BLOOD GLUCOSE TESTING
Policy Number: CMP - 009
Effective Date: January 21, 2017

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INSTRUCTIONS FOR USE
This Medical Policy provides assistance in interpreting UnitedHealthcare benefit plans. When deciding coverage, the enrollee specific document must be referenced. The terms of an enrollee's document (e.g., Certificate of Coverage (COC) or Summary Plan Description (SPD)) may differ greatly. In the event of a conflict, the enrollee's specific benefit document supersedes this Medical Policy. All reviewers must first identify enrollee eligibility, any federal or state regulatory requirements and the plan benefit coverage prior to use of this Medical Policy. Other Policies and Coverage Determination Guidelines may apply. UnitedHealthcare reserves the right, in its sole discretion, to modify its Policies and Guidelines as necessary. This Medical Policy is provided for informational purposes. It does not constitute medical advice.

UnitedHealthcare may also use tools developed by third parties, such as the MCG™ Care Guidelines, to assist us in administering health benefits. The MCG™ Care Guidelines are intended to be used in connection with the independent professional medical judgment of a qualified health care provider and do not constitute the practice of medicine or medical advice.

BACKGROUND
Blood glucose is an analyte in the basic metabolic panel, and as such, it is often ordered for asymptomatic persons, but it is also used to diagnose hyperglycemia and hypoglycemia. Blood glucose levels are followed in hospitalized patients and persons who have or are suspected of having diabetes mellitus. In the pediatric population, blood glucose measurement is key to diagnosing a wide spectrum of disorders including diabetes mellitus and genetic disorders causing hypoglycemia.

Hospitalized patients can be hyperglycemic for a number of reasons, including dietary changes, stress, medications, and diabetes mellitus. Good glycemic control correlates with better outcomes in hospitalized patients. The American Association of Clinical Endocrinologists has established blood glucose target levels for patients in the ICU and for those in noncritical care. For patients without a diagnosis of diabetes on admission...
who develop significant hyperglycemia in the hospital, follow-up includes definitive testing to distinguish hospital-related hyperglycemia from undiagnosed diabetes mellitus.

Three laboratory assays are recommended by the American Diabetes Association (ADA) for the diagnosis of diabetes: fasting plasma glucose, $A_1c$, and the oral glucose tolerance test. Any three of these tests may be used to diagnose diabetes mellitus, and blood glucose tests can diagnose both type 1 and type 2 diabetes. To determine which patients to test for diabetes, health care providers consider the usual diabetes symptoms of polydipsia, polyuria, and weight loss in addition to other factors. These additional factors include patient race/ethnicity (high-risk groups include African American, Latino, Native American, Asian American, Pacific Islander), family history, patient medical history, weight, and laboratory values.

The ADA maintains standards of care for diabetes, including guidelines for testing for the disease. Currently, testing for diabetes is recommended for all persons over the age of 45. Testing is also recommended for asymptomatic adults less than 45 if they are overweight and have one of the following risk factors: severe obesity, physical inactivity, a first-degree relative with the disease, high-risk race/ethnicity, cardiovascular disease, hypertension, low HDL cholesterol or high triglyceride level, acanthosis nigricans, prediabetes, and for women, a diagnosis of polycystic ovary syndrome, history of giving birth to a baby >9 lb, or history of gestational diabetes mellitus. Pregnant women are screened for gestational diabetes with serum glucose one hour after ingestion of a 50 gram oral glucose load at 24-28 weeks gestation. Those with an elevated value (> 135 mg/dl) undergo a 3 hr glucose tolerance test after ingestion of a 100 gram oral glucose load for definitive diagnosis.

ADA guidelines also recommend that women who are diagnosed with gestational diabetes mellitus during pregnancy should be screened every three years for the rest of their life. The guidelines recommend testing for asymptomatic children if they are overweight or have two of the following risk factors: first or second-degree relative with diabetes, high-risk race/ethnicity, signs of insulin resistance including small for gestational age birth weight, and maternal history of gestational diabetes mellitus.

In addition to establishing the diagnosis of diabetes mellitus, blood glucose levels are also useful in monitoring the treatment of diabetes. Patients with diabetes type 1 are especially at risk for iatrogenic hypoglycemia from insulin therapy.

Hypoglycemia symptoms usually arise when blood glucose falls below 70 mg/dL in adults. These symptoms include confusion, dizziness, feeling shaky, hunger, headaches, irritability, pounding heart, pale skin, sweating, trembling, weakness, and nightmares. As hypoglycemia progresses, patients may complain of headache, poor coordination, and numbness in the mouth and tongue and may pass out or go into a hypoglycemic coma. In emergency departments, most patients with hypoglycemia have a diagnosis of diabetes mellitus and about a quarter of them are septic. In hospitalized patients, drugs, most commonly insulin, cause the majority of cases of hypoglycemia.

Fasting hypoglycemia in otherwise healthy adults is most often due to insulinoma, a rare tumor of the pancreas. In a minority of cases, insulinoma occurs as a consequence of multiple endocrine neoplasia type 1 syndrome, along with tumors of the pituitary and parathyroid glands.

Genetic disorders causing hypoglycemia can be classified into two groups: those with hyperinsulinism and those without hyperinsulinism. Congenital hyperinsulinemia presents with macrosomy, facial dysmorphism, seizures,
and hypoglycemia responsive to glucagon. Syndromic causes of hyperinsulinism include hyperinsulinism-
hyperammonemia syndrome and Beckwith-Wiedemann syndrome (BWS). Clinical features of BWS include
macrosomia, macroglossia, earlobe creases, hernias, and neonatal hypoglycemia; identification is important due
to an increased risk of tumorigenesis. Fanconi Bickel syndrome is a metabolic disorder not associated with
hyperinsulinism.

Disorders of the pituitary and adrenal glands cause hypoglycemia. For example, ACTH deficiency is a rare cause
of hypoglycemia in children.

Infections and drugs can also cause decrease blood glucose. Outbreaks of malaria are uncommon in the United
States, but malaria is a global cause of hypoglycemia in children and pregnant women, and quinine, a drug used
to treat the disease, causes hypoglycemia.

**POLICY**

For the following CPT code(s) in Table 1, the patient should have a diagnosis (ICD-10-CM) code(s) listed in
the attached files below.

**Table 1. HCPCS Codes (Alphanumeric, CPT® AMA)**

<table>
<thead>
<tr>
<th>HCPCS Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>82947</td>
<td>Glucose; quantitative, blood (except reagent strip)</td>
</tr>
<tr>
<td>82948</td>
<td>Glucose; blood, reagent strip</td>
</tr>
<tr>
<td>82962</td>
<td>Glucose, blood by glucose monitoring device cleared by FDA for home use.</td>
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**ICD-10 Diagnosis Codes (Proven)**
REFERENCES


POLICY HISTORY/REVISION HISTORY

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<th>Action/Description</th>
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<tbody>
<tr>
<td>01/21/2017</td>
<td>Updated ICD10 codes as per CMS recommendations. Removed ICD9 code file.</td>
</tr>
<tr>
<td>12/03/2015</td>
<td>Annual Policy Review Completed – changes made: Added ICD9 diagnosis codes related to pregnancy: V72.42 Added ICD10 diagnosis codes related to pregnancy: Z32.01</td>
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<tr>
<td>10/01/2015</td>
<td>Removed ICD9 table. Embedded ICD9/ ICD10 PDF files.</td>
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