



Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM <i>Implemented for Blue Cross Blue Shield of Illinois</i>	
Measure Title	GLYCOSYLATED HEMOGLOBIN (HBA1C) TEST FOR DIABETICS	
Disease State	Diabetes	Indicator Classification¹ Prevention
Strength of Recommendation²	A	
Clinical Intent	To ensure that all members with diabetes receive glycosylated hemoglobin tests at a clinically appropriate frequency.	
Physician Specialties	Family Practice, General Practice, Internal Medicine, Mixed Specialty	

Clinical Rationale

Disease Burden

- Diabetes is a chronic, serious disease that affects approximately 14.7 million Americans. This disease is the leading cause of new cases of blindness among adults aged 20-74, the leading cause of end-stage renal disease, and a major contributing cause of lower extremity amputations.[1]

Reason for Indicated Intervention or Treatment

- Screening for hemoglobin A1C levels and improved glycemic control for patients with diabetes is associated with a reduced risk of developing microvascular diabetic complications (eye, kidney, and nerve disease).[2-4]

Evidence supporting Intervention or Treatment

- Detection of elevated hemoglobin A1C affords the opportunity to provide patients with effective treatments to improve their glycemic control and decrease the risk of or delay the onset of diabetic vascular related complications. Prospective randomized clinical trials such as the Diabetes Control and Complications Trial and the United Kingdom Prospective Diabetes Study have demonstrated that improved glycemic control is associated with decreased rates of retinopathy, nephropathy, and neuropathy.[5-9]

Clinical Recommendations

- The American Diabetes Association, the American Association of Clinical Endocrinologists/American College of Endocrinology (AAACE/ACE), the American Board of Family Practice, the Centers for Disease Control and Prevention, and the Veterans Affairs Administration all recommend that glycosylated hemoglobin (Hgb A1C) be monitored. These organizations differ on the frequency with which this level should be checked and what the goal level should be.[4, 10-13]
- The ADA recommends doctors perform the A1C test at least two times a year in patients who are meeting treatment goals (and who have stable glycemic control), and perform the A1C test quarterly in patients whose therapy has changed or who are not meeting glycemic goals. Use of point-of-care testing for A1C allows for timely decisions on therapy changes, when needed.[14]

Source	Health Plan Employer Data and Information Set (HEDIS®) 2007 Technical Specification.
Denominator	Continuously enrolled members ages 18 - 75 years by the end of the measurement year who were identified as having diabetes during the measurement year or year prior.
Denominator Exclusion	Members in the denominator with a diagnosis of polycystic ovaries at any time in the member's history who did NOT receive a diagnosis of diabetes during the measurement year or year prior, or members diagnosed with gestational diabetes or steroid-induced diabetes during the measurement year or year prior.
Numerator	Members who received one glycosylated hemoglobin (HbA1c) test during the measurement year.
Interpretation of Score	High score implies better performance
Physician Attribution	Score all physicians (in the selected specialties) who saw the member during the measurement year
References	<ol style="list-style-type: none"> 1. CDC. <i>National Diabetes Surveillance System</i>. 2004 [cited 2004 November 17th]; Available from: http://www.cdc.gov/diabetes/statistics/prev/national/figpersons.htm 2. <i>Standards of medical care in diabetes</i>. Diabetes Care, 2004. 27 Suppl 1: p. S15-35. 3. Woolf, S.H., et al., <i>Controlling blood glucose levels in patients with type 2 diabetes mellitus. An evidence-based policy statement by the American Academy of Family Physicians and American Diabetes Association</i>. J Fam Pract, 2000. 49(5): p. 453-60. 4. Clark, M.J., Jr., J.J. Sterrett, and D.S. Carson, <i>Diabetes guidelines: a summary and comparison of the recommendations of the American Diabetes Association, Veterans Health Administration, and American Association of Clinical Endocrinologists</i>. Clin Ther, 2000. 22(8): p. 899-910; discussion 898. 5. <i>Retinopathy and nephropathy in patients with type 1 diabetes four years after a trial of intensive therapy. The Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications Research Group</i>. N Engl J Med, 2000. 342(6): p. 381-9. 6. Stratton, I.M., et al., <i>Association of glycaemia with macrovascular and microvascular complications of type 2 diabetes (UKPDS 35): prospective observational study</i>. Bmj, 2000. 321(7258): p. 405-12. 7. <i>Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). UK Prospective Diabetes Study (UKPDS) Group</i>. Lancet, 1998. 352(9131): p. 837-53. 8. <i>Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. UK Prospective Diabetes Study Group</i>. Bmj, 1998. 317(7160): p. 703-13. 9. <i>The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. The Diabetes Control and Complications Trial Research Group</i>. N Engl J Med, 1993. 329(14): p. 977-86. 10. Zoorob, R.J. and M.D. Hagen, <i>Guidelines on the care of diabetic nephropathy, retinopathy and foot disease</i>. Am Fam Physician, 1997. 56(8): p. 2021-8, 2033-4.

11. VHA. *Clinical Guidelines for Management of Patients with Diabetes Mellitus*. [cited 2005 December 14]; Version 1.0:[Available from: http://www.oqp.med.va.gov/cpg/DM/DM3_cpg/content/ModD/modD_fr.htm].
12. *The American Association of Clinical Endocrinologists Medical Guidelines for the Management of Diabetes Mellitus: the AACE system of intensive diabetes self-management--2000 update*. Endocr Pract, 2000. **6**(1): p. 43-84.
13. ADA, *Standards of Medical Care in Diabetes* Diabetes Care, 2006. **29** ((Supplement 1): S4).

¹ **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Diagnosis	Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g. evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain)
Effectiveness of Care	
Prevention	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).
Screening	Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g. pap smears; screening for elevated blood pressure).
Disease Management	Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g. cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).
Medication Monitoring	Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g. thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy)
Medication Adherence	Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g. adherence to lipid lowering medication).
Utilization	Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g. conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).

Strength of Recommendation Based on a Body of Evidence

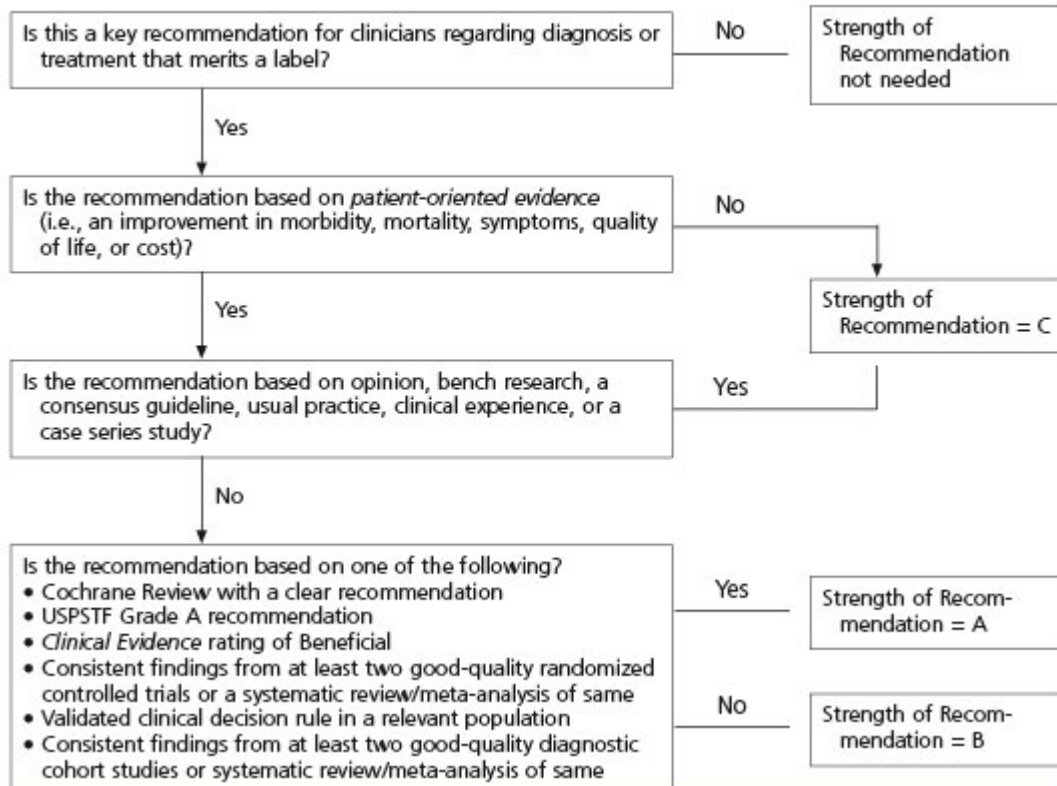


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)