

**National Institute for Health and Clinical Excellence**

**950 – Percutaneous balloon cryoablation for pulmonary vein isolation in atrial fibrillation**

**Consultation Comments table**

**IPAC date: 8 March 2012**

<b>Com . no.</b>	<b>Consultee name and organisation</b>	<b>Sec. no.</b>	<b>Comments</b>	<b>Response</b> Please respond to all comments
1	Consultee 1 NHS Professional	<b>1</b>	Agreed	Thank you for your comment.
2	Consultee 2 NHS Professional	<b>1.5</b>	A brief note to add to the on-line comments I posted in regard to this Interventional Procedures Consultation document. In the last 18 months it has been clear that there are asymptomatic cerebral lesions noted on MRI scanning in a significant minority of patients undergoing AF catheter ablation. It is assumed these are thromboemboli, although there are other possible explanations which we and others are exploring. It has also been suggested that balloon cryoablation may have lower rates of these events than some other ablation technologies. I have added at the end of this letter the relevant references that describe these finding with the different technologies. It is not my view that any recommendation about safety can be made at present. However I would like to see this important issue referred to as frequently as possible, partly to encourage the profession to consider it in all cases, and importantly to persuade relevant prospective data collection for long term outcomes.	Thank you for your comment.  Section 2.5 of the guidance has been changed.

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3	Consultee 2 NHS Professional	1.5 cont	<p>References.</p> <p>Herrera Siklódy C, Deneke T, Hocini M, Lehrmann H, Shin DI, Miyazaki S, Henschke S, Fluegel P, Schiebeling-Römer J, Bansmann PM, Bourdias T, Dousset V, Haïssaguerre M, Arentz T. Incidence of asymptomatic intracranial embolic events after pulmonary vein isolation: comparison of different atrial fibrillation ablation technologies in a multicenter study. J Am Coll Cardiol. 2011 Aug 9;58(7):681-8.</p> <p>Neumann T, Kuniss M, Conradi G, Janin S, Berkowitsch A, Wojcik M, Rixe J, Erkapic D, Zaltsberg S, Rolf A, Bachmann G, Dill T, Hamm CW, Pitschner HF. MEDAFI-Trial (Micro-embolization during ablation of atrial fibrillation): comparison of pulmonary vein isolation using cryoballoon technique vs. radiofrequency energy. Europace. 2011 Jan;13(1):37-44.</p> <p>Gaita F, Leclercq JF, Schumacher B, Scaglione M, Toso E, Halimi F, Schade A, Froehner S, Ziegler V, Sergi D, Cesarani F, Blandino A. Incidence of silent cerebral thromboembolic lesions after atrial fibrillation ablation may change according to technology used: comparison of irrigated radiofrequency, multipolar nonirrigated catheter and cryoballoon. J Cardiovasc Electrophysiol. 2011 Sep;22(9):961-8.</p>	<p>Thank you for your comment.</p> <p>The Gaita (2011) study has been added to the main extraction table and the Neumann (2011) study (included in the main extraction table) has now been added to Appendix A of the overview.</p> <p>The Herrera Siklody (2011) study is included in Appendix A of the overview.</p>

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4	Consultee 1 NHS Professional	<b>2.1</b>	beating should be replaced by activation. Classification of AF is changing to paroxysmal, persistent and long-standing persistent. Ablation may be offered as an alternative first line therapy in selected patients.	Thank you for your comment. Section 2.1 of the guidance has been changed.
5	Consultee 3 Specialist Adviser	<b>2.1</b>	2.1.2 should also include that rhythm control with cryoablation is also indicated when drug therapy is contraindicated	Thank you for your comment. The Committee considered this comment and did not wish to change the guidance. The Committee noted that at an early stage patients should receive the best medical care and this procedure should not be an alternative at this stage.
6	Consultee 1 NHS Professional	<b>2.2</b>	2.2.2 normally catheters are placed in both femoral veins. Although many if not most people use 2 trans-septal sheaths, especially with through lumen mapping with the cryoballoon, single trans-septal procedures are increasingly performed.	Thank you for your comment. Section 2.2.2 of the guidance has been changed to read 'one or two catheters are introduced percutaneously via the femoral veins'.  Section 2.2.3 of the guidance has been changed to read 'One or two sheaths'
7	Consultee 2 NHS Professional	<b>2.2</b>	Section 2.2.3 should be changed to read each of the pulmonary veins... There may be less than 4 veins.	Thank you for your comment. Section 2.2.3 of the guidance has been changed to read 'each of the pulmonary veins'.
8	Consultee 3 Specialist Adviser	<b>2.2</b>	cryoablation is performed for 5 minutes not 4 minutes	Thank you for your comment. The duration of cryoablation stated in section 2.2.3 of the guidance is an approximation and is not intended to be definitive.
9	Consultee 1 NHS Professional	<b>2.3</b>	Agreed.	Thank you for your comment.

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10	Consultee 4 Medtronic Manufacturer	<b>2.3</b>	We also like to inform NICE that the STOP-AF Clinical Study has been completed and that its results were used to gain regulatory approval in the United States ( <a href="http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DeviceApprovalsandClearances/Recently-ApprovedDevices/ucm240093.htm">http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/DeviceApprovalsandClearances/Recently-ApprovedDevices/ucm240093.htm</a> ). We appreciate the manuscript has not become available yet, we would like however to point out that the results of this study have been published in the peer-reviewed literature in the MetaAnalysis attached (as Packer 2010) and in the recent ESC 2010 AF Guidelines (Camm 2010) as STOP-AF.	Thank you for the comment.  The meta-analysis (Andrade 2011) has been added to the main extraction table in the overview.  The Packer (2010) study included in the meta-analysis has been added to Appendix A.
11	Consultee 1 NHS Professional	<b>2.4</b>	2.4.2 Phrenic nerve injury is seen much more frequently when using the smaller 23mm balloon compared with the larger 28mm balloon because the smaller balloon, when treating the right sided pulmonary veins, is closer to the phrenic nerve. This complication can be avoided in almost all cases by careful monitoring of phrenic nerve function when treating the right pulmonary veins.	Thank you for your comment. This issue has been acknowledged under the 'Validity and generalisability of the studies' section of the overview. This is more detail than usually presented in NICE Interventional Procedures guidance.
12	Consultee 2 NHS Professional	<b>2.4</b>	Comment should be made on the recent observation of silent cerebral lesions found after AF ablation, and that further research is required to confirm whether there may be less with cryoablation than other techniques (refs: Siklody et al JACC 2011 Neumann et al, Europace 2011 Gaita et al, JCE 2011).	Thank you for your comment.  The Gaita (2011) study has been added to the main extraction table in the overview.  The Neumann (2011) (included in the main extraction table) has now been added to the Appendix A of the overview. The Siklody (2011) study is included in Appendix A of the overview.

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13	Consultee 4 Medtronic Manufacturer	<b>2.5</b>	We would like to inform NICE to the fact that a spiral mapping catheter could replace the multipolar mapping catheter in this procedure as suggested by the Kuck 2010 manuscript below and demonstrated with the Chun 2009 publication also attached. Please note that the catheter used in the Chun 2009 lacks the sturdiness to be indeed used routinely in this way but a new mapping catheter from Medtronic (ACHIEVE) has not been made available can could be used. This may allow for a single vs. a dual transeptal puncture per procedure which may have beneficial impact on patient safety and procedure time. Nevertheless, presence or absence of those effects have yet to be demonstrated.	Thank you for your comment.  The Committee considered this comment but decided not to change the guidance. The Kuck (2010) study cited by consultee is in Appendix A of the overview.  The Chun (2009) study was not included as it did not meet the inclusion criteria.
14	Consultee 3 Specialist Adviser	<b>General</b>	you have spelt my name wrong in the specialist advisors section of the overview document	Thank you for your comment. This will be changed in the 'Specialist Advisers' opinions' section of the overview.
15	Consultee 4 Medtronic Manufacturer	<b>General</b>	On-Going Clinical Studies related to this guidance: Head-2-head study (FIRE AND ICE) comparing Cryoballon with RF ablation which is now enrolling (reference <a href="http://clinicaltrials.gov/ct2/show/NCT01490814">http://clinicaltrials.gov/ct2/show/NCT01490814</a> )	Thank you for the comment. Details of this trial will be added to the relevant section in the overview.

*"Comments received in the course of consultations carried out by NICE are published in the interests of openness and transparency, and to promote understanding of how recommendations are developed. The comments are published as a record of the submissions that NICE has received, and are not endorsed by NICE, its officers or advisory committees."*