

Cardiac Catheter Ablation Guidelines (Follow up)

February 2021

DOCUMENT PROFILE

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Author	Angela Moss
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Updates:

January 2018: ESC 2016 updated guidelines added and 2017 EHRA Catheter ablation updated guidelines. Additional note on p5 suggesting annual review by a medical professional following AF ablation is advised with an ECG.

Reviewed and no other changes required.

February 2021: ESC 2020 AF guidelines reviewed. EHRA guidelines have not been updated since last review. P4 – follow up schedule amended. P5 – anticoagulation guidance post-procedure simplified and updated (faded text no longer referred to, replaced with paragraph underneath). P13 – Discharge post ablation at 12 months if well (and therefore not for a 24 month outpatient review).

1. INTRODUCTION

1.1 Rationale

Catheter ablation is a procedure whereby energy is transmitted through catheters to the heart in an attempt to destroy small areas of heart tissue which could be causing arrhythmia. This involves delivering highly focused heat (or radio frequency energy) to specific areas.

Techniques have and continue to develop and it can be a highly successful method of treatment and symptom control for many patients. A variety of arrhythmias can be ablated and research is continuous with new procedures, equipment and approaches adopted in an attempt to provide therapeutic relief. Recommendations provided by the European Society of Cardiology (2012, 2016, 2020) and NICE (2014) in relation to management of atrial fibrillation suggest ablation should now be considered earlier on and is widely accepted as an often effective cure for other arrhythmias, particularly supra-ventricular and accessory pathway arrhythmias. Atrial flutter can also be ablated as can ventricular arrhythmias as an isolated treatment or an adjunct to other therapies.

These guidelines have been produced with the recommendations from the Heart Rhythm Society (HRS), European Heart Rhythm Association (EHRS) and European Cardiac Arrhythmia Society (ECAS) Expert Consensus Statement on Catheter and Surgical Ablation of AF (2007, 2012 and 2017). Assistance was also sought from St Georges and Basildon tertiary referral centres using their guidelines on follow up for ablation patients. They have been amended to suit local practice and in conjunction with our Consultant Cardiologists practice.

They are necessary to ensure we are following a uniformed and standardised approach for all returning patients who have undergone cardiac catheter ablation for atrial fibrillation, atrial flutter, supra-ventricular tachycardia and accessory pathway ablations.

1.2 Scope

These guidelines apply to all patients who undergo cardiac catheter ablation off island. This is not a procedure we can undertake locally and therefore rely on excellent communication links between us in Jersey and the Electrophysiology teams in the John Radcliffe hospital in Oxford. It is however not exclusive to this tertiary referral centre and if we adopt the care of patients who have undergone this procedure elsewhere, standard follow up applies.

All follow up can be provided locally including monitoring, investigations and clinic appointments. Communication is upheld with the tertiary centre during follow up in order to keep them fully informed of patient outcomes.

1.3 Principles

It is important patients are managed in a standardised way to ensure a common approach incorporating clinic appointments, timings and necessary investigations.

When evidence based guidelines are adopted this helps prevent errors and unnecessary duplication.

2. GUIDELINE PURPOSE

This guideline aims to set out a pathway for which patients who have undergone cardiac catheter ablation will follow. This starts from the moment they have returned to the island and communication is received from the tertiary centre. Initial appointments can however be pre-arranged once the date of procedure is known.

Ambulatory monitoring is indicated in some pathways (see Appendix 1-4) and at set intervals. This can however be adapted when patients experience symptoms and therefore deviation from the algorithm will apply.

Previously follow up was sometimes delayed due to excessive workload but this guideline sets out the specified times according to HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of AF (2007, 2012 and 2017) and in conjunction with nationwide centres.

Key points from research, guidelines and practice are noted as follows and these should be read in conjunction with the pathways in the appendix section.

- Cardiac monitoring is suggested in various forms but the most practical, reliable and cost effective for this purpose is the holter monitor which should be applied for 7 days. A 12 lead ECG should accompany this with both sets of results available for clinic review at three months (1, 2).
- Early recurrences of AF are common during the first three months after ablation (3, 4). For this reason, monitoring is delayed until three months unless it is required earlier to evaluate patient's arrhythmia symptoms in the early post ablation period. This may often represent ectopic beats but may also be an early predictor of arrhythmia recurrence (5, 6).
- Early recurrence of AF may occur frequently in the early post ablation period but up to 60% of patients experiencing this within the first few months will not have further arrhythmias in long term follow up (7).
- Pacemakers / defibrillators with atrial leads allow the burden of AF to be assessed (8, 9). Loop recorders if already in place, can also be used for this purpose (11, 12).
- Follow up should be three months minimum from date of procedure then at six months and 12 months.
- ECGs should be obtained at all visits (6). This can be done prior to clinic by Clinical Investigations or during the clinic OPA.
- Holter monitoring should be performed on patients who have undergone AF or atrial flutter ablation regardless of symptoms, at the times specified. Symptomatic patients may complain of symptoms suggesting arrhythmia recurrence yet ectopics

may be all that presents. And asymptomatic patients may have AF recurrence despite their lack of symptoms (12-14).

- A useful screening tool is teaching patients to take their own pulse. This can help detect AF even when asymptomatic and also assist in determining an irregularity when symptomatic (6).
- Cardioversion (DC CV) is more effective if done in the first 30 days of arrhythmia recurrence (15).
- In the follow up period it is important to ensure good control of weight and blood pressure and other AF risk factors including sleep apnoea (6).
- Patients are often given a PPI for four weeks post procedure and this may be stopped at first follow up if not already.
- Redo ablation procedures are best left until after the initial three months (6) but when highly symptomatic atrial arrhythmias cannot be controlled with medications, these may require more urgent attention (6). Cardioversion may be considered in this time.
- Late recurrence (one to five years from procedure) can occur in 11-29% of patients after a single procedure (16-18). Predictors of late recurrence are persistent AF, age, left atrial size, diabetes, valvular heart disease and non-ischaemic dilated cardiomyopathy (17,19).
- OAC should continue (life-long unless there are clinical reasons to not to) when the CHA₂DS₂-VASc is ≥ 1 . When the score is 0, continue OAC for 3 months and until the first clinical review at this time (if the ablation was for AF or atrial flutter) and then discontinue if the 7 day ambulatory heart monitor confirms sinus rhythm, there are no clinical symptoms of AF / flutter recurrence and 12 lead ECG also confirms the same (6, 21).

3. DEVELOPMENT AND CONSULTATION PROCESS

Consultation Schedule

Name and Title of Individual	Date Consulted
Dr Andrew Mitchell, Cardiologist	20.1.15
Andrew Norman, Clinical Investigations	22.1.15
Ranji Thomas, Associate Specialist	22.1.15

Review

Name and Title of Individual	Date Consulted
Dr Andrew Mitchell, Cardiologist	19.3.21
Dr Le Page, Cardiologist	19.3.21
Andrew Norman, Clinical Investigations	19.3.21
Sr Kinsella, Arrhythmia Nurse Specialist	19.3.21

4. REFERENCE DOCUMENTS

1. Ziegler P, Koehler J, Mehra R. (2006). Comparison of continuous versus intermittent monitoring of atrial arrhythmias. *Heart Rhythm*. 3(12), 1445–1452.
2. Edgerton J, Mahoney C, Mack M, Roper K, Herbert M. (2011). Long-term monitoring after surgical ablation for atrial fibrillation: how much is enough? *Journal of Thoracic and Cardiovascular Surgery*. 142(1), 162–165.
3. Bertaglia E, Stabile G, Senatore G, et al. (2005). Predictive value of early atrial tachyarrhythmias recurrence after circumferential anatomical pulmonary vein ablation. *Pacing Clinical Electrophysiology*. 28(5), 366–371.
4. Vasamreddy C, Lickfett L, Jayam V, et al. (2004). Predictors of recurrence following catheter ablation of atrial fibrillation using an irrigated-tip ablation catheter. *Journal of Cardiovasc Electrophysiology*. 15(6), 692–697.
5. Arya A, Hindricks G, Sommer P, et al. (2010). Long-term results and the predictors of outcome of catheter ablation of atrial fibrillation using steerable sheath catheter navigation after single procedure in 674 patients. *Europace*. 12(2), 173–180.
6. Calkins H, Heinz Kuck K, Cappate R, Brugada J, Camm A, et al. (2012). HRS/EHRA/ECAS Expert Consensus Statement on Catheter and Surgical Ablation of Atrial Fibrillation: Recommendations for Patient Selection, Procedural Techniques, Patient Management and Follow-up, Definitions, Endpoints, and Research Trial Design *Heart Rhythm*. 9(4), 528-606.
7. Patel M, Mahaffey K, Garg J, et al. (2011). Rivaroxaban versus warfarin in non-valvular atrial fibrillation. *New England Journal of Medicine*. 365(10), 883–891.
8. Purerfellner H, Gillis A, Holbrook R, Hettrick D. (2004). Accuracy of atrial tachyarrhythmia detection in implantable devices with arrhythmia therapies. *Pacing Clinical Electrophysiology*. 27(7), 983–992.
9. Seidl K, Meisel E, VanAgt E, et al. (1998). Is the atrial high rate episode diagnostic feature reliable in detecting paroxysmal episodes of atrial tachy-arrhythmias? *Pacing Clin Electrophysiology*. 21, 694–700.
10. Eitel C, Husser D, Hindricks G, et al. (2011). Performance of an implantable automatic atrial fibrillation detection device: impact of software adjustments and relevance of manual episode analysis. *Europace*. 13(4), 480–485.
11. Hindricks G, Pokushalov E, Urban L, et al. (2010). Performance of a new leadless implantable cardiac monitor in detecting and quantifying atrial fibrillation: results of the XPECT trial. *Circulation Arrhythmias and Electrophysiology*. 3(2), 141–147.
12. Karch M, Zrenner B, Deisenhofer I, et al. (2005). Freedom from atrial tachyarrhythmias after catheter ablation of atrial fibrillation: a randomised comparison between 2 current ablation strategies. *Circulation*. 111(22), 2875–2880.

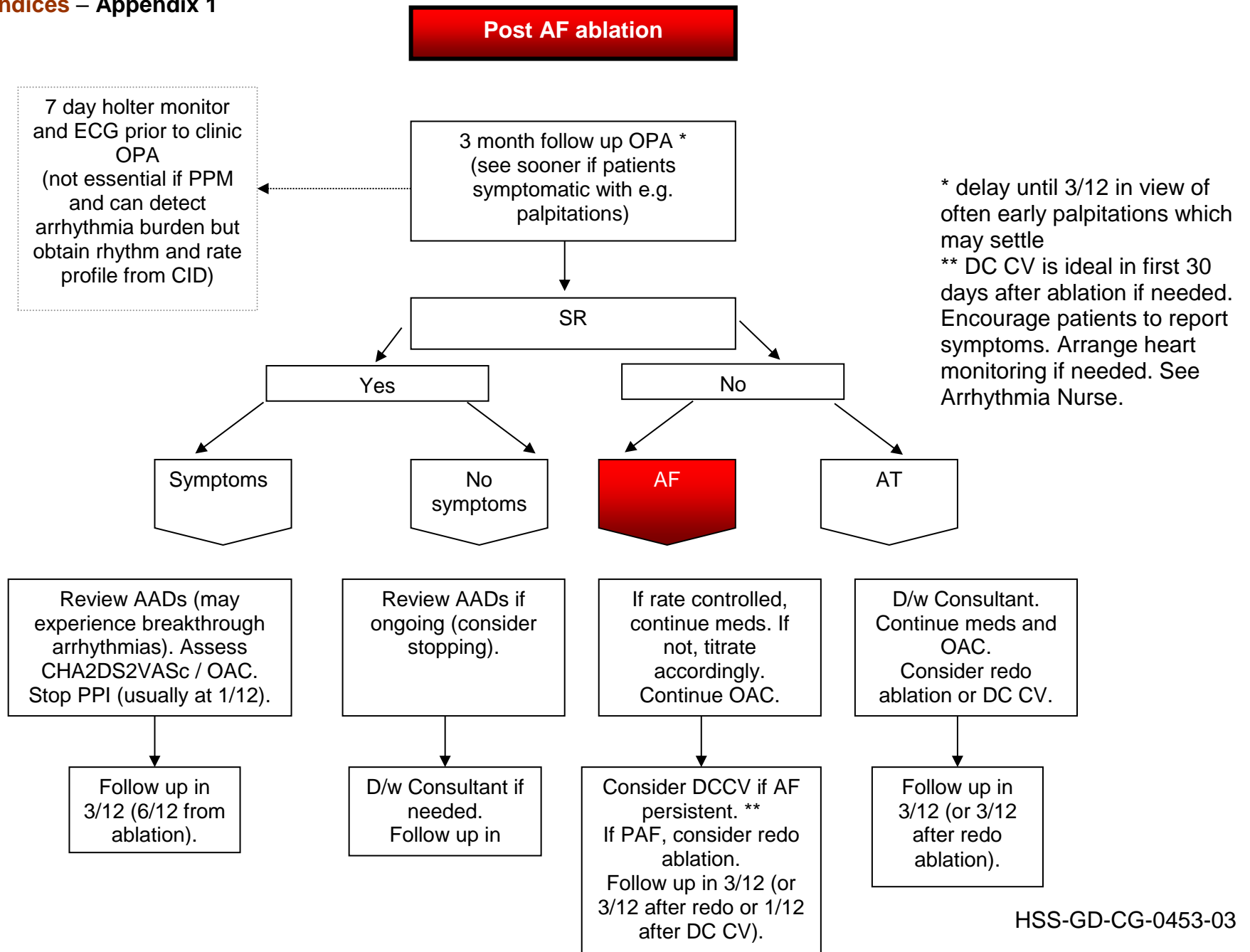
13. Klemm H, Ventura R, Rostock T, et al. (2006). Correlation of symptoms to ECG diagnosis following atrial fibrillation ablation. *J Cardiovascular Electrophysiology*. 17(2), 146 –150.
14. Vasamreddy C, Dalal D, Dong J, et al. (2006). Symptomatic and asymptomatic atrial fibrillation in patients undergoing radiofrequency catheter ablation. *Journal of Cardiovascular Electrophysiology*. 17(2), 134–139.
15. Baman T, Gupta S, Billakanty S, et al. (2009). Time to cardioversion of recurrent atrial arrhythmias after catheter ablation of atrial fibrillation and long-term clinical outcome. *Journal of Cardiovascular Electrophysiology*. 20(12), 1321–1325.
16. Ouyang F, Tilz R, Chun J, et al. (2010). Long-term results of catheter ablation in paroxysmal atrial fibrillation: lessons from a 5-year follow-up. *Circulation*. 122(23), 2368 – 2377.
17. Weerasooriya R, Khairy P, Litalien J, et al. (2011). Catheter ablation for atrial fibrillation: are results maintained at 5 years of follow-up? *Journal of the American College of Cardiology*. 57(2), 160 –166.
18. Wokhlu A, Hodge D, Monahan K, et al. (2010) Long-term outcome of atrial fibrillation ablation: impact and predictors of very late recurrence. *Journal Cardiovascular Electrophysiology*. 21(10), 1071–1078.
19. Tzou W, Marchlinski F, Zado E, et al. (2010) Long-term outcome after successful catheter ablation of atrial fibrillation. *Circ Arrhythmias and Electrophysiology*. 3(3), 237–242.
20. Calkins H, Hindricks G, Cappato R, et al. (2017). HRS/EHRA/ECAS/APHRS/SOLACE expert consensus statement on catheter and surgical ablation of atrial fibrillation. *Heart Rhythm*. 14(10), e275-e444.
21. Freeman J, Shrader P, Pieper K, Allen L, et al. (2019). Outcomes and anticoagulation use after catheter ablation for atrial fibrillation. *Circulation: Arrhythmias and Electrophysiology*. 12(12), doi.org/10.1161/CIRCEP.119.007612

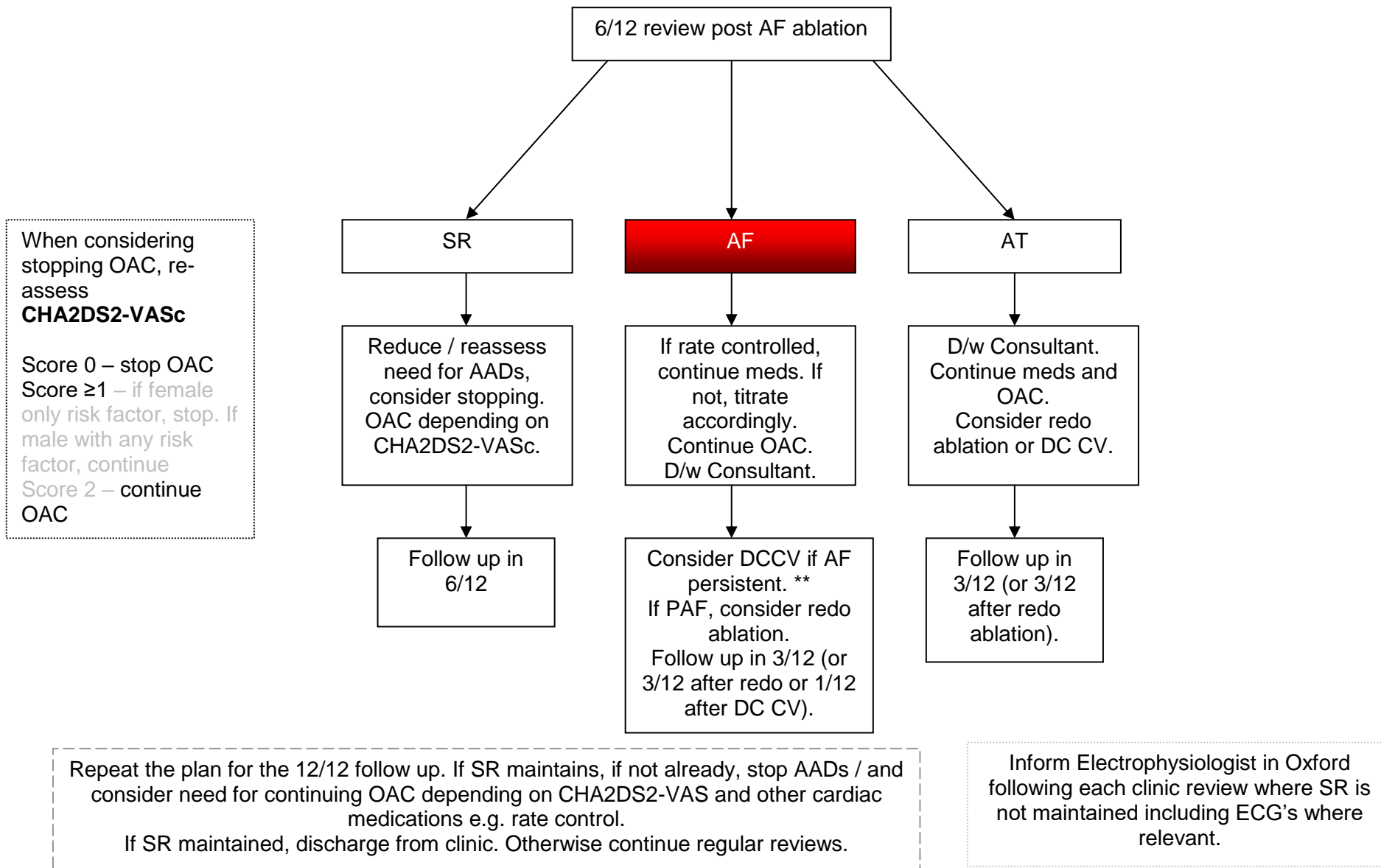
5. IMPLEMENTATION PLAN

Action	Responsible Officer	Timeframe
Cardiology Governance meeting for approval	Sister Angela Moss	28.1.15
Send to Ann Kelly, Information Governance for publication	Sister Angela Moss	End January 2015

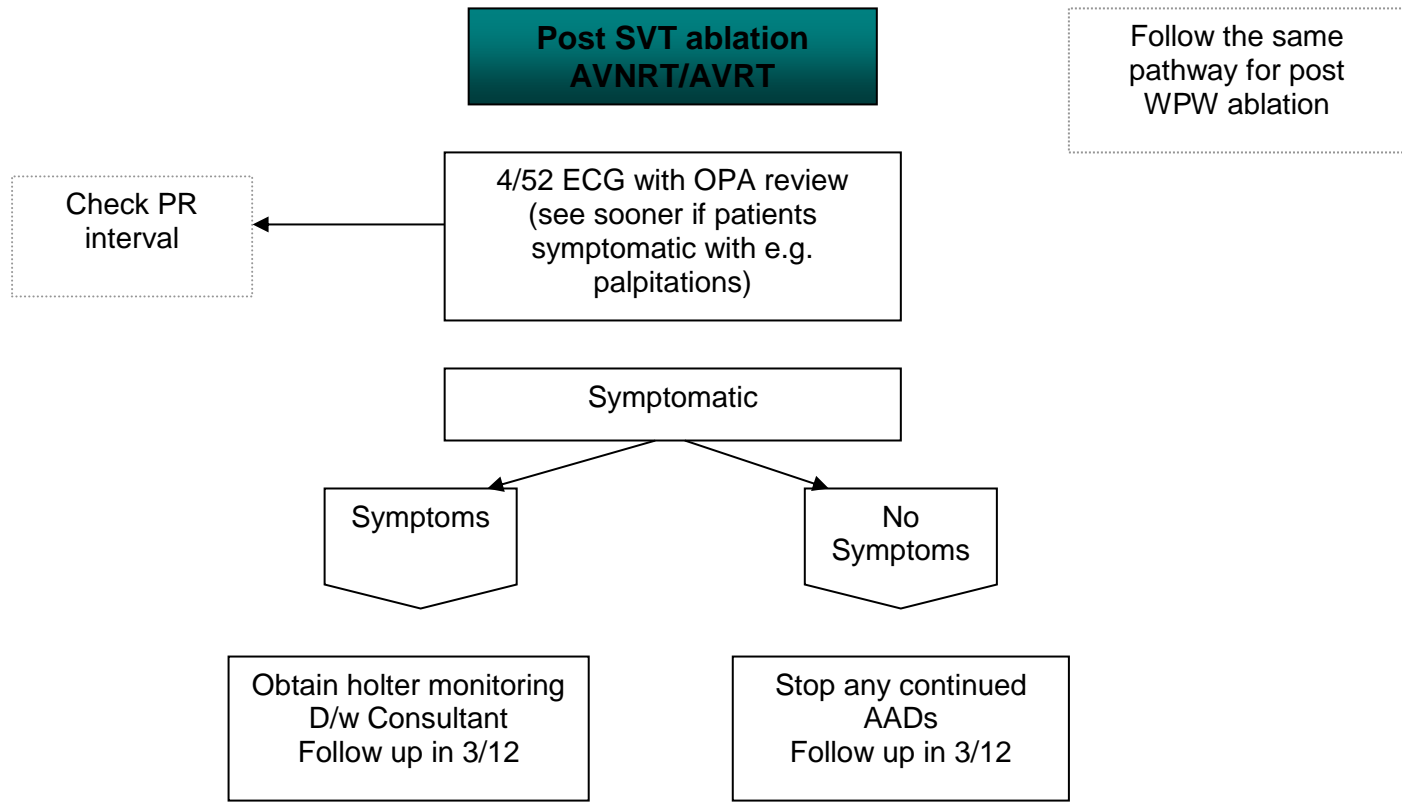
Action	Responsible Officer	Timeframe
Cardiology Governance sign-off	Sister Angela Hall	End March 2021
Send to hssnet for publication	Sister Angela Hall	End March 2021

6. Appendices – Appendix 1





Appendix 2



Follow up at 12/12, obtain a 12 lead ECG and assess patient and arrange monitoring as required. If well, ensure relevant meds ceased and discharge. Any return of arrhythmia, follow up accordingly.

Appendix 3

Post Atrial Flutter Ablation

7 day holter monitor and ECG prior to clinic OPA
 (not essential if PPM and can detect arrhythmia burden but obtain rhythm and rate profile from CID)

3 month follow up OPA *
 (see sooner if patients symptomatic with e.g. palpitations).

SR

AF

Atrial Flutter

Symptoms

No Symptoms

Review meds and OAC.
 Follow up in 3/12.

Stop AADs and review need for beta blockers.
 Reassess need for OAC.

Discuss options e.g. cardioversion / AF ablation (d/w Consultant).
 Manage AADs / rate control agents.
 Continue OAC.
 Follow up in 3/12.

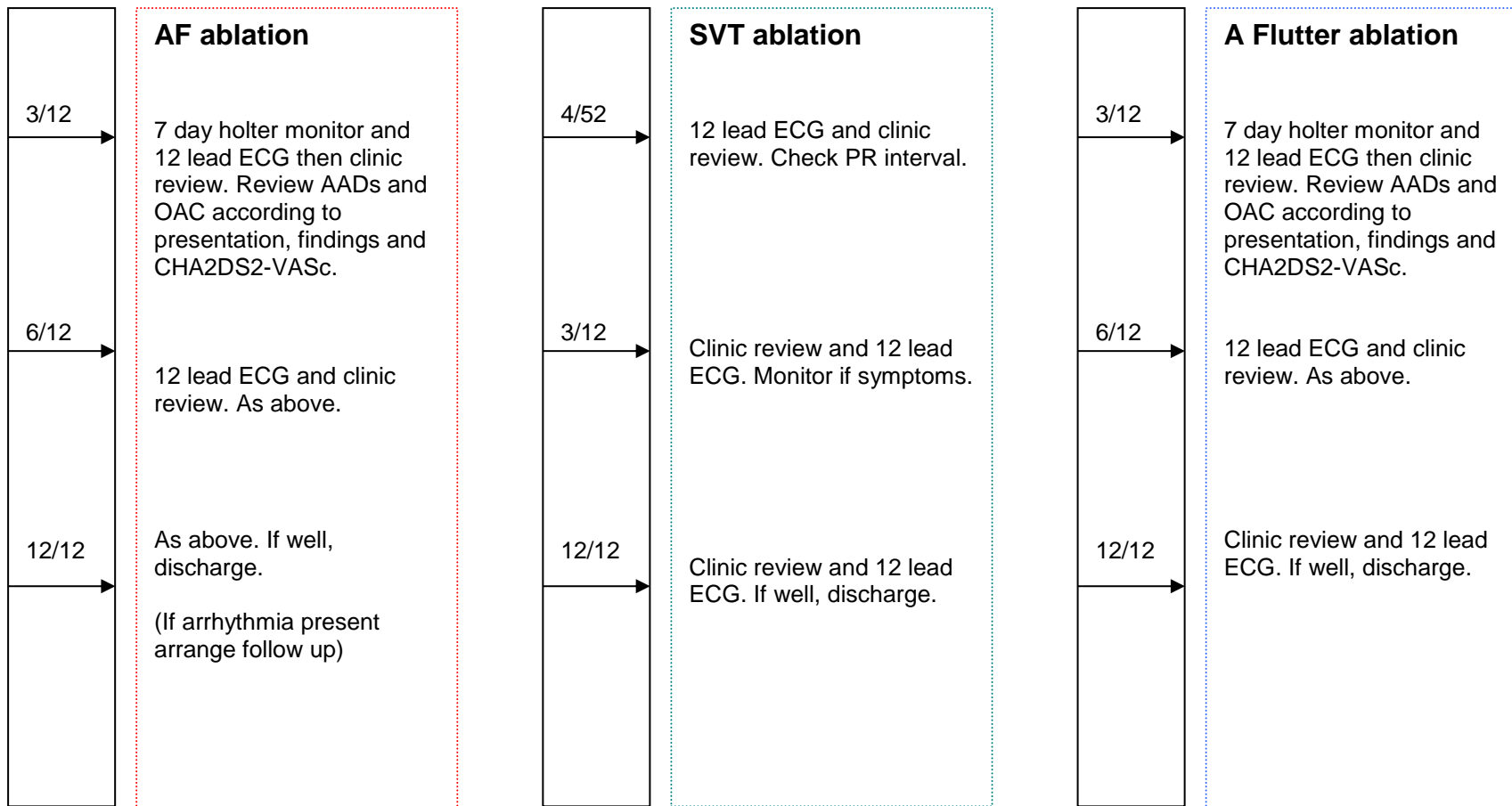
Consider re-do ablation (d/w Consultant).
 Continue OAC and other medications.
 Follow up in 3/12 or after procedure.

When considering stopping OAC, re-assess **CHA2DS2-VASc**
 Score 0 – stop OAC
 Score ≥1 – if female only risk factor, stop. If male with any risk factor, continue
 Score 2 - continue

Repeat the above at their 6/12 and 12/12 follow up. Perform additional monitoring if required according to patients presentation. If SR maintains, if not already, stop AADs and consider need for ongoing cardiac medications e.g. beta blockers. Consider need for ongoing OAC depending on CHA2DS2-VASc. If SR maintained, discharge from clinic. Otherwise review as patient condition dictates.

Appendix 4

Timeline



Where symptoms present between these timeline intervals, 7 day holter monitoring or an R test with symptom diary, can be arranged as the cardiology team feels necessary. Patients are encouraged to be able to take their pulse manually and report palpitations. Interventions may then be