



# International Classification of Diseases-10 Coding for Diabetes

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More than 29 million Americans have diabetes. The Centers for Disease Control and Prevention predict that the prevalence of diabetes will increase from 9% to >30% in the next 35 years. (1) More than 21 million offices medical visits/year are scheduled for diabetes. (2) A total of one in five dollars spent on health care in the United States (and one in three dollars spent through Medicare) are spent on people with diabetes. (3) With this in mind, proper and accurate coding for diabetes is a necessity.

The *International Classification of Diseases* 10th Revision—Clinical Modification (ICD-10) is designed to accurately classify and categorize all illnesses and diseases seen in the U.S. health care setting. (4) The coding system was updated in October 2015 to its tenth revision because it was thought that the ninth revision (ICD-9) no longer accommodated all of the new codes submitted to the system, and the ICD-9 codes were not descriptive enough to accurately reflect the state of patients' diseases. For example, the ICD-9 system had 13,000 three- to five-digit codes. This system was not able to take in

new codes and did not include a way to designate laterality. The ICD-10 system has 68,000 codes that are three to seven digits each and has the capacity to expand.

In general, ICD-10 codes can be up to seven characters long and are designed as follows: XXX.XXX.X (category.anatomic site/severity.extension). The first set of digits before the first decimal point describes the general disease or category. The next three digits after the first decimal point describe the etiology, anatomical site, severity, or clinical detail. Finally, some conditions will have a second decimal point, followed by a final digit that may define an initial or subsequent encounter, the laterality of a condition, or the number of weeks' gestation (in the case of pregnancy). This may seem overly detailed, but it allows for greater specificity of the disease and its state.

Most codes for diabetes will require four or five digits to provide the level of detail required by ICD-10 (5). This article provides key updates for ICD-10 coding for diabetes and its complications. To make sense of the coding descriptions, the authors will

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**TABLE 1. Diagnostic Criteria for Prediabetes\* and Diabetes**

	Normal	Prediabetes	Diabetes
Fasting glucose (mg/dL)	<100	100–125	≥126
Random glucose or OGTT (mg/dL)	<140	140–199	≥200
A1C (%)	<5.7	5.7–6.4	≥6.5

\*For prediabetes, use the "abnormal glucose" code R73.09.

explain them based on the way one might approach diabetes clinically.

**ICD-10 Codes for Diabetes**

For proper coding of diabetes, ICD-10 codes should reflect the type of diabetes, its current status, and comorbidities of the disease. Compared to ICD-9, the ICD-10 codes are much more specific. Carefully choosing the most specific ICD-10 codes is important to ensure proper reimbursement.

**Codes for Screening for Diabetes or Diagnosing Prediabetes**

**Screening for Diabetes: Z13.1**

If a person has risk factors for diabetes and you want to screen him or her for the condition (via glucose measurement, oral glucose tolerance test [OGTT], or A1C test), you would use a Z code (which indicates screening or prevention services). Alternatively, using a code that indicates the presence of a risk factor for diabetes is also acceptable for reimbursement. The current acceptable risk factors include hypertension (I10) and obesity (E66.XX).

**Prediabetes Diagnosis: R73.09**

If a person has prediabetes, the recommended ICD-10 code for abnormal glucose is R73.09, but this code also covers abnormal fasting glucose, abnormal glucose tolerance, or an elevated A1C in the prediabetes range (Table 1).

**Codes for Known Diabetes**

When you are treating a person who has known diabetes, the first level of distinction is the type of diabetes. Under ICD-9, the main types of diabetes were coded 250.XX. To properly code for diabetes under ICD-10, four to five digits are needed. The following steps will help to ensure accurate diabetes coding:

**Step 1. Confirm the Type of Diabetes**

The current codes for common forms of diabetes are:

- Type 1 diabetes: E10.XXX
- Type 2 diabetes: E11.XXX

**TABLE 2. Codes for Type 1 Diabetes With Complications**

Code	Used to report type 1 diabetes:
E10.1X	With the presence of diabetic ketoacidosis
E10.10	With diabetic ketoacidosis without coma
E10.11	With diabetic ketoacidosis with coma
E10.2X	With renal disease
E10.21	With diabetic nephropathy
E10.22	With diabetic chronic kidney disease
E10.29	With other diabetic kidney
E10.3X	With eye disease
E10.311	With ophthalmic complications without macular edema
E10.319	With ophthalmic complications with macular edema
E10.321	With mild nonproliferative diabetic retinopathy with macular edema
E10.329	With mild nonproliferative diabetic retinopathy without macular edema
E10.331	With macular edema
E10.339	Without macular edema
E10.341	With severe nonproliferative diabetic retinopathy with macular edema
E10.349	With severe nonproliferative diabetic retinopathy without macular edema
E10.351	With proliferative diabetic retinopathy with macular edema
E10.359	With proliferative diabetic retinopathy without macular edema
E10.36	With diabetic cataract
E10.39	With other diabetic ophthalmic complication
E10.4X	With nerve disease
E10.40	With diabetic neuropathy, unspecified
E10.41	With diabetic mononeuropathy
E10.42	With diabetic polyneuropathy
E10.43	With diabetic autonomic (poly)neuropathy
E10.44	With diabetic amyotrophy
E10.49	With other diabetic neurological complication
E10.5X	With peripheral vascular disease
E10.51	With diabetic peripheral angiopathy without gangrene
E10.52	With diabetic peripheral angiopathy with gangrene
E10.59	With other circulatory complications
E10.6X	With diabetes-related musculoskeletal, oral, or skin complications; hypoglycemia; or hyperglycemia
E10.61	With diabetic arthropathy
E10.610	With diabetic neuropathic arthropathy
E10.618	With other diabetic arthropathy
E10.620	With diabetic dermatitis
E10.621	With foot ulcer

TABLE CONTINUED ON P. 3 →

**TABLE 2. Codes for Type 1 Diabetes With Complications, continued from p. 2**

Code	Used to report type 1 diabetes:
E10.622	With other skin ulcer
E10.628	With other skin complications
E10.630	With periodontal disease
E10.638	With other oral complications
E10.641	With hypoglycemia with coma
E10.649	With hypoglycemia without coma or with hypoglycemia unawareness
E10.65	With hyperglycemia
E10.69	With other specified complication
E10.8	With complications, unspecified
E10.9	Without complications

**TABLE 3. Codes for Type 2 Diabetes With Complications**

Code	Used to report type 2 diabetes with:
E11.0X	With hyperosmolarity
E11.00	Without nonketotic hyperglycemic hyperosmolar coma
E11.01	With nonketotic hyperglycemic hyperosmolar coma
E11.2X	With kidney complications
E11.21	With diabetic nephropathy
E11.22	With diabetic chronic kidney disease
E11.29	With other diabetic kidney complications
E11.3X	With eye complications
E11.31	With diabetic retinopathy, unspecified
E11.311	With diabetic retinopathy with macular edema
E11.319	With diabetic retinopathy without macular edema
E11.32	With mild nonproliferative diabetic retinopathy
E11.321	With mild nonproliferative diabetic retinopathy with macular edema
E11.329	With mild nonproliferative diabetic retinopathy without macular edema
E11.33	With moderate nonproliferative diabetic retinopathy
E11.331	With moderate nonproliferative diabetic retinopathy with macular edema
E11.339	With moderate nonproliferative diabetic retinopathy without macular edema
E11.34	With severe nonproliferative diabetic retinopathy
E11.341	With severe nonproliferative diabetic retinopathy with macular edema
E11.349	With severe nonproliferative diabetic retinopathy without macular edema
E11.36	With diabetic cataract
E11.39	With other diabetic ophthalmic complication

TABLE CONTINUED ON P. 4 →

- Gestational diabetes mellitus (GDM): O24.429.

There are a number of special categories of diabetes that have a different pathogenesis from what is known for type 1 and type 2 diabetes. These are collectively called “secondary diabetes” and should not be confused with type 2 diabetes. For secondary diabetes, use the following codes:

- E08.XXX: “Diabetes due to underlying condition” is for diabetes caused by diseases such as cancer, pancreatitis, or nutritional deficiencies.
- E09.XXX: “Drug- or chemical-induced diabetes mellitus” is for diabetes induced by a drug or toxin.
- E13.XXX: “Other specified diabetes mellitus” is for genetic defects of  $\beta$ -cell function and insulin action or post-pancreatectomy diabetes.

### **Step 2. Describe Whether the Person’s Diabetes Is Currently Well Controlled**

Level of control is indicated by the number after the decimal point. If a person’s diabetes is well controlled, that digit will be 9 (i.e., EXX.9). For example, a person with type 2 diabetes that is well controlled who has no complications would be indicated by the code E11.9. Likewise, a person with type 1 diabetes that is well controlled who has no complications would be indicated by the code E10.9.

It is important to remember that E11.9 actually describes only a minority of people with type 2 diabetes. One of the goals of ICD-10 is to better characterize the control of people with diabetes and the specifics of the complications that they are experiencing. However, many patients with diabetes have hyperglycemia, which is considered a complication. Therefore, a diagnosis code with a complication code is appropriate for the majority of people with diabetes.

All of the digits beyond the decimal point are the same regardless of the type of diabetes (e.g., type 1 vs. type 2 diabetes). Each numerical

**TABLE 3. Codes for Type 2 Diabetes With Complications, continued from p. 3**

E11.4X	With nerve complications
E11.40	With diabetic neuropathy, unspecified
E11.41	With mononeuropathy
E11.42	With diabetic polyneuropathy
E11.45	With autonomic neuropathy (e.g., gastroparesis)
E11.49	With other diabetic neurological complications
E11.5X	With peripheral vascular disease
E11.51	With diabetic peripheral angiopathy without gangrene
E11.52	With diabetic peripheral angiopathy with gangrene
E11.59	With other circulatory complications
E11.6X	With diabetes-related musculoskeletal, oral, or skin complications; hypoglycemia; or hyperglycemia
E11.61	With diabetic arthropathy
E11.610	With diabetic neuropathic arthropathy
E11.618	With other diabetic arthropathy
E11.62	With skin complications
E11.620	With diabetic dermatitis
E11.621	With foot ulcer
E11.622	With other skin ulcer
E11.628	With other skin complications
E11.63	With oral complications
E11.630	With periodontal disease
E11.638	With other oral complications
E11.64	With hypoglycemia
E11.641	With hypoglycemia with coma
E11.649	Without hypoglycemia without coma
E11.65	With hyperglycemia
E11.69	With other complications
E11.8X	With other non-specified complication
E11.9X	Well controlled without hyperglycemia, hypoglycemia, or complications

**TABLE 4. Codes for Secondary Diagnosis for Diseases Associated With Diabetes**

Code	Used to report:
<i>Dermatology</i>	
S81.801	Open wound, unspecified, right lower leg
L97.X–L98.X	Site of ulceration
L97.411	Non-pressure chronic ulcer of right heel and mid-foot limited to breakdown of skin
L97.5	Non-pressure chronic ulcer of other part of the foot
L97.533	Non-pressure chronic ulcer of other part of left foot with necrosis of muscle

code after the decimal point (numbers 1–8) describes a different complication. The second and third digit after the decimal point subcategorize that complication. For example, the most common code used for type 2 diabetes is E11.65 (type 2 diabetes mellitus with hyperglycemia), which reflects suboptimal control. The most common codes for type 1 diabetes are E10.65 (type 1 diabetes with hyperglycemia) and E10.649 (type 1 diabetes with hypoglycemia without coma).

**Step 3. For Diabetes That Is Not Well Controlled, Identify Any Complications**

The first digit after the decimal point describes both the level of metabolic control and the presence of complications. Further digits subcategorize the complications. As mentioned above, the number 9 after the decimal point (i.e., E10.9 or E11.9) both defines the diabetes as controlled (i.e., without hyperglycemia or hypoglycemia) and documents the absence of complications. Thus, using a 9 after the decimal point should be the exception rather than the rule, given that most people with diabetes have either suboptimal control, complications, or both. The following codes pertain to complications of type 2 diabetes:

- Severe hyperosmolarity: E11.0X
- Kidney complications: E11.2X
- Eye complications: E11.3X
- Nerve complications: E11.4X
- Peripheral vascular disease: E11.5X
- Other specified complications, including musculoskeletal, oral, and skin complications; hypoglycemia; and hyperglycemia: E11.6X
- Other nonspecified complications: E11.8X
- Well-controlled type 2 diabetes without hyperglycemia, hypoglycemia, or complications: E11.9X

More detailed codes further subcategorize complications. Table 2 provides ICD-10 codes for complications associated with type 1 diabetes; table 3 lists codes for complications associated with type 2 diabetes.

TABLE CONTINUED ON P. 5 →

**TABLE 4. Codes for Secondary Diagnosis for Diseases Associated With Diabetes, continued from p. 4**

<i>Nephrology</i>	
N18.1	Chronic kidney disease (CKD) stage I
N18.2	CKD stage II
N18.3	CKD stage III
N18.4	CKD stage IV
N18.5	CKD stage V
N18.6	End-stage renal disease
R80.9	Microalbuminuria
Z99.2	Dependence on renal dialysis
E10.42	Presence of AV shunt for dialysis
<i>Hypoglycemia</i>	
E10.649	Type 1 diabetes with hypoglycemia without coma
E11.649	Type 2 diabetes with hypoglycemia without coma
E08.64	Diabetes due to underlying condition with hypoglycemia
E09.64	Drug- or chemical-induced diabetes with hypoglycemia
E16.0	Drug-induced hypoglycemia without coma
E16.1	Other hypoglycemia
E16.2	Hypoglycemia, unspecified
EXX.641	Fill in with code for type of diabetes with hypoglycemia and coma

**TABLE 5. Codes for Common Comorbid Disease Conditions**

Code	Used to report:
F17.210	Nicotine dependence, cigarettes, uncomplicated
K31.84	Gastroparesis
I10	Essential hypertension
	Hyperlipidemia:
E78.0	Pure hypercholesterolemia
E78.1	Pure hypertriglyceridemia
E78.2	Mixed hyperlipidemia
E78.5	Hyperlipidemia, unspecified
	Hypothyroidism:
E06.3	Due to Hashimoto's disease
E89.0	Postoperative or postablative
E03.9	Acquired
Z13.29	Thyroid disorder screen
R94.6	Abnormal thyroid blood test or screen
E66.0	Obesity due to excess calories
E66.01	Morbid severe obesity due to excess calories
E66.9	Obesity, unspecified
	Also utilize a Z68 code with obesity for BMI:
Z68.30	BMI 30.0–30.9 kg/m <sup>2</sup>
Z68.31	BMI 31.0–31.9 kg/m <sup>2</sup>

TABLE CONTINUED ON P. 6 →

**Step 4. Describe Any Identified Complication**

This means you will use a primary diabetes code that describes the type of diabetes, then specify whether it is controlled and whether there is a complication, and then add a second code specific to that complication. Sample codes for complications of diabetes are shown in Table 4; codes for common comorbidities are shown in Table 5).

**Example 1**

A patient has type 2 diabetes with polyneuropathy, hypertension with albuminuria, and dyslipidemia. The coding to document this patient should be E11.65 (type 2 diabetes with hyperglycemia), E11.42 (type 2 diabetes with polyneuropathy), I10 (hypertension), R80.9 (microalbuminuria), and E78.2 (mixed hyperlipidemia).

**Example 2**

A patient with type 1 diabetes has an active foot ulcer on the bottom of his right foot. The coding to document this patient should be E10.621 (type 1 diabetes with foot ulcer) and L97.411 (non-pressure chronic ulcer of right heel and mid-foot limited to breakdown of skin).

Comorbid conditions affect the complexity of care and the treatments you choose and thus should be coded as diagnoses. One nice feature of the BMI coding shown in Table 5 is that all BMI codes start with Z68, and the digits after the decimal are the actual BMI rounded down to the whole number. In the authors' experience, coding obesity to the level of the BMI has improved the ability to get coverage for additional medications. This suggests that some insurers may be relying on the coding to make coverage decisions.

**Codes to Document Complexity of Care Provided**

Finally, there are codes that demonstrate the additional work you do or the additional complexity of the care you are providing. These codes help to justify this higher level of care.

**TABLE 5. Codes for Common Comorbid Disease Conditions, continued from p. 5**

Code	Used to report:
Z68.32	BMI 32.0–32.9 kg/m <sup>2</sup>
Z68.33	BMI 33.0–33.9 kg/m <sup>2</sup>
Z68.34	BMI 34.0–34.9 kg/m <sup>2</sup>
Z68.35	BMI 35.0–35.9 kg/m <sup>2</sup>
Z68.36	BMI 36.0–36.9 kg/m <sup>2</sup>
Z68.37	BMI 37.0–37.9 kg/m <sup>2</sup>
Z68.38	BMI 38.0–38.9 kg/m <sup>2</sup>
Z68.39	BMI 39.0–39.9 kg/m <sup>2</sup>
Z68.41	BMI 40.0–44.9 kg/m <sup>2</sup>
Z68.42	BMI 45.0–49.9 kg/m <sup>2</sup>
Z68.43	BMI 50.0–59.9 kg/m <sup>2</sup>
Z68.44	BMI 60.0–69.9 kg/m <sup>2</sup>
Z68.45	BMI >70.0 kg/m <sup>2</sup>
G47.33	Obstructive sleep apnea
E28.2	Polycystic ovarian syndrome

**BOX 1. Case Studies for Diabetes Coding**

**Case 1:**

The patient is a 45-year-old man who has had type 1 diabetes for 25 years. At today's visit, he is diagnosed with gastroparesis. He reports one hypoglycemic episode with a random glucose of 43 mg/dL. His A1C is 7.4%. The patient has a history of nonproliferative retinopathy and CKD stage 1. You provide dietary counseling during the visit. What codes would you use?

**Answer:**

- E10.65: Type 1 diabetes with hyperglycemia
- E10.43: Type 1 diabetes with gastroparesis (autonomic neuropathy)
- E10.329: Type 1 diabetes with nonproliferative retinopathy
- E10.649: Type 1 diabetes with hypoglycemia
- E10.22: Type 1 diabetes with CKD stage 1
- K31.84: Gastroparesis
- Z71.3: Dietary counseling
- Z79.4: Insulin use

**Case 2:**

The patient is a 53-year-old obese man (BMI 37 kg/m<sup>2</sup>) who has uncontrolled type 2 diabetes with A1C of 8.8%, CKD stage 3, controlled hypertension on an ACE inhibitor, and mixed hyperlipidemia. He is takes daily insulin injections. What codes would you use?

**Answer:**

- E11.65: Type 2 diabetes with hyperglycemia
- E11.22: Type 2 diabetes with CKD
- N18.3: CKD stage 3
- E78.2: Mixed hyperlipidemia
- I10: Essential hypertension
- Z79.4: Insulin use
- Z68.37: Obesity

- Did you provide dietary or exercise counseling? These are noted with an additional Z code:
  - Dietary counseling and surveillance: Z71.3
  - Exercise counseling: Z71.89
- Is the patient using insulin? Note that the “long-term use” code Z79.4 code can be used once the drug has been initiated for any person who is taking insulin chronically
- Is the patient on an insulin pump? Codes related to pump use include:
  - Insulin pump: Z96.41
  - Counseling, titration, removal, training, or fitting/adjustment of insulin pump: Z46.81
  - Insulin pump complications: T85.694
- Has the patient underdosed or overdosed insulin? Codes related to these situations include:
  - Underdosing of insulin: T38.3X6
  - Unintentional overdosing of insulin: T38.3X1
  - Suspected self-harm by overdosing insulin: T38.3X2X

After these T codes, there should be a modifier at the end to denote initial encounter (A), subsequent encounter (D), or Sequelae (S). For example, an initial encounter for intentional self-harm by overdosing insulin should be “T38.3X2A”.

**Codes for Pregnancy in Diabetes**

Codes to report pregnancy in women with diabetes include:

- Preexisting type 1 diabetes in pregnancy: O24.01
- Preexisting type 2 diabetes in pregnancy: O24.11
- GDM, diet controlled: O24.410
- GDM, insulin controlled: O24.414
- Obesity complicating pregnancy, unspecified: O99.210

**Conclusion**

Remember the following steps when coding for patients with diabetes:

1. Document the type of diabetes they have.

### BOX 2. Tools to Help Providers With ICD-10 Coding

- In many electronic health record systems, providers can type in a description of a condition in words and receive a list of codes from which to choose. Some systems allow providers to type in an outdated ICD-9 code and then provide the corresponding current ICD-10 code.
  - There are a number of online tools that can help with coding. Among them are:
    - Centers for Medicare & Medicaid Services websites: <https://www.cms.gov/medicare/coding/icd10/2015-icd-10-cm-and-gems.html> and <https://www.cms.gov/medicare/coding/icd10/providerresources.html>
    - The ICD-10 website: <https://www.ICD10data.com>
2. Document if their diabetes is controlled without any complications.
  3. If their diabetes is uncontrolled or they have any complications, document the complications using the codes that fall to the right of the decimal point.
  4. Add the secondary diagnosis code to support the diabetes code.

Box 1 offers two case studies to help you apply your knowledge of diabetes coding. Box 2 provides information about additional tools to help providers with ICD-10 coding.

#### Duality of Interest

Jay Shubrook serves as an associate editor for *Clinical Diabetes*. No other potential

conflicts of interest relevant to this article were reported.

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