BYPAS-4+ COR ART
3541	ENLARGE EXISTING SEP DEF	3615	1 INT MAM-COR ART BYPASS
3542	CREATE SEPTAL DEFECT	3616	2 INT MAM-COR ART BYPASS
3550	PROSTH REP HRT SEPTA NOS	3617	ABD-CORON ART BYPASS OCT96-
3551	PROS REP ATRIAL DEF-OPN	3619	HRT REVAS BYPS ANAS NEC
3552	PROS REPAIR ATRIA DEF-CL	362	ARTERIAL IMPLANT REVASC
3553	PROST REPAIR VENTRIC DEF	363	OTH HEART REVASCULAR
3554	PROS REP ENDOCAR CUSHION	3631	OPEN CHEST TRANS REVASC
		3632	OTH TRANSMYO REVASCULAR

3633	ENDO TRANSMYO REVASCULAR OCT06-		3771	INT INSERT LEAD IN VENT
3634	PERC TRANSMYO REVASCULAR OCT06-		3772	INT INSERT LEAD ATRI-VENT
3639	OTH HEART REVASULAR		3773	INT INSER LEAD IN ATRIUM
3691	CORON VESS ANEURYSM REP		3774	INT OR REPL LEAD EPICAR
3699	HEART VESSLE OP NEC		3775	REVISION OF LEAD
3731	PERICARDIECTOMY		3776	REPL TV ATRI-VENT LEAD
3732	HEART ANEURYSM EXCISION		3777	REMOVAL OF LEAD W/O REPL
3733	EXC/DEST HRT LESION OPEN		3778	INSER TEAM PACEMAKER SYS
3734	EXC/DEST HRT LES OTHER		3779	REVIS OR RELOCATE POCKET
3735	PARTIAL VENTRICULECTOMY		3780	INT OR REPL PERM PACEMKR
3741	IMPLANT PROSTH CARD SUPPORT DEV OCT06		3781	INT INSERT 1-CHAM, NON
375	HEART TRANSPLANTATION (NOT VALID AFTER OCT 03)		3782	INT INSERT 1-CHAM, RATE
			3783	INT INSERT DUAL-CHAM DEV
			3785	REPL PACEM W 1-CHAM, NON
3751	HEART TRANPLANTATION OCT03-		3786	REPL PACEM 1-CHAM, RATE
3752	IMPLANT TOT REP HRT SYS OCT03-		3787	REPL PACEM W DUAL-CHAM
3753	REPL/REP THORAC UNIT HRT OCT03-		3789	REVISE OR REMOVE PACEMAK
			3794	IMPLT/REPL CARDDEFIB TOT
3754	REPL/REP OTH TOT HRT SYS OCT03-		3795	IMPLT CARDIODEFIB LEADS
			3796	IMPLT CARDIODEFIB GENATR
3770	INT INSERT PACEMAK LEAD		3797	REPL CARDIODEFIB LEADS
			3798	REPL CARDIODEFIB GENRATR

Appendix B: Links

The following links may be helpful to users of the AHRQ Prevention Quality Indicators.

Prevention Quality Indicators Version 3.1 Documents and Software

Available at http://www.qualityindicators.ahrq.gov/pqi_download.htm

Title	Description
Guide to Prevention Quality Indicators	Describes how the PQIs were developed and provides detailed evidence for each indicator.
Prevention Quality Indicators Technical Specifications	Provides detailed definitions of each PQI, including all ICD-9-CM and DRG codes that are included in or excluded from the numerator and denominator. Note that exclusions from the denominator are automatically applied to the numerator.
Prevention Quality Indicators Comparative Data	This document provides the average Area Rate, Area Standard Deviation, Population Rate, and Rating for each PQI.
PQI Covariates used in Risk Adjustment	Tables for each PQI provide the stratification and coefficients used to calculate the risk-adjusted rate for each strata.
SAS® PQI Software Documentation	This software documentation provides detailed instructions on how to use the SAS ® version of the PQI software including data preparation, calculation of the PQI rates, and interpretation of output.
Change Log to PQI Documents and Software	The Change Log document provides a cumulative summary of all changes to the PQI software, software documentation, and other documents made since the release of version 2.1 of the software in March 2003. Changes to indicator specifications that were not a result of new ICD-9-CM and DRG codes, are also described in the Change Log.
Fiscal year 2007 Coding Changes	This document summarizes the changes to the indicator definitions resulting from FY 2007 changes to ICD-9-CM coding and DRG changes. These changes will only affect data from FY 2007 (October 1, 2006) or later.
SAS® PQI Software	Requires the SAS® statistical program distributed by the SAS Institute, Inc. The company may be contacted directly regarding the licensing of its products: http://www.sas.com

AHRQ QI Windows Application

The AHRQ QI Windows Application calculates rates for all of the AHRQ Quality Indicators modules and does not require SAS® It is available at:

http://www.qualityindicators.ahrq.gov/winqi_download.htm

Additional Documents

The following documents are available within the "Documentation" section of the **AHRQ QI Downloads** Web page:

http://www.qualityindicators.ahrq.gov/downloads.htm

Refinement of the HCUP Quality Indicators (Technical Review), May 2001
Refinement of the HCUP Quality Indicators (Summary), May 2001
Measures of Patient Safety Based on Hospital Administrative Data - The Patient Safety
*   Indicators, August 2002*
Measures of Patient Safety Based on Hospital Administrative Data - The Patient Safety Indicators
*   (Summary), August 2002*

In addition, these documents may be accessed at the AHRQ QI Documentation Web page:

http://www.qualityindicators.ahrq.gov/documentation.htm

- *Guidance for Using the AHRQ Quality Indicators for Hospital-level Public Reporting or Payment, August 2004*
- *AHRQ Summary Statement on Comparative Hospital Public Reporting, December 2005*
- *Appendix A: Current Uses of AHRQ Quality Indicators and Considerations for Hospital-level*
- *Comparison of Recommended Evaluation Criteria in Five Existing National Frameworks*

The following documents can be viewed or downloaded from the page:

http://www.qualityindicators.ahrq.gov/newsletter.htm

- *2006 Area Level Indicator Changes*
- *Considerations in Public Reporting for the AHRQ QIs*
- *June 2005 Newsletter -* Contains the article, "Using Different Types of QI Rates"

Other Tools and Information

PQI rates can be calculated using the modified Federal Information Processing Standards (FIPS) State/county code. A list of codes is available at:

http://www.census.gov/popest/geographic/codes02.pdf

AHRQ provides a free, on-line query system based on HCUP data that provides access to health statistics and information on hospital stays at the national, regional, and State level. It is available at:

http://hcup.ahrq.gov/HCUPnet.asp

The CDC National Diabetes Surveillance System provides state level estimates of diabetes prevalence by age.

http://www.cdc.gov/diabetes/statistics/index.htm