



## Complete Summary

---

### TITLE

Diabetes mellitus: hospital admission rate for long-term complications.

### SOURCE(S)

AHRQ quality indicators. Guide to prevention quality indicators: hospital admission for ambulatory care sensitive conditions [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jan 9. Various p. (AHRQ Pub; no. 02-R0203).

## Brief Abstract

### DESCRIPTION

This indicator assesses the number of admissions for long-term diabetes complications per 100,000 population.

### RATIONALE

Long-term complications of diabetes mellitus include renal, eye, neurological, and circulatory disorders. Long-term complications occur at some time in the majority of patients with diabetes to some degree.

Proper outpatient treatment and adherence to care may reduce this incidence of diabetic long-term complications, and lower rates represent better quality care.

### PRIMARY CLINICAL COMPONENT

Diabetes mellitus; long-term complications; hospital admission rates

### DENOMINATOR DESCRIPTION

Population in Metropolitan Statistical Area (MSA) or county, age 18 years and older

### NUMERATOR DESCRIPTION

Discharges, age 18 years and older, with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) principal diagnosis code for long-term complications of diabetes (renal, eye, neurological, circulatory, or complications not otherwise specified). Patients transferring from another institution, Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium), or MDC 15 (newborns and other neonates) are excluded.

## Evidence Supporting the Measure

### PRIMARY MEASURE DOMAIN

Outcome

### SECONDARY MEASURE DOMAIN

Access  
Process

### EVIDENCE SUPPORTING THE MEASURE

A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence  
One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

## Evidence Supporting Need for the Measure

### NEED FOR THE MEASURE

Overall poor quality for the performance measured

### EVIDENCE SUPPORTING NEED FOR THE MEASURE

Hiss RG. Barriers to care in non-insulin-dependent diabetes mellitus. The Michigan experience. *Ann Intern Med* 1996 Jan 1;124(1 Pt 2):146-8. [PubMed](#)

Zoorob RJ, Hagen MD. Guidelines on the care of diabetic nephropathy, retinopathy and foot disease. *Am Fam Physician* 1997 Nov 15;56(8):2021-8, 2033-4. [53 references] [PubMed](#)

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

Internal quality improvement  
National health care quality reporting  
Quality of care research

## Application of Measure in its Current Use

### CARE SETTING

Ambulatory Care  
Community Health Care

#### PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Advanced Practice Nurses  
Physician Assistants  
Physicians

#### LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Counties or Cities

#### 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

Rates of diabetes are higher in black, Hispanic, and especially Native American populations than in other ethnic groups. Hyperglycemia appears to be frequent among Hispanic and Native American populations.

#### EVIDENCE FOR ASSOCIATION WITH VULNERABLE POPULATIONS

Harris MI. Diabetes in America: epidemiology and scope of the problem. Diabetes Care 1998 Dec;21 Suppl 3:C11-4. [PubMed](#)

#### BURDEN OF ILLNESS

Unspecified

#### UTILIZATION

Unspecified

## COSTS

Unspecified

### Institute of Medicine National Healthcare Quality Report Categories

## IOM CARE NEED

Living with Illness

## IOM DOMAIN

Effectiveness

Timeliness

### Data Collection for the Measure

## CASE FINDING

Both users and nonusers of care

## DESCRIPTION OF CASE FINDING

All individuals age 18 years and older in a Metropolitan Statistical Area (MSA) or county

## DENOMINATOR SAMPLING FRAME

Geographically defined

## DENOMINATOR (INDEX) EVENT

Patient Characteristic

## DENOMINATOR INCLUSIONS/EXCLUSIONS

### Inclusions

All individuals age 18 years and older in geographic areas defined at the Metropolitan Statistical Area (MSA) level or the county level

### Exclusions

Unspecified

## NUMERATOR INCLUSIONS/EXCLUSIONS

### Inclusions

Discharges, age 18 years and older, with International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) principal diagnosis code for long-term complications of diabetes (renal, eye, neurological, circulatory, or

complications not otherwise specified) (see Appendix A of the original measure documentation for ICD-9-CM codes)

#### Exclusions

Patients transferring from another institution, Major Diagnostic Category (MDC) 14 (pregnancy, childbirth, and puerperium), or MDC 15 (newborns and other neonates) are excluded.

#### DENOMINATOR TIME WINDOW

Time window is a single point in time

#### NUMERATOR TIME WINDOW

Encounter or point in time

#### DATA SOURCE

Administrative data

#### LEVEL OF DETERMINATION OF QUALITY

Not Individual Case

#### OUTCOME TYPE

Proxy for Outcome

#### PRE-EXISTING INSTRUMENT USED

Unspecified

### Computation of the Measure

#### SCORING

Rate

#### INTERPRETATION OF SCORE

Better quality is associated with a lower score

#### ALLOWANCE FOR PATIENT FACTORS

Analysis by subgroup (stratification on patient factors)  
Risk adjustment method widely or commercially available

#### DESCRIPTION OF ALLOWANCE FOR PATIENT FACTORS

Observed (raw) rates may be stratified by areas (Metropolitan Statistical Areas or counties), age groups, race/ethnicity categories, and sex.

Risk adjustment of the data is recommended using age and sex.

Application of multivariate signal extraction (MSX) to smooth risk adjusted rates is also recommended.

#### STANDARD OF COMPARISON

External comparison at a point in time  
External comparison of time trends  
Internal time comparison

### Evaluation of Measure Properties

#### EXTENT OF MEASURE TESTING

Each potential quality indicator was evaluated against the following six criteria, which were considered essential for determining the reliability and validity of a quality indicator: face validity, precision, minimum bias, construct validity, fosters real quality improvement, and application. The project team searched Medline for articles relating to each of these six areas of evaluation. Additionally, extensive empirical testing of all potential indicators was conducted using the 1995-97 Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID) and Nationwide Inpatient Sample (NIS) to determine precision, bias, and construct validity. Table 1 in the original measure documentation summarizes the results of the literature review and empirical evaluations on the Prevention Quality Indicators. Refer to the original measure documentation for details.

#### EVIDENCE FOR RELIABILITY/VALIDITY TESTING

AHRQ quality indicators. Guide to prevention quality indicators: hospital admission for ambulatory care sensitive conditions [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jan 9. Various p. (AHRQ Pub; no. 02-R0203).

### Identifying Information

#### ORIGINAL TITLE

Diabetes long-term complications admission rate.

#### MEASURE COLLECTION

[Agency for Healthcare Research and Quality \(AHRQ\) Quality Indicators](#)

#### MEASURE SET NAME

[Agency for Healthcare Research and Quality \(AHRQ\) Prevention Quality Indicators](#)

## DEVELOPER

Agency for Healthcare Research and Quality

## INCLUDED IN

National Healthcare Disparities Report (NHDR)  
National Healthcare Quality Report (NHQR)

## ADAPTATION

This indicator was an original Healthcare Cost and Utilization Project Quality Indicator (HCUP QI).

## PARENT MEASURE

Diabetes long-term complication (Agency for Healthcare Research and Quality)

## RELEASE DATE

2001 Oct

## REVISION DATE

2004 Jan

## MEASURE STATUS

This is the current release of the measure.

## SOURCE(S)

AHRQ quality indicators. Guide to prevention quality indicators: hospital admission for ambulatory care sensitive conditions [revision 3]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 Jan 9. Various p. (AHRQ Pub; no. 02-R0203).

## MEASURE AVAILABILITY

The individual measure, "Diabetes Long-Term Complications Admission Rate," is published in "AHRQ Quality Indicators. Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Sensitive Conditions." This document is available in [Portable Document Format \(PDF\)](#) and a [zipped WordPerfect\(R\) file](#) from the [Quality Indicators](#) page at the Agency for Healthcare Research and Quality (AHRQ) Web site.

For more information, please contact the QI Support Team at [support@qualityindicators.ahrq.gov](mailto:support@qualityindicators.ahrq.gov).

## COMPANION DOCUMENTS

The following are available:

- "AHRQ Prevention Quality Indicators Software (Version 2.1 Revision 3)" (Rockville, [MD]: AHRQ, 2004 Jan 9) and its accompanying documentation can be downloaded from the [Agency for Healthcare Research and Quality \(AHRQ\) Web site](#). (The software is available in both SAS- and SPSS-compatible formats.)
- Guidance for using the AHRQ quality indicators for hospital-level public reporting or payment. Rockville (MD): Agency for Healthcare Research and Quality; 2004 Aug. 24 p. This document is available from the [AHRQ Web site](#).
- "HCUPnet, Healthcare Cost and Utilization Project" [internet]. (Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2004 [Various pagings]). HCUPnet is available from the [AHRQ Web site](#).
- "Refinement of the HCUP Quality Indicators" (Rockville [MD]: AHRQ, 2001 May. Various pagings. [Technical review; no. 4]; AHRQ Publication No. 01-0035). This document was prepared by the UCSF-Stanford Evidence-based Practice Center for AHRQ and can be downloaded from the [AHRQ Web site](#).

#### NQMC STATUS

This NQMC summary was completed by ECRI on December 19, 2002. The information was verified by the Agency for Healthcare Research and Quality on January 9, 2003. This NQMC summary was updated by ECRI on April 6, 2004.

#### COPYRIGHT STATEMENT

No copyright restrictions apply.

© 2004 National Quality Measures Clearinghouse

Date Modified: 11/1/2004

The logo for FIRSTGOV, featuring the word "FIRSTGOV" in a stylized font with a red and blue color scheme.

