Supplemental Table 1. Logistic regression of the association between Any AF and mortality.

Variable	Odds Ratio for mortality	95% CI	P value
Age (per one year increase)	1.007	0.998-1.016	0.138
Congestive heart failure	0.935	0.634-1.378	0.735
Hypertension	0.890	0.680-1.165	0.395
APACHE II (per one point increase)	1.066	1.048-1.083	**<0.001**
Sepsis	1.690	1.271-2.248	**<0.001**
Shock	1.837	1.398-2.415	**<0.001**
Any AF	1.618	1.143-2.289	**0.007**

CI, confidence interval, APACHE II, Acute Physiology and Chronic Health Evaluation II; AF, atrial fibrillation

Supplemental Table 2. Logistic regression of New-onset AF, Recurrent AF, and hospital mortality.

	New-onset AF			Recurrent AF		
Variable	**Odds Ratio for mortality**	**95% CI**	**P value**	**Odds Ratio for mortality**	**95% CI**	**P value**
Age (per one year increase)	1.008	0.998-1.017	0.117	1.006	0.996-1.016	0.254
CHF	0.852	0.548-1.325	0.477	0.976	0.646-1.476	0.910
HTN	0.845	0.641-1.116	0.235	0.876	0.659-1.165	0.364
APACHE II (per one point increase)	1.066	1.048-1.084	**<0.001**	1.065	1.047-1.084	**<0.001**
Sepsis	1.678	1.247-2.257	**0.001**	1.844	1.358-2.503	**<0.001**
Shock	1.860	1.396-2.479	**<0.001**	1.943	1.460-2.585	**<0.001**
AF	1.597	1.030-2.474	**0.036**	1.661	1.018-2.709	**0.041**

Regression analysis for New AF compares to patients with No AF and excludes those with Recurrent AF. Regression analysis for Recurrent AF compares to patients with No AF and excludes those with New AF. CI, confidence interval, APACHE II, Acute Physiology and Chronic Health Evaluation II; AF, atrial fibrillation; CHF, congestive heart failure; HTN, hypertension

Supplemental Table 3. Heart rate and systolic blood pressure in patients treated with either rate-control or rhythm-control therapies for atrial fibrillation.

	Rate-control (n=82)	Rhythm-control (n=34)	P value
Frequency of Bradycardia	23 (28%)	10 (29%)	0.882
Frequency of Hypotension	59 (72%)	29 (85%)	0.126

Analysis was limited to patients who received rate control agents or rhythm control agents, excluding those that received both treatment types. Bradycardia was defined as a minimum recorded heart rate less than 60 beats per minute on any study day. Hypotension was defined as a minimum recorded systolic blood pressure less than 90 mmHg on any study day. Values represent median (interquartile range) or n (%). P values were determined by chi-square test.

Supplemental Table 4. Summary of publications demonstrating association between atrial fibrillation and increased mortality.

	Design	Location	Population	Arrhythmia definition	Association with Mortality	Reference
Artucio 1990	Retrospective	General ICU	2,820 patients 419 with AF	Atrial tachy-arrhythmia (52% AF)	40% vs. 35%, RR 1.16 Sepsis subgroup: 70% vs. 51%, RR 1.63	(2)
Brathwaite 1998	Prospective	Surgical ICU, excluding cardiothoracic	462 patients 47 atrial arrhythmias 31 with AF 58 with history of atrial arrhythmia	Atrial arrhythmia	New: 23% vs. 4%, p<0.02 History: 9% vs. 3%, p<0.02	(3)
Reinelt 2001	Prospective	Medical surgical ICU, including cardiac surgery	133 patients 108 narrow-complex tachy-arrhythmias 63 with AF	Any arrhythmia	31% vs. 21%, p=0.061	(10)
Seguin 2004	Prospective	Surgical ICU	460 patients 24 with AF	AF	38% vs. 18%, p=0.025	(13)
Seguin 2006	Prospective	Trauma patients in surgical ICU	293 patients 16 with AF	AF	ICU mortality: 25% vs. 13%, p=0.24 Hospital mortality: 31% vs. 15%, p=0.14	(12)
Arora 2007	Prospective	Medical and non-cardiac surgical ICUs	61 patients 18 with AF	New AF	56% vs. 21%, RR 2.7, p=0.01	(15)
Goodman 2007	Prospective	Multidisciplinary ICU	611 patients 52 with new SVT 38 with AF	SVT	Adjusted hospital mortality not significantly different 4 year mortality: 71% vs. 32%, p<0.01)	(5)
Annane 2008	Prospective	Medical and surgical ICUs	1341 patients 113 with SVTs 87 with AF	SVT	29% vs. 17%, OR 1.95, p<=0.003, adjusted OR with p=0.277	(1)
Christian 2008	Retrospective	Medical-surgical ICU, excluding cardiothoracic	274 patients with sepsis 16 with New AF	New AF in sepsis	69% vs. 40%, p=0.034	(4)
Salman 2008	Retrospective	Medical-surgical ICU	81 patients with sepsis 25 with paroxysmal AF	Paroxysmal AF in sepsis	Hospital mortality: 64% vs. 36%, p=0.081 28-day mortality: 72% vs. 38%, p=0.004, adjusted OR 3.28, p=0.029	(11)
Meierhenrich 2010	Prospective	Non-cardiac surgical ICU, including trauma	687 patients 47 with New AF 50 with septic shock	New AF in septic shock	44 vs. 22%, p=0.14 After successful treatment: 21% vs. 71%, p=0.015	(9)

Walkey 2011	Retrospective	Severe sepsis hospitalizations in California	49,082 with severe sepsis 2,896 with new AF 9,986 with pre-existing AF	New AF in severe sepsis	56% vs. 38%, adjusted RR 1.07 44% mortality with pre-existing AF	(16)
Walkey 2014	Retrospective	Sepsis hospitalizations in Medicare	138,722 sepsis survivors 33,646 with prior AF 9540 with new AF	New AF in sepsis	5 year mortality: 75% vs. 72%, HR 1.04	(17)

ICU, intensive care unit; AF, atrial fibrillation; RR, relative risk; SVT, supraventricular tachycardia; HR, hazard ratio; OR, odds ratio.