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Referring Physicians' Discordance with the Primary Prevention Implantable Cardioverter-Defibrillator Guidelines: A National Survey

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Abstract

BACKGROUND—The ACC/AHA/HRS Guidelines provide patient selection criteria for primary prevention implantable cardioverter-defibrillators (ICDs). For unknown reasons, guideline discordant practice is common.

OBJECTIVE—To determine referring physicians' concordance with the primary prevention ICD guidelines.

METHODS—We mailed a survey regarding ICD guidelines and individual practice characteristics to a random national sample of 3,000 physicians, 1/3rd each specializing in family medicine, internal medicine, and general cardiology, selected from the American Medical Association Masterfile.

RESULTS—Sixty-four percent with correct contact information responded. Three hundred and ninety-five (28%, 95% CI 25–30%) respondents never refer patients with the intent of consideration for a primary prevention ICD, including 7% (95% CI 5–10%) of cardiologists. Two hundred and twelve (15%, 95% CI 13–17%) believe ventricular arrhythmias are required before a primary prevention ICD is indicated; 525 (36%, 95% CI 34–39%) believe an ejection fraction > 40% warrants a primary prevention ICD; and 361 (25%, 95% CI 23–27%) would refer a patient for a primary prevention ICD within 40 days of a myocardial infarction. In multivariate analyses, family practice physicians and physicians residing in the Western US most often provided guideline-discordant answers, while cardiologists and those that refer to an electrophysiologist most often provided guideline-concordant answers. Primary care physicians that manage heart failure patients without referral to a subspecialist were not more likely to provide guideline concordant answers.

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CONCLUSIONS—Answers discordant with the primary prevention ICD guidelines were common, suggesting that referring physician beliefs are an important barrier to appropriate patient referrals for primary prevention ICD implantation.

Keywords

Implantable cardioverter defibrillator; ICD; Primary Prevention; Referring; Guidelines; Survey

Introduction

Several hundred thousand people die from sudden cardiac death (SCD) in the United States every year,¹ and randomized, controlled, clinical trials demonstrate that placement of an implantable cardioverter-defibrillator (ICD) in specific high risk groups significantly decreases the incidence of SCD and improves mortality.^{2–5} As a result of these studies, the American College of Cardiology, the American Heart Association and the Heart Rhythm Society (ACC/AHA/HRS) have published evidence-based guidelines that clearly describe patient criteria to determine appropriate candidates for primary prevention ICDs.⁶

While approximately 160,000 ICDs are implanted in North America on a yearly basis, the prevalence of patients that meet criteria for primary prevention ICD implantation may be as high as 1.2 million, with hundreds of thousand additional patients each year.^{7, 8} Multiple studies have shown that only a minority of patients eligible for ICD implantation are receiving them.^{9–11} Furthermore, it is estimated that 23% of primary prevention ICDs are implanted in patients who did not meet guideline criteria.¹²

The reasons underlying failure to adhere to the primary prevention ICD guidelines remain unknown. While much emphasis has been placed on implanting physicians,¹² we sought to test the hypothesis that referring physicians play an important role in guideline discordance. While general cardiologists are commonly responsible for these referrals, primary care physicians, predominately in the form of internists and family medicine physicians, are ultimately the initial referees. We therefore performed an assessment of referring physicians' concordance with the ACC/AHA/HRS primary prevention ICD guidelines.

Methods

A national sample of 3,000 physicians, 1/3rd each specializing in family medicine, internal medicine, and general cardiology, were selected from the American Medical Association Masterfile. Each participant was mailed a 34-item survey. All surveys were sent between June 3, 2009 and December 11, 2009.

The survey (see online Appendix) was created by the research team. Once the initial draft of the survey was completed, it was sent to a small group of cardiologists, family practitioners and internists to assess its clarity and practicality, and feedback was incorporated. Questions 1 through 5 tested physicians' understanding of the 2008 ACC/AHA/HRS guidelines for primary prevention ICD implantation. Questions 6 through 13 involved questions regarding ICD-related complications and reasons for not referring patients for ICD implantation. Questions 14 through 34 asked about the participants' demographics and practice habits.

Several strategies were employed to enhance response rates.¹³ A \$10 cash incentive was included with every mailing. Each mailing included a hand-written address, actual postage stamps, and a stamped, addressed envelope for return of the survey. For those that failed to respond within two-three months, a second survey with an additional \$10 cash was sent. If no survey was received within the following two-three months, physicians were called, with

an offer to either fill out the survey verbally via phone or to have a new survey sent via fax. Those with incorrect addresses determined by notes on returned survey mailers and those that both failed to respond to two mailed surveys and were found to have a wrong number were considered to have faulty addresses in the AMA Masterfile; these were not counted in the denominator when determining the response rate.

For the purposes of data analysis, several multi-variable groups were re-categorized and simplified. Those who indicated they were members of the American Academy of Family Physicians, American College of Physicians, Society of Hospital Medicine, American College of Cardiology, American Heart Association or Heart Rhythm Society were deemed members of professional societies. To analyze physician practice locations, the United States was divided into four regions: West, South, Midwest and Northeast (online Appendix Table 1). Practice setting was categorized as Health Maintenance Organization (HMO), University Hospital, Veterans Affairs (VA), non-VA governmental (consisting of “county hospital” and “other government setting”), and other (consisting of “private practice,” “group practice” or “other” practice type).

Informed consent was obtained for each participant, and this research was approved by the University of California San Francisco Committee on Human Research.

Statistical Analysis

Normally distributed continuous variables are expressed as means $\pm$ SD, and continuous variables that were not normally distributed are expressed as medians and interquartile ranges (IQR). Dichotomous comparisons of continuous variables were assessed using t-tests and the Wilcoxon rank sum test, and comparisons across more than two continuous variables were assessed using analysis of variance and the Kruskal-Wallis test. Categorical variables were compared using the χ^2 test. Continuous variables with skewed distributions were dichotomized into ranges most compatible with established results from the literature or those values clearly outside what has been reported in the literature and/or expert consensus guidelines. All respondent demographics and practice characteristics associated with a given response with a p value < 0.1 were added to a multivariate model in order to determine independent predictors of that response. Logistic regression was used for multivariate assessment of dichotomous outcomes, and linear regression was used for normally distributed continuous outcomes. Nominal variables with more than two categories that were significant in multivariate analysis were collapsed to allow for pairwise comparisons. Stata 11 (College Station, Texas) was used for all statistical analyses. A two tailed $p < 0.05$ was considered statistically significant.

Results

Of 3000 physicians mailed a survey, 1459 responded and 713 had incorrect information provided by the AMA Masterfile, resulting in a response rate of 64%. Of the 2,287 with correct contact information, response rates varied significantly by region within the US (West 67%, South 60%, Midwest 68%, and Northeast 62%. $P=0.005$), but not by specialty (family medicine 66%, internal medicine 65%, cardiology 61%, $p=0.16$). The respondent characteristics are shown in Table 1.

A median of ten percent (IQR 0–40) of primary care physicians manage patients with a low left ventricular ejection fraction (EF) without referral to a subspecialist: internists manage 15% (IQR 2–50) and family medicine physicians manage 10% (IQR 0–30%). The median value of the lowest EF that primary care physicians independently care for is 35% (IQR 20–40%).

Three hundred and ninety-five (28%, 95% CI 25–30%) respondents do not refer patients to a subspecialist with the specific intent of having the patient considered for a primary prevention ICD (Table 2). Cardiologists, physicians with more patients over age 60 years, and those who refer patients to an electrophysiologist (EP) were more likely to refer (Figure 1). However, 7% (95% CI 5–10%) of all cardiologists do not refer their patients for an ICD. In multivariable analysis, board certification in cardiology (associated with a 7.4 greater odds of referring, 95% CI 2.4 to 22.4 greater odds, $p < 0.001$) was the only independent predictor of this response in the analysis restricted to cardiologists.

Guideline-discordant answers and statistically significant independent predictors of those answers after multivariable analysis among the whole cohort are shown in Table 3. Practicing family medicine and residing in the Western US were associated with more discordance, while practicing cardiology and referring to an EP were associated with less discordance. Examining these same answers for cardiologists alone: 18 (4%, 95% CI 2–6%) believe an ICD is never indicated in the absence of a malignant ventricular arrhythmia, 117 (25%, 95% CI 21–29%) reported an EF $> 40\%$ as an appropriate cut-off for a primary prevention ICD, and 87 (19%, 95% CI 15–22%) refer patients for an ICD within 40 days of a myocardial infarction. The only independent predictor that could be identified for any of these answers restricted to cardiologists was years in practice, with a 1.01 greater odds of referring for an ICD within 40 days of a myocardial infarction for every additional year in practice (95% CI 1.002–1.027 greater odds, $p=0.025$).

Excluding the cardiologists, the primary care physicians that manage their systolic heart failure patients without referral to a subspecialist were not more likely to provide guideline concordant answers (Figure 2). As shown, the only statistically significant observation among these comparisons demonstrates that primary care physicians that independently manage patients with an EF $< 35\%$ were *more* likely to report that a ventricular arrhythmia is required before referral for a primary prevention ICD ($p=0.013$).

Regardless of what they believed to be appropriate referral guidelines, respondents report referring a median 85% (IQR 50–100%) of their patients *they believe* are indicated for a primary prevention ICD. Independent predictors of referring more than 50% of patients deemed to be appropriate candidates by the respondent included practicing cardiology (OR 1.90, 95% CI 1.26–2.72, $p=0.002$), practicing in the Northeast (OR 1.39, 95% CI 1.01–1.89, $p=0.041$), referring patients to an EP (OR 1.39, 95% CI 1.05–1.86, $p=0.023$), and having someone in the same group who implants ICDs (OR 2.31, 95% CI 1.51–3.53, $p<0.001$).

Those who did not refer for consideration of a primary prevention ICD reported a higher median risk of peri-procedural infection and believed that ICD discharges would be more painful (Table 4).

Summary statistics of Likert scales regarding potential factors of concern when deciding against referring a patient for an ICD are shown in Figure 3. Concerns regarding losing patients to the subspecialist, device recalls, and national health care costs did not appear to be important to most respondents (median scaled answer was “never”). Patient preference was the most important factor reported. Similar results were observed when restricting these answers to the cardiology group alone.

Discussion

Approximately one third of a random national sample of referring physicians provided answers discordant with the AHA/ ACC/ HRS guidelines regarding primary prevention ICD implantation. Answers from family medicine physicians and those practicing in the Western US were most discordant with the guidelines, while answers from cardiologists and those

who referred to an EP for ICD implantation were more often in agreement with the guidelines. Although cardiologists compared to other physicians more often provided answers consistent with guideline adherence, a substantial number of cardiologists provided guideline discordant answers. Primary care physicians that manage their systolic heart failure patients without referral to a subspecialist were no more likely to be guideline concordant than other primary care physicians.

A telephone survey study of 100 physicians in New Zealand demonstrated that, although the majority of respondents rated their knowledge regarding international ICD guidelines as satisfactory or better, a substantial number were not familiar with specific indications; of interest, barriers to ICD implantation were attributed to lack of financial resources, lack of local expertise, and lack of their own national guidelines.¹⁴ Although the response rate was 33%, a survey invitation to 332 physicians (110 respondents) practicing in two health care systems in New York state yielded results similar to ours, demonstrating that ICD guideline discordance was common and that primary care physicians in particular frequently failed to recommend ICDs when presented with case scenarios in which appropriate ICD candidates were described.¹⁵ They demonstrated that approximately 40% of physicians do not recommend an ICD in patients with a left ventricular ejection fraction $\leq 35\%$ and emphasized the importance of improving dissemination of guideline information to primary care physicians.

ICDs are one of a few primary prevention interventions that have been shown to improve mortality. It would generally be considered standard of care for a primary care physician to understand the indications for the majority of such strategies, including mammograms,¹⁶ colon cancer screening,¹⁷ daily aspirin in certain patients,¹⁸ and cholesterol-lowering therapy in certain patients,¹⁹ and quality of practice assessments often rely on the degree of guideline concordance. While ICD implantation is somewhat unique in that it involves a specialized procedure, colonoscopy does as well. Ultimately, if referring physicians do not understand these guidelines, some patients in need will never be offered a potentially life-saving device. Failure to understand the guidelines may also lead to over-referral, potentially adding to unnecessary visits to specialists and increased health care costs.

Although several randomized, controlled clinical trials have provided evidence to inform guidelines regarding primary prevention ICD implantation,²⁻⁶ it is known that a substantial proportion of eligible patients never receive this potentially life-saving therapy. Only 42% of 600 primary prevention ICD-eligible patients from a single Veterans Affairs medical center with an EF $< 35\%$ and 49% of those with EF $< 30\%$ received an ICD.¹¹ A retrospective analysis in 2009 determined that up to 49% of out-patients with a class I indication for ICD implantation did not receive a device.⁹ Furthermore, a review of Medicare patients eligible for ICD implantation found that only 20% to 25% actually received them.¹⁰ A recent analysis of the National Cardiovascular Data Registry demonstrated that failure to adhere to the primary prevention ICD guidelines may also include over-utilization in patients that do not meet criteria.¹²

Our survey results suggest that failure to adhere to ICD guidelines is at least in part due to a lack of awareness or failure to understand the guidelines. Despite clear evidence and expert consensus to the contrary, fifteen percent did not believe an ICD was ever indicated unless there was evidence of a ventricular arrhythmia. And, for those that would consider the EF, more than one third believed an EF $> 40\%$ would warrant consideration of primary prevention ICD implantation.

Approximately one third of respondents never refer patients with the intent of consideration for a primary prevention ICD. Independent predictors of referring for an ICD included

practicing cardiology, referring to an EP, and having an older patient population (more patients older than 60 years of age), suggesting that primary care physicians, those without access to an EP, and those that treat younger patients (perhaps those who also treat pediatric populations) do not refer. This is despite the fact that the internists and family physicians reported caring for a median 10% of their patients with a low EF without referral to a subspecialist, including patients with EFs less than 35%. Importantly, the primary care physicians that independently manage their heart failure patients also provided guideline discordant answers approximately 20 to 30% of the time. It is important to emphasize that these physicians caring for systolic heart failure patients without referral to a subspecialist are discordant not only with the ICD guidelines,⁶ but also with the Class I indications for primary prevention ICDs in the heart failure guidelines.²⁰ A number of cardiologists also do not refer—the fact that board certification predicted a greater likelihood of referral may suggest that education (or lack thereof) is an important factor. Whether educational efforts can rectify guideline-discordant referral practices remains unknown and requires further study. Finally, although our survey results were received prior to announcement of the Department of Justice investigation into the appropriateness of ICD implants,²¹ we suspect that such an investigation will likely, if anything, make practitioners potentially even more reluctant to refer. However, this investigation in fact underscores the importance of understanding and addressing the extent of discordance between practice and evidence based guidelines for ICD implantation.

Even among those patients in whom the physician felt a primary prevention ICD was indicated, 15% are never referred. Our data suggest that reasons for failure to refer even in the event that a primary prevention ICD is felt to be indicated by the respondent include concerns regarding device infection, painful ICD shocks, and patient preference. It did not appear that concerns regarding inappropriate shocks, peri-procedural complications on the whole, possibility of recalls, or loss of patients to specialists were important.

Multivariate analyses suggested that family medicine physicians and those in the Western United States more often failed to exhibit guideline concordance. It is unclear why those in the Western United States did not perform as well as those in other regions, and no state in particular appeared to be responsible. Although we did not assess for differences by rural versus urban settings, these analyses were adjusted for miles from a tertiary referral center as well as patient volumes and ages.

Our study has several limitations. While the surveyed population may not represent the general population of referring physicians, it did represent a random national sample within each specialty. Importantly, the AMA Masterfile is not restricted to AMA members, but rather includes all physicians that graduated from medical school in the US. In addition, our response rate of 64% is among the highest in major surveys of health care providers.²² We also included 95% confidence intervals in order to communicate population estimates that can be extrapolated from these data. Although we had nearly 1,500 respondents, it is possible that insufficient power prevented identification of all measured independent predictors of certain responses, particularly when investigating within groups (such as analyses restricted to cardiologists only). We were not able to distinguish if guideline-discordant answers were due to lack of knowledge versus informed opinion. However, given the known phenomenon of poor primary prevention ICD guideline adherence, our research question was specifically to assess referring physician guideline discordance itself (rather than individual-level motivations). As the guidelines were written by expert consensus and in consideration of all of the known complications of these devices, ultimately it can be argued that it does not matter why a certain proportion of answers were not in accordance with the guidelines, but rather simply that a certain proportion of respondents would or would not refer certain types of patients. Finally, this study did not include data on actual

device utilization. Interestingly, by linking survey results with data obtained from the National Cardiovascular Data Registry for ICDs and the Medicare denominator file, one study could find no relationship between physicians' attitudes regarding ICD utility and the relative degree of actual ICD use in the region in which they practiced.²³ However, this sample was restricted to ACC members (rather than referring physicians per se), the response rate was 12%, and a disproportionately high number of electrophysiologists responded.

In summary, a substantial number of physicians fail to refer their patients in a manner that is concordant with the ICD guidelines. This may reveal an important barrier to guideline adherence. Certain respondent characteristics associated with answers most discordant with guideline recommendations, including those practicing family medicine, those in the Western United States, and those that do not refer their ICD patients to an EP, may help determine the best candidates for interventions to increase guideline adherence and may help target efforts to determine motivations that underlie guideline discordance, whether due to a lack of knowledge or informed opinion.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Abbreviations

ACC/AHA/HRS	American College of Cardiology, the American Heart Association and the Heart Rhythm Society
CI	confidence interval
EF	left ventricular ejection fraction
HMO	health maintenance organization
ICD	implantable cardioverter-defibrillator
IQR	interquartile range
OR	odds ratio
SCD	sudden cardiac death
VA	Veterans Affairs

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Figure 1.

Multivariate analysis of characteristics of physicians that do refer for consideration of a primary prevention ICD. All predictors associated with this response with a $p < 0.01$ in bivariate analyses are included. P values are shown for statistically significant results. Y error bars denote 95% confidence intervals. The dashed line denotes an odds ratio of 1.

*Reference is internal medicine and family medicine physicians grouped together

†Reference is the Western United States

‡Analyzed as a continuous variable; the odds ratio is increased odds per percent of patients > age 60 years

Figure 2.

Proportion of primary care physicians (general internal medicine and family medicine physicians) with guideline discordant answers that do and do not manage heart failure patients independently. For those that manage patients with a reduced EF, 40% of total patients was used because the cut-off because this represented the upper interquartile range for that answer.

EF denotes left ventricular ejection fraction

MI denotes myocardial infarction

Figure 3. Summary statistics of Likert scales regarding concerns when deciding against referring a patient for an ICD.

*Concern that the respondent would lose their patient to another physician.

Table 1

Demographic and practice characteristics of respondents grouped by specialty.

	Family Medicine Physicians (n=473)	Internal Medicine Physicians (n=437)	General cardiologists (n=468)	p value
Mean age (years)	50 ± 9	50 ± 10	53 ± 9	<0.001
Median years since completing medical training (IQR)	20 (10–27)	20 (12–28)	20 (12–27)	0.27
Median Miles from tertiary medical center (IQR)	15 (5–40)	5 (1–17)	1 (0–11)	<0.001
Practice in teaching hospital (%)	120 (26%)	163 (37%)	243 (52%)	<0.001
Practice type (%) University Hospital HMO VA Non-VA government Other *	13 (3%) 17 (4%) 4 (1%) 21 (4%) 416 (88%)	22 (5%) 21 (5%) 14 (3%) 28 (6%) 349 (81%)	49 (11%) 5 (1%) 3 (1%) 21 (4%) 402 (86%)	<0.001
Region West South Midwest Northeast	97 (21%) 143 (30%) 147 (31%) 84 (18%)	105 (24%) 114 (26%) 95 (22%) 122 (28%)	83 (18%) 129 (28%) 105 (22%) 148 (32%)	<0.001
Mean percent of patient >60 years of age	35 ± 18	55 ± 20	64 ± 14	<0.001
Accept Medicaid (%)	333 (72%)	293 (68%)	386 (84%)	<0.001
Median percent of practice that is outpatient (IQR)	98 (90–100)	90 (65–100)	70 (50–80)	<0.001
Median patients per week (IQR)	100 (75–120)	85 (60–100)	75 (50–100)	<0.001
Refer to an EP	266 (56%)	334 (76%)	425 (91%)	<0.001
Someone implants ICDs in the same group	30 (6%)	33 (8%)	254 (54%)	<0.001
Professional society member	420 (89%)	282 (65%)	435 (93%)	<0.001
Board certified	459 (97%)	416 (95%)	462 (99%)	0.019

* Included private practice (n=665), group practice (n=476), and other (n=92) IQR = interquartile range; EP = electrophysiologist

Table 2

Demographic and practice characteristics of respondents that do and do not refer for consideration of primary prevention ICD implantation and that do and do not believe that a left ventricular ejection fraction provides sufficient information to warrant ICD placement in a New York Heart Association Class 3 patient.

	Refer for consideration of a primary prevention ICD		p value
	Yes (n=1031)	No (n=390)*	
Specialty (%) Family Medicine Internal Medicine General Cardiology	289 (28%) 324 (31%) 388 (38%)	174 (45%) 109 (28%) 69 (18%)	<0.001
Mean age (years)	51 ± 10	50 ± 10	0.14
Median years since completing medical training (IQR)	20 ± 10	19 ± 9	0.053
Median Miles from tertiary medical center (IQR)	5 (0–25)	6 (1–20)	0.50
Practice in teaching hospital	412 (40%)	129 (33%)	0.016
Practice type (%) University Hospital HMO VA Non-VA government Other	69 (7%) 35 (3%) 14 (1%) 37 (4%) 878 (85%)	29 (5%) 11 (3%) 7 (2%) 19 (5%) 335 (86%)	0.56
Region West South Midwest Northeast	214 (21%) 278 (27%) 258 (25%) 284 (28%)	93 (24%) 119 (30%) 98 (25%) 83 (21%)	0.078
Mean percent of patient >60 years of age	54 ± 20	44 ± 23	<0.001
Accept Medicaid (%)	783 (76%)	280 (72%)	0.084
Median percent of practice that is outpatient (IQR)	85 (60–98)	95 (80–100)	<0.001
Median patients per week (IQR)	80 (55–100)	80 (60–100)	0.33
Refer to an EP	812 (78%)	241 (61%)	<0.001
Someone implants ICDs in the same group	250 (24%)	69 (18%)	0.007
Professional society member	851 (82%)	305 (77%)	0.034
Board certified	1,003 (97%)	375 (95%)	0.093

IQR = interquartile range; EP = electrophysiologist

* Although 395 participants reported they did not refer, only 390 provided all of the answers to the questions pertinent to this table

Table 3

Prevalence and predictors of guideline-discordant answers

	Answer		Significant Predictors in Multivariate Analysis*		
	Yes n (%)	No n (%)	Independent Predictors	Odds ratios (95% CI)	P values
Is an ICD ever indicated in the absence of an arrhythmia?	1,200 (85%)	212 (15%, 95% CI 13–17%) [‡]	Cardiologist Refer to an EP	4.9 (2.7–8.9) 1.6 (1.1–2.3)	<0.001 0.008
A left ventricular ejection fraction > 40% warrants a primary prevention ICD[‡]	525 (36%, 95% CI 34–39%) [‡]	934 (64%)	Family medicine Western US Refer to an EP	2.0 (1.4–2.8) 1.6 (1.1–2.2) 0.67 (0.50–0.91)	<0.001 0.007 0.01
Refer a patient for a primary prevention ICD within 40 days of a myocardial infarction	361 (25%, 95% CI 23–27%) [‡]	1,098 (75%)	Cardiologist	0.60 (0.42–0.86)	0.006

* All predictors with a $p < 0.10$ in bivariate analyses were included in the multivariate models.

[‡] Guideline discordant answers include 95% confidence intervals

[‡] Only providers that use an ejection fraction cut-off were asked this question; this dichotomous answer was derived from the ejection fraction cut-off numbers provided by the respondents.

CI= confidence interval; EP = electrophysiologist

Table 4

Respondent beliefs regarding ICD characteristics in those that do and do not refer for consideration of a primary prevention ICD.

Belief Regarding Device Characteristic	Do not refer for consideration of a primary prevention ICD n=395	Do refer for consideration of a primary prevention ICD n=1051	p value
Chance of appropriate shock in primary prevention ICD in 1 year (median, IQR)	10% (5–35%)	10% (5–20%)	0.057
Chance of inappropriate shock in primary prevention ICD in 1 year (median, IQR)	85% (50–100%)	82.5% (50–100%)	0.53
Chance of peri-procedural complication (median, IQR)	5% (2–5%)	5% (2–5%)	0.31
Chance of recall (median, IQR)	1% (1–5%)	1% (1–5%)	0.80
Chance of infection (median, IQR)	2% (1–5%)	2% (1–5%)	0.005 *
Pain with ICD discharge (mean $\pm$ SD)	6.0 $\pm$ 2	5.6 $\pm$ 2	0.005

* Although median and IQR were similar, this p value is driven by upper extremes: the 99th percentile in those who do not refer was 25% versus 15% in those that do.