Definition
Diabetes mellitus is a chronic, lifelong disease that involves impaired metabolism of carbohydrate, protein and fat. It is marked by high levels of sugar in the blood due to insufficient secretion of insulin by the pancreas, tissue resistance to insulin produced by the pancreas or both.

Background
Sugar from food is converted to glucose, which enters the bloodstream and is used by the body for energy. Insulin produced in the pancreas “unlocks” the tissue cells in the body, allowing glucose to enter to provide fuel and energy for the cells.

Types
- **Type 1 diabetes mellitus**: The pancreas produces little to no insulin, and daily insulin injections are required. Usually (but not always) diagnosed in childhood.
- **Type 2 diabetes mellitus**: The pancreas does not produce enough insulin to maintain normal glucose levels, often because the body tissues do not respond well to insulin (insulin resistance); in some cases, daily insulin injections are required. Far more common than Type 1. Usually occurs in adulthood.
- **Secondary diabetes mellitus**: Elevated blood sugar that is caused by another condition, such as malignant neoplasm of the pancreas, pancreatectomy, adverse drug effects or poisoning.

Risk factors for Type 2 diabetes mellitus
- Age (older than 45 years)
- Family history of diabetes
- Gestational diabetes or history of delivering a baby weighing more than 9 pounds
- Heart disease
- High cholesterol levels
- Obesity
- Physical inactivity
- Polycystic ovary syndrome in women
- History of glucose intolerance
- Certain ethnic groups are at higher risk (e.g., African Americans, Native Americans, Hispanic Americans, Pacific Islanders)

Signs and symptoms
- Frequent urination (polyuria)
- Excessive thirst (polydipsia)
- Excessive hunger (polyphagia)
- Unusual weight loss
- Fatigue
- Blurry vision
- Irritability

Complications
Acute complications
- Diabetic ketoacidosis: An acute life-threatening condition that requires immediate medical attention. This condition develops when cells in the body are unable to get the sugar (glucose) they need for energy. As a result, the body begins to break down fat and muscle for energy; this process produces ketones, which enter the bloodstream and cause a chemical imbalance called diabetic ketoacidosis. When diabetic ketoacidosis is severe, there is a risk of coma and even death.
- Infections
- Stroke
Chronic long-term complications

- Atherosclerotic peripheral vascular disease
- Coronary artery disease
- Diabetic neuropathy
- Diabetic nephropathy
- Diabetic retinopathy
- Erectile dysfunction
- Hyperlipidemia
- Hypertension

Diagnostic tools

- Urinalysis (to check for glucose, protein, ketones, etc.)
- Blood tests (fasting or random blood sugar, glucose tolerance tests, glycohemoglobin/Hgb A1c, metabolic profiles)

Treatment

Treatment depends on the type of diabetes and may include insulin injections or oral medications. Other treatments include dietary management; regular exercise; control of weight, blood pressure and cholesterol; close monitoring of blood glucose levels; diabetes education; and monitoring for complications.

Documentation tips for providers

- A good rule of thumb for any medical record is to limit – or avoid altogether – the use of acronyms and abbreviations. “DM” is a commonly accepted medical abbreviation for diabetes mellitus but can represent other medical conditions (for example: diastolic murmur, distal metastasis, dermatomyositis, Descemet’s membrane). The meaning of an abbreviation or acronym can often be determined based on context, but this is not always true. Best practice is to always spell out the diagnosis in full in the final assessment or impression.

- The subjective section of the office note should document the presence or absence of any current symptoms related to diabetes mellitus. If there are no current symptoms, this section should show the patient was asked about symptoms.

- The objective section of the office note should include any current physical exam findings associated with diabetes mellitus or its manifestations. If there are no current related exam findings, the objective section should show the patient was evaluated for related findings.

- Document diabetes mellitus to the highest level of specificity, including all of the following:
  - The type or cause of diabetes
    - Type 1
    - Type 2
    - Due to drugs or chemical (specify the causative drug or chemical)
    - Due to other disease or condition (specify the causative disease or condition)
    - Other specified type (specify the “other” type)
  - All complications or manifestations with clear cause-and-effect linkage. Remember that, unlike in ICD-9-CM, ICD-10-CM does not classify diabetes as controlled or uncontrolled. Rather, ICD-10-CM classifies diabetes that is “inadequately controlled,” “out of control” and “poorly controlled” to diabetes mellitus by type with hyperglycemia.

- MAJOR CODING ALERT: The American Hospital Association (AHA) Coding Clinic (Diabetes Mellitus with Associated Conditions, First Quarter ICD-10 2016, pages 11-12 and Clarification – Diabetes and Associated Conditions, Second Quarter 2016, pages 36-37) advises that, in accordance with ICD-10-CM Official Guidelines for Coding and Reporting, Section I.A.15, the word “with” should be interpreted to mean “associated with” or “due to” when it appears in a code title, the alphabetic index or an instructional note in the tabular list. The classification assumes a causal relationship between the two conditions linked by these terms in the alphabetic index or tabular list.
Here is an example from the alphabetic index for the main term “diabetes” and the subterm “with”:

- Diabetes, diabetic (mellitus) (sugar) E11.9
  - with
    - amyotrophy E11.44
    - arthropathy NEC E11.618
    - autonomic (poly) neuropathy E11.43
    - cataract E11.36
    - Charcot’s joints E11.610
    - chronic kidney disease E11.22
    - dermatitis E11.620
    - myasthenia E11.44

(This example list is not all-inclusive. For the complete list from the ICD-10-CM coding manual, see the alphabetic index under the various types of diabetes “with.”)

The subterm “with” in the index should be interpreted by the coder as a link between diabetes and any condition indented under the word “with.” These conditions should be coded as related to diabetes, even in the absence of provider documentation explicitly linking them, unless the documentation clearly states the conditions are not caused by diabetes – for example, by stating the actual nondiabetes-related cause or the cause is not diabetes or that the cause is unknown etc.

The AHA Coding Clinic states as an example that the physician documentation does not need to provide a link between diabetes and chronic kidney disease to accurately assign code E11.22, Type 2 diabetes mellitus with diabetic chronic kidney disease. This link can be assumed, since chronic kidney disease is listed under the subterm “with” (as long as there is no documentation indicating that CKD is not caused by diabetes).

For conditions not specifically linked by the word “with” in the code title, alphabetic index or tabular list, the provider documentation should clearly link the conditions to code them as related.

If the provider does not want these conditions coded as diabetic manifestations, he or she should clearly indicate diabetes is not the cause.

**Best documentation practice**

- Despite this new coding guidance, best documentation guidance remains the same. It is the responsibility of providers to document each and every medical diagnosis to the highest level of specificity.
- It is important that providers clearly document diabetes and its manifestations in a cause-and-effect relationship using linking terms, such as “due to,” “associated with” and “secondary to.” The best documentation practice is to describe each diabetes complication with the descriptor “diabetic.” For example, use “Diabetes mellitus Type 2, well controlled, with diabetic peripheral neuropathy, diabetic retinopathy and diabetic nephropathy.”
- Remember that if your electronic medical record (EMR) documents a current diagnosis of “diabetes mellitus with other manifestation,” the record must precisely identify the “other” manifestation. Not doing so represents incomplete documentation and may result in erroneous diagnosis coding.
- Make sure your EMR does not document conflicting or contradictory information. For example:
  - Your final impression should not document diabetes mellitus Type 1 and diabetes mellitus Type 2 (unless the patient truly has both types – this scenario requires a documented explanation).
  - Your final impression should not document diabetes mellitus as both controlled and uncontrolled.
  - Your final impression should not document diabetes mellitus as both with and without complications.
• If the patient is currently taking insulin, clearly document the current insulin regimen in the treatment plan section of the record (not only in the medication list).

• Always document the cause of secondary diabetes.

ICD-10-CM tips and resources for coders

• In ICD-10-CM, the codes for diabetes mellitus begin with the letter “E” and are in Chapter 4: Endocrine, Nutritional, and Metabolic Diseases. The ICD-10-CM diabetes codes are combination codes that identify:
  a) the type of diabetes mellitus
  b) the body system affected
  c) the particular complications that affect each body system

• Diabetes mellitus is coded from categories E08 — E13 as follows:
  o E08 Diabetes mellitus due to underlying cause
  o E09 Drug or chemical induced diabetes mellitus
  o E10 Type 1 diabetes mellitus
  o E11 Type 2 diabetes mellitus
  o E13 Other specified diabetes mellitus

Fourth, fifth and, in some cases, sixth characters are required to further describe the diabetic condition to the highest level of specificity.

• “Code first” and “Use additional code” notes are present for some of the diabetes mellitus categories and subcategories. The underlying condition should be sequenced first, followed by the manifestation. The “Use additional code” note appears at the etiology code and a “Code first” note at the manifestation code.

• The “Excludes1” note (meaning “not coded here”) appears under all the diabetes mellitus categories. An Excludes1 note indicates that the code excluded should never be used at the same time as the code above the Excludes1 note.

• To ensure accurate ICD-10-CM code assignment, the medical record documentation must be reviewed in its entirety, followed by location of the appropriate code in the alphabetic index and confirmation of the code in the tabular list, including careful review of all instructional notes.

Type of diabetes mellitus

• If the type of diabetes mellitus is not documented in the medical record, the default is Type 2 diabetes mellitus, which classifies to category E11.

Diabetes mellitus controlled or uncontrolled

• Remember that, unlike in ICD-9-CM, ICD-10-CM does not classify diabetes as controlled or uncontrolled. Rather, the alphabetic index advises that for diabetes mellitus described as inadequately controlled, out of control or poorly controlled, we must “code to diabetes, by type, with hyperglycemia.”

Diabetic complications or manifestations

• Patients with diabetes mellitus often experience one or more complications or manifestations of the diabetes that particularly affect the eyes, the feet, the kidneys, the nervous system and the circulatory system. These complications can occur at any time in the course of diabetes.

• A patient may have multiple complications of diabetes mellitus in more than one body area or system. Assign as many codes from categories E08 – E13, and within each particular subcategory, as needed to fully describe all of the diabetes complications that are present. Codes are sequenced based on the reason for the encounter.
• Please see the MAJOR CODING ALERT above in the fifth bullet under the “documentation tips for providers” section. AHA Coding Clinic (Clarification – Diabetes and Associated Conditions, Second Quarter 2016, pages 36-37) advises that, in accordance with the ICD-10-CM Official Guidelines for Coding and Reporting (Section I.15.A), the word “with” in the alphabetic index should be interpreted as a link between diabetes and any of those conditions indented under the word “with.” These conditions should be coded as related, even in the absence of provider documentation explicitly linking them (unless the documentation clearly states the conditions are not caused by diabetes — for example, by stating the actual nondiabetes-related cause or that the cause is not diabetes or that the cause is unknown).

The AHA Coding Clinic advises as an example that the physician documentation does not need to provide a link between diabetes and chronic kidney disease to accurately assign code E11.22, Type 2 diabetes mellitus with diabetic chronic kidney disease. This link can be assumed, since chronic kidney disease is listed under the subterm “with,” as long as there is no documentation indicating that CKD is not caused by diabetes.

• For conditions not specifically linked by the word “with” in the code title, alphabetic index or tabular list, the provider documentation must clearly link the conditions to code them as related.

Complications due to insulin pump malfunction
• **Underdose** of insulin due to an insulin pump failure codes to subcategory T85.6-, Mechanical complication of other specified internal and external prosthetic devices, implants and grafts. Fifth and sixth characters specify the particular type of pump malfunction, while a seventh character is assigned to report initial encounter, subsequent encounter or sequela. The code from subcategory T85.6 is the principal or first-listed code, followed by T38.3x6-, Underdosing of insulin and oral hypoglycemic [antidiabetic] drugs. Additional codes should be assigned for the type of diabetes mellitus and any associated complications due to the underdosing.

• **Overdose** of insulin due to insulin pump failure also codes to T85.6- (principal or first-listed) with fifth, sixth and seventh characters as noted above, followed by T38.3x1-, Poisoning by insulin and oral hypoglycemic [antidiabetic] drugs, accidental (unintentional).

Diabetes mellitus and long-term (current) use of insulin
• Current, long-term use of insulin does not affect the selection of the type of diabetes; i.e., insulin use does not automatically mean the patient is Type 1 diabetic.

• If the documentation in a medical record does not indicate the type of diabetes but does indicate that the patient uses insulin, code E11, Type 2 diabetes mellitus, should be assigned. Code Z79.4, Long-term (current) use of insulin, should also be assigned to indicate that the patient uses insulin. Code Z79.4 should not be assigned if insulin is given temporarily to bring a Type 2 patient’s blood sugar under control during an encounter.

• Code Z79.4 should not be assigned based only on a simple notation of “insulin” on a medication list. The medical record must clearly show the patient currently takes insulin regularly and routinely.

Secondary diabetes mellitus
• Secondary diabetes mellitus is always caused by another condition or event (for example, cystic fibrosis, malignant neoplasm of pancreas, pancreatectomy, adverse effect of drug or poisoning). Complications/manifestations associated with secondary diabetes mellitus classify to the following categories:
  o EØ8 Diabetes mellitus due to underlying condition
  o EØ9 Drug or chemical induced diabetes mellitus
  o E13 Other specified diabetes mellitus (identify)
The sequencing of the secondary diabetes codes in relationship to codes for the cause of the diabetes is based on the tabular list instructions for categories E08, E09 and E13.

For patients who routinely use insulin, code Z79.4, Long-term (current) use of insulin, should also be assigned. Code Z79.4 should not be assigned if insulin is given temporarily to bring a patient’s blood sugar under control during an encounter.

Secondary diabetes mellitus due to pancreatectomy (lack of insulin due to the surgical removal of all or part of the pancreas) codes to E89.1, Postprocedural hypoinsulinemia. Assign a code from category E13 and a code from subcategory Z90.41-, Acquired absence of pancreas, as additional codes.

Secondary diabetes mellitus due to drugs may be caused by an adverse effect of correctly administered medications, poisoning or sequela of poisoning. See ICD-10-CM Official Guidelines for Coding and Reporting:
- Section I.C.19.e for coding of adverse effects and poisoning
- Section I.C.20 for external cause code reporting

**Prediabetes and borderline diabetes**

- Prediabetes and borderline diabetes mellitus both classify to R73.09, Other abnormal glucose.

**Diabetes mellitus resolved**

- Generally speaking, diabetes mellitus is a chronic, lifelong condition. However, diabetes mellitus may be described as resolved in some cases. For example:
  - Type 1 diabetes mellitus resolved following pancreas transplant
  - Type 2 diabetes mellitus resolved after significant weight loss following gastric bypass surgery

When a medical record documents diabetes mellitus as resolved, the condition cannot be coded as current.

**Coding examples**

<table>
<thead>
<tr>
<th>Example 1</th>
<th>Final diagnosis</th>
<th>ICD-10-CM code</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetic neuropathy</td>
<td>E11.40</td>
<td>Neuropathy is identified as “diabetic.”</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example 2</th>
<th>Final diagnosis</th>
<th>ICD-10-CM codes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 diabetes and neuropathy</td>
<td>E11.40</td>
<td>Physician documentation does not need to provide a link between the diagnoses of diabetes and neuropathy. In the alphabetic index of ICD-10-CM, under diabetes, Type 2, “with” – neuropathy is listed as a subterm; therefore, the linkage can be assumed when the record does not specify any other cause of neuropathy.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Example 3</th>
<th>Final diagnosis</th>
<th>ICD-10-CM codes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes complicated by stage 3 CKD</td>
<td>E11.22, N18.3</td>
<td>This statement clearly links the renal manifestation of stage 3 CKD the diabetes through use of the linking phrase “complicated by.”</td>
<td></td>
</tr>
</tbody>
</table>
### Example 4

<table>
<thead>
<tr>
<th>Final diagnosis</th>
<th>Type 2 diabetes mellitus with diabetic ketoacidosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD-10-CM codes</td>
<td>E13.10</td>
</tr>
<tr>
<td>Comments</td>
<td>See AHA Coding Clinic guideline for diabetes mellitus with diabetic ketoacidosis, first quarter 2013, pages 26-27.</td>
</tr>
</tbody>
</table>

### Example 5

| Final diagnosis | 1. Type 1 diabetes, poorly controlled  
2. Retinopathy 
3. HTN 
4. CHF |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD-10-CM codes</td>
<td>E10.65, E10.319, I10, I50.9</td>
</tr>
<tr>
<td>Comments</td>
<td>The alphabetic index of ICD-10-CM indicates diabetes mellitus described as poorly controlled codes to diabetes, by type, with hyperglycemia. Physician documentation does not need to provide a link between the diagnoses of diabetes and retinopathy. In the alphabetic index, under diabetes, Type 1, “with” – retinopathy is listed as a subterm; therefore, the linkage can be assumed when the record does not specify any other cause of retinopathy.</td>
</tr>
</tbody>
</table>

### Example 6

<table>
<thead>
<tr>
<th>Final diagnosis</th>
<th>Type 2 diabetes mellitus with diabetic ketoacidosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD-10-CM codes</td>
<td>E13.10</td>
</tr>
<tr>
<td>Comments</td>
<td>In the alphabetic index under diabetes, Type 2, “with,” ketoacidosis is not listed as a subterm. However, AHA Coding Clinic guideline for diabetes mellitus with diabetic ketoacidosis, first quarter 2013, pages 26-27, advises to use code E13.10, stating: “Given the less than perfect limited choices, it was felt that it would be clinically important to identify the fact that the patient has ketoacidosis. The National Center for Health Statistics (NCHS), which has oversight for volumes I and II of ICD-10-CM, has agreed to consider a future ICD-10-CM Coordination and Maintenance Committee meeting proposal.”</td>
</tr>
</tbody>
</table>

**References:** American Hospital Association Coding Clinic; Dorland’s Medical Dictionary; MedlinePlus; ICD-10-CM Official Guidelines for Coding and Reporting; Mayo Clinic; MedlinePlus