



## Complete Summary

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### TITLE

Management of type 2 diabetes mellitus: frequency of low-density lipoprotein (LDL) cholesterol values in adult patients with diabetes by category: less than 100 mg/dL, 100-130, greater than 130, incalculable, untested.

### SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Management of type 2 diabetes mellitus. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2003 Nov. 80 p. [138 references]

## Brief Abstract

### DESCRIPTION

This measure assesses the frequency of low-density lipoprotein (LDL) cholesterol values in adult patients with diabetes by category: less than 100 mg/dL, 100-130, greater than 130, incalculable, untested.

### RATIONALE

The priority aims addressed by this measure are to decrease the percentage of patients with diabetes with poorly controlled cardiovascular risk factors and to increase the percentage of patients with diabetes age 18 to 75 for whom the recommended screening frequency of receiving a lipid profile in the last 12 months and the ideal treatment goal of low-density lipoprotein (LDL) less than 100 mg/dL are met.

### PRIMARY CLINICAL COMPONENT

Diabetes mellitus; low-density lipoprotein cholesterol

### DENOMINATOR DESCRIPTION

Number of adult patients with diabetes mellitus who had an encounter in the last month. Two options for defining the denominator are listed in the related "Denominator Inclusions/Exclusions" field of the Complete Summary.

### NUMERATOR DESCRIPTION

For patients with diabetes from the denominator, the value of the most recent low-density lipoprotein (LDL) cholesterol test performed within the last 12 months by the following categories:

- a. Less than 100
- b. 100-130
- c. Greater than 130
- d. Untested in the last 12 months\*
- e. Incalculable\*

\*Note: It is understood that some data systems do not separate these two categories. While not preferable, it may be necessary to combine these two categories.

## Evidence Supporting the Measure

### PRIMARY MEASURE DOMAIN

Outcome

### SECONDARY MEASURE DOMAIN

Process

### EVIDENCE SUPPORTING THE MEASURE

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

### NATIONAL GUIDELINE CLEARINGHOUSE LINK

- [Management of type 2 diabetes mellitus.](#)

## Evidence Supporting Need for the Measure

### NEED FOR THE MEASURE

Unspecified

## State of Use of the Measure

### STATE OF USE

Current routine use

### CURRENT USE

Internal quality improvement

## Application of Measure in its Current Use

### CARE SETTING

Physician Group Practices/Clinics

PROFESSIONALS RESPONSIBLE FOR HEALTH CARE

Physicians

LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED

Group Clinical Practices

TARGET POPULATION AGE

Age 18 to 75 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

- 75-80% of adult patients with diabetes die of macrovascular disease — specifically coronary, carotid and/or peripheral vascular disease.
- Dyslipidemia is a known risk factor for macrovascular disease.
- High triglycerides and low high-density lipoprotein (HDL) cholesterol are independent risk factors for cardiovascular disease in the patient with diabetes. Small density low-density lipoprotein (LDL) cholesterol (more atherogenic) particles are increased in type 2 diabetes, and LDL cholesterol itself may differ in people with diabetes compared with people without diabetes. Patients with diabetes develop more atherosclerosis than patients without diabetes with the same quantitative lipoprotein profiles.

EVIDENCE FOR BURDEN OF ILLNESS

Institute for Clinical Systems Improvement (ICSI). Management of type 2 diabetes mellitus. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2003 Nov. 80 p. [138 references]

#### 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

Number of adult patients with diabetes mellitus who had an encounter in the last month. Two options for defining the denominator are listed in the "Denominator Inclusions/Exclusions" field of the Complete Summary.

It is understood that many medical groups will not have electronic access to an integrated database containing both visit data and lab data. In this case, manual identification of at least 20 patients meeting the denominator definition will be necessary and the low-density lipoprotein (LDL) cholesterol values collected from the medical record.

#### DENOMINATOR SAMPLING FRAME

Patients associated with provider

#### DENOMINATOR (INDEX) EVENT

Clinical Condition  
Encounter

## DENOMINATOR INCLUSIONS/EXCLUSIONS

### Inclusions

Number of adult patients with diabetes mellitus who had an encounter in the last month. Two options for defining the denominator are listed below:

#### Definition 1

Patients 18 years or older with a primary, secondary, or tertiary diagnosis of diabetes (International Classification of Diseases, Ninth Revision [ICD-9] code 250.xx). Established patients with diabetes should be included. This requires both a visit in the target month AND a diabetic visit in a window of 12 to 24 months before the target month. Both types 1 and 2 are included\*.

#### Definition 2

Patients ages 18 to 75 continuously enrolled for the last 12 months AND

- a. two or more ambulatory visits or one acute inpatient or emergency room visit with a primary or secondary diagnosis of diabetes\* in the last 12 months: 250.xx, 362.0x (diabetic retinopathy), 366.41 (diabetic cataract), 357.2x (polyneuropathy in diabetes), or 648.0 (pregnancy excludes gestational diabetes), OR
- b. one or more prescriptions for insulin in the last 12 months (coding is available on disk from either Institute for Clinical Systems Improvement [ICSI] or from the National Committee for Quality Assurance website [NCQA.org]): regular insulin, NPH, Lente, Lispro, Humulin, 70/30, 75/25, 50/50, Novolin, Ultralente, Glargine, Aspart, Multiple Daily Injections or Continuous Subcutaneous Infusion of Insulin, Insulin Pump, Insulin Pen, Semilente, Novolin, Penfill, Ultralente, Velosulin, Humalog, OR
- c. one or more prescriptions for oral agents in the last 12 months (coding is available on disk from either ICSI or from the NCQA.org website): Acarbose, Miglitol/Glycet, Amaryl, Diabeta, Diabinese, Glimepiride, Glipizide, Glipizide XL, Glucophage, Glucotrol, Glucotrol XL, Glyburide, Glynase, Metformin, Micronase, Prandin, Starlix, Glucovance, Repaglinide, Precose, Tolazamide, Tolamide, Tolbutamide, Tolinase, Rosiglitazone, Pioglitazone.

\*Note: Both types 1 and 2 are included in both measures listed here, while the guideline (Refer to the National Guideline Clearinghouse [NGC] summary of the Institute for Clinical Systems Improvement [ICSI] guideline [Management of Type 2 Diabetes Mellitus](#)) is focused on type 2 diabetes. The inclusion of type 1 diabetes in the measures is for administrative ease, as many medical groups will not be able to determine this relatively small percentage of patients with type 1 diabetes from standard coding.

### Exclusions

Unspecified

## NUMERATOR INCLUSIONS/EXCLUSIONS

### Inclusions

For patients with diabetes from the denominator, the value of the most recent low-density lipoprotein (LDL) cholesterol test performed within the last 12 months by the following categories:

- a. Less than 100

- b. 100-130
- c. Greater than 130
- d. Untested in the last 12 months\*
- e. Incalculable\*

\*Note: It is understood that some data systems do not separate these two categories. While not preferable, it may be necessary to combine these two categories.

Exclusions  
Unspecified

#### DENOMINATOR TIME WINDOW

Time window precedes index event

#### NUMERATOR TIME WINDOW

Fixed time period

#### DATA SOURCE

Administrative data  
Laboratory data  
Medical record

#### LEVEL OF DETERMINATION OF QUALITY

Not Individual Case

#### OUTCOME TYPE

Clinical Outcome

#### PRE-EXISTING INSTRUMENT USED

Unspecified

### Computation of the Measure

#### SCORING

Frequency Distribution

#### INTERPRETATION OF SCORE

Better quality is associated with a score falling within a defined interval

#### ALLOWANCE FOR PATIENT FACTORS

Unspecified

## STANDARD OF COMPARISON

Internal time comparison

## Evaluation of Measure Properties

## EXTENT OF MEASURE TESTING

Unspecified

## Identifying Information

## ORIGINAL TITLE

Frequency of LDL cholesterol values in adult patients with diabetes by category: less than 100 mg/dL, 100-130, greater than 130, incalculable, untested.

## MEASURE COLLECTION

[Management of Type 2 Diabetes Mellitus Measures](#)

## DEVELOPER

Institute for Clinical Systems Improvement

## ADAPTATION

Measure was not adapted from another source.

## RELEASE DATE

2003 Nov

## MEASURE STATUS

This is the current release of the measure.

## SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Management of type 2 diabetes mellitus. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2003 Nov. 80 p. [138 references]

## MEASURE AVAILABILITY

The individual measure, "Frequency of LDL cholesterol values in adult patients with diabetes by category: less than 100 mg/dL, 100-130, greater than 130, incalculable, untested," is published in "Health Care Guideline: Management of

Type 2 Diabetes Mellitus." This document is available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#).

For more information, contact ICSI at, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; phone: 952-814-7060; fax: 952-858-9675; Web site: [www.icsi.org](http://www.icsi.org); e-mail: [icsi.info@icsi.org](mailto:icsi.info@icsi.org).

#### NQMC STATUS

This NQMC summary was completed by ECRI on July 6, 2004.

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