

SUPPLEMENTARY DATA

Table 1 of the supplementary data

Univariate and multivariate predictors of any ICD therapy

	IRR	95%CI	P	aIRR	95%CI
<i>ADVANCE programming</i>	1.26	1.15-1.38	< .001	0.77	0.69-0.86
<i>Age, y</i>	1.02	1.02-1.03	< .001	1.004	100-1.01
<i>Male sex</i>	1.91	1.72-2.12	< .001	1.72	1.53-1.92
<i>LVEF</i>					
≥ 50%	Ref				
30%-50%	2.03	1.81-2.63	< .001	1.71	1.51-1.95
≤ 30%	1.63	1.47-1.81	< .001	1.74	1.52-1.98
<i>Ischemic cardiomyopathy</i>	1.68	1.56-1.82	< .001	1.34	1.22-1.47
<i>Diabetes</i>	0.92	0.91-1.09	.915	--	--
<i>Hypertension</i>	1.09	1.01-1.18	.022	1.01	0.93-1.09
<i>Atrial fibrillation</i>	1.85	1.71-2.01	< .001	1.66	1.52-1.82
<i>Indication (secondary prevention)</i>	3.31	3.05-3.57	< .001	4.12	3.76-4.53
<i>First ICD implantation</i>	0.54	0.46-0.64	< .001	0.82	0.68-0.99
<i>NYHA functional class</i>					
I	Ref				
II	1.01	0.92-1.1	.879	0.91	0.82-1.01
III	1.49	1.34-1.65	.005	1.43	1.25-1.64
IV	3.74	2.55-5.48	< .001	3.61	2.44-5.34
<i>QRS width, ms</i>	1.00	1.00-1.01	.003	0.999	0.99-1.00
<i>Left bundle branch block</i>	1.02	0.93-1.12	.713	--	--
<i>Date of implantation</i>					
2005-2010	Ref				
2010-2016	0.99	0.92-1.08	.930	--	--
<i>Device type</i>					
Single-chamber ICD	Ref				
Dual-chamber ICD	0.84	0.77-0.93	.001	0.91	0.82-1.01
CRT-ICD	1.03	0.94-1.13	.552	1.09	0.96-1.25

95%CI, 95% confidence interval; aIRR, adjusted incidence rate ratio; CRT-ICD, cardiac resynchronization therapy-implantable cardioverter-defibrillator; IRR, incidence rate ratio; LVEF, left ventricular ejection fraction; NID, number of intervals to detect; NYHA, New York Heart Association.

Table 2 of the supplementary data

Univariate and multivariate predictors of appropriate ICD shocks

	IRR	95%CI	P	aIRR	95%CI
<i>ADVANCE programming</i>	1.29	1.14-1.48	< .001	1.02	0.88-1.17
<i>Age, y</i>	1	1.00-1.01	.001	0.989	0.99-0.99
<i>Male sex</i>	1.55	1.36-1.79	< .001	1.39	1.19-1.64
LVEF					
≥ 50%	Ref				
30%-49%	1.44	1.23-1.68	< 001	1.32	1.09-1.59
< 30%	1.5	1.30-1.74	< 001	1.59	1.32-1.94
<i>Ischemic cardiomyopathy</i>	1.42	1.27-1.58	< 001	1.27	1.12-1.44
<i>Diabetes</i>	1.09	0.97-1.23	.158	--	--
<i>Hypertension</i>	1.21	1.09-1.35	< 001	1.06	0.94-1.20
<i>Atrial fibrillation</i>	1.7	1.52-1.91	< 001	1.65	1.45-1.88
<i>Indication (secondary prevention)</i>	2.29	2.06-2.56	< 001	3.08	2.71-3.51
<i>First ICD implantation</i>	0.57	0.45-0.72	< 001	0.71	0.55-0.92
NYHA functional class					
I	Ref				
II	1.28	1.13-1.45	< 001	1.34	1.16-1.55
III	1.58	1.37-1.83	< 001	1.92	1.58-2.32
IV	3.11	1.96-4.95	< 001	3.85	2.31-6.41
<i>QRS width, ms</i>	1.00	1.00-1.01	.008	1.002	1.00-1.01
<i>Left bundle branch block</i>	1.06	0.94-1.19	.347	--	--
Date of implantation					
2005-2010	Ref				
2010-2016	1.08	0.97-1.21	.148	--	--
Device type					
Single-chamber ICD	Ref				
Dual-chamber ICD	0.79	0.69-0.90	< 001	0.84	0.72-0.97
CRT-ICD	0.97	0.85-1.10	.608	0.81	0.67-0.98

95%CI, 95% confidence interval; CRT-ICD, cardiac resynchronization therapy-implantable cardioverter-defibrillator; IRR, incidence rate ratio; aIRR, adjusted incidence rate ratio; LVEF, left ventricular ejection fraction; NID, number of intervals to detect; NYHA, New York Heart Association.

Table 3 of the supplementary data

Univariate and multivariate predictors of recurrent inappropriate ICD shocks

	IRR	95%CI	P	aIRR	95%CI
<i>ADVANCE programming</i>	0.74	0.59-0.94	.014	0.66	0.52-0.85
<i>Age, y</i>	0.992	0.99-1.00	.005	0.991	0.98-1.00
<i>Male sex</i>	1.26	1.06-1.48	.007	0.74	0.60-0.89
LVEF					
≥ 50%	Ref				
30%-49%	1.57	1.26-1.97	< .001	2.12	1.64-2.74
< 30%	0.89	0.71-1.11	.295	1.34	1.04-1.78
<i>Ischemic cardiomyopathy</i>	1.04	0.88-1.23	.625	--	--
<i>Diabetes</i>	1.35	1.13-1.62	.001	1.62	1.31-1.99
<i>Hypertension</i>	0.82	0.69-0.96	.015	0.74	0.60-0.89
<i>Atrial fibrillation</i>	1.49	1.25-1.78	.001	1.78	1.47-2.15
<i>Indication (secondary prevention)</i>	1.26	1.06-1.48	.007	1.09	0.90-1.32
<i>First ICD implantation</i>	3.85	1.80-8.24	.001	2.97	1.37-6.48
NYHA functional class					
I	Ref				
II	0.74	0.61-0.88	.001	0.81	0.66-1.01
III	0.48	0.37-0.63	.001	0.7	0.50-0.97
IV	6.24	3.71-10.49	< .001	8.94	5.06-15.80
<i>QRS width, ms</i>	0.989	0.99-0.99	< .001	0.992	0.99-1.00
Date of implantation					
2005-2010	Ref				
2010-2016	1.09	0.93-1.29	.293	--	--
Device type					
Single-chamber ICD	Ref				
Dual-chamber ICD	0.91	0.75-1.10	.34	0.91	0.74-1.12
CRT-ICD	0.48	0.38-0.59	< .001	0.76	0.55-1.05

95%CI, 95% confidence interval; CRT-ICD, cardiac resynchronization therapy-implantable cardioverter-defibrillator; IRR, incidence rate ratio; aIRR, adjusted incidence rate ratio; LVEF, left ventricular ejection fraction; NID, number of intervals to detect; NYHA, New York Heart Association.

Figure 1 of the supplementary data. Tip card provided to Medtronic technical consultants providing support to physicians performing ICD implants and generator changes. Recommended settings for single-chamber ICDs.

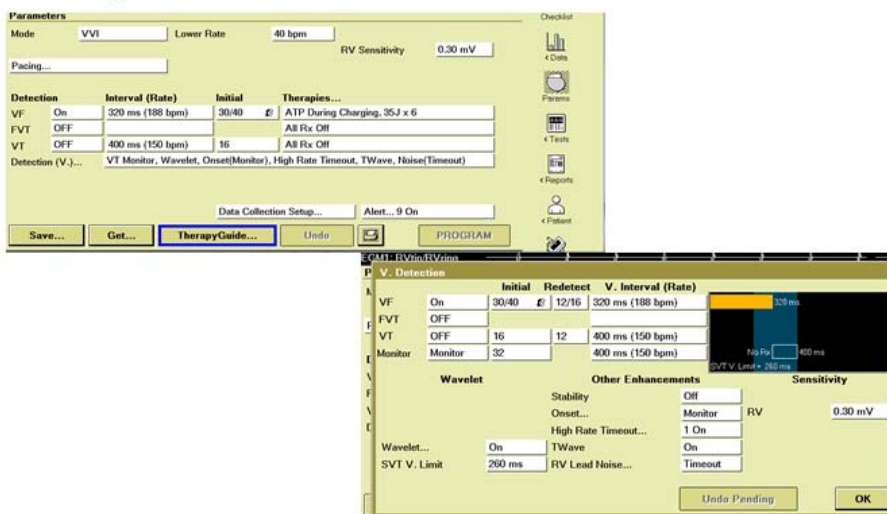
ICD programming recommendations to avoid unnecessary therapy

The use of long detection intervals, combined with ATP during capacitor charging, reduces unnecessary therapy by 37% and inappropriate shocks by 45% without increases in mortality or syncope rates.

VF cut-off < 320ms. NID :30/40 . ATP during charging.

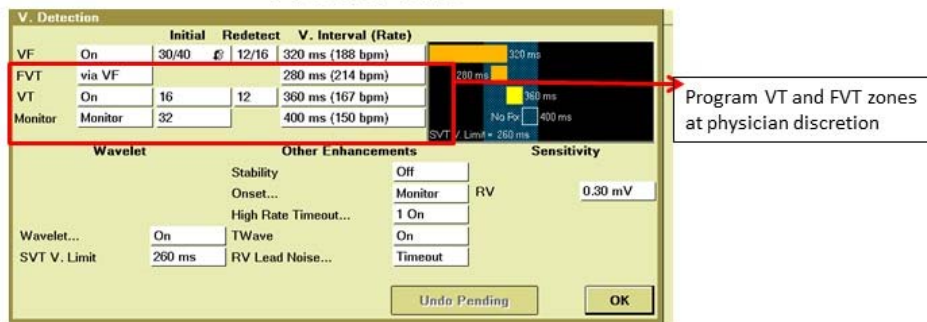
Single chamber ICD

Primary prevention



Secondary prevention

FVT & VT zone



Program VT and FVT zones at physician discretion

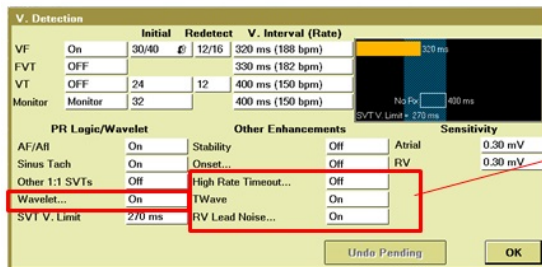
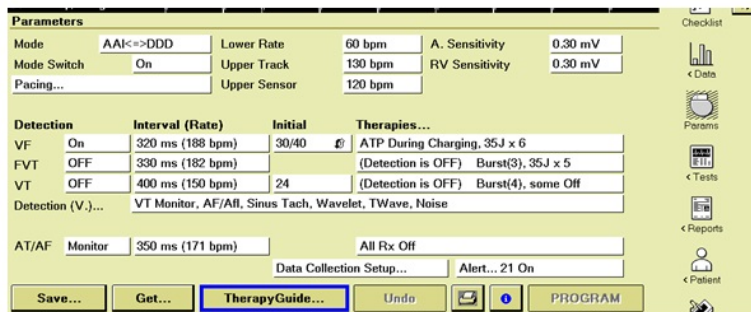
ATP, antitachycardia pacing, FVT, fast ventricular tachycardia, ICD, implantable cardioverter-defibrillator, NID, number of intervals to detect, SVT, supraventricular tachycardia, VF, ventricular fibrillation, VT, ventricular tachycardia.

Figure 2 of the supplementary data. Tip card provided to Medtronic technical consultants providing support to physicians performing ICD implants and generator changes. Recommended settings for dual-chamber ICDs.

Dual chamber ICD

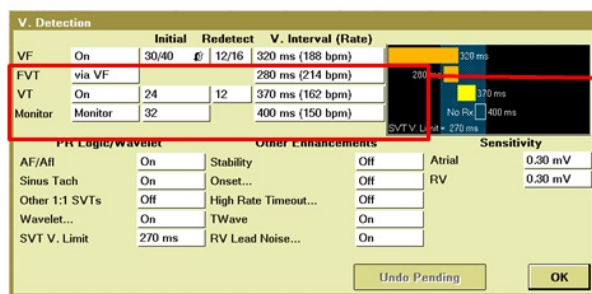
VF cut-off < 320ms. NID :30/40 . ATP during charging.

Primary prevention



SVT discriminators available from Protecta series and onwards

Secondary prevention



Program VT and FVT zones at physician discretion

ATP, antitachycardia pacing, FVT, fast ventricular tachycardia, ICD, implantable cardioverter-defibrillator, NID, number of intervals to detect, SVT, supraventricular tachycardia, VF, ventricular fibrillation, VT, ventricular tachycardia.