

Diabetes Guideline

These clinical guidelines are designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients. They are not intended to replace a clinician’s judgment or to establish a protocol for all patients with a particular condition. A guideline will rarely establish the only approach to a problem.

GUIDELINE HISTORY and APPROVAL

ACTION	SEED GUIDELINE and/or MAIN INFORMATION & GROUP SOURCE(S)	DATE	ORGANIZATION
Adoption of Original Guideline	<ol style="list-style-type: none"> 1. International Diabetes Center (IDC), Staged Diabetes Management (SDM) guidelines of the Park Nicollet Medical Foundation 2. Staged Diabetes Management-A Systematic Approach by Maaze, Strock, Simonson, Bergenstal Etwiler, 2000. 	1999	Diabetes Clinical Guideline Team
Guideline Reviewed, Revised, and Approved	Same as Above.	September 20, 2000	Geisinger Health Plan/ Clinical Guideline Committee
Guideline Reviewed and Approved	Same as Above.	October 25, 2000	Geisinger Health Plan/ Quality Improvement Committee
Guideline Reviewed, Revised, and Approved	<ol style="list-style-type: none"> 1. American Diabetes Association’s 2002 Diabetes Clinical Practice Guidelines 2. International Diabetes Center (IDC), Staged Diabetes Management (SDM) guidelines of the Park Nicollet Medical Foundation 3. Staged Diabetes Management-A Systematic Approach by Maaze, Strock, Simonson, Bergenstal Etwiler, 2000. 	June 03, 2002	Geisinger Health Plan/ Clinical Guideline Committee
Guideline Reviewed, Revised, and Approved	<ol style="list-style-type: none"> 1. American Diabetes Association’s 2002 Diabetes Clinical Practice Guidelines 2. International Diabetes Center (IDC), Staged Diabetes Management (SDM) guidelines of the Park Nicollet Medical Foundation 3. Staged Diabetes Management-A Systematic Approach by Maaze, Strock, Simonson, Bergenstal Etwiler, 2000. 4. Pennsylvania Medical Society Medical Director’s Forum, Diabetes Care Workgroup, 2002. 	July 24, 2002	Geisinger Health Plan/ Quality Improvement Committee

	<ol style="list-style-type: none"> 1. American Diabetes Association’s 2002 Diabetes Clinical Practice Guidelines 2. International Diabetes Center (IDC), Staged Diabetes Management (SDM) guidelines of the Park Nicollet Medical Foundation 3. Staged Diabetes Management-A Systematic Approach by Maaze, Strock, Simonson, Bergenstal Etwiler, 2000. 4. National Diabetes Education Program (NDEP) at www.ndep.nih.gov/ a partnership of National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and the Center for Disease Control and Prevention (CDC) at www.cdc.gov/diabetes 5. DeFronzo, R.A. 1999. Pharmacologic Therapy for Type 2 diabetes mellitus. <i>Annals of Internal Medicine.</i> 131(4). 281-303. 6. Huang, E. S. et al. 2001. The effect of interventions to prevent cardiovascular disease in patients with Type 2 diabetes mellitus. <i>The American Journal of Medicine.</i> 111(8):633-642. 7. Vinik, A, Flemmer, M. 2002. Diabetes and Macrovascular Disease. <i>Journal of Diabetes and Its Complications.</i> 16: 235-245 8. Nathan, DM. 2002. Initial Management of Glycemia in Type 2 Diabetes Mellitus <i>NEJM</i> 347 (17):1342-1349 9. Pennsylvania Medical Society Medical Director’s Forum, Diabetes Care Workgroup, 2002. 	<p>November 20, 2002</p>	<p>Diabetes Clinical Guideline Team Meeting</p>
<p>Guideline Reviewed and Approved</p>	<p>Same as Above.</p>	<p>January 2, 2003</p>	<p>Geisinger Health Plan/ Clinical Guideline Committee</p>
<p>Guideline Reviewed and Approved</p>	<p>Same as Above.</p>	<p>January 22, 2003</p>	<p>Geisinger Health Plan/ Quality Improvement Committee</p>
<p>Guideline Reviewed, Revised, and Approved</p>	<p>American Diabetes Association (ADA) Summary of Revisions for the 2004 Clinical Practice Recommendations. <i>Diabetes Care.</i> Volume 27, Supplement 1, 3, January 2004.</p>	<p>June 3-28, 2004</p>	<p>Pennsylvania Medical Society Medical Directors Forum Workgroup 2004</p>

<p>Guideline Reviewed, Revised, and Approved</p>	<ol style="list-style-type: none"> 1. American Diabetes Association (ADA) Summary of Revisions for the 2004 Clinical Practice Recommendations. <u>Diabetes Care</u>. Volume 27, Supplement 1, Supplement 3, January 2004. 2. <u>Diabetes Care</u> 2003: Trends in Lipid Management in CAD Patients 3. <u>Diabetes Care</u> 2003: The Platelet in Diabetes. 4. <u>Diabetes Care</u> 2003: Integrating Medical Management with Diabetes Self-Management Education 5. <u>Diabetes Care</u> 2002: The Treatment of Hypertension in Adult Patients with Diabetes. 6. <u>Diabetes Care</u> 2003: A Pharmaceutical Intervention Article for Type 2 Diabetics. International Diabetes Center (IDC), Staged Diabetes Management (SDM) Guidelines of the Park Nicollet Medical Foundation. 7. Pennsylvania Medical Society Medical Directors Forum. Diabetes Care Workgroup 2004. 8. National Diabetes Education Program (NDEP). Guiding Principles for Diabetes Care for Providers, April 2004. National Institute of Health, National Institute of Diabetes and Digestive and Kidney Diseases and the Center for Disease Control and Prevention. 	<p>May 7-24, 2004 and June 28 - August 20, 2004</p>	<p>Geisinger Health Plan Diabetes Guideline Team</p>
<p>Guideline Reviewed and Approved</p>	<p>Same as Above.</p>	<p>May 3-5, 2004 and September 22, 2004</p>	<p>Geisinger Health Plan Pharmacy</p>
<p>Guideline Reviewed and Approved</p>	<p>Same as Above.</p>	<p>December 6, 2004</p>	<p>Geisinger Health Plan Medical Management Committee (MMC)</p>
<p>Guideline Reviewed and Approved</p>	<p>Same as Above.</p>	<p>December 9-13, 2004</p>	<p>Geisinger Health Plan Guideline Committee</p>
<p>Guideline Reviewed and Approved</p>	<p>Same as Above.</p>	<p>January 2005</p>	<p>Geisinger Health Plan/ Quality Improvement Committee</p>
<p>Guideline Reviewed and Approved</p>	<p>Same as Above</p> <ol style="list-style-type: none"> 1. Pennsylvania Medical Society Medical Directors Forum. Diabetes Care Workgroup 2006. 2. American Diabetes Association (ADA) Standards of Medical Care in Diabetes—2006 <u>Diabetes Care</u> 2006 29: S4-42 3. American Diabetes Association Diagnosis and Classification of Diabetes Mellitus <u>Diabetes Care</u> 2006 29: S43-48 4. Centers for Disease Control. National Diabetes Fact Sheet. United States, 2005 	<p>July 5 , 2006</p>	<p>Geisinger Health Plan Guideline Committee</p>

Guideline Reviewed, Revised, and Approved	Same as Above	July 5 -24 , 2006	Geisinger Health Plan Pharmacy
Guideline Reviewed and Approved	Same as Above	July 6, 2006	Geisinger Specialty Physician Input
Guideline Reviewed and Approved	Same as Above	Sept. 26 – Oct. 6 2006	Geisinger Health Plan Medical Directors
Guideline Reviewed and Approved	Same as Above	Nov 20, 2006	Geisinger Health Plan Medical Management Committee
Guideline Reviewed and Approved	Same as Above	Jan. 24, 2007	Geisinger Health Plan Quality Improvement Committee
Guideline Reviewed, Revised,	<ol style="list-style-type: none"> 1. Pennsylvania Medical Society Medical Directors Forum. Diabetes Care Workgroup 2008. 2. American Diabetes Association (ADA) Standards of Medical Care in Diabetes– 2008 <u>Diabetes Care</u> 2008 31 (S1): S12-54 3. American Diabetes Association (ADA) Diagnosis and Classification of Diabetes Mellitus <u>Diabetes Care</u> 2008 31(S1): S55-60 	May- Aug 2008	Geisinger Health Plan Guideline Committee
Guideline Reviewed and Approved	Same as above	July 2008	Geisinger Health Plan Pharmacy
Guideline Reviewed and Approved	Same as above	Nov 25-Dec 1, 2008	Geisinger Health Plan Medical Directors
Guideline Reviewed and Approved	Same as above	Dec.1, 2008	Geisinger Health Plan Medical Management Committee
Guideline Reviewed and Approved	Same as above	Jan. 28, 2009	Geisinger Health Plan Quality Improvement Committee
Guideline Reviewed, Revised	<p>American Diabetes Association (ADA) Standards of Medical Care in Diabetes– 2010 <u>Diabetes Care</u> 2010;33(Suppl 1):S11-S61.</p> <p>American Diabetes Association (ADA) Diagnosis and Classification of Diabetes Mellitus <u>Diabetes Care</u> 2010;33(Suppl 1):S62-S69.</p>	Oct 1,2010 – jan. 26, 2011	Geisinger Health Plan Guideline Committee
Guideline Reviewed and Approved	Same as above	Dec.20, 2010	Geisinger Health Plan Medical Management Committee
Guideline Reviewed and Approved	Same as above	Jan. 26, 2011	Geisinger Health Plan Quality Improvement Committee



Vice President, Chief Medical Officer
Geisinger Health Plan

OVERVIEW

Diabetes is a serious, costly disease that is on the rise. 23.6 million Americans (7.8 % of the population) have diabetes, and over 200,000 people die each year of related complications. In 2007, approximately 1.6 million new cases of diabetes were diagnosed in people aged 20 years and older. Diabetes can cause heart disease, stroke, blindness, kidney failure, leg and foot amputations, pregnancy complications, and deaths related to flu and pneumonia. Particularly at risk are the 5.7 million Americans who are unaware that they have the disease.

People with diabetes have an insulin deficiency or a decreased ability to use insulin, a hormone that allows glucose (sugar) to enter cells and be converted to energy. In uncontrolled diabetes, glucose and fats remain in the blood and, over time, causes significant microvascular, macrovascular, and neuropathic complications.

There are two main types of diabetes. Type 1 most often appears during childhood or adolescence. Type 2 affects 90%–95% of people with diabetes and most often appears after age 40. However, it is no longer considered an adult-only disease. It is now being found at younger ages and is even being diagnosed among children and teens. Type 2 diabetes is linked to obesity and physical inactivity—both of which can be modified to improve health.

Some women develop diabetes during pregnancy. Known as gestational diabetes, this condition affects 2%–5% of all pregnancies. Other, less common forms of diabetes result from genetic syndromes, surgery, drugs, malnutrition, infections, and other illnesses.

Now the sixth leading cause of death in America, diabetes has its greatest effects on the elderly and certain racial and ethnic groups. The risk of death among people with diabetes is about 2 times that of people without diabetes. One in five adults over age 65 have diabetes. Among adults aged 20 or older, African Americans and Hispanics are twice as likely as whites to have diabetes, and American Indians and Alaska Natives are 2.2 times more likely to have diabetes.

In 2007, the total direct and indirect costs of diabetes was estimated to be \$174 billion. The average health expenditures for a person with diabetes are approximately 2.3 times higher than they would be

without diabetes. However, the full burden of diabetes is hard to measure: death records often fail to reflect the role of diabetes, and the costs related to undiagnosed diabetes are unknown.

Better nutrition, physical activity, control of blood glucose levels, and access to services can delay the progression of diabetes. In fact, recent findings show that modest, consistent physical activity and a healthy diet can cut a person's risk for developing type 2 diabetes by nearly 60%.

Many Complications of Diabetes Can Be Prevented

Eye disease and blindness. Diabetes is the leading cause of new cases of blindness among adults aged 20-74 years. Each year, 12,000-24,000 people become blind because of diabetic eye disease. Screening and care could prevent up to 90% of diabetes-related blindness. However, only 60% of people with diabetes receive annual dilated eye exams.

Kidney disease. Diabetes is the leading cause of end stage renal disease, accounting for 44% of new cases. About 38,000 people with diabetes develop kidney failure each year, and over 100,000 are treated for this condition. Treatment to better control blood pressure and blood glucose levels could reduce diabetes-related kidney failure by about 50%.

Amputations. About 82,000 people have diabetes-related leg and foot amputations each year. Foot care programs that include regular examinations and patient education could prevent up to 85% of these amputations.

Cardiovascular disease. Heart disease and stroke cause about 65% of deaths among people with diabetes. About 73% of adults with diabetes have hypertension. These deaths could be reduced by 30-50% with improved care to control blood pressure, blood glucose, and lipid levels.

Pregnancy complications. About 18,000 women with preexisting diabetes deliver babies each year, and an estimated 135,000 expectant mothers are diagnosed with gestational diabetes. These women and their babies have an increased risk for serious complications. Screenings and diabetes care before and during pregnancy can reduce the risk for complications such as stillbirths, congenital malformations, and the need for cesarean sections.

Flu- and pneumonia-related deaths. Each year, 10,000-30,000 people with diabetes die of complications from flu or pneumonia. They are roughly three times more likely to die of these complications than people without diabetes. However, only 55% of people with diabetes get an annual flu shot. This overview is from the Centers for Disease Control website.

It can be seen at: <http://www.cdc.gov/diabetes/pubs/estimates05.htm#prev>

Other related Geisinger Health Plan Clinical Guidelines:

Diabetic patients are at increased risk for cardiovascular events related to high blood pressure and hyperlipidemia, therefore it is important to also use Geisinger Health Plan's Hypertension Guideline and Hyperlipidemia Guideline when managing patients with diabetes. These guidelines are also located at www.thehealthplan.com.

SEED GUIDELINE

The Diabetes guideline was developed from the following sources:

1. American Diabetes Association: Standards of Medical Care in Diabetes 2010 Diabetes Care 2010;33(S1): S11- S61
http://care.diabetesjournals.org/content/33/Supplement_1/S11.full.pdf+html
2. International Diabetes Center (IDC), Staged Diabetes Management (SDM) guidelines of the Park Nicollet Medical Foundation.
3. Pennsylvania Medical Society Medical Director's Forum. Diabetes Care Workgroup. 2008
4. Stirban, AO, Tschoepe D. Cardiovascular Complications in Diabetes – Targets and Interventions Diabetes Care 2008;31(Supp2):S215-S221.
5. National Diabetes Education Program (NDEP) at <http://www.ndep.nih.gov/> a partnership of National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and the Center for Disease Control and Prevention (CDC) at www.cdc.gov/diabetes.
6. Huang, E. S. et al. 2001. The effect of interventions to prevent cardiovascular disease in patients with Type 2 diabetes mellitus. The American Journal of Medicine. 111(8):633-642.
7. Vinik, A, Flemmer, M. 2002. Diabetes and Macrovascular Disease. Journal of Diabetes and Its Complications. 16: 235-245.
8. Nathan, DM. 2002. Initial Management of Glycemia in Type 2 Diabetes Mellitus NEJM 347 (17):1342-1349.
9. Massing, M.W. et al. 2003. Trends in lipid management among patients with coronary artery disease. Diabetes Care. 26(4): 991-997.
10. Colwell, J.A. and Nesto, R.W. 2003. The platelet in diabetes. Diabetes Care. 26(7): 2181-2188.
Polonsky, W.H. et al. 2003. Integrating medical management with diabetes self-management training. Diabetes Care. 26(11): 3048-3053.
11. Arauz-Pacheco, C. et al. 2002. The treatment of hypertension in adult patients with diabetes. Diabetes Care. 25(1): 134-147.
12. Schwartz, S. et al. 2003. Insulin 70-30 Mix Plus Metformin Versus Triple Oral Therapy in the Treatment of Type 2 Diabetes After Failure of Two Oral Drugs. Diabetes Care. 26(8): 2238-2243.
13. American Diabetes Association. *Medical Management of Type 1 Diabetes*. Alexandria, VA, American Diabetes Association, 2008
14. American Diabetes Association *Management of Type 2 Diabetes*. Alexandria, VA, American

Diabetes Association, 2008.

15. American Diabetes Association. *Intensive Diabetes Management*. Alexandria, VA, American Diabetes Association, 2009.

GOALS

1. Increase percent of members with glycosolated hemoglobin (A1C) of <7%.
2. Decrease frequency of the acute complications (i.e. ketoacidosis, hyperosmolar coma, severe hypoglycemia).
3. Decrease frequency of chronic complications of diabetes (i.e. retinopathy, nephropathy, vasculopathy, neuropathy).
4. LDL < 100 mg/dL.
5. Blood Pressure <130/80 mm Hg.
6. Regular assessment/treatment of coronary heart disease risk factors.
7. Annual monofilament foot examinations.
8. Annual dilated retinal exam by eye care specialist.
9. Annual influenza immunization.
10. Pneumococcal immunization.
11. Increase use of ACE inhibitors or ARB's for patients with microalbuminuria.
12. Increase use of aspirin therapy in men >50 yrs and women >60 yrs with at least one addition major risk factor for CV disease=

FAST FACTS

- ◆ For persons with diabetes, the following are recommended annually:
 1. Complete history and physical.
 2. Dilated eye exam.
 3. Foot exam with 10g, 5.07 monofilament.
 4. Lipid profile.
 5. Kidney screening (microalbumin or GFR if macroalbuminuria.)
 6. Influenza vaccine.
- ◆ For persons with diabetes, the following are recommended for each visit or 2-4 times/year:
 1. Weight.
 2. Blood pressure.

3. Review of management plan, including nutrition, physical activity and self-blood glucose monitoring results.
 4. Review of medications.
 5. Glycosolated hemoglobin (A1C).
 6. Review hypoglycemia and sick day management.
- ◆ To reduce the microvascular and macrovascular complications of diabetes, aggressive control of risk factors must be undertaken.
1. LDL <100 - If not at target, a statin should be started or titrated to achieve target. Diabetes is a cardiac risk-equivalent.
 2. B/P <130/80 - If not at target, use of ACE/ARB is recommended. Treatment with 2 or 3 antihypertensive agent is often necessary to achieve optimal control.
 3. Tobacco Cessation - If patient uses tobacco, strong emphasis should be placed on tobacco cessation. Refer to Care Coordination's Tobacco Cessation program at 1-800-883-6355.
 4. Weight Management/Physical Activity - Self-management education and counseling regarding nutrition management and physical activity should be part of every patient's treatment plan. Refer to CC Diabetes Care program for all members with diabetes.

Note: Pharmaceutical coverage is dependent upon individual pharmacy benefit design and certain drugs may require prior authorization. Providers are encouraged to review the GHP formulary at <http://www.thehealthplan.com>, or contact the GHP Pharmacy Department at 1-800-988-4861.

DIABETES CARE RECOMMENDATIONS

PREAMBLE: This document is a summary of the recommendations for diabetes care. Although manifestations of diabetes can vary from patient to patient, it was prepared with the intent to primarily assist physicians in treating patients with Type 2 Diabetes. As this disease requires a multidisciplinary approach, and in order to satisfy these disciplines, a general approach was favored. This is a collaborative and dynamic document that is largely based upon the most recent American Diabetes Association (ADA) recommendations (www.diabetes.org). The information provided in this document is the result of meetings held through the Pennsylvania Medical Society's (the Society) Medical Directors' Forum (the Forum). The Forum is a coalition of Society physician leadership and medical directors from managed care organizations.

Self-management education is key to successful diabetes management. Consider a referral to GHP's Care Coordination (CC) Diabetes Care Program. CC nurses will assist your patient in the management of diabetes with education and regular monitoring. Contact the CC office at 1-800-883-6355 to coordinate a referral to the appropriate CC nurse. CC business hours are Monday through Friday 8:00 am to 4:30 pm.

GOALS:

- Intensive control to achieve near-normal glycemia defined by a glyated hemoglobin (HbA1c) level < 7.0%⁶
- Achieve plasma glucose level 70 – 130 mg/dl before meals and < 180 mg/dl after meals

- Prevent acute complications (i.e. ketoacidosis, hyperosmolar coma, hypoglycemia)
- Prevent major organ disease (i.e. retinopathy, nephropathy, vasculopathy, neuropathy)
- Lipids: LDL < 100 mg/dl, triglycerides < 150 mg/dl, and HDL > 40 mg/dl / >50 for women mg/dl⁷
- Blood Pressure < 130/80 mmHg
- Regular assessment/treatment of coronary heart disease risk factors
- Regular foot examinations including assessment for peripheral arterial disease and the use of monofilament
- Annual dilated eye exam by eye care specialist
- Annual influenza immunization
- Pneumococcal immunization
- Consider aspirin use for all age 30 and older, unless contraindicated

SCREENING:

- Testing for diabetes should be performed in all individuals age 45 and above, and if normal, should be repeated at 3-year intervals.
- Testing should be considered at a younger age or be carried out more frequently in overweight adults with a Body Mass Index ≥ 25 kg/m² and certain additional risk factors. Please link to http://care.diabetesjournals.org/content/33/Supplement_1/S11.full.pdf+html for details for testing for diabetes in asymptomatic adults.
- Testing every 2 years should be considered in overweight children aged 10 years (or at onset of puberty, if it occurs at a younger age) with a BMI > 85th percentile for age and sex who have certain additional risk factors. Please link to http://care.diabetesjournals.org/content/33/Supplement_1/S11.full.pdf+html for details for testing for type 2 diabetes in children.

RISK FACTORS

- Individuals who:
 - Have a Body Mass Index > 25 kg/m²
 - Are habitually physically inactive
 - Have a first-degree relative with diabetes
 - Are members of a high-risk ethnic population (e.g., African-American, Latino, Native American, Asian-American, Pacific Islander)
 - Have delivered a baby weighing > 9 lbs or have been diagnosed with gestational diabetes mellitus
 - Are hypertensive (> 130/80 mmHg)
 - Have an HDL cholesterol level < 35 mg/dl and/or triglyceride level > 250 mg/dl
 - Have “pre-diabetes” indicated by fasting glucose (IFG) of 100-125 mg/dl or impaired glucose tolerance (IGT) with a 2-hour postload glucose of 140-199 mg/dl
 - Have polycystic ovary syndrome or other clinical conditions associated with insulin resistance
 - Have a history of vascular disease

DIAGNOSIS:

- Fasting plasma glucose ≥ 126 mg/dl. Fasting is defined as no caloric intake for at least the past 8 hours; *or*

- Symptoms of diabetes plus casual plasma glucose concentration ≥ 200 mg/dl. Casual is defined as any time of day without regard to time since last meal. The classic symptoms of diabetes include polyuria, polydipsia, and unexplained weight loss; *or*
- 2-hour plasma glucose ≥ 200 mg/dl during an oral glucose tolerance test. The test should be performed as described by World Health Organization, using a glucose load containing the equivalent of 75-g anhydrous glucose dissolved in water.

In the absence of unequivocal hyperglycemia, the diagnostic criteria should be confirmed by repeat testing on a different day. The oral glucose tolerance test is not recommended for routine use. A1C is not used for diagnosis.

ASSESSMENT: Ask about symptoms of hypoglycemia, check for peripheral sensory loss and look for signs and symptoms of organ disease, acute complications, hypertension and depressed mood and reinforce lifestyle interventions at every visit.

MANAGEMENT: Type 1 - Multiple (3-4) injections daily of basal and prandial insulin or continuous insulin via pump, synchronized with diet and physical activity. Please link to http://care.diabetesjournals.org/content/33/Supplement_1/S11.full.pdf+html for details for dietary management, weight management and physical activity.

Type 2 – Begin metformin (unless contraindicated) and lifestyle changes at the time of diagnosis. Additional oral agents and/or insulin therapy may be needed later. Please link to http://care.diabetesjournals.org/content/33/Supplement_1/S11.full.pdf+html for details for dietary management, weight management and physical activity.

Specialist involvement is encouraged upon hospital admissions, evidence of major organ disease, persistent elevation of A1C, consideration and management of an external insulin pump, creatinine levels ≥ 1.5 mg/dl for women and ≥ 2.0 mg/dl for men, GFR < 30 mL/min., recurrent hypoglycemia, or foot examination when indicated.

Efforts should be made to aggressively manage diabetes medications and lifestyle choices to achieve A1c levels of $<7.0\%$. Earlier treatment with insulin in patients with Type 2 diabetes demonstrates positive clinical outcomes for patients.

DISCLAIMER: These recommendations are intended to assist the clinician in the diagnosis and treatment of diabetes, and not intended to replace medical judgment of the physician.

This material was prepared in conjunction with the Pennsylvania Medical Society and is distributed by Quality Insights of Pennsylvania, under contract with the Centers for Medicare and Medicaid Services (CMS). The views presented do not necessarily reflect those of CMS.



DIABETES MELLITUS FLOW SHEET

NAME _____ SEX M F ID or SS#: _____ DOB _____

ALLERGIES _____

Record date of visit at top of column and results of any ordered test in the appropriate box below. Place a check mark in appropriate space below date for each item reviewed.

ANNUAL VISIT INTERVENTION - DATE	/ /		/ /		/ /		/ /	
Complete History & Physical Exam Annual (including ROS, risk factors, physical activity, diet history, and frequency of hypoglycemia) Initial visit and annual at discretion of clinician. Follow-up of referrals								
Foot Exam¹ At Least Annually Sensory exam (including monofilament), visual inspection, and assessment for peripheral arterial disease without shoes and socks								
Dilated Eye Exam² Annual TYPE 1: Annual beginning within 5 years after onset TYPE 2: At time of diagnosis and annual								
Microalbuminuria³ Annual TYPE 1: Annual beginning 5 years from onset TYPE 2: At time of diagnosis and annual								
Immunizations Influenza vaccine Annual Pneumococcal vaccine As Recommended (By the Advisory Committee on Immunization Practices)								
Adherence to Aspects of Self-Care Annual								
<ul style="list-style-type: none"> • Nutrition Counseling⁴ • Review of Self-Management Skills • Review of Physical Activity Plan • Review of Tobacco Use • Review of Alcohol Use • Preconception/Pregnancy • Psychosocial/Psychological Adjustment • Sexuality/Impotence 								
EVERY VISIT INTERVENTION - DATE	/	/	/	/	/	/	/	/
Weight Every Visit								
Blood Pressure (< 130/80 mmHg)⁵ Every Visit								
Review of the Management Plan Every Visit								
Review Medications (including aspirin) Every Visit								
HbA1c (< 7.0%)⁶ Every 3 or 6 mos.								
LDL (< 100 mg/dl)⁷ At Least Annually								
Triglycerides (< 150 mg/dl) At Least Annually								
HDL (> 40 men / > 50 women mg/dl) At Least Annually								
TSH At Least Annually								
Serum Creatinine At Least Annually								

- 1 Patients with neuropathy or other high-risk conditions should have examination of their feet at every diabetic follow-up visit (www.bphc.hrsa.gov/leap).
- 2 If retinopathy is progressing, do exams more frequently.
- 3 Measurement of the albumin-to-creatinine ratio in a random spot urine collection (preferred method). In the treatment of micro and macro albuminuria either **ACE inhibitors** or **ARBs** should be used unless contraindicated.
- 4 Daily dietary protein intake restricted to 0.8 -1.0 g/kg in patients with earlier stages of chronic kidney disease (CKD); and 0.8 g/kg in patients with later stages of CKD.
- 5 If the patient has co-existing hypertension, it is recommended they be treated with either **ACE inhibitors** or **ARBs** unless contraindicated.
- 6 Patients who are meeting treatment goals and who have stable glycemic control should be tested every 6 mos. Patients whose therapy has changed or who are not meeting glycemic goals or have unstable glycemic control should be tested every 3 mos. The A1C goal for the individual patient is as close to normal as possible without significant hypoglycemia.
- 7 Diabetics not achieving target LDL should receive statin treatment unless contraindicated. If known CAD, goal of < 70 mg/dl is an option.

MEASURES

- Percent of members with dilated eye exam
- Percent of members with evaluation of nephropathy (screening or evidence of ACE/ARB use)
- Percent of members with annual monofilament
- Percent of members with A1C screening
- Percent of members with A1C controlled (< 7.0%)

NOTE: For HEDIS measurement, the population will be:

- Percent of members < 65 yrs of age with A1C < 7.0% (population excludes previous CABG or PCI, hx of IVD, CHF, prior MI, ESRD, dementia, blindness or amputation of lower limb).
- Percent of members (total population with A1C < 8.0%)
- Percent of members (total population) with A1C < 9.0%
- Percent of members with LDL screening
- Percent of members with LDL ≤ 100 mg. dl
- Percent of members > age 30 taking ASA or other anticoagulation therapy
- ER rate/1000
- Hospital days/1000
- Average length of stay
- Percent of members with blood pressure < 130/80

NOTE: For HEDIS Measurement

- Percent of members with blood pressure < 140/80
- Percent of members with blood pressure < 140/90

