# Identify Patients With Type 2 Diabetes at Risk for Cardiovascular Events and Hospitalizations
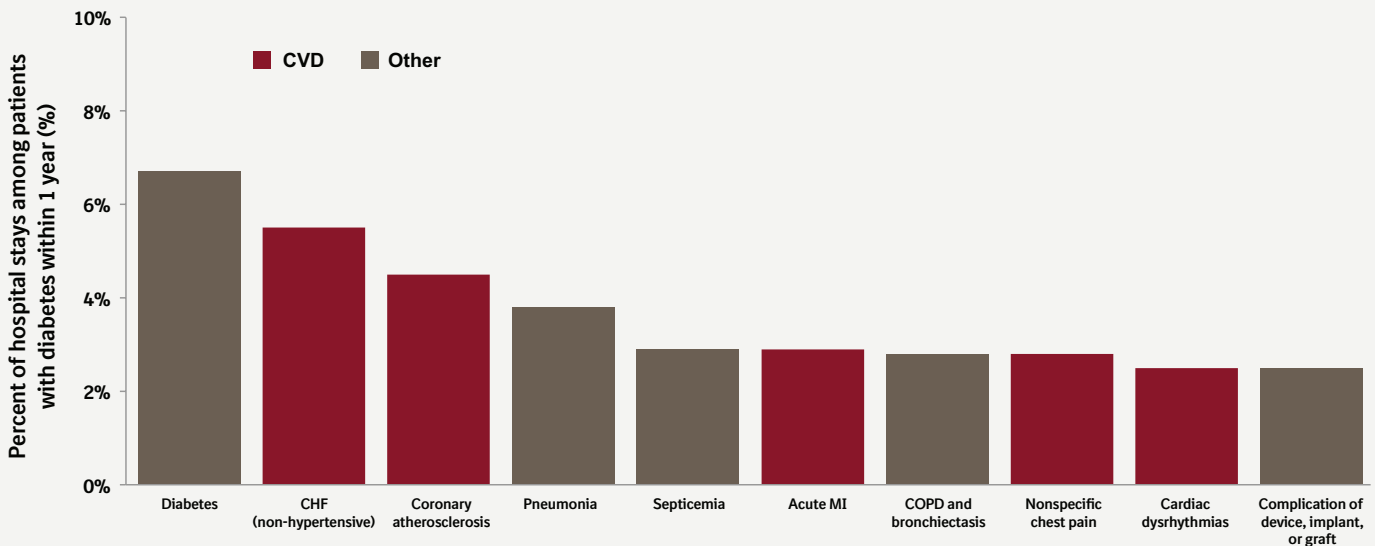
Atherosclerotic cardiovascular disease (ASCVD) defined as acute coronary syndrome, a history of myocardial infarction (MI), stable or unstable angina, coronary or other arterial revascularization, stroke, transient ischemic attack, or peripheral arterial disease presumed to be of atherosclerotic origin is the leading cause of morbidity and mortality for individuals with diabetes and is the largest contributor to the direct and indirect costs of diabetes.[1]

*American Diabetes Association*

## ASCVD increases morbidity, mortality, and hospitalization rates in patients with type 2 diabetes

### Top 10 Principal Diagnoses for Hospitalizations Among Patients With Diabetes[2]



CHF=congestive heart failure; COPD=chronic obstructive pulmonary disease.

## Risk Factors for ASCVD[1]

✔ Obesity

✔ Hypertension

✔ Dyslipidemia

✔ Smoking

✔ Family history of premature coronary disease

✔ Presence of albuminuria

*CVD=cardiovascular disease

## STEP 1 — Identify Patients With Type 2 Diabetes

| Description | ICD-9 CODE[3] | | ICD-10 Code[3] | |
| --- | --- | --- | --- | --- |
| Type 2 Diabetes | 250.00 | Diabetes mellitus without mention of complications, type II or unspecified type, not stated as uncontrolled | E11 | Type 2 diabetes mellitus |

## STEP 2 — Identify Patients With Type 2 Diabetes Who Have Already Experienced an ASCVD Event

| Description | ICD-9 CODE[3] | | ICD-10 Code[3] | |
| --- | --- | --- | --- | --- |
| Myocardial infarction | 410.xx | Acute myocardial infarction | I21.09 | ST elevation (STEMI) myocardial infarction involving other coronary artery of anterior wall |
| Coronary artery disease | 411.xx | Other acute and subacute forms of ischemic heart disease | I24.8 | Other forms of acute ischemic heart disease |
| | 412 | Old myocardial infarction | I25.2 | Old myocardial infarction |
| | 413.x | Angina pectoris | I20 | Angina pectoris |
| | 414.xx | Other forms of chronic ischemic heart disease | I25.5 | Ischemic cardiomyopathy - or - |
| | | | 125.89 | Other forms of chronic ischemic heart disease - or - |
| | | | I25.9 | Chronic ischemic heart disease, unspecified |
| | 429.0 | Myocarditis, unspecified | I51.4 | Myocarditis, unspecified |
| | 429.1 | Myocardial degeneration | I51.5 | Myocardial degeneration |
| | 429.2 | Cardiovascular disease, unspecified | I25.10 | Atherosclerotic heart disease of native coronary artery without angina pectoris |
| Unstable angina | 413.x | Angina pectoris | I20 | Angina pectoris |
| Stroke | 430.Xx | Subarachnoid hemorrhage | I60.9 | Nontraumatic subarachnoid hemorrhage, unspecified |
| | 431.Xx | Intracerebral hemorrhage | I61.9 | Nontraumatic intracerebral hemorrage, unspecified |
| | 433.01 | Occlusion and stenosis of basilar artery with cerebral infarction | I63.22 | Cerebral infarction due to unspecified occlusion or stenosis of basilar arteries |
| | 433.11 | Occlusion and stenosis of carotid artery with cerebral infarction | I63.139 | Cerebral infarction due to embolism of unspecified carotid artery - or - |
| | | | I63.239 | Cerebral infarction due to unspecified occlusion or stenosis of unspecified carotid arteries |

[a] This table includes the commonly identified ICD-9-CM and ICD-10-CM codes for adult patients with type 2 diabetes that are at risk for cardiovascular events and hospitalizations. This table has been reviewed for accuracy and completeness, however there may be less commonly used codes that are missing. For additional codes please refer to a coding resource.

## STEP 2 (continued) — Identify Patients With Type 2 Diabetes Who Have Already Experienced an ASCVD Event

| Description | ICD-9 CODE[3] | | ICD-10 Code[3] | |
| --- | --- | --- | --- | --- |
| Transient ischemic attack | 435.8 | Other specified transient cerebral ischemias | G45.1 | Carotid artery syndrome - or - |
| | | | G45.8 | Other transient cerebral ischemic attacks and related syndromes |
| | 435.9 | Unspecified transient cerebral ischemia | G45.9 | Transient cerebral ischemic attack, unspecified - or - |
| | | | I67.848 | Other cerebrovascular vasospasm and vasoconstriction |
| Peripheral arterial disease | 440.20 | Atherosclerosis of native arteries of the extremities | I70.209 | Unspecified atherosclerosis of native arteries of extremities, unspecified extremity |
| | 440.30 | Atherosclerosis of bypass graft of the extremities | I70.399 | Other atherosclerosis of unspecified type of bypass graft(s) of the extremities, unspecified extremity |
| | 443.9 | Peripheral vascular disease, unspecified | I73.9 | Peripheral vascular disease, unspecified |
| | 444.2 | Arterial embolism and thrombosis of arteries of the extremities | I74.2 | Embolism and thrombosis of arteries of the upper extremities - or - |
| | | | I74.3 | Embolism and thrombosis of arteries of the lower extremities |
| | 444.81 | Embolism and thrombosis of iliac artery | I74.5 | Embolism and thrombosis of iliac artery |
| | 445 | Atheroembolism | I75 | Atheroembolism |
| Heart failure | 428.0 | Congestive heart failure, unspecified | I50.9 | Heart failure, unspecified |
| | 428.1 | Left heart failure | I50.1 | Left heart failure |
| | 428.20 | Systolic heart failure | I50.20 | Unspecified systolic (congestive) heart failure |
| | 428.30 | Diastolic heart failure, unspecified | I50.30 | Unspecified diastolic (congestive) heart failure |
| | 428.40 | Combined systolic and diastolic heart failure, unspecified | I50.40 | Unspecified combined systolic (congestive) and diastolic (congestive) heart failure |
| | 428.9 | Heart failure, unspecified | I50.9 | Heart failure, unspecified |

## STEP 3 — Appropriately Manage Patients to Prevent Another ASCVD Event and/or Rehospitalization

- Assess and monitor risk
- Encourage weight loss for overweight/obese patients
- Maintain blood pressure target <140/90 mm Hg
- Evaluate statin therapy based on risk for all patients
- Ensure smoking cessation counseling
- Focus on lifestyle modifications and medication adherence

[a] This table includes the commonly identified ICD-9-CM and ICD-10-CM codes for adult patients with type 2 diabetes that are at risk for cardiovascular events and hospitalizations. This table has been reviewed for accuracy and completeness, however there may be less commonly used codes that are missing. For additional codes please refer to a coding resource.

# Use ICD-9/ICD-10 Codes to Identify Patients With Type 2 Diabetes at Risk for ASCVD Events and Hospitalizations[a]

## STEP 1 — Identify Patients With Type 2 Diabetes

| Description | ICD-9 CODE[3] | | ICD-10 Code[3] | |
|---|---|---|---|---|
| Type 2 Diabetes | 250.00 | Diabetes mellitus without mention of complications, type II or unspecified type, not stated as uncontrolled | E11 | Type 2 diabetes mellitus |

## STEP 2 — Identify Patients With Type 2 Diabetes Who Have Additional ASCVD Risk Factors

| Description | ICD-9 CODE[3] | | ICD-10 Code[3] | |
|---|---|---|---|---|
| Overweight | 278.02 | Overweight | E66.3 | Overweight |
| Obesity | 278.00 | Obesity, unspecified | E66.9 | Obesity, unspecified |
| Hypertension | 401.9 | Unspecified essential hypertension | I10 | Essential (primary) hypertension |
| Hyperlipidemia | 272.4 | Other and unspecified hyperlipidemia | E78.5 | Hyperlipidemia, unspecified |
| Smoking | 305.1 | Tobacco use disorder | F17.200 | Nicotine dependence, unspecified, uncomplicated |
| Family history of premature coronary disease | V17.3 | Family history of ischemic heart disease | Z82.49 | Family history of ischemic heart disease and other diseases of the circulatory system |
| Proteinuria | 791.0 | Proteinuria | R80.9 | Proteinuria, unspecified |
| Type 2 diabetes with kidney complications | 250.40 | Diabetes with renal manifestations | E11.2 | Type 2 diabetes with other diabetic kidney complication |

## STEP 3 — Appropriately Manage Patients at Risk of Hospitalizations[1]

- Achieve a >5% weight loss for overweight/obese patients
- Establish blood pressure target <140/90 mm Hg
- Initiate statin therapy based on risk for all patients
- Ensure smoking cessation counseling
- Assess for coronary disease risk
- Monitor for and identify diabetic renal disease

[a]This table includes the commonly identified ICD-9-CM and ICD-10-CM codes for adult patients with type 2 diabetes that are at risk for cardiovascular events and hospitalizations. This table has been reviewed for accuracy and completeness, however there may be less commonly used codes that are missing. For additional codes please refer to a coding resource.

References: 1. American Diabetes Association. Standards of medical care in diabetes−2017. *Diabetes Care*. 2017;40 (suppl 1):S1-S135. 2. Fraze T, Jiang J, Burgess J. Hospital stays for patients with diabetes, 2008. H-CUP Statistical Brief #93. August 2010. 3. ICD10Data.com. http://www.icd10data.com/. Accessed July 13, 2017.

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