THE NATIONAL QUALITY FORUM

National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update

A CONSENSUS REPORT

Foreword

Diabetes mellitus is one of this country's most common and costly medical conditions. It affects an estimated 18.2 million Americans, including a disproportionate number of persons who belong to racial and ethnic minority populations. Diabetes remains the nation's leading cause of kidney failure, blindness, and amputation, with direct and indirect costs of the disease estimated to be $132 billion annually. The personal toll of this disease on patients and families is incalculable.

Because of the urgent need for quality measurement and reporting for this condition, the National Diabetes Quality Improvement Alliance (the Alliance) disseminated a single, widely accepted set of scientifically rigorous performance measures in 2002. These measures formed the basis of the first set of condition-specific consensus standards endorsed by the National Quality Forum (NQF) in 2002.

Both the Alliance and NQF are committed to reviewing and updating measures on a regular basis so that the measures reflect the rapidly changing nature of healthcare, new scientific information, evolving clinical guidelines, and feedback from NQF Members and other experts. Accordingly, in January 2005, the Alliance approved an updated set of measures, which were subsequently submitted to NQF for consideration under its Consensus Development Process. NQF evaluated these measures and in 2005 endorsed an updated set of voluntary consensus standards for diabetes. The measures are intended to promote both public accountability and quality improvement.

We thank the Alliance for its commitment to the public vetting of healthcare quality measures. We also thank NQF Members and the Adult Diabetes Care Consensus Standards Maintenance Committee for its stewardship of and participation in this project.

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1999-2005

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National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update

Executive Summary

An estimated 18.2 million Americans—6.3 percent of the population—have diabetes. It is the sixth leading cause of death for Americans overall, with direct and indirect costs of the disease estimated to be approximately $132 billion per year. It affects a disproportionate number of racial and ethnic minority patients, contributing in disparately large numbers to deaths and to serious complications, such as amputation and end-stage renal disease.

Because of the urgent need to measure and report on the quality of care for this common condition, diabetes was one of the initial areas for which widely accepted, scientifically rigorous performance measures were developed. The National Diabetes Quality Improvement Alliance (the Alliance) issued its first performance measure set for adult diabetes care in 2002, and the National Quality Forum (NQF) endorsed these measures as voluntary consensus standards soon thereafter.

The Alliance reviews and updates its measures periodically in response to the rapidly changing nature of healthcare, emerging evidence, evolving clinical guidelines, and feedback from NQF Members and other experts. Subsequent to the Alliance update, NQF updated its set of voluntary consensus standards for adult diabetes care; this report details the 2005 updates to the endorsed set. These consensus standards comprise 9 public reporting measures, 26 quality improvement-only measures, and 3 community-level measures.

The criteria used to evaluate the diabetes measures are similar to those used to identify other NQF-endorsed™ standards, including those applied to the endorsed ambulatory care measures (i.e., importance,

scientific acceptability, feasibility, and usability). In addition to the Alliance measures, three measures developed by the Agency for Healthcare Research and Quality were endorsed in this 2005 update. The measures are intended to be used at the ambulatory care provider and health plan level.

The NQF diabetes work complements our other project work to endorse consensus standards for other aspects of outpatient care, "Standardizing Measures of Ambulatory Care." Although both measure sets address the same healthcare setting, NQF considered the diabetes measures under a separate process, because the diabetes set reflects an update of an existing NQF-endorsed set. During the final phase of the ambulatory care project (Phase 3), the initial set of ambulatory care consensus standards will be expanded and refined, at which point the diabetes measures will merge with the other ambulatory care measures for review and endorsement as a single set of ambulatory care consensus standards.

The following tables contain the 2005 national voluntary consensus standards for adult diabetes care.

National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update Public Reporting Measures, Ambulatory Provider and Health Plan Level

MEASURE (PER YEAR)
A1c Management
1. Percentage of patients with one or more A1c test(s)
2. Percentage of patients with most recent A1c level >9.0% (poor control)
Lipid Management
3. Percentage of patients with at least one LDL-C test
4. Percentage of patients with most recent LDL-C <130 mg/dl
5. Percentage of patients with most recent LDL-C <100 mg/dl
Urine Protein Screening
6. Percentage of patients with at least one test for microalbumin during the measurement year or who had evidence of medical attention for existing nephropathy (diagnosis of nephropathy or documentation of microalbuminuria or albuminuria)
Eye Examination
7. Percentage of patients who received a dilated eye exam or seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos during the reporting year or during the prior year if patient is at low risk for retinopathy
Foot Examination
8. Percentage of eligible patients receiving at least one foot exam, defined in any manner
Blood Pressure Management
9. Percentage of patients with most recent blood pressure <140/80 mm Hg

National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level*

MEASURE (PER YEAR)
A1c Management
10. Number of tests received, per patient
11. Trend of A1c values, per patient
12. Percentage of patients receiving one or more A1c test(s), per patient population
13. Distribution of number of tests done (0, 1, 2, 3 or more), per patient population
14. Distribution of most recent A1c value by range: ≤6.0, 6.1-7.0, 7.1-8.0, 8.1-9.0, 9.1-10.0, >10.0, undocumented, per patient population
Lipid Management
15. Trend of values for each test, per patient
16. Patient whose most recent LDL-C is <130 mg/dl or who is receiving a statin or other lipid-lowering therapy, per patient
17. Patient whose most recent LDL-C is <100 mg/dl or who is receiving a statin or other lipid-lowering therapy, per patient
18. Percentage of patients receiving at least one lipid profile (or ALL component tests), per patient population
19. Percentage of patients whose most recent LDL-C is <130 mg/dl or who are receiving a statin or other lipid-lowering therapy, per patient population
20. Percentage of patients whose most recent LDL-C is <100 mg/dl or who are receiving a statin or other lipid-lowering therapy, per patient population
21. Distribution of most recent test values by range, per patient population: **Total cholesterol:** ≥240, 200-239, <200, undocumented **LDL-C:** ≥160, 130-159, 100-129, <100, undocumented If non-HDL cholesterol is reported, record the test values in the following ranges: ≥190, 160-189, 130-159, <130, undocumented **HDL-C:** <40, 40-49, 50-59, ≥60, undocumented **Triglycerides:** ≥400, 200-399, <200, 150-199, <150, undocumented
Urine Protein Screening
22. Any test for microalbuminuria received, per patient
23. If no urinalysis OR urinalysis with negative or trace urine protein, a test for microalbumin was received, per patient
24. Percentage of patients who received any test for microalbuminuria, per patient population
25. Percentage of patients with no urinalysis OR urinalysis with negative or trace urine protein, who received a test for microalbumin, per patient population
Eye Examination
26. Dilated retinal eye exam performed by an ophthalmologist or optometrist, per patient
27. Seven standard field stereoscopic photos with interpretation performed by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos, per patient
28. Percentage of patients receiving a dilated retinal eye exam by an ophthalmologist or optometrist, per patient population
29. Percentage of patients receiving seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos, per patient population
Foot Examination
30. At least one complete foot exam received (visual inspection, sensory exam with monofilament, and pulse exam), per patient
31. Percentage of eligible patients receiving at least one complete foot exam (visual inspection, sensory exam with monofilament, and pulse exam), per patient population

*Measures reported "per patient" apply at the ambulatory care provider level only and exclude health plans.

National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level* (continued)

MEASURE (PER YEAR)
Blood Pressure Management
32. Most recent systolic and diastolic blood pressure reading, per patient
33. Distribution of most recent blood pressure values by range, per patient population: **Systolic (mm Hg):** <120, 120-129, 130-139, 140-149, 150-159, 160-169, 170-179, ≥180, undocumented **Diastolic (mm Hg):** <75, 75-79, 80-89, 90-99, 100-109, ≥110, undocumented
Aspirin Use
34. Patient receiving aspirin therapy (dose ≥75 mg), per patient
35. Percentage of patients receiving aspirin therapy (dose ≥75 mg), per patient population

*Measures reported "per patient" apply at the ambulatory care provider level only and exclude health plans.

National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update Community-Level Measures

MEASURE
36. Admissions for uncontrolled diabetes or short-term complications, per 100,000 population
37. Admissions for diabetes long-term complications, per 100,000 population
38. Admissions for lower-extremity amputation among patients with diabetes, per 100,000 population

National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update

Introduction

Diabetes is one of this country's most common and costly medical conditions. An estimated 18.2 million Americans—6.3 percent of the population—have diabetes, and the direct and indirect costs of the disease are estimated to be approximately $132 billion per year.[1] Diabetes is the sixth leading cause of death for Americans overall, and it exacts an even greater burden on certain racial and ethnic minority populations, who are more likely to suffer serious complications, such as amputation and end-stage renal disease, and to die from the disease.[2] Improved quality of care for those with diabetes would benefit a large and growing segment of the U.S. population. Diabetes is one of the National Quality Forum (NQF)-endorsed™ priorities for healthcare quality measurement and reporting.[3]

Because of the urgent need for quality-of-care measurement and reporting for this condition, diabetes was one of the initial areas for which a single, widely accepted set of scientifically rigorous performance measures was developed.[4] The National Diabetes Quality

[1] Centers for Disease Control and Prevention (CDC), *National Diabetes Fact Sheet: General Information and National Estimates on Diabetes in the United States, 2002,* Atlanta, GA: U.S. Department of Health and Human Services; 2003.

[2] CDC, National Diabetes Surveillance System. Available at www.cdc.gov/diabetes/statistics/prev/national/figraceethsex.htm. Last accessed September 2005.

[3] National Quality Forum (NQF), *National Priorities for Healthcare Quality Measurement and Reporting: A Consensus Report,* Washington, DC: NQF; 2004.

[4] The first major set of measures was released by the Diabetes Quality Improvement Program (DQIP) in 1998. In 2002, DQIP merged with a performance measurement collaboration of the American Medical Association (AMA), the Joint Commission on Accreditation of Healthcare Organizations, and the National Committee for Quality Assurance (NCQA) to form the National Diabetes Quality Improvement Alliance (the Alliance).

Improvement Alliance (the Alliance) issued its first performance measure set for adult diabetes care in 2002,[5] and NQF endorsed those measures as voluntary consensus standards in the same year. The consensus standards included 8 measures designated for accountability and 29 measures designated for internal quality improvement.

The Alliance reviews and updates its measures periodically in response to the rapidly changing nature of healthcare, emerging evidence, evolving clinical guidelines, and feedback from NQF Members and other experts. In January 2005, the Alliance approved an updated set of 10 measures for public reporting and 44 for internal quality improvement.[6] In May 2005, NQF endorsed 9 of the 10 public reporting measures for its 2005 adult diabetes care consensus standards; 1 measure was approved by NQF Members, but was deferred by the Board of Directors for future consideration, due to the anticipated need to reconcile it with similar measures in another set of NQF measures for ambulatory care.

Because of NQF Member concerns about the appropriateness of endorsing standards for purposes other than public reporting, the Alliance's internal quality improvement measures were subjected to additional scrutiny. In October 2005, NQF endorsed 26 of the 44 internal quality improvement measures as part of the diabetes measure set; the remaining 18 were not endorsed because of potential redundancies with NQF's ambulatory care project and at the measure developer's requests, as described in appendix E.

In addition to the Alliance measures, three measures developed by the Agency for Healthcare Research and Quality (AHRQ) were endorsed in the 2005 update. Based on the work of its Evidence-based Practice Center, AHRQ developed a broad set of Prevention Quality Indicators (PQIs) designed as community-level indicators for use in population

[5]Technical specifications for the Alliance measures were developed and are maintained and owned by AMA for the quality improvement measures and NCQA for the public reporting measures.

[6]National Diabetes Quality Improvement Alliance, *Performance Measurement Set for Adult Diabetes.* Approved January 21, 2005. Available at www.nationaldiabetesalliance.org.

and public health improvement efforts.[7] The PQIs reflect a number of ambulatory care-sensitive conditions, including diabetes, and are designed to identify hospital admissions that evidence suggests may have been avoided, at least in part, through high-quality outpatient care.

Of note, NQF has under way a project to endorse measures for other aspects of outpatient care, "Standardizing Measures of Ambulatory Care," which includes a review of a set of ambulatory care measures developed by the Centers for Medicare and Medicaid Services (CMS), the American Medical Association (AMA) Physician Consortium for Performance Improvement, and the National Committee for Quality Assurance (NCQA). Although the ambulatory care project addresses the same healthcare setting as the diabetes project, NQF considered the diabetes measures under a separate process from the other ambulatory care measures, since the diabetes set reflects an update of an existing NQF-endorsed set. During the final phase of the ambulatory care project (Phase 3), the initial set of ambulatory care measures is being expanded and refined, at which point the diabetes measures will merge with the other ambulatory care measures for review and endorsement as a single set of ambulatory care consensus standards. During Phase 3 of the ambulatory care project, similar measures that address the same topic area for patients with diabetes and the general ambulatory care population (e.g., smoking cessation, influenza vaccination) will be reviewed by the appropriate NQF committee and/or Board of Directors to determine how redundancies or inconsistencies among the measures should be reconciled.

Identification of the Measure Set

Measures endorsed as national voluntary consensus standards must be evaluated based on a comprehensive set of criteria in order to provide meaningful, useful, and accurate information about quality. The criteria used by the Alliance to identify measures include strength of scientific evidence, feasibility of measurement, and variability in performance. These criteria are similar to those used to identify other NQF-endorsed standards, including those being applied to the ambulatory care measures proposed for endorsement (i.e., importance, scientific acceptability, feasibility, and usability). Detailed descriptions of the processes used to develop the Alliance's original measure set are published elsewhere.[8,9,10] The AHRQ PQIs were based upon information that can be obtained

[7] Technical specifications for the Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators (PQIs) were developed and are maintained by AHRQ. *AHRQ Quality Indicators – Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions,* Rockville, MD: AHRQ. Revision 4; November 24, 2004. AHRQ Pub. No. 02-R0203. Available at www.qualityindicators.ahrq.gov. Last accessed June 2005.

[8] See www.nationaldiabetesalliance.org for a list of the members of the Alliance Operations Group and Technical Expert Panel.

[9] Fleming BB, Greenfield S, Engelgau MM, et al., for the DQIP Group, The Diabetes Quality Improvement Project: moving science into health policy to gain an edge on the diabetes epidemic, *Diabetes Care,* 2001;24(10):1815-1820.

[10] *Coordinated Performance Measurement for the Management of Adult Diabetes: A Consensus Statement from the American Medical Association, Joint Commission on Accreditation of Healthcare Organizations, and National Committee for Quality Assurance*; April 2001.

from administrative hospital discharge data. The process for identifying the indicators utilized a comprehensive evaluation framework, which included criteria focusing on the technical merits of potential PQIs, such as face validity and precision. The process for developing and refining the AHRQ PQIs is described in detail in a separate report.[11,12]

2005 Update

The NQF Adult Diabetes Care Consensus Standards Maintenance Committee reviewed the proposed changes and additions to the set endorsed by NQF in 2002 and recommended that all of the Alliance's public reporting and quality improvement measures approved in 2005 and the three AHRQ PQIs be forwarded to NQF Members for consideration under the Consensus Development Process (CDP) as an update to the existing set of NQF-endorsed adult diabetes care consensus standards. Some of the Alliance measures recommended by the Committee were not proposed for NQF endorsement, however, as noted earlier. A detailed commentary of the Committee's discussions is provided in appendix E.

Changes to the proposed measures were based on the Alliance's review of emerging clinical evidence and expert stakeholder input, which included comments submitted by NQF Members when the initial measures were reviewed through the CDP in 2002. The update reflects a set of 38 consensus standards, compared with the 2002 version's 37 NQF-endorsed consensus standards. Additionally, detailed technical specifications are now available on how to calculate the measures, while no specifications were available when the 2002 consensus standards were endorsed. The technical specifications for these measures are owned and maintained by NCQA, AMA, and AHRQ. A complete summary of the 2005 update changes, the measure specifications, and the clinical rationale for the changes and current specifications can be found in appendixes A, B, and C. This update replaces, in its entirety, the set endorsed in 2002.

Purpose

Recommendation 1

The primary purpose of this set of voluntary consensus standards is to promote the highest quality of care and outcomes for adults with diabetes. The intended users of the measures are consumers, purchasers, healthcare professionals, providers, health plans, accreditors, quality improvement organizations, researchers, policymakers, community and public health groups, and other relevant stakeholders. Measures should be used as appropriate, based on their specified purpose. The measures will enable stakeholders to make performance-based decisions about provider/health plan selection, enhance value-based

[11] See www.qualityindicators.ahrq.gov/project_background.htm for a list of the members of the AHRQ and Evidence-based Practice Center project team.

[12] *Refinement of the HCUP Quality Indicators: File Inventory,* Technical Review Number 4, AHRQ Publication No. 01-0035, Rockville, MD: AHRQ; May 2001. Available at www.qualityindicators.ahrq.gov/psi_overview.htm. Last accessed June 2005.

purchasing, promote accountability of providers/health plans, facilitate public use of healthcare information, identify quality improvement needs, and stimulate and facilitate the continuous improvement of care. The standards in tables 1, 2, and 3 represent measures that are designed for three distinct purposes:

- table 1, measures #1-9: accountability and public reporting at the ambulatory care provider and health plan level;
- table 2, measures #10-35: internal quality improvement at the ambulatory care provider and health plan[13] level; and
- table 3, measures #36-38: quality improvement for ambulatory care across communities at the local, state, and national levels, and public reporting of facility-aggregated data at these levels, as appropriate.[14]

Terminology: Important Distinctions

This section highlights key distinctions among a number of commonly used terms that often are variably defined and understood.

Measures Versus Guidelines

The measure specifications are directly related to well-known clinical practice guidelines for optimal care, but it must be noted that measures are not guidelines and will not always reflect ideal clinical goals for a number of important reasons. Additional discussion regarding the reasons for using guideline-based levels for performance in measures of public reporting can be found in greater detail in appendixes C and E and elsewhere[15]:

- **Variable conditions.** Clinical guidelines generally allow for greater flexibility in clinical practice, due to many individual differences in patient conditions and preferences

[13] Measures collected "per patient" apply only at the ambulatory care provider level and exclude health plans.

[14] These measures do not represent the quality of care for individual providers, health plans, or healthcare organizations and should not be publicly reported at this level.

[15] Lee TH, Cleeman JI, Grundy SM, et al., Clinical goals and performance measures for cholesterol management in secondary prevention of coronary heart disease, *JAMA*, 2000;283(1):94-98.

that must be considered in determining the best course of care for a patient. For example, guidelines allow physicians to weigh their decisions about A1c and hypertension management for diabetes against other clinical factors, such as the overall benefit of additional medication to lower A1c/blood pressure for patients with a large number of comorbidities, given other priorities for treatment. Performance measures aim to take into account the major factors that influence whether the type of care described in measures is appropriate for the patient (e.g., excluding patients with contraindications to recommended medications). However, since measures must rigidly define all these factors in order to promote standardized calculations and valid comparisons, they may not be able to account for every individual scenario that could otherwise be considered in normal clinical, guideline-based decisionmaking.

- **Risk adjustment.** Measures that use the ideal outcomes recommended in clinical practice guidelines often require risk adjustment to account for individual patient characteristics in order to ensure fair comparisons. To minimize data collection and measurement burden, as well as to avoid methodological difficulties, public reporting measures reflect outcomes that should be reached regardless of patient-specific factors that could otherwise bias results against plans and providers who care for sicker patients. For example, a measure of poor A1c control is likely to indicate both deficiencies in provider/plan quality as well as patient self-management, to some degree, while a measure of good A1c control could be achieved by providers/plans that selectively care for healthier, more compliant patients. Requiring plans and providers to report on measures for which they cannot substantially influence performance (e.g., due to variable levels of patient risk, adherence, and self-management) would yield unfair and inaccurate results and potentially result in adverse consequences such as provider/plan risk selection for healthier patients.

For these reasons, there are some differences between the levels of performance specified by the measures, particularly the public reporting measures, and the optimal levels of clinical outcomes recommended in current guidelines. The measures are intended to fill a need for information that can be used by a number of stakeholders to select and improve the quality of care—not to set a low bar for quality or to prescribe standards for clinical practice. Providers and plans should aim for levels of care that are consistent with clinical practice recommendations, as appropriate.[16]

Public Reporting Versus Internal Quality Improvement Measures

Measures that are deemed suitable for public reporting, accountability, and/or reimbursement must meet a high level of evidence and take into account factors such as the degree to which providers can influence performance on the respective measure, particularly for those that reflect clinical outcomes. Measures designed for internal quality improvement may not appropriately case mix/risk adjust to serve this purpose and should not be used for external reporting or accountability.

The Alliance notes that its measures were designed specifically for the purpose of either internal quality improvement or public reporting based on several factors, including scientific strength, data collection reliability, and the ability to distinguish good care from poor care. For example, public reporting measures met a higher threshold for evidence linking measured processes to important clinical outcomes. Public reporting measures may be appropriate for use in pay-for-performance programs that reimburse or incentivize providers and health plans, while quality improvement measures may not appropriately case mix/risk adjust to serve this purpose. Furthermore, public reporting measures have been determined to distinguish reliably between the quality of health plans and providers and also were designed to reduce the influence of patient characteristics on performance measurement, thus making risk adjustment unnecessary for meaningful and accurate public comparisons.

The quality improvement measures provide detailed information that can be used to design and implement strategies to improve care, but they may not categorically identify poor- or high-quality care, may need risk adjustment, or otherwise may not measure reliably enough to permit fair public comparisons or reimbursement policies. For example, some measures are designated for internal quality improvement only because the provider cannot substantially influence whether the measure was met (e.g., good A1c control) or because providers could not reasonably ascertain from the patient, family, or other providers whether an indicated service was provided (e.g., influenza immunization).

[16]The Alliance currently is working to identify risk-adjustment strategies that are scientifically sound and feasible to implement, in order to expand the public reporting measures to include those that simultaneously represent ideal clinical outcomes and fairly represent provider and health plan quality. Future updates to the NQF-endorsed standards will include consideration of additional public reporting measures, as they become available.

Additional guidance about the appropriate criteria for distinguishing between measures suitable for various purposes currently is under development by the NQF Ad Hoc Advisory Committee on Performance Measure Criteria. Commentary about the distinction between public reporting and quality improvement measures also is available in appendixes C and E.

Voluntary Consensus Standards Versus Standards of Care

NQF-endorsed voluntary consensus standards should not be viewed as "standards of care" for the practice of medicine or as recommendations for clinical practice. As applied in the National Technology Transfer and Advancement Act and the Office of Management and Budget Circular A-119, and in accordance with the NQF CDP, voluntary consensus standards are legally defined as "standards developed or adopted by voluntary consensus standards bodies, both domestic and international."[17] The use of the term "standards" in this report refers to the CDP's legal status and the formal process used to reach agreement around the measures, which is distinct from standards of care as applied in medical practice.

Recommended National Consensus Standards

Tables 1, 2, and 3 contain the 2005 national voluntary consensus standards for adult diabetes care. Specifically, the set includes 38 measures: 9 designed for public reporting at the ambulatory care provider/health plan level, 26 designed for quality improvement at the ambulatory care provider/health plan level, and 3 designed for quality improvement and monitoring at the community level.

Acknowledgments

NQF greatly appreciates the support provided by CMS through a subcontract with the Delmarva Foundation for Medical Care NQF SS-MD-09. NQF also appreciates the efforts of the Adult Diabetes Care Consensus Standards Maintenance Committee and members and staff of the Alliance Operations Group and Technical Expert Panel.

[17] U.S. Office of Management and Budget, Circular A-119 (revised February 10, 1998).

Table 1. National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update Public Reporting Measures, Ambulatory Provider and Health Plan Level

MEASURE (PER YEAR)
A1c Management
1. Percentage of patients with one or more A1c test(s)
2. Percentage of patients with most recent A1c level >9.0% (poor control)
Lipid Management
3. Percentage of patients with at least one LDL-C test
4. Percentage of patients with most recent LDL-C <130 mg/dl
5. Percentage of patients with most recent LDL-C <100 mg/dl
Urine Protein Screening
6. Percentage of patients with at least one test for microalbumin during the measurement year or who had evidence of medical attention for existing nephropathy (diagnosis of nephropathy or documentation of microalbuminuria or albuminuria)
Eye Examination
7. Percentage of patients who received a dilated eye exam or seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos during the reporting year or during the prior year if patient is at low risk for retinopathy
Foot Examination
8. Percentage of eligible patients receiving at least one foot exam, defined in any manner
Blood Pressure Management
9. Percentage of patients with most recent blood pressure <140/80 mm Hg

Table 2. National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level*

MEASURE (PER YEAR)
A1c Management
10. Number of tests received, per patient
11. Trend of A1c values, per patient
12. Percentage of patients receiving one or more A1c test(s), per patient population
13. Distribution of number of tests done (0, 1, 2, 3 or more), per patient population
14. Distribution of most recent A1c value by range: ≤6.0, 6.1-7.0, 7.1-8.0, 8.1-9.0, 9.1-10.0, >10.0, undocumented, per patient population
Lipid Management
15. Trend of values for each test, per patient
16. Patient whose most recent LDL-C is <130 mg/dl or who is receiving a statin or other lipid-lowering therapy, per patient
17. Patient whose most recent LDL-C is <100 mg/dl or who is receiving a statin or other lipid-lowering therapy, per patient
18. Percentage of patients receiving at least one lipid profile (or ALL component tests), per patient population
19. Percentage of patients whose most recent LDL-C is <130 mg/dl or who are receiving a statin or other lipid-lowering therapy, per patient population
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21. Distribution of most recent test values by range, per patient population: **Total cholesterol:** ≥240, 200-239, <200, undocumented **LDL-C:** ≥160, 130-159, 100-129, <100, undocumented If non-HDL cholesterol is reported, record the test values in the following ranges: ≥190, 160-189, 130-159, <130, undocumented **HDL-C:** <40, 40-49, 50-59, ≥60, undocumented **Triglycerides:** ≥400, 200-399, <200, 150-199, <150, undocumented
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Foot Examination
30. At least one complete foot exam received (visual inspection, sensory exam with monofilament, and pulse exam), per patient
31. Percentage of eligible patients receiving at least one complete foot exam (visual inspection, sensory exam with monofilament, and pulse exam), per patient population

*Measures reported "per patient" apply at the ambulatory care provider level only and exclude health plans.

Table 2. National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level* (continued)

MEASURE (PER YEAR)
Blood Pressure Management
32. Most recent systolic and diastolic blood pressure reading, per patient
33. Distribution of most recent blood pressure values by range, per patient population: **Systolic (mm Hg):** <120, 120-129, 130-139, 140-149, 150-159, 160-169, 170-179, ≥180, undocumented **Diastolic (mm Hg):** <75, 75-79, 80-89, 90-99, 100-109, ≥110, undocumented
Aspirin Use
34. Patient receiving aspirin therapy (dose ≥75 mg), per patient
35. Percentage of patients receiving aspirin therapy (dose ≥75 mg), per patient population

*Measures reported "per patient" apply at the ambulatory care provider level only and exclude health plans.

Table 3. National Voluntary Consensus Standards for Adult Diabetes Care: 2005 Update Community-Level Measures

MEASURE
36. Admissions for uncontrolled diabetes or short-term complications, per 100,000 population
37. Admissions for diabetes long-term complications, per 100,000 population
38. Admissions for lower-extremity amputation among patients with diabetes, per 100,000 population

Appendix A

Summary of Changes to the 2002 NQF National Voluntary Consensus Standards for Adult Diabetes Care

The updated measure set includes two new topic areas (aspirin use and complication-related admissions), and two topic areas have been eliminated (influenza immunization and office visits). The updated set contains 38 measures, 35 measures developed by the National Diabetes Quality Improvement Alliance (the Alliance) (9 for public reporting and 26 for internal quality improvement) and 3 measures developed by the Agency for Healthcare Research and Quality (AHRQ). The 2002 NQF-endorsed™ set contained 37 measures developed by the Alliance (8 for public reporting and 29 for quality improvement). The updated set replaces the previously endorsed set in its entirety. Changes to the individual measures are summarized below, with changes noted in bold for the modified measures. Appendix B describes the clinical rationale for the measure specifications and reasons for the changes, where relevant.

A1c Management

One public reporting measure modified:

- 2002: Percent of patients with most recent A1c level >*9.5%*
- Update: Percentage of patients with most recent A1c level **>9.0%** *(poor control)*

One quality improvement measure modified:

- 2002: Distribution of most recent A1c value by range: *6.0-6.9%, 7.0-7.9%, 8.0-8.9%, 9.0-9.9%, ≥10.0%*, undocumented, across all patients
- Update: Distribution of most recent A1c value by range: **≤6.0, 6.1-7.0, 7.1-8.0, 8.1-9.0, 9.1-10.0, >10.0**, undocumented, per patient population

Lipid Management

One public reporting measure added:

- Percentage of patients with most recent LDL-C <100 mg/dL

One quality improvement measure modified:

- 2002: Distribution of most recent test values by range:
  - Total cholesterol: ≥240, 200-239, <200, undocumented
  - LDL-C: ≥160, 130-159, 100-129, <100, undocumented
  - HDL-C: <*35, 35-45,* >*45*, undocumented
  - Triglycerides: ≥400, 200-399, <200, 150-199, <150, undocumented
- Update: Distribution of most recent test values by range:
  - Total cholesterol: ≥240, 200-239, <200, undocumented
  - LDL-C: ≥160, 130-159, 100-129, <100, undocumented
  - **If non-HDL cholesterol is reported, record the test values in the following ranges: ≥190, 160-189, 130-159, <130, undocumented**
  - HDL-C: **<40, 40-49, 50-59, ≥60,** undocumented
  - Triglycerides: ≥400, 200-399, <200, 150-199, <150, undocumented

Four quality improvement measures added:

- Patient whose most recent LDL-C is <130 mg/dl or receiving a statin or other lipid-lowering therapy, per patient
- Patient whose most recent LDL-C is <100 mg/dl or receiving a statin or other lipid-lowering therapy, per patient
- Percentage of patients whose most recent LDL-C is <130 mg/dl or receiving a statin or other lipid-lowering therapy, per patient population
- Percentage of patients whose most recent LDL-C is <100 mg/dl or receiving a statin or other lipid-lowering therapy, per patient population

Two quality improvement measures deleted:

- Distribution of number of profiles done (0, 1, 2, 3 or more), across all patients
- Number of lipid profiles received, per patient

Urine Protein Screening

One public reporting measure modified:

- 2002: Percent of patients receiving at least one test for microalbumin during the measurement year; or who had evidence of medical attention for existing nephropathy *or a positive test for macroalbuminuria; or receiving at least one test for microalbumin within the past two years, if two of the three criteria for low risk are met: 1) not taking insulin; 2) HbA1c <8%; 3) no evidence of macroalbuminuria in prior year*
- Update: Percentage of patients with at least one test for microalbumin during the measurement year; or who had evidence of medical attention for existing nephropathy **(diagnosis of nephropathy or documentation of microalbuminuria or albuminuria)**

Eye Examination

One public reporting measure modified:

- 2002: Percent of patients who received a dilated eye exam *or evaluation of retinal photographs* by an optometrist or ophthalmologist within the reporting year; or the past two years for patients at low risk of retinopathy:
  - A patient is considered at low risk if *two out of three criteria are met: not taking insulin, HbA1c <8%*, no evidence of retinopathy in prior year

- Update: Percentage of patients who received a dilated eye exam **or seven standard field stereoscopic photos with interpretation** by an ophthalmologist **or optometrist or imaging validated to match diagnosis from these photos** during the reporting year, or during the prior year, if patient is at low risk for retinopathy:
  - A patient is considered low risk if **the following criterion** is met: has no evidence of retinopathy in the prior year

Four quality improvement measures modified:

- 2002: Dilated retinal eye exam *received*, per patient
- Update: Dilated retinal eye exam **performed by an ophthalmologist or optometrist**, per patient
- 2002: *Other eye exam (e.g., funduscopic photo with interpretation or other) by type of exam received*, per patient
- Update: **Seven standard field stereoscopic photos with interpretation performed by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos**, per patient
- 2002: Percent of patients receiving a dilated retinal eye exam, across all patients
- Update: Percentage of patients receiving a dilated retinal eye exam **by an ophthalmologist or optometrist**, per patient population
- 2002: Percent of patients receiving *other eye exam (e.g., funduscopic photo with interpretation or other) by type of exam*, across all patients
- Update: Percentage of patients receiving **seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos**, per patient population

Foot Examination

No changes

Influenza Immunization

Topic area eliminated. Three quality improvement measures deleted:

- Percent of patients who received an influenza immunization during the recommended calendar period, across all patients
- Percent of patients who received an immunization or refused immunization during the recommended calendar period, across all patients
- Immunization status, per patient

Blood Pressure Management

One public reporting measure modified:

- 2002: Percentage of patients with most recent blood pressure <140/*90* mm Hg
- Update: Percentage of patients with recent blood pressure <140/**80** mm Hg

One quality improvement measure modified:

- 2002: Distribution of most recent blood pressure values by range, across all patients.
  - Systolic (mm Hg): <*130*, 130-139, 140-149, 150-159, 160-169, 170-179, ≥180, undocumented.
  - Diastolic (mm Hg): <*80*, 80-89, 90-99, 100-109, ≥110, undocumented

- Update: Distribution of most recent blood pressure values by range, per patient population.
  - Systolic (mm Hg): **<120, 120-129**, 130-139, 140-149, 150-159, 160-169, 170-179, ≥180, undocumented
  - Diastolic (mm Hg): **<75, 75-79**, 80-89, 90-99, 100-109, ≥110, undocumented

Two quality improvement measures deleted:

- Percent of patients who received a blood pressure reading at each visit, across all patients
- Percent of visits that included a blood pressure reading, per patient

Aspirin Use

Topic area added; two quality improvement measures added:

- Patient receiving aspirin therapy (dose ≥75 mg), per patient
- Percentage of patients receiving aspirin therapy (dose ≥75mg), per patient population

Office Visits

Topic area eliminated; two quality improvement measures deleted:

- Percent of patients with two or more visits
- Two or more visits per patient

Complication-Related Admissions

Topic area added; different measure developer (AHRQ); three measures added:

- Number of admissions for uncontrolled diabetes or short-term complications per 100,000 population
- Number of admissions for diabetes long-term complications per 100,000 population
- Number of admissions for lower-extremity amputation among patients with diabetes per 100,000 population

Appendix B

Specifications of the National Voluntary Consensus Standards for Adult Diabetes Care: 2005

The following tables summarize the detailed specifications for each of the National Quality Forum (NQF)-endorsed™ voluntary consensus standards for adult diabetes care. All information presented has been derived directly from the measure sources/developers without modification or alteration (except when the measure developer agreed to such modification during the NQF Consensus Development Process) and is current as of August 2, 2005.[1]

All NQF-endorsed voluntary consensus standards are open source, meaning they are fully accessible and disclosed. References to related risk-adjustment methodologies and definitions are provided to assure openness and transparency. Issues regarding any NQF-endorsed consensus standard (e.g., modifications to specifications, emerging evidence) may be submitted to NQF for review and consideration via the "Implementation Feedback Form" found at www.qualityforum.org/implementation_feedback.htm. NQF will transmit this information to the measure developers and/or compile it for consideration in updating the measure set.

[1]These accountability measures, including any updating of specifications, are being reviewed during Phase 3 of the ambulatory care project.

The measure specifications are maintained by the National Committee for Quality Assurance[2] (NCQA) (measures #1-9), the American Medical Association[3] (measures #10-35), and the Agency for Healthcare Research and Quality (measures #36-38). For the most current technical specifications, please refer to the measure maintenance entities' web sites (www.ncqa.org, www.ama-assn.org, and www.ahrq.gov). Additional information and tools to assist in collecting, analyzing, and reporting data are also available on these sites. All exclusions are required unless otherwise noted.

The approach used for data collection, analysis, and reporting on these measures will vary based on the use of these measures within a specific organization or initiative—for example, health plan reporting for NCQA accreditation through HEDIS® measurement should follow the NCQA standards. Issues such as how the population should be sampled (e.g., counting all patients, a random sample of patients, or some other subgroup) will differ based on the use of the measures. Entities using these measures should define and use a standardized approach for data collection, analysis, and reporting that is statistically sound and consistent for all providers/plans represented.

[2]These performance measures were developed by and are owned by the National Committee for Quality Assurance (NCQA). These performance measures are not clinical guidelines and do not establish a standard of medical care. NCQA makes no representations, warranties, or endorsement about the quality of any organization or physician that uses or reports performance measures, and NCQA has no liability to anyone who relies on such measures. NCQA holds a copyright in these measures and can rescind or alter them at any time. These measures may not be modified by anyone other than NCQA. Anyone desiring to use or reproduce these measures without modification for a noncommercial purpose may do so without obtaining any approval from NCQA. All commercial uses must be approved by NCQA and are subject to a license at the discretion of NCQA. ©2005 National Committee for Quality Assurance, all rights reserved.

[3]The Diabetes Measurement Set (Set) was developed by the National Diabetes Quality Improvement Alliance (the Alliance) to facilitate quality improvement activities by physicians. The performance measures contained in this Set are not clinical guidelines and do not establish a standard of medical care. This Set is intended to assist physicians in enhancing 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. The Alliance has not tested this Set. This Set is subject to review and may be revised or rescinded at any time by the Alliance. The Set may not be altered without the prior written approval of the Alliance. A Set developed by the Alliance, while copyrighted, can be reproduced and distributed without modification, for noncommercial purposes. Any other use is subject to the approval of the Alliance. Neither the Alliance nor its members shall be responsible for any use of this Set. ©2005 American Medical Association. All Rights Reserved. Technical specifications for Electronic Health Record Systems (EHRSs), which include clinical and standard code sets, algorithms, and HL7 messaging to facilitate the exchange of information and integration of the measures into electronic health record systems, may be accessed at the Centers for Medicare and Medicaid Services web site at www.doqit.org/doqit/jsp/index.jsp and the American Medical Association web site at www.ama-assn.org/ama.

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
A1C MANAGEMENT					
1. Percentage of patients with one or more A1c test(s)	NCQA	One or more HbA1c tests conducted during the measurement year identified through either CPT Code 83036 or LOINC Codes 4548-4, 4549-2, 17855-8, 17856-6, or an automated laboratory record with a service date, or, at minimum, documentation in the medical record must include a note indicating the date on which the HbA1c test was performed and the result. Notation of the following may be counted in the medical record: ■ A1c ■ HbA1c ■ hemoglobin A1c ■ glycohemoglobin A1c ■ HgbA1c Presentation of Codes Unless otherwise noted, codes are stated to the minimum specificity required. For example, if a three-digit code is listed, it is valid as a three-, four-, or five-digit code. When necessary, a code may be specified with an "x" which represents a required digit. For example, ICD-9 CM Diagnosis Code 640.0x means that a fifth digit is required, but the fifth digit could be any number allowed by the coding manual	A systematic sample of patients 18-75 years old who had a diagnosis of diabetes (type 1 and type 2) Two methods are provided to identify patients with diabetes during the measurement year, or year prior: pharmacy data and claims/encounter data: ■ Pharmacy data: Patients who were dispensed insulin or oral hypoglycemics/antihyperglycemics during the measurement year or year prior to the measurement year on an ambulatory basis. Prescriptions to identify patients with diabetes include insulin prescriptions (drug list is available) and oral hypoglycemics/antihyperglycemics prescriptions (drug list is available) ■ Claim/encounter data: Patients with a diagnosis of diabetes who had two face-to-face encounters with different dates of service in an ambulatory setting or non-acute inpatient setting or one face-to-face encounter in an acute inpatient or emergency room setting during the measurement year or year prior to the measurement year with a diagnosis of diabetes Codes to identify patients with diabetes include: ■ Diabetes diagnosis: ICD-9-CM Codes 250, 357.2, 362.0, 366.41, 648.0; DRGs 294, 295 ■ Outpatient/non-acute inpatient: CPT Codes 92002-92014, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99271-99275, 99301-99303, 99311-99313, 99321-99323, 99331-99333, 99341-99355, 99384-99387, 99394-99397, 99401-99404, 99411, 99412,	Exclude patients with a diagnosis of polycystic ovaries (ICD-9-CM Code 256.4) who did not have any face-to-face encounters with the diagnosis of diabetes, in any setting, during the measurement year or year prior to the measurement year. Exclude patients with gestational diabetes (ICD-9-CM Code 648.8) or steroid-induced diabetes (ICD-9-CM Code 962.0, 251.8) during the measurement year	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
A1C MANAGEMENT (continued)					
1. Percentage of patients with one or more A1c test(s) *continued*			99420, 99429, 99499; UB-92 Revenue Codes 019X, 0456, 049X-053X, 055X-059X, 065X, 066X, 076X, 077X, 082X-085X, 088X, 092X, 094X, 096X, 0972-0979, 0982-0986, 0988, 0989 Acute inpatient/emergency department: CPT Codes 99221-99223, 99231-99233, 99238-99239, 99251-99255, 99261-99263, 99281-99285, 99291-99292, 99356-99357; UB-92 Revenue Codes 010X-016X, 020X-022X, 0450, 0451, 0452, 0459, 072X, 080X, 0981, 0987		
2. Percentage of patients with most recent A1c level >9.0% (poor control)	NCQA	The most recent HbA1c level (performed during the measurement year) is >9.0%, as documented through automated laboratory data or medical record review. If there is no HbA1c level during the measurement year, the level is considered to be >9.0% (i.e., no test is counted as poor HbA1c control). At a minimum, documentation in the medical record must include a note indicating the date on which the HbA1c test was performed and the result	Same denominator as measure #1 "Percentage of patients with one or more A1c test(s)"	Same exclusions as measure "Percentage of patients with one or more A1c test(s)"	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data
LIPID MANAGEMENT					
3. Percentage of patients with at least one LDL-C test	NCQA	An LDL-C test done during the measurement year as determined by claim/encounter or automated laboratory data or medical record review. To identify an LDL-C test using claim/encounter or automated laboratory data, the LDL-C test must have a service date during the measurement year. Codes to identify LDL-C Screening: CPT Codes 80061, 83715, 83716, 83721; LOINC Codes 2089-1, 12773-8, 13457-7, 18261-8, 18262-6, 22748-7, 24331-1. Documentation in the medical record must include, at a minimum, a note indicating the date on which the LDL-C test was performed and the result	Same denominator as measure #1 "Percentage of patients with one or more A1c test(s)"	Same exclusions as measure "Percentage of patients with one or more A1c test(s)"	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
LIPID MANAGEMENT (continued)					
4. Percentage of patients with most recent LDL-C <130 mg/dl	NCQA	The most recent LDL-C level (performed during the measurement year) is <130 mg/dL, as documented through automated laboratory data or medical record review. Using automated laboratory data, identify the most recent LDL-C test during the measurement year. The patient is numerator compliant if the most recent automated LDL-C level is <130 mg/dl. If the automated result for the most recent LDL-C test during the measurement year is ≥130 mg/dl or is missing, or if an LDL-C, test was not done in the measurement year, the patient is not numerator compliant. Documentation in the medical record must include, at a minimum, a note indicating the date on which the LDL-C test was performed and the result LDL-C levels may be calculated from total cholesterol, HDL-C, and triglycerides using the Friedewald equation if triglycerides are ≤400 mg/dl (LDL-C) = (total cholesterol) - (HDL) - (triglycerides/5) If lipoprotein (a) is measured, this calculation is: (LDL-C) = (total cholesterol) - (HDL) - (triglycerides/5) - 0.3[lipoprotein(a)] These formulae are used when all levels are expressed in mg/dl and cannot be used if triglycerides >400 mg/dl	Same denominator as measure "Percentage of patients with one or more A1c test(s)"	Same exclusions as measure "Percentage of patients with one or more A1c test(s)"	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
LIPID MANAGEMENT (continued)					
5. Percentage of patients with most recent LDL-C <100 mg/dl	NCQA	The most recent LDL-C level (performed during the measurement year) is <100 mg/dL, as documented through automated laboratory data or medical record review. Using automated laboratory data, identify the most recent LDL-C test during the measurement year. The patient is numerator compliant if the most recent automated LDL-C level is <100 mg/dl. If the automated result for the most recent LDL-C test during the measurement year is ≥100 mg/dl or is missing, or if an LDL-C test was not done in the measurement year, the patient is not numerator compliant For medical record collection: Documentation in the medical record must include, at a minimum, a note indicating the date on which the LDL-C test was performed and the result LDL-C levels may be calculated from total cholesterol, HDL-C, and triglycerides using the Friedewald equation if triglycerides are ≤400 mg/dl (LDL-C) = (total cholesterol) - (HDL) - (triglycerides/5) If lipoprotein (a) is measured, this calculation is: (LDL-C) = (total cholesterol) - (HDL) - (triglycerides/5) - 0.3[lipoprotein(a)] These formulae are used when all levels are expressed in mg/dl and cannot be used if triglycerides >400 mg/dl	Same denominator as measure #1 "Percentage of patients with one or more A1c test(s)"	Same exclusions as measure "Percentage of patients with one or more A1c test(s)"	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING					
6. Percentage of patients with at least one test for microalbumin during the measurement year; or who had evidence of medical attention for existing nephropathy (diagnosis of nephropathy or documentation of microalbuminuria or albuminuria)	NCQA	Screening for nephropathy or evidence of nephropathy, as documented through either administrative data or medical record review. The following are allowed to count toward the numerator: patients who have been screened for urine microalbumin, or patients who have nephropathy, as demonstrated by either evidence of medical attention for nephropathy, a visit to a nephrologist, or a positive urine macroalbumin test Urine microalbumin test. A urine microalbumin test during the measurement year, with at least one of the following codes: CPT Codes 82042, 82043, 82044, 83518, 84156, or [(84160, 84165, 84166) with Code 81050]; LOINC Codes 11218-5, 14956-7, 14957-5, 14958-3, 14959-1, 30000-4, 30001-2, 30003-8, 1753-3, 1754-1, 1755-8, 9318-7, 13705-9, 14585-4, 20621-9, 21059-1, 32294-1, 2887-8, 2888-6, 2889-4, 2890-2, 12842-1, 13801-6, 18373-1, 21482-5, 26801-1, 27298-9, 32209-9, 32551-4, 34366-5, 35663-4, or documentation in the medical record, which must include a note indicating the date on which the urine microalbumin test was performed and the result. Notation of the following may count in the medical record for urine microalbumin test: ■ 24-hour urine for microalbumin ■ timed urine for microalbumin ■ spot urine for microalbumin ■ microalbumin/creatinine ratio Medical attention for nephropathy. Documentation of nephropathy by one of three methods during the measurement year:	Same denominator as measure #1 "Percentage of patients with one or more A1c test(s)"	Same exclusions as measure "Percentage of patients with one or more A1c test(s)"	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING (continued)					
6. Percentage of patients with at least one test for microalbumin during the measurement year; or who had evidence of medical attention for existing nephropathy (diagnosis of nephropathy or documentation of microalbuminuria or albuminuria) *continued*		■ evidence of treatment for nephropathy during the measurement year using the following codes: Urine macroalbumin test*: CPT Codes 81000-81003, 81005; LOINC Codes 5804-0, 20454-5, 24356-8, 24357-6. Evidence of diagnosis of or treatment for nephropathy: CPT Codes 36800, 36810, 36815, 36818, 36820, 36821, 50300, 50320 50340, 50360, 50365, 50370, 50380, 90920, 90921, 90924, 90925, 90935, 90937, 90945, 90947, 90989, 90993, 90997, 90999, 99512; ICD-9-CM Codes 39.27, 39.42, 39.43, 39.53, 39.93-39.95, 54.98, 55.4-55.6, 250.4, 403, 404, 405.01, 405.11, 405.91, 581.81, 582.9, 583.81, 584-586, 588, 753.0, 753.1, 791.0; V-Codes V42.0, V45.1, V56; UB-92 Revenue Codes 0800-0804, 0809, 0820-0825, 0829-0835, 0839-0845, 0849-0855, 0859-0882, 0889; DRGs 316, 317, or documentation in the medical record which must include, at a minimum, a note indicating medical attention during the measurement year for: ■ diabetic nephropathy ■ a positive test result for urine microalbumin (i.e., urine protein or proteinuria) ■ end-stage renal disease (ESRD) ■ chronic renal failure (CRF) ■ renal insufficiency ■ acute renal failure (ARF) ■ dialysis, hemodialysis, or peritoneal dialysis *Automated laboratory data must be used to confirm a positive result for a urine macroalbumin test identified through administrative data			

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING (continued)					
6. Percentage of patients with at least one test for microalbumin during the measurement year; or who had evidence of medical attention for existing nephropathy (diagnosis of nephropathy or documentation of microalbuminuria or albuminuria) *continued*		■ nephrologist visit during the measurement year (no restriction on the diagnosis or procedure code submitted) ■ a positive urine macroalbumin test during the measurement year, as documented by claim/encounter or automated laboratory data. The urine microalbumin test codes above may be used to identify tests, and automated laboratory data may be used to confirm a positive result. "Trace" urine macroalbumin test results are not considered numerator compliant. At a minimum, documentation in the medical record must include a note indicating the date on which the test was performed and a positive result for protein in the urine. The following may be counted in the medical record: • positive urinalysis (timed, spot, microalbumin/creatinine ratio) • positive urine dipstick • positive tablet reagent Note: "Trace" urine macroalbumin test results are not considered numerator compliant			

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
EYE EXAMINATION					
7. Percentage of patients who received a dilated eye exam or seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos during the reporting year, or during the prior year, if patient is at low risk* for retinopathy *Patient is considered low risk if the following criterion is met: has no evidence of retinopathy in the prior year	NCQA	An eye screening for diabetic retinal disease includes those patients with diabetes who had a retinal or dilated eye exam by an eye care professional in the measurement year (optometrist or ophthalmologist), as documented through either administrative data or medical record review. A negative retinal exam is also allowed to count toward the numerator performed in the year prior to the measurement year. The following codes may be used to identify eye exams: ■ CPT Codes 67101, 67105, 67107-67108, 67110, 67112, 67141, 67145, 67208, 67210, 67218, 67227, 67228, 92002, 92004, 92012, 92014, 92018, 92019, 92225, 92226, 92230, 92235, 92240, 92250, 92260, 92287, 99203-99205, 99213-99215, 99242-99245; ICD-9-CM Codes 14.1-14.5, 14.9, 95.02-95.04, 95.11, 95.12, 95.16; V Code V72.0. For exams performed in the year prior to the measurement year, an automated result must be available Documentation in the medical record of a retinal eye exam during the measurement year or a negative retinal eye exam during the year prior to the measurement year must include: A note or letter from an ophthalmologist, optometrist, or other healthcare professional summarizing the date on which the procedure was performed and the results of a retinal evaluation performed by an eye-care professional; or a chart or photograph of retinal abnormalities. If fundus photography was used in the exam, there must be documentation in	Same denominator as measure #1 "Percentage of patients with one or more A1c test(s)"	Same exclusions as measure "Percentage of patients with one or more A1c test(s)"	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
EYE EXAMINATION (continued)					
7. Percentage of patients who received a dilated eye exam or seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos during the reporting year, or during the prior year, if patient is at low risk* for retinopathy *continued* *Patient is considered low risk if the following criterion is met: has no evidence of retinopathy in the prior year		the medical record indicating the date on which the procedure was performed and evidence that an eye-care professional reviewed the results Alternatively, results must be read by a qualified reading center that operates under the direction of a medical director who is a retinal specialist, or a note, which may be prepared by a primary care provider, indicating the date on which the procedure was performed, and that an ophthalmoscopic exam was completed by an eye-care professional, with the results of the exam			

Table 1 – Public Reporting Measures, Ambulatory Provider and Health Plan Level (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
FOOT EXAMINATION					
8. Percentage of eligible patients receiving at least one foot exam, defined in any manner	NCQA	Patients who received a foot exam, defined in any manner (visual inspection, sensory exam with monofilament, or pulse exam). Indication of a test result and date must be documented	All patients with diabetes 18-75 years of age. See list under measure #1 "Percentage of patients with one or more A1c test(s)" denominator for codes and drugs	Same exclusions as measure "Percentage of patients with one or more A1c test(s)" Patients with bilateral foot/leg amputation (ICD-9-CM Exclusion Codes for foot exam 896.2, 896.3, 897.6, 897)	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data
BLOOD PRESSURE MANAGEMENT					
9. Percentage of patients with most recent blood pressure <140/80 mm Hg	NCQA	Patients with most recent systolic blood pressure measurement <140 mm Hg and a diastolic blood pressure <80 mm Hg during the measurement year, as documented through medical record review. If there is no valid blood pressure level within the last measurement year or if the result for the most recent blood pressure is not available, the level is considered to be >140/80 mm Hg	All patients with diabetes 18-75 years of age. See list under measure #1 "Percentage of patients with one or more A1c test(s)" denominator for codes and drugs	Same exclusions as measure "Percentage of patients with one or more A1c test(s)"	Visit, lab, and pharmacy encounter data or claims. Electronic data may be supplemented by medical record data

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4]

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
A1C MANAGEMENT					
10. Number of tests received, per patient	American Medical Association (AMA)[4]	Number of A1c tests received by the patient	Same denominator as measure #1	Same exclusions as measure #1	Electronic Health Record System (EHRS), retrospective paper medical records, prospective flow sheet
11. Trend of A1c values, per patient	AMA[4]	Trend of A1c values of tests received by the patient	Patient with diabetes 18-75 years of age and has had at least one A1c test in the reporting year. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
12. Percentage of patients receiving one or more A1c test(s), per patient population	AMA[4]	Patients who received one or more A1c test(s) during the measurement period (CPT Laboratory Code for A1c testing: 83036) (LOINC Code for A1c testing: 17855-8, 17856-6, 4548-4, 4549-2)	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
13. Distribution of number of tests done (0, 1, 2, 3, or more), per patient population	AMA[4]	Distribution of the number of A1c tests done (0, 1, 2, 3, or more)	Same denominator as measure #1	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
14. Distribution of most recent A1c value by range: ≤6.0, 6.1-7.0, 7.1-8.0, 8.1-9.0, 9.1-10.0, >10.0, undocumented, per patient population	AMA[4]	Distribution of most recent A1c values by range: ≤6.0, 6.1-7.0, 7.1-8.0, 8.1-9.0, 9.1-10.0, >10.0, undocumented	All patients with diabetes 18-75 years of age and have had at least one A1c test in the reporting year. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet

[4]Measures reported "per patient" apply at the ambulatory care provider level, but are not appropriate for use in health plans.

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
LIPID MANAGEMENT					
15. Trend of values for each test, per patient	AMA[4]	Trend of lipid profile (total cholesterol, LDL-C, HDL-C, triglycerides) values of tests received by the patient	Patient who has diabetes (same denominator as measure #1) and has had at least one test in the reporting year	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
16. Patient whose most recent LDL-C is <130 mg/dl or who is receiving a statin or other lipid-lowering therapy, per patient	AMA[4]	Patients whose most recent LDL-C is <130 mg/dL or receiving a statin or other lipid-lowering therapy (drug list is available). LDL-C: CPT Codes 80061, 83715, 83716, 83721; LOINC Codes 2089-1, 12773-8, 13457-7, 18261-8, 18262-6, 22748-7, 24331-1	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
17. Patient whose most recent LDL-C is <100 mg/dl or who is receiving a statin or other lipid-lowering therapy, per patient	AMA[4]	Patients whose most recent LDL-C is <100 mg/dL or receiving a statin or other lipid-lowering therapy (drug list is available). LDL-C: CPT Codes 80061, 83715, 83716, 83721; LOINC Codes 2089-1, 12773-8, 13457-7, 18261-8, 18262-6, 22748-7, 24331-1	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
18. Percentage of patients receiving at least one lipid profile (or ALL component tests), per patient population	AMA[4]	Patients with at least one lipid profile (or ALL component tests) during the measurement period. CPT laboratory codes for lipid testing: 80061, 83721, 83716, 82465, 83718, 84478; LOINC Codes for lipid testing: 24331-1, 13457-7, 18262-6, 18261-8, 22748-8, 2093-3, 14647-2, 2085-9, 14646-4, 18263-4, 2571-8, 14927-8, 1644-4, 3043-7, 3048-6, 30524-3	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1 Other reason documented by the practitioner for not obtaining at least one LDL cholesterol test	EHRS, retrospective paper medical records, prospective flow sheet

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
LIPID MANAGEMENT (continued)					
19. Percentage of patients whose most recent LDL-C is <130 mg/dl or who are receiving a statin or other lipid-lowering therapy, per patient population	AMA[4]	See measure #16	See measure #16	See measure #16	EHRS, retrospective paper medical records, prospective flow sheet
20. Percentage of patients whose most recent LDL-C is <100 mg/dl or who are receiving a statin or other lipid-lowering therapy, per patient population	AMA[4]	See measure #17	See measure #17	See measure #17	EHRS, retrospective paper medical records, prospective flow sheet
21. Distribution of most recent test values by range, per patient population	AMA[4]	Distribution of most recent lipid profile values by range: **Total cholesterol:** ≥240, 200-239, <200, undocumented **LDL-C:** ≥160, 130-159, 100-129, <100, undocumented If Non-HDL cholesterol is reported, record the test values in the following ranges: ≥190, 160-189, 130-159, <130, undocumented **HDL-C:** <40, 40-49, 50-59, ≥60, undocumented **Triglycerides:** ≥400, 200-399, <200, 150-199, <150, undocumented	All patients with diabetes 18-75 years of age and have had at least one test in the reporting year. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING					
22. Any test for microalbuminuria received, per patient	AMA[4]	Patients who received any test for microalbuminuria **Urine microalbumin test.** A urine microalbumin test during the measurement year, with at least one of the following codes: CPT Codes 82042, 82043, 82044, 83518, 84156 or [(84160, 84165, 84166) with Code 81050]; LOINC Codes 11218-5, 14956-7, 14957-5, 14958-3, 14959-1, 30000-4, 30001-2, 30003-8, 1753-3, 1754-1, 1755-8, 9318-7, 13705-9, 14585-4, 20621-9, 21059-1, 32294-1, 2887-8, 2888-6, 2889-4, 2890-2, 12842-1, 13801-6, 18373-1, 21482-5, 26801-1, 27298-9, 32209-9, 32551-4, 34366-5, 35663-4 or documentation in the medical record which must include a note indicating the date on which the urine microalbumin test was performed and the result. Notation of the following may count in the medical record for urine microalbumin test: ■ 24-hour urine for microalbumin ■ timed urine for microalbumin ■ spot urine for microalbumin ■ microalbumin/creatinine ratio Evidence of a macroalbuminuria test may also count: urinalysis (both timed, spot, microalbumin/creatinine ratio), positive urine dipstick, positive tablet reagent. CPT Codes for macroalbuminuria test: 81000-81003, 81005; (LOINC Codes) Urine Microalbuminuria 1753-3, 1754-1, 1755-8, 9318-7, 13705-9, 14585-4, 20621-9, 21059-1, 32294-1; Urine Protein 2887-8, 2888-6, 2889-4, 2890-2, 5804-0, 12842-1, 13801-6, 18373-1, 20454-5, 21482-5, 24356-8, 24357-6, 26801-1, 27298-9, 32209-9, 32551-4, 34366-5, 35663-4	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1. Patients who have nephropathy, as demonstrated by either evidence of medical attention for nephropathy, a visit to a nephrologist, or a positive urine macroalbumin test Medical attention for nephropathy. Documentation of nephropathy by one of three methods during the measurement year: ■ evidence of treatment for nephropathy during the measurement year using the following codes: Urine macroalbumin test*: CPT Codes 81000-81003, 81005; LOINC Codes 5804-0, 20454-5, 24356-8, 24357-6; evidence of diagnosis of or treatment for nephropathy: CPT Codes 36800, 36810, 36815, 36818, 36820, 36821, 50300, 50320, 50340, 50360, 50365, 50370, 50380, 90920, 90921, 90924, 90925, 90935, 90937, 90945, 90947, 90989, 90993, 90997, 90999, 99512; ICD-9-CM Codes 39.27, 39.42, 39.43, 39.53, 39.93-39.95, 54.98, 55.4-55.6, 250.4, 403, 404, 405.01, 405.11, 405.91, 581.81, 582.9, 583.81, 584-586, 588, 753.0, 753.1, 791.0; V-Codes V42.0, V45.1, V56, UB-92 Revenue Codes 0800-0804, 0809, 0820-0825, 0829-0835, 0839-0845, 0849-0855, 0859-0882, 0889; DRGs 316, 317 or documentation in the medical record which must include, at a minimum, a note indicating	EHRS, retrospective paper medical records, prospective flow sheet

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING (continued)					
22. Any test for microalbuminuria received, per patient *continued*				medical attention during the measurement year for: • diabetic nephropathy • a positive test result for urine microalbumin (i.e., urine protein or proteinuria) • end-stage renal disease (ESRD) • chronic renal failure (CRF) • renal insufficiency • acute renal failure (ARF) • dialysis, hemodialysis or peritoneal dialysis *Automated laboratory data must be used to confirm a positive result for a urine macroalbumin test identified through administrative data ■ a nephrologist visit during the measurement year (no restriction on the diagnosis or procedure code submitted) ■ a positive urine macroalbumin test during the measurement year, as documented by claim/encounter or automated laboratory data. The urine microalbumin test codes above may be used to identify tests and automated laboratory data may be used to confirm a positive result. "Trace" urine macroalbumin test results are not considered numerator-compliant. At a minimum, documentation in the medical record must include a note indicating the date	

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING (continued)					
22. Any test for microalbuminuria received, per patient *continued*				on which the test was performed, and a positive result for protein in the urine. The following may be counted in the medical record: • positive urinalysis (timed, spot, microalbumin/creatinine ratio) • positive urine dipstick • positive tablet reagent *Note:* "Trace" urine macroalbumin test results are not considered numerator compliant	
23. If no urinalysis OR urinalysis with negative or trace urine protein, a test for microalbumin was received, per patient	AMA[4]	Patients with no urinalysis OR urinalysis with negative or trace urine protein, who received a test for microalbumin **Urine microalbumin test.** A urine microalbumin test during the measurement year, with at least one of the following codes: CPT Codes 82042, 82043, 82044, 83518, 84156 or [(84160, 84165, 84166) with Code 81050]; LOINC Codes 11218-5, 14956-7, 14957-5, 14958-3, 14959-1, 30000-4, 30001-2, 30003-8, 1753-3, 1754-1, 1755-8, 9318-7, 13705-9, 14585-4, 20621-9, 21059-1, 32294-1, 2887-8, 2888-6, 2889-4, 2890-2, 12842-1, 13801-6, 18373-1, 21482-5, 26801-1, 27298-9, 32209-9, 32551-4, 34366-5, 35663-4, or documentation in the medical record that must include a note indicating the date on which the urine microalbumin test was performed, and the result. Notation of the following may count in the medical record for urine microalbumin test:	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1 Patients who have nephropathy, as demonstrated by either evidence of medical attention for nephropathy, a visit to a nephrologist, or a positive urine macroalbumin test Medical attention for nephropathy. Documentation of nephropathy by one of three methods during the measurement year: ■ evidence of treatment for nephropathy during the measurement year using the following codes: Urine macroalbumin test*: CPT Codes 81000-81003, 81005; LOINC Codes 5804-0, 20454-5, 24356-8, 24357-6; evidence of diagnosis of or treatment for nephropathy: CPT Codes 36800, 36810, 36815, 36818, 36820, 36821, 50300, 50320 50340, 50360,	EHRS, retrospective paper medical records, prospective flow sheet

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING (continued)					
23. If no urinalysis OR urinalysis with negative or trace urine protein, a test for microalbumin was received, per patient *continued*		■ 24-hour urine for microalbumin ■ timed urine for microalbumin ■ spot urine for microalbumin ■ microalbumin/creatinine ratio		50365, 50370, 50380, 90920, 90921, 90924, 90925, 90935, 90937, 90945, 90947, 90989, 90993, 90997, 90999, 99512; ICD-9-CM Codes 39.27, 39.42, 39.43, 39.53, 39.93-39.95, 54.98, 55.4-55.6, 250.4, 403, 404, 405.01, 405.11, 405.91, 581.81, 582.9, 583.81, 584-586, 588, 753.0, 753.1, 791.0; V-Codes V42.0, V45.1, V56, UB-92; Revenue Codes 0800-0804, 0809, 0820-0825, 0829-0835, 0839-0845, 0849-0855, 0859-0882, 0889; DRGs 316, 317 or documentation in the medical record which must include, at a minimum, a note indicating medical attention during the measurement year for: • diabetic nephropathy • a positive test result for urine microalbumin (i.e., urine protein or proteinuria) • ESRD • CRF • ARF • dialysis, hemodialysis, or peritoneal dialysis *Automated laboratory data must be used to confirm a positive result for a urine macroalbumin test identified through administrative data	

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING (continued)					
23. If no urinalysis OR urinalysis with negative or trace urine protein, a test for microalbumin was received, per patient *continued*				■ a nephrologist visit during the measurement year (no restriction on the diagnosis or procedure code submitted) ■ a positive urine macroalbumin test during the measurement year, as documented by claim/encounter or automated laboratory data. The urine microalbumin test codes above may be used to identify tests and automated laboratory data may be used to confirm a positive result. "Trace" urine macroalbumin test results are not considered numerator-compliant. At a minimum, documentation in the medical record must include a note indicating the date on which the test was performed, and a positive result for protein in the urine. The following may be counted in the medical record: • positive urinalysis (timed, spot, microalbumin/creatinine ratio) • positive urine dipstick • positive tablet reagent *Note:* "Trace" urine macroalbumin test results are not considered numerator compliant	

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
URINE PROTEIN SCREENING (continued)					
24. Percentage of patients who received any test for microalbuminuria, per patient population	AMA[4]	See measure #22	See measure #22	See measure #22	EHRS, retrospective paper medical records, prospective flow sheet
25. Percentage of patients with no urinalysis OR urinalysis with negative or trace urine protein, who received a test for microalbumin, per patient population	AMA[4]	See measure #23	See measure #23	See measure #23	EHRS, retrospective paper medical records, prospective flow sheet

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
EYE EXAMINATION					
26. Dilated retinal eye exam performed by an ophthalmologist or optometrist, per patient	AMA[4]	Patients who received a dilated retinal eye exam by an ophthalmologist or optometrist. Documentation in the medical record, which must include: a note or letter from an ophthalmologist, optometrist, or other healthcare professional summarizing the date on which the procedure was performed and the results of a retinal evaluation performed by an eye-care professional, OR a chart or photograph of retinal abnormalities	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusion as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
27. Seven standard field stereoscopic photos with interpretation performed by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos, per patient	AMA[4]	Patients who received seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos. Documentation in the medical record, which must include: a note or letter from an ophthalmologist, optometrist, or other healthcare professional summarizing the date on which the procedure was performed and the results of a seven standard field stereoscopic photo with interpretation, OR a report from a validated imaging system	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
28. Percentage of patients receiving a dilated retinal eye exam by an ophthalmologist or optometrist, per patient population	AMA[4]	See measure #26	See measure #26	See measure #26	EHRS, retrospective paper medical records, prospective flow sheet

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
EYE EXAMINATION (continued)					
29. Percentage of patients receiving seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos, per patient population	AMA[4]	See measure #27	See measure #27	See measure #27	EHRS, retrospective paper medical records, prospective flow sheet

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
FOOT EXAMINATION					
30. At least one complete foot exam received (visual inspection, sensory exam with monofilament, and pulse exam), per patient	AMA[4]	Patients who received at least one complete foot exam (visual inspection, sensory exam with monofilament, and pulse exam)	All patients with diabetes 18-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1 Patients with bilateral foot/leg amputation (ICD-9-CM Exclusion Codes for Foot Exam: 896.2, 896.3, 897.6, 897.7) Other reason documented by the practitioner for not performing a complete foot exam	EHRS, retrospective paper medical records, prospective flow sheet
31. Percentage of eligible patients receiving at least one complete foot exam (visual inspection, sensory exam with monofilament, and pulse exam), per patient population	AMA[4]	See measure #30	See measure #30	See measure #30	EHRS, retrospective paper medical records, prospective flow sheet

Table 2 – Internal Quality Improvement Measures, Ambulatory Provider and Health Plan Level[4] (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
BLOOD PRESSURE MANAGEMENT					
32. Most recent systolic and diastolic blood pressure reading, per patient	AMA[4]	Most recent systolic and diastolic blood pressure reading	Same denominator as measure #1	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
33. Distribution of most recent blood pressure values by range, per patient population	AMA[4]	Distribution of most recent blood pressure values by range: Systolic (mm Hg): <120, 120-129, 130-139, 140-149, 150-159, 160-169, 170-179, ≥180, undocumented Diastolic (mm Hg): <75, 75-79, 80-89, 90-99, 100-109, ≥110, undocumented	Same denominator as measure #1	Same exclusions as measure #1	EHRS, retrospective paper medical records, prospective flow sheet
ASPIRIN USE					
34. Patient receiving aspirin therapy, (dose ≥75 mg), per patient	AMA[4]	Patients receiving aspirin therapy (dose ≥75 mg) (drug list is available)	All patients with diabetes 40-75 years of age. See list under measure #1 denominator for codes and drugs	Same exclusions as measure #1 Documentation that aspirin therapy was not indicated Documentation of medical reason(s) for not prescribing aspirin therapy (e.g., allergy, contraindication) Documentation of patient reason(s) for not prescribing aspirin therapy (e.g., economic, social, religious)	EHRS, retrospective paper medical records, prospective flow sheet
35. Percentage of patients receiving aspirin therapy, (dose ≥75 mg), per patient population	AMA[4]	See measure #34	See measure #34	See measure #34	EHRS, retrospective paper medical records, prospective flow sheet

Table 3 – Community-Level Measures

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
COMPLICATION-RELATED ADMISSIONS[5]					
36. Admissions for uncontrolled diabetes or short-term complications, per 100,000 population	Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators (PQIs)[6]	Discharges with ICD-9-CM Principal Diagnosis Code for short-term complications (ketoacidosis, hyperosmolarity, coma) or with a Principal Diagnosis Code for uncontrolled diabetes, without mention of a short-term or long-term complication (see below). All non-maternal/non-neonatal discharges of age 18 years and older. Include ICD-9-CM Diagnosis Codes: For short-term complications: 25010 DM KETO T2, DM CONT 25011 DM KETO T1, DM CONT 25012 DM KETO T2, DM UNCONT 25013 DM KETO T1, DM UNCONT 25020 DM W/ HYPROSM T2, DM CONT 25021 DM W/ HYPROSM T1, DM CONT 25022 DM W/ HYPROSM T2, DM UNCNT 25023 DM W/ HYPROSM T1, DM UNCNT 25030 DM COMA NEC TYP II, DM CNT 25031 DM COMA NEC T1, DM CONT 25032 DM COMA NEC T2, DM UNCONT 25033 DM COMA NEC T1, DM UNCONT For uncontrolled diabetes: 25002 DM, T2, UNCONT 25003 DM, T1, UNCONT	Population in Metropolitan Statistical Area (MSA) or county, age 18 years and older	Transfer from other institution, MDC 14 (pregnancy, childbirth, and puerperium), and MDC 15 (newborns and other neonates)	Administrative (electronic claims)

[5]The reporting timeframe for these measures is not specified by the measure developer and should be defined by the user, as appropriate for the given purpose. Users should identify a consistent reporting timeframe for data collection when comparing performance across communities for these measures.

[6]The Prevention Quality Indicator (PQI) definitions use ICD-9-CM codes valid from October 1, 1994, to September 30, 2005. Specifications are from AHRQ PQIs, version 2.1, revision 4, November 15, 2004.

Table 3 – Community-Level Measures (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
COMPLICATION-RELATED ADMISSIONS[5] (continued)					
37. Admissions for diabetes long-term complications, per 100,000 population	AHRQ PQIs[6]	Discharges with ICD-9-CM Principal Diagnosis Code for long-term complications (renal, eye, neurological, circulatory, or complications not otherwise specified) (see below). All non-maternal/ non-neonatal discharges of age 18 years and older. Include ICD-9-CM Diagnosis Codes: 25040 DM RENAL COMP T2 CONT 25041 DM RENAL COMP T1 CONT 25042 DM RENAL COMP T2 UNCNT 25043 DM RENAL COMP T1 UNCNT 25050 DM EYE COMP T2 CONT 25051 DM EYE COMP T1 CONT 25052 DM EYE COMP T2 UNCNT 25053 DM EYE COMP T1 UNCNT 25060 DM NEURO COMP T2 CONT 25061 DM NEURO COMP T1 CONT 25062 DM NEURO COMP T2 UNCNT 25063 DM NEURO COMP T1 UNCNT 25070 DM CIRCU DIS T2 CONT 25071 DM CIRCU DIS T1 CONT 25072 DM CIRCU DIS T2 UNCNT 25073 DM CIRCU DIS T1 UNCNT 25080 DM W COMP NEC T2 CONT 25081 DM W COMP NEC T1 CONT 25082 DM W COMP NEC T2 UNCNT 25083 DM W COMP NEC T1 UNCNT 25090 DM W COMPL NOS T2 CONT 25091 DM W COMPL NOS T1 CONT 25092 DM W COMPL NOS T2 UNCNT 25093 DM W COMPL NOS T1 UNCNT	Population in MSA or county, age 18 years and older	Transfer from other institution, MDC 14 (pregnancy, childbirth, and puerperium), and MDC 15 (newborns and other neonates)	Administrative (electronic claims)

Table 3 – Community-Level Measures (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
COMPLICATION-RELATED ADMISSIONS[5] (continued)					
38. Admissions for lower-extremity amputation among patients with diabetes, per 100,000 population	AHRQ PQIs[6]	Discharges with ICD-9-CM Procedure Code for lower-extremity amputation (see below) in any field and Diagnosis Code of diabetes in any field (see below). All non-maternal/non-neonatal discharges of age 18 years and older. Include ICD-9-CM Procedure Codes: 8410 LOWER LIMB AMPUTAT NOS 8411 TOE AMPUTATION 8412 AMPUTATION THROUGH FOOT 8413 DISARTICULATION OF ANKLE 8414 AMPUTAT THROUGH MALLEOLI 8415 BELOW KNEE AMPUTAT NEC 8416 DISARTICULATION OF KNEE 8417 ABOVE KNEE AMPUTATION 8418 DISARTICULATION OF HIP 8419 HINDQUARTER AMPUTATION ICD-9-CM Diagnosis Codes for diabetes: 25000 DMII WO CMP NT ST UNCNTR 25001 DMI WO CMP NT ST UNCNTRL 25002 DMII WO CMP UNCNTRLD 25003 DMI WO CMP UNCNTRLD 25010 DMII KETO NT ST UNCNTRLD 25011 DMI KETO NT ST UNCNTRLD 25012 DMII KETOACD UNCONTROLD 25013 DMI KETOACD UNCONTROLD 25020 DMII HPRSM NT ST UNCNTRL 25021 DMI HPRSM NT ST UNCNTRLD 25022 DMII HPROSMLR UNCONTROLD 25023 DMI HPROSMLR UNCONTROLD 25030 DMII O CM NT ST UNCNTRLD	Population in MSA or county, age 18 years and older	Transfer from other institution, MDC 14 (pregnancy, childbirth, and puerperium), MDC 15 (newborns and other neonates), and trauma diagnosis code (see below) in any field Exclude ICD-9-CM Diagnosis Codes associated with trauma: 8950 AMPUTATION TOE 8951 AMPUTATION TOE-COMPLICAT 8960 AMPUTATION FOOT, UNILAT 8961 AMPUT FOOT, UNILAT-COMPL 8962 AMPUTATION FOOT, BILAT 8963 AMPUTAT FOOT, BILAT-COMP 8970 AMPUT BELOW KNEE, UNILAT 8971 AMPUTAT BK, UNILAT-COMPL 8972 AMPUT ABOVE KNEE, UNILAT 8973 AMPUT ABV KN, UNIL-COMPL 8974 AMPUTAT LEG, UNILAT NOS 8975 AMPUT LEG, UNIL NOS-COMP 8976 AMPUTATION LEG, BILAT 8977 AMPUTAT LEG, BILAT-COMPL	Administrative (electronic claims)

Table 3 – Community-Level Measures (continued)

Measure	IP Owner	Numerator	Denominator	Exclusions	Data Source
COMPLICATION-RELATED ADMISSIONS[5] (continued)					
38. Admissions for lower-extremity amputation among patients with diabetes, per 100,000 population *continued*		25031 DMI O CM NT ST UNCNTRL 25032 DMII OTH COMA UNCONTROLD 25033 DMI OTH COMA UNCONTROLD 25040 DMII RENL NT ST UNCNTRLD 25041 DMI RENL NT ST UNCNTRLD 25042 DMII RENAL UNCNTRLD 25043 DMI RENAL UNCNTRLD 25050 DMII OPHTH NT ST UNCNTRL 25051 DMI OPHTH NT ST UNCNTRLD 25052 DMII OPHTH UNCNTRLD 25053 DMI OPHTH UNCNTRLD 25060 DMII NEURO NT ST UNCNTRL 25061 DMI NEURO NT ST UNCNTRLD 25062 DMII NEURO UNCNTRLD 25063 DMI NEURO UNCNTRLD 25070 DMII CIRC NT ST UNCNTRLD 25071 DMI CIRC NT ST UNCNTRLD 25072 DMII CIRC UNCNTRLD 25073 DMI CIRC UNCNTRLD 25080 DMII OTH NT ST UNCNTRLD 25081 DMI OTH NT ST UNCNTRLD 25082 DMII OTH UNCNTRLD 25083 DMI OTH UNCNTRLD 25090 DMII UNSPF NT ST UNCNTRL 25091 DMI UNSPF NT ST UNCNTRLD 25092 DMII UNSPF UNCNTRLD 25093 DMI UNSPF UNCNTRLD			

Appendix C
Clinical Rationale

This appendix provides a description of the clinical rationale behind the design and specifications for the 2005 update of the National Quality Forum *National Voluntary Consensus Standards for Adult Diabetes Care.* The clinical rationale for each measure is drawn directly from the respective measure developer's report:

- Measures #1-35: National Diabetes Quality Improvement Alliance. *Performance Measurement Set for Adult Diabetes*. Approved January 21, 2005. Available at www.nationaldiabetesalliance.org.
- Measures #36-38: Agency for Healthcare Research and Quality (AHRQ) *Quality Indicators–Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions*. Rockville, MD: AHRQ. Revision 4. (November 24, 2004). AHRQ Pub. No. 02-R0203. Available at www.qualityindicators.ahrq.gov.

Measure	Clinical Rationale and Associated Guidelines
A1C MANAGEMENT **Intensive therapy of glycosylated hemoglobin (A1c) reduces the risk of microvascular complications.[1,2,3]**	
1. Percentage of patients with one or more A1c test(s) **10. Number of tests received, per patient** **12. Percentage of patients receiving one or more A1c test(s), per patient population** **13. Distribution of number of tests done (0, 1, 2, 3, or more), per patient population**	The American Association of Clinical Endocrinologists/American College of Endocrinology (AACE/ACE) recommends that a glycosylated hemoglobin be performed during an initial assessment and during follow-up assessments, which should occur at no longer than three-month intervals.[4] The American Diabetes Association (ADA) recommends obtaining a glycosylated hemoglobin during an initial assessment and then routinely as part of continuing care. In the absence of well-controlled studies that suggest a definite testing protocol, expert opinion recommends that glycosylated hemoglobin be obtained at least twice a year in patients who are meeting treatment goals and who have stable glycemic control and more frequently (quarterly assessment) in patients whose therapy was changed or who are not meeting glycemic goals. Type of evidence:* E[5,6]
2. Percentage of patients with most recent A1c level >9.0% (poor control) **11. Trend of A1c values, per patient** **14. Distribution of most recent A1c value by range: ≤6.0, 6.1-7.0, 7.1-8.0, 8.1-9.0, 9.1-10.0, >10.0, undocumented, per patient population**	A public reporting measure on the percentage of patients with most recent A1c level <7.0% is under active consideration by the National Diabetes Quality Improvement Alliance (the Alliance). The Alliance believes that before such a measure can be put forward, appropriate means for considering case mix must be specified. Measures are *not* clinical recommendations. Measures are derived from clinical recommendations and must account for differences in individual patient conditions and preferences, feasibility of data collection, actionability by user, compliance, case mix, etc. In particular, the Alliance believes that publicly reported measures of patient outcomes that are not reasonably within the control of the provider must be appropriately adjusted in order to accurately reflect the provider's performance. Failing to adequately adjust for these variables may yield misleading results and unfairly represent providers serving patients with greater clinical needs. Due to these issues, the level of performance used in this measure is **not** identical to the ideal clinical goals recommended in professional practice guidelines, although providers should aim to achieve the highest levels of quality and reach established clinical goals, as appropriate. AACE/ACE recommends that A1c be universally adopted as the primary method of assessment of glycemic control. On the basis of data from multiple interventional trials, the target for attainment of glycemic control should be A1c values ≤6.5%.[4] Because different assays can give varying glycated hemoglobin values, ADA recommends that laboratories only use assay methods that are certified as traceable to the Diabetes Control and Complications Trial A1c reference method. ADA's goal for glycemic control is A1c <7%. Type of evidence: B[5,6] The American Geriatrics Society (AGS) recommends monitoring and treating hyperglycemia, with a target A1c of 7%, but less stringent goals for therapy may be appropriate once patient preferences, diabetes severity, life expectancy, and functional status have been considered.[7]

*Evidence level A is defined as "clear evidence from well-conducted, generalizable, randomized controlled trials that are adequately powered including: evidence from a well-conducted multicenter trial; evidence from a meta-analysis that incorporated quality ratings in the analysis; compelling nonexperimental evidence, i.e., 'all or none' rule developed by the Center for Evidence Based Medicine at Oxford. Supportive evidence from well-conducted randomized controlled trials that are adequately powered including: evidence from a well-conducted trial at one or more institutions; evidence from a meta-analysis that incorporated quality ratings in the analysis." Evidence level B is defined as "supportive evidence from well-conducted cohort studies (evidence from a well-conducted prospective cohort study or registry, evidence from a well-conducted meta-analysis of cohort studies); supportive evidence from a well-conducted case-control study." Evidence level C is defined as "supportive evidence from poorly controlled or uncontrolled studies (evidence from randomized clinical trials with one or more major or three or more minor methodological flaws that could invalidate the results, evidence from observational studies with high potential for bias [such as case series with comparison to historical controls], evidence from case series or case reports); conflicting evidence with the weight of evidence supporting the recommendation." Evidence level E is defined as "expert consensus or clinical experience."

Measure	Clinical Rationale and Associated Guidelines
LIPID MANAGEMENT **Persons with diabetes are at increased risk for coronary heart disease (CHD). Lowering serum cholesterol levels can reduce the risk for CHD events.[8]**	
3. Percentage of patients with at least one low-density lipoprotein cholesterol (LDL-C) test **18. Percentage of patients receiving at least one lipid profile (or ALL component tests), per patient population**	AACE/ACE recommends that a fasting lipid profile be obtained during an initial assessment, during each follow-up assessment, and annually as part of the cardiac-cerebrovascular-peripheral vascular module.[4,9] ADA recommends that a fasting lipid profile be obtained as part of an initial assessment. Adult patients with diabetes should be tested annually for lipid disorders with fasting serum cholesterol, triglycerides, HDL-C, and calculated LDL-C measurements. If values fall in lower-risk levels, assessments may be repeated every two years. Type of evidence: E[5,6]
4. Percentage of patients with most recent LDL-C <130 mg/dl **5. Percentage of patients with most recent LDL-C <100 mg/dl**	AACE/ACE recommended LDL-C levels: acceptable <130, ideal <100. ADA recommends[8] low (target) <100. National Cholesterol Education Program (NCEP)[10] recommends normal/optimal <100. Measures are *not* clinical recommendations. Measures are derived from clinical recommendations and must account for differences in individual patient conditions and preferences, feasibility of data collection, actionability by user, compliance, case mix, etc. In particular, the Alliance believes that publicly reported measures of patient outcomes that are not reasonably within the control of the provider must be appropriately adjusted in order to accurately reflect the provider's performance. Failing to adequately adjust for these variables may yield misleading results and unfairly represent providers serving patients with greater clinical needs. For these reasons, the level of performance in this measure is **not** identical to the target goals recommended in professional practice guidelines. Providers should aim to achieve the highest levels of quality and reach established clinical goals, as appropriate.
15. Trend of values for each test, per patient **21. Distribution of most recent test values by range:** **Total cholesterol:** ≥240, 200-239, <200, undocumented **LDL-C:** ≥160, 130-159, 100-129, <100, undocumented **If non-HDL cholesterol is reported, record the test values in the following ranges:** ≥190, 160-189, 130-159, <130, undocumented **HDL-C:** <40, 40-49, 50-59, ≥60, undocumented **Triglycerides:** ≥400, 200-399, <200, 150-199, <150, undocumented	**Total cholesterol recommendations** AACE/ACE:[9] acceptable <200, ideal <170 **LDL-C recommendations** AACE/ACE:[9] acceptable <130, ideal <100 ADA:[5,8] low (target) <100 NCEP:[11] normal/optimal <100 **HDL-C recommendations** AACE/ACE:[9] acceptable >35, ideal >45 ADA:[5,8] target (men) >45, target (women) >55 **Triglyceride recommendations** AACE/ACE:[9] acceptable <200, ideal <150 ADA:[5,8] target <150

Measure	Clinical Rationale and Associated Guidelines
LIPID MANAGEMENT (continued) **Persons with diabetes are at increased risk for coronary heart disease (CHD). Lowering serum cholesterol levels can reduce the risk for CHD events.[8]**	
16. Patient whose most recent LDL-C is <130 mg/dl or who is receiving a statin or other lipid-lowering therapy, per patient **17. Patient whose most recent LDL-C is <100 mg/dl or who is receiving a statin or other lipid-lowering therapy, per patient** **19. Percentage of patients whose most recent LDL-C is <130 mg/dl or who are receiving a statin or other lipid-lowering therapy, per patient population** **20. Percentage of patients whose most recent LDL-C is <100 mg/dl or who are receiving a statin or other lipid-lowering therapy, per patient population**	Because there is evidence that statins are beneficial for patients and effective in lowering LDL-C levels, this measure allows a provider to track those individual patients who have not yet achieved the target LDL-C goals but who are receiving recommended therapies. According to ADA, patients who do not achieve lipid goals with lifestyle modifications require pharmacological therapy. Lowering LDL-C with a statin is associated with a reduction in cardiovascular events. Type of evidence: A[8] The American College of Physicians (ACP) recommends that lipid-lowering therapy should be used for secondary prevention of cardiovascular mortality and morbidity for all patients with known coronary artery disease and type 2 diabetes. Statins should be used for primary prevention against macrovascular complications in patients with type 2 diabetes and other cardiovascular risk factors. Once lipid-lowering therapy is initiated, patients with type 2 diabetes mellitus should be taking at least moderate doses of a statin.[12] According to AGS, older persons with diabetes are likely to benefit greatly from cardiovascular risk reduction, therefore monitor and treat hypertension and dyslipidemias.[7]

Measure	Clinical Rationale and Associated Guidelines
URINE PROTEIN SCREENING **Diabetes is the leading cause of end-stage renal disease (ESRD).[13] In the United States, diabetic nephropathy accounts for about one-third of all ESRD cases. The earliest clinical evidence of nephropathy is the appearance of low, but abnormal, levels of albumin (protein) in the urine, referred to as microalbuminuria. Early detection and treatment may prevent or slow the progression of diabetic nephropathy.[14]**	
6. Percentage of patients with at least one test for microalbumin during the measurement year, or who had evidence of medical attention for existing nephropathy (diagnosis of nephropathy or documentation of microalbuminuria or albuminuria) **22. Any test for microalbuminuria received, per patient** **23. If no urinalysis OR urinalysis with negative or trace urine protein, a test for microalbumin was received, per patient** **24. Percentage of patients who received any test for microalbuminuria, per patient population** **25. Percentage of patients with no urinalysis OR urinalysis with negative or trace urine protein who received a test for microalbumin, per patient population**	AACE/ACE recommends that the initial assessment should include a urinalysis test for microalbuminuria and creatinine clearance. The renal complication module should be performed annually and should include a test for microalbuminuria and creatinine clearance.[4] ADA recommends that a test for the presence of microalbumin be performed at diagnosis in patients with type 2 diabetes. Microalbuminuria rarely occurs with short duration of type 1 diabetes; therefore, screening for individuals with type 1 diabetes should begin after five years' disease duration. Type of evidence: E[14,6] However, some evidence suggests that the prepubertal duration of diabetes may be important in the development of microvascular complications; therefore, clinical judgment should be exercised when individualizing these recommendations. Because of the difficulty in precise dating of the onset of type 2 diabetes, such screening should begin at the time of diagnosis. After the initial screening and in the absence of previously demonstrated microalbuminuria, a test for the presence of microalbumin should be performed annually.[14] Screening for microalbuminuria can be performed by three methods: 1) measurement of the albumin-to-creatinine ratio in a random spot collection; 2) 24-hour collection with creatinine, allowing the simultaneous measurement of creatinine clearance; and 3) timed (e.g., four-hour or overnight) collection—the analysis of a spot sample for the albumin-to-creatinine ratio is strongly recommended. The role of annual microalbuminuria assessment is less clear after diagnosis of microalbuminuria and institution of angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) therapy and blood pressure control. Many experts recommend continued surveillance to assess both response to therapy and progression of disease. The National Kidney Foundation (NKF) recommends that individuals at increased risk, but found not to have chronic kidney disease, should be advised to follow a program of risk factor reduction, if appropriate, and undergo repeat periodic evaluation.[15]

Measure	Clinical Rationale and Associated Guidelines
EYE EXAMINATION **Retinopathy poses a serious threat to vision. The prevalence of retinopathy is strongly related to the duration of diabetes. Treatment modalities exist that can prevent or delay diabetic retinopathy.[16]**	
7. Percentage of patients who received a dilated eye exam or seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos during the reporting year, or during the prior year, if patient is at low risk* for retinopathy ******Patient is considered low risk if the following criterion is met: has no evidence of retinopathy in the prior year* **26. Dilated retinal eye exam performed by an ophthalmologist or optometrist, per patient** **27. Seven standard field stereoscopic photos with interpretation performed by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos, per patient** **28. Percentage of patients receiving a dilated retinal eye exam by an ophthalmologist or optometrist, per patient population** **29. Percentage of patients receiving seven standard field stereoscopic photos with interpretation by an ophthalmologist or optometrist or imaging validated to match diagnosis from these photos, per patient population**	The low-risk criteria have been revised. Two criteria have been deleted: 1) patient not taking insulin and 2) patient has an A1c <8.0%. The Alliance believes that it is appropriate to limit the low-risk criteria for annual eye examinations only to those patients who had no evidence of retinopathy in the prior year. The measures for quality improvement and public reporting have been revised to further define which funduscopic photo test should be performed. In addition, an imaging system that has been validated to match the diagnosis from the photos is an acceptable alternative.[17,18,19,20] Ophthalmologists and optometrists should provide a report back to the provider after each eye exam or funduscopic imaging. The eye report should include the level of diabetic retinopathy, the next recommended follow-up evaluation, and the specific medical eye management plan. AACE/ACE, ADA, and the American Academy of Ophthalmology (AAO) recommend that a dilated eye examination be performed on patients with diabetes during an initial assessment and at least annually thereafter.[4,16,21] AACE/ACE recommends that the annual eye examination be performed as part of a retinal module. The module includes a test of visual acuity (Snellen chart); funduscopic examination and intraocular pressure test. AACE/ACE recommends that diabetic patients should be under the care of an ophthalmologist experienced in the management of diabetic retinopathy. AACE/ACE further believes that a dilated eye exam should be done only by an MD/DO.[4] ADA recommends that patients with type 1 diabetes have an initial dilated and comprehensive eye examination by an ophthalmologist or optometrist within three to five years after the onset of diabetes. In general, evaluation for diabetic eye disease is not necessary before 10 years of age. However, some evidence suggests that the prepubertal duration of diabetes may be important in the development of microvascular complications; therefore, clinical judgment should be used when applying these recommendations to individual patients. Type of evidence: B[6,16] Patients with type 2 diabetes should have an initial dilated and comprehensive eye examination by an ophthalmologist or optometrist shortly after diabetes diagnosis. Type of evidence: B[6,16] Subsequent examinations for type 1 and type 2 diabetic patients should be repeated annually by an ophthalmologist or optometrist who is knowledgeable and experienced in diagnosing the presence of diabetic retinopathy and is aware of its management. Examination will be required more frequently if retinopathy is progressing. This follow-up interval is recommended, recognizing that there are limited data addressing this issue. Type of evidence: B[6,16] Seven standard field stereoscopic 30° fundus photography is an accepted method for examining diabetic retinopathy.[16] AAO recommends that diabetic patients should be under the care of an ophthalmologist experienced in the management of diabetic retinopathy. Ophthalmologists with specialized knowledge and experience in managing the disease are best able to detect and treat serious disease. Stereoscopic photographs offer an advantage over non-stereoscopic photographs, and the traditional "seven stereo fields" provide the most complete coverage.[21]

Measure	Clinical Rationale and Associated Guidelines
EYE EXAMINATION (continued) **Retinopathy poses a serious threat to vision. The prevalence of retinopathy is strongly related to the duration of diabetes. Treatment modalities exist that can prevent or delay diabetic retinopathy.[16]**	
	AGS recommends that dilated eye examinations be performed every two years at a minimum, and more often if there are additional risk factors for diabetic eye disease or evidence of age-related eye disease.[7] The American Optometric Association recommends eye examinations to determine the level of diabetic retinopathy as follows (individual situations and level of eye disease may suggest more frequent eye examinations):[4] ■ patients age 29 years or younger (generally type 1 diabetes): within three to five years after diagnosis of diabetes once a person is age 10 years or older, and annually thereafter ■ patients age 30 years or older (generally type 2 diabetes): at the time of diagnosis, and annually thereafter ■ pregnancy in pre-existing diabetes: prior to conception and during the first trimester, with follow-up evaluation during pregnancy based on findings of the first trimester examination and six to eight weeks postpartum.[22]
FOOT EXAMINATION **Persons with diabetes are at increased risk for foot ulcers and amputations. Annual, thorough foot examinations and management of risk factors can prevent or delay adverse outcomes.[23]**	
8. Percentage of eligible patients receiving at least one foot exam, defined in any manner **30. At least one complete foot exam received (visual inspection, sensory exam with monofilament, and pulse exam), per patient** **31. Percentage of eligible patients receiving at least one complete foot exam (visual inspection, sensory exam with monofilament, and pulse exam), per patient population**	AACE/ACE and ADA recommend that a foot examination (visual inspection, sensory exam, and pulse exam) be performed during an initial assessment.[4,23] AACE/ACE recommends that a foot examination be a part of every follow-up assessment visit, which should occur quarterly. ADA recommends that all individuals with diabetes should receive an annual foot examination to identify high-risk foot conditions. Type of evidence: E[6] This examination should include assessment of protective sensation, foot structure and biomechanics, vascular status, and skin integrity.[23] Perform a visual inspection of the patient's feet at each routine visit. Type of evidence E[6,23] The foot examination can be accomplished in a primary care setting and should include the use of a Semmes-Weinstein monofilament, tuning fork, palpation, and a visual examination. Type of evidence: B[6,23] ADA recommends that people with one or more high-risk foot conditions should be evaluated more frequently for the development of additional risk factors. People with neuropathy should have a visual inspection of their feet at every contact with a healthcare professional.[23]

Measure	Clinical Rationale and Associated Guidelines
BLOOD PRESSURE MANAGEMENT **Intensive control of blood pressure in patients with diabetes reduces diabetes complications, diabetes-related deaths, strokes, heart failure, and microvascular complications.[24]**	
9. Percentage of patients with most recent blood pressure <140/80 mm Hg **32. Distribution of most recent blood pressure values by range, per patient population** **Systolic (mm Hg): <120, 120-129, 130-139, 140-149, 150-159, 160-169, 170-179, ≥180, undocumented** **Diastolic (mm Hg): <75, 75-79, 80-89, 90-99, 100-109, ≥110, undocumented**	The diastolic value was reduced from 90 mm Hg to 80 mm Hg. The systolic value is unchanged from 140 mm Hg for two reasons. First, because the measure's intended purpose is public reporting, the Alliance has chosen to keep the systolic value where the evidence remains strongest (i.e., based on randomized control trials). Second, there are many valid reasons why an individual patient may not achieve or where it would not be safe to attempt a target systolic <130 mm Hg. Because this measure is not yet able to account for case mix, the Alliance believes it is not appropriate to have as an accountability measure a blood pressure <130/80 mm Hg. Measures are *not* clinical recommendations. Measures are derived from clinical recommendations and must account for differences in individual patient conditions and preferences, feasibility of data collection, actionability by user, compliance, case mix, etc. In particular, the Alliance believes that publicly reported measures of patient outcomes that are not reasonably within the control of the provider must be appropriately adjusted in order to accurately reflect the provider's performance. Failing to adequately adjust for these variables may yield misleading results and unfairly represent providers serving patients with greater clinical needs. Due to these issues, the level of performance used in this measure is **not** identical to the ideal clinical goals recommended in professional practice guidelines, although providers should aim to achieve the highest levels of quality and reach established clinical goals, as appropriate. ACP recommends that clinicians aim for a target blood pressure of no more than 135/80 mm Hg for their patients with diabetes. Thiazide diuretics or ACE inhibitors can be used as first-line agents for blood pressure control in most patients with diabetes.[25] ADA recommends that patients with diabetes should be treated to a diastolic blood pressure <80 mm Hg. Type of evidence: A[6,26] Patients with diabetes should be treated to a systolic blood pressure of <130 mm Hg. Type of evidence: B[6,26] All patients with diabetes and hypertension should be treated with a regimen that includes either an ACE inhibitor or an ARB. If one class is not tolerated, the other should be substituted. If needed to achieve blood pressure targets, a thiazide diuretic should be added. Type of evidence: E[6,26] Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure VII (JNC VII)[27] recommends that in patients with hypertension and diabetes or renal disease, the blood pressure goal is <130/80 mmHg.
32. Most recent systolic and diastolic blood pressure reading, per patient	AACE/ACE recommends that a blood pressure determination during the initial evaluation, including orthostatic evaluation, be included in the initial and every interim physical examination.[6] ADA recommends that blood pressure be measured at every routine diabetes visit. Patients found to have systolic blood pressure ≥130 mmHg or diastolic ≥80 mmHg should have blood pressure confirmed on a separate day. Orthostatic measurement of blood pressure should be performed to assess for the presence of autonomic neuropathy. Type of evidence: E[6,26] JNC VII[27] recommends that measurement of blood pressure in the standing position is indicated periodically, especially in those at risk for postural hypotension. At least two measurements should be made and the average recorded. After blood pressure is at goal and stable, follow-up visits can usually be at three- to six-month intervals. Comorbidities such as heart failure, associated diseases such as diabetes, and the need for laboratory tests influence the frequency of visits. NKF recommends that all individuals should be evaluated during health encounters to determine whether they are at increased risk of having or of developing chronic kidney disease. This evaluation of risk factors should include blood pressure measurement.[15]

Measure	Clinical Rationale and Associated Guidelines
ASPIRIN USE **Daily low-dose aspirin therapy is important for both primary and secondary prevention of cerebral and cardiac events.[4]** **Aspirin has been used as a primary and secondary therapy to prevent cardiovascular events in diabetic individuals.[5]**	
34. Patient receiving aspirin therapy (dose ≥75 mg), per patient **35. Percentage of patients receiving aspirin therapy (dose ≥75 mg), per patient population**	The Alliance believes this measure remains appropriate only for quality improvement purposes because: 1) The data needed for this measure are often not readily available from claims data. 2) Abstraction from the medical record cannot be considered reliable for this aspect of care in part because this drug is available over the counter and often is not recorded. AACE/ACE recommends that optimal care of the diabetic patient include the use of antiplatelet therapy for prevention of vascular events. Prevention of vascular events by the antiplatelet effect of daily low-dose aspirin (as low as 30mg/day) has been well established. Daily low-dose aspirin therapy is important for both primary and secondary prevention of cerebral and cardiac events.[4] ADA recommends aspirin therapy as a secondary prevention strategy in diabetic men and women who have evidence of large vessel disease. This includes diabetic men and women with a history of myocardial infarction, vascular bypass procedure, stroke or transient ischemic attack, peripheral vascular disease, claudication, and/or angina.[28] Consider beginning aspirin therapy (75-325 mg/day) for primary prevention in patients ≥40 years of age with diabetes and one or more other cardiovascular risk factors. Type of evidence: A[5,6] Use aspirin therapy (75-325mg/day) in all adult patients with diabetes and macrovascular disease. Type of evidence: A[5,6,28] Do not use aspirin in patients <21 years of age because of the increased risk of Reye's syndrome. Type of evidence: A[6,28] People with aspirin allergy, bleeding tendency, anticoagulant therapy, recent gastrointestinal bleeding, and clinically active hepatic disease are not candidates for aspirin therapy.[28] ADA recommends aspirin therapy as a primary prevention in high-risk men and women with type 1 or type 2 diabetes. This includes family history of coronary heart disease, cigarette smoking, hypertension, obesity (>120% desirable weight), BMI >27.3kg/m^2 in women, >27.8kg/m^2 in men, albuminuria (micro or macro), lipids: cholesterol >200mg.dl, LDL ≥100m.dl, HDL <45mg/dl in men and <55 in women, age >30 years.[28]

Measure	Clinical Rationale and Associated Guidelines
COMPLICATION-RELATED ADMISSIONS—COMMUNITY LEVEL **Patients with diabetes may be hospitalized for diabetic complications if their conditions are not adequately monitored or if they do not receive the patient education needed for appropriate self-management.[29]**	
36. Admissions for uncontrolled diabetes or short-term complications per 100,000 population	Short-term diabetic emergencies arise from the imbalance of glucose and insulin, which can result from deviations in proper care, misadministration of insulin, or failure to follow a proper diet. High-quality outpatient management of patients with diabetes has been shown to lead to reductions in almost all types of serious avoidable hospitalizations. However, tight control may be associated with more episodes of hypoglycemia, which leads to more admissions. Although risk adjustment with age and sex does not impact the relative or absolute performance of areas, this indicator should be risk adjusted. Some areas may have higher rates of diabetes as a result of racial composition and systematic differences in other risk factors. Areas with high rates of diabetic emergencies may want to examine education practices, access to care, and other potential causes of non-compliance when interpreting this indicator. Also, areas may consider examining the rates of hyperglycemic versus hypoglycemic events when interpreting this indicator. Studies of precipitating events of admission for diabetic emergencies often rely on self-report, which may be a biased measurement in and of itself. The results of one study showed that more than 60% of patients with known and treated diabetes had made an error in insulin administration or had omitted insulin.[30] In a potentially underserved population of urban African Americans, two-thirds of admissions were due to cessation of insulin therapy—over half of the time for financial or other difficulties obtaining insulin.[31] Bindman reported that an area's self-rated access to care report explained 46% of the variance in admissions for diabetes, although the analysis was not restricted to diabetic emergencies.[32] Weissman found that uninsured patients had more than twice the risk of admission for diabetic ketoacidosis and coma than privately insured patients.[33] Hospital admission for uncontrolled diabetes is a Prevention Quality Indicator that would be of most interest to comprehensive healthcare delivery systems. Healthy People 2010 has established a goal to reduce the hospitalization rate for uncontrolled diabetes in persons 18-64 years of age from 7.2 per 10,000 population to 5.4 per 10,000 population.[34] Combining this indicator with the short-term diabetes indicator will result in the Healthy People 2010 measure, except that this QI excludes transfers from another institution to reduce double counting of cases. As a result, the rate for the Agency for Healthcare Research and Quality QI may be minimally lower than the Healthy People 2010 indicator.
37. Admissions for diabetes long-term complications per 100,000 population	Long-term diabetes complications are thought to arise from sustained long-term poor control of diabetes. Intensive treatment programs have been shown to decrease the incidence of long-term complications in both type 1 and type 2 diabetes. It is unclear whether poor glycemic control arises from poor quality medical care, non-compliance of patients, lack of education, or access to care problems. Areas with high rates may wish to examine these factors when interpreting this indicator. Sociodemographic characteristics of the population, such as race, may bias the indicator, since Native Americans and Hispanics/Latinos have higher rates of diabetes and poorer glycemic control. The importance of these factors as they relate to admission rates is unknown. Risk adjustment for observable characteristics, such as racial composition of the population, is recommended. Several observational studies have linked improved glycemic control to substantially lower risks of developing complications in both type 1 and type 2 diabetes.[35] Given that appropriate adherence to therapy and consistent monitoring of glycemic control help to prevent complications, high-quality outpatient care should lower long-term complication rates. However, adherence to guidelines aimed at reducing complications (including eye and foot examinations and diabetic education) has been described as modest,[36] with only one-third of patients receiving all essential services.[37] Compliance of physicians and patients is essential to achieve good outcomes, and it seems likely that problems with both access to and quality of care, as well as patient compliance, may contribute to the occurrence of complications.

Measure	Clinical Rationale and Associated Guidelines
COMPLICATION-RELATED ADMISSIONS—COMMUNITY LEVEL (continued) **Patients with diabetes may be hospitalized for diabetic complications if their conditions are not adequately monitored or if they do not receive the patient education needed for appropriate self-management.[30]**	
38. Admissions for lower-extremity amputation among patients with diabetes per 100,000 population	Lower-extremity amputation (LEA) affects up to 15% of all patients with diabetes in their lifetimes.[38] A combination of factors may lead to this high rate of amputation, including minor trauma to the feet, which is caused by loss of sensation and may lead to gangrene.[39] Proper long-term glucose control, diabetes education, and foot care are some of the interventions that can reduce the incidence of infection, neuropathy, and microvascular diseases. Healthy People 2010 has set a goal of reducing the number of LEAs to 1.8 per 1,000 persons with diabetes.[34] Studies have shown that LEA varies by age and sex, and age-sex risk adjustment affects moderately the relative performance of areas. Race may bias the indicator, since the rates of diabetes and poor glycemic control are higher among Native Americans and Hispanics/Latinos. However, results must be interpreted with care when adjusting for race, because poor quality care may also vary systematically with racial composition. In the United States, diabetes is the leading cause of non-traumatic amputations (approximately 57,000/year).[40] Possible interventions include availability of foot clinics, wearing proper footwear, and proper care of feet and foot ulcers.[39] Several studies of intervention programs have noted a decrease in amputation risk. One recent study noted a one-year post-intervention decrease of 79% in amputations in a low-income African American population. Interventions included foot care education, assistance in finding properly fitting footwear, and prescription footwear.[41] One observational study found that patients who receive no outpatient diabetes education have a three-fold higher risk of amputation than those receiving care.[42]

References

1. U.K. Prospective Diabetes Study (UKPDS) Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet.* 1998;352:837-853.
2. Diabetes Control and Complications Trial Research Group. The absence of a glycemic threshold for the development of long-term complications: the perspective of the Diabetes Control and Complications Trial. *Diabetes.* 1996;45:1289-1298.
3. Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med.* 1993;329:977-986.
4. American Association of Clinical Endocrinologists and American College of Endocrinology (AACE/ACE). The American Association of Clinical Endocrinologists medical guidelines for the management of diabetes mellitus: the AACE system of intensive diabetes self-management—2002 update. *Endocr Pract.* 2002;8(1):40-82.
5. American Diabetes Association (ADA) Clinical Practice Recommendations 2004. Standards of medical care for patients with diabetes mellitus (position statement). *Diabetes Care*. 2004;27(suppl 1):15-35.
6. Level of evidence as defined in the ADA evidence grading system for clinical practice recommendations, available at www.care.diabetesjournals.org/cgi/content/full/28/suppl_1/s4/T1. Last accessed March 2006.
7. California Healthcare Foundation/American Geriatrics Society. Improving care of elders with diabetes: guidelines for improving the care of the older person with diabetes mellitus. *J Am Geriatr Soc.* 2003;51:S265-S280. Available at www.americangeriatrics.org/education/diabetes_executive_summary.shtml. Accessed September 2004.
8. ADA Clinical Practice Recommendations 2004. Dyslipidemia management in adults with diabetes (position statement). *Diabetes Care.* 2004;27(suppl 1):68-71.
9. AACE/ACE. The American Association of Clinical Endocrinologists medical guidelines for clinical practice for the diagnosis and treatment of dyslipidemia and prevention of atherogenesis. 2002 amended version. *Endocr Pract.* 2000;6(2):162-213.
10. National Cholesterol Education Program (NCEP). *Third Report of the National Cholesterol Education Program (NCEP) on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel lll). Final Report.* National Heart, Lung, and Blood Institute, National Institutes of Health (NHLBI, NIH). NIH Publication No. 02-5215; September 2002.
11. NCEP. *Third Report of the National Cholesterol Education Program (NCEP) on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel lll).* Final Report. NHLBI, NIH. NIH Publication No. 02-5215; September 2002.
12. American College of Physicians (ACP). Clinical practice guidelines, lipid control in the management of type 2 diabetes mellitus. *Ann Intern Med.* 2004:140:644-650.
13. *U.S. Renal Data Systems 1999 Annual Data Report.* U.S. Department of Health and Human Services (DHHS), National Institute of Diabetes and Digestive and Kidney Diseases, NIH; 1999.
14. ADA Clinical Practice Recommendations 2004. Nephropathy in diabetes (position statement). *Diabetes Care.* 2004;27(suppl 1):79-83.
15. National Kidney Foundation. *K/DOQI Clinical Practice Guidelines for Chronic Kidney Disease: Evaluation, Classification, and Stratification.* Available at www.kidney.org/professionals/doqi/guidelineindex.cfm. Last accessed February 2003.
16. ADA Clinical Practice Recommendations 2004. Retinopathy in diabetes (position statement). *Diabetes Care.* 2004;27(suppl 1):84-87.
17. Bursell SE, Cavallerano JD, Cavallerano AA, et al. Stereo nonmydriatic digital-video color retinal imaging compared with Early Treatment Diabetic Retinopathy Study seven standard field 35-mm stereo color photos for determining level of diabetic retinopathy. O*phthalmology.* 2001;108:572-585.
18. Cavallerano AA, Cavallerano JD, Katalinic P, et al. Use of Joslin Vision Network digital-video nonmydriatic retinal imaging to assess diabetic retinopathy in a clinical program. *Retina.* 2003;23:215-223.
19. Fransen SR, Leonard-Martin TC, Feuer WJ, et al. Clinical evaluation of patients with diabetic retinopathy: accuracy of the Inoveon diabetic retinopathy-3DT system. *Ophthalmology.* 2002;109:595-601.
20. Zeimer R, Zou S, Meeder T, et al. A fundus camera dedicated to the screening of diabetic retinopathy in the primary-care physician's office. *Invest Ophthalmol Vis Sci.* 2002;43:1581-1587.
21. American Academy of Ophthalmology Preferred Practice Pattern on Diabetic Retinopathy, 1998, and Hammond CJ, Shackleton J, Flanagan DW, et al. Comparison between an ophthalmic optician and ophthalmologist in screening for diabetic retinopathy. *Eye.* 1996;10:107-112.

22. American Optometric Association (AOA). *Clinical Practice Guideline on Care of the Patient with Diabetes Mellitus.* 3rd Revision. St. Louis, MO: AOA; 2002.

23. ADA Clinical Practice Recommendations 2004. Preventive foot care in diabetes (position statement). *Diabetes Care.* 2004;27(suppl 1):63-64.

24. UK Prospective Diabetes Study Group. Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38 [published erratum appears in *BMJ*. 1999;318:29]. *BMJ*. 1998;317:703-713.

25. ACP. The evidence base for tight blood pressure control in the management of type 2 diabetes mellitus. *Ann Intern Med.* 2003;138:S87-S92.

26. ADA Clinical Practice Recommendations 2004. Hypertension management in adults with diabetes (position statement). *Diabetes Care.* 2004;27(suppl 1):65-67.

27. *The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure* (JNC VII). NIH Publication No. 04-5230; August 2004.

28. ADA Clinical Practice Recommendations 2004. Aspirin therapy in diabetes (position statement). *Diabetes Care.* 2004;27(suppl 1):72-73.

29. *AHRQ Quality Indicators – Guide to Prevention Quality Indicators: Hospital Admission for Ambulatory Care Sensitive Conditions.* Rockville, MD: AHRQ. Revision 4 (November 24, 2004). AHRQ Pub. No. 02-R0203. Available at www.qualityindicators.ahrq.gov. Last accessed May 2005.

30. Bagg W, Sathu A, Streat S, et al. Diabetic ketoacidosis in adults at Auckland Hospital, 1988-1996. *Aust N Z J Med.* 1998;28(5):604-608.

31. Musey VC, Lee JK, Crawford R, et al. Diabetes in urban African-Americans. I. cessation of insulin therapy is the major precipitating cause of diabetic ketoacidosis. *Diabetes Care.* 1995;18(4):483-489.

32. Bindman AB, Grumbach K, Osmond D, et al. Preventable hospitalizations and access to health care. *JAMA.* 1995;274(4):305-311.

33. Weissman JS, Gatsonis C, Epstein AM. Rates of avoidable hospitalization by insurance status in Massachusetts and Maryland. *JAMA.* 1992;268(17):2388-2394.

34. Office of Disease Prevention and Health Promotion. DHHS. *Healthy People 2010.* Available at www.healthypeople.gov. Last accessed March 2006.

35. Gaster B, Hirsch IB. The effects of improved glycemic control on complications in type 2 diabetes. *Arch Intern Med.* 1998;158(2):134-140.

36. Zoorob RJ, Hagen MD. Guidelines on the care of diabetic nephropathy, retinopathy and foot disease. *Am Fam Physician.* 1997;56(8):2021-2028, 2033-2034.

37. Hiss RG. Barriers to care in non-insulin-dependent diabetes mellitus: the Michigan Experience. *Ann Intern Med.* 1996;124(1 Pt 2):146-148.

38. Mayfield JA, Reiber GE, Sanders LJ, et al. Preventive foot care in people with diabetes. *Diabetes Care.* 1998;21(12):2161-2177.

39. Pecoraro RE, Reiber BE, Burgess EM. Pathways to diabetic limb amputation: basis of prevention. *Diabetes Care.* 1990;13(5):513-521.

40. Centers for Disease Control and Prevention. *National Diabetes Fact Sheet: National Estimates and General Information on Diabetes in the United States.* Atlanta, GA: DHHS; 1999.

41. Patout CA, Jr., Birke JA, Horswell R, et al. Effectiveness of a comprehensive diabetes lower-extremity amputation prevention program in a predominantly low-income African-American population. *Diabetes Care.* 2000;23(9):1339-1342.

42. Reiber GE, Pecoraro RE, Koepsell TD. Risk factors for amputation in patients with diabetes mellitus: a case-control study. *Ann Intern Med.* 1992;117(2):97-105.

Appendix D
Maintenance Committee and Project Staff

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Appendix E
Commentary

In January 2005, the National Quality Forum (NQF) appointed the Adult Diabetes Care Consensus Standard Maintenance Committee (appendix D), whose purpose is to continually review the set of diabetes consensus standards to ensure that it is current and consistent with the best medical evidence.[1] The Committee's essential role is to make recommendations to NQF for the addition of new performance measures (or other consensus standards, as relevant), the modification of existing consensus standards, and/or the deletion of previously endorsed consensus standards.

The Maintenance Committee held its first conference call in February 2005 and recommended that a set of 57 public reporting and quality improvement measures developed by the National Diabetes Quality Improvement Alliance (the Alliance) and the Agency for Healthcare Research and Quality (AHRQ) should be reviewed by NQF Members and the public under the Consensus Development Process (CDP). A second call was held following the review period in order for the Committee to review and respond to comments received from NQF Members and the public during the review phase. One of the major issues raised during the comment period was whether NQF should continue to endorse measures designed only for internal quality improvement but that are not appropriate for public reporting purposes. The existing NQF-endorsed™ diabetes set represented the only NQF-endorsed consensus standards to date with measures endorsed only for internal quality improvement. In revisiting this issue during the

[1]The initial set of diabetes consensus standards endorsed in 2002 was considered under expedited consensus, based on the recommendation of the NQF Diabetes Measures Review Committee. After the initial measure set is endorsed, a Maintenance Committee replaces the Review Committee in reviewing and recommending updates to the set.

recent review period, some commenters noted that it presented what they felt was a conflict with their view of NQF's primary mission of focusing on standardized measures for accountability. Accordingly, they recommended that only measures suitable for public reporting be endorsed. Several other commenters also noted that the number of measures was too large, confusing, and burdensome, and they recommended that NQF pare the measure set down to the areas of highest priority.

The NQF Adult Diabetes Care Consensus Standards Maintenance Committee discussed the issues raised during the comment period at length. However, Committee members recommended that all 57 measures reviewed be voted upon by NQF Members. In contrast, the NQF Standardizing Measures of Ambulatory Care Steering Committee recommended advancing only measures for accountability, not quality-improvement-only measures.[2]

Based on careful consideration of Member/public comments, the Diabetes Maintenance Committee's discussion, and the discussions and the decisions of the NQF Standardizing Measures of Ambulatory Care Steering Committee, the revised draft report sent to NQF Members during the first round of voting for the updated diabetes consensus standards included the 10 public reporting measures and excluded the 47 measures limited to quality improvement and community-level monitoring. In advancing the proposed 2005 diabetes set update, NQF was mindful of the ambulatory care project and the need to integrate the two projects sooner, rather than later, as well as concerns raised during the review period. Also in response to these comments, NQF initiated an Ad Hoc Advisory Committee on Performance Measure Criteria for the purpose of broadly recommending whether NQF should endorse measures for various purposes (i.e., public reporting and internal quality improvement). This Committee would consider what criteria could be used to determine whether measures are suitable for a given purpose—for the diabetes project and for all other NQF projects.

NQF Members voted overwhelmingly to approve the 10 public reporting measures during the first round of voting. The Board of Directors endorsed 9 of those 10 measures, deferring measure #10 (smoking assessment) for reconsideration because it appeared to be redundant with other smoking cessation measures—which would also apply to adults with diabetes—that were being reviewed at the same time as part of the ambulatory care project.

With the support of Board members representing all four Member Councils, the Board also voted to forward an additional 37 quality improvement measures[3] to NQF Members for voting, in response to

[2] Although these ambulatory measures address the same setting of care as the diabetes set, NQF considered the diabetes measures under a separate process, since the diabetes set reflects an update of existing NQF-endorsed consensus standards. During Phase 3 of the NQF ambulatory care project, the initial set of ambulatory care measures will be expanded and refined, at which point the diabetes measures will merge with the other ambulatory care measures for review under a single process.

[3] Although 47 quality improvement measures were initially reviewed by NQF Members and recommended for voting, the measure developer requested that 10 of these measures be withheld from voting, citing the need for additional refinement and testing, leaving 37 quality improvement measures to be voted upon.

comments received during the first round of voting that additional measures were needed in order for providers and health plans to engage in quality improvement activities. These 37 measures and a revised recommendation describing the various purposes of the measures were sent to NQF Members for a first round of voting in June 2005; they were approved by only three of four Member Councils in the first round. After a second round of voting, three of four Member Councils approved all items; one Council had a tie vote for all items.

The NQF Board endorsed 29 of the 37 measures and the revised recommendation and deferred 8 of the internal quality improvement measures related to smoking cessation and influenza immunization due to redundancy and conflicts with the proposed measures being considered under NQF's ambulatory care project. Measures for these priority areas relevant to all patients, including adults with diabetes, will be addressed during a later phase of the ambulatory care project. The final set endorsed in the 2005 update contained 38 measures composed of 9 for public accountability, 26 for internal quality improvement, and 3 for community-level monitoring.

Other comments submitted during the review and voting periods are summarized below.

Alliance Measures Excluded from 2005 Update

Although the existing NQF-endorsed set of measures was identical to the Alliance's set of measures at the time of the NQF endorsement, the 2005 update to NQF's set excludes 19 Alliance measures for a few important reasons. The measure development entity, the American Medical Association (AMA), requested that 10 quality improvement measures be withdrawn from consideration after they had been reviewed by NQF Members and the public under the CDP, citing the need for additional refinements to the measures prior to NQF endorsement. The 10 Alliance-approved internal quality improvement measures withdrawn at the AMA's request were:

- Patient who is **not** on an angiotensin-converting enzyme (ACE) inhibitor or angiotensin-receptor blocker (ARB) and was screened for microalbuminuria, per patient.
- Patient who is on an ACE inhibitor or ARB and was screened for microalbuminuria, per patient.
- Percentage of patients who are on an ACE inhibitor or ARB and were screened for microalbuminuria, per patient population.
- Percentage of patients who are **not** on an ACE inhibitor or ARB and were screened for microalbuminuria, per patient population.
- Patient is receiving three or more antihypertensive medications, per patient.
- Percentage of patients who are receiving three or more antihypertensive medications, per patient population.

- Woman of child-bearing potential who received prepregnancy counseling with respect to diabetes care in preventing complications in the last two years, per patient.
- Woman of child-bearing potential who was counseled on family planning or is receiving contraception in the last two years, per patient.
- Percentage of women of child-bearing potential who received prepregnancy counseling with respect to diabetes care in preventing complications in the last two years, per patient population.
- Percentage of women of child-bearing potential who were counseled on family planning or are receiving contraception in the last two years, per patient population.

An additional nine Alliance-approved measures for public reporting and internal quality improvement were deferred by the NQF Board for consideration during a later phase of the ambulatory care project to avoid having several different measures in the same topic area addressing the same population. These measures were:

- Percent of patients who received an influenza immunization during the recommended calendar period, per patient population.
- Percent of patients who received an influenza immunization or refused influenza immunization during the recommended calendar period, per patient population.
- Influenza immunization status, per patient.
- Percentage of patients whose smoking status was ascertained and documented annually, per patient.
- Patient assessed for smoking status, per patient.
- Patient identified as a smoker was recommended or offered counseling or pharmacologic therapy, per patient.
- Percentage of patients assessed for smoking status, per patient population.
- Percentage of patients who are smokers, per patient population.
- Percentage of smokers who were recommended or offered an intervention for smoking cessation, per patient population.

Burden and Purpose of Endorsed Measures

A substantial number of commenters asserted that the burden of collecting, analyzing, and reporting data for the measures was too high. Commenters also questioned whether it was appropriate for NQF to endorse measures designed only for internal quality improvement, given their view that the primary mission of NQF is to promote external accountability and considering that no other NQF-endorsed consensus standards have been excluded from this purpose. Accordingly, they recommended that only measures suitable for public reporting should be pursued as consensus standards.

Committee members noted that the large number of measures has become an issue as the number of NQF-endorsed measures increases, but several individuals stated that the data collection burden should be the same even if only the public reporting measures are collected, since the same data

elements will need to be collected and it is the analysis/reporting strategy that differs. Committee members recommended that NQF forward all 57 quality improvement and public reporting measures to NQF Members for voting in the CDP, instead of only the public reporting measures, for a number of additional reasons. These include encouraging providers to engage in more comprehensive quality improvement than would be possible with the limited information in the public reporting measure set and allowing others more flexibility in picking which measures are best suited for their needs. Committee members noted that providers would not be expected to use all measures, and that additional guidance should be developed to describe how the quality improvement measures should be used.

Repetition of Measures

Commenters noted that many measures appear to be redundant—for example, the same measure appears in the public reporting and quality improvement-only sets. They also noted the use of identical measures with only "per patient" and "per patient population" distinctions. Committee members responded that the public reporting set is more parsimonious and that confusion may be resulting from the format of the table containing the measures; they suggested that the table should be modified to address these comments.

Designed Use

Some commenters called for more consideration involving broader uses of the measures, beyond internal quality improvement for providers/health plans, for example. A few individuals also noted that the public reporting measures could also be used to drive internal quality improvement efforts. Committee members responded that the measures' stated purposes are based on whether they have been validated for such use—that is, because the AHRQ community-level measures were not validated for use in health plans, they should not be used at the health plan level.

Some commenters also questioned why measures that appeared to be appropriate for public reporting were restricted for use in the quality improvement set (e.g., influenza immunization). Committee members commented that the public reporting measures, which were developed/maintained by the National Committee for Quality Assurance (NCQA), are designed around electronic data collection to ensure greater feasibility and to ease implementation. Measures that could be useful in public reporting, but that had lower feasibility due to data collection burden, were limited to the quality improvement-only set.

Data Analysis

Questions were raised about how to analyze data, given that a standardized approach to sampling, trend analysis, and reporting period is needed for reliable and valid comparisons across providers. The Committee felt that the data analysis

should be statistically sound and standardized within a specific initiative or use (e.g., for HEDIS® health plan analysis), but that this strategy will differ based on the use of the measures. It suggested that greater specificity should not be added because it would limit the measures' adaptability and use. Appendix B of this report was revised to reflect the Committee's position and provide additional guidance around how data analysis should be conducted. This is an implementation issue that merits greater examination and that also will be examined in the context of the full ambulatory care set.

Guideline Versus Public Reporting Measure Discrepancies

Numerous commenters noted that the public reporting measures do not reflect ideal levels of care, and they recommended additional language that would more clearly convey the rationale and distinction between clinical guidelines and performance measures (e.g., due to lack of case-mix adjustment). Other commenters stated that more aggressive measurement targets were needed to motivate providers to reach ideal treatment levels and that public reporting measures should mirror clinical guidelines in order to promote higher-quality care. The Committee recommended amending the report text to emphasize the distinction; Committee members also noted that the Alliance is working to develop measures that can adequately case mix for use in public reporting, particularly for A1c levels.

Measure Modifications/ Specifications

A number of specific changes were proposed to existing measures by commenters. As with other sets, the proposed specification changes will be forwarded to the Alliance, NCQA, AMA, and AHRQ. Those comments calling for clarification but no changes to the actual specifications were addressed in the report and relevant appendixes. Of note, Committee members also commented that a number of proposed changes would make data very difficult or impossible to reliably collect—for example, whether patients had type 1 or 2 diabetes, or juvenile-onset diabetes; whether continuous care had been provided for at least six months; and whether patients were terminally ill or had other major comorbidities for exclusion from the measures.

Deleted Measurement Areas

Some commenters noted that the utilization measures proposed for deletion (e.g., office visits, number of lipid profiles) may be useful to providers for internal quality improvement and assessment of utilization and adequacy of follow-up efforts, and they should not be deleted. Committee members responded that the utilization measures were deleted because they were confusing, difficult to interpret and act upon, and overall not deemed to be of high priority or useful in supporting quality improvement efforts. Because all of the deleted utilization measures were designed for internal quality improvement only, however, no action was necessary.

New Measurement Areas

Commenters suggested a variety of additional measurement areas for addition to the set, such as self-management, obesity, prediabetes prevention and management, care of hospitalized patients, and cardiovascular disease risk management. Committee members recommended forwarding these comments to the Alliance for consideration in its future measure development work. Some individuals noted that the Alliance has discussed the feasibility of adding measures in other areas such as those that were recommended.

Appendix F
Abbreviations

AACE	American Association of Clinical Endocrinologists
AAO	American Academy of Ophthalmology
ACE	American College of Endocrinology
ACE inhibitor	Angiotensin-converting enzyme inhibitor
ACP	American College of Physicians
ADA	American Diabetes Association
AGS	American Geriatrics Society
AHRQ	Agency for Healthcare Research and Quality
AMA	American Medical Association
ARB	Angiotensin receptor blocker
CDP	Consensus Development Process
CHD	Coronary heart disease
CMS	Centers for Medicare and Medicaid Services
DQIP	Diabetes Quality Improvement Project
EHRS	Electronic Health Record System
EPC	Evidence-based Practice Center
ESRD	End-stage renal disease
HDL-C	High-density lipoprotein cholesterol
JCAHO	Joint Commission on Accreditation of Healthcare Organizations
JNC VII	Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (seventh report)
LDL-C	Low-density lipoprotein cholesterol
LEA	Lower-extremity amputation
NCEP	National Cholesterol Education Program
NCQA	National Committee for Quality Assurance
NKF	National Kidney Foundation
NQF	National Quality Forum
PQIs	Prevention Quality Indicators

Appendix G
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Consumers' Checkbook
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American Managed Behavioral Healthcare Association
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American Society of Clinical Oncology
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America's Health Insurance Plans
Ascension Health
Association for Professionals in Infection Control and Epidemiology
Association of Professors of Medicine
Aurora Health Care
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* When voting under the NQF Consensus Development Process occurred for this report.

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Beverly Enterprises
BJC HealthCare
Blue Cross and Blue Shield Association
Bon Secours Health System
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Catholic Health Association of the United States
Catholic Healthcare Partners
Catholic Health Initiatives
Centura Health
Child Health Corporation of America
CHRISTUS Health
CIGNA Healthcare
College of American Pathologists
Connecticut Hospital Association
Council of Medical Specialty Societies
Detroit Medical Center
Empire BlueCross/BlueShield
Exempla Healthcare
Federation of American Hospitals
First Health
Florida Hospital Medical Center
Gentiva Health Services
Greater New York Hospital Association
Hackensack University Medical Center
HCA
Healthcare Leadership Council
HealthHelp
HealthPartners
Health Plus
Henry Ford Health System
Hoag Hospital
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Illinois Hospital Association
INTEGRIS Health
John Muir/Mount Diablo Health System
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KU Med at the University of Kansas Medical Center
Los Angeles County–Department of Health Services
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National Association Medical Staff Services
National Association of Chain Drug Stores
National Association of Children's Hospitals and Related Institutions
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National Hospice and Palliative Care Organization
National Rural Health Association
Nebraska Heart Hospitals
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Elias A. Zerhouni, MD
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[1] Chair through December 2005; Chair Emeritus since January 2006
[2] Appointed to the Board of Directors and named Chair-Elect in May 2005; became Chair in January 2006
[3] Through September 2005
[4] Since March 2006
[5] Through December 2005
[6] Since February 2005
[7] NQF President and CEO since February 2006; also was Liaison Member representing the Institute of Medicine through May 2005
[8] Since March 2006
[9] Through December 2004
[10] Through February 2005
[11] Through January 2005
[12] Since February 2006
[13] NQF President and CEO through November 2005
[14] Since August 2006
[15] Since February 2006
[16] Since March 2006
[17] Since January 2005
[18] October 2005 to August 2006
[19] Through October 2005
[20] Since January 2005
[21] Since October 2005
[22] Through December 2005
[23] Since August 2005
[24] October 2005 to June 2006
[25] Since April 2006

Appendix H
Consensus Development Process: Summary

The National Quality Forum (NQF), a voluntary consensus standards-setting organization, brings together diverse healthcare stakeholders to endorse performance measures and other standards to improve healthcare quality. Because of its broad stakeholder representation and formal Consensus Development Process (CDP), NQF-endorsed™ products have special legal standing as voluntary consensus standards. The primary participants in the NQF CDP are NQF member organizations, which include:

- consumer and patient groups;
- healthcare purchasers;
- healthcare providers, professionals, and health plans; and
- research and quality improvement organizations.

Any organization interested in healthcare quality measurement and improvement may apply to be a member of NQF. Membership information is available on the NQF web site, www.qualityforum.org.

Members of the public with particular expertise in a given topic also may be invited to participate in the early identification of draft consensus standards, either as technical advisors or as Steering Committee members. In addition, the NQF process explicitly recognizes a role for the general public to comment on proposed consensus standards and to appeal healthcare quality consensus standards endorsed by NQF. Information on NQF projects, including information on NQF meetings open to the public, is posted at www.qualityforum.org.

Each project NQF undertakes is guided by a Steering Committee (or Review Committee) composed of individuals from each of the four critical stakeholder perspectives. With the assistance of NQF staff and

technical advisory panels and with the ongoing input of NQF Members, a Steering Committee conducts an overall assessment of the state of the field in the particular topic area and recommends a set of draft measures, indicators, or practices for review, along with the rationale for proposing them. The proposed consensus standards are distributed for review and comment by NQF Members and non-members.

Following the comment period, a revised product is distributed to NQF Members for voting. The vote need not be unanimous, either within or across all Member Councils, for consensus to be achieved. If a majority of Members within each Council do not vote approval, staff attempts to reconcile differences among Members to maximize agreement, and a second round of voting is conducted. Proposed consensus standards that have undergone this process and that have been approved by all four Member Councils on the first ballot or by at least two Member Councils after the second round of voting are forwarded to the Board of Directors for consideration. All products must be endorsed by a vote of the NQF Board of Directors.

Affected parties may appeal voluntary consensus standards endorsed by the NQF Board of Directors. Once a set of voluntary consensus standards has been approved, the federal government may utilize it for standardization purposes in accordance with the provisions of the National Technology Transfer and Advancement Act of 1995 (P.L. 104-113) and the Office of Management and Budget Circular A-119. Consensus standards are updated as warranted.

For this report, the NQF CDP, version 1.7, was in effect. The complete process can be found at www.qualityforum.org.

The National Quality Forum (NQF) is a private, nonprofit, open membership, public benefit corporation whose mission is to improve the American healthcare system so that it can be counted on to provide safe, timely, compassionate, and accountable care using the best current knowledge. Established in 1999, the NQF is a unique public-private partnership having broad participation from all parts of the healthcare industry. As a voluntary consensus standards setting organization, the NQF seeks to develop a common vision for healthcare quality improvement, create a foundation for standardized healthcare performance data collection and reporting, and identify a national strategy for healthcare quality improvement. The NQF provides an equitable mechanism for addressing the disparate priorities of healthcare's many stakeholders.

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