The Institute of Cardiovascular Medicine and Science

Liverpool Heart and Chest Hospital NHS
NHS Foundation Trust

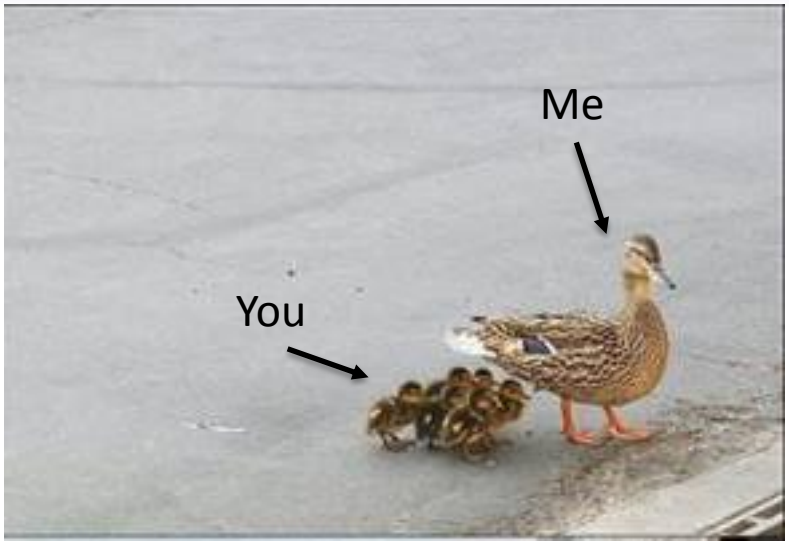
Can the UK afford ablation for persistent AF? – cost efficacy analysis

Dr Derick Todd
Liverpool Heart & Chest Hospital

Conflicts of Interest

Speaker fees / Consultancy / Travel support:

Bayer
Boehringer Ingelheim
Biosense Webster
Boston Scientific
Medtronic
Pfizer / BMS
Sanofi- Aventis
St Jude Medical



Cost efficacy analysis

EUROPEAN SOCIETY OF CARDIOLOGY®

Europace (2011) **13**, 1375–1385
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REVIEW

The cost of illness of atrial fibrillation: a systematic review of the recent literature

S.E. Wolowacz[1]*, M. Samuel[1], V.K. Brennan[2], J.-G. Jasso-Mosqueda[3], and I.C. Van Gelder[4]

[1]RTI Health Solutions, The Pavilion, Towers Business Park, Didsbury, Manchester M20 2LS, UK; [2]RTI Health Solutions, Velocity House, Business and Conference Centre, 3 Solly Street, Sheffield S1 4DE, UK; [3]EBM Department/Scientific Support/PVD, sanofi-aventis R&D, Paris, France; and [4]University Medical Center, University of Groningen, Groningen and Interuniversity Cardiology Institute Netherlands Utrecht, The Netherlands

AF is expensive

1. It affects 2% of the population – elderly
   (in the UK that is 1 million people)
2. Hospital admission is the main cost
3. Costing assessments are complex
   – increased incidence / recognition
4. Drug costs are increasing – NOAC use
5. Intervention costs are increasing

AF definitions

1. Paroxysmal AF (PAF) – self-terminating
2. Persistent AF (PeAF) - last >7days or requires cardioversion to terminate
3. Long-standing persistent AF (LsPeAF)– AF of duration > 1 year
4. Permanent AF – decision to accept AF

Recommendations for catheter ablation of atrial fibrillation and atrial fibrillation surgery

Recommendations	Class[a]	Level[b]	Ref[c]
Catheter ablation of symptomatic paroxysmal AF is recommended to improve AF symptoms in patients who have symptomatic recurrences of AF on antiarrhythmic drug therapy (amiodarone, dronedarone, flecainide, propafenone, sotalol) and who prefer further rhythm control therapy, when performed by an electrophysiologist who has received appropriate training and is performing the procedure in an experienced centre.	I	A	585–587, 713,727
Ablation of common atrial flutter should be considered to prevent recurrent flutter as part of an AF ablation procedure if documented or occurring during the AF ablation.	IIa	B	827
Catheter ablation of AF should be considered as first-line therapy to prevent recurrent AF and to improve symptoms in selected patients with symptomatic paroxysmal AF as an alternative to antiarrhythmic drug therapy, considering patient choice, benefit, and risk.	IIa	B	585
All patients should receive oral anticoagulation for at least 8 weeks after catheter (IIaB) or surgical (IIaC) ablation.	IIa	B C	727
Anticoagulation for stroke prevention should be continued indefinitely after apparently successful catheter or surgical ablation of AF in patients at high-risk of stroke.	IIa	C	
When catheter ablation of AF is planned, continuation of oral anticoagulation with a VKA (IIaB) or NOAC (IIaC) should be	IIb	B C	760,768
Maze surgery, possibly via a minimally invasive approach, performed by an adequately trained operator in an experienced centre, should be considered by an AF Heart Team as a treatment option for patients with symptomatic refractory persistent AF or post-ablation AF to improve symptoms.	IIa	C	808,832
Maze surgery, preferably biatrial, should be considered in patients undergoing cardiac surgery to improve symptoms attributable to AF, balancing the added risk of the procedure and the benefit of rhythm control therapy.	IIa	A	461,466, 790,791, 796,797
Concomitant biatrial maze or pulmonary vein isolation may be considered in asymptomatic AF patients undergoing cardiac surgery.	IIb	C	796,797, 833

2016 ESC Guidelines

Level of evidence C — **Consensus of opinion of the experts and/or small studies, retrospective studies, registries.**

Catheter or surgical ablation should be considered in patients with symptomatic persistent or long-standing persistent AF refractory to AAD therapy to improve symptoms, considering patient choice, benefit and risk, supported by an AF Heart Team.

IIa	C	468,735, 777,831, 832,1040

NICE 2014 - Ablation Pe AF

Left atrial ablation

1.6.19 If drug treatment has failed to control symptoms of atrial fibrillation or is unsuitable:

- offer left atrial catheter ablation to people with paroxysmal atrial fibrillation
- consider left atrial catheter or surgical ablation for people with persistent atrial fibrillation
- discuss the risks and benefits with the person[6]. **[new 2014]**

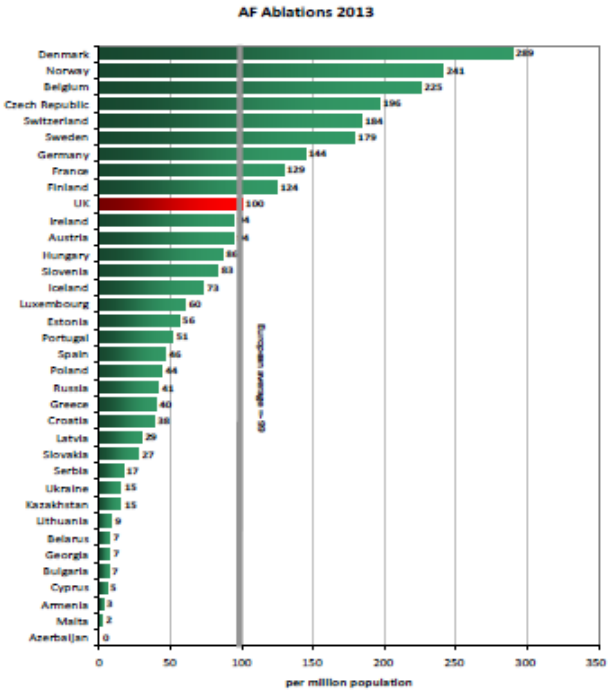
1.6.20 Consider left atrial surgical ablation at the same time as other cardiothoracic surgery for people with symptomatic atrial fibrillation[7]. **[new 2014]**

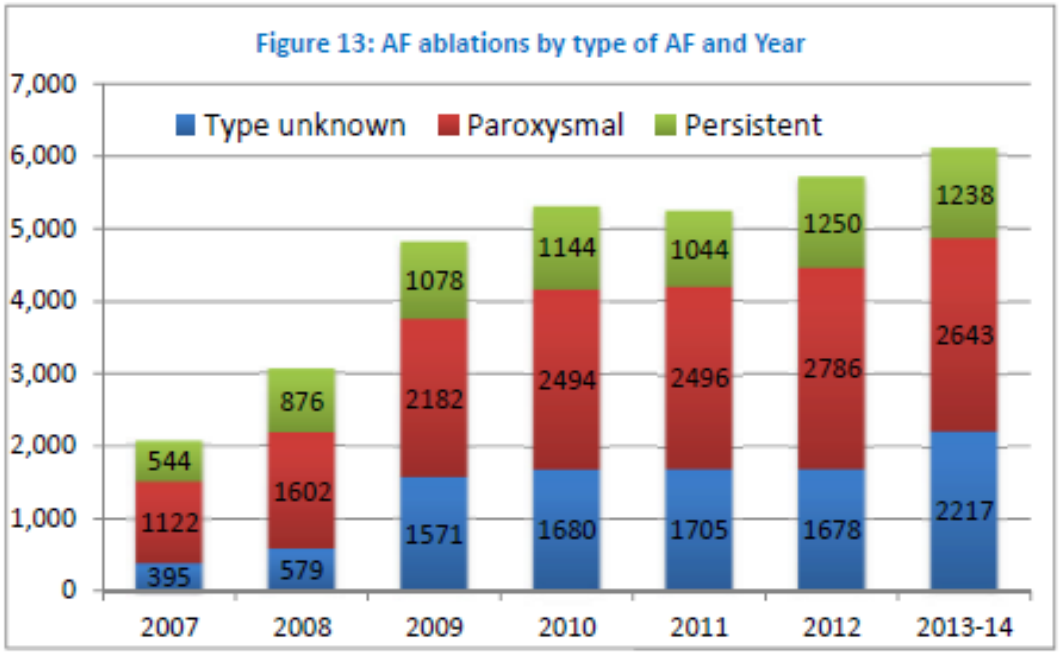
Catheter Ablation / PVI / AF ablation

Recommendations for catheter ablation of atrial fibrillation and atrial fibrillation surgery

Recommendations	Class[a]	Level[b]	Ref[c]
Catheter ablation of symptomatic paroxysmal AF is recommended to improve AF symptoms in patients who have symptomatic recurrences of AF on antiarrhythmic drug therapy (amiodarone, dronedarone, flecainide, propafenone, sotalol) and who prefer further rhythm control therapy, when performed by an electrophysiologist who has received appropriate training and is performing the procedure in an experienced centre.	I	A	585–587, 713, 727
Catheter or surgical ablation should be considered in patients with symptomatic persistent or long-standing persistent AF refractory to AAD therapy to improve symptoms, considering patient choice, benefit and risk, supported by an AF Heart Team.	IIa	C	468, 735, 777, 831, 832, 1040

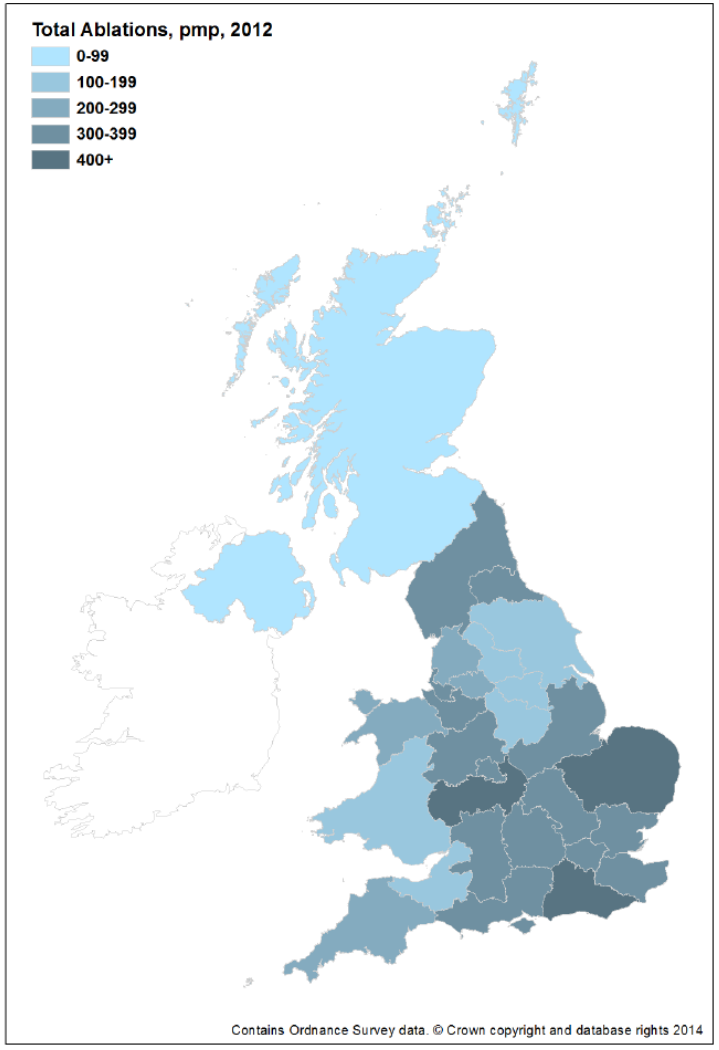
Fig 12: AF Ablation in Europe 2013

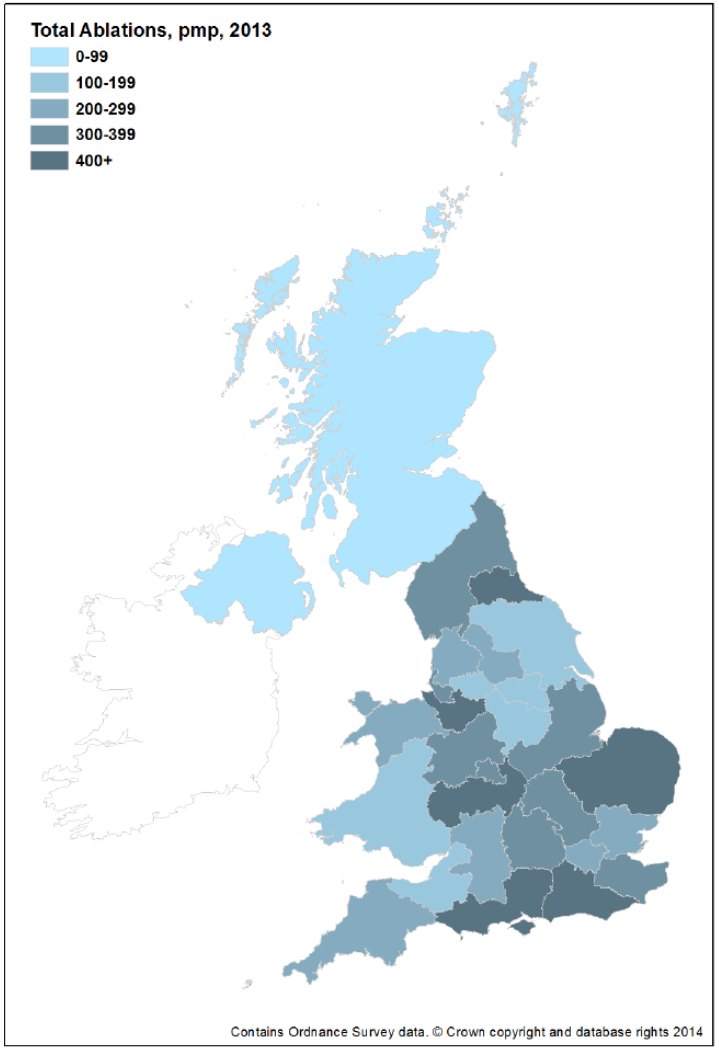




ALL ABLATIONS BY GEOGRAPHY 2012 AND 2013

NICOR DATA

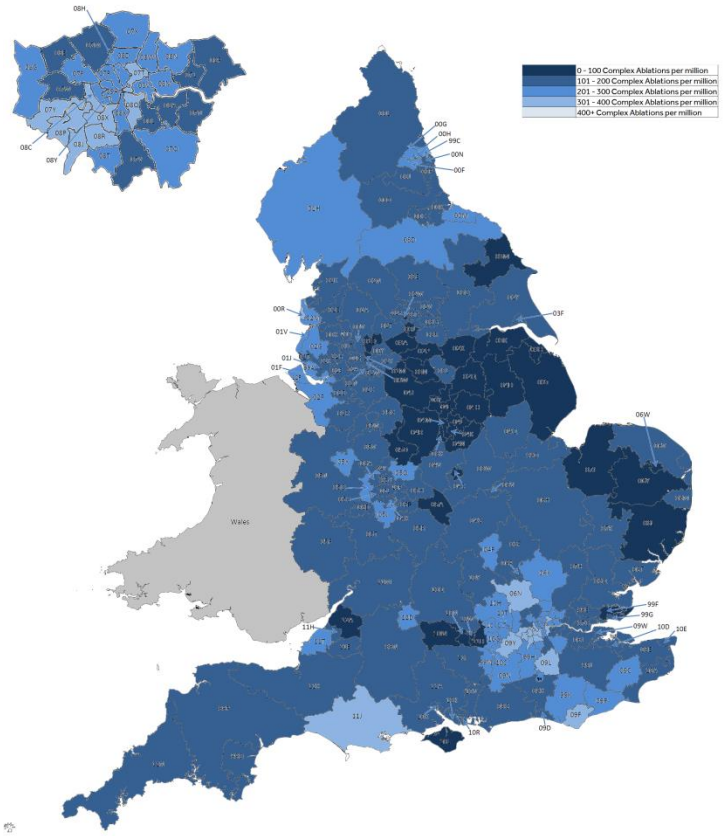




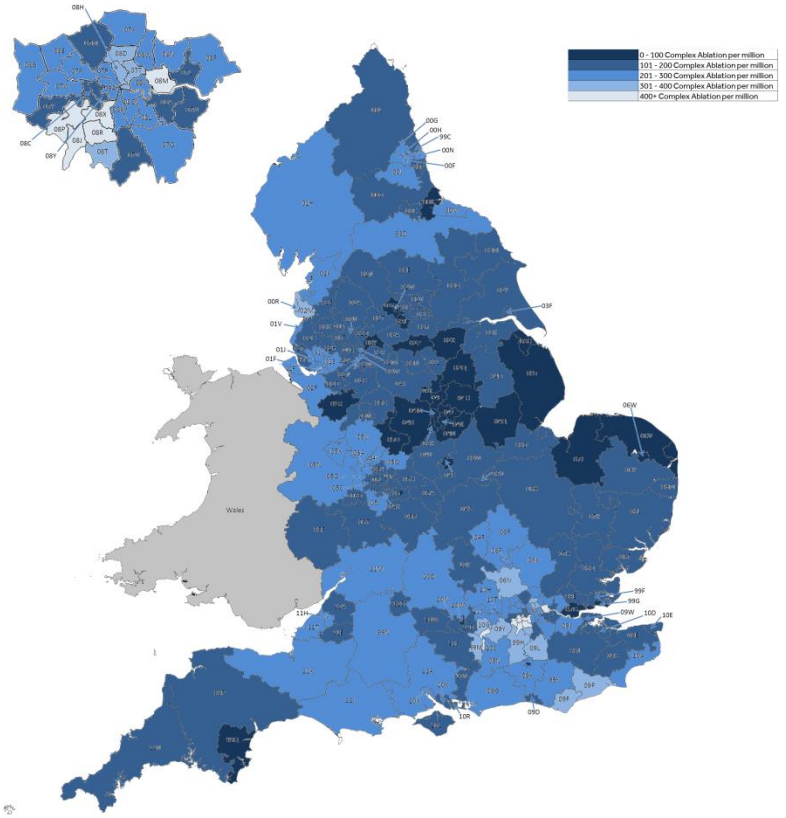
ABLATION HEAT MAPS IN ENGLAND BY CCG SOURCED FROM HEALTH EPISODE STATISTICS

EA29Z - PERCUTANEOUS COMPLEX ABLATION (INCLUDES ATRIAL FIBRILLATION OR VENTRICULAR TACHYCARDIA)

2014-2015



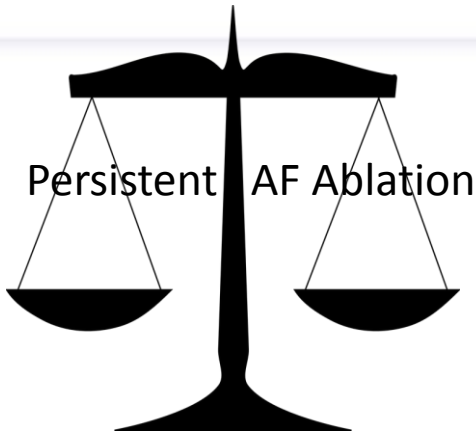
2015-2016



But … is ablation for persistent AF worth the cost for the NHS?

Factors determining cost efficacy

1. Up front costs of the procedure
2. Future reduction in healthcare costs
3. Benefits in quality of life (QoL)
4. Benefits to society e.g. employment



For:

‘Cure’ AF

- patient feels better
- reduce hospital admissions
- reduce risk of stroke
- improve heart function (EF)
- reduce dementia risk

Even partial success – may reduce all of above

Against:

Cost

Real world data on outcomes

A cash strapped NHS

Figuring out if it is worth the cost

QALY's – quality adjusted life years

ICER – incremental cost effectiveness ratio

QALY

1 quality adjusted life year is 1 year in perfect health

or …..

2 years with a 50% quality

ICER

Compares the cost of 2 treatments (A v B) and the outcomes of the 2 treatments (A v B) to determine the additional cost per QALY.

AF ablation costs more but if it provides much better QoL and / or makes people live longer with less morbidity then it is worth the NHS spending money on it

What does the NHS pay for?

Current thresholds are £20,000 - £30,000 per QALY

But .. ablation of AF is at a disadvantage because:

- All the cost is up-front
- Long-term data is lacking
- In assessment of ICER health economists prefer randomised, controlled trials comparing ablation v medical management
- Ablation success is defined as <30secs of AF (not easy to achieve in persistent AF)

	Chan et al.[30]	Rodgers/McKenna et al.[31]	Reynolds et al.[21]	Eckard et al.[33]	Assasi/Blackhouse et al.[34]	Ollendorf et al.[36]	Reynolds et al.[38]	Aronsson et al.[37]
Year of Study	2006	2008/ 2009	2009	2010	2010/ 2013	2010	2014	2014
Country	USA	UK	USA	Sweden	Canada (Ontario)	USA	UK	Europe
AF Type	All Types	Mostly paroxysmal	Paroxysmal	Paroxysmal and persistent	Paroxysmal	Proxysmal and Persistent	Paroxysmal	Paroxysmal
Ablation Type	Radiofrequency	Radiofrequency	Radiofrequency	Radiofrequency	Radiofrequency	Radiofrequency	Cryoballoon	Radiofrequency
First- or Second-Line Therapy	First-line	Second-line	Second-line	Second-line	Second-line	First- and second-line	Second-line	First-line
Therapeutic Comparator	Rate Control, AAD (amiodarone)	AAD (amiodarone)	AAD (sotalol/ flecainide first, amiodarone second), then RC	AAD (amiodarone, flecainalde)	AAD (amiodarone)	AAD (amiodarone), then RC	AAD (propafenone, first sotalol second, amiodarone third), then RC	AAD (amiodarone flecainalde, propafenone, sotalol)
Model Type	Markov Model	Markov Model	Markov Model	Markov Model	Markov Model	Markov Model	Markov Model	Markov Model
Model Inputs	Published literature, Medicare data	Published literature, costs from practicing MD	Published literature, Medicare data, FRACTAL registry	Published literature, Swedish clinical and national data	Published literature, FRACTAL registry, Canadian mortality, stroke, cost data	Published literature, Medicare data	Published literature, STOP-AF trial data	MANTRA-PAF trial data
Time Horizon	Lifetime	5 years / lifetime	5 years	Lifetime	5 years	5 years / lifetime	5 years	Lifetime
AF Ablation Success Rate	80 %	74–84 %	90 %	78 %	76 %	82 % (paroxysmal), 79 % (persistent)	71 % at 12 months	85 % at 24 months
Number of Ablation Attempts	1.3	1.3	1.3	1.4	1.3	N/A	N/A	1.5–1.6 based on patient age
Anticoagulation	Warfarin or ASA based on risk	Warfarin, ASA or none	Assumed same between groups	Warfarin	Warfarin	Warfarin or ASA based on risk	Warfarin, then ASA if bleeding	Warfarin
Model Patient Assumptions	3 model groups: 65 y.o. low risk 65 y.o. mod risk 55 y.o. mod risk	Mean age: 52 years 80% male $CHADS_2$ of 1	60 years old Male	3 groups: Age >69 years Age 70–79 years Age >80 years	65 years old Male $CHADS_2$ of 2	3 groups (Male): 60 y.o. low risk 65 y.o. mod risk 75 y.o. high risk	Based on STOP-AF trial population	Based on MANTRA-PAF trial population
Assumptions with greatest impact on sensitivity analysis	AF ablation success rate, RC success rate, AF stroke rate, Warfarin utility, Warfarin bleed risk	AF Ablation success rate, NSR and AF utility, NSR stroke risk	Time horizon, NSR and AF utility, Ablation cost	AF ablation success rate over lifetime	Time horizon, NSR and AF utility	NSR and AF utility, NSR and AF stroke risk	Time horizon, Follow-up care costs for recurrent AF, Ablation costs	Readiness of offering crossovers, Ablation costs

AF – atrial fibrillation, AAD – anti-arrhythmic drug, RC – rate control, ASA – aspirin, NSR – normal sinus rhythm, y.o. – year old, mod – moderate, CAD – Canadian dollar, ICER – incremental cost-effectiveness ratio, QALY – quality-adjusted life year.

Chang et al Arrhythmia and Elect Review:2014; 3 ; 177-184

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Chang et al Arrhythmia and Elect Review:2014; 3 ; 177-184

	Chan et al.[30]			Rodgers/McKenna[31]		Reynolds et al.(2009)[21]	Eckard et al.[33]	Assasi/ Blackhouse et al.[34]		Ollendorf et al.[36] (First-line)			Reynolds et al.(2014)[38]	Aronsson et al.[37]	
	55 y.o. mod risk	65 y.o. mod risk	65 y.o. low risk	5-year horizon	Lifetime horizon			5-year horizon	20-year horizon	60 y.o. low risk	65 y.o. mod risk	75 y.o. high risk	Cryoballoon	≤50 y.o.	>50 y.o.
QALYs															
AF Ablation	14.26	11.06	11.40	11.18	12.14	3.51	9.46	3.42	--	11.63	8.96	6.00	3.57	--	--
Comparison	13.95	10.81	11.21	10.76	10.77	3.38	8.68	3.27	--	11.12	8.67	5.80	3.40	--	--
Incremental	0.31	0.25	0.19	0.42	1.37	0.13	0.78	0.14	0.51	0.51	0.30	0.21	0.17	0.142	0.035
Cost															
AF Ablation	$59,380	$52,369	$43,036	£26,016	£26,027	$26,584	$9,860	$21,150 CAD	--	$34,044	$38,245	$34,410	£21,162	--	--
Comparison	$50,509	$39,391	$24,540	£15,352	£15,367	$19,898	$1,640 (annual)	$12,611 CAD	--	$20,265	$20,332	$17,759	£17,627	--	--
Incremental	$8,871	$12,978	$18,496	£10,664	£10,660	$6,686	$1,660 (5-year)	$8,539 CAD	$71 CAD	$13,779	$17,913	$16,651	£3,535	€488	€3,685
ICER															
Ablation vs. Comparator	$28,700 /QALY	$51,800 /QALY	$98,900 /QALY	£25,510 /QALY	£7,780 /QALY	$51,431/ QALY	Dominant	$59,194 CAD/QALY	Dominant	$26,869 /QALY	$60,804 /QALY	$80,615 /QALY	£21,957/QALY	€3,434 /QALY	€108,937 /QALY
Probability of Cost-Effectiveness of AF Ablation at Willingness-to-pay Threshhold	$50,000/QALY: 40 % $100,000/QALY: 78 %			£20,000/QALY: 16.5 % £30,000/QALY: 68.6 %		N/A	N/A	$50,000 CAD /QALY: 30 % $100,000 CAD/QALY: 89 %		Multiple			£20,000/QALY: unlikely £30,000/QALY: 86 % £40,000/ QALY: 97.2 %	<€50,000/QALY: ~90 % for ≤50 y.o. group.	

AF – atrial fibrillation, AAD – anti-arrhythmic drug, RC – rate control, ASA – aspirin, NSR – normal sinus rhythm, y.o. – year old, mod – modera te, CAD – Canadian dollar, ICER – incremental cost-effectiveness ratio, QALY – quality-adjusted life year

Probability of Cost-Effectiveness of AF Ablation at Willingness-to-pay Threshhold

£20,000/QALY: 16.5 %
£30,000/QALY: 68.6 %

£20,000/QALY: unlikely
£30,000/QALY: 86 % £40,000/ QALY: 97.2 %

What does an AF ablation cost in the NHS?

Current tariff for EA29Z - £3250
+ cost of consumables - £2250
Total cost = £5500

Factors determining cost efficacy

1. Up front costs of the procedure
2. Future reduction in healthcare costs
3. Benefits in quality of life (QoL)
4. Benefits to society e.g. employment

What money does an AF ablation save the NHS?

1. Admissions – no data
2. Reduction in stroke risk – no data
3. Benefits in QoL – some data
4. Benefits to society - subjective

Factors determining cost efficacy

1. Up front costs of the procedure
2. Future reduction in healthcare costs
3. Benefits in quality of life (QoL)
4. Benefits to society e.g. employment

What is the evidence that ablation for persistent AF works?

UK Data - Hunter et al Heart 2010

Consecutive patients from 2002-2007

125 patients underwent 250 procedures – mean 2/pt

Most PeAF > 1yr

Success rate during longer term follow-up - 65%

Hunter et al Heart 2010: **6**:1372-1378 doi:10.1136/hrt.2009.188128

What is the cost per patient?

UK Data - Hunter et al Heart 2010

2 procedures on average = £11,000 per patient

Success rate during longer term follow-up - 65%

So each success costs £16,500

What is the gain in QoL?

Class 0

Asymptomatic with respect to AF

Class 1

Symptoms attributable to AF have ***minimal*** effect on patient's general QoL.

- minimal and/or infrequent symptoms, or
- single episode of AF without syncope or heart failure

Class 2

Symptoms attributable to AF have a ***minor*** effect on patient's general QoL.

- mild awareness of symptoms in patients with persistent/permanent AF, or
- rare episodes (eg, less than a few per year) in patients with paroxysmal or intermittent AF

Class 3

Symptoms attributable to AF have a ***moderate*** effect on patient's general QoL.

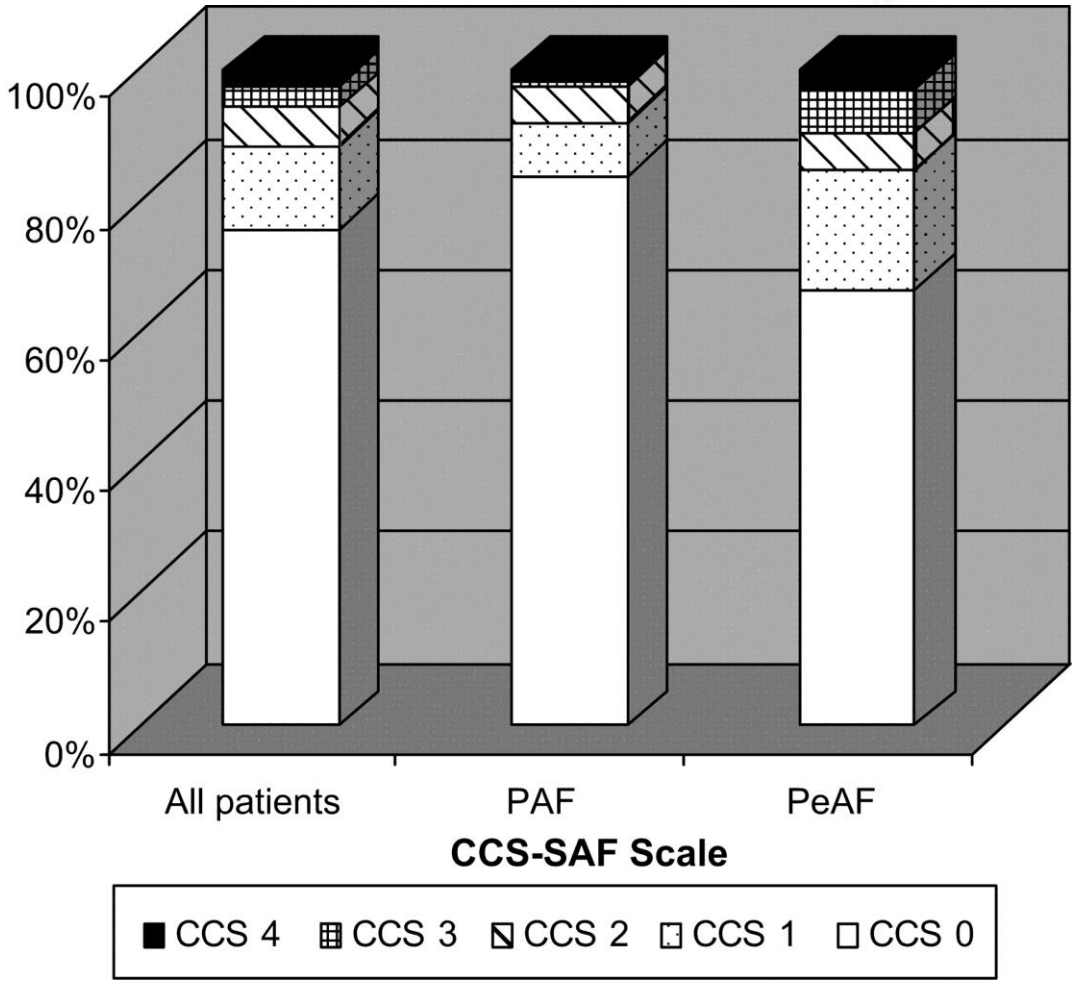
- moderate awareness of symptoms on most days in patients with persistent/permanent AF, or
- more common episodes (eg, more than every few months) or more severe symptoms, or both, in patients with paroxysmal or intermittent AF

Class 4

Symptoms attributable to AF have a ***severe*** effect on patient's general QoL.

- very unpleasant symptoms in patients with persistent/paroxysmal AF and/or
- frequent and highly symptomatic episodes in patients with paroxysmal or intermittent AF and/or
- syncope thought to be due to AF and/or
- congestive heart failure secondary to AF

95% of patients reported improved symptoms



Hunter et al Heart 2010: **6**:1372-1378 doi:10.1136/hrt.2009.188128

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LHCH QoL Data EQ5D

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By placing a tick in one box in each group below, please indicate which statements best describe your own health state today.

Mobility
- I have no problems in walking about ❑
- I have some problems in walking about ❑
- I am confined to bed ❑

Self-Care
- I have no problems with self-care ❑
- I have some problems washing or dressing myself ❑
- I am unable to wash or dress myself ❑

Usual Activities (*e.g. work, study, housework, family or leisure activities)*
- I have no problems with performing my usual activities ❑
- I have some problems with performing my usual activities ❑
- I am unable to perform my usual activities ❑

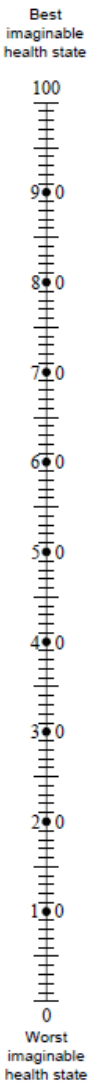
Pain/Discomfort
- I have no pain or discomfort ❑
- I have moderate pain or discomfort ❑
- I have extreme pain or discomfort ❑

Anxiety/Depression
- I am not anxious or depressed ❑
- I am moderately anxious or depressed ❑
- I am extremely anxious or depressed ❑

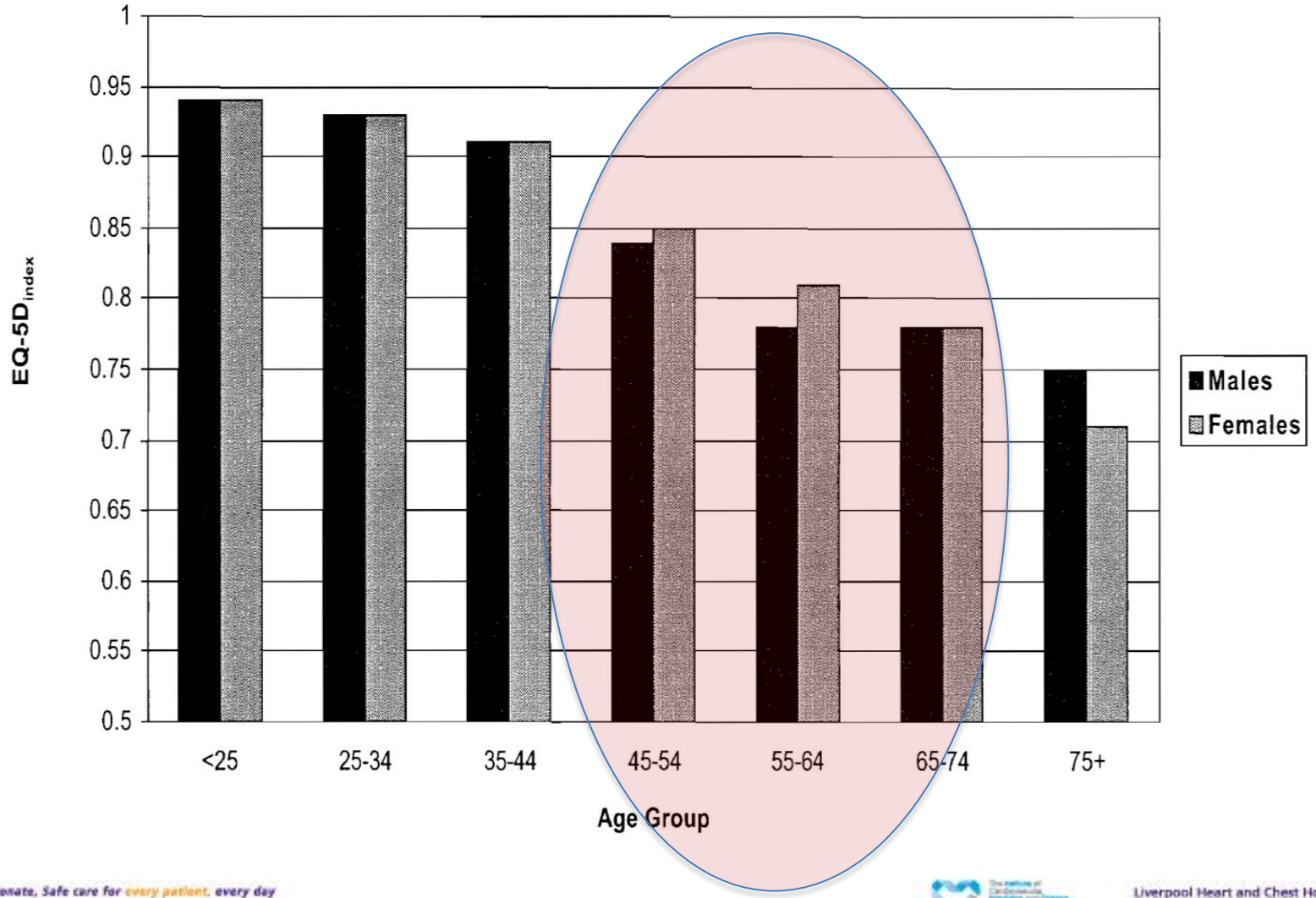
To help people say how good or bad a health state is, we have drawn a scale (rather like a thermometer) on which the best state you can imagine is marked 100 and the worst state you can imagine is marked 0.

We would like you to indicate on this scale how good or bad your own health is today, in your opinion. Please do this by drawing a line from the box below to whichever point on the scale indicates how good or bad your health state is today.

Your own health state today

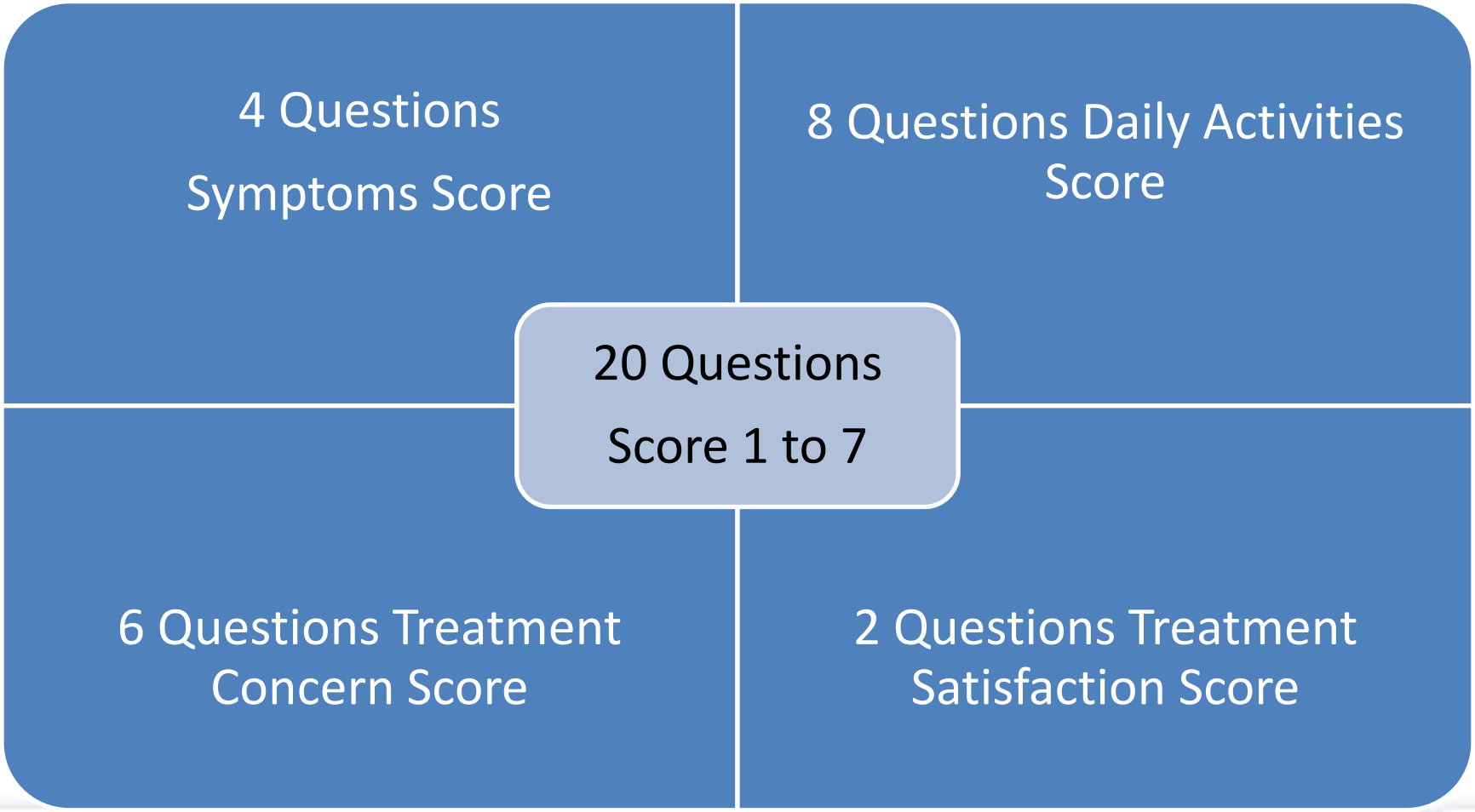


PROMS (Patient Reported Outcome Measures) – EQ5D Population means



PROMS

Atrial Fibrillation Effect on QualiTy-of-life (AFEQT)



PROMS - AFEQT

The 20 questions can be combined to create a score out of 100.

0 = lowest quality of life

100 = highest quality of life

Also possible to create a score out of 100 for each of the 3 parameters of Symptoms, Activities and Concerns.

Validated between 2008 – 2009; 6 centre prospective observational study.

(*Circ Arrhythm Electrophysiol. 2011;4:15-25.)*

PROMS - AFEQT

Atrial Fibrillation Effect on QualiTy-of-life (AFEQT) Questionnaire

Section 1. Occurrence of atrial fibrillation Name or ID:_____

Are you currently in atrial fibrillation? ☐ Yes ☐ No

If No, when was the last time you were aware of having had an episode of atrial fibrillation? (Please check one answer which best describes your situation)

__earlier today
__within the past week
__within the past month
__1 month to 1 year ago
__more than 1 year ago
__I was never aware of having atrial fibrillation

Section 2. **The following questions refer to how atrial fibrillation affects your quality of life.**

On a scale of 1 to 7, over the past 4 weeks, as a result of your atrial fibrillation, how much were you bothered by: (Please circle one number which best describes your situation)

	Not at all bothered Or I did not have this symptom	Hardly bothered	A little bothered	Moderately bothered	Quite a bit bothered	Very bothered	Extremely bothered
1. Palpitations: Heart fluttering, skipping or racing	1	2	3	4	5	6	7
2. Irregular heart beat	1	2	3	4	5	6	7
3. A pause in heart activity	1	2	3	4	5	6	7
4. Lightheadedness or dizziness	1	2	3	4	5	6	7

On a scale of 1 to 7, over the past 4 weeks, have you been limited by your atrial fibrillation in your: (Please circle one number which best describes your situation)

	Not at all limited	Hardly limited	A little limited	Moderately limited	Quite a bit limited	Very limited	Extremely limited
5. Ability to have recreational pastimes, sports, and hobbies	1	2	3	4	5	6	7
6. Ability to have a relationship and do things with friends and family	1	2	3	4	5	6	7

On a scale of 1 to 7, over the past 4 weeks, as a result of your atrial fibrillation, how much difficulty have you had in: (Please circle one number which best describes your situation)

	No difficulty at all	Hardly any difficulty	A little difficulty	Moderate difficulty	Quite a bit of difficulty	A lot of difficulty	Extreme difficulty
7. Doing any activity because you felt tired, fatigued, or low on energy	1	2	3	4	5	6	7
8. Doing physical activity because of shortness of breath	1	2	3	4	5	6	7
9. Exercising	1	2	3	4	5	6	7
10. Walking briskly	1	2	3	4	5	6	7
11. Walking briskly uphill or carrying groceries or other items, up a flight of stairs without stopping	1	2	3	4	5	6	7
12. Doing vigorous activities such as lifting or moving heavy furniture, running, or participating in strenuous sports like tennis or racquetball	1	2	3	4	5	6	7

Developed by AFEQT Core Team-John Spertus, MD, Mid America Heart Institute, Kansas City, MO; Paul Dorian, MD, St. Michaels Hospital, Toronto, ON; Rosemary Bubien, RN, University of Alabama, Birmingham, AL; Caroline Burk, Pharm D. M.S; Steven Lewis, PhD; Donna Godejohn, BSN, St. Jude Medical, St. Paul, MN.

Atrial Fibrillation Effect on QualiTy-of-life (AFEQT) Questionnaire

On a scale of 1 to 7, over the past 4 weeks as a result of your atrial fibrillation, how much did the feelings below bother you? (Please circle one number which best describes your situation)

	Not at all Bothered	Hardly bothered	A little bothered	Moderately bothered	Quite a bit bothered	Very bothered	Extremely bothered
13. Feeling worried or anxious that your atrial fibrillation can start anytime	1	2	3	4	5	6	7
14. Feeling worried that atrial fibrillation may worsen other medical conditions in the long run	1	2	3	4	5	6	7

On a scale of 1 to 7, over the past 4 weeks, as a result of your atrial fibrillation treatment, how much were you bothered by: (Please circle one number which best describes your situation)

	Not at all bothered	Hardly bothered	A little bothered	Moderately bothered	Quite a bit bothered	Very bothered	Extremely bothered
15. Worrying about the treatment side effects from medications	1	2	3	4	5	6	7
16. Worrying about complications or side effects from procedures like catheter ablation, surgery, or pacemakers therapy	1	2	3	4	5	6	7
17. Worrying about side effects of blood thinners such as nosebleeds, bleeding gums when brushing teeth, heavy bleeding from cuts, or bruising.	1	2	3	4	5	6	7
18. Worrying or feeling anxious that your treatment interferes with your daily activities	1	2	3	4	5	6	7

On a scale of 1 to 7, overall, how satisfied are you at the present time with: (Please circle one number which best describes your situation)

	Extremely satisfied	Very satisfied	Somewhat satisfied	Mixed with satisfied and dissatisfied	Somewhat dissatisfied	Very dissatisfied	Extremely dissatisfied
19. How well your current treatment controls your atrial fibrillation?	1	2	3	4	5	6	7
20. The extent to which treatment has relieved your symptoms of atrial fibrillation?	1	2	3	4	5	6	7

Name or ID:_____

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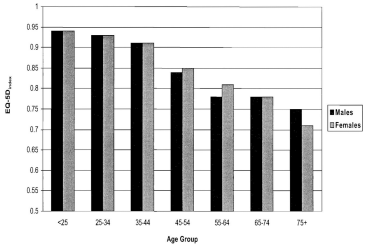
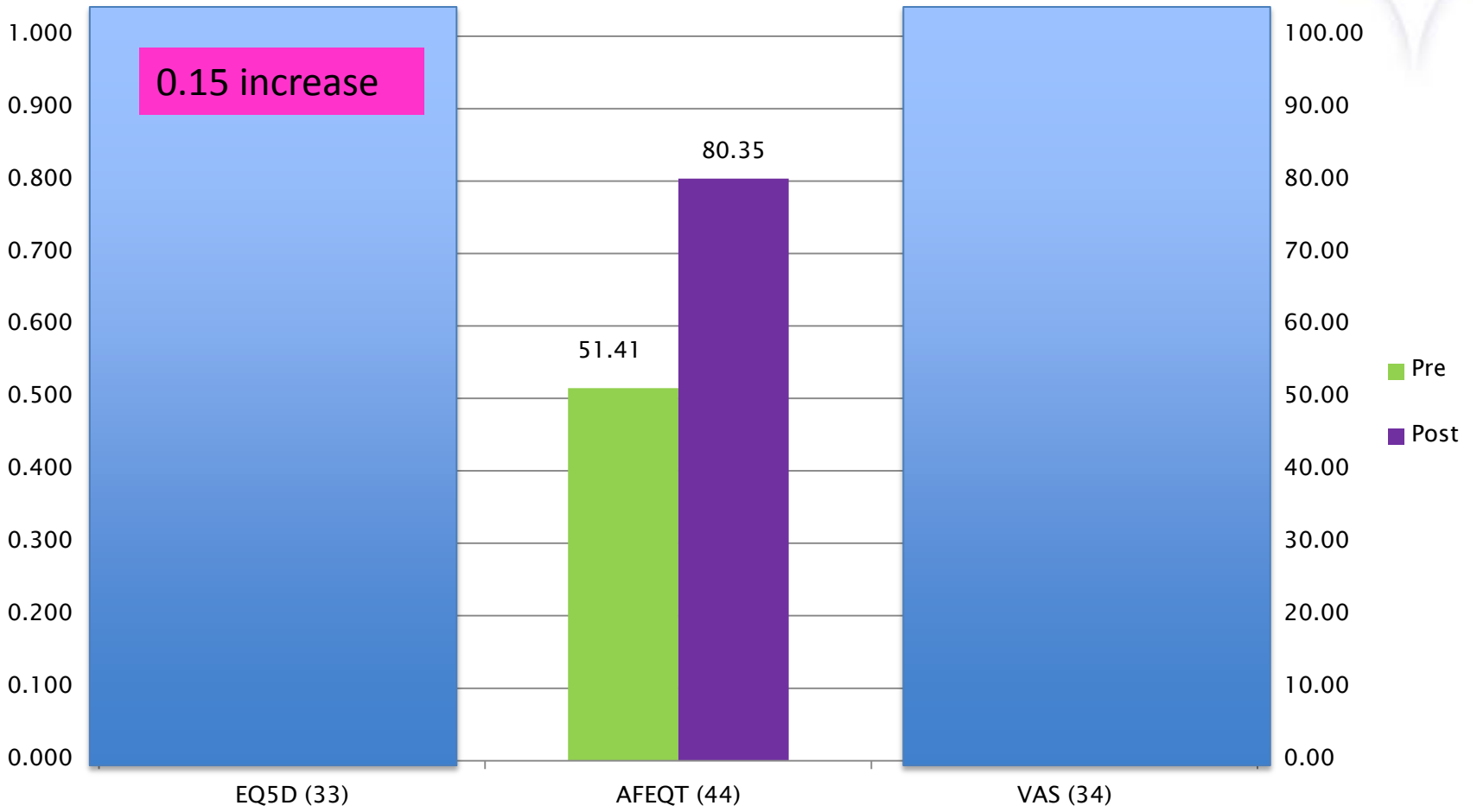
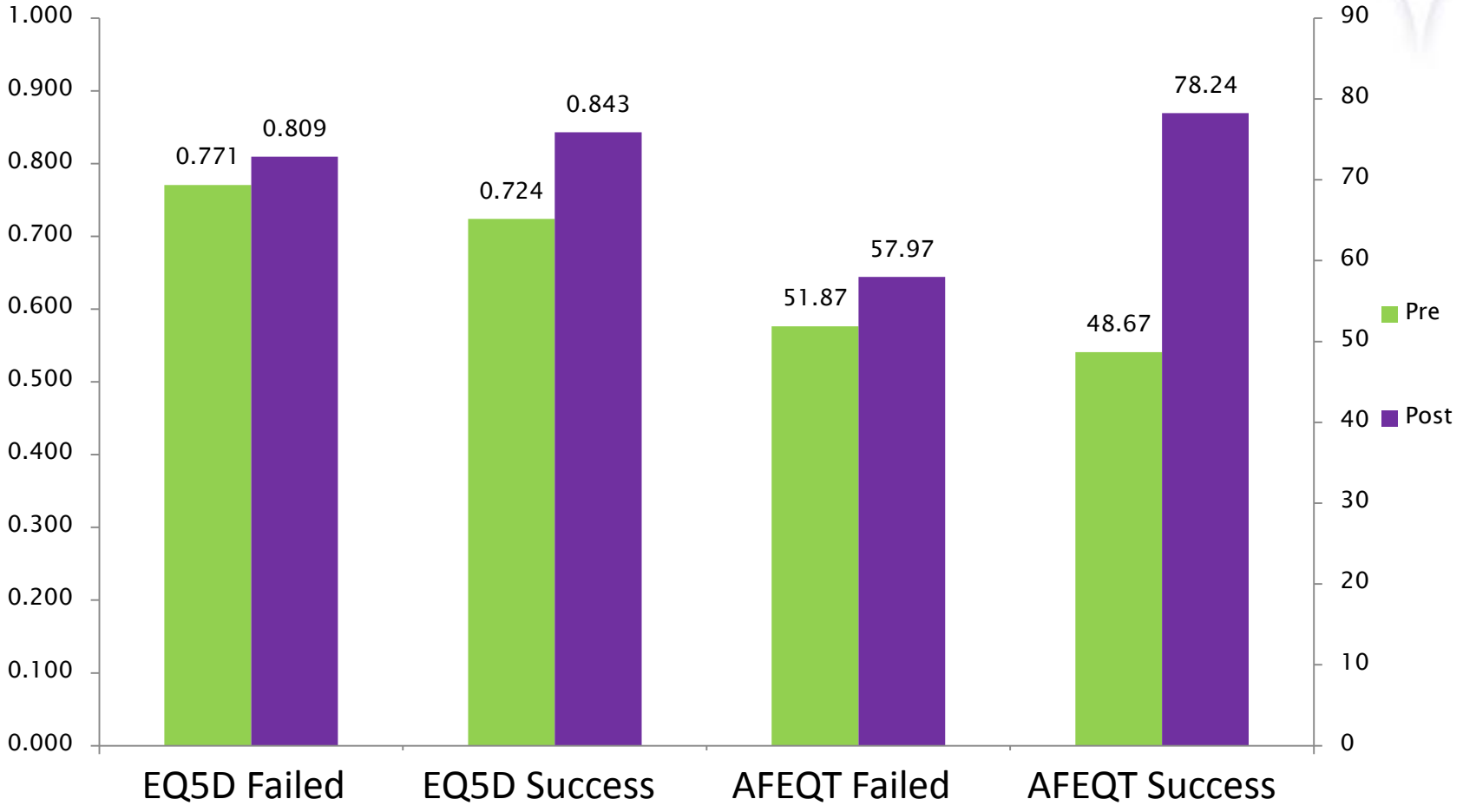
Developed by AFEQT Core Team-John Spertus, MD, Mid America Heart Institute, Kansas City, MO; Paul Dorian, MD, St. Michaels Hospital, Toronto, ON; Rosemary Bubien, RN, University of Alabama, Birmingham, AL; Caroline Burk, Pharm D. M.S; Steven Lewis, PhD; Donna Godejohn, BSN, St. Jude Medical, St. Paul, MN.

PROMS – Persistent AF





PROMS – clinical success v failure



Cost-effectiveness in simplistic terms:

Utility gain – 0.15

Cost - £16,500

Cost = £110,000 per QALY

But we must consider that this is only over 1 year

If this last 5-years cost per QALY is £110,000 ÷ 5 = £22,000

Or over 10-years - £11,000

In addition there may be other benefits:

- Reduction in stroke risk
- Better LV function – less heart failure
- Continuing active employment

If this was true the cost-efficacy arguments would be straight-forward, *however*

- Data from randomised controlled trials of ablation v medical management is lacking
- As ablation has become an accepted treatment for persistent AF this is unlikely to ever change

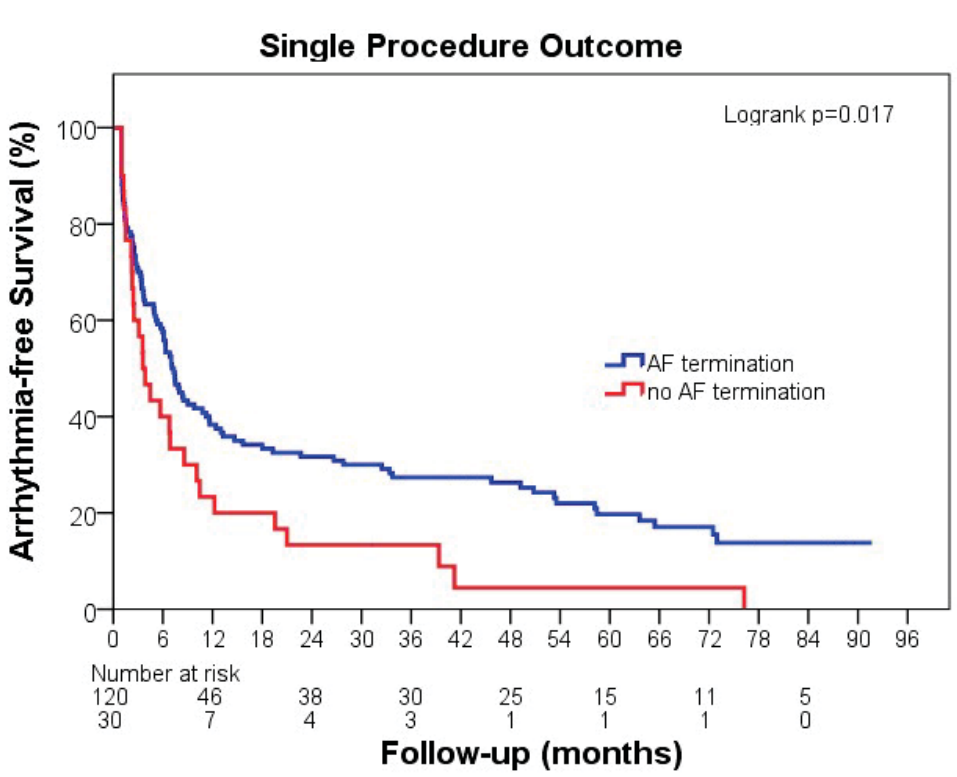
Long-term outcome data for Pe AF ablation

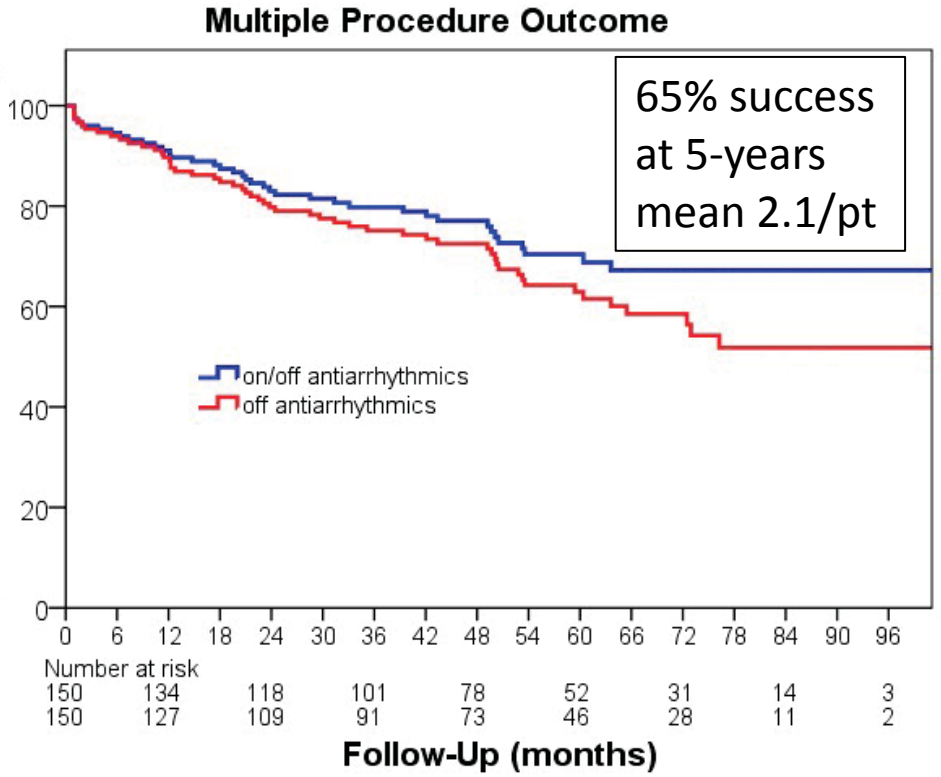
- Very few publications
- Summarise with 3 from well respected groups

  Bordeaux, Hamburg, Boston

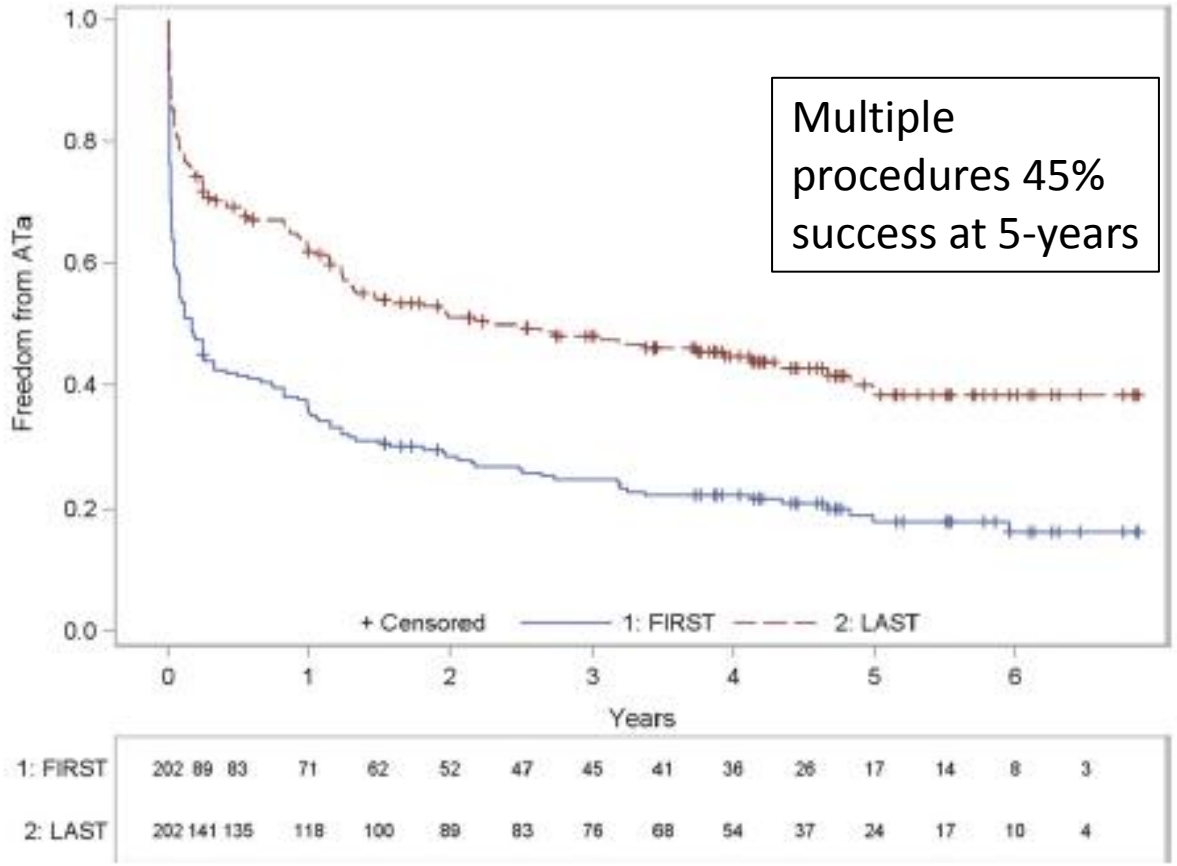
D Scerr et al Circ EP 2014: DOI: 10.1161/CIRCEP.114.001943
RR Tilz et al J Am Coll Cardiol 2012;60:1921–9
EK Heist et al Am J Cardiol 2012;110:545–551

Long-term outcome data for Pe AF ablation – Bordeaux (AF termination endpoint)



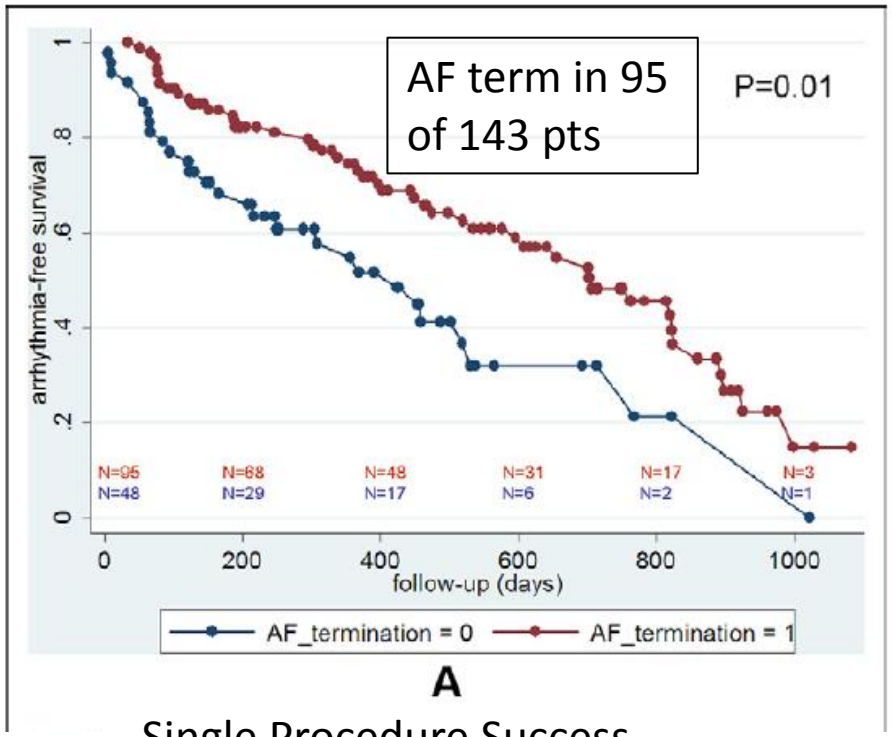


Long-term outcome data for Pe AF ablation Munich – concentrating on PVAI

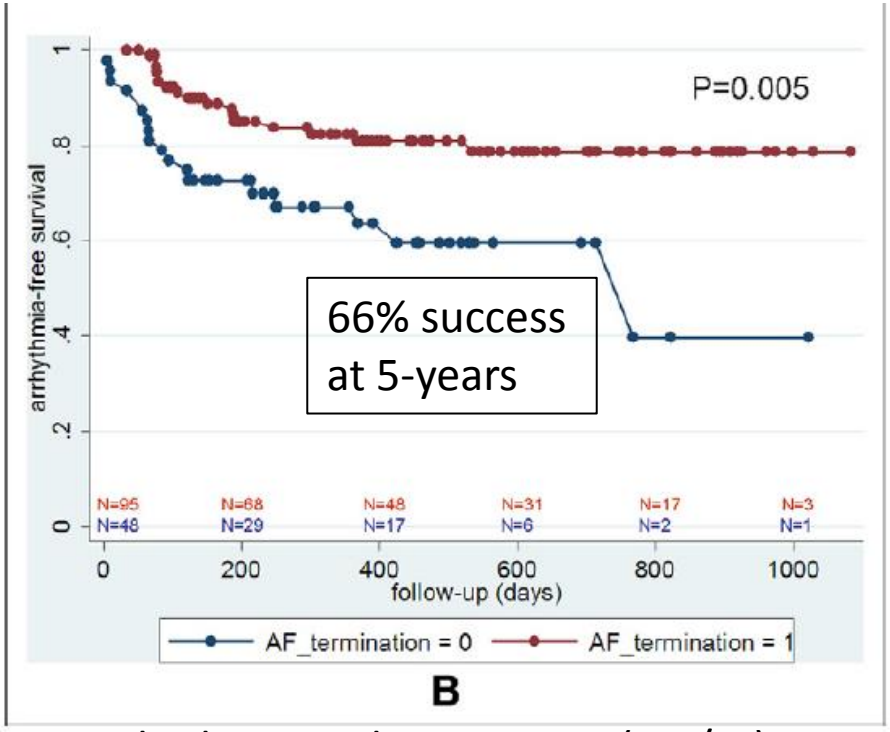


Multiple procedures 45% success at 5-years

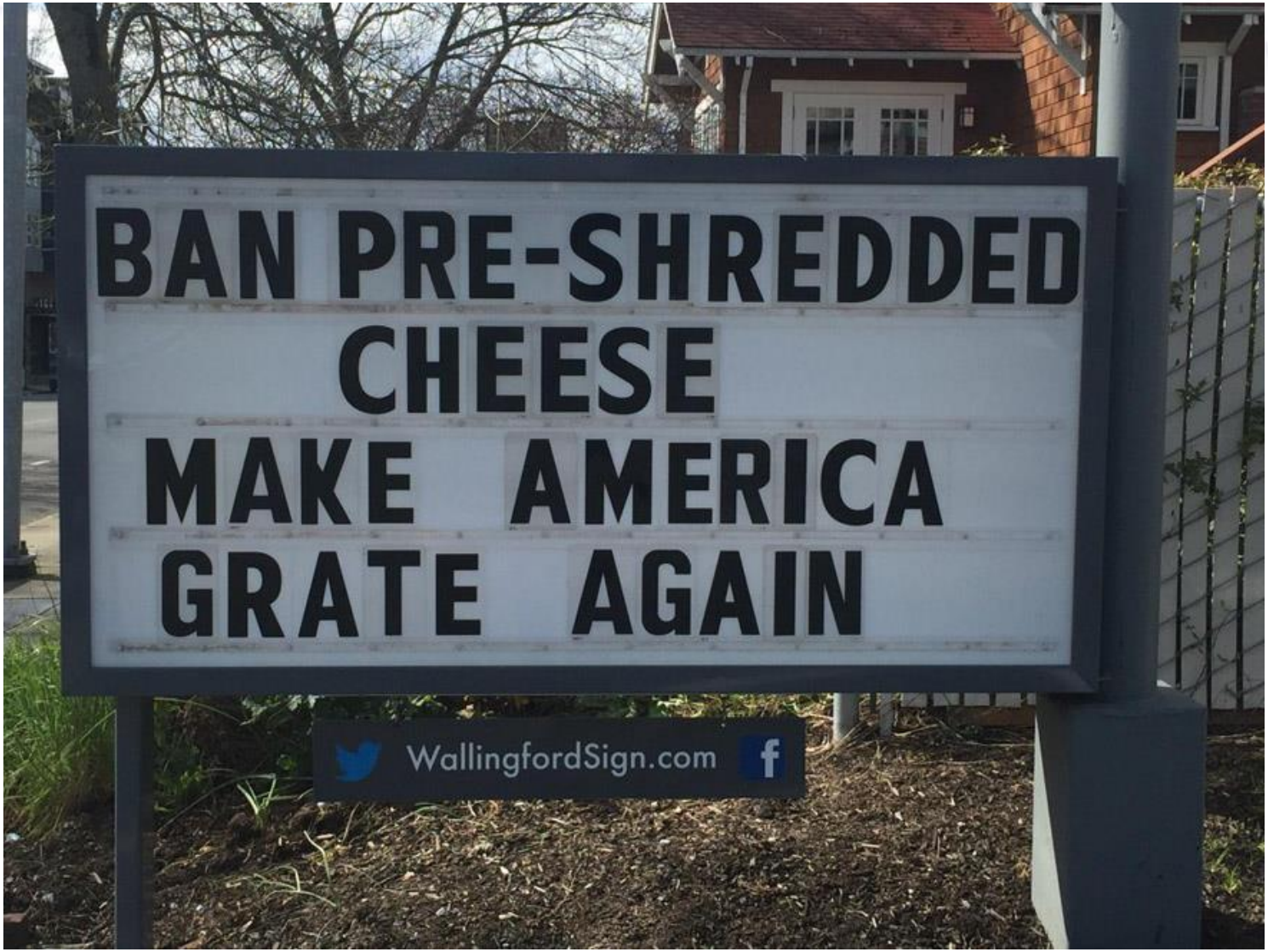
Long-term outcome data for Pe AF ablation - Boston (Mass Gen / AF termination strategy)



Single Procedure Success

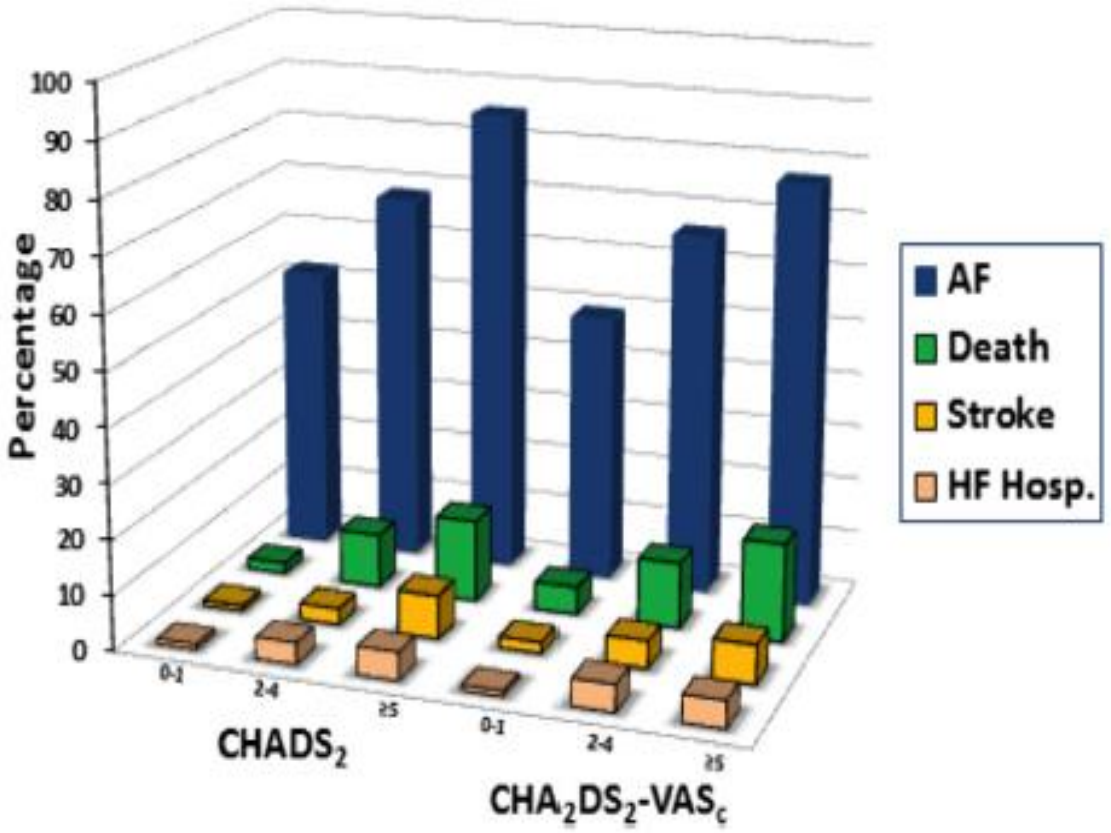


Multiple Procedure Success (1.3/pt)

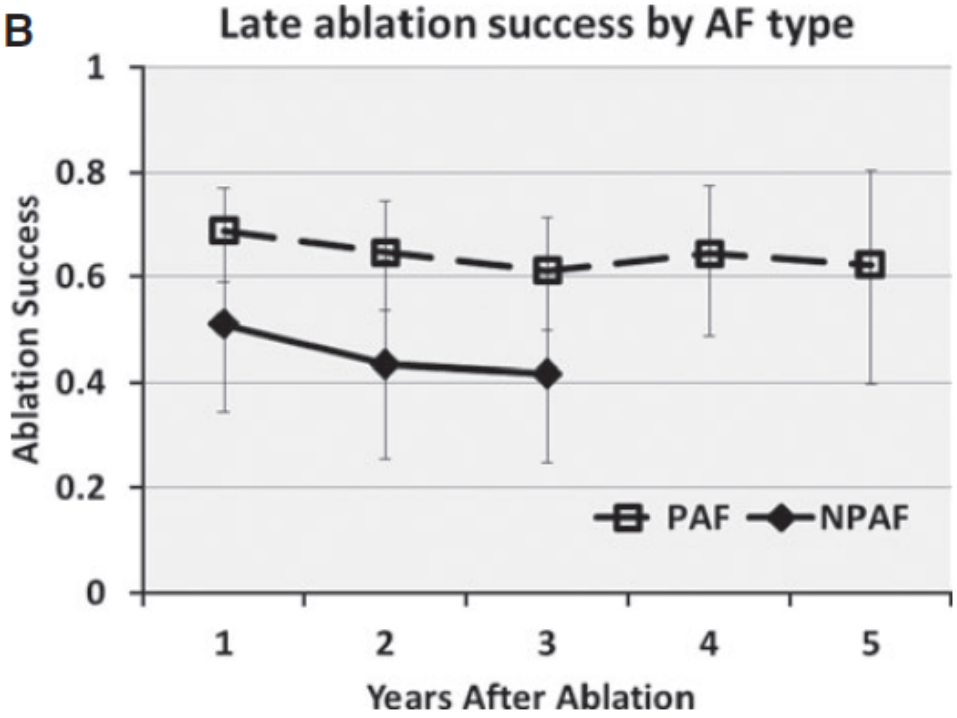

BAN PRE-SHREDDED
CHEESE
MAKE AMERICA
GRATE AGAIN
WallingfordSign.com

Heart Rhythm, Vol 12, No 4, April 2015

5 Year Outcomes after AF Ablation



Pe AF Ablation – 5 year data summary



Years After Ablation	1	2	3	4	5
PAF (number of studies)	10	10	10	5	3
NPAF (number of studies)	6	6	6	2	1

AN Ganesan, J Am Heart Assoc 2013;2:e004549

Long-term outcome data for Pe AF ablation

Some common messages about adverse clinical features:

1. LA >50mm
2. Pe AF > 18 months or 2 years
3. Structural heart disease
4. Older patients

Procedural factors:

1. Unable to ablate AF to SR
2. Needing more than PVI to achieve SR

Can the UK afford ablation for persistent AF? – cost efficacy analysis

For:

- Shown to improve QoL
- Success achieved in 50-65% with multiple procedures

Against:

- Multiple procedures needed (1.5-2 per patient)
- Cost
- No trial evidence of reduction of clinical endpoints e.g. stroke

Can the UK afford ablation for persistent AF? – cost efficacy analysis

Yes if:

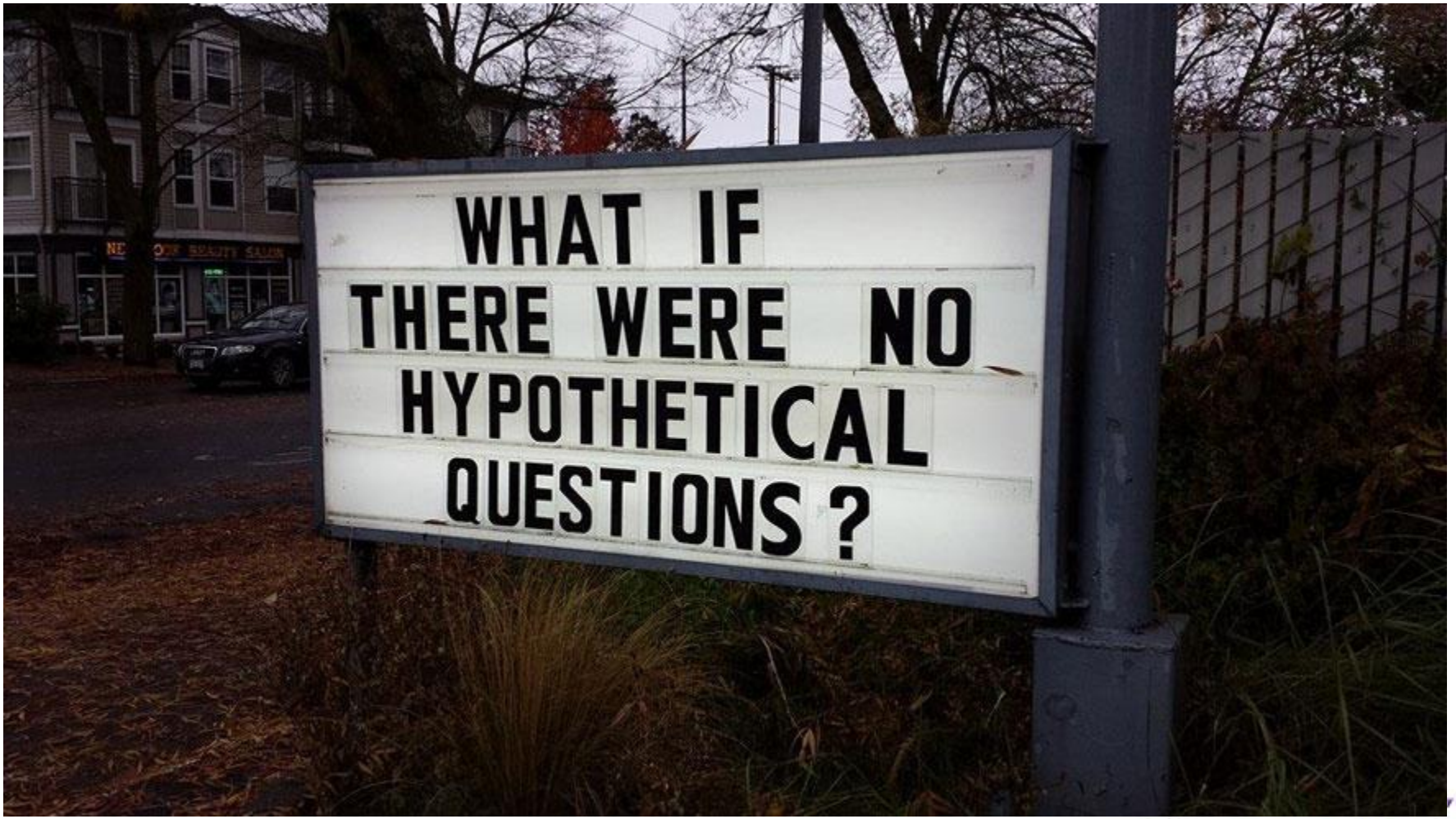
- We concentrate on highly symptomatic patients
- If we get better at ablation (centre selection?)
- We select patients with a good chance of success

No if:

- We continue to select patients poorly
- Everyone who ablates AF ablation in the UK does it
- If we do not use PROMS in assessing patients at the outset and after the procedure


LET ME REPEAT THAT DIAGNOSIS FOR YOU...
quiddlebee.com
SESQUIPEDALIOPHOBIA:
THE FEAR OF LONG WORDS

Can the UK afford ablation for persistent AF? – <u>maybe</u>



Thank you