SUPPLEMENTAL MATERIAL

Supplemental Methods. Description of Turagam et al. Meta-analysis used for Catheter Ablation Clinical Effectiveness Inputs

The base case clinical effectiveness inputs were informed by a recent meta-analysis (Turagam MK et al. Catheter Ablation of Atrial Fibrillation in Patients With Heart Failure: A Meta-analysis of Randomized Controlled Trials. *Ann Intern Med*. 2019;170:41-50).

This meta-analysis searched the following databases without language restrictions for abstracts and articles published between January 1, 2005 and October 1, 2018: ClinicalTrials.gov, PubMed, Web of Science (Clarivate Analytics), EBSCO Information Services, Cochrane Central Register of Controlled Trials, Google Scholar, and various major scientific conference sessions (held at American Heart Association, American College of Cardiology, European Society of Cardiology Congress, Heart Rhythm Society, and Cardiostim meetings). Turagam et al. systematically searched the databases using the search terms: *atrial fibrillation*, *catheter ablation*, *heart failure*, *left ventricular ejection fraction*, *hospitalizations*, *functional capacity*, *peak oxygen consumption*, and *quality of life*.

Supplemental Table I. Parameters for Probabilistic Sensitivity Analysis

Variable	Mean (95% Confidence Interval)	Distribution	Parameters
Clinical Inputs			
All-cause death in Medical Management Arm	n/a	Weibull	λ, κ (0.046, 1,37)
Relative risk of HF Hospitalization (Ablation vs. Medical Management)	0.600 (0.39 to 0.93)	Log-normal	μ, σ (-0.511 ,0.222)
Relative risk of death (Ablation vs. Medical Management)	0.520 (0.33 to 0.81)	Log-normal	μ, σ (-0.654, 0.229)
Annual Rate of HF Hospitalization	0.124 (0.001 to 0.460)	Beta	α, β (0.787, 5.545)
Probability of Sinus Rhythm at 1 year with Medical Therapy	0.275 (0.202 to 0.353)	Beta	α, β (37.2, 98.0)
Relative risk of AF Recurrence (Ablation vs. Medical Management)	0.390 (0.27 to 0.57)	Log-normal	μ, σ (-0.942 ,0.191)
Risk of Ablation Complication within 1 year	0.029 (0.018 to 0.041)	Beta	α, β (23.6, 789.9)
Annual risk of antiarrhythmic drug toxicity	0.053 (0.030 to 0.083)	Beta	α, β (14.5, 256.9)
Annual risk of redo ablation procedure	0.055 (0.031 to 0.085)	Beta	α, β (14.5, 250.3)
Utilities			
Alive in Sinus Rhythm	0.779 (0.769 to 0.788)	Beta	α, β (6359.8, 1804.2)
Disutility AF Recurrence	-0.080 (-0.062 to -0.100)	Beta	α, β (66.01, 759,12)
Disutility HF Hospitalization	-0.0066 (-0.0017 to -0.0150)	Beta	α, β (3.64, 548.16)
Costs (2018 USD)			
Cost of AF Catheter Ablation	$36,475 ($2,753 to $111,503)	Gamma	α, λ (1.58, 0.000043)
Heart Failure Hospitalization Cost	$15,874 ($8,843 to $24,654)	Gamma	α, λ (15.4, 0.000968)
Annual Outpatient Costs of AF	$5,115 ($2,869 to $7,950)	Gamma	α, λ (15.4, 0.003042)

Abbreviations: AF, atrial fibrillation; HF, heart failure; n/a, not applicable; sd, standard deviation

Supplemental Table II. Base Case and Lifetime Deterministic Models

	Base Case (Lifetime Horizon with Attenuated Clinic Benefit)			Lifetime Horizon (Sustained Clinical Benefit)			5-Year Time Horizon (Limited to Follow Up of CASTLE AF Trial)		
Strategy	Total Costs	Total LYs	Total QALYs	Total Costs	Total LYs	Total QALYs	Total Costs	Total LYs	Total QALYs
Medical Management	63,883	7.21	5.30	63,883	7.21	5.07	33,413	3.95	2.78
Catheter Ablation	106,425	8.45	6.49	115,109	10.45	7.93	68,247	4.26	3.23
ICER	*$35,600 per QALY gained*			*$17,899 per QALY gained*			$76,826 per QALY gained		