



## Complete Summary

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### TITLE

Advanced chronic kidney disease (CKD): percent of patients on angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs).

### SOURCE(S)

Renal Physicians Association. Appropriate patient preparation for renal replacement therapy. Rockville (MD): Renal Physicians Association; 2002 Oct 1. 78 p. (Clinical Practice Guideline; no. 3).

## Brief Abstract

### DESCRIPTION

This measure assesses the percent of patients on angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs) among patients with advanced chronic kidney disease (CKD) with blood pressure greater than 130/80 mmHg with or without antihypertensive treatment.

### RATIONALE

Patients with advanced chronic kidney disease (CKD) are situated at a crossroads between patients with less severe chronic kidney disease, where strict blood pressure control is a well established mainstay of therapy, and patients on dialysis, where blood pressure goals are not well understood. In the absence of strong scientific data to define therapeutic targets, blood pressure goals in dialysis patients remain extrapolated from the general population. Because of significantly increased cardiovascular risk in patients with both advanced CKD and diabetes, management of patients with both conditions deserves special attention.

Numerous randomized, controlled clinical trials have demonstrated that angiotensin-converting enzyme (ACE) inhibitors reduce the progression of CKD. These studies have examined type I and type II diabetic as well as non-diabetic nephropathies, utilizing endpoints such as serum creatinine, glomerular filtration rate (GFR), time to end-stage renal disease (ESRD), and death. Most investigations report that patients receiving an ACE inhibitor have a reduction in disease progression that is greater than for patients with similar levels of blood pressure control without ACE inhibition. The additional benefit conferred by ACE inhibitors is thought to be related, in part, to reduction in proteinuria levels. ACE inhibition has also been shown to reduce mortality and cardiovascular events in patients with pre-existing coronary artery disease and patients with diabetes mellitus and at least one other coronary artery disease risk factor. The mortality

benefit conferred by ACE inhibitors may be greater for patients with elevated serum creatinine compared to those with normal renal function.

Patients with CKD often have coronary artery disease, diabetes, or other important cardiovascular risk factors. They are considered to be in the highest category for cardiac risk and are thus likely to derive benefit from ACE inhibition. Angiotensin II receptor blockers (ARBs) have also been shown to reduce progression of chronic kidney disease in subjects with type II diabetes mellitus. In one study, patients taking an ARB also had fewer hospitalizations for heart failure. There are no clinical outcomes data currently regarding ARB use and non-diabetic nephropathy. Similarly, no large trials in patients at risk for coronary artery disease have been undertaken.

#### PRIMARY CLINICAL COMPONENT

Advanced chronic kidney disease; hypertension; antihypertensive therapy; angiotensin-converting enzyme inhibitors; angiotensin II receptor blockers

#### DENOMINATOR DESCRIPTION

The number of adult patients with advanced chronic kidney disease (CKD), not currently receiving renal replacement therapy, with blood pressure greater than 130/80 mmHg with or without antihypertensive treatment

#### NUMERATOR DESCRIPTION

The number of patients from the denominator on angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs)

### Evidence Supporting the Measure

#### PRIMARY MEASURE DOMAIN

Process

#### SECONDARY MEASURE DOMAIN

Not applicable

#### EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence

A formal consensus procedure involving experts in relevant clinical, methodological, and organizational sciences

A systematic review of the clinical literature

#### NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [Appropriate patient preparation for renal replacement therapy.](#)

## Evidence Supporting Need for the Measure

### NEED FOR THE MEASURE

Unspecified

## State of Use of the Measure

### STATE OF USE

Pilot testing

### CURRENT USE

Internal quality improvement

## Application of Measure in its Current Use

### CARE SETTING

Ambulatory Care  
Physician Group Practices/Clinics

### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Individual Clinicians

### TARGET POPULATION AGE

Age greater than or equal to 18 years

### TARGET POPULATION GENDER

Either male or female

### STRATIFICATION BY VULNERABLE POPULATIONS

Unspecified

## Characteristics of the Primary Clinical Component

### INCIDENCE/PREVALENCE

Unspecified

## ASSOCIATION WITH VULNERABLE POPULATIONS

Unspecified

## BURDEN OF ILLNESS

Elevated blood pressure is clearly an important risk factor for rapid progression of kidney disease and for cardiac hypertrophy.

## EVIDENCE FOR BURDEN OF ILLNESS

Foley RN, Parfrey PS, Harnett JD, Kent GM, Murray DC, Barre PE. Impact of hypertension on cardiomyopathy, morbidity and mortality in end-stage renal disease. *Kidney Int* 1996 May; 49(5): 1379-85. [PubMed](#)

Foley RN, Parfrey PS. Cardiac disease in chronic uremia: clinical outcome and risk factors. *Adv Ren Replace Ther* 1997 Jul; 4(3): 234-48. [160 references] [PubMed](#)

Mall G, Huther W, Schneider J, Lundin P, Ritz E. Diffuse intermyocardiocytic fibrosis in uremic patients. *Nephrol Dial Transplant* 1990; 5(1): 39-44. [PubMed](#)

Shiigai T, Hattori K, Iwamoto H, Owada A. Long-term enalapril therapy in patients with chronic renal failure on a low-protein diet. A prospective randomized comparison with metoprolol. *Nephron* 1998; 79(2): 148-53. [45 references] [PubMed](#)

## UTILIZATION

Unspecified

## COSTS

Unspecified

Institute of Medicine National Healthcare Quality Report Categories

## IOM CARE NEED

Living with Illness

## IOM DOMAIN

Effectiveness

Data Collection for the Measure

## CASE FINDING

Users of care only

## DESCRIPTION OF CASE FINDING

Adult patients 18 years and older with advanced chronic kidney disease (CKD) with blood pressure greater than 130/80 mmHg with or without antihypertensive treatment

## DENOMINATOR (INDEX) EVENT

Clinical Condition  
Therapeutic Intervention

## DENOMINATOR INCLUSIONS/EXCLUSIONS

### Inclusions

Adult patients age 18 years and older with chronic kidney disease stage 4 or 5 (glomerular filtration rate [GFR] less than or equal to 30 mL/min/1.73 m<sup>2</sup>), not currently receiving renal replacement therapy, with blood pressure greater than 130/80 mmHg with or without antihypertensive treatment

### Exclusions

Unspecified

## NUMERATOR INCLUSIONS/EXCLUSIONS

### Inclusions

The number of patients from the denominator on angiotensin-converting enzyme (ACE) inhibitors or angiotensin II receptor blockers (ARBs)

### Exclusions

Unspecified

## DENOMINATOR TIME WINDOW

Time window precedes index event

## NUMERATOR TIME WINDOW

Episode of care

## DATA SOURCE

Administrative data  
Laboratory data  
Medical record  
Pharmacy data

## LEVEL OF DETERMINATION OF QUALITY

Individual Case

## PRE-EXISTING INSTRUMENT USED

Unspecified

## Computation of the Measure

## SCORING

Rate

## INTERPRETATION OF SCORE

Better quality is associated with a higher score

## ALLOWANCE FOR PATIENT FACTORS

Unspecified

## STANDARD OF COMPARISON

Internal time comparison

## Evaluation of Measure Properties

## EXTENT OF MEASURE TESTING

Unspecified

## Identifying Information

## ORIGINAL TITLE

Number of patients on ACE inhibitors or ARBs / number of patients with advanced CKD with blood pressure greater than 130/80 mmHg with or without antihypertensive treatment.

## MEASURE COLLECTION

[Renal Physicians Association Clinical Performance Measures on Appropriate Patient Preparation for Renal Replacement Therapy](#)

## MEASURE SET NAME

[Renal Physicians Association Clinical Performance Measures for Hypertension Recommendations](#)

## DEVELOPER

Renal Physicians Association

#### ADAPTATION

Measure was not adapted from another source.

#### RELEASE DATE

2002 Oct

#### MEASURE STATUS

This is the current release of the measure.

#### SOURCE(S)

Renal Physicians Association. Appropriate patient preparation for renal replacement therapy. Rockville (MD): Renal Physicians Association; 2002 Oct 1. 78 p. (Clinical Practice Guideline; no. 3).

#### MEASURE AVAILABILITY

The individual measure, "Number of patients on ACE inhibitors or ARBs / number of patients with advanced CKD with blood pressure greater than 130/80 mmHg with or without antihypertensive treatment," is published in "Renal Physicians Association Clinical Practice Guideline #3: Appropriate Patient Preparation for Renal Replacement Therapy."

For more information, contact RPA at 1700 Rockville Pike, Suite 220, Rockville, MD 20852; phone: 301-468-3515; fax: 301-468-3511; Web site: [www.renalmd.org](http://www.renalmd.org); e-mail: [rpa@renalmd.org](mailto:rpa@renalmd.org).

#### NQMC STATUS

This NQMC summary was completed by ECRI on May 23, 2003. The information was verified by the Renal Physicians Association on June 17, 2003.

#### COPYRIGHT STATEMENT

This NQMC summary is based on the original measure, which is subject to the measure developer's copyright restrictions.

For more information, contact RPA at 1700 Rockville Pike, Suite 220, Rockville, MD 20852; phone: 301-468-3515; fax: 301-468-3511; Web site: [www.renalmd.org](http://www.renalmd.org); e-mail: [rpa@renalmd.org](mailto:rpa@renalmd.org).

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