Appendix A

Table 1 – Patient Inclusion and Exclusion Criteria for Primary Prevention Trials

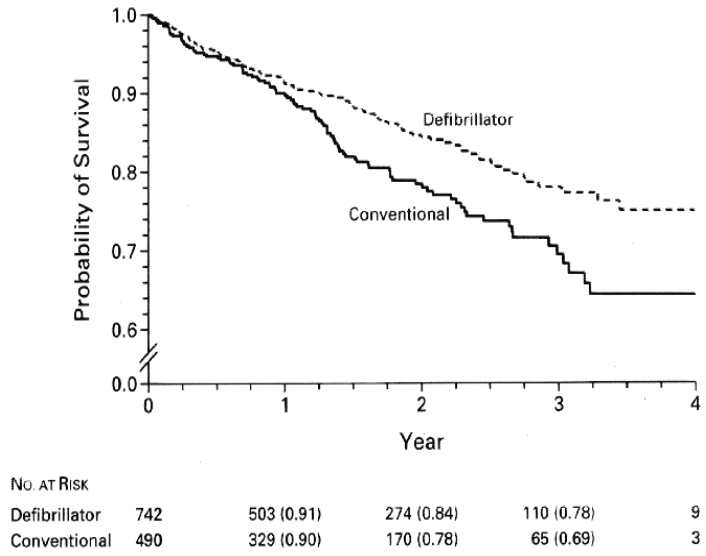
Study Sample Size	Inclusion Criteria	Exclusion Criteria	EP study	Outcome
MADIT I, 1996. Tx n=95; Conventional n=101.	age 25 to 80 years; myocardial infarction 3 wks or more; episode of asymptomatic unsustained VT unrelated to MI; LVEF ≤ 0.35; NYHA I-III; inducible, nonsuppressible VT on EPS; no indications for CABG or angioplasty.	prior cardiac arrest or VT causing syncope not associated with AMI; symptomatic hypotension; MI within past 3 wks; CABG within 2 months; angioplasty within 3 months; women of childbearing age not on med. contraceptives, adv cerebrovascular; noncardiac condition with reduced likelihood of survival.	all patients.	60% of defibrillator patients had shock discharge within 2 years. 15.8% (15 deaths) mortality rate in defibrillator group; 38.6% (39 deaths) in conventional therapy. hazard ratio=0.46; 95%CI=0.26-0.82.
CABG-Patch, 1997. Tx n=446; Control n=454.	scheduled for CABG; age < 80 years; LVEF < 0.36; Abn. signal averaged electrocardiogram.	h/o sustained VT or VF; diabetes m with poor control or infections; prior valve surgery; concomitant cerebrovascular surgery; serum creatinine >3mg/dl, emergency CABG; noncardiac condition with ex survival < 2 years; inability to attend f/u visits.	not required.	57% of defibrillator patients had shock discharge within 2 years. 22.6% (101 deaths) mortality rate in defibrillator group; 20.9% (95 deaths) in control group. hazard ratio=1.07; 95% CI=0.81-1.42.
MUSTT, 1999. EP tx n=351; No tx n=353.	had coronary artery disease; LVEF≤ 40%; asymptomatic unsustained ventricular tachycardia; EP induced sustained VT, VF.	H/o syncope or sustained ventricular tachycardia or fibrillation more than 48 hours after myocardial infarction; unsustained ventricular tachycardia only in acute ischemia, metabolic disorders, or drug toxicity.	all patients.	42% (132 deaths) overall mortality in antiarrhythmic therapy; 48% (158 deaths) in no antiarrhythmic therapy. Relative risk=0.80; 95%CI=0.64-1.01. Relative risk=0.45; 95%CI=0.32-0.63 for patients with defibrillators.
MADIT II, 2002. Tx n=742; Conventional n=490.	age >21 years, MI ≥ 1 month, LVEF ≤ 0.30.	had FDA approved indication for ICD; NYHA class IV; coronary revascularization within 3 months; MI within past month; advanced cerebrovascular disease; were of childbearing age not using med contraceptives; condition other than cardiac disease with high likelihood of death; unwilling to consent.	not required.	19% of defibrillator patients had shock discharge within 2 years. 14.2% (105 deaths) mortality rate in defibrillator group; 19.8% (97 deaths) in conventional therapy. hazard ratio=0.69; 95% CI=0.51-0.93.

Table 2 – Patient Inclusion and Exclusion Criteria for Secondary Prevention Trials

Study Sample Size	Inclusion Criteria	Exclusion Criteria	EP study	Outcome
AVID, 1997. Defib n=507; Drug tx n=509.	Resuscitated from near-fatal ventricular fibrillation; sustained ventricular tachycardia with syncope; sustained ventricular tachycardia with LVEF ≤ 0.40 and symptoms severe hemodynamic compromise.	not eligible for treatment with amiodarone.	not specified.	Overall survival = 89.3%, 81.6%, 75.4% at 1,2,3 years in defibrillator group; 82.3%, 74.7%, 64.1% at 1,2,3 years in antiarrhythmic drug group. P-value < 0/02.
CIDS, 2000. Defib n=328; Amio n=331.	In absence of AMI and electrolyte imbalance: documented VF; out of hosp cardiac arrest requiring defib or cardioversion; documented sustained VT causing syncope; other documented, sustained VT rate ≥ 150 causing presyncope or angina with LVDF ≤ 0.35; unmonitored syncope with documented spontaneous VT or sustained VT induced.	Defibrillator or amiodarone not appropriate tx; excessive perioperative risk for device implantation; previous amiodarone therapy for ≥ 6 weeks; nonarrhythmic medical condition with unlikely 1 year survival; long QT syndrome.	variable	25% (83 deaths) all cause mortality rate in defibrillator group; 29.6% (98 deaths) in amiodarone group; p-value=0.142.
CASH, 2000. Defib n=99; Drug n=189.	Resuscitated from cardiac arrest secondary to documented sustained ventricular arrhythmias.	cardiac arrest within 72 hours of AMI, cardiac surgery, electrolyte abnormalities, or proarrhythmic drug effect.	programmed electrical stimulation (PES).	36.4% death rate (95%CI=26.9%-46.6%) in defibrillator group; 44.4% (95%CI=37.2%-51.8%) in amiodarone/ metoprolol group.

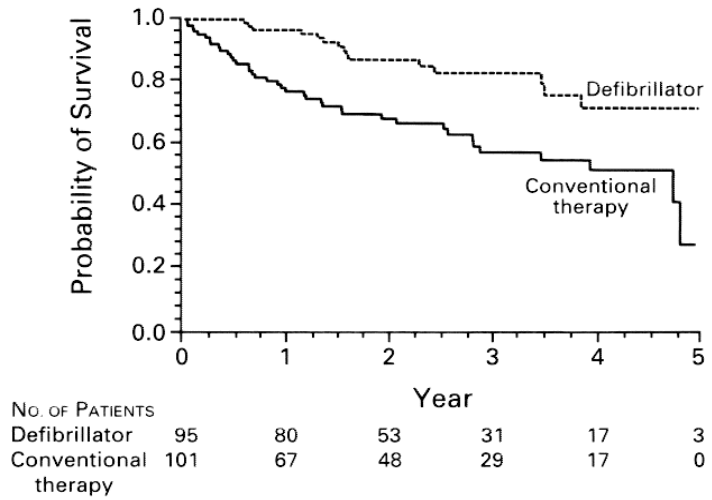
Appendix B

Figure 1 – Kaplan-Meier Survival Curve from MADIT II



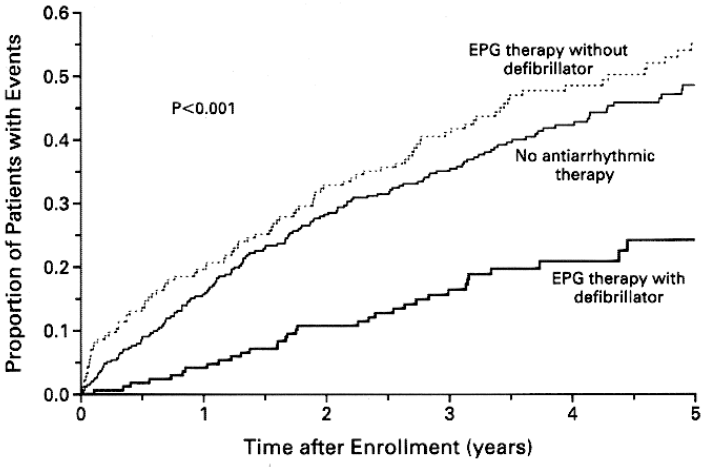
Kaplan-Meier Estimates of the Probability of Survival in the Group Assigned to Receive an Implantable Defibrillator and the Group Assigned to Receive Conventional Medical Therapy.
From: Moss: N Engl J Med, Volume 346(12).March 21, 2002.877-883.

Figure 2 – Kaplan-Meier Survival Curve from MADIT I



Kaplan-Meier Analysis of the Probability of Survival, According to Assigned Treatment. The difference in survival between the two treatment groups was significant (P = 0.009) .
From: Moss: N Engl J Med, Volume 335(26).December 26, 1996.1933-1940

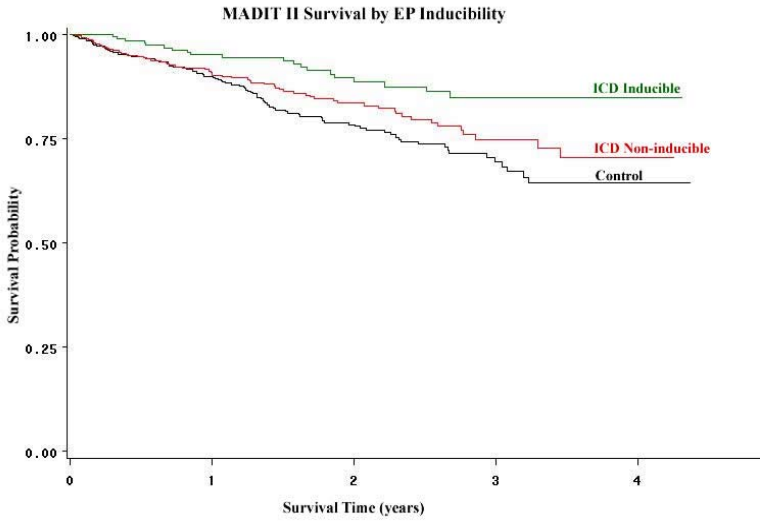
Figure 3 – Kaplan-Meier Mortality Curves from MUSTT



Kaplan-Meier Estimates of the Rates of Overall Mortality According to Whether the Patients Received Treatment with a Defibrillator.
From*:* Buxton: N Engl J Med, Volume 341(25).December 16, 1999.1882-1890

Appendix C

Figure 1 – Kaplan-Meier Survival Curves by EP Inducibility
(CMS analysis of the MADIT II dataset supplied by Guidant)



Appendix D

Table 1 - Deaths by LVEF and Group in MADIT II

	Treatment group			Control group			Total			p-value
	Deaths	N	%	Deaths	N	%	Deaths	N	%	
25%≤EF≤30%	43	385	11%	40	262	15%	83	647	13%	0.13
LVEF < 25%	62	357	17%	57	228	25%	119	585	20%	0.03

CMS analysis from MADIT II dataset supplied by Guidant.

Figure 1 - KM Survival Curves for Patients with LVEF>=25% by Group
(CMS analysis of the MADIT II dataset supplied by Guidant)

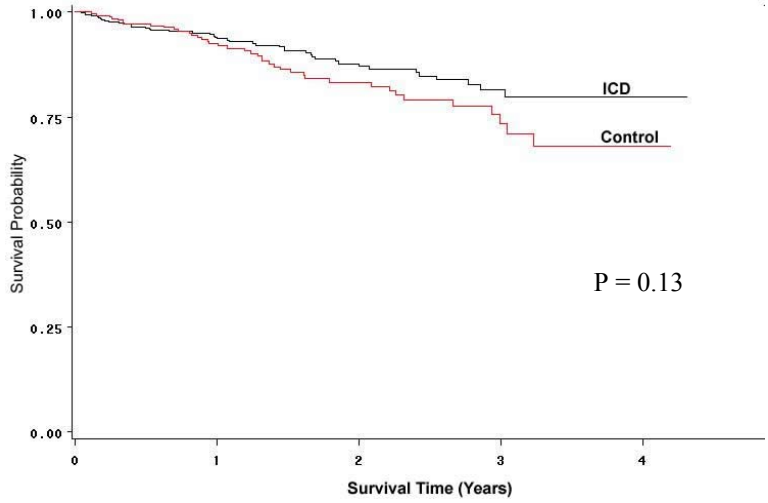
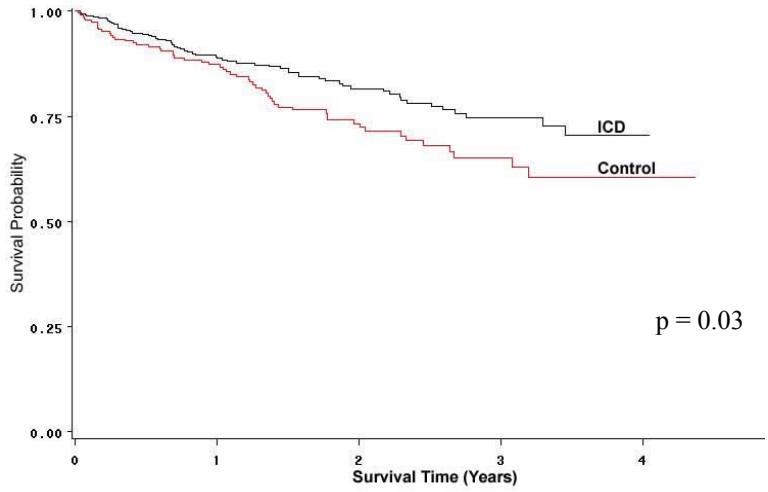
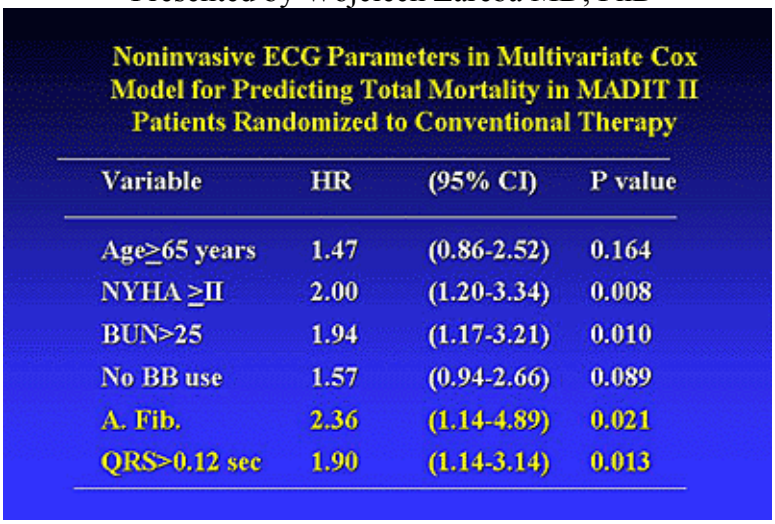


Figure 2 - KM Survival Curves for Patients with LVEF<25% by Group
(CMS analysis of the MADIT II dataset supplied by Guidant)



Appendix E

Table 1 - Noninvasive Electrocardiology and Outcomes in MADIT II Patients
Presented by Wojciech Zareba MD, PhD



Noninvasive ECG Parameters in Multivariate Cox Model for Predicting Total Mortality in MADIT II Patients Randomized to Conventional Therapy

Variable	HR	(95% CI)	P value
Age≥65 years	1.47	(0.86-2.52)	0.164
NYHA ≥II	2.00	(1.20-3.34)	0.008
BUN>25	1.94	(1.17-3.21)	0.010
No BB use	1.57	(0.94-2.66)	0.089
A. Fib.	2.36	(1.14-4.89)	0.021
QRS>0.12 sec	1.90	(1.14-3.14)	0.013

From: NASPE 2002 Meeting - May 11, 2002.
http://naspehighlights.org/summary/summary.asp?sid=1&stid=19&ld=2002-05-11

Table 2 - Deaths by QRS Interval and Group in MADIT II

	Treatment group			Control group			Total			Hazard ratio
	Deaths	N	%	Deaths	n	%	Deaths	N	%	
QRS < 120 ms	43	357	12%	37	230	16%	80	587	14%	0.76
QRS = 120 ms	14	83	17%	13	84	16%	27	167	16%	1.03
QRS > 120 ms	35	225	16%	41	136	30%	76	361	21%	0.39

Results provided by Guidant.
98 pacemaker patients excluded; 19 missing QRS values.
Interaction p value = 0.052.

Table 3 - Deaths by QRS Interval and Group in MADIT II

	Treatment group			Control group			Total			p-value
	Deaths	N	%	Deaths	N	%	Deaths	N	%	
QRS ≤ 120 ms	57	451	13%	50	322	16%	107	773	14%	0.25
QRS > 120 ms	36	229	16%	41	138	30%	77	367	23%	0.001

CMS analysis of MADIT II dataset supplied by Guidant.
92 patients with pacemakers were excluded. 4 patients with unknown pacemaker status were included.
Interaction p value = 0.015

Figure 1 - KM Survival Curves for Patients with QRS ≤ 120 ms by Group
(CMS analysis of the MADIT II dataset supplied by Guidant)

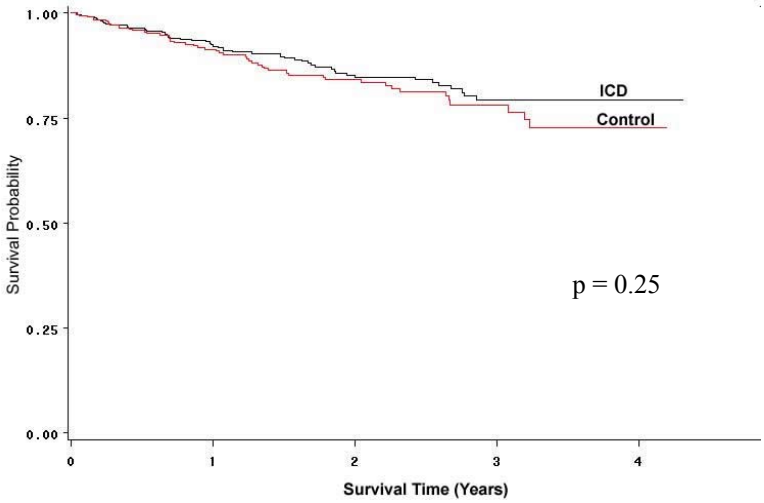


Figure 2 - KM Survival Curves for Patients with QRS > 120 ms by Group
(CMS analysis of the MADIT II dataset supplied by Guidant)

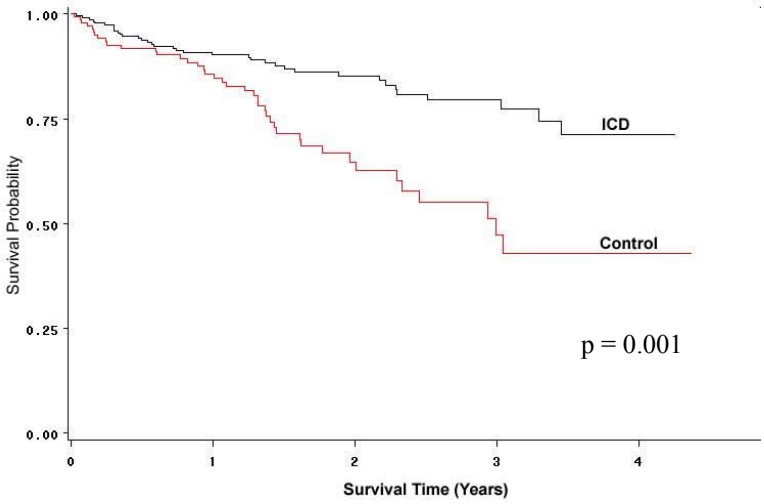


Table 4 - Cox Regression Model
(CMS analysis of the MADIT II dataset supplied by Guidant)

Variable	DF	Parameter Estimate	Standard Error	Chi-Square	Pr > ChiSq	Hazard Ratio
Treatment	1	0.56531	0.45510	1.5430	0.2142	1.760
AGE	1	0.03462	0.00846	16.7428	<.0001	1.035
EF	1	-0.03811	0.01358	7.8739	0.0050	0.963
BUN	1	0.02896	0.00433	44.7956	<.0001	1.029
QRS>120ms	1	1.24498	0.48103	6.6985	0.0096	3.473
QRS interaction	1	-0.74071	0.30554	5.8771	0.0153	0.477