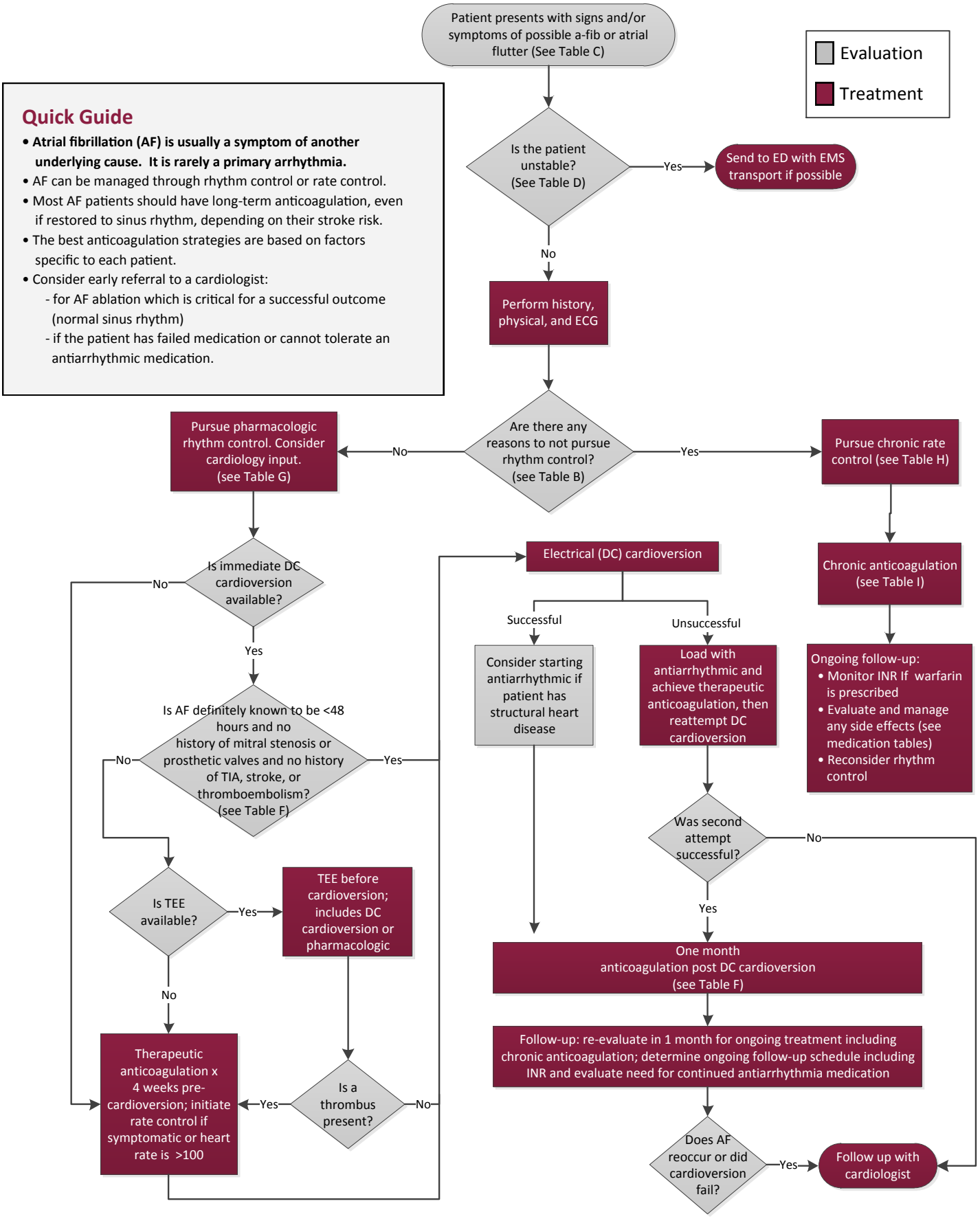
MOUNT CARMEL Health Partners

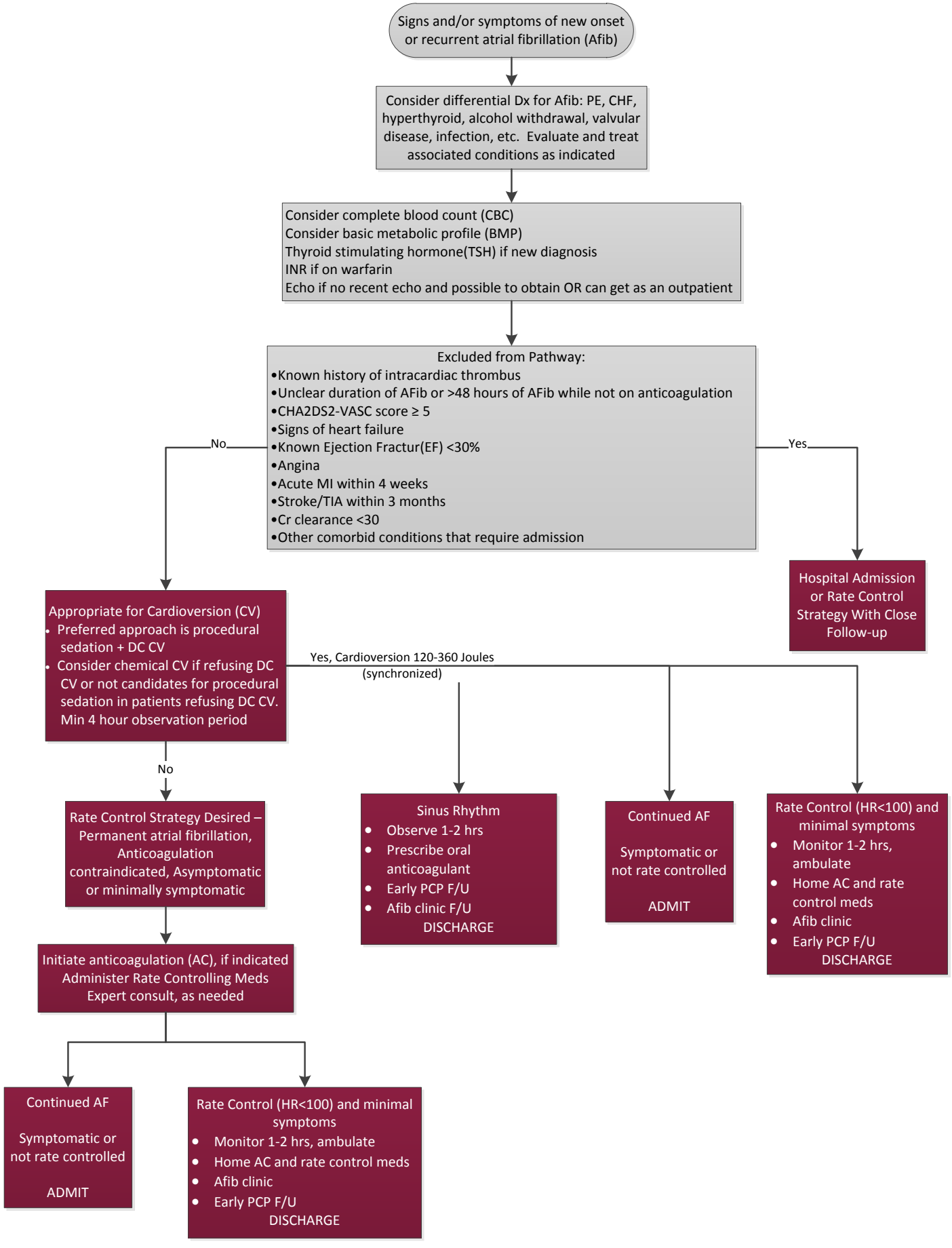
Atrial Fibrillation Clinical Guideline

Quick Guide

- **Atrial fibrillation (AF) is usually a symptom of another underlying cause. It is rarely a primary arrhythmia.**
- AF can be managed through rhythm control or rate control.
- Most AF patients should have long-term anticoagulation, even if restored to sinus rhythm, depending on their stroke risk.
- The best anticoagulation strategies are based on factors specific to each patient.
- Consider early referral to a cardiologist:
  - for AF ablation which is critical for a successful outcome (normal sinus rhythm)
  - if the patient has failed medication or cannot tolerate an antiarrhythmic medication.



Mount Carmel Emergency Department Protocol for Early Cardioversion of Hemodynamically Stable Atrial Fibrillation



Definition: Atrial fibrillation is a supraventricular tachyarrhythmia characterized by uncoordinated atrial activation with consequent deterioration of atrial mechanical function documented continually on an ECG or for at least 30 seconds on monitoring.

Classification

- **Paroxysmal AF**: AF that ends in less than 7 days and can be recurrent
- **Persistent AF**: Continuous AF (present on every ECG) that is sustained beyond 7 days or requires cardioversion
- **Longstanding persistent AF**: Continuous AF of greater than a 12-month duration with continued efforts to restore sinus rhythm
- **Permanent AF**: Continuous AF of a greater than 12-month duration when no further interventions to restore to sinus rhythm are planned
- **Nonvalvular AF**: AF in the absence of rheumatic mitral stenosis, a mechanical or bioprosthetic heart valve, or mitral valve repair

History and Evaluation

- Description of the symptoms: onset or date of discovery, frequency and duration, severity, and qualitative characteristics
- Symptoms may include: palpitations, tachycardia, fatigue, weakness, dizziness, lightheadedness, reduced exercise capacity, increased urination, or mild dyspnea
  Severe symptoms: dyspnea at rest, angina, presyncope, or syncope
- Precipitating causes: exercise, emotion, alcohol, or sleep apnea
- Other medical history: underlying heart disease, comorbidities and possible reversible conditions such as hyperthyroidism, electrolyte imbalance, or pulmonary disease

Physical Exam and Diagnostic Testing

- Physical exam
- Vital signs, including oximetry
- ECG to verify AF and identify other cardiac concerns
- Labs: CBC, CMP, and thyroid function
- Transthoracic echocardiogram
- Consider chest x-ray if there are pulmonary signs or symptoms
- Consider nocturnal oximetry to assess for sleep apnea; may consider STOP-BANG obstructive sleep apnea questionnaire (see page 10 of this guideline)
- Imaging stress test if antiarrhythmic medications are considered or if there is a moderate to high CHD risk

Rate Control

Medications to meet the goal of 60 to 100 BPM include Carvedilol, Metoprolol, Diltiazem, and Verapamil.

Consider additional medications based on the patient's circumstances:

- If the patient's ejection fraction is less than 35% (chronic), add digoxin or a beta blocker.
- If the patient's heart rate is high at rest and the patient is already taking a calcium channel blocker or beta blocker, add digoxin.
- If the patient's elevated heart rate is exertion-induced, add a beta blocker or a calcium channel blocker.

Table A: Preferred Rate Control Medications

Medication	Dosing	Special Considerations
Carvedilol (Coreg, Coreg CR) (immediate release: IR or extended release: ER)	IR: 3.125 mg to 25 mg, twice daily ER: 10 mg to 80 mg, once daily	Major potential ADRs: bradyarrhythmia, hypotension, hyperglycemia, fatigue, dizziness, or headache; preferred for patients with heart failure and diabetes due to increases in insulin sensitivity
Metoprolol succinate (Toprol XL) Metoprolol tartrate (Lopressor)	Toprol XL: 25 mg to 300 mg, once daily Lopressor: 25 mg to 100 mg, twice daily	Major potential ADRs: bradyarrhythmia, dizziness, dyspnea, fatigue, heart block, and decompensated heart failure; Succinate (Toprol XL) preferred for patients with heart failure
Diltiazem (Cardizem CD, Dilacor CD, Tiazac)	120 mg to 360 mg, once daily	Major potential ADRs: bradyarrhythmia, dizziness, headache, cough, fatigue, heart block, and heart failure; causes less constipation or edema
Verapamil (Calan, Isoptin, Verelan, Covera-HS)	IR: 60 mg to 80 mg, 3 to 4 times a daily SR: 120 mg to 360 mg, once daily	Major potential ADRs: AV block, edema, constipation, dizziness, and headache; consider for AF driven by hypertension and patients with PVCs

TABLE B: Reasons to Pursue Chronic Rate Control Over Rhythm Control

The following are reasons to not pursue rhythm control
Elderly (age 65 and older) asymptomatic patient with relatively normal heart function
Risks of cardioversion may outweigh benefits (multiple comorbidities or overall poor prognosis)
History of ≥2 previous DC cardioversions while on an antiarrhythmic
Low chance of success (AF duration >1 year; moderate to severe mitral stenosis)
Patient prefers not to pursue rhythm control

Rhythm Control:

To maintain sinus rhythm in patients with recurrent paroxysmal or persistent AF after DC cardioversion, ACCF/AHA guidelines recommend choosing an antiarrhythmic medication based on the seriousness of heart disease as shown in the maintenance of sinus rhythm algorithm.

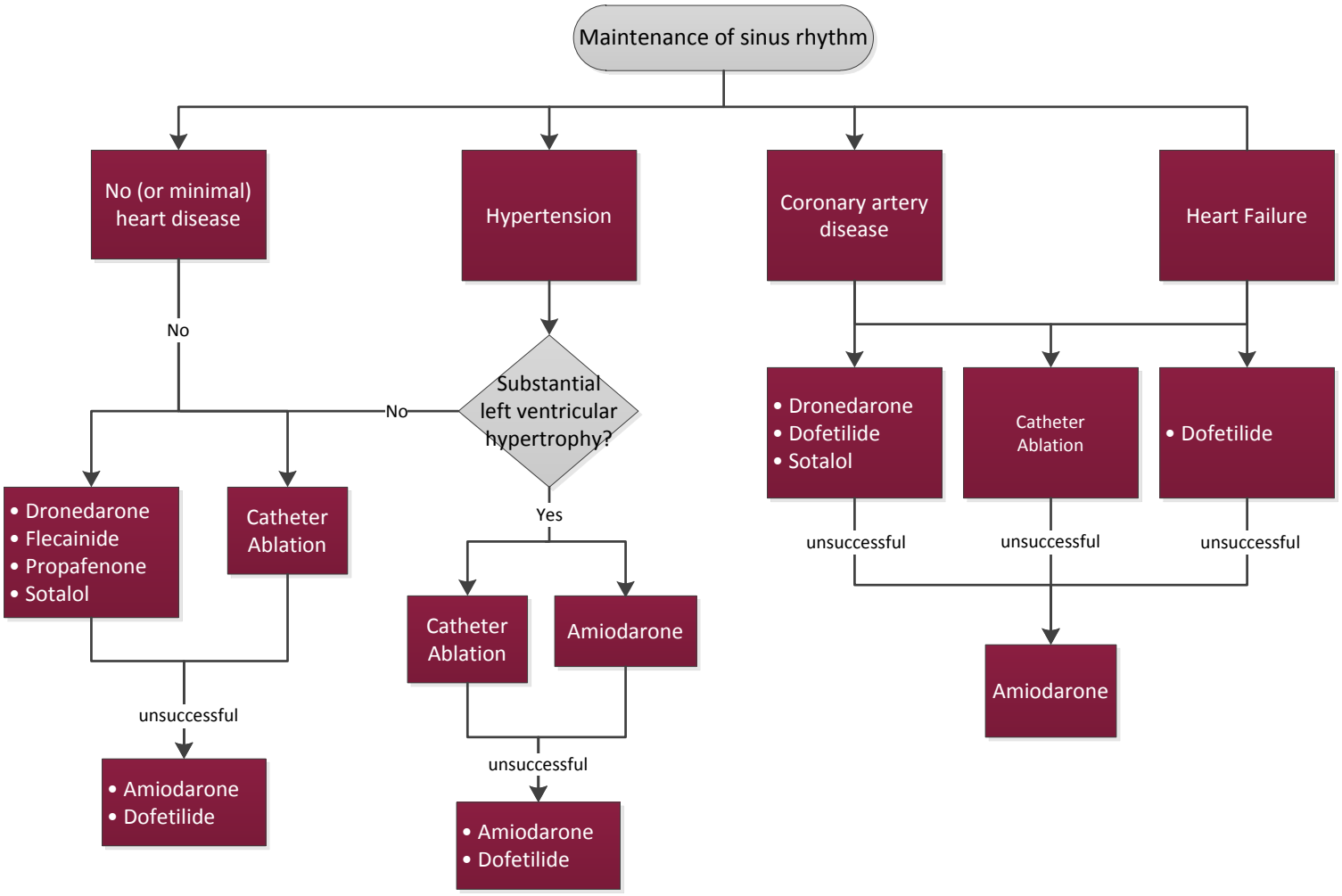
- Consult a cardiologist to evaluate the need for antiarrhythmic medication after DC cardioversion, especially if the patient has structural heart disease.
- Cardiovascular factors help determine the best medication choice.

Pharmacological Cardioversion:

Pharmacological cardioversion is discouraged due to low efficacy, the dosage required, and the need for inpatient initiation with most patients.

AF Ablation:

Consult a cardiologist to consider catheter ablation for symptomatic patients with recurrent symptomatic atrial fibrillation.



Rhythm Control Medications

Medication	Dosage	Monitoring & Usage	Contraindications and Potential Adverse Drug Reactions (ADRs)	Drug-drug Interactions
Amiodarone (Cordarone, Pacerone)	100 to 400 mg, once daily	Monitoring: periodic eye exams, thyroid function tests, pulmonary function tests, chest x-rays	ADRs: photosensitivity, pulmonary fibrosis/toxicity, GI upset, bradycardia, hepatic toxicity, thyroid dysfunction, eye complications, skin discoloration	Use caution with drugs that prolong QT interval; CYP3A4 inhibitors may increase concentrations of amiodarone.
Dofetilide (Tikosyn)	125 mcg to 500 mcg, twice daily	Initiate as inpatient. Monitoring: CrCl potassium levels	ADRs: torsades de pointes, heart block, and arrhythmias	Use caution with drugs that prolong QT interval. Avoid meds that inhibit renal tubular secretion.
Dronedarone (Multaq)	400 mg, twice daily	Monitoring: periodic liver function tests, ECG	Contraindications: persistent/ chronic AF, bradycardia (<50 bpm), recently decompensated or Class IV HF, second or third degree heart block ADRs: liver failure, CVA, prolonged QT interval, new or worsening HF, diarrhea, nausea, abdominal pain, pulmonary toxicity	May interact with CYP3A inhibitors and drugs that prolong QT interval. Reduce concurrent CCB/BB dose to reduce bradycardia risk. Hypokalemia and hypomagnesemia with diuretics that deplete K+
Flecainide (Tambocor)	50 to 150 mg, twice daily	Start beta blocker or calcium channel blocker. Monitoring: ECG, HR, liver function, CrCl, periodic trough plasma levels	Contraindications: ischemic heart disease, second or third degree AV block, right bundle branch block. ADRs: cardiac arrest, other dysrhythmias, heart failure	Use caution with drugs that prolong QT interval. Beta blockers carry the potential to increase negative inotropic effects.
Propafenone (Rythmol)	IR: 150 to 225 mg, every 8 hours SR: 225 to 425 mg, every 12 hours	Start beta blocker or calcium channel blocker. Monitoring: ECG, heart rate, CBC, ANA titer, CrCl, liver function	Contraindication: ischemic heart disease ADRs: ventricular tachycardia, heart failure, first degree AV block, bradyarrhythmia, chest pain	Use caution with drugs that prolong QT interval. Avoid potent CYP2D6 inhibitors (bupropion, some SSRIs, terbinafine)
Sotalol (Betapace AF)	80 to 160 mg, twice daily	Initiate as inpatient for patients at increased risk of torsades de pointes: - elderly women - renal dysfunction - borderline QT interval - persistent AF Monitoring: CrCl, ECG, potassium, magnesium levels	ADRs: QT prolongation, bradycardia, dyspnea, fatigue	CCBs, digoxin, use caution with drugs that prolong QT interval, caution with catecholamine-depleting drugs (reserpine and guanethidine)

Chronic anticoagulation:

- Is recommended for most AF patients due to the high rate of AF recurrence and devastating outcomes from strokes
- Patients with paroxysmal AF should have chronic oral anticoagulation (OAC) according to their risk score
- If AF is definitely known to be secondary to surgery or other illness, OAC can be stopped after 6 months if there are no clinical symptoms or recurrence of AF, the secondary cause has been addressed, and an ambulatory telemetry test at 6 months is negative

Assess stroke risk:

Utilize the CHA_2DS_2VASc score (see Table I), which helps predict future stroke risk in patients who do not receive anticoagulation.

Assess and manage bleeding risk:

Bleeding risk is not a reason to withhold anticoagulation. Manage modifiable bleeding risk factors.

HAS-BLED Scoring	
Each checkmark = 1 point **H**ypertension (SBP > 160 mmHg **A**bnormal: • Kidney function: serum creatinine >2.26 • Liver function: bili >2X ULN and LFTs >3X LN **S**troke history **B**leeding history or predisposition **L**abile INRs: TTR 60% **E**lderly: >65 years **D**rugs: • ETOH use • ASA or NSAID use	Using the score: Score 0 - 1 = low risk Score 2 = moderate risk Score 3 = high risk For patients at high risk, consider: • Optimizing blood pressure control • More frequent INRs in the first 3 months of warfarin • Anticoagulation clinic management • Fall prevention • Use of NOAC

Considerations:

- Regardless of bleeding risk, concurrent aspirin/clopidogrel with oral anticoagulation should be used ONLY for patients with a recent history (12 months) of stent placement, high risk mechanical heart valve placement, or acute coronary syndrome.
- Patients with stable CAD may be managed with oral anticoagulants alone; adding aspirin increases bleeding risk and does not reduce MI/stroke risk.
- Even after a significant GI bleed or intracranial hemorrhage, consider restarting chronic anticoagulation in patients at risk for thrombotic events.
- Consider referral for patients with possible left atrial occlusion.

Choose desired anticoagulant:

The choice of warfarin versus NOAC (novel oral anticoagulant: apixaban, rivaroxaban, edoxaban, or dabigatran) is based on medical conditions, medication interactions, and on TTR (time in therapeutic INR range).

Warfarin Mandatory:

- Valvular heart disease

Warfarin Preferred:

- Patient is taking meds that interact with NOAC
- Patient prefers warfarin and TTR is at least 65% to 70%
- NOAC is cost prohibitive
- Chronic kidney disease

NOAC Preferred:

- For most patients with nonvalvular AF, unless warfarin is preferred
- If TTR on warfarin is less than 65% to 70% (not due to noncompliance)
- If patient has limited access to INR monitoring
- If frequent procedures interrupt anticoagulation
- If patient is taking meds that interact with warfarin
- If it is necessary to achieve therapeutic effect quickly

Uncertain:

- Stable coronary artery disease
- High GI bleed risk (some NOACs increase GI bleeding)
- Frail elderly patients: age ≥75, weight <60 kg, eGFR 30-49 and/or polypharmacy

Switch between anticoagulants wisely:

Warfarin → NOAC

- Stop warfarin
- Start apixaban, or dabigatran, as soon as INR is less than 2
- Start rivaroxaban when INR less than 3
- Start edoxaban when INR is less than or equal to 2.5

Apixaban → Warfarin

- Start warfarin while patient is still taking apixaban
- Check INR on day 4 of overlap
- If the INR is ≥2.0, stop apixaban and repeat INR after 1 to 2 days of warfarin alone
- If the INR is <2, consider continuing apixaban along with warfarin; repeat INR 1 to 2 days later

Dabigatran → Warfarin

- Start warfarin while patient is taking dabigatran. Stop dabigatran 1 to 4 days later with timing based on patient's creatinine clearance (CrCl) and INR level
- If CrCl is >50: check INR on day 4 of overlap
  - if INR is ≥2, stop dabigatran, repeat INR after 1 to 2 days of warfarin alone
  - if INR <2.0, consider continuing dabigatran along with warfarin; repeat INR 1 to 2 days later
- If CrCl = 31-50: stop dabigatran 2 days later and check INR after 2 days of warfarin alone
- If CrCl <30: stop dabigatan 1 day later and check INR after 3 days on warfarin alone

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Anticoagulants

Medication	Dosage	Contraindications and Potential Adverse Drug Reactions (ADRs)	Special Considerations and Monitoring
Apixaban(Eliquis) Factor Xa Inhibitor	5 mg, twice daily (2.5 mg, twice daily **if** two of these factors: age >80, weight <60 kg or sCR >1.5 m/dL)	Contraindications: Do not use in severe liver disease; do not use in patients on dialysis if CrCl <15 Drug-drug interactions with azole, HIV protease inhibitors, macrolide antibiotics, carbamazepine, phenytoin, rifampin	Only NOAC with proven survival benefit against warfarin; lower bleeding risk than aspirin Activated charcoal may be useful in managing overdose or accidental ingestion
Dabigatran (Pradaxa) Direct thrombin inhibitor	150 mg, twice daily; 75 mg, twice daily for CrCl 15-30; use caution in this class due to lack of studies	Contraindication: Do not use if CrCl <30 ml/min ADR: dyspepsia, GI side effects, increased GI bleeds Drug-drug interactions with antacids, verapamil, amiodarone, clarithromycin, rifampin, carbamezapine	Caution with use of 75 mg dose in renal impairment, as this dose has never been studied; must remain in original packaging **Antidote**: Idarucizumab (Praxbind)
Rivaroxaban (Xarelto) Factor Xa inhibitor	20 mg, once daily (15 mg, daily if CrCL is 15-50) taken with evening meal	Contraindication: Do not use in liver disease or if CrCL <15; Drug-drug interactions with azoles, carbamazepine, HIV protease inhibitors, macrolide antibiotics, phenytoin, primidone, rifampin, phenobarbitol	Once daily dosing and less GI effects make this the preferred NOAC for some patients
Warfarin (Coumadin) Vitamin K antagonist	Dose based on current and previous INRs	Many drug-drug and food-drug interactions	Monitoring: INR tests at least every 4 weeks, frequency based on INR level **Antidote**: vitamin K, fresh frozen plasma
Edoxaban (Savaysa) Factor Xa inhibitor	60 mg, daily CrCl 15-50, 30 mg daily	CrCl >95 avoid use; CrCl <15 avoid use	Premature discontinuation increases risk for ischemic events.

Switch between anticoagulants wisely *(continued)*:

Rivaroxaban → Warfarin

- Start warfarin while patient is still taking rivaroxaban. Stop rivaroxaban 2 to 4 days later with timing based on patient's creatinine clearance (CrCl) and INR level
- If CrCl is >50: check INR on day 4 of overlap
  - if INR is ≥2, stop rivaroxaban, repeat INR after 1 to 2 days of warfarin alone
  - if INR <2.0, consider continuing rivaroxaban along with warfarin; repeat INR 1 to 2 days later
- If CrCl = 31-50: stop rivaroxaban 3 days later and check INR after 1 to 2 days of warfarin alone
- If CrCl <30: stop rivaroxaban 2 days later and check INR after 2 days on warfarin alone

Edoxaban → Warfarin

- If on 60mg dose, reduce to 30mg daily and start warfarin.
- If on 30mg dose, reduce to 15mg daily and start warfarin. Check INR at least weekly and stop edoxaban once INR greater than or equal to 2

Enoxaparin → NOAC

- Stop enoxaparin and start dabigatran, rivaroxaban, apixaban, or edoxaban at usual time of next scheduled dose of enoxaparin.

NOAC → IV UH or LMWH

- Apixaban: start unfractionated heparin or low molecular-weight heparin 12 hours after last apixaban dose
- Dabigatran:
  - If CrCl >30: start unfractionated heparin or low molecular-weight heparin 12 hours after last dabigatran dose
  - If CrCl <30: consider LMWH 24 hours after last dabigatran dose based on clinical interpretation of the patient's risk of bleeding and thrombosis
- Rivaroxaban: start unfractionated heparin or LMWH 12 hours after last rivaroxaban dose if patient is within first 21 days of treatment for VTE or 24 hours after last rivaroxaban dose for other indications

Initiate warfarin wisely:

- Consider warfarin sensitivity. Lower initiation dose for patients with the following: age >75 years, congestive heart failure, diarrhea, drug interactions, elevated baseline INR, fever, hyperthyroidism, malignancy, malnutrition, or NPO greater than 3 days.
- Check INR frequently during titration. Obtain INR 3 days after the first starting dose, then every 2 to 3 days until in-range INR is achieved on two measurements. Check the INR one week after the second in-range INR.

Manage bleeding or supratherapeutic INR:

- Severe or life-threatening bleeding on any anticoagulant: send the patient to the ED with EMS transport.
- Minor bleeding on apixaban, rivaroxaban, edoxaban or dabigatran: assess patient individually. If necessary, hold 1 to 2 doses to achieve homeostasis, then restart medication.
- Supratherapeutic INR on warfarin:
  - If INR is 4.5 to 10: hold 1 to 2 doses; check INR more frequently (1 to 3 days). Resume warfarin at adjusted dose when INR returns to therapeutic range.
  - If INR is over 10: hold warfarin and give vitamin K 2.5 to 5 mg orally. Check INR more frequently; give additional vitamin K if needed. Resume warfarin at adjusted dose when INR returns to therapeutic range.

Management of severe/life-threatening bleeding:

Severe GI bleeding or intracranial hemorrhage

- Coumadin: give vitamin K or FFP (Fresh frozen plasma)
- NOAC: give FFP or PCC (Prothrombin complex concentrate)
- Dabigatran (Pradaxa): give Idarucizumab (Praxbind)

Manage periprocedural bridging:

Periprocedural bridging of warfarin and novel OACs should be based on the patient's thromboembolism risk and the bleeding risk of the procedure.

In general, the anticoagulant must be discontinued if the surgical bleeding risk is high. Those at very high or high thromboembolic risk should limit the period without anticoagulation to the shortest possible interval. This typically involves the use of a bridging agent (e.g., a low molecular weight [LMW] heparin) if the patient's usual anticoagulant is a vitamin K antagonist. Often bridging is not required for those with very high or high thromboembolic risk who are receiving a direct thrombin inhibitor or factor Xa inhibitor because of the shorter half-lives of these agents.

TABLE C: Symptoms Associated with AF

Fatigue/tiredness	Palpitations
Dyspnea	Dizziness
Chest pain	Weakness

TABLE D: Signs of Instability

Unstable vital signs	Myocardial ischemia
Ongoing chest pain with AF	Hypotension
Decompensated heart failure	

TABLE E: CHD Risk

Mild: 1 to 2 risk factors; Moderate: 3 risk factors; High ≥4 risk factors	
Age (men >45, women >55years)	Impaired fasting glucose (101—125)
Cigarette smoking	Family history of premature CHD (1st degree relative <60 years or female 1st degree relative <70 years)
BP >140/90 or on antihypertensive medication	Non-HDL cholesterol >160
Low HDL cholesterol (men <40, women <50)	

TABLE F: Pre and Post-Cardioversion Anticoagulation

Pre-cardioversion—3 options
If 4 weeks therapeutic anticoagulation with apixaban, rivaroxaban, dabigatran, edoxaban or warfarin (INR range 2-3 or if patient has mechanical value, INR 2.5 to 3.5) then elective DC cardioversion is acceptable.
If AF <48 hours AND NO history of mitral stenosis/prosthetic values, TIA, stroke, or thromboembolism (CHA_2DS_2 VASc >5), then DC cardioversion without TEE is acceptable. If patient is not fully anticoagulated, give enoxaparin (30 mg IV and 1 mg/kg SCQ) or heparin or therapeutic NOAC dose before cardioversion.
IF AF ≥ 48 hours (or duration unknown) OR there are any of the thrombosis risk factors above, then TEE guided cardioversion is warranted. If patient is not fully anticoagulated, give enoxaparin (30 mg IV and 1 mg/kg SCQ) or heparin drip per protocol before cardioversion or novel oral anticoagulant (NOAC).
Post-cardioversion
30-days of therapeutic anticoagulation for all patients regardless of CHA_2DS_2VASC score; anticoagulation is important due to the risk of AF recurrence during this time window. Warfarin, apixaban, rivaroxaban, edoxaban, or dabigatran may be used; if warfarin is used, bridge with enoxaparin until therapeutic INR has been achieved for 2 days.
Evaluate need for chronic anticoagulation based on CHA_2DS_2VASC score.

TABLE G: Rhythm Control

Why it's important:	The longer the patient is in AF, the more likely the condition is to become permanent. Control should be achieved ASAP.
DC cardioversion:	Should be pursued unless risks outweigh benefits or there is a low chance of success.
Antiarrhythmic medications:	Post-cardioversion: consider medication unless it is the first episode and there is no structural heart disease. Chronic: referral to cardiologist.

TABLE H: Chronic Rate Control

When to consider:	Patients with the factors listed in Table D and patients for whom rhythm control has failed
Treatment goal:	60 to 100 bpm
Strategy:	Use diltiazem or verapamil and/or beta blocker, unless EF <35%; options include digoxin and amiodarone

TABLE I: Chronic Anticoagulation

<table>
<tr><th colspan="2">CHA_2DS_2 VASc Scoring*</th></tr>
<tr><td>Factor — Points
☐ Congestive heart failure — 1
☐ Hypertension — 1
☐ Age ≥75 years — 2
☐ Age 65 to 74 years — 1
☐ Diabetes mellitus — 1
☐ Stroke/TIA/VTE — 2
☐ Sex = female — 1
☐ Vascular disease (MI, PAD, or aortic plaque) — 1</td><td>Examples of AF patients with a score ≥2 who will need chronic anticoagulation:
• A woman with any of these: hypertension, CHF, age 65, diabetes, or vascular disease
• A 65-year-old with any of these: CHF, diabetes, or vascular disease
• Any patient 75 years old and older</td></tr>
<tr><td>Cigarette smoking</td><td>Family history of premature CHD (1st degree relative <60 years or female 1st degree relative <70 years)</td></tr>
<tr><td>BP >140/90 or on antihypertensive medication</td><td>Non-HDL cholesterol >160</td></tr>
<tr><td>Low HDL cholesterol (men <40, women <50)</td><td></td></tr>
<tr><td>Score = 0</td><td>No therapy</td></tr>
<tr><td>Score = 1</td><td>Decision determined by bleeding risk
• Aspirin alone (75 mg to 325 mg daily) OR
• Aspirin plus clopidogrel</td></tr>
<tr><td>Score ≥ 2</td><td>Chronic anticoagulation:
NOACs (novel oral anticoagulants: apixaban, dabigatran, Rivaroxaban, edoxaban):
• Recommended for most AF patients, unless contraindicated or warfarin is strongly preferred
• Contraindicated in valvular heart disease (mitral stenosis or valve surgery) or renal impairment (eGFR <30)
• Recommended if TTR (time in therapeutic INR range) is ≥65%
Warfarin
• Mandatory choice in patients with valvular heart disease
Relative contraindications to anticoagulation include history of transfusion-dependent bleed (≥2 units) or intracranial bleed</td></tr>
</table>

* Treat as score of 1 if only risk factors are female and age.

CHA_2DS_2-Vasc Score and Stroke Rates

The CHA_2DS_2-Vasc score is effective in predicting future stroke in patients who do not receive anticoagulation, as shown in this chart.

CHA_2DS_2-Vasc Total Score	Stroke Rate (% per year)
0	0%
1	1.3%
2	2.2%
3	3.2%
4	4.0%
5	6.7%
6	9.8%
7	9.6%
8	6.7%
9	15.2%

STOP-BANG Questionnaire

☐ Yes	☐ No	**Snoring?** Do you **snore loudly** (enough to be heard through closed doors or your bed-partner elbows you for snoring at night)?
☐ Yes	☐ No	**Tired?** Do you often feel **tired, fatigued, or sleepy** during the daytime (such as falling asleep during driving)?
☐ Yes	☐ No	**Observed?** Has anyone **observed** you **stop breathing** or **choking/gasping** during your sleep?
☐ Yes	☐ No	**Pressure?** Do you have or are you being treated for **high blood pressure**?
☐ Yes	☐ No	**Body Mass Index of more than 35 kg/m²**?
☐ Yes	☐ No	**Age older than 50 years**?
☐ Yes	☐ No	**Neck size large?** (measured around Adam's apple) For a male, is your shirt collar 17 inches or larger? For a female, is your shirt collar 16 inches or larger?
☐ Yes	☐ No	**Gender?** Are you a **male**?
Scoring Criteria* for General Population:		
Low risk of OSA: Yes to 0 - 2 questions		
Intermediate risk of OSA: Yes to 3 - 4 questions		
High risk of OSA: Yes to 5 - 8 questions		

* For validated scoring criteria in obese patients, please refer to the UptoDate topic on surgical risk and the preoperative evaluation and management of adults with obstructive sleep apnea.

ICD-10 Codes - Atrial Fibrillation

ICD 10 Code and Description	
I48.91*	Unspecified atrial fibrillation
I48.1	Persistent atrial fibrillation
I48.2	Chronic atrial fibrillation
I48.92*	Unspecified atrial flutter
I48.3	Typical atrial flutter
I48.4	Atypical atrial flutter
I46.9	Cardiac arrest, cause unspecified
I49.5	Sick sinus syndrome
I49.8	Other specified cardiac arrhythmias
I49.9*	Cardiac dysrhythmia, unspecified
R00.0	Tachycardia, unspecified
R00.1	Bradycardia, unspecified
R00.2	Palpitations

*Codes with greater degree of specificity should be considered first.

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