These protocols are designed to implement standard guidelines, based on the best evidence, that provide a consistent clinical experience for AHC II Integrated Clinical Delivery Network patients and allow to quantitatively demonstrate to payers the high-value care provided. They are not intended to replace a clinician's judgment or to establish a protocol for all patients with a particular condition.

DEFINITION OF DIABETES

A metabolic disease state of hyperglycemia resulting from one or more pathologic processes of insulin secretion, insulin action or both. This chronic hyperglycemic state is associated with long-term macro and micro vascular disease complications.

SCREENING AND PREVENTION

Identify patients at risk and screen to reduce delay in diagnosis and subsequent complications- 7 million undiagnosed diabetics in U.S, even higher percentage of pre-diabetics
Lowering A1c to below or near 7% has been shown to reduce complications and co-morbid disease states. Check twice annually in patients meeting A1c goals or at least quarterly in patients whose therapy has changed or not meeting therapeutic targets
A minority of patients complete Diabetes Self- Management Training (DSMT). Diabetes education leads to better measureable clinical outcomes and therefore decreases health care associated costs

All diabetic patients should undergo screening for co-morbid disease states:
1. Blood pressure measurement every routine visit
2. Fasting cholesterol at least annually
3. Urine microalbumin and serum creatinine at least annually
4. Annual eye exam and initial dilated and comprehensive exam
5. Comprehensive annual foot exam

Little direct evidence shows clinical benefit from broad-based screening programs for type 2 diabetes. Diabetes can clearly be prevented in persons who have pre-diabetes with programs. Aimed at modest weight loss, and medication may be indicated for those who cannot achieve lifestyle goals. Because diet and exercise programs tend to be universally beneficial, screening may best be preserved for persons at particularly high risk, to identify those who may benefit from medications to prevent diabetes. Guidelines for lifestyle change suggest that loss of about 7% of body weight and 150 minutes of exercise per week are enough to substantially reduce diabetes risk[i].

In the primary care setting, patients should be screened according to the following criteria. Screening should occur no less frequently than every 3 years, with some patients meriting more frequent testing. Patients who are considered pre-diabetic (see below) should be screened annually for the diagnostic criteria of diabetes.

Criteria for testing for diabetes in asymptomatic adult individuals	
	Testing should be considered in all adults who are overweight (BMI ≥25 kg/m^2, or lower in some ethnic groups) and have additional risk factors: • physical inactivity • first-degree relative with diabetes • high-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)

	- women who delivered a baby weighing >9 lb or were diagnosed with GDM - hypertension (≥140/90 mmHg or on therapy for hypertension) - HDL cholesterol level <35 mg/dL (0.90 mmol/L) and/or a triglyceride level >250 mg/dL (2.82 mmol/L) - women with polycystic ovary syndrome - A1C ≥5.7%, IGT, or IFG on previous testing - other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans) - history of CVD
	In the absence of the above criteria, testing for diabetes should begin at age 45 years.
	If results are normal, testing should be repeated at least at 3-year intervals, with consideration of more frequent testing depending on initial results (e.g., those with prediabetes should be tested yearly) and risk status.

DIAGNOSIS

In General

Type 2 diabetes is common and should be considered when patients present with suggestive symptoms (e.g. polyuria or polydipsia), signs (e.g., acanthosis nigricans), or complications of disease (e.g., retinopathy).
Confirmed by HbA1c levels measuring >/= 6.5 or higher or by fasting plasma glucose levels >7 mmol/L (126 mg/dL) on 2 occasions at least 1 day apart.
Random plasma glucose levels and OGTT can also be used to diagnose Type 2 diabetes.
Newly diagnosed patients should be examined for hypertension, neurological, ophthalmologic, and podiatric complications.
Initial laboratory evaluation should include an assessment of the following:
    Glucose control; Lipid profile; Measurement of the urine micro albumin-creatinine ratio[ii]

Diagnostic Criteria for "pre-diabetes" and thus for the opportunity to prevent or delay type 2 diabetes:

FPG 100 mg/dL (5.6 mmol/L) to 125 mg/dL
    (6.9 mmol/L) (IFG)
                OR
2-h plasma glucose in the 75-g OGTT 140 mg/dL
    (7.8 mmol/L) to 199 mg/dL (11.0 mmol/L)
    (IGT)
                OR
A1C 5.7–6.4%

*For all three tests, risk is continuous, extending below the lower limit of the range and becoming disproportionately greater at higher ends of the range.

Patients (with rare exceptions) who are diagnosed with pre-diabetes should be managed by their primary care provider.
Patients with pre-diabetes should be:
- Referred to the Diabetes Center for a program of education

- R
eferred to an effective on-going support program targeting weight loss of 7% of body weight and increasing physical activity to at least 150 minutes/week of moderate activity such as walking.
- Have follow-up counselling
- Metformin should be considered, especially in those with a BMI > 35 kg/m2, age < 60 years, and women with prior gestational diabetes
- Monitoring for diabetes should occur at least annually
- Modifiable risk factors for cardiovascular diseases should be assessed and addressed.

Diagnostic Criteria for diabetes:

$A1C \geq 6.5\%$. The test should be performed in a laboratory using a method that is NGSP certified and standardized to the DCCT assay.*

OR

$FPG \geq 126$ mg/dL (7.0 mmol/L). Fasting is defined as no caloric intake for at least 8 h.*

OR

2-h plasma glucose ≥ 200 mg/dL (11.1 mmol/L) during an OGTT. The test should be performed as described by the WHO, using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water.*

OR

In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose ≥ 200 mg/dL (11.1 mmol/L).

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*In the absence of unequivocal hyperglycemia, result should be confirmed by repeat testing.

COLLABORATIVE MANAGEMENT PLAN/INTEGRATED REFERRALS

The "Executive Summary: Standards of Medical Care in Diabetes-2013" is attached to this guide in Appendix 1 and provides an excellent and succinct summary of diabetes care. A number of tables from the more extensive accompanying standards of medical care in diabetes are incorporated into this guide. The AACE/ACE Diabetes "Algorithm For Glycemic Control" is adopted as a standardized protocol for medication management and is attached.

This Guide is applicable to adult patients whose primary care is delivered by AHC-II Integrated Clinical Network Group, in either primary care or endocrinology. This Guide does not apply to those patients who have diabetes and present for management in other specialty offices or who have presented to primary care only for acute care needs.

Comprehe

nsive Evaluation: Patients diagnosed with Diabetes should receive a comprehensive evaluation; this evaluation should occur in the primary care office if the patient is a primary care patient:

Medical history
Age and characteristics of onset of diabetes (e.g., DKA, asymptomatic laboratory finding)
Eating patterns, physical activity habits, nutritional status, and weight history; growth and development in children and
Diabetes education history
Review of previous treatment regimens and response to therapy (A1C records)
Current treatment of diabetes, including medications, medication adherence and barriers thereto, meal plan, physical activity patterns, and readiness for behavior change
Results of glucose monitoring and patient's use of data
DKA frequency, severity, and cause
Hypoglycemic episodes
Hypoglycemia awareness
Any severe hypoglycemia: frequency and cause
History of diabetes-related complications
Microvascular: retinopathy, nephropathy, neuropathy (sensory, including history of foot lesions; autonomic, including
Macrovascular: CHD, cerebrovascular disease, and PAD
Other: psychosocial problems[*], dental disease[*]

Physical examination
Height, weight, BMI
Blood pressure determination, including orthostatic measurements when indicated
Fundoscopic examination[*]
Thyroid palpation
Skin examination (for acanthosis nigricans and insulin injection sites)
Comprehensive foot examination
Inspection
Palpation of dorsalis pedis and posterior tibial pulses
Presence/absence of patellar and Achilles reflexes
Determination of proprioception, vibration, and monofilament sensation

Laboratory evaluation

A1C, if results not available within past 2–3 months
If not performed/available within past year
Fasting lipid profile, including total, LDL and HDL cholesterol and triglycerides
Liver function tests
Test for urine albumin excretion with spot urine albumin-to-creatinine ratio
Serum creatinine and calculated GFR
TSH in type 1 diabetes, dyslipidemia or women over age 50 years

Referral Considerations
Eye care professional for annual dilated eye exam
Registered dietitian for Medical Nutrition Therapy
Dentist for comprehensive periodontal examination
Mental health professional, if needed
Medication management, to include the frequency of follow up care and testing, will follow the AACE/ACE algorithm in Appendix 2
Referred to the Diabetes Center for a program of education
Referred to an effective on-going support program targeting weight loss of 7% of body weight and increasing physical activity to at least 150 minutes/week of moderate activity such as walking.
Have follow-up counselling
These patients will be enrolled in the Disease Management program for the purpose of assisting in the self-management and referral coordination.

OF PERFORMANCE

Aligned with CMS' ACO/PQRS/Meaningful Use CQM measures and the NCQA Diabetes Recognition Program

Diabetes: Hemoglobin A1c Poor Control (ACO #27; NQF #59; PQRS #1)
Percentage of patients 18-75 years of age with diabetes who had hemoglobin A1c > 9.0% during the measurement period. Reported once per year.
Domain: Clinical Process/Effectiveness
Numerator: Patients whose most recent HbA1c level (performed during the measurement period) is > 9.0%.
Denominator: Patients 18 - 75 years of age with diabetes with a visit during the measurement period.

Controlling High Blood Pressure (ACO #28; NQF #18; PQRS #236)
Percentage of patients 18-85 years of age who had a diagnosis of hypertension and whose blood pressure was adequately controlled (<140/90mmHg) during the measurement period. Reported once per yea**r.**
Domain: Clinical Process/Effectiveness
Numerator: Patients whose most recent blood pressure is adequately controlled (systolic blood pressure < 140 mmHg and diastolic blood pressure < 90 mmHg) during the measurement period.
Denominator: Patients 18 through 85 years of age who had a diagnosis of essential hypertension within the first six months of the measurement period or any time prior to the measurement period.

Diabetes Eye Exam (ACO #41; NQF #55; PQRS #117)
Percentage of patient's 18-75 years of age with diabetes who had a retinal or dilated eye exam by an eye care professional during the measurement period or a negative retinal exam (no evidence of retinopathy) in the 12 months prior to the measurement period.
Domain: Clinical Process/Effectiveness
Numerator: Patients with an eye screening for diabetic retinal disease. This includes diabetics who had one of the following: A retinal or dilated eye exam by an eye care professional in the measurement period or a negative retinal exam (no evidence of retinopathy) by an eye care professional in the year prior to the measurement period.
Denominator: Patients 18-75 years of age with diabetes with a visit during the measurement period.

Tobacco Use: Screening and Cessation Intervention (ACO #17; NQF #28; PQRS #226)
Percentage of patients aged 18 years and older who were screened for tobacco use one or more times within 24 months AND who received cessation counseling intervention if identified as a tobacco user.
Domain: Population/Public Health
Numerator: Patients who were screened for tobacco use at least once within 24 months AND who received tobacco cessation counseling intervention if identified as a tobacco user.
Denominator: All patients aged 18 years and older.

Diabetes: Medical Attention for Nephropathy (NQF #62; PQRS #119)
The percentage of patients 18-75 years of age with diabetes who had a nephropathy screening test or evidence of nephropathy during the measurement period. Reported once per year.
Domain: Clinical Process/Effectiveness
Numerator: Patients with a screening for nephropathy or evidence of nephropathy during the measurement period.
Denominator: Patients 18-75 years of age with diabetes with a visit during the measurement period.

Foot Exam (NQF #56; PQRS #163)
Percentage of patients aged 18-75 years of age with diabetes who had a foot exam during the measurement period. Reported once per year.
Domain: Clinical Process/Effectiveness
Numerator: Patients who received a foot exam (i.e., visual inspection, sensory exam with monofilament AND pulse exam) during the measurement period.
Denominator: Patients 18-75 years of age with diabetes with a visit during the measurement period.

Key tools and references

National Committee for Quality Assurance (NCQA) Diabetes Recognition Program	http://www.ncqa.org/Programs/Recognition/Clinicians/DiabetesRecognitionProgramDRP.aspx
In the Clinic: Type 2 Diabetes. Annals of Internal Medicine. 2015.	http://annals.org/article.aspx?articleid=745650
American College of Physicians – Living with Diabetes 2014	https://www.acponline.org/cgi-bin/cpph.cgi?CPP3003_Living_With_Diabetes_2014.pdf
Patient/Family health tips for diabetes - American College of Physicians	www.acponline.org/patients_families/products/health_tips/diab_en.
American Diabetes Association	http://www.diabetes.org/living-with-diabetes/

1. Executive Summary: Standards of Medical Care in Diabetes-2013: (http://care.diabetesjournals.org/content/36/Supplement_1)
2. Standards of Medical Care in Diabetes: (http://care.diabetesjournals.org/content/36/Supplement_1)
3. The AACE/ACE Diabetes Algorithm For Glycemic Control (https://www.aace.com/files/glycemiccontrol-algorithm-ppt.pdf)
4. 2013 Physician Quality Reporting System (PQRS) Claims/Registry Measure Specifications Manual (http://www.cms.gov/Medicare/Quality-Initiatives-Patient-AssessmentInstruments/PQRS/MeasuresCodes.html)

   Appendix 1. Executive Summary: Standards of Medical Care in Diabetes-2013 (http://care.diabetesjournals.org/content/36/Supplement_1)

   Appendix 2. The AACE/ACE Diabetes Algorithm For Glycemic Control (https://www.aace.com/files/glycemic-control-_algorithm-ppt.pdf)
   glycemic-control-algorithm-ppt.pdf

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[i] Vijan S. In the Clinic. Type 2 Diabetes. Ann Intern Med. 2015; 162: ITC1.
[ii] Ibid.