



**AHRQ Quality Indicators™ (AHRQ QI™)  
ICD-9-CM and ICD-10-CM/PCS  
Specification Enhanced Version 5.0**

**Prevention Quality Indicators #7 (PQI #7)  
Hypertension Admission Rate**

**October 2015  
Area-Level Indicator  
Type of Score: Rate**

**Prepared by:**

Agency for Healthcare Research and Quality  
U.S. Department of Health and Human Services  
540 Gaither Road  
Rockville, MD 20850

[www.qualityindicators.ahrq.gov](http://www.qualityindicators.ahrq.gov)

## PQI #7 Hypertension Admission Rate

DESCRIPTION
-------------

Admissions with a principal diagnosis of hypertension per 100,000 population, ages 18 years and older. Excludes kidney disease combined with dialysis access procedure admissions, cardiac procedure admissions, obstetric admissions, and transfers from other institutions

*[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 admissions per 100,000 population.]*

### PQI #7 Hypertension Admission Rate

#### NUMERATOR

Discharges, for patients ages 18 years and older, with a principal ICD-9-CM or ICD-10-CM diagnosis code for hypertension.

*[NOTE: By definition, discharges with a principal diagnosis of hypertension are precluded from an assignment of MDC 14 by grouper software. Thus, obstetric discharges should not be considered in the PQI rate, though the AHRQ QI™ software does not explicitly exclude obstetric cases.]*

#### Hypertension diagnosis codes: (ACSHYPD)

ICD-9-CM	Description	ICD-10-CM	Description
4010	MALIGNANT HYPERTENSION	I10	Essential (primary) hypertension
4019	HYPERTENSION NOS	I119	Hypertensive heart disease without heart failure
40200	MAL HYPERTEN HRT DIS NOS	I129	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
40210	BEN HYPERTEN HRT DIS NOS	I1310	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
40290	HYPERTENSIVE HRT DIS NOS		
40300	MAL HYP REN W/O REN FAIL		
40310	BEN HYP REN W/O REN FAIL		
40390	HYP REN NOS W/O REN FAIL		
40400	MAL HY HT/REN W/O CHF/RF		
40410	BEN HY HT/REN W/O CHF/RF		
40490	HY HT/REN NOS W/O CHF/RF		

### PQI #7 Hypertension Admission Rate

#### NUMERATOR EXCLUSIONS

Exclude cases:

- with any-listed ICD-9-CM or ICD-10-PCS procedure codes for cardiac procedure
- with any-listed ICD-9-CM or ICD-10-CM diagnosis codes of Stage I-IV kidney disease, only if accompanied by any-listed ICD-9-CM or ICD-10-PCS procedure codes for dialysis access
- transfer from a hospital (different facility)
- transfer from a Skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
- transfer from another health care facility
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing), principal diagnosis (DX1=missing), or county (PSTCO=missing)

[Appendix A – Admission Codes for Transfers](#)

[Appendix B – Cardiac Procedure Codes](#)

#### Stage I-IV kidney disease diagnosis codes: (ACSHY2D)

ICD-9-CM	Description	ICD-10-CM	Description
40300	MAL HYP REN W/O REN FAIL	I129	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
40310	BEN HYP REN W/O REN FAIL	I1310	Hypertensive heart and chronic kidney disease without heart failure, with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
40390	HYP REN NOS W/O REN FAIL		
40400	MAL HY HT/REN W/O CHF/RF		
40410	BEN HY HT/REN W/O CHF/RF		
40490	HY HT/REN NOS W/O CHF/RF		

<b><i>Dialysis access procedure codes: (ACSHYPP)</i></b>			
<b>ICD-9-PCS</b>	<b>Description</b>	<b>ICD-10-PCS</b>	<b>Description</b>
3895	VEN CATH RENAL DIALYSIS	031209D	Bypass Innominate Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach
3927	DIALYSIS ARTERIOVENOSTOM	031209F	Bypass Innominate Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
3929	VASC SHUNT & BYPASS NEC	03120AD	Bypass Innominate Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach
3942	REVIS REN DIALYSIS SHUNT	03120AF	Bypass Innominate Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
3943	REMOV REN DIALYSIS SHUNT	03120JD	Bypass Innominate Artery to Upper Arm Vein with Synthetic Substitute, Open Approach
3993	INSERT VES-TO-VES CANNUL	03120JF	Bypass Innominate Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
3994	REPLAC VES-TO-VES CANNUL	03120KD	Bypass Innominate Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach
		03120KF	Bypass Innominate Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
		03120ZD	Bypass Innominate Artery to Upper Arm Vein, Open Approach
		03120ZF	Bypass Innominate Artery to Lower Arm Vein, Open Approach
		031309D	Bypass Right Subclavian Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach
		031309F	Bypass Right Subclavian Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
		03130AD	Bypass Right Subclavian Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach
		03130AF	Bypass Right Subclavian Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach

03130JD	Bypass Right Subclavian Artery to Upper Arm Vein with Synthetic Substitute, Open Approach
03130JF	Bypass Right Subclavian Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
03130KD	Bypass Right Subclavian Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach
03130KF	Bypass Right Subclavian Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
03130ZD	Bypass Right Subclavian Artery to Upper Arm Vein, Open Approach
03130ZF	Bypass Right Subclavian Artery to Lower Arm Vein, Open Approach
031409D	Bypass Left Subclavian Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach
031409F	Bypass Left Subclavian Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
03140AD	Bypass Left Subclavian Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach
03140AF	Bypass Left Subclavian Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
03140JD	Bypass Left Subclavian Artery to Upper Arm Vein with Synthetic Substitute, Open Approach
03140JF	Bypass Left Subclavian Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
03140KD	Bypass Left Subclavian Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach
03140KF	Bypass Left Subclavian Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
03140ZD	Bypass Left Subclavian Artery to Upper Arm Vein, Open Approach
03140ZF	Bypass Left Subclavian Artery to Lower Arm Vein, Open Approach

031509D	Bypass Right Axillary Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach
031509F	Bypass Right Axillary Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
03150AD	Bypass Right Axillary Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach
03150AF	Bypass Right Axillary Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
03150JD	Bypass Right Axillary Artery to Upper Arm Vein with Synthetic Substitute, Open Approach
03150JF	Bypass Right Axillary Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
03150KD	Bypass Right Axillary Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach
03150KF	Bypass Right Axillary Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
03150ZD	Bypass Right Axillary Artery to Upper Arm Vein, Open Approach
03150ZF	Bypass Right Axillary Artery to Lower Arm Vein, Open Approach
031609D	Bypass Left Axillary Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach
031609F	Bypass Left Axillary Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
03160AD	Bypass Left Axillary Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach
03160AF	Bypass Left Axillary Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
03160JD	Bypass Left Axillary Artery to Upper Arm Vein with Synthetic Substitute, Open Approach
03160JF	Bypass Left Axillary Artery to Lower Arm Vein with Synthetic Substitute, Open Approach

03160KD	Bypass Left Axillary Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach
03160KF	Bypass Left Axillary Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
03160ZD	Bypass Left Axillary Artery to Upper Arm Vein, Open Approach
03160ZF	Bypass Left Axillary Artery to Lower Arm Vein, Open Approach
031709D	Bypass Right Brachial Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach
031709F	Bypass Right Brachial Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
03170AD	Bypass Right Brachial Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach
03170AF	Bypass Right Brachial Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
03170JD	Bypass Right Brachial Artery to Upper Arm Vein with Synthetic Substitute, Open Approach
03170JF	Bypass Right Brachial Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
03170KD	Bypass Right Brachial Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach
03170KF	Bypass Right Brachial Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
03170ZD	Bypass Right Brachial Artery to Upper Arm Vein, Open Approach
03170ZF	Bypass Right Brachial Artery to Lower Arm Vein, Open Approach
031809D	Bypass Left Brachial Artery to Upper Arm Vein with Autologous Venous Tissue, Open Approach
031809F	Bypass Left Brachial Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach



03180AD	Bypass Left Brachial Artery to Upper Arm Vein with Autologous Arterial Tissue, Open Approach
03180AF	Bypass Left Brachial Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
03180JD	Bypass Left Brachial Artery to Upper Arm Vein with Synthetic Substitute, Open Approach
03180JF	Bypass Left Brachial Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
03180KD	Bypass Left Brachial Artery to Upper Arm Vein with Nonautologous Tissue Substitute, Open Approach
03180KF	Bypass Left Brachial Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
03180ZD	Bypass Left Brachial Artery to Upper Arm Vein, Open Approach
03180ZF	Bypass Left Brachial Artery to Lower Arm Vein, Open Approach
031909F	Bypass Right Ulnar Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
03190AF	Bypass Right Ulnar Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
03190JF	Bypass Right Ulnar Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
03190KF	Bypass Right Ulnar Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
03190ZF	Bypass Right Ulnar Artery to Lower Arm Vein, Open Approach
031A09F	Bypass Left Ulnar Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
031A0AF	Bypass Left Ulnar Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
031A0JF	Bypass Left Ulnar Artery to Lower Arm Vein with Synthetic Substitute, Open Approach

031A0KF	Bypass Left Ulnar Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
031A0ZF	Bypass Left Ulnar Artery to Lower Arm Vein, Open Approach
031B09F	Bypass Right Radial Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
031B0AF	Bypass Right Radial Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
031B0JF	Bypass Right Radial Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
031B0KF	Bypass Right Radial Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
031B0ZF	Bypass Right Radial Artery to Lower Arm Vein, Open Approach
031C09F	Bypass Left Radial Artery to Lower Arm Vein with Autologous Venous Tissue, Open Approach
031C0AF	Bypass Left Radial Artery to Lower Arm Vein with Autologous Arterial Tissue, Open Approach
031C0JF	Bypass Left Radial Artery to Lower Arm Vein with Synthetic Substitute, Open Approach
031C0KF	Bypass Left Radial Artery to Lower Arm Vein with Nonautologous Tissue Substitute, Open Approach
031C0ZF	Bypass Left Radial Artery to Lower Arm Vein, Open Approach
03PY07Z	Removal of Autologous Tissue Substitute from Upper Artery, Open Approach
03PY0JZ	Removal of Synthetic Substitute from Upper Artery, Open Approach
03PY0KZ	Removal of Nonautologous Tissue Substitute from Upper Artery, Open Approach
03PY37Z	Removal of Autologous Tissue Substitute from Upper Artery, Percutaneous Approach

03PY3JZ	Removal of Synthetic Substitute from Upper Artery, Percutaneous Approach
03PY3KZ	Removal of Nonautologous Tissue Substitute from Upper Artery, Percutaneous Approach
03PY47Z	Removal of Autologous Tissue Substitute from Upper Artery, Percutaneous Endoscopic Approach
03PY4JZ	Removal of Synthetic Substitute from Upper Artery, Percutaneous Endoscopic Approach
03PY4KZ	Removal of Nonautologous Tissue Substitute from Upper Artery, Percutaneous Endoscopic Approach
03WY0JZ	Revision of Synthetic Substitute in Upper Artery, Open Approach
03WY3JZ	Revision of Synthetic Substitute in Upper Artery, Percutaneous Approach
03WY4JZ	Revision of Synthetic Substitute in Upper Artery, Percutaneous Endoscopic Approach
03WYXJZ	Revision of Synthetic Substitute in Upper Artery, External Approach
05HY33Z	Insertion of Infusion Device into Upper Vein, Percutaneous Approach
06HY33Z	Insertion of Infusion Device into Lower Vein, Percutaneous Approach

## PQI #7 Hypertension Admission Rate

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
--

† 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.

### **PQI #7 Hypertension Admission Rate**

<b>DENOMINATOR EXCLUSIONS</b>
<i>Not Applicable</i>