NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0018 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Controlling High Blood Pressure
De.2 **Brief description of measure**: The percentage of members 18–85 years of age who had a diagnosis of hypertension (HTN) and whose blood pressure (BP) was adequately controlled (<140/90) during the measurement year. Use the Hybrid Method for this measure.
1.1-2 **Type of Measure:** Outcome De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Getting better, Living with illness

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least	**B** **Y**☐

every 3 years. Yes, information provided in contact section	N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability, Accreditation	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	Met Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	Eval Rating
(for NQF staff use) **Specific NPP goal**:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, Leading cause of morbidity/mortality, Patient/societal consequences of poor quality **1a.2** **1a.3 Summary of Evidence of High Impact:** Health Importance: Hypertension is a very significant health issue in the United States. Fifty million or more Americans have high blood pressure that warrants treatment, according to the NHANES survey (JNC-7, 2003). The USPSTF recommends that clinicians screen adults aged 18 and older for high blood pressure (USPSTF, 2007). The most frequent and serious complications of uncontrolled hypertension include coronary heart disease, congestive heart failure, stroke, ruptured aortic aneurysm, renal disease, and retinopathy. The increased risks of hypertension are present in individuals ranging from 40 to 89 years of age. For every 20 mmHg systolic or 10 mmHg diastolic increase in BP, there is a doubling of mortality from both IHD and stroke (JNC-7, 2003). Better control of BP has been shown to significantly reduce the probability that these undesirable and costly outcomes will occur. Thus, the relationship between the measure (control of hypertension) and the long-term clinical outcomes listed is well established. In clinical trials, antihypertensive therapy has been associated with reductions in stroke incidence (35-40%), myocardial infarction (20-25%) and heart failure (>50%) (JNC-7, 2003). The percentage of persons receiving treatment for their hypertension has increased from 31% (1976-1980) to	1a C☐ P☐ M☐ N☐

Comment [KP1]: 1a. The measure focus addresses:
- a specific national health goal/priority identified by NQF's National Priorities Partners; OR
- a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

59% in 1999-2000. Thirty-four percent of persons with hypertension from 1999-2000 have their blood pressure controlled below 140/90 mmHg compared to 10% from 1976-1980. However, the prevalence and hospitalization rates of heart failure have continued to increase. A majority of the people have hypertension prior to developing heart failure (JNC-7, 2003).

The outcomes that are principally affected by controlling blood pressure are morbidity and mortality related to cerebrovascular and cardiovascular events (e.g., stroke, heart failure and myocardial infarction) (JNC-7, 2003).

In patients ages 65 and older with systolic blood pressure greater than 139, it was estimated that if these persons were in active treatment for their hypertension using antihypertensive drugs alone, the following annual, shot-term benefits would be produced:

- No additional medical costs,
- 115,000 fewer strokes,
- 106,000 fewer CAD events,
- 77,000 fewer deaths,
- 46,000 fewer skilled nursing facility and recovery facility admissions, and
- 4,000 fewer long term care placements (Pyenson, 2004)

The prevalence of high blood pressure by age in Americans 20 and older between 1999 and 2002 was:

- For ages 20-34, 11.1 percent for men and 5.8 percent for women
- For ages 35-44, 21.3 percent for men and 18.1 percent for women
- For ages 45-54, 34.1 percent for men and 34.0 percent for women
- For ages 55-64, 46.6 percent for men and 55.5 percent for women
- For ages 65-74, 60.9 percent for men and 74.0 percent for women
- For ages 75+, 69.2 percent for men and 83.4 percent for women (AHA, 2004)

The death rates per 100,000 in 2002 from high blood pressure were:

- 14.4 for White Males
- 49.6 for Black Males
- 13.7 for White Females
- 40.5 for Black Females (AHA High BP Statistics, 2003)

In the SHEP study involving hypertensive individuals over age 60 with pretreatment SBP >160 and DBP <90 mmHg, individuals treated with chlorthalidone (with or without BB) had reductions in the primary endpoint of stroke (36 percent), as well as HF events (54 percent), MI (27 percent), and overall CVD (32 percent) as compared with the placebo group (SHEP, 1991).

Although no randomized prospective clinical trial has conclusively proven the benefits of treatment of hypertension in individuals with stage 1 systolic hypertension (140–159 mmHg), hypertension therapy should not be withheld in these patients, and therapy should not be withheld on the basis of age (JNC-7, 2003). There is no definitive evidence of an increase in risk of aggressive treatment (a J-curve) unless DBP is lowered to <55 or 60 mmHg by treatment (Somes, 1999).

For treatment of hypertension in patients 80 and older, hypertension is a significant problem. Controlling high blood pressure is important and beneficial for this age group; however there are also significant risks of serious complications and death. In one study, 70% of those 80 and older have hypertension, and among the oldest participants only 38% of men and 23% of women had a blood pressure controlled to less than 140/90 mm Hg. Since the relative and very high absolute risks among those 80 and over are very similar, their data suggest that the 80 and over age group have the most to gain from blood pressure reduction, even if they have a shorter lifespan remaining (Lloyd-Jones, 2005).

A meta-analysis of eight placebo-controlled trials in 15,693 elderly patients followed for 4 years found that active antihypertensive treatment reduced coronary events (23 percent), strokes (30 percent), cardiovascular deaths (18 percent), and total deaths (13 percent), with the benefit particularly great in those older than 70 years (Staessen, 2000). Benefits of therapy have been demonstrated even in individuals over 80 years of age (Hansson, 1999 & Gueyffier, 1999). However, in the same study (Gueyffier, 1999), the meta-analysis showed that while the risk of cardiovascular and stroke events with blood pressure control

decreased, there was an increase in mortality suggesting that a reduction in stroke events of 36% may have to be balanced against a 14% increase in total mortality (Gueyffier, 1999). In addition, a review article by Goodwin showed that BP is protective of mortality in those less than 80 years of age, and that mortality increases with treatment in those older than 80 years of age (Goodwin, 2003).

It is important to exclude patients with End Stage Renal Disease due to the complicated health factors with this condition. Eleven percent of the U.S. population has chronic kidney disease (Smith, 2004). Treatment strategies for hypertension are different for patients with End Stage Renal Disease especially if the patient is on dialysis. Adequacy and duration of dialysis are key determinants of blood pressure in ESRD patients. There seems to be a lack of consensus regarding treatment of hypertension for ESRD patients based on antihypertensive prescription patterns (Griffith, 2003).

Financial Importance:

Hypertension is extremely costly for the United States. High blood pressure and its complications cost the U.S. economy more than $100 billion each year (NHLBI, 2004). When you look at just the office visits to physicians, high blood pressure causes more visits than any other condition. Just a 10% reduction in visits would save $478 million each year (Facts about HBP, NHLBI). To give perspective, in 2002 there were 17.2 million visits to office based physicians related to hypertension (CDC Hypertension Fact Sheet, 2003).

In addition, drugs to treat hypertension are among the leading prescriptions in the U.S.. Two anti-hypertensive drugs are in the NDCHealth Top 50 drugs for 2004 by U.S. sales (NDCHealth Top 200, 2005) and five anti-hypertensive drugs are in the top 11 prescriptions for 2004 by number of U.S. mail and retail prescriptions (NDCHealth Top 10, 2005).

1a.4 **Citations for Evidence of High Impact:** The Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. (JNC-7) Hypertension. 2003 Dec;42(6):1206-52. Epub 2003 Dec 1.

USPSTF - U.S. Preventive Services Task Force. Screening for high blood pressure: recommendations and rationale. Am J Prev Med. 2003 Aug;25(2):159-64.

Pyenson, et al., Milliman, Inc. "Controlling Hypertension Among Medicare Beneficiaries: Saving Lives Without Additional Cost," (Brookfield, WI: Milliman, 2004). <http://www.phrma.org/publications/policy/23.08.2005.1042.cfm>.AHA.

American Heart Association. High Blood Pressure Statistics. 2004. http://www.americanheart.org/downloadable/heart/1110821765203FS14HBP5.REVdoc.doc Accessed: 8/24/05

AHA. American Heart Association. High Blood Pressure Statistics. 2003. http://www.americanheart.org/presenter.jhtml?identifier=4621 Accessed: 7/18/05

SHEP Cooperative Research Group. Prevention of stroke by antihypertensive drug treatment in older persons with isolated systolic hypertension. Final results of the Systolic Hypertension in the Elderly Program (SHEP). JAMA 1991;265:3255-64.

Somes GW, Pahor M, Shorr RI, Cushman WC, Applegate WB. The role of diastolic blood pressure when treating isolated systolic hypertension. Arch Intern Med 1999;159:2004-9.

Lloyd-Jones DM, Evans JC, Levy D. Hypertension in adults across the age spectrum: current outcomes and control in the community. JAMA 2005; 294(4):466-472.

Staessen JA, Gasowski J, Wang JG, Thijs L, Den Hond E, Boissel JP et al. Risks of untreated and treated isolated systolic hypertension in the elderly: meta-analysis of outcome trials. Lancet 2000; 355(9207):865-872.

Hansson L, Lindholm LH, Ekbom T, Dahlof B, Lanke J, Schersten B et al. Randomised trial of old and new antihypertensive drugs in elderly patients: cardiovascular mortality and morbidity the Swedish Trial in Old

Patients with Hypertension-2 study. Lancet 1999; 354(9192):1751-1756.

Gueyffier F, Bulpitt C, Boissel JP, Schron E, Ekbom T, Fagard R et al. Antihypertensive drugs in very old people: a subgroup meta-analysis of randomised controlled trials. INDANA Group. Lancet 1999; 353(9155):793-796.

Goodwin, James S. Embracing complexity: A consideration of hypertension in the very old. J Gerontol A Biol Sci Med Sci. 2003 Jul;58(7):653-8. Review.

Griffith TF, Chua BS, Allen AS, Klassen PS, Reddan DN, Szczech LA. Characteristics of treated hypertension in incident hemodialysis and peritoneal dialysis patients. Am J Kidney Dis 2003; 42(6):1260-1269.

CDC. National Center for Health Statistics. Hypertension Fact Sheet. 2003. Accessed: 7/14/05. http://www.cdc.gov/nchs/fastats/hyprtens.htm

NDCHealth Top 200 Drugs for 2004 by U.S. Sales. Accessed: 7/25/05. http://www.ndchealth.com/press_center/uspharmaIndustryData/ndchealthtop2002004sales.htm

NDCHealth Top 200 Drugs for 2004 by U.S. Sales Accessed: 7/25/05. http://www.ndchealth.com/press_center/uspharmaindustrydata/2004top10productsbytotalprescription.htm

1b. Opportunity for Improvement

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Quality Gap/Room for Improvement

For all product lines, the rates for the measure have been increasing. The national average for 2005 was 66.8% for commercial with a range of 19.2% between the 10th percentile and the 90th percentile, 61.8% for Medicare with a range of 19.3%, and 64.6% for Medicaid with a range of 24.8%.

The mean for commercial plans has increased 8.7% from 2003 to 2005 while the standard deviation has decreased. For Medicare plans, the average rate increase over the past three years was 7.4%, slightly less than commercial plans, and the standard deviation has remained constant. The mean for Medicaid plans has increased 9.5% over the past three years, and the standard deviation has decreased.

Commercial, Medicare and Medicaid rates have increased over the past few years; however rates are still averaging in the low to mid-60%. Certainly the lower performing plans have potential for significant improvement, but even the highest scoring plans could improve considerably.

2006:

Product Line	N	Mean Rate	90th %tile
Commercial ALL	269	68.7	76.3
Commercial HMO	264	68.8	76.3
Commercial PPO	5	60.9	70.6
Medicaid All	92	61.4	71.0
Medicaid HMO	91	61.4	71.0
Medicaid PPO	1	59.9	59.9
Medicare All	161	66.3	75.1
Medicare HMO	159	66.4	75.1
Medicare PPO	2	60.6	65.5

2007:

Product Line	N	Mean Rate	90th %tile
Commercial ALL	261	59.5	68.1
Commercial HMO	257	59.7	68.4
Commercial PPO	4	48.9	67.6
Medicaid All	95	52.9	65.8
Medicaid HMO	94	52.9	65.8
Medicaid PPO	1	51.1	51.1

1b
C☐
P☐
M☐
N☐

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Medicare All	209	56.8	66.7
Medicare HMO	207	56.8	66.7
Medicare PPO	2	51.2	55.0

2008:

Product Line	N	Mean Rate	90th %tile
Commercial ALL	252	62.2	70.3
Commercial HMO	252	62.2	70.3
Commercial PPO	0	.	.
Medicaid All	114	53.4	65.0
Medicaid HMO	114	53.4	65.0
Medicaid PPO	0	.	.
Medicare All	241	57.6	67.8
Medicare HMO	241	57.6	67.8
Medicare PPO	0	.	.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:

Commercial

Controlling High BP	2003	2004	2005
n	259	277	267
Mean	58.1	62.2	66.8
Standard Deviation	9.7	9.0	7.4
Standard Error	0.6	0.5	0.5
Min	0.0	0.0	41.8
Max	83.1	83.1	83.7
10th Percentile	46.6	51.0	56.2
25th Percentile	53.3	58.6	62.5
50th Percentile	59.4	63.6	67.5
75th Percentile	64.5	67.4	72.3
90th Percentile	68.0	71.2	75.4

Medicare

Controlling High BP	2003	2004	2005
n	151	155	133
Mean	57.0	61.3	64.4
Standard Deviation	7.7	7.9	7.6
Standard Error	0.6	0.6	0.7
Min	32.6	28.5	40.4
Max	75.4	80.3	81.8
10th Percentile	47.0	52.5	54.4
25th Percentile	51.8	57.0	59.9
50th Percentile	58.1	61.8	65.0
75th Percentile	61.9	66.3	69.7
90th Percentile	66.2	69.8	73.7

Medicaid

Controlling High BP	2003	2004	2005
n	77	65	65
Mean	52.3	58.2	61.8
Standard Deviation	11.5	9.2	9.9
Standard Error	1.3	1.1	1.2
Min	15.3	30.0	38.7
Max	71.1	73.9	86.8
10th Percentile	39.4	47.7	48.2
25th Percentile	45.6	52.8	55.8
50th Percentile	54.5	59.9	62.0

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

75th Percentile	60.3	65.0	69.0
90th Percentile	64.5	67.6	73.0

1b.3 Citations for data on performance gap:
These results reflect measure performance from our HEDIS and Recognition Programs.

1b.4 Summary of Data on disparities by population group:
None

1b.5 Citations for data on Disparities:
NA

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** The most frequent and serious complications of uncontrolled hypertension include coronary heart disease, congestive heart failure, stroke, ruptured aortic aneurysm, renal disease, and retinopathy. Better control of BP has been shown to significantly reduce the probability that these undesirable and costly outcomes will occur. Thus, the relationship between the measure (control of hypertension) and the long-term clinical outcomes listed is well established. In clinical trials, antihypertensive therapy has been associated with reductions in stroke incidence (35-40%), myocardial infarction (20-25%) and heart failure (>50%) (JNC-7, 2003).

1c.2-3. Type of Evidence: Evidence-based guideline, Expert opinion, Meta-analysis

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Given the prevalence of hypertension, the impact of uncontrolled hypertension on the population that lead to acute clinical conditions/events, and the cost of care for these conditions, this condition could have a significant impact on health plans. Hypertension is a condition where a proven method for controlling hypertensive patients' blood pressure levels may be high on the list of strategic priorities.

The prevalence of hypertension varies in the population by (JNC-7, 2003):
- Age: prevalence and increased risk is higher in adults 40 to 89 years of age;
- Gender: hypertension is more common among men in early adulthood, however after the age of 50, hypertension in women increases faster than in men, and after the age of 60 the prevalence of hypertension in women is equal to or exceeds that in men;
- Race: blacks are more likely to have hypertension than whites;
- Socioeconomic status: persons with lower incomes and lower educational levels are more likely to have hypertension than those with higher incomes and education levels

While prevalence data are useful for understanding the proportion of persons who have HTN, the question from the perspective of controllability is whether any of these groups represent greater challenges for clinical management. The JNC-7 (2003) indicates that "women are more likely than men to know they have hypertension and to have it treated and controlled. In NHANES III, approximately 75 percent of hypertensive Black and White women were aware of their high BP in contrast to 65 percent of hypertensive men in these ethnic groups. Overall, 61 percent of hypertensive women, but only 44 percent of men were being treated with antihypertensive medications. The higher treatment rates in women have been attributed to increased numbers of physician contact" (JNC-7, 2003).

Health plans can supplement and reinforce patient and provider education related to the importance of blood pressure management in patients with hypertension and the decreased risk of coronary events and death associated with lower levels. Education and communication materials can emphasize the importance of adhering to medication, diet, and weight loss programs. Because response to patient and provider education programs has been mixed, health plans should review interventions conducted by other plans, assess studies on effectiveness and design intervention and patient education programs which have proven effective in like settings.

Hypertension is treatable with lifestyle modifications and if goal is not achieved, antihypertensive drugs can

1c
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N☐

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
oEfficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

be used. A large number of drugs are currently available for reducing BP. Thiazide-type diuretics should be used as initial therapy for most patients, either alone or in combination with one of the other classes (ACEIs, ARBs, BBs, CCBs) that have also been shown to reduce one or more hypertensive complications in randomized controlled outcome trials (JNC-7, 2004).

1c.5 **Rating of strength/quality of evidence (***also provide narrative description of the rating and by whom***):**

1c.6 **Method for rating evidence:**

1c.7 **Summary of Controversy/Contradictory Evidence:** None

1c.8 **Citations for Evidence (***other than guidelines***):** The Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. (JNC-7) Hypertension. 2003 Dec;42(6):1206-52. Epub 2003 Dec 1.

Wang Y, Wang QJ. The prevalence of prehypertension and hypertension among US adults according to the new joint national committee guidelines: new challenges of the old problem. Arch Intern Med 2004; 164(19):2126-2134.

1c.9 **Quote the Specific guideline recommendation (***including guideline number and/or page number***):**
1. The U.S. Preventive Services Task Force (USPSTF) recommends screening for high blood pressure in adults age 18 years and older. This is a grade A recommendation

2. JNC-7: Treating SBP and DBP to targets that are <140/90 mmHg is associated with a decrease in CVD complications.

1c.10 **Clinical Practice Guideline Citation:** U.S. Preventive Services Task Force. Screening for high blood pressure: U.S. Preventive Services Task Force reaffirmation recommendation statement. Ann Intern Med 2007 Dec 4;147(11):783-6.

Prevention, Detection, Evaluation, and Treatment of High Blood Pressure
The Seventh Report of the Joint National Committee on Prevention,
Detection, Evaluation, and Treatment ofHigh Blood Pressure
NIH P u b l i c a t i o n N o . 0 3 - 5 2 3 3 December 2003

1c.11 **National Guideline Clearinghouse or other URL:**

1c.12 **Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):**
A

1c.13 **Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**

1c.14 **Rationale for using this guideline over others:**

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?* — **1**

Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** — **1** Y☐ N☐
Rationale:

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about — **Eval**

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

the quality of care when implemented. (evaluation criteria)	Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** The number of members in the denominator whose most recent BP is adequately controlled during the measurement year. For a member's BP to be controlled, both the systolic and diastolic BP must be <140/90 (adequate control). To determine if a member's BP is adequately controlled, the organization must identify the representative BP. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** Continuous Enrollment: The measurement year **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Table CBP-A: Codes to Identify Hypertension Description ICD-9-CM Diagnosis Hypertension 401 Table CBP-B: Codes to Identify Outpatient Visits Description CPT Outpatient visits: 99201-99205, 99211-99215, 99241-99245, 99384-99387, 99394-99397	
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** Event/Diagnosis: Hypertensive. A member is considered hypertensive if there is at least one outpatient encounter (Table CBP-B) with a diagnosis of HTN (Table CBP-A) during the first six months of the measurement year. **2a.5 Target population gender:** **2a.6 Target population age range:** 18-85 years **2a.7 Denominator Time Window (***The time period in which cases are eligible for inclusion in the denominator***):** Continuous Enrollment: The measurement year **2a.8 Denominator Details (***All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):** Table CBP-A: Codes to Identify Hypertension Description ICD-9-CM Diagnosis Hypertension 401 Table CBP-B: Codes to Identify Outpatient Visits Description CPT Outpatient visits: 99201-99205, 99211-99215, 99241-99245, 99384-99387, 99394-99397	
2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** • Exclude from the eligible population all members with evidence of end-stage renal disease (ESRD) (Table CBP-C) on or prior to December 31 of the measurement year. Documentation in the medical record must include a dated note indicating evidence of ESRD. Documentation of dialysis or renal transplant also meets the criteria for evidence of ESRD. • Exclude from the eligible population all members with a diagnosis of pregnancy (Table CBP-C) during the measurement year. • Exclude from the eligible population all members who had an admission to a nonacute inpatient setting any time during the measurement year. Refer to Table FUH-B for codes to identify nonacute care.	**2a-specs** **C☐** **P☐** **M☐** **N☐**

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**

Table CBP-C: Codes to Identify Exclusions

Description: Evidence of ESRD	CPT	HCPCS	ICD-9-CM Diagnosis	ICD-9-CM Procedure	UB Revenue	UB type of Bill	POS
	36145, 36800, 36810, 36815, 36818, 36819, 36820, 36821, 36831-36833, 50300, 50320, 50340, 50360, 50365, 50370, 50380, 90920, 90921, 90924, 90925, 90935, 90937, 90939, 90940, 90945, 90947, 90989, 90993, 90997, 90999, 99512	G0257, G0308-G0313, G0314-G0319, G0322, G0323, G0326, G0327, G0392, G0393, S9339	585.5, 585.6, V42.0, V45.1, V56	38.95, 39.27, 39.42, 39.43, 39.53, 39.93-39.95, 54.98, 55.6	0367	72X, 080x, 082x, 085x, 088x	65

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

None

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

None.

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion

2a.20 Interpretation of Score: Better quality = Higher score

2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**

None

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**

After a measure is created, it will go through first-year analysis. This anaysis consists of a review of data completeness, national results, regional results, and eligible population and prevalence. The first-year results are compared by data collection methodology, health plan accreditation status and finally, are compared to the field test results.

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

NA

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*

Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

2a.29-31 Data dictionary/code table web page URL or attachment:

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Clinicians: Group

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Amb Surgery Center, Ambulatory Care: Office, Ambulatory Care: Clinic, Ambulatory Care: Emergency Dept, Ambulatory Care: Hospital Outpatient, All settings

2a.38-41 Clinical Services (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 Data/sample *(description of data/sample and size)*: Product Line Reporting Type Beta binomial Reliability

Commercial	HMO + PPO	0.944903984
Commercial	HMO Only	0.964551482
Commercial	PPO Only	0.963536304
Medicare	HMO + PPO	0.957466173
Medicare	HMO Only	0.968996088
Medicare	PPO Only	0.959233323
Medicaid	HMO Only	0.940821614

2b.2 Analytic Method *(type of reliability & rationale, method for testing)*:
Reliability was estimated by using the beta-binomial model. Beta-binomial is a better fit when estimating the reliability of simple pass/fail rate measures as is the case with most HEDIS measures. The beta-binomial model assumes the plan score is a binomial random variable conditional on the plan´s true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates. The beta distribution can be symmetric, skewed or even U-shaped.

Equation for calculating the reliability:
Reliability = Variance (plan-to-plan) / [Variance (plan-to-plan) + Variance (plan-specific-error]

Reliability used here is the ratio of signal to noise. The signal in this case is the proportion of the variability in measured performance that can be explained by real differences in performance. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in performance.

2b
C☐
P☐
M☐
N☐

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
NA

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: NA

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
NA

2c
C☐
P☐
M☐
N☐

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
NA

2d. Exclusions Justified

2d
C☐

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);
if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

2d.1 Summary of Evidence supporting exclusion(s):
NA

2d.2 Citations for Evidence:
NA

2d.3 Data/sample *(description of data/sample and size)***:** NA

2d.4 Analytic Method *(type analysis & rationale)***:**
NA

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)***:**
NA

P☐ M☐ N☐ NA☐

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)***:** NA

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)***:**
NA

2e.3 Testing Results *(risk model performance metrics)***:**
NA

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: NA

2e
C☐ P☐ M☐ N☐ NA☐

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR rationale/data support no risk adjustment.

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)***:** NA

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)***:**
NA

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)***:**
NA

2f
C☐ P☐ M☐ N☐

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)***:** NA

2g.2 Analytic Method *(type of analysis & rationale)***:**
NA

2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)***:**
NA

2g
C☐ P☐ M☐ N☐ NA☐

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

2h. Disparities in Care

2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)***:** NA

2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:
NA

2h
C☐ P☐ M☐ N☐ NA☐

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*

2

Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties***, met?**

2
C☐

Rationale:	**P☐ M☐ N☐**
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information 3a.1 **Current Use:** In use 3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:** Healthcare Effectiveness Data and Information Set (HEDIS) - Health Plans and Physician Measurement 3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** Quality Compass: http://www.ncqa.org/tabid/177/Default.aspx America´s Best Health Plans: http://www.ncqa.org/tabid/506/Default.aspx **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)***:** None 3a.5 **Methods** *(e.g., focus group, survey, QI project)***:** NA 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:** NA	**3a C☐ P☐ M☐ N☐**
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:** None	
(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** Note that this measure is different from the IVD: Blood Pressure Control (0075) measure in that the denominators are different. IVD: Blood Pressure Control (0075) is specific to the population diagnosed with IVD while Contolling High Blood Pressure (0018) measures BP control in the population of patients with a diagnosis of hypertension.	**3b C☐ P☐ M☐ N☐ NA☐**
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** NA 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** NA	**3c C☐ P☐ M☐ N☐ NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability***, met?** **Rationale:**	**3 C☐**

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

	P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition)	4a C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	4b C☐ P☐ M☐ N☐
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** 4c.2 **If yes, provide justification.**	4c C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** NA	4d C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** NA 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** NA 4e.3 **Evidence for costs:** MA 4e.4 **Business case documentation:** NA	4e C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	4
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	4 C☐ P☐ M☐ N☐

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y**☐ **N**☐ **A**☐

CONTACT INFORMATION
Co.1 Measure Steward (Intellectual Property Owner) **Co.1 Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 **Co.2 Point of Contact** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-
Measure Developer If different from Measure Steward **Co.3 Organization** National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005 **Co.4 Point of Contact** Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-
Co.5 Submitter If different from Measure Steward POC Greg, Pawlson, pawlson@ncqa.org, 202-955-5170-, National Committee for Quality Assurance
Co.6 Additional organizations that sponsored/participated in measure development

ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development **Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.** NCQA follows a standard process of vetting members of their measurement advisory panels for conflicts of interest.
Ad.2 If adapted, provide name of original measure: NA **Ad.3-5 If adapted, provide original specifications URL or attachment**
Measure Developer/Steward Updates and Ongoing Maintenance **Ad.6 Year the measure was first released:** **Ad.7 Month and Year of most recent revision:** 07, 2009 **Ad.8 What is your frequency for review/update of this measure?** Approximately every 3 years, sooner if the clinical guidelines have changed significantly. **Ad.9 When is the next scheduled review/update for this measure?** 10, 2013
Ad.10 Copyright statement/disclaimers:
Ad.11 -13 Additional Information web page URL or attachment:
Date of Submission (*MM/DD/YY*)**:** 12/31/2010

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0013 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Hypertension: Blood Pressure Control
De.2 **Brief description of measure**: Percentage of patients aged 18 years and older with a diagnosis of hypertension with a blood pressure <140/90 mm Hg OR patients with a blood pressure >= 140/90 mm Hg and prescribed 2 or more anti-hypertensive medications during the most recent office visit within a 12 month period
1.1-2 **Type of Measure:** Process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Population health De.5 **IOM Quality Domain**: Effectiveness, Equity De.6 **Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:**	**A** **Y☐** **N☐**
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement Accountability	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** No, testing will be completed within 12 months D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use) **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s): RWinkler	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**:	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Affects large numbers, Leading cause of morbidity/mortality, High resource use, Severity of illness, Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** Hypertension is a high impact topic area: •One in three adults in the United States has high blood pressure. •Approximately 69% of those who have a first heart attack, 77% who have a first stroke, and 74% of those with congestive heart failure have a blood pressure greater than 140/90 mmHg (based on unpublished estimates from the National Heart, Lung, & Blood Institute [NHLBI]) •Hypertension is associated with shorter overall life expectancy, shorter life expectancy free from cardiovascular disease, and more years lived with cardiovascular disease (based on data from the Framingham Heart Study [FHS]/NHLBI). •From 1995-2005 the death rate from high blood pressure increased 25.2%. •In 2006, the number of ambulatory care visits for hypertension was 44,879,000. •The 2009 estimated direct and indirect costs of hypertension are $73.4 billion. 1a.4 **Citations for Evidence of High Impact:** Lloyd-Jones D, Adams R, Carnethon M, et al. Heart disease and stroke statistics – 2009 update: a report from the american heart association statistics committee and stroke statistics subcommittee. Circulation. 2009;199(3):21-181.	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement	**1b**

Comment [KP1]: 1a. The measure focus addresses:
•a specific national health goal/priority identified by NQF's National Priorities Partners; OR
•a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

1b.1 Benefits (improvements in quality) envisioned by use of this measure: This measure aims to improve the number of patients whose blood pressure is under control and encourage appropriate management in cases where it is not.

C☐ P☐ M☐ N☐

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
From 1998-2000,
•Approximately 76% of hypertensive patients with a consistent average SBP >140 or DBP >90 over 6 months had either a change in dose in their antihypertensive regimen or repeated education regarding lifestyle modifications (1)

Performance relating to the National Committee for Quality Assurance measure of controlling high blood pressure shows the following for 2009 (2)
Measure: Percentage of members 18 to 85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled to <140/90 mmHg during the measurement year. Both systolic and diastolic pressure must be at or under this threshold for blood pressure to be considered controlled. 63.4 (commercial); 58.5 (Medicare); 55.8 (Medicaid)

Using data from the National Ambulatory Medical Survey (NAMS), Ma and Stafford found that 39% of treated visits for hypertension were at recommended blood pressure goals. Additionally:
•There was geographic variability in the odds of being treated for hypertension (South vs. Northeast – 2.6) and by visit type (first time vs. return visits – 1.6).
•Odds of blood pressure control were greater for patients with comorbidities (1.6).(3)

(1)Technical Appendix to McGlynn EA, Asch SM, Adams JL, et al. Who is at greatest risk for receiving poor quality health care? New England Journal of Medicine. 2006;354:1147-1156. Available at: www.rand.org/pubs/working_papers/WR-174-1.
(2)The State of Healthcare Quality 2009. National Committee for Quality Assurance. Washington DC. Available at: http://www.ncqa.org/Portals/0/Newsroom/SOHC/SOHC_2009.pdf.
(3)Ma J, Stafford RS. Screening, treatment, and control of hypertension is US private physician offices, 2003-2004. Hypertension. 2008;51:1275-1281.

1b.3 Citations for data on performance gap:

1b.4 Summary of Data on disparities by population group:
We are not aware of any publications/evidence outlining disparities in this area.

1b.5 Citations for data on Disparities:

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Effective management of blood pressure in patients with hypertension can help prevent cardiovascular events, including myocardial infarction, stroke, and the development of heart failure.(1)

(1)National Institutes of Health, National Heart, Lung, and Blood Institute, National High Blood Pressure Education Program. The seventh report of the Joint National Committee on Prevention, Detection, and Treatment of High Blood Pressure. NIH Publication No. 04-5230. September 2004.

1c.2-3. Type of Evidence: Evidence-based guideline

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Blood pressure control is recommended. Treating SBP and DBP to targets that are <140/90 mm Hg is associated with a decrease in CVD risk complications. In patients with hypertension and diabetes or renal

1c
C☐ P☐ M☐ N☐

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
oEfficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

disease, the BP goal is <130/80 mm Hg.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
Strength/Quality of Evidence not Rated

1c.6 Method for rating evidence:

1c.7 Summary of Controversy/Contradictory Evidence:

1c.8 Citations for Evidence (*other than guidelines***):**

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
Treating SBP and DBP to targets that are <140/90 mm Hg is associated with a decrease in CVD risk complications. In patients with hypertension and diabetes or renal disease, the BP goal is <130/80 mm Hg. (JNC VII, 2004)

Therapy begins with lifestyle modification, and if BP goal is not achieved, thiazide-type diuretics should be used as initial therapy for most patients, either alone or in combination with one of the other classes (ACEIs, ARBs, BBs, or CCBs) that have also been shown to reduce one or more hypertensive complications in randomized-controlled outcome trials. Selection of one of these other agents as initial therapy is recommended when a diuretic cannot be used or a competing indication is present that requires use of a specific drug…If the initial drug selected is not tolerated or contraindicated, then a drug from one of the other classes proven to reduce cardiovascular events should be substituted. (JNC VIII, 2004)

Compelling indications for use of individual drug classes for treatment of hypertension (JNC VIII, 2004):

Stable angina and silent ischemia
Unless contraindicated, pharmacologic therapy should be initiated with a BB. BBs will lower BP; reduce symptoms of angina; improve mortality; and reduce cardiac output, heart rate, and AV conduction. The reduced inotropy and hear rated decrease myocardial oxygen demand.

If angina and BP are not controlled by BB therapy alone, or if BBs are contraindicated, as in the presence of severe reactive airway disease, severe peripheral arterial disease, high-degree AV block, or the sick sinus syndrome, either long-acting dihydropyridine or nondihydropyridine CCBs may be used. CCBs decrease total peripheral resistance, which leads to reduction in BP and wall tension. CCBs also decrease coronary resistance and enhance post-stenotic coronary perfusion. Nondihyrdopyridine CCBs can decrease heart rate; when in combination with a BB however, they may cause severe bradycardia or high degrees of heart block. Therefore, long-acting dihydropyridine CCBs are preferred for combination therapy with BBs. If angina or BP is still not controlled with this two-drug regimen, nitrates can be added, but these should be used with caution in patients taking phosphodiesterase-5 inhibitors such as sildenafil. Short-acting dihydropyridine CCBs should not be used because of their potential to increase mortality, especially in the setting of acute MI.
Heart Failure
HF is a "compelling indication" for the use of ACEI. Abundant evidence exists to justify their use with all stages of HF. In patients intolerant of ACEIs, ARBs may be used. BBs are also recommended for HF because of clinical studies demonstrating decreased morbidity and mortality, and improvement in HF symptoms.
Diabetes
Thiazide-type diuretics are beneficial in diabetics, either alone or as part of a combined regimen.

Therapy with an ACEI also is an important component of most regimens to control BP in diabetic patients. ACEIs may be used alone for BP lowering but are much more effective when combined with a thiazide –type diuretic or other antihypertensive drugs.

BBs, especially beta 1-selective agents, are beneficial to diabetics as part of multidrug therapy, but their value as monotherapy is less clear. A BB is indicated in a diabetic with IHD but may be less effective in preventing stroke than an ARB as was found in the LIFE study. Although BBs can cause adverse effects on glucose homeostasis in diabetics, including worsening of insulin sensitivity and potential masking of the

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

epinephrine-mediated symptoms of hypoglycemia, these problems are usually easily managed and are not absolute contraindication for BB use.

CCBs may be useful to diabetics, particularly as part of combination therapy to control BP.
Chronic Kidney Disease
The joint recommendation of the American Society of Nephrology and the National Kidney Foundation provide useful guidelines for the management of hypertensive patients with CKD. They recommend a goal BP for all CKD patients of <130/80 mm Hg and the need for more than one antihypertensive drug to achieve this goal. The guidelines indicate that most patients with CKD should receive an ACEI or ARB in combination with a diuretic, and many will require a loop diuretic rather than a thiazide. In addition, if there is a conflict between the goals of slowing progression of CKD and CV risk reduction, individual decision making is recommended based on risk stratification.

1c.10 **Clinical Practice Guideline Citation:** National Institutes of Health, National Heart, Lung, and Blood Institute, National High Blood Pressure Education Program. The seventh report of the Joint National Committee on Prevention, Detection, and Treatment of High Blood Pressure. NIH Publication No. 04-5230. September 2004.
1c.11 **National Guideline Clearinghouse or other URL:**
http://www.nhlbi.nih.gov/guidelines/hypertension/

1c.12 **Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):**
Strength of Recommendation not Rated

1c.13 **Method for rating strength of recommendation** (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**

1c.14 **Rationale for using this guideline over others:**
It is the PCPI policy to use guidelines, which are evidence-based, applicable to physicians and other healthcare providers, and developed by a national specialty organization or government agency. In addition, the PCPI has now expanded what is acceptable as the evidence base for measures to included documented quality improvement (QI) initiatives or implementation projects that have demonstrated improvement in the quality of care.

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES	
Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)	**Eval Rating**
2a. MEASURE SPECIFICATIONS	
S.1 **Do you have a web page where current detailed measure specifications can be obtained?** S.2 **If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 **Numerator Statement (***Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** Patients with a blood pressure <140/90 mm Hg OR	**2a-specs** **C☐** **P☐** **M☐** **N☐**

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

Patients with a blood pressure >= 140/90 mm Hg and prescribed 2 or more anti-hypertensive medications during the most recent office visit within a 12-month period

Instructions:
Report number of patients for 1st numerator component (outcome)
AND
Report number of patients for 2nd numerator component (process)
AND
Report total number of patients for all numerator components

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
once during the 12-month measurement period

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
BP value used for measure calculation:
- Must be specified in medical record if >1 value (systolic/diastolic) recorded, and
- Must be value upon which treatment decision was based, and
- May be obtained by measurement during office visit, review of home blood pressure log, OR review of 24 hour ambulatory blood pressure monitor

Prescribed may include prescriptions given to the patient for 2 or more anti-hypertensive medications at most recent office visit OR patient already taking 2 or more anti-hypertensive medications as documented in the current medication list (Each anti-hypertensive component in a combination medication should be counted individually)

See attached for EHR specifications.

For Claims/Administrative: Patients with a blood pressure <140/90 mm Hg
- 3074F Most recent systolic blood pressure, <130 mm Hg
OR
- 3075F Most recent systolic blood pressure, 130 to 139 mm Hg
AND
- 3078F Most recent diastolic blood pressure, <80 mm Hg
OR
- 3079F Most recent diastolic blood pressure, 80 - 89 mm Hg
OR
Patients with a blood pressure >= 140/90 mm Hg and prescribed 2 or more anti-hypertensive medications during the most recent office visit within a 12 month period
- 3077F Most recent systolic blood pressure >= 140 mm Hg
AND
- 3080F Most recent diastolic blood pressure >= 90 mm Hg
AND
- CPT Category II (in development) 4XXXF- Two or more anti-hypertensive medications prescribed

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
All visits for patients aged 18 years and older with a diagnosis of hypertension

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Aged 18 years and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
12 consecutive months

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
See attached for EHR Specifications.

For Claims/Administrative: see coding tables attached for coding: (ICD-9-CM, ICD-10-CM, SNOMED, CPT)

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):**
Documentation of medical reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, allergy, intolerant, postural hypotension)

Documentation of patient reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, patient declined)

Documentation of system reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, financial reasons)

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
- Append modifier to CPT II code (in development) 4XXXF-1P
- Append modifier to CPT II code (in development) 4XXXF-2P
- Append modifier to CPT II code (in development) 4XXXF-3P

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**

2a.12-13 Risk Adjustment Type: No risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
See attached for calculation algorithm

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**

2a.23 Sampling (Survey) Methodology *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)*
Paper medical record/flow-sheet, Electronic administrative data/claims, Electronic clinical data, Electronic Health/Medical Record, Registry data

2a.25 Data source/data collection instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
This measure, in its previous specifications, is currently being used in the ACCF PINNACLE registry for the outpatient office setting.

2a.26-28 Data source/data collection instrument reference web page URL or attachment: URL
www.pinnacleregistry.org

2a.29-31 Data dictionary/code table web page URL or attachment:

2a.32-35 Level of Measurement/Analysis (*Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Clinicians: Group

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Home, Ambulatory Care: Office, Ambulatory Care: Clinic, Nursing home (NH) /Skilled Nursing Facility (SNF),

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

Ambulatory Care: Hospital Outpatient, Assisted Living, Group homes

2a.38-41 **Clinical Services** (*Healthcare services being measured, check all that apply*)
Clinicians: PA/NP/Advanced Practice Nurse, Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 **Data/sample** *(description of data/sample and size)*: PCPI staff analysis of available testing data for this measure is ongoing and will be submitted to NQF separately and at the earliest possible date.

2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)*:

2b.3 **Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:

2b C☐ P☐ M☐ N☐

2c. Validity testing

2c.1 **Data/sample** *(description of data/sample and size)*:

2c.2 **Analytic Method** *(type of validity & rationale, method for testing)*:
All PCPI performance measures are assessed for content validity by expert work group members during the development process. Additional input on the content validity of draft measures is obtained through a 30-day public comment period and by also soliciting comments from a panel of consumer, purchaser, and patient representatives convened by the PCPI specifically for this purpose. All comments received are reviewed by the expert work group and the measures adjusted as needed. Other external review groups (eg, focus groups) may be convened if there are any remaining concerns related to the content validity of the measures.

2c.3 **Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:

2c C☐ P☐ M☐ N☐

2d. Exclusions Justified

2d.1 **Summary of Evidence supporting exclusion(s)**:
The Hypertension Work Group agreed to include a medical reason exception so that clinicians can exclude patients for whom the prescription of two or more antihypertensive medications may not be indicated or contraindicated (eg, allergy, intolerant, postural hypotension). A patient reason exception has been included for patients who might decline this particular pharmacologic treatment. Additionally, a system reason exception has been included to account for potential financial constraints that would inhibit use/prescription of two or more antihypertensive medications.

2d.2 **Citations for Evidence:**

2d.3 **Data/sample** *(description of data/sample and size)*:

2d.4 **Analytic Method** *(type analysis & rationale)*:

2d.5 **Testing Results** *(e.g., frequency, variability, sensitivity analyses)*:

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 **Data/sample** *(description of data/sample and size)*:

2e C☐ P☐

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;
AND
•precisely defined and specified:
–if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of ca ... [1]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;Error! Bookmark not defined. OR ... [2]

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*: This is a process measure; risk adjustment is not indicated. **2e.3 Testing Results** *(risk model performance metrics)*: **2e.4 If outcome or resource use measure is not risk adjusted, provide rationale:**	**M☐ N☐ NA☐**
2f. Identification of Meaningful Differences in Performance **2f.1 Data/sample from Testing or Current Use** *(description of data/sample and size)*: **2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance** *(type of analysis & rationale)*: **2f.3 Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:	**2f C☐ P☐ M☐ N☐**
2g. Comparability of Multiple Data Sources/Methods **2g.1 Data/sample** *(description of data/sample and size)*: **2g.2 Analytic Method** *(type of analysis & rationale)*: **2g.3 Testing Results** *(e.g., correlation statistics, comparison of rankings)*:	**2g C☐ P☐ M☐ N☐ NA☐**
2h. Disparities in Care **2h.1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: The measure is not stratified by patient groups or cohorts that could potentially be affected by disparities in care, nor are we aware of any existing research identifying disparities in care that may be relevant to this measure. **2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** We are not aware of any relevant disparities that have been identified.	**2h C☐ P☐ M☐ N☐ NA☐**
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* **C☐ P☐ M☐ N☐**
3. USABILITY	
Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)	**Eval Rating**
3a. Meaningful, Understandable, and Useful Information **3a.1 Current Use:** In use **3a.2 Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly*	**3a C☐ P☐ M☐ N☐**

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

reported, state the plans to achieve public reporting within 3 years)**:**
This measure is not yet used in any public reporting initiative. The measure will, however, be eligible for inclusion in the CMS PQRS and other government programs in 2012 and would thus provide information about clinician participation to the public. The ACCF, AHA, and PCPI believe that the reporting of such participation information is a beneficial first step on a trajectory toward the public reporting of performance results, which is most appropriate after the measures are thoroughly tested and the reliability of the performance data has been validated. Continued NQF endorsement will facilitate our ongoing progress toward this public reporting objective.

3a.3 If used in other programs/initiatives (*If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
All PCPI measures are suitable for use in quality improvement initiatives and are made freely available on the PCPI website and through the implementation efforts of medical specialty societies and other PCPI members. The PCPI strongly encourages the use of its measures in QI initiatives and seeks to provide information on such initiatives to PCPI members.

The American Heart Association's Get With The Guidelines®-Outpatient (GWTG-O) is a virtual performance improvement program that will improve adherence to evidence-based care in the outpatient setting, including specialist practices, general healthcare practices and health clinics. GWTG-Outpatient historically has had a long history of quality improvement for cardiovascular care. They have published 65 publications over the past 10 years. This program is designed to assist healthcare professionals in the outpatient setting to provide the best possible care to patients. This program collects a number of clinical measures for primary and secondary prevention. Clinical measure sets include those developed by American Heart Association, including those co-developed with other organizations, such as the American College of Cardiology Foundation and the American Medical Association, as well as other National Quality Forum endorsed measures.

Through this program, we collect data on clinical measures affecting a number of cardiovascular related conditions including, atrial fibrillation, coronary artery disease, heart failure, hypertension, diabetes, and preventative care. The primary analytical system used is Duke Clinical Research Institute. Get With The Guidelines®-Outpatient is a quality improvement program that can be utilized for Maintenance of Certification (MOC) with groups like American Board of Internal Medicine (ABIM) and American Board of Family Medicine (ABFM). ABIM has confirmed that the reports received from Get With The Guidelines-Outpatient can be utilized in completion of their Self-Directed Practice Improvement Module (PIM). The Self-Directed PIM provides one pathway for earning practice performance credit in ABIM's MOC program. This program includes several integral components: A preliminary Continuing Education (CE) course for the care team, data submission and reporting that is integrated with existing Electronic Health Records (EHRs)/health technology platforms, corresponding professional and provider education including webinars, online tools and resources, digital access to reference materials and videos through the Get With The Guidelines®-Outpatient website (http://outpatient.heart.org). The free continuing education activity titled, Outpatient Quality Improvement Focus, addresses the quality chasm and treatment gap, presents the benefits of quality improvement and identifies the steps necessary for implementation in the practice setting. This continuing education activity is certified for physicians, nurses and pharmacists.

The American College of Cardiology Foundation's Cardiology Practice Improvement Pathway (CPIP) uses clinical measure sets that are developed and specified by the American College of Cardiology Foundation with the American Heart Association and the American Medical Association's Physician Consortium for Performance Improvement for Hypertension, Stable Coronary Artery Disease, Heart Failure, and Atrial Fibrillation/Atrial Flutter. This program is intended as an approved quality improvement product that can be applied toward ABIM's Part IV practice performance requirement for Maintenance of Certification (ABIM AQI application submitted). They are in the process of creating a homepage on the Cardiosource.org homepage. The URL will be cardiosource.org/cpip. The web-based tool will be available after spring 2011. Through an online webinar hosted in November 2010, CPIP anticipates enrolling 50 - 100 practices during 2011 which will provide data from about 500-1,000 cardiologists. This ACCF initiative has contracted with the NY QIO: IPRO to analyze and scores based on thresholds. Of the 100 points needed to achieve recognition in the program, 70 come directly from clinical points such as the Heart Failure measures that are being submitted to NQF for consideration. IPRO will audit 5% of practices who submit their data for

recognition evaluation.

The American College of Cardiology Foundation's has an Performance Improvement program entitled "A New Era" which is an educational format approved for credit by the American Medical Association (AMA) and the American Nursing Credentialing Center. This continuing medical education program blends both quality improvement and educational methodologies to provide a high quality learning experience that impacts changes to practice. These activities are structured, long-term processes in which a healthcare professional learns about the heart failure specific performance metrics, uses metrics to retrospectively assess his practice, applies these metrics prospectively over a useful interval, and reevaluates his performance. As part of this process, clinicians set goals for change and engage in structured learning activities to improve their performance. As of December 6th, 2010:
- 425 clinicians have enrolled in A New ERA
- The data is generated from all but four states (Montana, New Hampshire, South Dakota, and Wyoming)
- 82% are physicians
- 90% agreed or strongly agreed that performance metric data were valuable
- 80% agreed or strongly agreed that performance metric data review would help them improve their practice
- No one has finished the program, as it takes several months to do so

In 2008, the American College of Cardiology Foundation launched the PINNACLE program (formerly known as the Improving Continuous Cardiac Care or IC3). This was the first, national, prospective, outpatient based cardiac QI registry in the US. While participation is voluntary, this registry collects a variety of longituditional patient data at the point of service, including patients' symptoms, vital signs, medication, and recent hospitalizations. Jointly developed ACCF/AHA/PCPI measures for Coronary Artery Disease, Heart Failure, and Atrial Fibrillation. Data collection is achieved in 2 ways for the practices: paper forms or practice's electronic medical record data collection systems. The primary analytical system used is St. Luke's Mid America Heart Institute. The ACCF registry, PINNACLE, pulls data from outpatient facilities via paper flowsheets or 14 EHR vendors. As of December 10, 2010, there are 47 practices collecting data at 200 sites with 276,000 unique patients representing 1 million documented encounters.

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 **Data/sample** *(description of data/sample and size)*:

3a.5 **Methods** *(e.g., focus group, survey, QI project)*:

3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*:

3b/3c. Relation to other NQF-endorsed measures

3b.1 **NQF # and Title of similar or related measures:**

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization — **3b**
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 **Are the measure specifications harmonized? If not, why?**

C☐ P☐ M☐ N☐ NA☐

3c. Distinctive or Additive Value — **3c**
3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:**

5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the**

C☐ P☐ M☐ N☐ NA☐

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

same target population), Describe why it is a more valid or efficient way to measure quality:	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** **C☐** **P☐** **M☐** **N☐**
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** **C☐** **P☐** **M☐** **N☐**
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes 4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** **C☐** **P☐** **M☐** **N☐**
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** **C☐** **P☐** **M☐** **N☐** **NA☐**
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Although we are not currently aware of any unintended consequences related to this measure, we plan through an active redesign of the PCPI website to facilitate the collection of information on unintended consequences from the users of PCPI measures.	**4d** **C☐** **P☐** **M☐** **N☐**
4e. Data Collection Strategy/Implementation 4e.1 **Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Costs to implement the measure have not been calculated.	**4e** **C☐** **P☐** **M☐** **N☐**

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

4e.3 Evidence for costs: **4e.4 Business case documentation:**	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **Rationale:**	**4** **C☐** **P☐** **M☐** **N☐**
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited ☐**
Steering Committee: Do you recommend for endorsement? **Comments:**	**Y☐** **N☐** **A☐**

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
American Medical Association, 515 N State St, Chicago, Illinois, 60654

Co.2 Point of Contact
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-

Measure Developer If different from Measure Steward
Co.3 Organization
American Medical Association, 515 N State St, Chicago, Illinois, 60654

Co.4 Point of Contact
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-

Co.5 Submitter If different from Measure Steward POC
Mark, Antman, DDS, MBA, mark.antman@ama-assn.org, 312-464-5056-, American Medical Association

Co.6 Additional organizations that sponsored/participated in measure development
American College of Cardiology Foundation/American Heart Association

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development
Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
Bruce Abramowitz, MD, FACC (interventional cardiology; measure implementation)
Karen Alexander, MD (cardiology; geriatrics)
Craig T. Beam, CRE (patient representative)
Robert O. Bonow, MD, MACC, FAHA, FACP (cardiology)
Jill S. Burkiewicz, PharmD, BCPS (pharmacy)
Michael Crouch, MD, MSPH (family medicine)
David C. Goff, Jr., MD, PhD, FAHA, FACP (internal medicine)
Richard Hellman, MD, FACP, FACE (endocrinology)
Thomas James, III, FACP, FAAP (health plan representative)
Marjorie L. King, MD, FACC, FAACVPR (cardiology; cardiac rehabilitation)
Edison A. Machado, Jr., MD, MBA (measure implementation)
Eduardo Ortiz, MD, MPH (guideline development)
Michael O'Toole, MD (cardiology; electrophysiology; measure implementation)

Stephen D. Persell, MD, MPH (internal medicine; measure implementation)
Jesse M. Pines, MD, MBA, MSCE, FAAEM (emergency medicine)
Frank J. Rybicki, MD, PhD (radiology)
Lawrence B. Sadwin (patient representative)
Joanna D. Sikkema, MSN, ANP-BC, FAHA (cardiology)
Peter K. Smith, MD (thoracic surgery)
Patrick J. Torcson, MD, FACP, MMM (hospital medicine)
John B. Wong MD, FACP (internal medicine)

PCPI measures are developed through cross-specialty, multi-disciplinary work groups. All medical specialties and other health care professional disciplines participating in patient care for the clinical condition or topic under study must be equal contributors to the measure development process. In addition, the PCPI strives to include on its work groups individuals representing the perspectives of patients, consumers, private health plans, and employers. This broad-based approach to measure development ensures buy-in on the measures from all stakeholders and minimizes bias toward any individual specialty or stakeholder group. All work groups have at least two co-chairs who have relevant clinical and/or measure development expertise and who are responsible for ensuring that consensus is achieved and that all perspectives are voiced.

Ad.2 **If adapted, provide name of original measure:** This measure is a combination of two previously developed PCPI measures - Hypertension: Blood Pressure Measurement and Hypertension: Plan of Care
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2003
Ad.7 **Month and Year of most recent revision:** 12, 2010
Ad.8 **What is your frequency for review/update of this measure?** Every 3 years or as new evidence becomes available that materially affects the measures.
Ad.9 **When is the next scheduled review/update for this measure?** 12, 2013

Ad.10 **Copyright statement/disclaimers:** This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement® (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. While copyrighted, they can be reproduced and distributed, without modification, for noncommercial purposes, e.g., use by health care providers in connection with their practices. Commercial use is defined as the sale, license, or distribution of the performance measures for commercial gain, or incorporation of the performance measures into a product or service that is sold, licensed or distributed for commercial gain. Commercial uses of the PPMS require a license agreement between the user and the AMA, (on behalf of the Consortium) or the ACC or the AHA. Neither the AMA, ACC, AHA, the Consortium nor its members shall be responsible for any use of this PPMS.

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Limited proprietary coding is contained in the measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The AMA, the ACC, the AHA, the Consortium and its members disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specifications.

Ad.11 -13 **Additional Information web page URL or attachment:**

Date of Submission (*MM/DD/YY*)**:** 12/14/2010

Page 8: [1] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

2d. Clinically necessary measure exclusions are identified and must be:

- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;

AND

- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;

AND

- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).

Page 8: [2] Comment [KP16] **Karen Pace** **10/5/2009 8:59:00 AM**

2e. For outcome measures and other measures (e.g., resource use) when indicated:

- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;**Error! Bookmark not defined.** OR

rationale/data support no risk adjustment.

PCPI Performance Measure Testing Results - Hypertension

The PCPI Testing Protocol outlines the comprehensive set of tests that should be conducted in different practice settings, using different data sources, for each performance measurement set. The PCPI recognizes that multiple testing projects will be needed to achieve the required test results for each measurement set. Moreover, testing and surveillance should be part of continued evaluation and updating of the measures.

This document presents results for the American College of Cardiology (ACC)/ American Heart Association (AHA)/ PCPI Hypertension Physician Performance Measures from the Doctor's Office Quality Project[1], the CMS Physician Group Practice program[2], the Persell testing project[3], the Peterson testing project[4], and the EQUIP Project.

1. Where are the measures used and what are the documented performance rates ?

Performance rates for individual measures are found to vary across the measure reporting and testing programs. This is expected, in that the performance rates are derived from different data sources, different practice sites, and variation in both the program implementation of the measures and approaches to implementation of the measures at individual practices or by the physicians in the practice sites included in the testing project. Variation in performance rates across practice sites suggests that the measure is able to differentiate among practices. In addition, no single relatively high value of performance for a measure should be used as an indication of that measure being "topped out", and hence no longer important or meaningful to measure.

PCPI #	**NQF endorsed (#)**	**Measure**	**Doctor's Office Quality (DOQ) Project** (performance)	**CMS PGP 2006** (performance)	**Persell Testing Project** (performance)	**Petersen Testing Project** (performance)	**EQUIP Project** (performance)
1	13	Blood Pressure Measurement	**79.7** %	Not reported	Surrogate testing*	Surrogate testing* **57.3** % were in control	Not reported
2	17	Plan of Care	Not reported	Not reported	Surrogate testing*	Surrogate testing* **53.7** % had a follow-up visit within 6 months	Not reported

** Surrogate testing refers to testing measures, and the corresponding data elements (eg, numerators and denominators), that are similar to those in the PCPI measures.*

What are the reported exception rates? (# patients with valid exceptions / (# patients in denominator)

It is expected that reported exception rates will vary across measures and across the measure reporting and testing programs. This is primarily due to differences in the types of measure (eg, medications versus screening), data sources examined in testing, variation among the practice sites where the measures were implemented, and the types and number of reasons included in the measure specification (ie, medical reason, patient reason, and system reason). Any one value for a reported exception rate, in of itself, should not be interpreted as indication of gaming or patient selection behavior.

Measure	
Blood Pressure Measurement	This measure has no exceptions.
Plan of Care	This measure has no exceptions.

[1] DOQ and DOQ-IT measure specifications. Available at: https://www.cms.hhs.gov/apps/QMIS/browseResults.asp?bItem=ProgramId&bID=3&pageNum=2

[2] http://www.cms.gov/DemoProjectsEvalRpts/downloads/PGP_Fact_Sheet.pdf

[3] Persell SD, Kho AN, Thomspson JA, Baker DW. Improving Hypertension Quality Measurement Using Electronic Health Records. Medical Care. Volume 47(4), April 2009, pp 388-394

[4] Peterson LA, Woodard LD, Henderson LM, Urech TH, Pietz K. Will Hypertension Performance Measures Used for Pay-for-Performance Programs Penalize Those Who Care for Medically Complex Patients? Circulation, 2009;119:2978-2985.

PCPI Performance Measure Testing Results - Hypertension

2. Which tests have been carried out in which settings or data sources? Tests of feasibility/ implementation, reliability, validity, and unintended consequences conducted in a variety of practice settings including (eg solo practices, large practices, academic practices, safety-net practices, single- and multi-specialty groups).

Setting / Data Source	Medical Record (Gold Standard) (Paper or Electronic)	EHR Reporting	Registry	Administrative Data (single source)	Administrative Data (multiple sources)	Administrative Data Plus Clinical Data
Solo Practice						
Specialty Practice	• Feasibility • Inter-Rater Reliability	• Feasibility • Inter-Rater Reliability				
Safety-net practice						
Academic Setting	• Feasibility	• Feasibility • Inter-Rater Reliability				
Community Setting	• Feasibility • Inter-Rater Reliability	• Feasibility • Inter-Rater Reliability				

Feasibility Testing

3. How confident are we that practices can accurately collect and report these measures in a sustainable fashion?

These measures have been tested and found to be generally feasible in paper, EHR, and claims data sources.

The feasibility of a PCPI performance measure/measure set refers to:

- Whether or not data are stored in a codified field
- Which clinical codes sets are utilized/available
- Where in the record the data are found
- Necessary clarifications needed to implement the measure
- Documentation of challenges to measure implementation
- The extent to which clinical practices are able to interpret measure definitions and technical specifications, and a) integrate them into existing workflows and health information systems to collect, manage, and manipulate data elements; b) compute performance measures; and c) generate performance reports within a reasonable time frame and budget.

Doctor's Office Quality Pilot Project

Data Source:
2 practices sites with electronic health records
Methods
Practices were given technical specifications to use to capture the quality measures from their EHR system
Feasibility was assessed for all measures, and some measures were implemented
Results
Both sites found both measures to be fully feasible.

CMS PGP Demonstration Project

Data Source:
10 physician group practices sites with electronic health records
Represents 5,000 physicians and 220,000 Medicare fee-for-service beneficiaries

	Methods Practices were given technical specifications to use to capture the quality measures from their EHR system Feasibility was assessed for all measures, and measures were implemented in a phased approach Results At the end of the third performance year, all 10 of the participating physician groups continued to improve the quality of care for patients with chronic illness or who require preventive care by achieving benchmark or target performance on at least 28 out of 32 quality markers for patients with diabetes, coronary artery disease, congestive heart failure, hypertension, and cancer screening. Two of the physician groups -- Geisinger Clinic and Park Nicollet Health Services -- achieved benchmark quality performance on all 32 quality measures. **EQUIP Project** Data Source: Four multiple site HRSA-funded Community Health Centers with electronic health records Methods Practices were given technical specifications to use to capture the quality measures from their EHR system Feasibility was assessed for all measures Results The site found both measures to be fully feasible. **Persell Hypertension Quality Measure Project** Data Source: Electronic health records for 5905 hypertensive adults with 3 or more clinic visits at an internal medicine clinic Methods Cross sectional study Measured simple blood pressure control as the proportion of diagnosed hypertension patients with their last blood pressure below goal Compared simple control to sequentially more complex measures Results It is possible to collect information on hypertension performance measures from electronic health records. **Petersen Hypertension Quality Measure Project** Data Source: Electronic health records for 141609 hypertensive veterans Methods Blood pressure, overall good quality of care, and patient satisfaction of care were assessed Patients were grouped based on co morbidities The relationship between patient assessment and objective measures of quality were assessed Results It is possible to collect information on hypertension performance measures Contrary to expectation, patients with greater complexity had higher odds of receiving high-quality care for hypertension
Reliability Testing	**4. How confident are we that the measures accurately and consistently assess the performance of physicians providing the care assessed in the measure?** Reliability is whether two abstractors, reviewing the same data from the same data source, would come to the same conclusion as to the patient meeting the measure, not meeting the measure, or

qualifying as an exception.

Doctor's Office Quality Pilot Project

Data Source:
2 practices sites with electronic health records
Methods
Abstractor responses were compared with "gold standard" responses determined by two abstractors familiar with the data definitions and who were responsible for abstractor training.
Results

Measure	Doctor's Office Quality (DOQ) Project
Blood Pressure Measurement	389 / 400 **97** % 33 / 35 **94** %
Plan of Care	263 / 271 **97** % 14 / 15 **93** %

Measure Exceptions Validated

(and specific exception reasons documented to inform measure maintenance)

5. Are exceptions clinically appropriate and consistently documented?

These measures have no exceptions.

Comparison of Data Sources

*Note: in these projects it is recommended to always compare the secondary data source to the current gold standard of manual abstraction of the medical record.

6. Is measure collection from different data sources comparable?

This test has not yet been performed for this measure set.

7. How does automated measure calculation compare to manual measure abstraction?

This test has not yet been performed for this measure set.

8. If automated reporting identifies a patient as meeting the measure, what likelihood is there that manual review will validate that finding?

This test has not yet been performed for this measure set.

9. Are the individual parts of the measure (numerator, denominator, exceptions) reliably calculated, as compared to the overall measure?

This test has not yet been performed for this measure set.

10. What proportion of patients that met the measure are correctly identified?

- Insufficient sample size to conduct this test

11. What proportion of patients that do not meet the measure are correctly identified?

- Insufficient sample size to conduct this test

EHR "In Silo" Verification

Note: initially this may be of limited

12. Can EHR products reliably identify data elements and calculate these measures?

A "dummy" data set of patient data will be provided to several EHR vendors along with EHR measure specifications. The vendors will use this test file to determine if their system can reliably calculate the measures based on intended documentation patterns.

usefulness until EHR functionality and use progresses	This test has not yet been performed for this measure set.
Predictive Validity	**13. Does high performance on these measures lead to better patient outcomes?** If the scientific evidence regarding the process of care is strong and widely accepted in the field, no formal evaluation of predictive validity is necessary. If the evidence is less strong, however, it is desirable to show that high performance leads to better patient outcomes. This test has not yet been performed for this measure set.
Unintended Consequences	**14. Have monitoring and testing uncovered unexpected consequences of measurement?** Testing should be performed for anticipated unintended consequences. Unanticipated unintended consequences should be monitored for on a long term basis as they may only occur in later stages and widespread adoption. This test has not yet been performed for this measure set.
Project Descriptions	**Doctor's Office Quality Pilot Project** Data was captured at two large physician practice groups who use two distinct EHR systems. The study population of group 1 was their fee-for service Medicare patients. The study population was all non-Medicare patients for Group 2. Once the DOQ clinical measures were developed, the practices were given technical specifications to use to capture the quality measures from their EHR system. Feasibility was assessed for all measures, and some measures were implemented. DOQ and DOQ-IT measure specifications. Available at: https://www.cms.hhs.gov/apps/QMIS/browseResults.asp?bItem=ProgramId&bID=3&pageNum=2 **CMS PGP Demonstration Project** CMS Physician Group Practice Project. Available at: http://www.cms.hhs.gov/DemoProjectsEvalRpts/downloads/PGP_Fact_Sheet.pdf The ambulatory care measures used under the demonstration are part of Medicare's comprehensive efforts to improve the quality of care delivered to Medicare beneficiaries. CMS worked with the physician groups to develop a consensus agreement on how to report the measures and how to use them to assess performance and reward quality under the demonstration. The measures were phased in starting with the diabetes mellitus measures that were used to assess performance and reward quality care during the first performance year. Additional measures focusing on congestive heart failure and coronary artery disease were added in performance year two. Hypertension and cancer screening measures were added for performance years three, four and five. **Persell Testing Project** The objective of this cross-sectional study was to compare measured quality using simple outcome measures to more sophisticated measures utilizing data available within an electronic health record. A total of 5905 hypertensive adults with 3 or more clinic visits between July 1, 2005 and December 31, 2006 at an internal medicine clinic were eligible for the study. The study measured simple control as the proportion of diagnosed hypertension patients with their last blood pressure below goal. We compared this to sequentially more complex measures. Persell SD, Kho AN, Thomspson JA, Baker DW. Improving Hypertension Quality

Measurement Using Electronic Health Records. Medical Care. Volume 47(4), April 2009, pp 388-394.

Petersen Testing Project

This project classified 141609 veterans with hypertension into 4 condition groups: those with hypertension-concordant (diabetes mellitus, ischemic heart disease, dyslipidemia) and/or – discordant (arthritis, depression, chronic obstructive pulmonary disease) conditions or neither. We measured blood pressure control at the index visit, overall good quality of care for hypertension, including a follow-up interval, and patient ratings of satisfaction with their care. Associations between condition type and number of coexisting conditions on receipt of overall good quality of care were assessed with logistic regression. The relationship between patient assessment and objective measures of quality was assessed.

Peterson LA, Woodard LD, Henderson LM, Urech TH, Pietz K. Will Hypertension Performance Measures Used for Pay-for-Performance Programs Penalize Those Who Care for Medically Complex Patients? Circulation, 2009;119:2978-2985.

EQUIP Project

The project aim was to implement advanced EHR functionality, including decision support, care management, and quality reporting of national performance measures in a replicable, scalable model across four safety net Health Centers. The project was carried out in four multiple site HRSA-funded Community Health Centers desiring to leverage health information technology to support their application f the IHI Care model. Methodology included working with vendor, measure developers, and end users to define necessary data elements for incorporation into end user screens, report specifications in a data warehouse for national performance measure reporting and progressive refinement of replicable implementation methodology to drive standardized adoption and use through sequential pilots. A formal evaluation combined implementation monitoring with process and outcome measures. All major goals and objectives were achieved. The Data Warehouse supports regular reporting on national performance measures and aspects of system use at network, site, and individual provider level.

AMA-PCPI Level I EHR Specifications

Clinical Topic	Hypertension
Measure Title	**Blood Pressure Control**
Measure #	**PCPI HTN-1**
Measure Description	Percentage of patients aged 18 years and older with a diagnosis of hypertension with a blood pressure <140/90 mm Hg OR patients with a blood pressure ≥140/90 mm Hg and prescribed 2 or more anti-hypertensive medications during the most recent office visit within a 12 month period
Measurement Period	Twelve consecutive months
Initial Patient Population	Patient Age: Patients aged 18 years and older before the start of the measurement period Diagnosis Active: Patient has a diagnosis of Hypertension before or simultaneously to encounter date Encounter: At least two visits with the physician, physician's assistant, or nurse practitioner during the measurement period
Denominator Statement	All patients aged 18 years and older with a diagnosis of hypertension
Numerator Statement	Patients with a blood pressure <140/90 mm Hg* OR Patients with a blood pressure ≥ 140/90 mm Hg and prescribed** 2 or more anti-hypertensive medications during the most recent office visit within a 12 month period *Report Number of Patients for Each Numerator Component Separately AND a Total* *****BP value used for measure calculation: • Must be specified in medical record if >1 value (systolic/diastolic) recorded, and • Must be value upon which treatment decision was based, and • May be obtained by measurement during office visit, review of home blood pressure log, OR review of 24 hour ambulatory blood pressure monitor ******Prescribed may include prescriptions given to the patient for 2 or more anti-hypertensive medications at most recent office visit OR patient already taking 2 or more anti-hypertensive medications as documented in the current medication list (Each anti-hypertensive component in a combination medication should be counted individually)
Denominator Exceptions	Documentation of medical reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, allergy, intolerant, postural hypotension, other medical reason) Documentation of patient reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, patient declined, other patient reason) Documentation of system reason(s) for not prescribing 2 or more anti-hypertensive medications (eg, financial reasons, other system reason)

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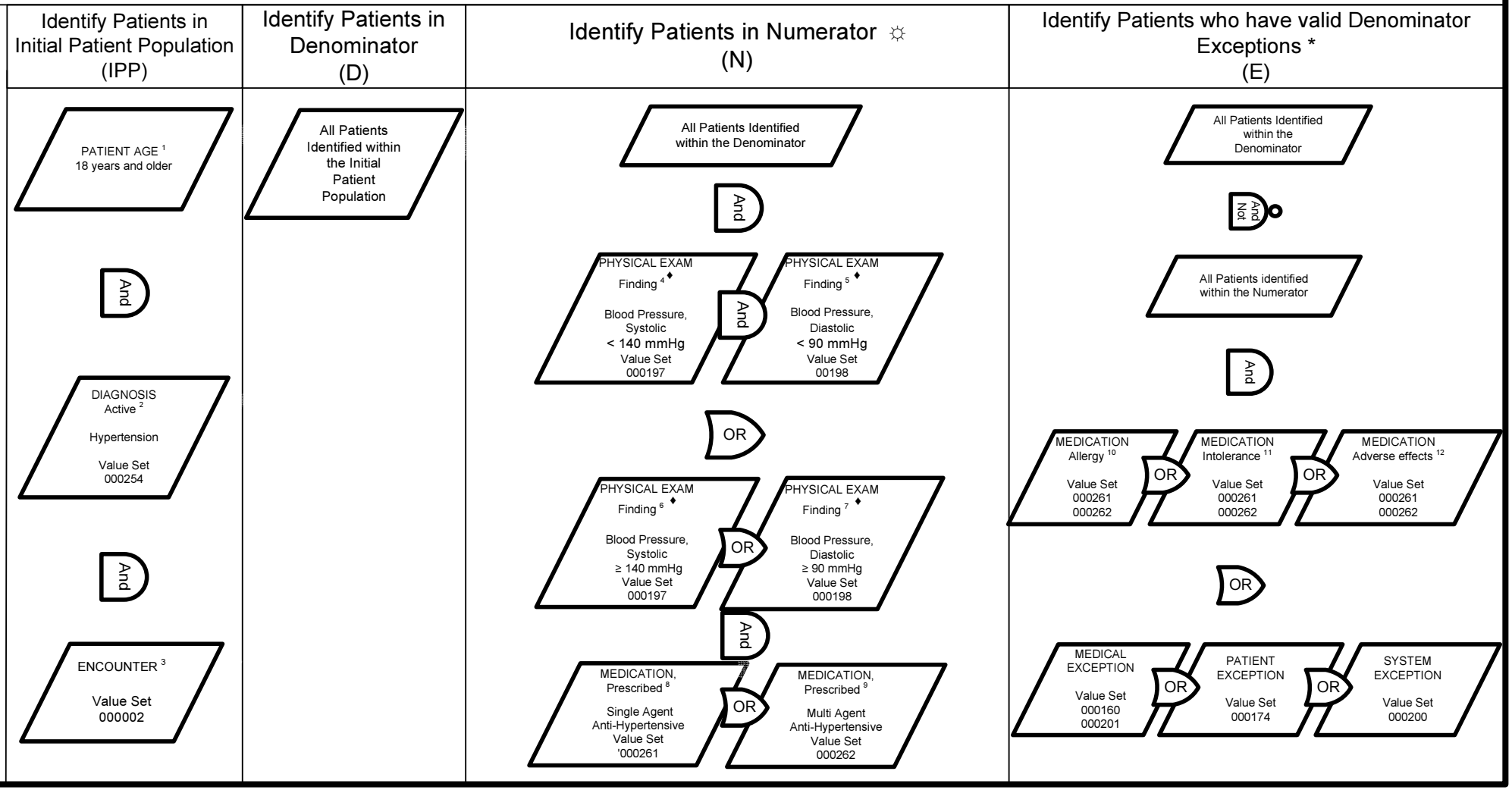
Measure Logic for Hypertension: Blood Pressure Control

Measure Description: Percentage of patients aged 18 years and older with a diagnosis of hypertension with a blood pressure <140/90 mm Hg OR patients with a blood pressure ≥ 140/90 mm Hg and prescribed 2 or more anti-hypertensive medications during the most recent office visit within a 12 month period

Measurement Period: 12 Consecutive Months

PCPI Measure #: HTN-1



PARAMETER SPECIFICATIONS (Value Sets are found in the Coding Appendices):

IPP: [1] Patient Age: 18 years and older before the start of measurement period; [2] Diagnosis, Active: before or simultaneously to encounter date; [3] Encounter: ≥ to 2 visits during measurement period;

N: [4 5 6 7] Physical Exam Finding-during the most recent encounter in the measurement period; [8] Medication, Prescribed-active or ordered before or simultaneously to measurement period and count of ≥ 2 medications; [9] Medication, Prescribed-active or ordered before or simultaneously to measurement period and count of ≥ 1 medication;

E: Value Sets 000160, 000174, 000200 during the measurement period; all other Value Sets start before or simultaneously to measurement period. [10 11 12] Medication Allergy, Intolerance, Adverse effects-the Value Set listed references the medications to which the allergy, intolerance or adverse effect exists;

☼ Both (N) components (BP < 140/90 mmHg AND BP ≥ 140/90 mmHG with appropriate prescribing) should be reported separately in addition to the TOTAL (N)

♦BP value used for measure calculation:
-Must be specified in medical record if >1 value (systolic/diastolic) recorded, and
-Must be value upon which treatment decision was based, and
-May be obtained by measurement during office visit, review of home blood pressure log, OR review of 24 hour ambulatory blood pressure monitor

*Coded examples are NOT intended to be an exhaustive list. Exceptions will vary for each patient and situation.

Version 2.0

Basic Measure Calculation:

$$\frac{(N)}{(D) - (E)} = \%$$

The PCPI strongly recommends that exception rates also be computed and reported alongside performance rates as follows:

Exception Calculation:

$$\frac{(E)}{(D)} = \%$$

Exception Types:
E= E1 (Medical Exceptions) + E2 (Patient Exceptions) + E3 (System Exceptions)
For patients who have more than one valid exception, only one exception should be be counted when calculating the exception rate

Initial Patient Population (IPP)	Denominator (D)	Numerator (N)	Denominator Exceptions (E)
Definition: The initial patient population identifies the general group of patients that the performance measureis designed to address; usually focused on a specific clinical condition (e.g., coronary artery disease, asthma). For example, a patient aged 18 years and older with a diagnosis of CADwho has at least 2 Visits during the measurement period.	**Definition:** The denominator defines the specific group of patients for inclusion in a specific performance measure based on specific criteria (e.g., patient's age, diagnosis, prior MI). In some cases, the denominator may be I dentical to the initial patient population.	**Definition:** The numerator defines the group of patients in the denominator for whom a process or outcome of care occurs (e.g., flu vaccine received).	**Definition:** Denominator exceptions are the valid reasons why patients who are included in the denominator population did not receive a process or outcome of care (described in the numerator). Patients may have Denominator Exceptions for medical reasons (e.g., patient has an egg allergy so they did not receive flu vaccine); patient reasons (e.g., patient declined flu vaccine); or system reasons (e.g., patient did not receive flu Vaccine due to vaccine shortage). These cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported. This group of patients constitutes the Denominator Exception reporting population – patients for whom the numerator was not achieved and a there is a valid Denominator Exception.
Find the patients who meet the Initial Patient Population criteria (IPP)	Find the patients who qualify for the denominator (D): ○ From the patients within the Patient Population criteria (IPP) select those people who meet Denominator selection criteria. (In some cases the IPP and D are identical).	Find the patients who qualify for the Numerator (N): ○ From the patients within the Denominator (D) criteria, select those people who meet Numerator selection criteria. ○ Validate that the number of patients in the numerator is less than or equal to the number of patients in the denominator	From the patients who did not meet the Numerator criteria, determine if the patient meets any criteria for the Denominator Exception (E1 + E2+E3). If they meet any criteria, they should be removed from the Denominator for performance calculation. As a point of reference, these cases are removed from the denominator population for the performance calculation, however the number of patients with valid exceptions should be calculated and reported.

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Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99201	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99202	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99203	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99204	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99205	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99212	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99213	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99214	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99215	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99241	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99242	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99243	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99244	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99245	
000002	HTN	1	IPP	Encounter Nursing Facility	Encounter	CPT	99304	
000002	HTN	1	IPP	Encounter Nursing Facility	Encounter	CPT	99305	
000002	HTN	1	IPP	Encounter Nursing Facility	Encounter	CPT	99306	
000002	HTN	1	IPP	Encounter Nursing Facility	Encounter	CPT	99307	
000002	HTN	1	IPP	Encounter Nursing Facility	Encounter	CPT	99308	
000002	HTN	1	IPP	Encounter Nursing Facility	Encounter	CPT	99309	
000002	HTN	1	IPP	Encounter Nursing Facility	Encounter	CPT	99310	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99324	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99325	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99326	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99327	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99328	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99334	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99335	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99336	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99337	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99341	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99342	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99343	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99344	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99345	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99347	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99348	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99349	
000002	HTN	1	IPP	Encounter Outpatient	Encounter	CPT	99350	
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	401.0	MALIGNANT HYPERTENSION

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Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	401.1	BENIGN HYPERTENSION
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	401.9	HYPERTENSION NOS
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	402.00	MAL HYP HRT DIS W/O HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	402.01	MAL HYP HRT DIS W HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	402.10	BEN HYP HRT DIS W/O HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	402.11	BEN HYP HRT DIS W HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	402.90	HYP HRT DIS NOS W/O HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	402.91	HYP HRT DIS NOS W HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	403.00	MAL HYP REN DIS W/O RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	403.01	MAL HYP REN DIS W RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	403.10	BEN HYP REN DIS W/O RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	403.11	BEN HYP REN DIS W RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	403.90	HYP REN DIS NOS W/O RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	403.91	Hypertensive chronic kidney disease, unpecified, with chronic kidney disease stage V or end stage renal disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.00	MAL HYP HRT/REN DIS W/O HF/RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.01	MAL HYP HRT/REN DIS W HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.02	MAL HYP HRT/REN DIS W RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.03	MAL HYP HRT/REN DIS W HF & RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.10	BEN HYP HRT/REN DIS W/O HF/RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.11	BEN HYP HRT/REN DIS W HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.12	BEN HYP HRT/REN DIS W RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.13	BEN HYP HRT/REN DIS W HF & RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.90	HYP HRT/REN DIS NOS W/O HF/RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.91	HYP HRT/REN DIS NOS W HF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.92	HYP HRT/REN DIS NOS W RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I9	404.93	HYP HRT/REN DIS NOS W HF & RF
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I10	Essential (primary) hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I11.0	Hypertensive heart disease with heart failure
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I11.9	Hypertensive heart disease without heart failure
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I12.0	Hypertensive chronic kidney disease with stage V chronic kidney disease or end stage renal disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I12.9	Hypertensive chronic kidney disease with stage I through stage IV chronic kidney disease, or unspecified chronic kidney disease, NOS
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I13	Hypertensive heart and chronic kidney disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I13.0	Hypertensive heart and chronic kidney disease with heart failure and stage I through stage IV chronic kidney disease, or unspecified chronic kidney disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I13.10	Hypertensive heart and chronic kidney disease without heart failure, with stage I through stage IV chronic kidney disease, or unspecified chronic kidney disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I13.11	Hypertensive heart and chronic kidney disease without heart failure, with stage V chronic kidney disease, or end stage renal disease

AMA-PCPI Level I EHR Specifications
Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	I10	I13.2	Hypertensive heart and chronic kidney disease with heart failure and with stage V chronic kidney disease, or end stage renal disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	1201005	benign essential hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	10725009	benign hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	193003	benign hypertensive renal disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	78544004	chronic hypertensive uremia
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	48146000	diastolic hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	59621000	essential hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	429198000	exertional hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	62275004	hypertensive episode
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	86234004	hypertensive heart AND renal disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	38481006	hypertensive renal disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	194774006	hypertensive renal disease with renal failure
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	49220004	hypertensive renal failure
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	65518004	labile diastolic hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	371125006	labile essential hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	276789009	labile hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	78975002	malignant essential hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	70272006	malignant hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	65443008	malignant hypertensive renal disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	194793008	other specified hypertensive disease
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	84094009	rebound hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	59720008	sustained diastolic hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	429457004	systolic essential hypertension
000254	HTN	1	IPP	Hypertension	Diagnosis/Condition/Problem	SNM	56218007	systolic hypertension
000197	HTN	1	N	Systolic Blood Pressure	Physical Exam	SNM	271649006	systolic blood pressure
000198	HTN	1	N	Diastolic Blood Pressure	Physical Exam	SNM	271650006	diastolic blood pressure
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197475	Chlorothiazide 250 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	309198	Chlorothiazide 50 MG/ML Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197476	Chlorothiazide 500 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	541298	Chlotride 500 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	213443	Diuril 250 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	213439	Diuril 50 MG/ML Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	213447	Diuril 500 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197497	Chlorthalidone 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197498	Chlorthalidone 15 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197499	Chlorthalidone 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197500	Chlorthalidone 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831703	Hydone Tablet 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831701	Hydone Tablet 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201263	Hygroton 100 MG Oral Tablet

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Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	214082	Hygroton 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201262	Hygroton 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	214081	Thalitone 15 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	214083	Thalitone 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	310813	HCTZ 10 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197769	HCTZ 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	314020	HCTZ 100 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199903	HCTZ 12.5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	429503	HCTZ 12.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	310798	HCTZ 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197770	HCTZ 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207936	Esidrix 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207942	Esidrix 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207943	Ezide 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207937	Hydro Par 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207944	Hydro Par 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	542850	Hydrocot 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207935	HydroDIURIL 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207938	HydroDIURIL 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207945	HydroDIURIL 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	542854	Hydrokraft 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207946	Loqua 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207939	Oretic 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207947	Oretic 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198110	Polythiazide 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198111	Polythiazide 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198112	Polythiazide 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208716	Renese 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208717	Renese 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208719	Renese 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197815	Indapamide 1.25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197816	Indapamide 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206945	Lozol 1.25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206946	Lozol 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197977	Metolazone 0.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197978	Metolazone 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197979	Metolazone 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311671	Metolazone 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	93382	Mykrox 0.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207276	Zaroxolyn 10 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207271	Zaroxolyn 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207272	Zaroxolyn 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	250660	Bumetanide 0.2 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197417	Bumetanide 0.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197418	Bumetanide 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197419	Bumetanide 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104222	Bumetanide 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205488	Bumex 0.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205489	Bumex 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205490	Bumex 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	251308	Furosemide 1 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197730	Furosemide 10 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	630032	Furosemide 12.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	310429	Furosemide 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104220	furosemide 20 MG per 5 ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313988	Furosemide 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	248657	Furosemide 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199610	Furosemide 500 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197732	Furosemide 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	542678	Furocot 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205726	Lasix 10 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200801	Lasix 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200809	Lasix 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205732	Lasix 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205728	Lo-Aqua 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	630035	Salix - substance 12.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	645036	Salix - substance 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198369	torsemide 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198370	torsemide 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	250044	torsemide 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198371	torsemide 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198372	torsemide 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208076	Demadex 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208080	Demadex 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208081	Demadex 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208082	Demadex 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	977882	Midamor 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	977887	Amiloride Hydrochloride 1 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	977880	Amiloride Hydrochloride 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198312	Triamterene 100 MG Oral Capsule

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198313	Triamterene 50 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208674	Dyrenium 100 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208675	Dyrenium 50 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	351258	eplerenone 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	351256	eplerenone 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	351257	eplerenone 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	402106	Inspra 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	402105	Inspra 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104231	spironolactone 10 MG per 5 ML Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198222	Spironolactone 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313096	Spironolactone 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104232	spironolactone 25 MG per 5 ML Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104230	spironolactone 5 MG per 5 ML Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198223	Spironolactone 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104233	spironolactone 50 MG per 5 ML Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200825	Aldactone 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200820	Aldactone 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200817	Aldactone 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197379	Atenolol 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197380	Atenolol 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	755528	atenolol 25 MG per 5 ML Syrup
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197381	Atenolol 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	211773	Senormin 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201322	Tenormin 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	150750	Tenormin 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	152414	Tenormin 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	261397	Betaxolol 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	261398	Betaxolol 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	213731	Kerlone 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	141882	Kerlone 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	865154	Bisoprolol Fumarate 1.25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854901	Bisoprolol Fumarate 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	865155	Bisoprolol Fumarate 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	865157	Bisoprolol Fumarate 3.75 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854905	Bisoprolol Fumarate 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	865159	Bisoprolol Fumarate 7.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854903	Zebeta 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854907	Zebeta 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866514	Metoprolol Tartrate 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866511	Metoprolol Tartrate 100 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866924	metoprolol tartrate 25 MG (as metoprolol succinate 23.75 MG) Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866513	Lopressor 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866516	Lopressor 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866513	Lopressor 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866516	Lopressor 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866415	Metoprolol Tartrate 100 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866419	metoprolol tartrate 200 MG (as metoprolol succinate 190 MG) 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866422	Metoprolol Tartrate 200 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866427	metoprolol tartrate 25 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866430	Metoprolol Tartrate 25 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866436	metoprolol tartrate 50 MG (as metoprolol succinate 47.5 MG) 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866439	Metoprolol Tartrate 50 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866414	24 HR Toprol XL 100 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866421	24 HR Toprol XL 200 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866429	24 HR Toprol XL 25 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866416	Toprol 100 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866423	Toprol 200 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866431	Toprol 25 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866440	Toprol 50 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	866438	Toprol XL 50 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198004	Nadolol 120 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198005	Nadolol 160 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198006	Nadolol 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198007	Nadolol 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198008	Nadolol 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206968	Nadolol 120 MG [Corgard]
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201337	Nadolol 160 MG [Corgard]
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201338	Nadolol 20 MG [Corgard]
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208003	Nadolol 40 MG [Corgard]
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208029	Nadolol 80 MG [Corgard]
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856448	Propranolol Hydrochloride 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856713	Propranolol Hydrochloride 160 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856719	Propranolol Hydrochloride 2 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856457	Propranolol Hydrochloride 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856724	propranolol hydrochloride 20 MG per 5 ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856519	Propranolol Hydrochloride 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856733	Propranolol Hydrochloride 40 MG per 5 ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856704	Propranolol Hydrochloride 5 MG per 5 ML Oral Syrup
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856703	Propranolol Hydrochloride 50 MG per 5 ML Oral Syrup

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856556	Propranolol Hydrochloride 60 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856735	Propranolol Hydrochloride 80 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856578	Propranolol Hydrochloride 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856712	Propranolol Hydrochloride 80 MG per 5 ML Oral Syrup
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856737	Propranolol Hydrochloride 80 MG/ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856739	Propranolol Hydrochloride 90 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856450	Inderal 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856508	Inderal 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856521	Inderal 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856557	Inderal 60 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856579	Inderal 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856459	Pronol 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856528	Pronol 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856460	propranolol hydrochloride 120 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856463	Propranolol Hydrochloride 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856481	propranolol hydrochloride 160 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856484	Propranolol Hydrochloride 160 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856535	propranolol hydrochloride 60 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856538	Propranolol Hydrochloride 60 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856569	propranolol hydrochloride 80 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856572	Propranolol Hydrochloride 80 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856464	Inderal 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856485	Inderal 160 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856539	Inderal 60 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856573	Inderal 80 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856462	Inderal LA 120 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856483	Inderal LA 160 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856537	Inderal LA 60 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856571	Inderal LA 80 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856472	InnoPran 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856577	InnoPran 80 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	856471	InnoPran XL 120 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198284	Timolol 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198285	Timolol 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198286	Timolol 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201340	Blocadren 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208576	Blocadren 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208575	Blocadren 5 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998693	Acebutolol Hydrochloride 100 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998689	Acebutolol Hydrochloride 200 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998685	Acebutolol Hydrochloride 400 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998695	Acebutolol Hydrochloride 400 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998691	Sectral 200 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998687	Sectral 400 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	312254	Penbutolol 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207367	Levatol 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198104	Pindolol 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199277	Pindolol 15 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198105	Pindolol 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208140	Visken 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200857	Visken 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200032	carvedilol 12.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200033	carvedilol 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	686924	carvedilol 3.125 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200031	carvedilol 6.25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860510	carvedilol phosphate 10 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860513	carvedilol phosphate 10 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860516	carvedilol phosphate 20 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860519	carvedilol phosphate 20 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860522	carvedilol phosphate 40 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860525	carvedilol phosphate 40 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860532	carvedilol phosphate 80 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860535	carvedilol phosphate 80 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860512	24 HR Coreg 10 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860518	24 HR Coreg 20 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860524	24 HR Coreg 40 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860534	24 HR Coreg 80 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860514	Coreg 10 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	212389	Coreg 12.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860520	Coreg 20 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	212390	Coreg 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	686926	Coreg 3.125 Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860526	Coreg 40 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	212388	Coreg 6.25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	860536	Coreg 80 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896758	Labetalol hydrochloride 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896762	Labetalol hydrochloride 200 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896766	Labetalol hydrochloride 300 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896983	Labetalol hydrochloride 400 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896987	Labetalol hydrochloride 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896760	Normodyne 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896764	Normodyne 200 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896768	Normodyne 300 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896777	Trandate 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896781	Trandate 200 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	896783	Trandate 300 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	308607	benazepril 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	308609	benazepril 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	308612	benazepril 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	308962	Captopril 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	308963	Captopril 12.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	317173	Captopril 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	308964	Captopril 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	210994	Capoten 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	210994	Capoten 12.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201372	Capoten 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201374	Capoten 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858914	Enalapril Maleate 10 MG Chewable Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858817	Enalapril Maleate 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858920	Enalapril Maleate 2.5 MG Chewable Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858804	Enalapril Maleate 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858938	Enalapril Maleate 5 MG Chewable Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858813	Enalapril Maleate 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858845	Renitec 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858819	Vasotec 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858806	Vasotec 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858812	Vasotec 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858815	Vasotec 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	857169	Fosinopril Sodium 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	857183	Fosinopril Sodium 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	857187	Fosinopril Sodium 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	857171	Monopril 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	857185	Monopril 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	857189	Monopril 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	314076	Lisinopril 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311353	Lisinopril 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	314077	Lisinopril 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205326	Lisinopril 30 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197884	Lisinopril 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311354	Lisinopril 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206765	Prinivil 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206763	Prinivil 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206766	Prinivil 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206770	Prinivil 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206770	Prinivil 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104377	Zestril 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104375	Zestril 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104378	Zestril 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	213482	Zestril 30 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206771	Zestril 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104376	Zestril 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311734	moexipril 15 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311735	moexipril 7.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206277	Univasc 15 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206313	Univasc 7.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854984	Perindopril Erbumine 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854988	Perindopril Erbumine 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854925	Perindopril Erbumine 8 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854986	Aceon 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854990	Aceon 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	854927	Aceon 8 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	312748	quinapril (as quinapril hydrochloride) 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	312749	quinapril (as quinapril hydrochloride) 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	314203	quinapril (as quinapril hydrochloride) 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	312750	quinapril (as quinapril hydrochloride) 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207892	Accupril 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207893	Accupril 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207895	Accupril 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207891	Accupril 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845488	Ramipril 1.25 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	401965	Ramipril 1.25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	261962	Ramipril 10 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	401968	Ramipril 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198188	Ramipril 2.5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	251856	Ramipril 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198189	Ramipril 5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	251857	Ramipril 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845489	Altace 1.25 MG Oral Capsule

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	730511	Altace 1.25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	260333	Altace 10 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	730512	Altace 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104384	Altace 2.5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	730513	Altace 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104385	Altace 5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	730514	Altace 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199622	trandolapril 0.5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199816	trandolapril 1 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199353	trandolapril 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199817	trandolapril 2 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199351	trandolapril 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	210671	Mavik 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	210672	Mavik 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	210673	Mavik 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	639537	candesartan cilexetil 32 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	153822	candesartan cilexetil 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	153823	candesartan cilexetil 8 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	639539	Atacand 16 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	639543	Atacand 32 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	577785	Atacand 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	577787	Atacand 8 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	389185	eprosartan 300 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	310139	eprosartan 400 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	310140	eprosartan 600 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	261300	Teveten 400 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	261301	Teveten 600 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200095	irbesartan 150 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200096	irbesartan 300 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	200094	irbesartan 75 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	153666	Avapro 150 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	153667	Avapro 300 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	153665	Avapro 75 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	979480	Losartan Potassium 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	979485	Losartan Potassium 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	979492	Losartan Potassium 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	979482	Cozaar 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	979487	Cozaar 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	979494	Cozaar 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	401971	Olmesartan medoxomil 10 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	349401	Olmesartan medoxomil 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	349405	Olmesartan medoxomil 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	349373	Olmesartan medoxomil 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	575927	Olmesartan medoxomil 20 MG [Benicar]
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	575928	Olmesartan medoxomil 40 MG [Benicar]
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	575926	Olmesartan medoxomil 5 MG [Benicar]
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	282755	telmisartan 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205304	telmisartan 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205305	telmisartan 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	284531	Micardis 20 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	213431	Micardis 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	213432	Micardis 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199919	valsartan 160 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	349201	valsartan 160 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	349200	valsartan 320 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	153077	valsartan 40 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	349483	valsartan 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199850	valsartan 80 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	349199	valsartan 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	153080	Diovan 160 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	351762	Diovan 160 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	352001	Diovan 320 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	352274	Diovan 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	153079	Diovan 80 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	351761	Diovan 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830872	diltiazem hydrochloride 120 MG 12 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830861	diltiazem hydrochloride 120 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830874	diltiazem hydrochloride 120 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831150	Diltiazem Hydrochloride 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831117	Diltiazem Hydrochloride 120 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831054	Diltiazem Hydrochloride 120 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830845	diltiazem hydrochloride 180 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830877	diltiazem hydrochloride 180 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831233	Diltiazem Hydrochloride 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831230	Diltiazem Hydrochloride 180 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831229	Diltiazem Hydrochloride 180 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833716	diltiazem hydrochloride 200 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845214	Diltiazem Hydrochloride 200 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830837	diltiazem hydrochloride 240 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830879	diltiazem hydrochloride 240 MG 24 HR Extended Release Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831274	Diltiazem Hydrochloride 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831271	Diltiazem Hydrochloride 240 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833217	Diltiazem Hydrochloride 30 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830801	diltiazem hydrochloride 300 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830882	diltiazem hydrochloride 300 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831313	Diltiazem Hydrochloride 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831312	Diltiazem Hydrochloride 300 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830795	Diltiazem Hydrochloride 360 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830897	diltiazem hydrochloride 360 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831339	Diltiazem Hydrochloride 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845184	Diltiazem Hydrochloride 360 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831359	diltiazem hydrochloride 420 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830900	diltiazem hydrochloride 420 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831351	Diltiazem Hydrochloride 420 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831350	Diltiazem Hydrochloride 420 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830865	diltiazem hydrochloride 60 MG 12 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833707	diltiazem hydrochloride 60 MG 12 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830922	Diltiazem Hydrochloride 60 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830979	Diltiazem Hydrochloride 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831012	Diltiazem Hydrochloride 60 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831103	Diltiazem Hydrochloride 60 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830869	diltiazem hydrochloride 90 MG 12 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833708	diltiazem hydrochloride 90 MG 12 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831022	Diltiazem Hydrochloride 90 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831022	Diltiazem Hydrochloride 90 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831102	Diltiazem Hydrochloride 90 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	849860	Diltiazem Malate 240 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830873	12 HR Cardizem 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830867	12 HR Cardizem 60 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830871	12 HR Cardizem 90 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830863	24 HR Cardizem 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830876	24 HR Cardizem 120 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830847	24 HR Cardizem 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830878	24 HR Cardizem 180 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830839	24 HR Cardizem 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830880	24 HR Cardizem 240 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830803	24 HR Cardizem 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830883	24 HR Cardizem 300 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830798	24 HR Cardizem 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830898	24 HR Cardizem 360 MG Extended Release Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	830902	24 HR Cardizem 420 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831226	24 HR Cartia 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831255	24 HR Cartia 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831309	24 HR Cartia 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831338	24 HR Cartia 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831224	24 HR Dilacor 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831254	24 HR Dilacor 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831305	24 HR Dilacor 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831252	24 HR Dilt 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831285	24 HR Dilt 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831337	24 HR Dilt 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831250	24 HR Dilt 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831302	24 HR Diltia 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831209	24 HR Diltia 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	848524	24 HR Diltia XT 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	848524	24 HR Diltzac 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833703	24 HR Diltzac 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833704	24 HR Diltzac 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833705	24 HR Diltzac 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833706	24 HR Diltzac 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831196	24 HR Taztia 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831248	24 HR Taztia 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831300	24 HR Taztia 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831325	24 HR Taztia 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831349	24 HR Taztia 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833694	24 HR Tiamate 120 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833695	24 HR Tiamate 180 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833696	24 HR Tiamate 240 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831193	24 HR Tiazac 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831244	24 HR Tiazac 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831296	24 HR Tiazac 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831323	24 HR Tiazac 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831323	24 HR Tiazac 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845176	Cardizem 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845180	Cardizem 120 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831055	Cardizem 120 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845175	Cardizem 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845181	Cardizem 180 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845174	Cardizem 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845182	Cardizem 240 MG Extended Release Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	833219	Cardizem 30 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845173	Cardizem 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845183	Cardizem 300 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845172	Cardizem 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845185	Cardizem 360 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845186	Cardizem 420 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845177	Cardizem 60 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	834393	Cardizem 60 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845178	Cardizem 90 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831137	Cardizem 90 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845192	Cartia 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831242	Cartia 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831288	Cartia 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831321	Cartia 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845191	Dilacor 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845197	Dilacor 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845202	Dilacor 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845190	Dilt 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845196	Dilt 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845198	Dilt 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845205	Dilt 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845189	Diltia 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845195	Diltia 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845201	Diltia 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831172	Diltzac 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831240	Diltzac 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831282	Diltzac 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831319	Diltzac 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831345	Diltzac 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845188	Taztia 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845194	Taztia 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845200	Taztia 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845204	Taztia 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845207	Taztia 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	846148	Teczem Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831119	Tiamate 120 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831232	Tiamate 180 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831273	Tiamate 240 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845187	Tiazac 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845193	Tiazac 180 MG Extended Release Capsule

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845199	Tiazac 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845203	Tiazac 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845206	Tiazac 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	831360	Tiazac 420 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845208	Tiazac 420 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897666	Verapamil hydrochloride 120 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901438	Verapamil hydrochloride 160 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	898340	Verapamil hydrochloride 180 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901446	Verapamil hydrochloride 240 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897722	Verapamil hydrochloride 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901450	verapamil hydrochloride 40 MG per 5 ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897683	Verapamil hydrochloride 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897635	verapamil 180 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897646	verapamil 240 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897584	verapamil hydrochloride 100 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897587	Verapamil hydrochloride 100 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901434	verapamil hydrochloride 120 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897612	verapamil hydrochloride 120 MG 24HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897615	Verapamil hydrochloride 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897659	Verapamil hydrochloride 120 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897618	verapamil hydrochloride 180 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897621	Verapamil hydrochloride 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897640	Verapamil hydrochloride 180 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897590	verapamil hydrochloride 200 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897593	Verapamil hydrochloride 200 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897624	verapamil hydrochloride 240 MG 24HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897627	Verapamil hydrochloride 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897649	Verapamil hydrochloride 240 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897596	verapamil hydrochloride 300 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897599	Verapamil hydrochloride 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897630	verapamil hydrochloride 360 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897633	Verapamil hydrochloride 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897719	Verapamil hydrochloride 40 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901448	Verapamil hydrochloride 400 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897635	verapamil 180 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897646	verapamil 240 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897584	verapamil hydrochloride 100 MG 24 HR Extended Release Capsule

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Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897587	Verapamil hydrochloride 100 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901434	verapamil hydrochloride 120 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897612	verapamil hydrochloride 120 MG 24HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897615	Verapamil hydrochloride 120 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897659	Verapamil hydrochloride 120 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897666	Verapamil hydrochloride 120 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901438	Verapamil hydrochloride 160 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897618	verapamil hydrochloride 180 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897621	Verapamil hydrochloride 180 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897640	Verapamil hydrochloride 180 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	898340	Verapamil hydrochloride 180 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897590	verapamil hydrochloride 200 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897593	Verapamil hydrochloride 200 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897624	verapamil hydrochloride 240 MG 24HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897627	Verapamil hydrochloride 240 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897649	Verapamil hydrochloride 240 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901446	Verapamil hydrochloride 240 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897596	verapamil hydrochloride 300 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897599	Verapamil hydrochloride 300 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897630	verapamil hydrochloride 360 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897633	Verapamil hydrochloride 360 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897719	Verapamil hydrochloride 40 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897722	Verapamil hydrochloride 40 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901450	verapamil hydrochloride 40 MG per 5 ML Oral Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	901448	Verapamil hydrochloride 400 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	897683	Verapamil hydrochloride 80 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	757675	Amlodipine 2.5 MG Disintegrating Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	757675	Amlodipine 5 MG Disintegrating Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	757674	Amlodipine 10 MG Disintegrating Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	308135	amlodipine (as amlodipine besylate) 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	308136	amlodipine (as amlodipine besylate) 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197361	amlodipine (as amlodipine besylate) 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	212575	Norvasc 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	212542	Norvasc 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	212549	Norvasc 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	402695	Felodipine 10 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	700745	Felodipine 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	402698	Felodipine 2.5 MG 24 HR Extended Release Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197692	Felodipine 2.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	402696	felodipine 5 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	358334	Felodipine 5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104420	24 HR Plendil 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	152933	24 HR Plendil 2.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104419	24 HR Plendil 5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844418	Plendil 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844437	Plendil 2.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844417	Plendil 5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	562518	isradipine 10 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311202	Isradipine 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197848	Isradipine 2.5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199757	Isradipine 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	562520	isradipine 5 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311203	Isradipine 5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197849	Isradipine 5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885733	24 HR Dynacirc 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885735	24 HR Dynacirc 5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885734	Dynacirc 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206935	Dynacirc 2.5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885736	Dynacirc 5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206934	Dynacirc 5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858587	nicardipine hydrochloride 30 MG 12 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858590	Nicardipine hydrochloride 30 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858580	nicardipine hydrochloride 45 MG 12 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858584	Nicardipine hydrochloride 45 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858593	nicardipine hydrochloride 60 MG 12 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	858596	Nicardipine hydrochloride 60 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	250206	nifedipine 10 MG 12 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	248708	nifedipine 10 MG 12 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844748	Nifedipine 10 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844741	Nifedipine 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	249620	nifedipine 20 MG 12 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844745	Nifedipine 20 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	246262	Nifedipine 20 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	227058	nifedipine 30 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198034	nifedipine 30 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844724	Nifedipine 30 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	491070	Nifedipine 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	250384	nifedipine 40 MG 24 HR Extended Release Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844750	Nifedipine 40 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	227059	nifedipine 60 MG 24 HR Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198035	nifedipine 60 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844725	Nifedipine 60 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	491078	Nifedipine 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198036	nifedipine 90 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	491086	Nifedipine 90 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	672916	24 HR Adalat 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	672917	24 HR Adalat 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	672918	24 HR Adalat 90 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	672921	24 HR Afeditab CR 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	880433	24 HR Nifediac CC 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	541603	24 HR Nifediac CC 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	880437	24 HR Nifediac CC 90 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	360394	24 HR Nifedical 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	351438	24 HR Nifedical 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207772	24 HR Procardia 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207773	24 HR Procardia 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	207774	24 HR Procardia 90 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845004	Adalat 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845005	Adalat 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845006	Adalat 90 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	672920	Afeditab CR 30 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845007	Afeditab CR 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845008	Afeditab CR 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	880434	Nifediac 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844923	Nifediac 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	880438	Nifediac 90 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844846	Nifedical 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844830	Nifedical 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844584	Procardia 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844585	Procardia 60 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844586	Procardia 90 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311983	nisoldipine 10 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	562154	Nisoldipine 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	763519	nisoldipine 17 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845095	Nisoldipine 17 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311984	nisoldipine 20 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	562514	Nisoldipine 20 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	763574	nisoldipine 25.5 MG 24 HR Extended Release Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845097	Nisoldipine 25.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311985	nisoldipine 30 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	562515	Nisoldipine 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	763589	nisoldipine 34 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845101	Nisoldipine 34 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	360344	nisoldipine 40 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311986	Nisoldipine 40 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	790489	nisoldipine 8.5 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	763497	Nisoldipine 8.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	672922	24 HR Sular 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	763521	24 HR Sular 17 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	597921	24 HR Sular 20 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	763576	24 HR Sular 25.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	597922	24 HR Sular 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	763591	24 HR Sular 34 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	597923	24 HR Sular 40 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	790840	24 HR Sular 8.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845009	Sular 10 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845096	Sular 17 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844942	Sular 20 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844942	Sular 25.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844943	Sular 30 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	845102	Sular 34 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	844944	Sular 40 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	763499	Sular 8.5 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197625	Doxazosin 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197626	Doxazosin 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	636360	doxazosin 4 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	389131	Doxazosin 4 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197627	Doxazosin 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	636361	doxazosin 8 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	389166	Doxazosin 8 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197628	Doxazosin 8 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104367	Cardura 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104368	Cardura 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	631240	Cardura 4 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104369	Cardura 4 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	631243	Cardura 8 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	205544	Cardura 8 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199796	Prazosin 0.5 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	312593	Prazosin 1 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199797	Prazosin 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	312594	Prazosin 2 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199798	Prazosin 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198141	Prazosin 5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199799	Prazosin 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208979	Minipress 1 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208980	Minipress 2 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208981	Minipress 5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313215	terazosin (as terazosin hydrochloride) 1 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313216	terazosin (as terazosin hydrochloride) 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	260376	terazosin (as terazosin hydrochloride) 10 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313214	terazosin (as terazosin hydrochloride) 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313217	terazosin (as terazosin hydrochloride) 2 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313218	terazosin (as terazosin hydrochloride) 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313219	terazosin (as terazosin hydrochloride) 5 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	313220	terazosin (as terazosin hydrochloride) 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	1013930	12 HR Clonidine Hydrochloride 0.1 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	1013937	12 HR Clonidine Hydrochloride 0.2 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	892791	Clonidine Hydrochloride 0.025 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	1013894	Clonidine Hydrochloride 0.1 MG Enteric Coated Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885878	clonidine hydrochloride 0.1 MG/ML (clonidine 0.09 MG/ML) 24HR Extended Release Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885879	Clonidine Hydrochloride 0.1 MG/ML Extended Release Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885880	clonidine hydrochloride 0.2 MG (clonidine 0.17 MG) 24HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885881	Clonidine Hydrochloride 0.2 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	892795	Clonidine Hydrochloride 0.25 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885882	clonidine hydrochloride 0.3 MG (clonidine 0.26 MG) 24HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	885883	Clonidine Hydrochloride 0.3 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	884173	clonidine hydrochloride 100 MCG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	884221	clonidine hydrochloride 100 MCG/ML Injectable Solution
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	884185	clonidine hydrochloride 200 MCG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	884189	clonidine hydrochloride 300 MCG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	1013934	12 HR Kapvay 0.1 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	1013939	12 HR Kapvay 0.2 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	884175	Catapres 0.1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	884187	Catapres 0.2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	884191	Catapres 0.3 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998673	Catapres-TTS-1 0.1 MG/Day Weekly Transdermal Patch
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998677	Catapres-TTS-2 0.2 MG/Day Weekly Transdermal Patch

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998681	Catapres-TTS-3 0.3 MG/Day Weekly Transdermal Patch
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998671	clonidine hydrochloride 0.1 MG/Day Weekly Transdermal Patch
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998675	clonidine hydrochloride 0.2 MG/Day Weekly Transdermal Patch
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	998679	clonidine hydrochloride 0.3 MG/Day Weekly Transdermal Patch
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	104357	Methyldopa 250 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197955	Methyldopa 125 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197956	Methyldopa 250 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197957	Methyldopa 50 MG/ML Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197958	Methyldopa 500 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	311645	Methyldopa 250 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	411773	Methyldopa 350 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	411774	Methyldopa 250 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	411775	Methyldopa 175 MG Extended Release Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201354	Aldomet 125 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201355	Aldomet 250 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201361	Aldomet 50 MG/ML Oral Suspension
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201358	Aldomet 500 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198196	Reserpine 0.1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	198197	Reserpine 0.25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	315197	Reserpine 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	429105	Reserpine 0.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208085	Hydropres-25 Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	208091	Hydropres-50 Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197745	Guanfacine 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197746	Guanfacine 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862006	24 HR Guanfacine 1 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862013	24 HR Guanfacine 2 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862019	24 HR Guanfacine 3 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862025	24 HR Guanfacine 4 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862011	Guanfacine 1 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862016	Guanfacine 2 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862022	Guanfacine 3 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862028	Guanfacine 4 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862010	Intuniv 1 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862012	Intuniv 1 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862012	Intuniv 2 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862017	Intuniv 2 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862021	Intuniv 3 MG 24 HR Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862023	Intuniv 3 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862027	Intuniv 4 MG 24 HR Extended Release Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	862029	Intuniv 4 MG Extended Release Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206412	Tenex 1 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	206413	Tenex 2 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	905199	Hydralazine Hydrochloride 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	905222	Hydralazine Hydrochloride 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	905225	Hydralazine Hydrochloride 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	905395	Hydralazine Hydrochloride 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	966620	Hydralazine Hydrochloride 50 MG Oral Capsule
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	905201	Apresoline 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	905224	Apresoline 100 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	905227	Apresoline 25 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	905397	Apresoline 50 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197986	Minoxidil 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	197987	Minoxidil 2.5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	199776	Minoxidil 5 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201350	Loniten 10 MG Oral Tablet
000261	HTN	1	N	Single Agent Anti-Hypertensive	Medication	RxNorm	201348	Loniten 2.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898342	Amlodipine 10 MG / Benazepril hydrochloride 20 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898346	Amlodipine 10 MG / Benazepril hydrochloride 40 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898350	Amlodipine 2.5 MG / Benazepril hydrochloride 10 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898353	Amlodipine 5 MG / Benazepril hydrochloride 10 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898356	Amlodipine 5 MG / Benazepril hydrochloride 20 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898359	Amlodipine 5 MG / Benazepril hydrochloride 40 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898344	Lotrel 10/20 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898348	Lotrel 10/40 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898352	Lotrel 2.5/10 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898355	Lotrel 5/10 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898358	Lotrel 5/20 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898361	Lotrel 5/40 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858618	Enalapril Maleate 5 MG / Felodipine 2.5 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858621	Enalapril Maleate 5 MG / Felodipine 5 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858884	Lexxel 5/2.5 Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858892	Lexxel 5/5 Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897781	trandolapril 1 MG / verapamil hydrochloride 240 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897778	trandolapril 1 MG / Verapamil hydrochloride 240 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897783	trandolapril 2 MG / verapamil hydrochloride 180 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	901451	trandolapril 2 MG / Verapamil hydrochloride 180 MG Extended Release Capsule

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Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897786	trandolapril 2 MG / Verapamil hydrochloride 180 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897844	trandolapril 2 MG / verapamil hydrochloride 240 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897847	trandolapril 2 MG / Verapamil hydrochloride 240 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897853	trandolapril 4 MG / Verapamil hydrochloride 240 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897856	trandolapril 4 MG / Verapamil hydrochloride 240 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897782	Tarka 1/240 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897785	Tarka 2/180 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897846	Tarka 2/240 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897855	Tarka 4/240 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897780	trandolapril 1 MG / Verapamil hydrochloride 240 MG Extended Release Tablet [Tarka 1/240]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897787	trandolapril 2 MG / Verapamil hydrochloride 180 MG Extended Release Tablet [Tarka 2/180]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897848	trandolapril 2 MG / Verapamil hydrochloride 240 MG Extended Release Tablet [Tarka 2/240]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897857	trandolapril 4 MG / Verapamil hydrochloride 240 MG Extended Release Tablet [Tarka 4/240]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898362	benazepril hydrochloride 10 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898367	benazepril hydrochloride 20 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898372	Benazepril hydrochloride 20 MG / Hydrochlorothiazide 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898378	Benazepril hydrochloride 5 MG / Hydrochlorothiazide 6.25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898371	Lotensin HCT (benazepril 20 MG / HCTZ 12.5 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898376	Lotensin HCT (benazepril 20 MG / HCTZ 25 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898366	Lotensin HCT 10/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898382	Lotensin HCT 5/6.25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	104370	captopril 25 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197436	captopril 25 MG / HCTZ 15 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197437	captopril 25 MG / HCTZ 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197438	captopril 50 MG / HCTZ 15 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197439	captopril 50 MG / HCTZ 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	211053	Capozide 25/15 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	211072	Capozide 25/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	790297	Capozide 50/15 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	790296	Capozide 50/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858913	enalapril maleate 10 MG / HCTZ 25 MG Chewable Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858828	enalapril maleate 10 MG / HCTZ 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858921	enalapril maleate 20 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858935	enalapril maleate 5 MG / HCTZ 12.5 MG Chewable Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858824	enalapril maleate 5 MG / HCTZ 12.5 MG Oral Tablet

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Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858827	Vaseretic (enalapril maleate 5 MG / HCTZ 12.5 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858830	Vaseretic 10/25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	857166	fosinopril sodium 10 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	857174	fosinopril sodium 20 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	857182	Monopril-HCT 10/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	857178	Monopril-HCT 20/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197885	HCTZ 12.5 MG / lisinopril 10 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197886	HCTZ 12.5 MG / lisinopril 20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197887	HCTZ 25 MG / lisinopril 20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	1001394	Hydrochlorothiazide 12.5 MG / Lisinopril 5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	207963	Prinzide (HCTZ 12.5 MG / lisinopril 20 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	207961	Prinzide (lisinopril 10 MG / HCTZ 12.5 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	207965	Prinzide (lisinopril 20 MG / HCTZ 25 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	207965	Zestoretic 10/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	823982	Zestoretic 20/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	823971	Zestoretic 20/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	349443	HCTZ 12.5 MG / moexipril 15 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310795	HCTZ 12.5 MG / moexipril 7.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310805	HCTZ 25 MG / moexipril 15 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	891618	Uniretic 15/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	891626	Uniretic 15/25 (moexipril / HCTZ) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	891622	Uniretic 7.5/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310796	HCTZ 12.5 MG / quinapril 10 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310797	HCTZ 12.5 MG / quinapril 20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310809	HCTZ 25 MG / quinapril 20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	809854	Accuretic 10/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	809858	Accuretic 20/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	882559	Accuretic 20/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	991549	Quinaretic 10/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	991553	Quinaretic 20/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	991557	Quinaretic 20/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	578325	candesartan cilexetil 16 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	578330	candesartan cilexetil 32 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	802749	candesartan cilexetil 32 MG / HCTZ 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	805863	Atacand HCT 16/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	805859	Atacand HCT 32/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	805855	Atacand HCT 32/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	351292	eprosartan 600 MG / HCTZ 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	351293	eprosartan 600 MG / HCTZ 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	352335	Teveten HCT (eprosartan 600 MG / HCTZ 12.5 MG) Oral Tablet

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Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	352336	Teveten HCT (eprosartan 600 MG / HCTZ 25 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310792	HCTZ 12.5 MG / irbesartan 150 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310793	HCTZ 12.5 MG / irbesartan 300 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	485471	HCTZ 25 MG / irbesartan 300 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	823934	Avalide 150/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	823938	Avalide 300/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	823942	Avalide 300/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	979464	HCTZ 12.5 MG / losartan potassium 100 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	979468	HCTZ 12.5 MG / losartan potassium 50 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	979471	HCTZ 25 MG / losartan potassium 100 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	979466	Hyzaar 100/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	979473	Hyzaar 100/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	979470	Hyzaar 50/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	403853	HCTZ 12.5 MG / olmesartan medoxomil 20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	403854	HCTZ 12.5 MG / olmesartan medoxomil 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	403855	HCTZ 25 MG / olmesartan medoxomil 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	847060	Benicar HCT 20/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	847055	Benicar HCT 40/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	847042	Benicar HCT 40/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	283316	HCTZ 12.5 MG / telmisartan 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	283317	HCTZ 12.5 MG / telmisartan 80 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	477130	HCTZ 25 MG / telmisartan 80 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	749833	Micardis-HCT 40/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	749837	Micardis-HCT 80/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	749841	Micardis-HCT 80/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	200285	HCTZ 12.5 MG / valsartan 160 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	636042	HCTZ 12.5 MG / valsartan 320 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	200284	HCTZ 12.5 MG / valsartan 80 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	349353	HCTZ 25 MG / valsartan 160 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	636045	HCTZ 25 MG / valsartan 320 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	809018	Diovan HCT 160/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	809022	Diovan HCT 160/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	809026	Diovan HCT 320/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	809030	Diovan HCT 320/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	809014	Diovan HCT 80/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197382	Atenolol 100 MG / Chlorthalidone 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	152916	Atenolol 50 MG / Chlorthalidone 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197383	Atenolol 50 MG / Chlorthalidone 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	746023	Tenoretic 100 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	746030	Tenoretic 50 Oral Tablet

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Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	854908	bisoprolol fumarate 10 MG / HCTZ 6.25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	854916	bisoprolol fumarate 2.5 MG / HCTZ 6.25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	854919	bisoprolol fumarate 5 MG / HCTZ 6.25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	854910	Ziac 10/6.25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	854918	Ziac 2.5/6.25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	854921	Ziac 5/6.25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866461	HCTZ 12.5 MG / metoprolol tartrate 25 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866472	HCTZ 12.5 MG / metoprolol tartrate 50 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866479	HCTZ 25 MG / metoprolol tartrate 100 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866846	HCTZ 25 MG / metoprolol tartrate 200 MG (as metroprolol succinate 190 MG) 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866482	HCTZ 25 MG / metoprolol tartrate 50 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866491	HCTZ 50 MG / metoprolol tartrate 100 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866452	hydrochlorothiazide 12.5 MG / metoprolol tartrate 100 MG (as metoprolol succinate 95 MG) 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866456	Hydrochlorothiazide 12.5 MG / Metoprolol Tartrate 100 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866465	Hydrochlorothiazide 12.5 MG / Metoprolol Tartrate 25 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866476	Hydrochlorothiazide 12.5 MG / Metoprolol Tartrate 50 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866455	Dutoprol 100/12.5 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866464	Dutoprol 25/12.5 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866475	Dutoprol 50/12.5 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866457	Hydrochlorothiazide 12.5 MG / Metoprolol Tartrate 100 MG Extended Release Tablet [Dutoprol 100/12.5]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866466	Hydrochlorothiazide 12.5 MG / Metoprolol Tartrate 25 MG Extended Release Tablet [Dutoprol 25/12.5]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866477	Hydrochlorothiazide 12.5 MG / Metoprolol Tartrate 50 MG Extended Release Tablet [Dutoprol 50/12.5]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866498	Lopressor HCT 100/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866506	Lopressor HCT 100/50 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866502	Lopressor HCT 50/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	198000	Bendroflumethiazide 5 MG / Nadolol 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	198001	Bendroflumethiazide 5 MG / Nadolol 80 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208003	Corzide 40/5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208029	Corzide 80/5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856398	24 HR Hydrochlorothiazide 50 MG / Propranolol Hydrochloride 120 MG Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856401	24 HR Hydrochlorothiazide 50 MG / Propranolol Hydrochloride 160 MG Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856412	24 HR Hydrochlorothiazide 50 MG / Propranolol Hydrochloride 80 MG Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856422	HCTZ 25 MG / propranolol hydrochloride 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856429	HCTZ 25 MG / propranolol hydrochloride 80 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856393	HCTZ 50 MG / propranolol hydrochloride 120 MG Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856406	HCTZ 50 MG / propranolol hydrochloride 160 MG Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856417	HCTZ 50 MG / propranolol hydrochloride 80 MG Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856426	Inderide 40/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856433	Inderide 80/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856586	Inderide LA 120/50 24 HR Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856587	Inderide LA 120/50 Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856591	Inderide LA 160/50 24 HR Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856592	Inderide LA 160/50 Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856596	Inderide LA 80/50 24 HR Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	856597	Inderide LA 80/50 Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310811	HCTZ 25 MG / timolol 10 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	491234	Timolide (HCTZ 25 MG / timolol 10 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197963	HCTZ 15 MG / methyldopa 250 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197960	HCTZ 25 MG / methyldopa 250 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197962	HCTZ 30 MG / methyldopa 500 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197961	HCTZ 50 MG / methyldopa 500 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	688643	Aldoril (HCTZ 15 MG / methyldopa 250 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	688645	Aldoril (HCTZ 25 MG / methyldopa 250 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	688647	Aldoril (HCTZ 30 MG / methyldopa 500 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	688649	Aldoril (HCTZ 50 MG / methyldopa 500 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	205364	Chlorthalidone 25 MG / Reserpine 0.125 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	205365	Chlorthalidone 50 MG / Reserpine 0.25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	214094	Chlorthalidone 25 MG / Reserpine 0.125 MG Oral Tablet [Demi-Regroton]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	214095	Chlorthalidone 50 MG / Reserpine 0.25 MG Oral Tablet [Regroton]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	237192	Chlorothiazide 250 MG / Reserpine 0.125 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197477	Chlorothiazide 500 MG / Reserpine 0.125 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	213504	Chlorothiazide 250 MG / Reserpine 0.125 MG Oral Tablet [Diupres-250]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	213505	Chlorothiazide 500 MG / Reserpine 0.125 MG Oral Tablet [Diupres-500]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310810	HCTZ 25 MG / reserpine 0.1 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	204501	HCTZ 25 MG / reserpine 0.125 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	314018	HCTZ 50 MG / reserpine 0.1 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197771	HCTZ 50 MG / reserpine 0.125 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208084	Hydrochlorothiazide 25 MG / Reserpine 0.125 MG Oral Tablet [Hydro-Reserp]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208086	Hydrochlorothiazide 25 MG / Reserpine 0.125 MG Oral Tablet [Hydroserp]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208087	Hydrochlorothiazide 25 MG / Reserpine 0.125 MG Oral Tablet [Hydroserpine #1]

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208088	Hydrochlorothiazide 25 MG / Reserpine 0.125 MG Oral Tablet [Hydroserpine]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208089	Hydrochlorothiazide 25 MG / Reserpine 0.125 MG Oral Tablet [Mallopress]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208090	Hydrochlorothiazide 50 MG / Reserpine 0.125 MG Oral Tablet [Hydro-Reserp]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208092	Hydrochlorothiazide 50 MG / Reserpine 0.125 MG Oral Tablet [Hydroserp]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208093	Hydrochlorothiazide 50 MG / Reserpine 0.125 MG Oral Tablet [Hydroserpine]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208085	Hydropres-25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208091	Hydropres-50 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	977950	Amiloride Hydrochloride 2.5 MG / Hydrochlorothiazide 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	977883	amiloride hydrochloride 5 MG / HCTZ 50 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	977885	Moduretic 5-50 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	198224	HCTZ 25 MG / spironolactone 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	198225	HCTZ 50 MG / spironolactone 50 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208112	Aldactazide 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208116	Aldactazide 50 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208113	Hydrochlorothiazide 25 MG / Spironolactone 25 MG Oral Tablet [Spironolactone Plus]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	314029	HCTZ 25 MG / triameterene 50 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	198316	HCTZ 25 MG / triamterene 37.5 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310812	HCTZ 25 MG / triamterene 37.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	198314	HCTZ 25 MG / triamterene 50 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	310818	HCTZ 50 MG / triamterene 75 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	208124	Dyazide (HCTZ 25 MG / triamterene 37.5 MG) Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	93253	Maxzide-25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	93252	Maxzide-50 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	237192	Chlorothiazide 250 MG / Reserpine 0.125 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197477	Chlorothiazide 500 MG / Reserpine 0.125 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	213504	Chlorothiazide 250 MG / Reserpine 0.125 MG Oral Tablet [Diupres-250]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	213505	Chlorothiazide 500 MG / Reserpine 0.125 MG Oral Tablet [Diupres-500]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	205364	Chlorthalidone 25 MG / Reserpine 0.125 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	205365	Chlorthalidone 50 MG / Reserpine 0.25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	214094	Chlorthalidone 25 MG / Reserpine 0.125 MG Oral Tablet [Demi-Regroton]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	214095	Chlorthalidone 50 MG / Reserpine 0.25 MG Oral Tablet [Regroton]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197382	Atenolol 100 MG / Chlorthalidone 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	152916	Atenolol 50 MG / Chlorthalidone 12.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	197383	Atenolol 50 MG / Chlorthalidone 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	746023	Tenoretic 100 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	746030	Tenoretic 50 Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	866842	Atenolol 25 MG / Metoprolol Tartrate 25 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	199717	Clopamide 5 MG / Pindolol 10 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898342	Amlodipine 10 MG / Benazepril hydrochloride 20 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898346	Amlodipine 10 MG / Benazepril hydrochloride 40 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898350	Amlodipine 2.5 MG / Benazepril hydrochloride 10 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898353	Amlodipine 5 MG / Benazepril hydrochloride 10 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898356	Amlodipine 5 MG / Benazepril hydrochloride 20 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898359	Amlodipine 5 MG / Benazepril hydrochloride 40 MG Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898344	Lotrel 10/20 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898348	Lotrel 10/40 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898352	Lotrel 2.5/10 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898355	Lotrel 5/10 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898358	Lotrel 5/20 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	898361	Lotrel 5/40 Oral Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858618	Enalapril Maleate 5 MG / Felodipine 2.5 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858621	Enalapril Maleate 5 MG / Felodipine 5 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858884	Lexxel 5/2.5 Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	858892	Lexxel 5/5 Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	854993	Indapamide 1.25 MG / Perindopril Erbumine 4 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	389180	Felodipine 2.5 MG / Ramipril 2.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	389181	Felodipine 5 MG / Ramipril 5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897781	trandolapril 1 MG / verapamil hydrochloride 240 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897778	trandolapril 1 MG / Verapamil hydrochloride 240 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897783	trandolapril 2 MG / verapamil hydrochloride 180 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	901451	trandolapril 2 MG / Verapamil hydrochloride 180 MG Extended Release Capsule
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897786	trandolapril 2 MG / Verapamil hydrochloride 180 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897844	trandolapril 2 MG / verapamil hydrochloride 240 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897847	trandolapril 2 MG / Verapamil hydrochloride 240 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897853	trandolapril 4 MG / Verapamil hydrochloride 240 MG 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897856	trandolapril 4 MG / Verapamil hydrochloride 240 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897782	Tarka 1/240 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897785	Tarka 2/180 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897846	Tarka 2/240 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897855	Tarka 4/240 24 HR Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897780	trandolapril 1 MG / Verapamil hydrochloride 240 MG Extended Release Tablet [Tarka 1/240]

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897787	trandolapril 2 MG / Verapamil hydrochloride 180 MG Extended Release Tablet [Tarka 2/180]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897848	trandolapril 2 MG / Verapamil hydrochloride 240 MG Extended Release Tablet [Tarka 2/240]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	897857	trandolapril 4 MG / Verapamil hydrochloride 240 MG Extended Release Tablet [Tarka 4/240]
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	999986	Amlodipine 10 MG / Hydrochlorothiazide 12.5 MG / Olmesartan medoxomil 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	999991	Amlodipine 10 MG / Hydrochlorothiazide 25 MG / Olmesartan medoxomil 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	730861	Amlodipine 10 MG / Olmesartan medoxomil 20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	730866	Amlodipine 10 MG / Olmesartan medoxomil 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	999967	Amlodipine 5 MG / Hydrochlorothiazide 12.5 MG / Olmesartan medoxomil 20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	999996	Amlodipine 5 MG / Hydrochlorothiazide 12.5 MG / Olmesartan medoxomil 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	1000001	Amlodipine 5 MG / Hydrochlorothiazide 25 MG / Olmesartan medoxomil 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	730869	Amlodipine 5 MG / Olmesartan medoxomil 20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	730872	Amlodipine 5 MG / Olmesartan medoxomil 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	744624	Azor 10/20 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	744628	Azor 10/40 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	744632	Azor 5/20 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	744636	Azor 5/40 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	999971	Tribenzor 20/5/12.5 (olmesartan medoxomil / amlodipine (as amlodipine besylate) / HCTZ) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	999990	Tribenzor 40/10/12.5 (olmesartan medoxomil / amlodipine (as amlodipine besylate) / HCTZ) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	999995	Tribenzor 40/10/25 (olmesartan medoxomil / amlodipine / HCTZ) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	1000000	Tribenzor 40/5/12.5 (olmesartan medoxomil / amlodipine (as amlodipine besylate) / HCTZ) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	1000005	Tribenzor 40/5/25 (olmesartan medoxomil / amlodipine (as amlodipine besylate) / HCTZ) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	876514	Amlodipine 10 MG / telmisartan 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	876519	Amlodipine 10 MG / telmisartan 80 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	876524	Amlodipine 5 MG / telmisartan 40 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	876529	Amlodipine 5 MG / telmisartan 80 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	876518	Twynsta 40/10 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	876528	Twynsta 40/5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	876523	Twynsta 80/10 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	876533	Twynsta 80/5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	1011718	aliskiren 150 MG / valsartan 160 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	1011729	aliskiren 300 MG / valsartan 320 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	722126	Amlodipine 10 MG / valsartan 160 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	722131	Amlodipine 10 MG / valsartan 320 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	722134	Amlodipine 5 MG / valsartan 160 MG Oral Tablet

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	722137	Amlodipine 5 MG / valsartan 320 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848131	amlopidine 10 MG / HCTZ 12.5 MG / valsartan 160 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848151	amlopidine 10 MG / HCTZ 25 MG / valsartan 160 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848135	amlopidine 10 MG / HCTZ 25 MG / valsartan 320 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848140	amlopidine 5 MG / HCTZ 12.5 MG / valsartan 160 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848145	amlopidine 5 MG / HCTZ 25 MG / valsartan 160 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	1011735	Valturna (aliskiren 300 MG / valsartan 320 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	1011724	Valturna (aliskiren 150 MG / valsartan 160 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848149	Exforge HCT 5/160/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848144	Exforge HCT 5/160/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848139	Exforge HCT 10/320/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848155	Exforge HCT 10/160/25 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	848134	Exforge HCT 10/160/12.5 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	724879	Exforge 10/160 Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	724895	Exforge (amlodipine 5 MG / valsartan 320 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	724891	Exforge (amlodipine 5 MG / valsartan 160 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	724887	Exforge (amlodipine 10 MG / valsartan 320 MG) Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	833237	Diltiazem Hydrochloride 180 MG / Enalapril Maleate 5 MG Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	846148	Teczem Extended Release Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	389180	Felodipine 2.5 MG / Ramipril 2.5 MG Oral Tablet
000262	HTN	1	N	Multi Agent Anti-Hypertensive	Medication	RxNorm	389181	Felodipine 5 MG / Ramipril 5 MG Oral Tablet
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	I9	458.0	Orthostatic hypotension; includes postural
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	I9	458.8	Other specified hypotension
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	I9	458.9	Hypotension, unspecified
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	I10	G90.3	Neurogenic orthostatic hypotension (Shy-Drager)
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	I10	I95.1	Orthostatic hypotension
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	I10	I95.2	Hypotension due to drugs
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	SNM	28651003	orthostatic hypotension
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	SNM	75181005	chronic orthostatic hypotension
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	SNM	84438001	pure autonomic failure
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	SNM	61933008	hyperadrenergic postural hypotension
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	SNM	70247006	hypoadrenergic postural hypotension
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	SNM	371073003	postural orthostatic tachycardia syndrome
000201	HTN	1	E	Postural Hypotension	Diagnosis/Condition/Problem	SNM	230664009	sympathotonic orthostatic hypotension
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	21745	
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	21747	
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	21703	
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	21704	
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	22855	
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	21990	

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Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	21738	
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	22259	
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	21815	
000160	HTN	1	E	Medical reason	Negation Rationale	HL7	22261	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	19729	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	21741	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	21746	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	21743	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	21710	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	21708	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	22851	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	14880	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	22260	
000174	HTN	1	E	Patient reason	Negation Rationale	HL7	15985	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22168	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22169	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22165	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22166	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22167	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21493	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19731	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19730	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19733	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19735	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19734	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19736	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21744	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22024	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22023	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21706	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21709	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21707	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21732	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21706	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21731	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21733	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21728	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21729	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21730	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21734	

AMA-PCPI Level I EHR Specifications
Hypertension - Blood Pressure Control (HTN-1)

Value Set ID	Clinical Topic	Topic Indicator	Measure Component	Standard Concept	Standard Category	Standard Taxonomy	Code	Code Description
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22867	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21735	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22866	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22865	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21568	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	21408	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22907	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22909	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22911	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22913	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22912	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22858	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22857	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	22859	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19989	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19990	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19988	
000200	HTN	1	E	System Reason	Negation Rationale	HL7	19987	

This Physician Performance Measurement Set (PPMS) and related data specifications were developed by the Physician Consortium for Performance Improvement (the Consortium) including the American College of Cardiology (ACC), the American Heart Association (AHA) and the American Medical Association (AMA) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications. This PPMS is intended to assist physicians to enhance quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline.

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Limited proprietary coding is contained in the measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. The AMA, the ACC, the AHA, the Consortium and its members disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specifications.

NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** 0276 **NQF Project:** Cardiovascular Endorsement Maintenance 2010
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Hypertension Admission Rate (PQI 7)
De.2 **Brief description of measure**: Percentage of county population with an admission for hypertension.
1.1-2 **Type of Measure:** Outcome De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** Prevention Quality Indicator (PQI) composite
De.4 **National Priority Partners Priority Area:** Population health, Safety De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Staying healthy

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Government entity and in the public domain - no agreement necessary A.4 **Measure Steward Agreement attached:**	**A** **Y**☒ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	**B** **Y**☒ **N**☐

C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement	**C** Y☒ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** Yes, fully developed and tested D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	**D** Y☒ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☒ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:** impact of age, gender adjustments	
Staff Reviewer Name(s): RWinkler	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria.* (evaluation criteria) **1a. High Impact**	**Eval Rating**
(for NQF staff use) **Specific NPP goal**: Population health	
1a.1 **Demonstrated High Impact Aspect of Healthcare:** Patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** Bindman et al. found that an area's self-rated access to care explained 22% of admissions for hypertension [1]. Weissman et al. found that uninsured patients had a relative risk of admission for hypertension of 2.38 in Massachusetts after adjustment for age and sex, while Maryland had a corresponding relative risk of 1.93 [2]. Millman et al. reported that low-income ZIP codes had 7.6 times more hypertension hospitalizations per capita than high-income ZIP codes [3]. 1a.4 **Citations for Evidence of High Impact:** Bindman AB, Grumback K, Osmond D, et al. Preventable hospitalizations and access to health care. JAMA 1995;274(4):305-11. Weissman JS, Gatsonis C, Epstein AM. Rates of avoidable hospitalization by insurance status in Massachusetts and Maryland. JAMA 1992;268(1):2388-94. Millman M, editor. Committee on Monitoring Access to Personal Health Care Services. Washington, DC: National Academy Press; 1993.	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement 1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** Hospital admission for hypertension is a PQI that would be of most interest to comprehensive health care delivery systems. Little evidence exists regarding the validity of this indicator, although one study did relate admission rates to access to care problems. This indicator is measured with adequate precision, but some of the variance in age-sex adjusted rates does not reflect true differences in area performance. Adjustment for age-sex is recommended.	**1b** C☐ P☐ M☐ N☐

Comment [KP1]: 1a. The measure focus addresses:
- a specific national health goal/priority identified by NQF's National Priorities Partners; OR
- a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Areas may wish to identify hospitals that contribute the most to the overall area rate for this indicator. The patient populations served by these hospitals may be a starting point for interventions.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Adjusted per 100,000 rates by patient and hospital characteristics, 2007

Mean	Standard error	Location	P-value: Relative to Northeast
58.732	4.777	Northeast	
62.759	3.988	Midwest	0.518
78.766	4.441	South	0.002
34.893	3.198	West	0.000

1b.3 Citations for data on performance gap:
See the following report for a complete treatment of the methodology: "Methods: Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the National Healthcare Quality Report" [URL:http://hcupnet.ahrq.gov/QI%20Methods.pdf?JS=Y]

1b.4 Summary of Data on disparities by population group:
Adjusted per 100,000 rates by patient characteristics, 2007

Estimate	Standard error	Age: for conditions affecting any age
21.84	0.921	18-44
74.37	3.409	45-64
161.03	5.129	65 and over

Estimate	Standard error	Age: for conditions affecting elderly
104.341	4.307	65-69
135.429	5.368	70-74
166.023	6.092	75-79
213.54	7.438	80-84
246.715	8.798	85 and over

Estimate	Standard error	Gender
53.704	2.142	Male
66.628	2.272	Female

Estimate	Standard error	Median income of patient´s ZIP code
100.33	5.768	First quartile (lowest income)
60.771	2.84	Second quartile
47.923	2.472	Third quartile
38.217	2.572	Fourth quartile (highest income)

Estimate	Standard error	Location of patient residence (NCHS)
78.374	7.569	Large central metropolitan
55.501	4.944	Large fringe metropolitan
50.468	5.384	Medium metropolitan
49.898	5.925	Small metropolitan
60.398	4.282	Micropolitan

1b.5 Citations for data on Disparities:
See the following report for a complete treatment of the methodology: "Methods: Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the National Healthcare Quality Report"

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

[URL: http://hcupnet.ahrq.gov/QI%20Methods.pdf?JS=Y]

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Hypertension is a chronic condition that is often controllable in an outpatient setting with appropriate use of drug therapy. If area rates for hypertension are high even after risk adjustment and stratification, the quality of preventive services in that region are held to be insufficient in preparing hypertensive patients to manage their condition.

1c.2-3. Type of Evidence: Expert opinion, Systematic synthesis of research

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
Hospital admission for hypertension is a PQI that would be of most interest to comprehensive health care delivery systems. Little evidence exists regarding the validity of this indicator, although one study did relate admission rates to access to care problems. This indicator is measured with adequate precision, but some of the variance in age-sex adjusted rates does not reflect true differences in area performance. Adjustment for age-sex is recommended.
Areas may wish to identify hospitals that contribute the most to the overall area rate for this indicator. The patient populations served by these hospitals may be a starting point for interventions.

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
RATING: 14 Testing, rating, and review were conducted by the project team. A full report on the literature review and empirical evaluation can be found in Refinement of the HCUP Quality Indicators by the UCSF-Stanford EPC, Detailed coding information for each QI is provided in the document Prevention Quality Indicators Technical Specifications. Rating of performance on empirical evaluations, ranged from 0 to 26. The scores were intended as a guide for summarizing the performance of each indicator on four empirical tests of precision (signal variance, area-level share, signal ratio, and R-squared) and five tests of minimum bias (rank correlation, top and bottom decile movement, absolute change, and change over two deciles), as described in the previous section.

1c.6 Method for rating evidence: The project team conducted extensive empirical testing of all potential indicators using the 1995-97 HCUP State Inpatient Databases (SID) and Nationwide Inpatient Sample (NIS) to determine precision, bias, and construct validity. The 1997 SID contains uniform data on inpatient stays in community hospitals for 22 States covering approximately 60% of all U.S. hospital discharges. The NIS is designed to approximate a 20% of U.S. community hospitals and includes all stays in the sampled hospitals. Each year of the NIS contains between 6 million and 7 million records from about 1,000 hospitals. The NIS combines a subset of the SID data, hospital-level variables, and hospital and discharge weights for producing national estimates. The project team conducted tests to examine three things: precision, bias, and construct validity.
Precision. The first step in the analysis involved precision tests to determine the reliability of the indicator for distinguishing real differences in provider performance. For indicators that may be used for quality improvement, it is important to know with what precision, or surety, a measure can be attributed to an actual construct rather than random variation.
For each indicator, the variance can be broken down into three components: variation within a provider (actual differences in performance due to differing patient characteristics), variation among providers (actual differences in performance among providers), and random variation. An ideal indicator would have a substantial amount of the variance explained by between-provider variance, possibly resulting from differences in quality of care, and a minimum amount of random variation. The project team performed four tests of precision to estimate the magnitude of between-provider variance on each indicator:
• Signal standard deviation was used to measure the extent to which performance of the QI varies systematically across hospitals or areas.
• Provider/area variation share was used to calculate the percentage of signal (or true) variance relative to the total variance of the QI.
• Signal-to-noise ratio was used to measure the percentage of the apparent variation in QIs across providers that is truly related to systematic differences across providers and not random variations (noise) from year to year.

1c
C☐
P☐
M☐
N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [k4]: 1c. The measure focus is:
- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR
- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.

... [1]

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status – patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., mammography) or measures for multiple care processes that affect a single outcome.

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

• In-sample R-squared was used to identify the incremental benefit of applying multivariate signal extraction methods for identifying additional signal on top of the signal-to-noise ratio.
In general, random variation is most problematic when there are relatively few observations per provider, when adverse outcome rates are relatively low, and when providers have little control over patient outcomes or variation in important processes of care is minimal. If a large number of patient factors that are difficult to observe influence whether or not a patient has an adverse outcome, it may be difficult to separate the "quality signal" from the surrounding noise. Two signal extraction techniques were applied to improve the precision of an indicator:
• Univariate methods were used to estimate the "true" quality signal of an indicator based on information from the specific indicator and 1 year of data.
• Multivariate signal extraction (MSX) methods were used to estimate the "true" quality signal based on information from a set of indicators and multiple years of data. In most cases, MSX methods extracted additional signal, which provided much more precise estimates of true hospital or area quality.
Bias. To determine the sensitivity of potential QIs to bias from differences in patient severity, unadjusted performance measures for specific hospitals were compared with performance measures that had been adjusted for age and gender. All of the PQIs and some of the Inpatient Quality Indicators (IQIs) could only be risk-adjusted for age and sex. The 3M™ APR-DRG System Version 12 with Severity of Illness and Risk of Mortality subclasses was used for risk adjustment of the utilization indicators and the in-hospital mortality indicators, respectively. Five empirical tests were performed to investigate the degree of bias in an indicator:
• Rank correlation coefficient of the area or hospital with (and without) risk adjustment—gives the overall impact of risk adjustment on relative provider or area performance.
• Average absolute value of change relative to mean—highlights the amount of absolute change in performance, without reference to other providers' performance.
• Percentage of highly ranked hospitals that remain in high decile—reports the percentage of hospitals or areas that are in the highest deciles without risk adjustment that remain there after risk adjustment is performed.
• Percentage of lowly ranked hospitals that remain in low decile—reports the percentage of hospitals or areas that are in the lowest deciles without risk adjustment that remain there after risk adjustment is performed.
• Percentage that change more than two deciles—identifies the percentage of hospitals whose relative rank changes by a substantial percentage (more than 20%) with and without risk adjustment.
Construct validity. Construct validity analyses provided information regarding the relatedness or independence of the indicators. If quality indicators do indeed measure quality, then two measures of the same construct would be expected to yield similar results. The team used factor analysis to reveal underlying patterns among large numbers of variables—in this case, to measure the degree of relatedness between indicators. In addition, they analyzed correlation matrices for indicators.

1c.7 Summary of Controversy/Contradictory Evidence: See the following for a complete treatment of the topic: http://www.qualityindicators.ahrq.gov/downloads/pqi/pqi_guide_v31.pdf
Note: The Literature Review Findings column summarizes evidence specific to each potential concern on the link between the PQIs and quality of care, as described in step 3 above. A question mark (?) indicates that the concern is theoretical or suggested, but no specific evidence was found in the literature. A check mark indicates that the concern has been demonstrated in the literature.

1c.8 Citations for Evidence (*other than guidelines***):**
http://www.qualityindicators.ahrq.gov/downloads/pqi/pqi_guide_v31.pdf

1c.9 Quote the Specific guideline recommendation (*including guideline number and/or page number***):**
Not applicable

1c.10 Clinical Practice Guideline Citation: Not applicable
1c.11 National Guideline Clearinghouse or other URL:
http://www.guideline.gov/content.aspx?id=10952&search=hypertension

1c.12 Rating of strength of recommendation (*also provide narrative description of the rating and by whom***):**
Not applicable

1c.13 Method for rating strength of recommendation (*If different from USPSTF system, also describe rating and how it relates to USPSTF)***:**

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm**: **A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Not applicable

1c.14 Rationale for using this guideline over others:
Not applicable

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?* | **1**

Steering Committee: Was the threshold criterion, *Importance to Measure and Report*, **met?** | **1 Y☐ N☐**
Rationale:

2. SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria) | **Eval Rating**

2a. MEASURE SPECIFICATIONS

S.1 Do you have a web page where current detailed measure specifications can be obtained?
S.2 If yes, provide web page URL:

2a. Precisely Specified

2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):**
All discharges of age 18 years and older with ICD-9-CM principal diagnosis code for hypertension (see below).

2a.2 Numerator Time Window (*The time period in which cases are eligible for inclusion in the numerator***):**
Time window can be determined by user, but is generally a calendar year.

2a.3 Numerator Details (*All information required to collect/calculate the numerator, including all codes, logic, and definitions***):**
All 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
4019
HYPERTENSION NOS
40200
MAL HYPERTEN HRT DIS NOS
40210
BEN HYPERTEN HRT DIS NOS
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

Exclude cases:

2a-specs C☐ P☐ M☐ N☐

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

• transfer from a hospital (different facility)
• transfer from a skilled Nursing Facility (SNF) or Intermediate Care Facility (ICF)
• transfer from another health care facility
• MDC 14 (pregnancy, childbirth, and puerperium)
• with a cardiac procedure code
• with any diagnosis of Stage I-IV kidney disease, only if accompanied by procedure code for preparation for hemodialysis (dialysis access procedures)

ICD-9-CM Cardiac procedure codes
0050
IMPL CRT PACEMAKER SYS OCT02-
0051
IMPL CRT DEFIBRILLAT OCT02-
0052
IMP/REP LEAD LF VEN SYS OCT02-
0053
IMP/REP CRT PACEMKR GEN OCT02-
0054
IMP/REP CRT DEFIB GENAT OCT02-
0056
INS/REP IMPL SENSOR LEAD OCT06-
0057
IMP/REP SUBCUE CARD DEV OCT06-
0066
PTCA OCT06-
1751
IMPLANTATION OF RECHARGEABLE CARDIAC CONTRACTILITY MODULATION [CCM], TOTAL SYSTEM OCT09-
1752
IMPLANTATION OR REPLACEMENT OF CARDIAC CONTRACTILITY MODULATION [CCM] RECHARGEABLE PULSE GENERATOR ONLY OCT09-
3500
CLOSED VALVOTOMY NOS
3501
CLOSED AORTIC VALVOTOMY
3502
CLOSED MITRAL VALVOTOMY
3503
CLOSED PULMON VALVOTOMY
3504
CLOSED TRICUSP VALVOTOMY
3510
OPEN VALVULOPLASTY NOS
3511
OPN AORTIC VALVULOPLASTY
3512
OPN MITRAL VALVULOPLASTY
3513
OPN PULMON VALVULOPLASTY
3514
OPN TRICUS VALVULOPLASTY
3520
REPLACE HEART VALVE NOS
3521
REPLACE AORT VALV-TISSUE
3522
REPLACE AORTIC VALVE NEC
3523
REPLACE MITR VALV-TISSUE

3524 REPLACE MITRAL VALVE NEC 3525 REPLACE PULM VALV-TISSUE 3526 REPLACE PULMON VALVE NEC 3527 REPLACE TRIC VALV-TISSUE 3528 REPLACE TRICUSP VALV NEC 3531 PAPILLARY MUSCLE OPS 3532 CHORDAE TENDINEAE OPS 3533 ANNULOPLASTY 3534 INFUNDIBULECTOMY 3535 TRABECUL CARNEAE CORD OP 3539 TISS ADJ TO VALV OPS NEC 3541 ENLARGE EXISTING SEP DEF 3542 CREATE SEPTAL DEFECT 3550 PROSTH REP HRT SEPTA NOS 3551 PROS REP ATRIAL DEF-OPN 3552 PROS REPAIR ATRIA DEF-CL 3553 PROST REPAIR VENTRIC DEF 3554 PROS REP ENDOCAR CUSHION 3555 PROS REP VENTRC DEF-CLOS OCT06- 3560 GRFT REPAIR HRT SEPT NOS 3561 GRAFT REPAIR ATRIAL DEF 3562 GRAFT REPAIR VENTRIC DEF 3563 GRFT REP ENDOCAR CUSHION 3570 HEART SEPTA REPAIR NOS 3571 ATRIA SEPTA DEF REP NEC 3572 VENTR SEPTA DEF REP NEC 3573 ENDOCAR CUSHION REP NEC 3581 TOT REPAIR TETRAL FALLOT 3582 TOTAL REPAIR OF TAPVC	

3583 TOT REP TRUNCUS ARTERIOS 3584 TOT COR TRANSPOS GRT VES 3591 INTERAT VEN RETRN TRANSP 3592 CONDUIT RT VENT-PUL ART 3593 CONDUIT LEFT VENTR-AORTA 3594 CONDUIT ARTIUM-PULM ART 3595 HEART REPAIR REVISION 3596 PERC HEART VALVULOPLASTY 3598 OTHER HEART SEPTA OPS 3599 OTHER HEART VALVE OPS 3601 PTCA-1 VESSEL W/O AGENT 3602 PTCA-1 VESSEL WITH AGNT 3603 OPEN CORONRY ANGIOPLASTY 3604 INTRCORONRY THROMB INFUS 3605 PTCA-MULTIPLE VESSEL 3606 INSERT OF COR ART STENT OCT95- 3607 INS DRUG-ELUT CORONRY ST OCT02- 3609 REM OF COR ART OBSTR NEC 3610 AORTOCORONARY BYPASS NOS 3611 AORTOCOR BYPAS-1 COR ART 3612 AORTOCOR BYPAS-2 COR ART 3613 AORTOCOR BYPAS-3 COR ART 3614 AORTCOR BYPAS-4+ COR ART 3615 1 INT MAM-COR ART BYPASS 3616 2 INT MAM-COR ART BYPASS 3617 ABD-CORON ART BYPASS OCT96- 3619 HRT REVAS BYPS ANAS NEC 362 ARTERIAL IMPLANT REVASC 363 OTH HEART REVASCULAR	

3631
OPEN CHEST TRANS REVASC
3632
OTH TRANSMYO REVASCULAR
3633
ENDO TRANSMYO REVASCULAR OCT06-
3634
PERC TRANSMYO REVASCULAR OCT06-
3639
OTH HEART REVASULAR
3691
CORON VESS ANEURYSM REP
3699
HEART VESSLE OP NEC
3731
PERICARDIECTOMY
3732
HEART ANEURYSM EXCISION
3733
EXC/DEST HRT LESION OPEN
3734
EXC/DEST HRT LES OTHER
3735
PARTIAL VENTRICULECTOMY
3736
EXCISION OR DESTRUCTION OF LEFT ATRIAL APPENDAGE (LAA) OCT08-
3741
IMPLANT PROSTH CARD SUPPORT DEV OCT06
375
HEART TRANSPLANTATION (NOT VALID AFTER OCT 03)
3751
HEART TRANPLANTATION OCT03-
3752
IMPLANT TOT REP HRT SYS OCT03-
3753
REPL/REP THORAC UNIT HRT OCT03-
3754
REPL/REP OTH TOT HRT SYS OCT03-
3755
REMOVAL OF INTERNAL BIVENTRICULAR HEART REPLACEMENT SYSTEM OCT08-
3760
IMPLANTATION OR INSERTION OF BIVENTRICULAR EXTERNAL HEART ASSIST SYSTEM OCT08-
3761
IMPLANT OF PULSATION BALLOON
3762
INSERTION OF NON-IMPLANTABLE HEART ASSIST SYSTEM
3763
REPAIR OF HEART ASSIST SYSTEM
3764
REMOVAL OF HEART ASSIST SYSTEM
3765
IMPLANT OF EXTERNAL HEART ASSIST SYSTEM
3766
INSERTION OF IMPLANTABLE HEART ASSIST SYSTEM
3770
INT INSERT PACEMAK LEAD
3771
INT INSERT LEAD IN VENT

3772
INT INSERT LEAD ATRI-VENT
3773
INT INSER LEAD IN ATRIUM
3774
INT OR REPL LEAD EPICAR
3775
REVISION OF LEAD
3776
REPL TV ATRI-VENT LEAD
3777
REMOVAL OF LEAD W/O REPL
3778
INSER TEAM PACEMAKER SYS
3779
REVIS OR RELOCATE POCKET
3780
INT OR REPL PERM PACEMKR
3781
INT INSERT 1-CHAM, NON
3782
INT INSERT 1-CHAM, RATE
3783
INT INSERT DUAL-CHAM DEV
3785
REPL PACEM W 1-CHAM, NON
3786
REPL PACEM 1-CHAM, RATE
3787
REPL PACEM W DUAL-CHAM
3789
REVISE OR REMOVE PACEMAK
3794
IMPLT/REPL CARDDEFIB TOT
3795
IMPLT CARDIODEFIB LEADS
3796
IMPLT CARDIODEFIB GENATR
3797
REPL CARDIODEFIB LEADS
3798
REPL CARDIODEFIB GENRATR

ICD-9-CM Stage I-IV Kidney Disease diagnosis codes:
40300
HYPERTENSIVE CHRONIC KIDNEY DISEASE, MALIGNANT, WITH CHRONIC KIDNEY DISEASE STAGE I THROUGH STAGE IV, OR UNSPECIFIED
40310
HYPERTENSIVE CHRONIC KIDNEY DISEASE, BENIGN, WITH CHRONIC KIDNEY DISEASE STAGE I THROUGH STAGE IV, OR UNSPECIFIED
40390
HYPERTENSIVE CHRONIC KIDNEY DISEASE, UNSPECIFIED, WITH CHRONIC KIDNEY DISEASE STAGE I THROUGH STAGE IV, OR UNSPECIFIED
40400
HYPERTENSIVE HEART AND CHRONIC KIDNEY DISEASE, MALIGNANT,
WITHOUT HEART FAILURE AND WITH CHRONIC KIDNEY DISEASE STAGE I THROUGH STAGE IV, OR UNSPECIFIED
40410
HYPERTENSIVE HEART AND CHRONIC KIDNEY DISEASE, BENIGN, WITHOUT HEART FAILURE AND WITH CHRONIC

KIDNEY DISEASE STAGE I THROUGH STAGE IV, OR UNSPECIFIED
40490
HYPERTENSIVE HEART AND CHRONIC KIDNEY DISEASE, UNSPECIFIED, WITHOUT HEART FAILURE AND WITH CHRONIC KIDNEY DISEASE STAGE I THROUGH STAGE IV, OR UNSPECIFIED
Only if ICD-9-CM Dialysis Access procedure codes:
3895
VENOUS CATHETERIZATION FOR RENAL DIALYSIS
3927
ARTERIOVENOSTOMY FOR RENAL DIALYSIS
3929
OTHER (PERIPHERAL) VASCULAR SHUNT OR BYPASS
3942
REVISION OF ARTERIOVENOUS SHUNT
FOR RENAL DIALYSIS
3943
REMOVAL OF ARTERIOVENOUS SHUNT FOR RENAL DIALYSIS
3993
INSERTION OF VESSEL-TO-VESSEL CANNULA
3994
REPLACEMENT OF VESSEL-TO-VESSEL CANNULA

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
Population in Metro Area or county, age 18 years and older.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: 18 and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
calendar year

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
Population in Metro Area or county, age 18 years and older.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** none

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
none

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
Observed rates may be stratified by gender, age (5-year age groups), race / ethnicity

2a.12-13 Risk Adjustment Type: Risk adjustment method widely or commercially available

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
The predicted value for each case is computed using a logistic regression model and covariates for gender and age in years (in 5-year age groups). The reference population used in the model is the universe of discharges for states that participate in the HCUP State Inpatient Databases (SID) for the year 2007 (updated annually), a database consisting of 43 states and approximately 30 million adult discharges. The expected rate is computed as the sum of the predicted value for each case divided by the number of cases for the unit of analysis of interest (i.e., county, state, and region). The risk adjusted rate is computed using indirect standardization as the observed rate divided by the expected rate, multiplied by the reference population rate.

2a.15-17 Detailed risk model available Web page URL or attachment: URL None

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

http://qualityindicators.ahrq.gov/downloads/pqi/PQI_Risk_Adjustment_Tables_(Version_4_2).pdf

2a.18-19 **Type of Score:** Rate/proportion
2a.20 **Interpretation of Score:** Better quality = Lower score
2a.21 **Calculation Algorithm (***Describe the calculation of the measure as a flowchart or series of steps***):**
Each indicator is expressed as a rate, is defined as outcome of interest / population at risk or numerator / denominator. The AHRQ Quality Indicators (AHRQ QI) software performs five steps to produce the rates. 1) Discharge-level data is used to mark inpatient records containing the outcome of interest and 2) the population at risk. For provider indicators, the population at risk is also derived from hospital discharge records; for area indicators, the population at risk is derived from U.S. Census data. 3) Calculate observed rates. Using output from steps 1 and 2, rates are calculated for user-specified combinations of stratifiers. 4) Calculate expected rates. Regression coefficients from a reference population database are applied to the discharge records and aggregated to the provider or area level. 5) Calculate risk-adjusted rate. Use the indirect standardization to account for case-mix. 6) Calculate smoothed rate. A Univariate shrinkage factor is applied to the risk-adjusted rates. The shrinkage estimate reflects a reliability adjustment unique to each indicator. Full information on calculation algorithms and specifications can be found at http://qualityindicators.ahrq.gov/PQI_download.htm

2a.22 **Describe the method for discriminating performance** *(e.g., significance testing)***:**
Significance testing is not prescribed by the software. Users may calculate a confidence interval for the risk-adjusted rates and a posterior probability interval for the smoothed rates at a 95% or 99% level. Users may define the relevant benchmark and the methods of discriminating performance according to their application.

2a.23 **Sampling (Survey) Methodology** *If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate)*:
Not applicable

2a.24 **Data Source (***Check the source(s) for which the measure is specified and tested)*
Electronic administrative data/claims

2a.25 **Data source/data collection instrument (***Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):**
The data source is hospital discharge data such as the HCUP State Inpatient Databases (SID) or equivalent using UB-04 coding standards. The data collection instrument is public-use AHRQ QI software available in SAS or Windows versions.

2a.26-28 **Data source/data collection instrument reference web page URL or attachment:** URL None
http://www.qualityindicators.ahrq.gov/software.htm

2a.29-31 **Data dictionary/code table web page URL or attachment:** URL None
http://www.qualityindicators.ahrq.gov/downloads/winqi/AHRQ_QI_Windows_Software_Documentation_V41a.pdf

2a.32-35 **Level of Measurement/Analysis** (*Check the level(s) for which the measure is specified and tested)*
Population: states, Population: counties or cities

2a.36-37 **Care Settings (***Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Office

2a.38-41 **Clinical Services** (*Healthcare services being measured, check all that apply*)
Clinicians: Physicians (MD/DO)

TESTING/ANALYSIS

2b. Reliability testing

2b.1 **Data/sample** *(description of data/sample and size)***:** AHRQ 2007 State Inpatient Databases (SID) with 4,000 hospitals and 30 million adult discharges

2b.2 **Analytic Method** *(type of reliability & rationale, method for testing)***:**
Expert panels and empirical analysis

2b
C☐
P☐
M☐
N☐

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

2b.3 Testing Results *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Although hypertension is a common condition, hospitalizations for complications of hypertension are relatively uncommon. One study noted that hypertension accounted for only 0.5% of total admissions for ACSCs.54 Based on empirical evidence, this indicator is moderately precise, with a raw area level rate of 37.1 per 100,000 population and a substantial standard deviation of 32.2. The signal ratio (i.e., the proportion of the total variation across areas that is truly related to systematic differences in area performance rather than random variation) is moderate, at 69.9%, indicating that some of the observed differences in age-sex adjusted rates likely do not represent true differences in area performance.

2c. Validity testing

2c.1 Data/sample *(description of data/sample and size)*: AHRQ 2007 State Inpatient Databases (SID) with 4,000 hospitals and 30 million adult discharges

2c.2 Analytic Method *(type of validity & rationale, method for testing)*:
Expert panels and empirical analysis

2c.3 Testing Results *(statistical results, assessment of adequacy in the context of norms for the test conducted)*:
Bindman et al. found that an area's self-rated access to care explained 22% of admissions for hypertension.56 Weissman et al. found that uninsured patients had a relative risk of admission for hypertension of 2.38 in Massachusetts after adjustment for age and sex, while Maryland had a corresponding relative risk of 1.93.57 Millman et al. reported that low-income ZIP codes had 7.6 times more hypertension hospitalizations per capita than high-income ZIP codes.58

2c C☐ P☐ M☐ N☐

2d. Exclusions Justified

2d.1 Summary of Evidence supporting exclusion(s):
Exclusions remove cases where the outcome of interest is less likely to be preventable or with no or very low risk

2d.2 Citations for Evidence:
Refinement of the HCUP Quality Indicators (Technical Review), May 2001
http://qualityindicators.ahrq.gov/downloads/technical/qi_technical_review.zip

2d.3 Data/sample *(description of data/sample and size)*: AHRQ 2007 State Inpatient Databases (SID) with 4,000 hospitals and 30 million adult discharges

2d.4 Analytic Method *(type analysis & rationale)*:
Expert panel and descriptive analyses stratified by exclusion categories

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
Refinement of the HCUP Quality Indicators (Technical Review), May 2001
http://qualityindicators.ahrq.gov/downloads/technical/qi_technical_review.zip

2d C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: AHRQ 2007 State Inpatient Databases (SID) with 4,000 hospitals and 30 million adult discharges

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
Risk-adjustment models use a standard set of categories based on readily available classification systems for demographics, severity of illness and comorbidities. Within each category, covariates are initially selected based on a minimum of 30 cases in the outcome of interest. Then a stepwise regression process on a development sample is used to select a parsimonious set of covariates where p<.05. Model is then tested on a validation sample

2e.3 Testing Results *(risk model performance metrics)*:

2e C☐ P☐ M☐ N☐ NA☐

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;

AND
- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;

AND
- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such a ... [2]

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
- an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcome (but not disparities in care) and are present at start of care;[Error! Bookmark not defined.] OR

rationale/data support no risk adjustment.

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and women). It is preferable to stratify measures by race and socioeconomic status rather than adjusting out differences.

c-statistic not calculated

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: Not applicable

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: AHRQ 2007 State Inpatient Databases (SID) with 4,000 hospitals and 30 million adult discharges

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
Posterior probability distribution parameterized using the Gamma distribution

2f.3 Provide Measure Scores from Testing or Current Use *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:

5th	25th	Median	75th	95th
0.00000	0.000094	0.000333	0.000842	0.002201

2f C☐ P☐ M☐ N☐

2g. Comparability of Multiple Data Sources/Methods

2g.1 Data/sample *(description of data/sample and size)*: Not applicable

2g.2 Analytic Method *(type of analysis & rationale)*:
Not applicable

2g.3 Testing Results *(e.g., correlation statistics, comparison of rankings)*:
Not applicable

2g C☐ P☐ M☐ N☐ NA☐

2h. Disparities in Care

2h.1 If measure is stratified, provide stratified results *(scores by stratified categories/cohorts)*: Median income of patient´s ZIP code:
1) Estimate 2) Standard error 3) P-value: Relative to marked group-c 4) P-value:
2007 relative to 2006
First quartile (lowest income) 100.330 5.768 0.000 0.069
Second quartile 60.771 2.840 0.000 0.021
Third quartile 47.923 2.472 0.007 0.011
Fourth quartile (highest income)c 38.217 2.572 0.176

2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:
Users may stratify based on gender and race/ethnicity

2h C☐ P☐ M☐ N☐ NA☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*

2

Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?**
Rationale:

2 C☐ P☐ M☐ N☐

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

Eval Rating

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

3a. Meaningful, Understandable, and Useful Information

3a.1 **Current Use:** In use

3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*)**:**
1) State of California:
http://www.oshpd.ca.gov/hid/products/preventable_hospitalizations/pdfs/PH_REPORT_WEB.pdf
2) State of New Jersey: Find and Compare Quality Care in New Jersey Hospitals,
http://www.nj.gov/health/healthcarequality/
3) Niagara Health Quality Coalition and Alliance for Quality Health Care: New York State Hospital Report Card,
http://www.myhealthfinder.com/
4) State of Texas: Reports on Hospital Performance, http://www.dshs.state.tx.us/thcic/
5) Maine: Maine Health Data Organization: http://gateway.maine.gov/mhdo2008Monahrq/home.html
6) Hawaii: awaii Health Information Corporation: http://hhic.org/publicreports.asp
7) Nevada: Nevada Compare Care: http://www.nevadacomparecare.net/monahrq/home.html

In use as a part of the AHRQ Quality Indicators. They are reported in numerous forums including:
http://hcupnet.ahrq.gov/HCUPnet.jsp?Id=EB57801381F71C41&Form=MAINSEL&JS=Y&Action=%3E%3ENext%3E%3E&_MAINSEL=AHRQ%20Quality%20Indicators

This measure is used in the Monahrq system that is provide for public reporting and quality improvement throughout the United States: http://monahrq.ahrq.gov/

3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):**
The software is publicly available free of charge (www.qualityindicators.ahrq.gov/). Users apply the software to their own administrative data (UB-04 or claims) that is readily available. Hundreds of users have downloaded AHRQ Quality Indicator software.

This measure is used in the Monahrq system that is provide for public reporting and quality improvement throughout the United States: http://monahrq.ahrq.gov/

Testing of Interpretability (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*)
3a.4 **Data/sample** *(description of data/sample and size)***:** AHRQ 2007 State Inpatient Databases (SID) with 4,000 hospitals and 30 million adult discharges

3a.5 **Methods** *(e.g., focus group, survey, QI project)***:**
AHRQ has developed the Quality Indicators Mapping Tool to facilitate use of the Prevention Quality Indicators and incorporated the tool into the MONAHRQ software, which has undergone user beta testing and is now available for download

3a.6 **Results** *(qualitative and/or quantitative results and conclusions)***:**
Several states including Maine, Hawaii and Nevada have begun public reporting using the MONAHRQ tool. See http://monahrq.ahrq.gov/

3a
C☐
P☐
M☐
N☐

3b/3c. Relation to other NQF-endorsed measures

3b.1 **NQF # and Title of similar or related measures:**
None Found.

(for NQF staff use) **Notes on similar/related endorsed or submitted measures:**

3b. Harmonization
If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population):
3b.2 **Are the measure specifications harmonized? If not, why?**

3b
C☐
P☐
M☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., *influenza immunization* of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for *patients with diabetes*), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Not Applicable.	N☐ NA ☐
3c. Distinctive or Additive Value **3c.1 Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** No competing measures found. **5.1 If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** No competing measures found.	**3c** C☐ P☐ M☐ N☐ NA ☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability*?	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, met? **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	**Eval Rating**
4a. Data Generated as a Byproduct of Care Processes **4a.1-2 How are the data elements that are needed to compute measure scores generated?** Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry)	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources **4b.1 Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes **4b.2 If not, specify the near-term path to achieve electronic capture by most providers.**	**4b** C☐ P☐ M☐ N☐
4c. Exclusions **4c.1 Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No **4c.2 If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA ☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences **4d.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** Coding professionals follow detail guidelines, are subject to training and credentialing requirements, peer review and audit. Little evidence exists on potential biases for this indicator. The age structure of the population may possibly affect admission rates for this condition. Weissman et al. reported a reduction of 100% in relative risk for Medicaid patients when adjusting for age and sex. [1] No evidence was found on the effects of comorbidities such as obesity or other risk factors that may vary systematically by area on admission rates for hypertension complications in the area. Empirical results show that age-sex adjustment affects the ranking of those areas in the highest decile.	**4d** C☐ P☐ M☐ N☐

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare, is a more valid or efficient way to measure).

Comment [KP26]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP27]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

Comment [KP28]: 4c. Exclusions should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP29]: 4d. Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

[1] Weissman JS, Gatsonis C, Epstein AM. Rates of avoidable hospitalization by insurance status in Massachusetts and Maryland. JAMA 1992;268(1):2388-94.

4e. Data Collection Strategy/Implementation

4e.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data/missing data, timing/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:
This indicator is measured with adequate precision, but some of the variance in age-sex adjusted rates does not reflect true differences in area performance. Adjustment for age-sex is recommended.

4e.2 Costs to implement the measure (*costs of data collection, fees associated with proprietary measures*)**:**
All data necessary to calculate this measure are routinely collected for hospital administrative purposes. The software for calculating the measure is available for free at:
http://www.qualityindicators.ahrq.gov/software.htm

4e.3 Evidence for costs:
All data necessary to calculate this measure are routinely collected for hospital administrative purposes. The software for calculating the measure is available for free at:
http://www.qualityindicators.ahrq.gov/software.htm

4e.4 Business case documentation: All data necessary to calculate this measure are routinely collected for hospital administrative purposes. The software for calculating the measure is available for free at:
http://www.qualityindicators.ahrq.gov/software.htm

4e C☐ P☐ M☐ N☐

Comment [KP30]: 4e. Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*? **4**

Steering Committee: Overall, to what extent was the criterion, *Feasibility*, met? **4** C☐ P☐ M☐ N☐
Rationale:

RECOMMENDATION

(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.** **Time-limited** ☐

Steering Committee: Do you recommend for endorsement? Y☐ N☐ A☐
Comments:

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner)
Co.1 Organization
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Co.2 Point of Contact
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Measure Developer If different from Measure Steward
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Co.5 Submitter If different from Measure Steward POC

John, Bott, MSSW, MBA, john.bott@ahrq.hhs.gov, 301-427-1317-, Agency for Healthcare Research and Quality
Co.6 Additional organizations that sponsored/participated in measure development UC Davis, Stanford University, Battelle Memorial Institute
ADDITIONAL INFORMATION
Workgroup/Expert Panel involved in measure development **Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.** None
Ad.2 If adapted, provide name of original measure: None **Ad.3-5 If adapted, provide original specifications URL or attachment**
Measure Developer/Steward Updates and Ongoing Maintenance **Ad.6 Year the measure was first released:** 2001 **Ad.7 Month and Year of most recent revision:** 10, 2010 **Ad.8 What is your frequency for review/update of this measure?** Annual **Ad.9 When is the next scheduled review/update for this measure?** 05, 2011
Ad.10 Copyright statement/disclaimers: The AHRQ QI software is publicly available; no copyright disclaimers
Ad.11 -13 Additional Information web page URL or attachment:
Date of Submission (*MM/DD/YY*)**:** 02/01/2011

Page 4: [1] Comment [k4] **Karen Pace** **10/5/2009 8:59:00 AM**

1c. The measure focus is:

- an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;

OR

- if an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
  - Intermediate outcome – evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
  - Process – evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
    if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
  - Structure – evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
  - Patient experience – evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
  - Access – evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
  - Efficiency – demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Page 14: [2] Comment [KP14] **Karen Pace** **10/5/2009 8:59:00 AM**

2d. Clinically necessary measure exclusions are identified and must be:

- supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;

AND

- a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus;

AND

- precisely defined and specified:
  - if there is substantial variability in exclusions across providers, the measure is specified so that exclusions are computable and the effect on the measure is transparent (i.e., impact clearly delineated, such as number of cases excluded, exclusion rates by type of exclusion);

if patient preference (e.g., informed decision-making) is a basis for exclusion, there must be evidence that it strongly impacts performance on the measure and the measure must be specified so that the information about patient preference and the effect on the measure is transparent (e.g., numerator category computed separately, denominator exclusion category computed separately).