**SPECIALISED COMMISSIONING – RESPONSE TO AMENDMENTS REQUESTED TO EVIDENCE REVIEW DURING ENGAGEMENT OR CONSULTATION**

|  |  |
| --- | --- |
| **URN** | 1903 |
| **POLICY TITLE** | Clinical Commissioning Policy: Catheter ablation for paroxysmal and persistent atrial fibrillation (adults). |
| **CRG:** | Cardiac Services |
| **NPOC:** | Internal Medicine |
| **Date** | 17/02/2021 |

|  |  |
| --- | --- |
| **Description of comments during consultation (If studies have been suggested please provide a list of references)** | 44 references (duplicates removed) were suggested during consultation:   1. Kirchhof A, Camm J, Goette A, Brandes A, Eckardt L, Elvan A, Fetsch T, Van Gelder I, Hasse D, Haegeli L, Hamann F, Heidbuchel H. Early Rhythm-Control Therapy in Patients with Atrial Fibrillation. N Engl J Med. 2020; 383: 1305-1316. DOI: 10.1056/NEJMoa2019422. 2. Proietti R, Hadjis A, AlTurki A, Thanassoulis G, Roux JF, Verma A, Healey J, Bernier M, Birnie D, Nattel S, Essebag V. A systematic review on the progression of paroxysmal to persistent atrial fibrillation: shedding new light on the effects of catheter ablation. JACC Clin Electrophysiol. 2015; 1(3):105-115. DOI: 10.1016/j.jacep.2015.04.010. 3. Marrouche N, Brachmann J, Andresen D, Siebels J, Boersma L, Jordaens L, Merkely B, Pokushalov E, Sanders P, Proff J, Schunkert H, Christ H, Vogt J, Bansch D. Catheter ablation for atrial fibrillation with heart failure. N Engl J Med. 2018. 378: 417-427. DOI: 10.1056/NEJMoa1707855. 4. Jones D, Haldar S, Hussain W, Sharma R, Francis D, Rahman-Haley S, McDonagh T, Underwood S, Markides V, Wong T. A randomised trial to assess catheter ablation versus rate control in the management of persistent atrial fibrillation in heart failure. JACC. 2013; 61(18): 1894-1903. DOI: <https://doi.org/10.1016/j.jacc.2013.01.069>. 5. Packer DL, Mark DB, Robb RA, et al. Effect of Catheter Ablation vs Antiarrhythmic Drug Therapy on Mortality, Stroke, Bleeding, and Cardiac Arrest Among Patients With Atrial Fibrillation: The CABANA Randomized Clinical Trial. JAMA. 2019;321(13):1261–1274. doi:10.1001/jama.2019.0693. 6. Mark DB, Anstrom KJ, Sheng S, et al. Effect of Catheter Ablation vs Medical Therapy on Quality of Life Among Patients With Atrial Fibrillation: The CABANA Randomized Clinical Trial. JAMA. 2019;321(13):1275–1285. doi:10.1001/jama.2019.0692. 7. Halder S, Khan H, Boyalla V, Kralj-Hans I, Jones S, Lord J, Onyimadu O, Satishkumar A, Bahrami T, De Souza A. Catheter ablation vs. thoracoscopic surgical ablation in long-standing persistent atrial fibrillation: CASA-AF randomised controlled trial. Eur Heart J. 2020; 41(47): 4471-4480. DOI: [10.1093/eurheartj/ehaa658.](https://doi.org/10.1093/eurheartj/ehaa658) 8. Hindricks G, Potpara T, Dagres N, Arbelo E, Bax J, Blomstrom-Lundqvist C, Boriani G, Castella M, Dan G. 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). Euro Heart J. 2020; 42(5): 373-498. DOI: [10.1093/eurheartj/ehaa612.](https://doi.org/10.1093/eurheartj/ehaa612) 9. Providencia R, Elliott P, Patel K. Catheter ablation for atrial fibrillation in hypertropic cardiomyopathy: a systematic review and meta-analysis. Heart. 2016; 102: 1533-1543. [doi.org/10.1136/heartjnl-2016-309406.](http://dx.doi.org/10.1136/heartjnl-2016-309406) 10. Seligman W, Das-Gupta Z, Jobi-Odeneye AO, et al. Development of an international standard set of outcome measures for patients with atrial fibrillation: a report of the International Consortium for Health Outcomes Measurement (ICHOM) atrial fibrillation working group. European Heart Journal. 2020; 41: 1132–1140. doi:10.1093/eurheartj/ehz871. 11. Arbelo E, Aktaa S, Bollmann A, et al. Quality indicators for the care and outcomes of adults with atrial fibrillation. Europace. 2020; 00, 1–17 doi:10.1093/europace/euaa253. 12. Steinberg BA, Dorian P, Anstrom KJ, et al. Patient-Reported Outcomes in Atrial Fibrillation Research: Results of a Clinicaltrials.gov Analysis. JACC Clin Electrophysiol. 2019;5(5):599-605. doi:10.1016/j.jacep.2019.03.008. 13. Yew Ding W, Kozhuharov N, Hao Chin S, et al. Feasibility of weight loss in obese atrial fibrillation patients attending a specialist arrhythmia clinic and its impact on ablation outcomes. J Arrhythmia. 2020;00:1–7. <https://doi.org/10.1002/joa3.12432>. 14. Royal College of Surgeons. Rationing of Surgery. 2017 [online]. Available at: <https://www.rcseng.ac.uk/-/media/files/rcs/about-rcs/government-relations-consultation/rcs-briefing-paper-on-rationing.pdf>. 15. All-Party parliamentary group (APPG) on obesity. The current landscape of obesity services. 2018 [online]. Available at: [COP (squarespace.com)](https://static1.squarespace.com/static/5975e650be6594496c79e2fb/t/5af9b5cb03ce64f8a7aa20e5/1526314445852/APPG+on+Obesity+-+Report+2018.pdf). 16. Middeldorp ME. Lifestyle modifications for treatment of atrial fibrillation. Heart. 2020; 106(5): 325-332. 17. Nieuwlaat R, Prins MH, Le Heuzey JY, Vardas PE, Aliot E. Prognosis, disease progression, and treatment of atrial fibrillation patients during 1 year: follow-up of the Euro Heart Survey on atrial fibrillation. Eur Heart J. 2008; 29 (9): 1181-1189. 18. de Vos CB, Pisters R, Nieuwlaat R, Prins MH, Tieleman RG. Progression from paroxysmal to persistent atrial fibrillation clinical correlates and prognosis. J Am Coll Cardiol. 2010; 55 (8): 725-731. 19. Schnabel, RB, Pecen, L, Engler, D, Lucerna, M, Sellal, JM, Ojeda, FM, De Caterina, R & Kirchhof P. Atrial fibrillation patterns are associated with arrhythmia progression and clinical outcomes. Heart.2018 [online] Available at: <https://doi.org/10.1136/heartjnl-2017-312569>. 20. Piccini JP, Passman R, Turakhia M, Connolly AT, Nabutovsky Y, Varma N. Atrial fibrillation burden, progression, and the risk of death: a case-crossover analyzing patients with cardiac implantable electronic devices. Europace 2019;21:404-413. 21. Chiang CE, Naditch-Brule L, Murin J, Goethals M, Inoue H. Distribution and risk profile of paroxysmal, persistent, and permanent atrial fibrillation in routine clinical practice: insight from the real-life global survey evaluating patients with atrial fibrillation international registry. Circ Arrhythm Electrophysiol. 2012; 5 (4): 632-639. 22. Shi LZ, Heng R, Liu AM, Leng FY. Effect of catheter ablation versus antiarrhythmic drugs on atrial fibrillation: A meta-analysis of randomized controlled trials. Exp Ther Med. 2015; 10(2): 816–822. 23. Nyong J, Amit G, Adler AJ, Owolabi OO, Perel P, Prieto-Merino D, Lambiase P, Casas JP, Morillo CA. Efficacy and safety of ablation for people with nonparoxysmal atrial fibrillation. Cochrane Database Syst Rev 2016;11:CD012088. 24. Hummel J, Michaud G, Hoyt R, et al. Phased RF ablation in persistent atrial fibrillation. Heart Rhythm. 2014; 11(2):202-9. doi: 10.1016/j.hrthm.2013.11.009. 25. Al-Khatib SM, Allen LaPointe NM, Chatterjee R, Crowley MJ, Dupre ME, Kong DF, Lopes RD, Povsic TJ, Raju SS, Shah B, Kosinski AS, McBroom AJ, Sanders GD. Rate- and rhythm-control therapies in patients with atrial fibrillation: a systematic review. Ann Intern Med 2014;160:760773. 26. Lafuente-Lafuente C, Valembois L, Bergmann JF, Belmin J. Antiarrhythmics for maintaining sinus rhythm after cardioversion of atrial fibrillation. Cochrane Database Syst Rev. 2015;3:CD005049. 27. Andrade, J. Cryoballoon ablation for pulmonary vein isolation. Journal of Cardiovascular Electrophysiology. 2020; 31(8), pp.2128-2135. 28. Arujuna, A., Velu, S., Pathiraja, J., Lapper, A., Kidd, G., Forsey, P., Hado, H., Barr, C., Arya, A. and Petkar, S. 26 Day Case CRYO-Balloon Ablation Procedures: A Single Centre Experience In Trends, Safety And Cost Effective Analysis. Heart. 2018; 104(6). [10.1136/heartjnl-2018-BCS.26.](http://dx.doi.org/10.1136/heartjnl-2018-BCS.26) 29. Bartoletti S, Mann M, Gupta A, Khan A, Sahni, A, El‐Kadri, M., Modi, S., Waktare, J., Mahida, S., Hall M, Snowdon R, Todd D, Gupta D. Same‐day discharge in selected patients undergoing atrial fibrillation ablation. Pacing and Clinical Electrophysiology. 2019; 42(11), pp.1448-1455. 30. du Fay de Lavallaz J, Badertscher P, Kobori A, Kuck K, Brugada J, Boveda S, Providência R, Khoueiry Z, Luik A, Squara F, Kosmidou I, Davtyan K, Elvan A, Perez-Castellano N, Hunter R, Schilling R, Knecht S, Kojodjojo P, Wasserlauf J, Oral H, Matta M, Jain S, Anselmino M, Kühne M. Sex-specific efficacy and safety of cryoballoon versus radiofrequency ablation for atrial fibrillation: An individual patient data meta-analysis. Heart Rhythm. 2020; 17(8), pp.1232-1240. 31. Monnickendam G, de Asmundis C. Why the distribution matters: Using discrete event simulation to demonstrate the impact of the distribution of procedure times on hospital operating room utilisation and average procedure cost. Operations Research for Health Care. 2018;16, pp.20-28. 32. Opel A, Mansell J, Butler A, Schwartz R, Fannon M, Finlay M, Hunter R, Schilling R. Comparison of a high throughput day case atrial fibrillation ablation service in a local hospital with standard regional tertiary cardiac centre care. EP Europace. 2018; 21(3), pp.440-444. 33. Ravi V, Poudyal A, Pulipati P, Larsen T, Krishnan K, Trohman R, Sharma P, Huang H. A systematic review and meta‐analysis comparing second‐generation cryoballoon and contact force radiofrequency ablation for initial ablation of paroxysmal and persistent atrial fibrillation. Journal of Cardiovascular Electrophysiology.2020. 31(10): 2553-2796. 34. Reddy S, Nethercott S, Chattopadhyay R, Heck P, Virdee M. Safety, Feasibility and Economic Impact of Same-Day Discharge Following Atrial Fibrillation Ablation. Heart, Lung and Circulation. 2020. 29(12): 1766-1772. 35. Wasserlauf J, Kaplan R, Walega D, Arora R, Chicos A, Kim S, Lin A, Verma N, Patil K, Knight B, Passman R. Patient‐reported outcomes after cryoballoon ablation are equivalent between moderate sedation and general anaesthesia. Journal of Cardiovascular Electrophysiology. 2020; 31(7):1579-1584. 36. Kuck K. Catheter ablation can delay progression from paroxysmal to persistent atrial fibrillation. Presented at the ESC conference [online]. Available at: [Catheter Ablation Can Delay Progression from Paroxysmal To Persistent Atrial Fibrillation (escardio.org)](https://esc365.escardio.org/Congress/202083-catheter-ablation-can-delay-progression-from-paroxysmal-to-persistent-atrial-fibrillation). 37. Kanagaratnam P. Ablation versus anti-arrhythmic therapy for reducing all hospital episodes from reoccurent atrial fibrillation-AVATAR-AF. Presented at the European Heart Rhythm Association Congress, 2019. 38. Asad Z, Yousif A, Khan M, Al-Khatib S, Stavrakis S. Catheter ablation versus medical therapy for atrial fibrillation: a systematic review and meta-analysis of randomised controlled trials. Circulation: arrhythmia and electrophysiology. 2019; 12(9). [doi.org/10.1161/CIRCEP.119.007414](https://doi.org/10.1161/CIRCEP.119.007414) 39. Chen C, Zhou X, Zhu M, Chen S, Chen J, Cai H, Dai J, Xu X, Mao W. Catheter ablation versus medical therapy for patients with persistent atrial fibrillation: a systematic review and meta-analysis of evidence from randomized controlled trials. J Interv Card Electrophysiology. 2018;52:918. 40. Ganesan AN, Shipp NJ, Brooks AG, Kuklik P, Lau DH, Lim HS, Sullivan T, Roberts-Thomson KC, Sanders P. Long-term outcomes of catheter ablation of atrial fibrillation: a systematic review and meta-analysis. J Am Heart Assoc. 2013;2:e004549. 41. Barbarossa A, Guerra F, Capucci A. Silent Atrial Fibrillation: A Critical Review. J Atr Fibrillation. 2014;7(3):1138. doi:10.4022/jafib.1138. 42. Kelly JP, DeVore AD, Wu J, Hammill BG, Sharma A, Cooper LB, Felker GM, Piccini JP, Allen LA, Heidenreich PA, Peterson ED, Yancy CW, Fonarow GC, Hernandez AF. Rhythm control versus rate control in patients with atrial fibrillation and heart failure with preserved ejection fraction: insights from Get With The Guidelines-Heart Failure. J Am Heart Assoc 2019;8:e011560. 43. Amit G, Nyong J, Morillo CA. Efficacy of Catheter Ablation for Nonparoxysmal Atrial Fibrillation. JAMA Cardiology. 2017; 2(7):812-813. doi: 10.1001/jamacardio.2017.0901. 44. Blomstrom-Lundqvist C, Gizurarson S, Schwieler J, Jensen SM, Bergfeldt L, Kennebäck G, Rubulis A, Malmborg H, Raatikainen P, Lönnerholm S, Höglund N, Mörtsell D. Effect of Catheter Ablation vs Antiarrhythmic Medication on Quality of Life in Patients With Atrial Fibrillation: The CAPTAF Randomized Clinical Trial. JAMA. 2019 Mar 19;321(11):1059-1068. |
| **Action taken by Public Health lead** | Full text copies of all papers were acquired and read in reference to the PICO details. |
| **Outcome for studies suggested during consultation** | |
| **1. Evidence already identified during the evidence review** | 1. Marrouche N, Brachmann J, Andresen D, Siebels J, Boersma L, Jordaens L, Merkely B, Pokushalov E, Sanders P, Proff J, Schunkert H, Christ H, Vogt J, Bansch D. Catheter ablation for atrial fibrillation with heart failure. N Engl J Med. 2018. 378: 417-427. DOI: 10.1056/NEJMoa1707855 (Included in review). 2. Chen C, Zhou X, Zhu M, Chen S, Chen J, Cai H, Dai J, Xu X, Mao W. Catheter ablation versus medical therapy for patients with persistent atrial fibrillation: a systematic review and meta-analysis of evidence from randomized controlled trials. J Interv Card Electrophysiol. 2018;52:918 (Included in review). 3. Ganesan AN, Shipp NJ, Brooks AG, Kuklik P, Lau DH, Lim HS, Sullivan T, Roberts-Thomson KC, Sanders P. Long-term outcomes of catheter ablation of atrial fibrillation: a systematic review and meta-analysis. J Am Heart Assoc. 2013;2:e004549. (Excluded due to uncontrolled study populations). 4. Proietti R, Hadjis A, AlTurki A, Thanassoulis G, Roux JF, Verma A, Healey J, Bernier M, Birnie D, Nattel S, Essebag V. A systematic review on the progression of paroxysmal to persistent atrial fibrillation: shedding new light on the effects of catheter ablation. JACC Clin Electrophysiol. 2015; 1(3):105-115. doi: 10.1016/j.jacep.2015.04.010 (Excluded as not a study of effectiveness of ablation versus comparator). 5. Shi LZ, Heng R, Liu AM, Leng FY. Effect of catheter ablation versus antiarrhythmic drugs on atrial fibrillation: A meta-analysis of randomized controlled trials. Exp Ther Med. 2015; 10(2): 816–822. (Excluded as persistent and paroxysmal AF not reported separately). 6. Nyong J, Amit G, Adler AJ, Owolabi OO, Perel P, Prieto-Merino D, Lambiase P, Casas JP, Morillo CA. Efficacy and safety of ablation for people with nonparoxysmal atrial fibrillation. Cochrane Database Syst Rev 2016;11:CD012088. (Excluded as the 3 RCTs (n=261) in this SR are all included in the more recent SRMA by Chen et al 20181 (8 RCTs, n=809). 7. Amit G, Nyong J, Morillo CA. Efficacy of Catheter Ablation for Nonparoxysmal Atrial Fibrillation. JAMA Cardiology. 2017; 2(7):812-813. doi: 10.1001/jamacardio.2017.0901(Excluded as the same evidence presented by Nyong et. al. 2016). 8. Hummel J, Michaud G, Hoyt R, et al. Phased RF ablation in persistent atrial fibrillation. Heart Rhythm. 2014; 11(2):202-9. doi: 10.1016/j.hrthm.2013.11.009. (Excluded as one of the RCTs included in the systematic review by Chen et. al 2018, which is included in the evidence review). |
| **2.New evidence identified by stakeholders that does not fall within PICO and search methodology** | 1. Kirchhof A, Camm J, Goette A, Brandes A, Eckardt L, Elvan A, Fetsch T, Van Gelder I, Hasse D, Haegeli L, Hamann F, Heidbuchel H. Early Rhythm-Control Therapy in Patients with Atrial Fibrillation. N Engl J Med. 2020; 383: 1305-1316. DOI: 10.1056/NEJMoa2019422. 2. Jones D, Haldar S, Hussain W, Sharma R, Francis D, Rahman-Haley S, McDonagh T, Underwood S, Markides V, Wong T. A randomised trial to assess catheter ablation versus rate control in the management of persistent atrial fibrillation in heart failure. JACC. 2013; 61(18): 1894-1903. DOI: <https://doi.org/10.1016/j.jacc.2013.01.069>. 3. Hindricks G, Potpara T, Dagres N, Arbelo E, Bax J, Blomstrom-Lundqvist C, Boriani G, Castella M, Dan G. 2020 ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). Euro Heart J. 2020; 42(5): 373-498. DOI: [10.1093/eurheartj/ehaa612.](https://doi.org/10.1093/eurheartj/ehaa612) 4. Providencia R, Elliott P, Patel K. Catheter ablation for atrial fibrillation in hypertropic cardiomyopathy: a systematic review and meta-analysis. Heart. 2016; 102: 1533-1543. [doi.org/10.1136/heartjnl-2016-309406.](http://dx.doi.org/10.1136/heartjnl-2016-309406) 5. Seligman W, Das-Gupta Z, Jobi-Odeneye AO, et al. Development of an international standard set of outcome measures for patients with atrial fibrillation: a report of the International Consortium for Health Outcomes Measurement (ICHOM) atrial fibrillation working group. European Heart Journal. 2020; 41: 1132–1140. doi:10.1093/eurheartj/ehz871. 6. Arbelo E, Aktaa S, Bollmann A, et al. Quality indicators for the care and outcomes of adults with atrial fibrillation. Europace. 2020; 00, 1–17 doi:10.1093/europace/euaa253. 7. Steinberg BA, Dorian P, Anstrom KJ, et al. Patient-Reported Outcomes in Atrial Fibrillation Research: Results of a Clinicaltrials.gov Analysis. JACC Clin Electrophysiol. 2019;5(5):599-605. doi:10.1016/j.jacep.2019.03.008. 8. Yew Ding W, Kozhuharov N, Hao Chin S, et al. Feasibility of weight loss in obese atrial fibrillation patients attending a specialist arrhythmia clinic and its impact on ablation outcomes. J Arrhythmia. 2020;00:1–7. <https://doi.org/10.1002/joa3.12432> 9. Royal College of Surgeons. Rationing of Surgery. 2017 [online]. Available at: <https://www.rcseng.ac.uk/-/media/files/rcs/about-rcs/government-relations-consultation/rcs-briefing-paper-on-rationing.pdf> 10. All-Party parliamentary group (APPG) on obesity. The current landscape of obesity services. 2018 [online]. Available at: [COP (squarespace.com)](https://static1.squarespace.com/static/5975e650be6594496c79e2fb/t/5af9b5cb03ce64f8a7aa20e5/1526314445852/APPG+on+Obesity+-+Report+2018.pdf) 11. Middeldorp ME. Lifestyle modifications for treatment of atrial fibrillation. Heart. 2020; 106(5): 325-332. 12. Nieuwlaat R, Prins MH, Le Heuzey JY, Vardas PE, Aliot E. Prognosis, disease progression, and treatment of atrial fibrillation patients during 1 year: follow-up of the Euro Heart Survey on atrial fibrillation. Eur Heart J. 2008; 29 (9): 1181-1189. 13. de Vos CB, Pisters R, Nieuwlaat R, Prins MH, Tieleman RG. Progression from paroxysmal to persistent atrial fibrillation clinical correlates and prognosis. J Am Coll Cardiol. 2010; 55 (8): 725-731. 14. Schnabel, RB, Pecen, L, Engler, D, Lucerna, M, Sellal, JM, Ojeda, FM, De Caterina, R & Kirchhof P. Atrial fibrillation patterns are associated with arrhythmia progression and clinical outcomes. Heart.2018 [online] Available at: https://doi.org/10.1136/heartjnl-2017-312569. 15. Piccini JP, Passman R, Turakhia M, Connolly AT, Nabutovsky Y, Varma N. Atrial fibrillation burden, progression, and the risk of death: a case-crossover analyzing patients with cardiac implantable electronic devices. Europace 2019;21:404-413. 16. Chiang CE, Naditch-Brule L, Murin J, Goethals M, Inoue H. Distribution and risk profile of paroxysmal, persistent, and permanent atrial fibrillation in routine clinical practice: insight from the real-life global survey evaluating patients with atrial fibrillation international registry. Circ Arrhythm Electrophysiol. 2012; 5 (4): 632-639. 17. Al-Khatib SM, Allen LaPointe NM, Chatterjee R, Crowley MJ, Dupre ME, Kong DF, Lopes RD, Povsic TJ, Raju SS, Shah B, Kosinski AS, McBroom AJ, Sanders GD. Rate- and rhythm-control therapies in patients with atrial fibrillation: a systematic review. Ann Intern Med. 2014;160:760773. 18. Lafuente-Lafuente C, Valembois L, Bergmann JF, Belmin J. Antiarrhythmics for maintaining sinus rhythm after cardioversion of atrial fibrillation. Cochrane Database Syst Rev. 2015;3:CD005049. 19. Andrade, J. Cryoballoon ablation for pulmonary vein isolation. Journal of Cardiovascular Electrophysiology. 2020; 31(8), pp.2128-2135. 20. Arujuna, A., Velu, S., Pathiraja, J., Lapper, A., Kidd, G., Forsey, P., Hado, H., Barr, C., Arya, A. and Petkar, S. 26 Day Case CRYO-Balloon Ablation Procedures: A Single Centre Experience In Trends, Safety And Cost Effective Analysis. Heart. 2018; 104(6). [10.1136/heartjnl-2018-BCS.26.](http://dx.doi.org/10.1136/heartjnl-2018-BCS.26) 21. Bartoletti S, Mann M, Gupta A, Khan A, Sahni, A, El‐Kadri, M., Modi, S., Waktare, J., Mahida, S., Hall M, Snowdon R, Todd D, Gupta D. Same‐day discharge in selected patients undergoing atrial fibrillation ablation. Pacing and Clinical Electrophysiology. 2019; 42(11), pp.1448-1455. 22. du Fay de Lavallaz J, Badertscher P, Kobori A, Kuck K, Brugada J, Boveda S, Providência R, Khoueiry Z, Luik A, Squara F, Kosmidou I, Davtyan K, Elvan A, Perez-Castellano N, Hunter R, Schilling R, Knecht S, Kojodjojo P, Wasserlauf J, Oral H, Matta M, Jain S, Anselmino M, Kühne M. Sex-specific efficacy and safety of cryoballoon versus radiofrequency ablation for atrial fibrillation: An individual patient data meta-analysis. Heart Rhythm. 2020; 17(8), pp.1232-1240. 23. Monnickendam G, de Asmundis C. Why the distribution matters: Using discrete event simulation to demonstrate the impact of the distribution of procedure times on hospital operating room utilisation and average procedure cost. Operations Research for Health Care. 2018;16, pp.20-28. 24. Opel A, Mansell J, Butler A, Schwartz R, Fannon M, Finlay M, Hunter R, Schilling R. Comparison of a high throughput day case atrial fibrillation ablation service in a local hospital with standard regional tertiary cardiac centre care. EP Europace. 2018; 21(3), pp.440-444. 25. Ravi V, Poudyal A, Pulipati P, Larsen T, Krishnan K, Trohman R, Sharma P, Huang H. A systematic review and meta‐analysis comparing second‐generation cryoballoon and contact force radiofrequency ablation for initial ablation of paroxysmal and persistent atrial fibrillation. Journal of Cardiovascular Electrophysiology. 2020;31(10): 2553-2796. 26. Reddy S, Nethercott S, Chattopadhyay R, Heck P, Virdee M. Safety, Feasibility and Economic Impact of Same-Day Discharge Following Atrial Fibrillation Ablation. Heart, Lung and Circulation. 2020. 29(12): 1766-1772. 27. Wasserlauf J, Kaplan R, Walega D, Arora R, Chicos A, Kim S, Lin A, Verma N, Patil K, Knight B, Passman R. Patient‐reported outcomes after cryoballoon ablation are equivalent between moderate sedation and general anaesthesia. Journal of Cardiovascular Electrophysiology. 2020; 31(7):1579-1584 28. Kuck K. Catheter ablation can delay progression from paroxysmal to persistent atrial fibrillation. Presented at the ESC conference [online]. Available at: [Catheter Ablation Can Delay Progression from Paroxysmal To Persistent Atrial Fibrillation (escardio.org)](https://esc365.escardio.org/Congress/202083-catheter-ablation-can-delay-progression-from-paroxysmal-to-persistent-atrial-fibrillation). 29. Kanagaratnam P. Ablation versus anti-arrhythmic therapy for reducing all hospital episodes from reoccurent atrial fibrillation-AVATAR-AF. Presented at the European Heart Rhythm Association Congress, 2019. 30. Barbarossa A, Guerra F, Capucci A. Silent Atrial Fibrillation: A Critical Review. J Atr Fibrillation. 2014;7(3):1138. doi:10.4022/jafib.1138. 31. Kelly JP, DeVore AD, Wu J, Hammill BG, Sharma A, Cooper LB, Felker GM, Piccini JP, Allen LA, Heidenreich PA, Peterson ED, Yancy CW, Fonarow GC, Hernandez AF. Rhythm control versus rate control in patients with atrial fibrillation and heart failure with preserved ejection fraction: insights from get with the guidelines-Heart Failure. J Am Heart Assoc 2019;8:e011560. 32. Blomstrom-Lundqvist C, Gizurarson S, Schwieler J, Jensen SM, Bergfeldt L, Kennebäck G, Rubulis A, Malmborg H, Raatikainen P, Lönnerholm S, Höglund N, Mörtsell D. Effect of Catheter Ablation vs Antiarrhythmic Medication on Quality of Life in Patients with Atrial Fibrillation: The CAPTAF Randomized Clinical Trial. JAMA. 2019. 19;321(11):1059-1068. |
| **3.New evidence identified by stakeholders that falls within PICO and search methodology but does not materially affect the conclusions of the existing evidence review** | 1. Packer DL, Mark DB, Robb RA, et al. Effect of Catheter Ablation vs Antiarrhythmic Drug Therapy on Mortality, Stroke, Bleeding, and Cardiac Arrest Among Patients With Atrial Fibrillation: The CABANA Randomized Clinical Trial. *JAMA.* 2019;321(13):1261–1274. doi:10.1001/jama.2019.0693. 2. Mark DB, Anstrom KJ, Sheng S, et al. Effect of Catheter Ablation vs Medical Therapy on Quality of Life Among Patients With Atrial Fibrillation: The CABANA Randomized Clinical Trial. JAMA. 2019;321(13):1275–1285. doi:10.1001/jama.2019.0692. 3. Halder S, Khan H, Boyalla V, Kralj-Hans I, Jones S, Lord J, Onyimadu O, Satishkumar A, Bahrami T, De Souza A. Catheter ablation vs. thoracoscopic surgical ablation in long-standing persistent atrial fibrillation: CASA-AF randomised controlled trial. Eur Heart J. 2020; 41(47): 4471-4480. DOI: [10.1093/eurheartj/ehaa658.](https://doi.org/10.1093/eurheartj/ehaa658) 4. Asad Z, Yousif A, Khan M, Al-Khatib S, Stavrakis S. Catheter ablation versus medical therapy for atrial fibrillation: a systematic review and meta-analysis of randomised controlled trials. Circulation: arrhythmia and electrophysiology. 2019; 12(9). [doi.org/10.1161/CIRCEP.119.007414](https://doi.org/10.1161/CIRCEP.119.007414) |
| **4.New evidence identified by stakeholders that falls within PICO and search methodology, that does materially affect the conclusions of the existing evidence review. Updated evidence review to be undertaken (agreed with CET)** | None |