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
- Medications

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.

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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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 (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—as 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 current 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 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.
- If referrals are made or consultations requested, the office note should indicate to whom or where the referral or consultation is made or from whom consultation advice is requested.
- Document when the patient will be seen again.

Electronic medical record (EMR) reminder
- Some electronic medical records insert ICD-10-CM code descriptions into the medical record to represent the final diagnosis. For example: “I49.9, Cardiac arrhythmia, unspecified.”
- With these types of vague descriptions, the diagnosis will not be complete unless the physician clearly documents the specific cardiac arrhythmia.

Note: ICD-10-CM is a statistical classification; it is not a substitute for a provider’s final diagnostic statement. It is the healthcare provider’s responsibility to provide legible, clear, concise and specific documentation of a 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
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list a code number or select a code number from a list of codes in place of a diagnosis.

**Coding basics**
For accurate and specific diagnosis code assignment, the coder must review the entire medical record to verify sick sinus syndrome remains a current problem; then note the exact description of sick sinus syndrome documented in the medical record. Next, in accordance with ICD-10-CM official coding conventions and guidelines:
- Search the alphabetic index for that specific 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* the following:
- neonatal dysrhythmia (P29.1-)
- sinoatrial bradycardia (R00.1)
- sinus bradycardia (R00.1)
- vagal bradycardia (R00.1)

*Excludes 2* the following:
- bradycardia NOS (R00.1)

*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 syndromes 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 additional terms that it classifies to code 149.5.

(For example, tachycardia-bradycardia syndrome) can it classify to code I49.5.

**Implantable cardiac devices**

**Pacemaker:** a small device implanted under the skin in the upper chest.
- 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 type of cardiac device placed under the skin.
- Also 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 the codes noted here:
- 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
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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 **149.5** Sick sinus syndrome and **Z95.0** 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 cardioverter/defibrillator (AICD), cardiac resynchronization pacemaker (CRT-P), bi-ventricular 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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### Coding examples

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### Sick sinus syndrome (SSS)

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