Sick sinus syndrome (SSS)

ICD-10-CM

Clinical overview

Background

The sinus node (also known as the sinoatrial node or SA node) is an area of specialized cells located in the right upper chamber of the heart (the right atrium).

- The cells of the sinus node generate regular electric impulses at a steady rate that spread through the upper chambers of the heart (the atria) and the lower pumping chambers (the ventricles) and cause the muscular contractions responsible for the pumping function of the heart.
- The electrical signals of the sinus node control the heart rate at a steady rate; thus, the sinus node is called the "natural pacemaker of the heart."
- Under normal conditions, the sinus node produces 60 to 100 impulses a minute, which is the normal resting heart rate.
- The sinus node can increase the heart rate during periods of stress, such as exercise or high fever.
- During quiet times, such as during sleep, the sinus node may slow down to below 60 impulses, or beats, per minute.

Definition

Sick sinus syndrome (SSS) is an abnormality or malfunction of the sinus node. The result is that the heart rate is no longer controlled at a regular rate and rhythm, and abnormal heart rhythms (arrhythmias) occur.

Types

- Sinoatrial block: Electrical signals pass too slowly through the sinus node, resulting in an abnormally slow heart rate.
- Sinus arrest: Sinus node activity pauses.
- Tachycardia-bradycardia syndrome: Heart rate alternates between abnormally fast and slow, sometimes with long pauses in between.

Causes

- Age-related wear and tear to the heart muscle (the most common cause)
- Diseases that cause damage to the heart's electrical system
- Certain medications

Signs and symptoms

- Pulse that is slower than normal (bradycardia), too fast (tachycardia) or alternates between the two
- Dizziness or lightheadedness
- Fainting or near fainting
- Shortness of breath
- Fatigue
- Chest pain
- Palpitations
- Confusion or memory problems
- Difficulty sleeping

There may be no symptoms.

Diagnostic tools

- Medical history and physical exam
- Standard electrocardiogram (ECG or EKG)
- Holter monitoring
- Cardiac event recording
- Electrophysiologic studies (EP studies)

Treatment

When there are no symptoms:

- Monitoring and regular follow-up

For symptomatic sick sinus syndrome:

- Medication management to control rapid or irregular rhythms
- Implantation of a pacemaker to prevent slow rhythms
- Surgical procedures, such as radiofrequency ablation to destroy small areas of cardiac tissue and disrupt the electrical impulses that are causing the problem

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Best documentation practices for physicians

Subjective

The subjective section of the office note should document the presence or absence of any current signs or symptoms related to sick sinus syndrome (e.g., fatigue, dizziness, shortness of breath, etc.).

Objective

In the objective section include any current associated physical exam findings (e.g., abnormally slow or fast heart rate, low blood pressure, etc.) and related diagnostic testing results (abnormal heart rhythm on electrocardiogram, Holter monitor results, pacemaker interrogation and reprogramming, etc.).

Assessment

Abbreviations:

A good rule of thumb for a medical record is to limit – or avoid altogether – the use of abbreviations. While "SSS" is a commonly accepted medical abbreviation for sick sinus syndrome, best documentation practice is as follows:

- The initial notation of a condition should be spelled out in full followed by the abbreviation in parentheses — e.g., "Sick sinus syndrome (SSS)."
- Subsequent mention of the condition can then be made using the abbreviation.

Terms of uncertainty:

- Do not use terms that imply uncertainty ("probable," "apparently," "likely," "consistent with," etc.) to describe current, confirmed sick sinus syndrome.
- Do not document suspected and unconfirmed sick sinus syndrome as if the condition were confirmed. Instead, document signs and symptoms in the absence of a confirmed diagnosis.

Current versus historical:

Do not describe a *current* diagnosis of sick sinus syndrome as "history of." In diagnosis coding, the phrase "history of" means the condition is historical and no longer exists as a current problem.

Current status:

Document the current status of sick sinus syndrome (stable, worsening, controlled by pacemaker, etc.).

Cardiac devices:

Document the presence of a cardiac device (for example: pacemaker, automatic implantable cardioverter/defibrillator (AICD), cardiac resynchronization therapy pacemaker (CRT-P), or cardiac resynchronization therapy defibrillator (bi-ventricular defibrillator) (CRT-D).

Be sure to include associated information, such as:

a) Results of cardiac device interrogation
b) Detection of any problems with the cardiac device
c) Any associated bradyarrhythmia that is not controlled by the pacemaker
d) Medications that are being used in addition to a pacemaker to control tachyarrhythmias associated with sick sinus syndrome (with clear linkage between sick sinus syndrome and the medication being used to treat it)

Treatment plan

Document a specific and concise treatment plan for sick sinus syndrome.

- Include planned diagnostic testing.
- Clearly link sick sinus syndrome to any medications being used to control related tachyarrhythmias.
- Clearly indicate to whom or where referrals are made or from whom consultation advice is requested.
- Document when the patient will be seen again.

Electronic health record (EHR) issues

Other and unspecified codes with descriptions:

Some electronic health records (EHRs) insert ICD-10-CM codes with corresponding descriptions into the assessment section of the office note rather than a provider-stated final diagnosis. For example:

"I49.8 Other specified cardiac arrhythmias"

"I49.9 Cardiac arrhythmia, unspecified"

These are vague descriptions and incomplete diagnoses.

- Codes titled "other" or "other specified" are for use when the medical record provides a specific diagnosis description for which a specific code does not exist.
- The "other" ICD-10-CM code with description should not be used, by itself, as a final diagnosis without clear documentation that specifies the particular "other" condition.
- Unspecified diagnosis descriptions should be used only when sufficient clinical information is not known or available to the provider at the time of the encounter.

Mismatch between final diagnostic statement and EHR-inserted diagnosis code with description:
Another scenario that causes confusion is when the assessment section documents a provider-stated diagnosis *PLUS* an EHR-inserted diagnosis code with description that does not match – or may even be contradictory. Example:

Assessment
Problem #1: Coronary sinus rhythm disorder
I49.5 Sick sinus syndrome

Here the final diagnosis **in bold** in the Assessment is "Coronary sinus rhythm disorder", which codes to I49.8, Other specified cardiac arrhythmias.

The EHR-inserted diagnosis code with description that follows, however, is I49.5 Sick sinus syndrome.

This can lead to confusion regarding which diagnostic statement is correct and which diagnosis code should be reported. Documentation elsewhere in the record does not always provide clarity.

To avoid confusion and ensure accurate diagnosis code assignment, the provider-stated final diagnosis must either

a) match the code with description; or
b) it must classify in ICD-10-CM to the EHR-inserted diagnosis code with description.

Please note: ICD-10-CM is a statistical classification; it is not a substitute for a healthcare provider's final diagnostic statement. It is the healthcare provider's responsibility to provide legible, clear, concise and specific documentation of each final diagnosis described to the highest level of specificity, which is then translated to a code for reporting purposes. It is not appropriate for healthcare providers to simply list a code number or select a code number from a list of codes in place of a written final diagnosis.

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Tips and resources for coders

Coding basics

For accurate and specific diagnosis code assignment, the coder must review the entire medical record to verify the condition remains a current problem. Next, note the exact diagnosis description documented in the medical record. Finally, in accordance with ICD-10-CM official coding conventions and guidelines:

- Search the alphabetic index for that specific diagnosis description and the corresponding code.
- Verify the code in the tabular list, carefully following all instructional notes.

Coding sick sinus syndrome

Sick sinus syndrome classifies to category I49, Other cardiac arrhythmias. A fourth character is required to complete the code. Category I49:

Excludes 1 neonatal dysrhythmia (P29.1-)
sinoatrial bradycardia (RØØ.1)
sinus bradycardia (RØØ.1)
vagal bradycardia (RØØ.1)

Excludes 2 bradycardia NOS (RØØ.1)

Excludes 1 means the code excluded should not be used at the same time as the code above the *Excludes 1* note.

Excludes 2 means the condition excluded is not part of the condition represented by the code, but a patient may have both conditions at the same time. When both conditions are present, both codes can be assigned.

Sick sinus syndrome codes to I49.5, which includes tachycardia-bradycardia syndrome. "Sinoatrial node dysfunction" also codes to I49.5.

Sinus bradycardia

"Sinus bradycardia" with no further description is not the same as sick sinus syndrome. Sinus bradycardia simply means a slow heart rate. It is only when sinus bradycardia is described with certain additional terms (e.g., tachycardia-bradycardia syndrome) that it codes to I49.5.

Implantable cardiac devices

Pacemaker: A small device implanted under the skin in the upper chest that has a computer that senses when the heart beats at the wrong speed or out of rhythm. If this happens, the pacemaker sends out electrical pulses to maintain the heart at a steady rate and rhythm.

Automatic implantable cardioverter defibrillator (AICD): Another cardiac device placed under the skin of the chest. This device includes a computer that tracks heart rate and rhythm and detects heart beats that are way too fast or out of rhythm. If this happens, the AICD sends out a shock to get the heart back into rhythm. Some AICDs also act like pacemakers, sending out a signal when the heart rate is too slow.

Cardiac device interrogation: A routine computer evaluation of device function used to verify the device is programmed accurately and to assess battery and lead function. Device settings may be reprogrammed if indicated.

Depending on the specific medical record documentation, it may be appropriate to assign one of these codes:

- Z95.Ø Presence of cardiac pacemaker
- Z95.81Ø Presence of automatic (implantable) cardiac defibrillator
- Z45.Ø1Ø Encounter for checking and testing of cardiac pacemaker pulse generator (battery)
- Z45.Ø18 Encounter for adjustment and management of other part of cardiac pacemaker
- Z45.Ø2 Encounter for adjustment and management of automatic implantable cardiac defibrillator

When a patient with sick sinus syndrome (SSS) has a cardiac device that is being used as part of the management of SSS, it is appropriate to code both the sick sinus syndrome and the presence of the cardiac device.

- For example, a coder may assign codes I49.5 Sick sinus syndrome and Z95.Ø Presence of cardiac pacemaker when both are documented in the medical record.
- Although the pacemaker may be controlling the heart rate, it does not cure SSS. The condition is still present and being managed/monitored; and is a reportable condition.
- Cardiac device examples: pacemaker, automatic implantable cardioverter/ defibrillator (AICD), cardiac resynchronization therapy pacemaker (CRT-P), cardiac resynchronization therapy defibrillator (CRT-D).

Reference: AHA Coding Clinic, Sick Sinus Syndrome Controlled with Implanted Cardiac Device, First Quarter 2019, Pages 33-34.

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Tips and resources for coders

Coding examples

Example 1	
Medical record documentation	Six-month cardiology follow-up. States he is doing well from cardiovascular perspective. Had placement of permanent dual-chamber pacemaker in 2015 in the context of sinus pauses, dizziness and pre-syncope. Known coronary artery disease with prior three-vessel bypass grafting 2013.
Review of systems	Unremarkable. Denies symptoms of angina or heart failure.
Medications	Metoprolol, simvastatin, aspirin, levothyroxine, omeprazole, multivitamin
Physical exam	Weight 200 pounds, blood pressure 136/88, heart rate 81. Normal S1 and S2 without extra heart tones, murmurs or rubs. Pacemaker incision is well-healed. Remainder of exam unremarkable.
Pacemaker check	Atrial pacing 73 percent of the time and 1 percent in the ventricle. Battery voltage stable.
Impression/Plan	1. Coronary artery atherosclerosis with prior coronary artery bypass graft surgery. Continue statin. 2. Sinus node dysfunction with dual chamber permanent pacemaker placement six years ago. Interrogation shows device is functioning appropriately. Battery and lead status are stable. No problems identified.
ICD-10-CM code(s)	**I25.1Ø** Atherosclerotic heart disease of native coronary artery without angina pectoris **Z95.1** Presence of aortocoronary bypass graft **I49.5** Sick sinus syndrome **Z45.Ø18** Encounter for adjustment and management of other part of cardiac pacemaker
Comments	Although the pacemaker may be controlling the heart rate, it does not cure SSS; the condition is still present and being managed/monitored; and is a reportable condition. Therefore, both codes are assigned – I49.5 and Z45.Ø18.

Example 2	
Review of systems	Here for follow-up for heart disease. Denies shortness of breath or dizziness. Has some mild swelling in lower extremities and some difficulty walking – uses a cane for aid with ambulation.
Past medical history	Coronary artery disease, hyperlipidemia, hypertension, insulin-dependent diabetes mellitus, congestive heart failure, sick sinus syndrome, stroke/transient ischemic attack, degenerative joint disease, depression.
Medications	Neurontin, Lipitor, furosemide, Humulin insulin, aspirin, Plavix, potassium, atenolol, Zoloft
Physical exam	Blood pressure 118/88. HR 74. No jugular venous distention; normal respiratory effort; diminished breath sounds bilaterally. Heart regular rate and rhythm, point of maximal impulse not displaced, no thrills, lifts or palpable S3 or S4, 1+ pitting edema of the ankles, normal pedal pulses with good capillary refill. Recent echocardiogram and carotid Dopplers look good.
Impression	Hypertension, controlled. Congestive heart failure and sick sinus syndrome – stable at present. Insulin-dependent diabetes mellitus, controlled.
Plan	Take an extra Lasix daily if needed for swelling in lower extremities. Next re-check in four months.
ICD-10-CM code(s)	**I11.Ø** Hypertensive heart disease with heart failure **I5Ø.9** Heart failure, unspecified **I49.5** Sick sinus syndrome **E11.9** Type 2 diabetes mellitus without complications
Comments	Sick sinus syndrome is documented in the final assessment as a current problem that is stable at present. The treatment plan includes re-evaluation at the next visit. ICD-10-CM presumes a causal relationship between hypertension and heart failure unless the medical record specifically indicates these two conditions are not related. This requires combination code I11.Ø, Hypertensive heart disease with heart failure and I5Ø.9, Heart failure, unspecified.

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Tips and resources for coders

Example 3	
History of present illness	Presents today for monitoring of his coronary artery disease. He is aerobically active – normally golfs four days a week, walks entire nine holes with no problems. Reports no change in exercise tolerance over the last year, except about a month ago he started to tire more easily. Blood pressure is well controlled. Heart rate, however, is slow, measured at 40 beats per minute on two different measurements in the office today. EKG shows heart rate of 41 bpm with left atrial enlargement and nonspecific T wave changes. There has been a marked drop-off in his heart rate over the past year. Denies chest pain, palpitations, peripheral edema or syncopal episodes.
Physical exam	BP 124/60. Pulse 41. Respiration 16. Weight 129. Height 68". BMI 19. Well nourished, well developed but slight in stature. No acute distress noted. Chest with normal symmetry, clear to auscultation. Cardiac: S1 and S2 normal; no murmurs, rubs or gallops. Profound bradycardia noted. Extremities: No cyanosis, clubbing or edema.
Impression	1. Asymptomatic coronary artery atherosclerosis with history of angioplasty with stent. 2. Hyperlipidemia now on Crestor and due for re-assessment at the VA clinic next month. 3. Profound, persistent bradycardia with complaints of fatigability. Thus, I have instructed him to wean and discontinue Lopressor – once off Lopressor, he will check his blood pressure on two separate occasions at the local firehouse and call us with those blood pressure readings. If they are above 135/80, we will start him on Losartan 50 mg daily. Next visit in three months.
ICD-10-CM code(s)	**I25.1Ø** Atherosclerotic heart disease of native coronary artery without angina pectoris **Z95.5** Presence of coronary angioplasty implant and graft **E78.5** Hyperlipidemia, unspecified **RØØ.1** Bradycardia, unspecified
Comments	Final impression does not document bradycardia with any descriptors that lead to code I49.5.

References: American Hospital Association Coding Clinic; ICD-10-CM Official Guidelines for Coding and Reporting; Mayo Clinic; MedlinePlus; WebMD