

What to do when the battery runs out?

Primary prevention ICD but no therapy delivered

Dr Mark Dayer

A case



A case

- 85 y.o. man attended for an ICD box change
- 1979 NSTEMI
- 1994 MI + VF Arrest
- 1997 Non-syncopal VT
- 1997 VT Stim – Inducible VT
- 1997 Angio – “Severe” LMS disease + Occluded RCA and LV aneurysm
- 1997 Aneurysmectomy + CABG X 2
- 1997 VT Stim – Inducible VT
- 1998 ICD (At Musgrove)

A case

- 1999 Non-syncopal VT – at 155bpm – below device threshold – reprogrammed – 1xATP – SR
- 2005 Atrial flutter and heart failure
- 2006 Atrial flutter – Sotalol – New atrial lead
- 2007 ICD box change
- 2008 Episode of heart failure – EF 32%, PAP 46mmHg+JVP
- 2010 Episode of heart failure
- 2011 Booked for elective ICD box change:
 - » NYHA III
 - » Persistent atrial tachycardia for many months
 - » Last A threshold > 4.0V
 - » Pacing 100%
 - » 1 Further ATP in past 6/12 (asymptomatic)
 - » Previously cancelled (Fractured humerus), very little battery life left

Options

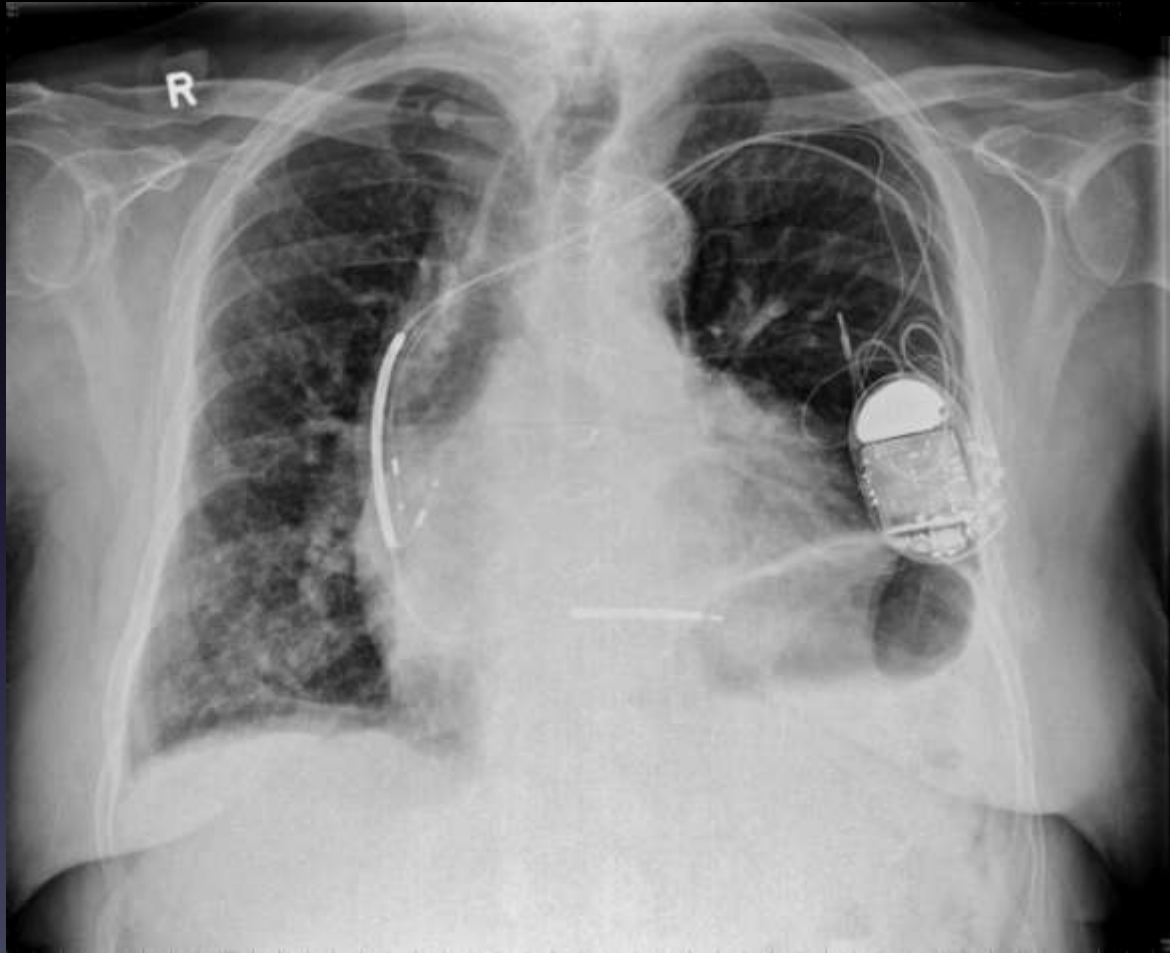
Replace ICD (VVI or new A lead+DDD+DCCV)

Replace with VVI PPM (Or DDD+new A lead+DCCV)

Upgrade to CRT-P

Upgrade to CRT-D

Pre-op CXR



What do I need to consider?

His attitudes, understanding and expectations

- Concept that an ICD does not prevent all deaths
- Views on death
- “Misbeliefs”

What do I need to consider?

Are the indications still valid?

- IHD
- Low EF when last checked
- Paced rhythm, intrinsic QRS broad
- Life expectancy > 1 year?

What do I need to consider?

Life expectancy – Seattle Heart Failure Model

| | | | |
|-------------|-----------|--------------|---------------------|
| Age | 85 | ACE-I | |
| Gender | Male | Beta Blocker | |
| NYHA Class | III | Statin | |
| Weight | 88Kg | Allopurinol | |
| EF | 32% | Bumetanide | 1.5mg od |
| Systolic BP | 110mmHg | Hb | 9.7g/dl |
| Aetiology | Ischaemic | Lymphocytes | 12% |
| | | Uric acid | g (no recent value) |
| | | Total chol | 116 |
| | | Sodium | 144 |

What do I need to consider?

With ICD

5 year survival

23%

Life expectancy

3.2 years

Without ICD

5 year survival

14%

Life expectancy

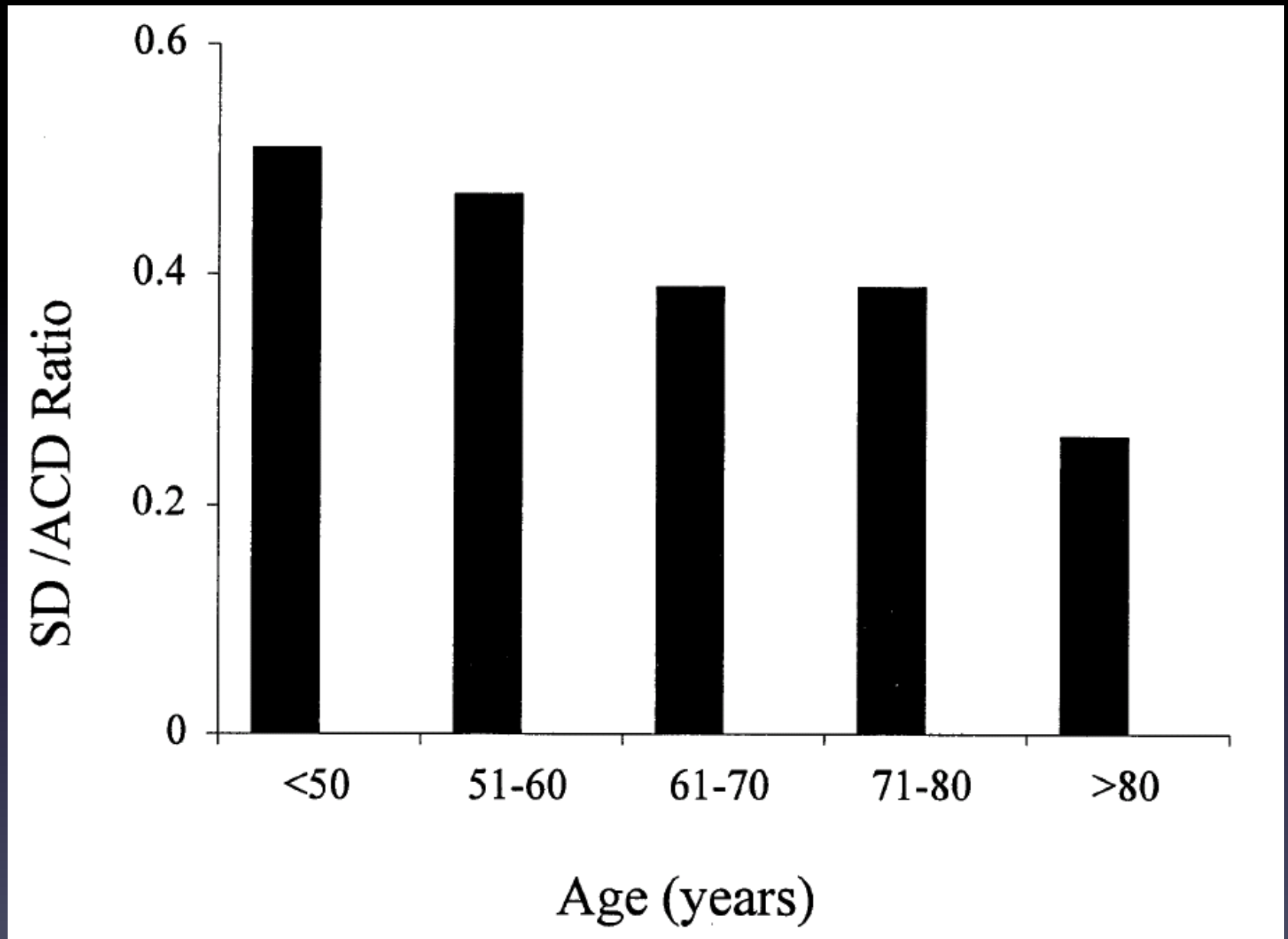
2.4 years

1.8% per annum increase in life expectancy, absolute gain of 9.6 months

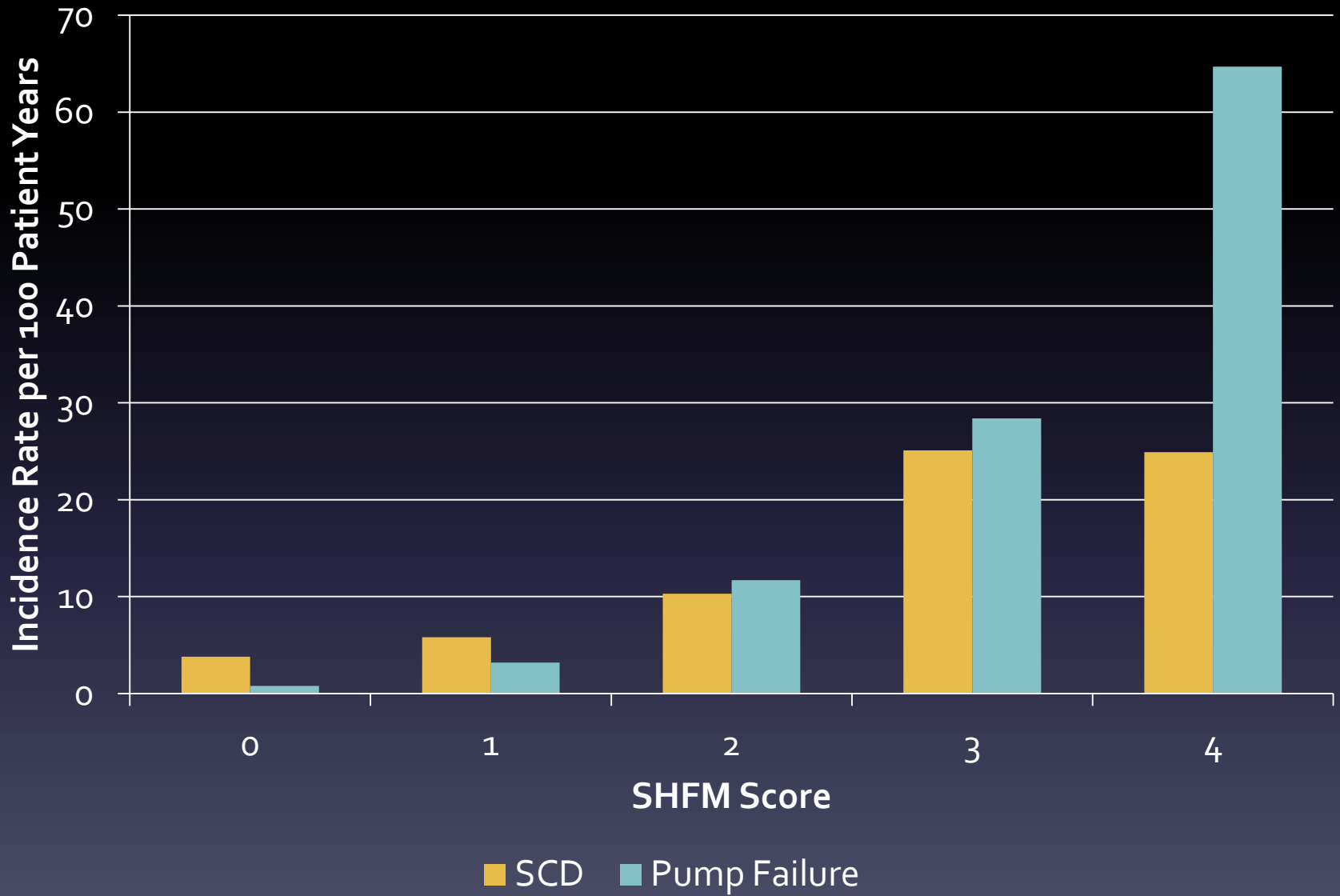
For these...devices, benefits were estimated from large published randomized trials or meta-analyses...to determine the...hazard ratio...Thus, these hazard ratios were estimated from published results of clinical trials and not from the validation data sets

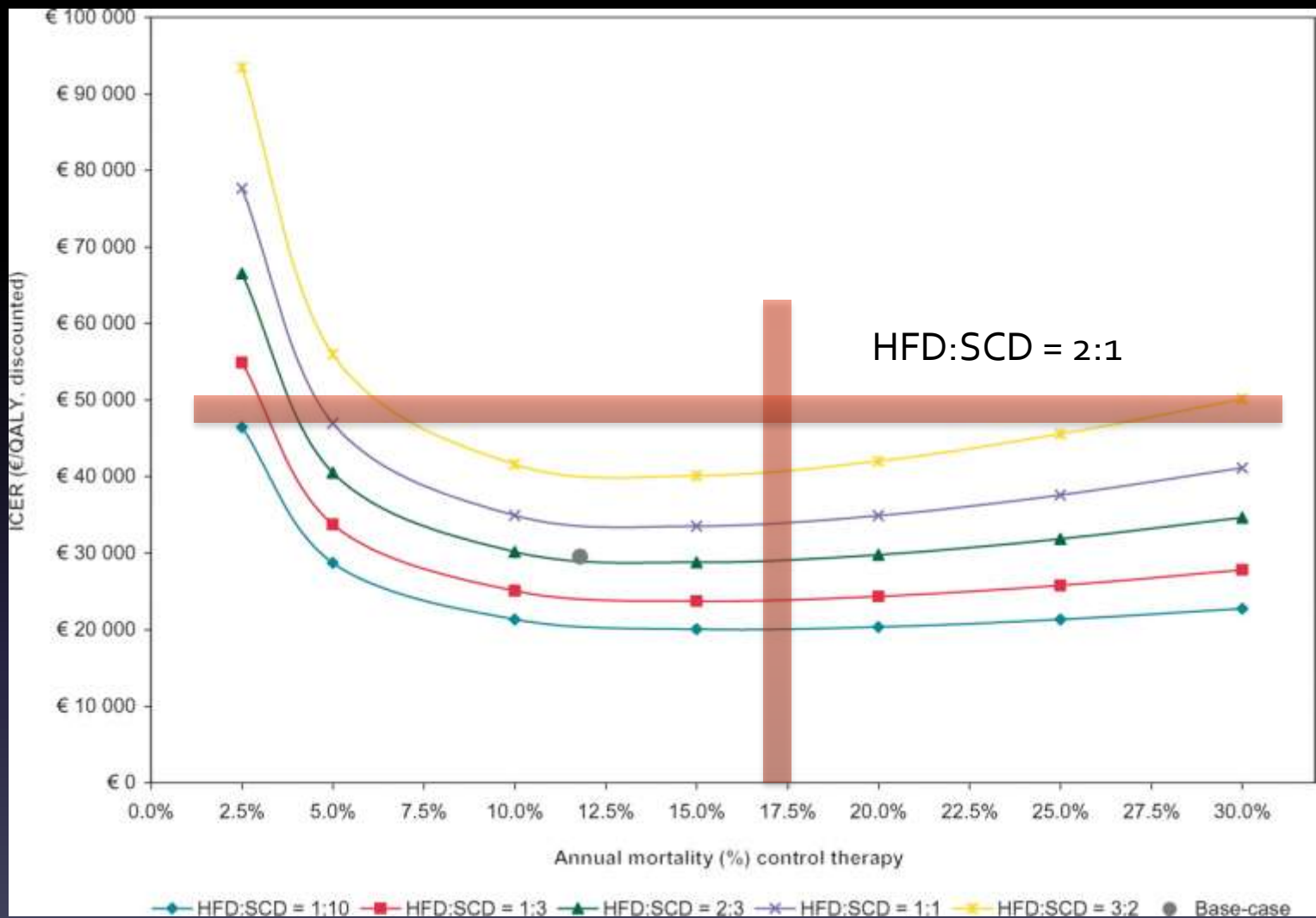
Problem

| Trial | Year | Mean Age – Control | Number | Mean Age – ICD | Number | All |
|------------|------|--------------------|--------|------------------|--------|------------------|
| MADIT | 1996 | 64±9 | 101 | 62±9 | 101 | |
| CABG-Patch | 1997 | 63±9 | 454 | 64±9 | 446 | |
| MUSTT | 1999 | 66 (58-72) | 351 | 67 (60-72) | 353 | |
| CAT | 2002 | 52±10 | 54 | 52±12 | 50 | 52±11 |
| MADIT II | 2002 | 65±10 | 490 | 64±10 | 742 | |
| AMIOVIRT | 2003 | 60±12 | 52 | 58±11 | 51 | |
| COMPANION | 2004 | 68 | 308 | 66 | 595 | |
| DEFINITE | 2004 | 58.1 (21.8-78.7) | 229 | 58.4 (20.3-83.9) | 229 | 58.3 (20.3-83.9) |
| DINAMIT | 2009 | 62.4±10.6 | 453 | 62.8±10.5 | 445 | |
| SCD-HeFT | 2005 | 59.7 (51.2-67.8) | 847 | 60.1 (51.9-69.2) | 829 | |

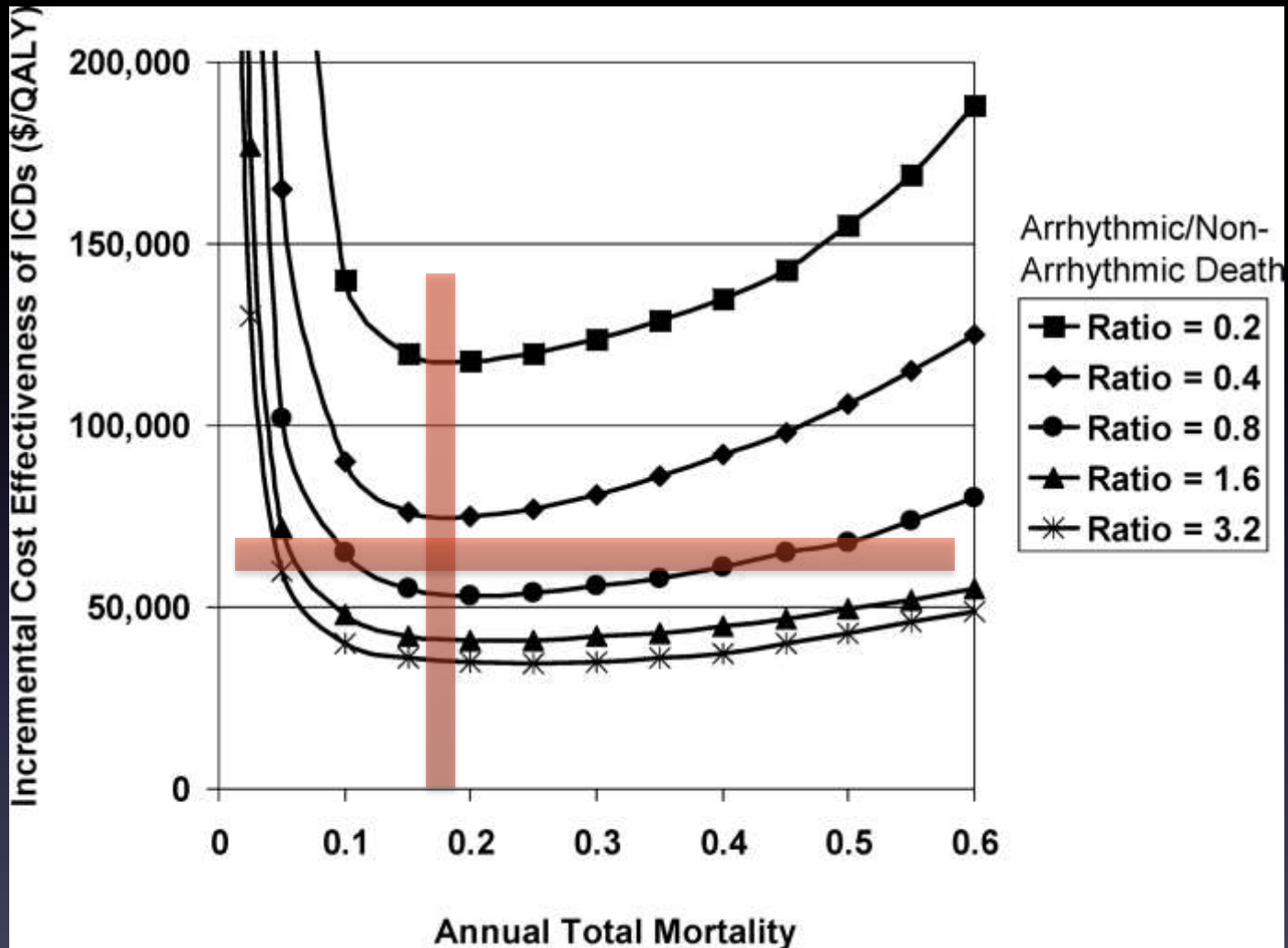


SCD vs. Pump Failure According to SHFM Score



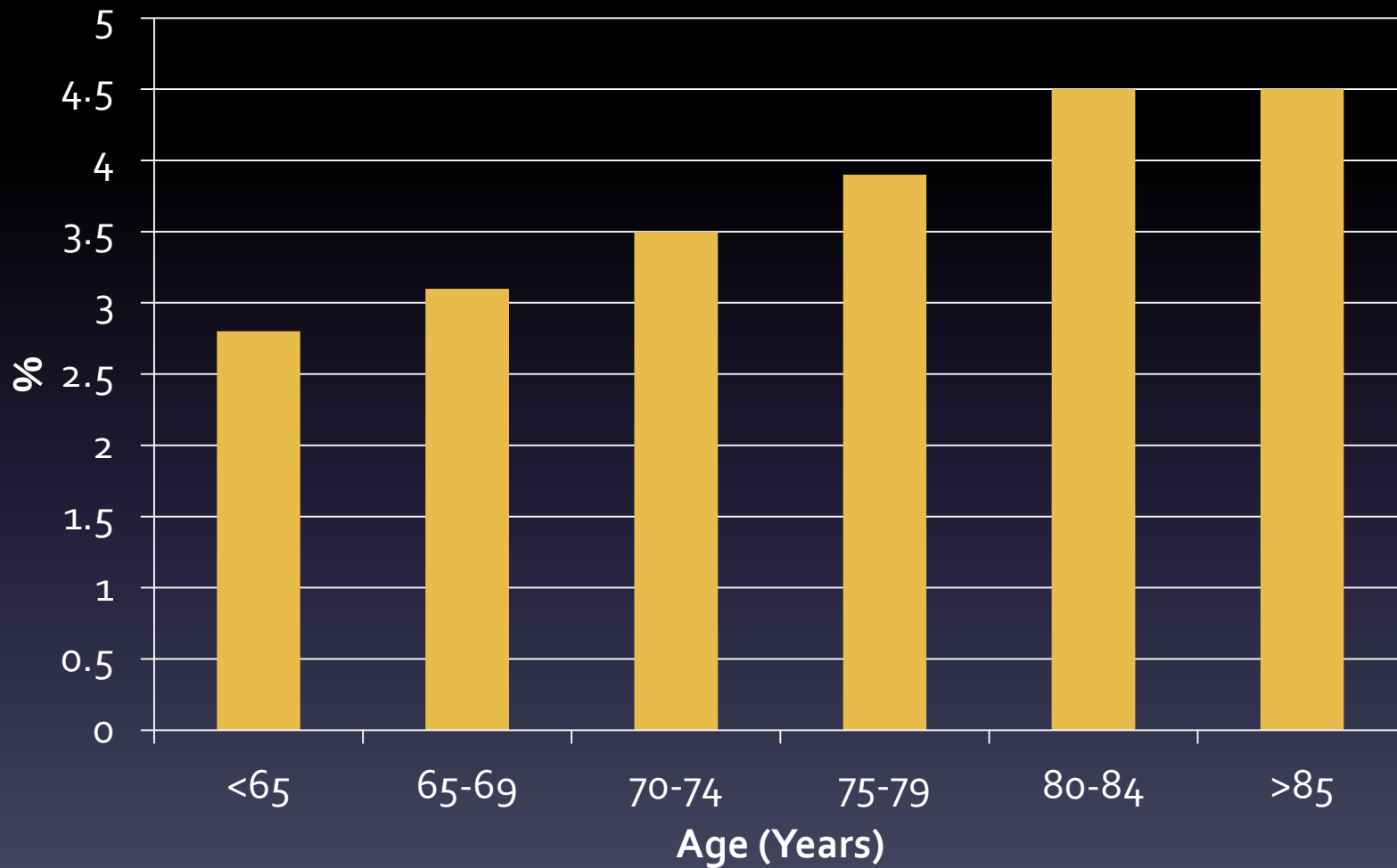


Cowie M R et al. *Europace* 2009;11:716-726



Heidenreich P A , Tsai V Circ Cardiovasc Qual Outcomes
2009;2:6-8

Any complication – Primary Prevention ICDs, n=150264



Quality of life

AF more common in the elderly¹

AF associated with inappropriate shocks²

Inappropriate shocks associated with impaired quality of life³

Elderly patients more likely to trade quantity for quality of life⁴

1. Zhang. Heart. 2009; 95: 1052-5.
2. Borleffs. Heart Rhythm. 2009; 6: 305-10.
3. Swindle. Arch Intern Med. 2010; 170: 1136-43.
4. Lewis. J Heart Lung Transplant. 2001; 20: 1016-24.

Studies in older persons

Many Studies Express Caution

Healey et al.

- Eur Heart J. 2007; 28: 1746-9

Pellegrini et al.

- Europace. 2008; 10: 1296–1301

Santagnelli et al.

- Ann Intern Med. 2010; 153:592-9

Swindle et al.

- Arch Intern Med. 2010; 170: 631-7

Rich et al.

- Expert Rev Cardiovasc Ther 2010; 8: 1203–5

Rees et al.

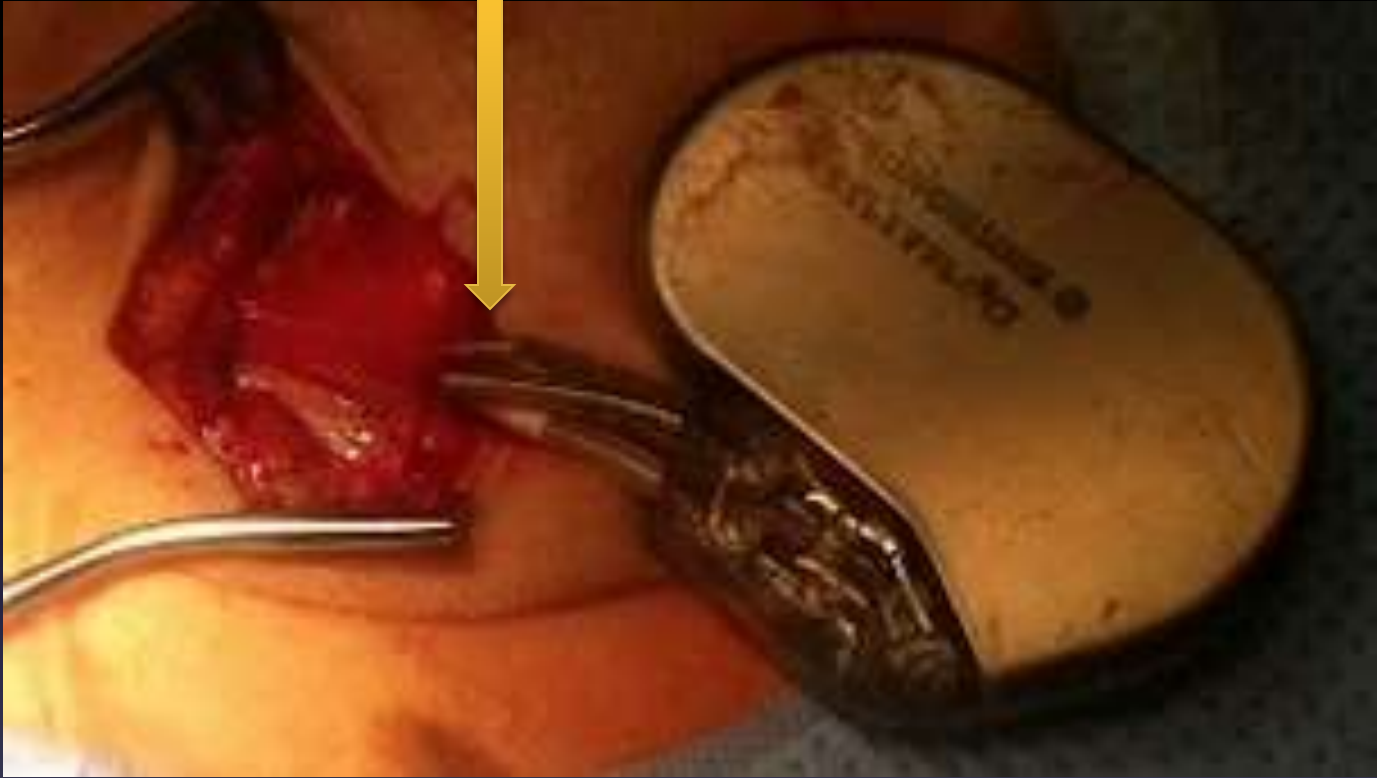
- Europace Advance Access. Published September 13, 2011

VVI PPM

“No caps”

“He has had ATP this year”

Sod it



Surgeons swear when operating: fact or myth?

F Fausto Palazzo, Orlando J Warner

The medical profession is rich with anecdotes about surgeons, many of national and international repute, using colourful language in the operating theatre. Legend has it that the language of the mildest mannered and pious surgeon, once he or she is gowned and gloved, undergoes a transformation. However, a Medline search of the past 20 years using the search words "swear," "swearing," "foul language," and "blasphemy" produced no relevant articles on the subject.

We therefore assessed to what extent the use of foul language by surgeons is a myth. We also tried to identify the surgical specialties where swearing is most common.

Materials, methods, and results

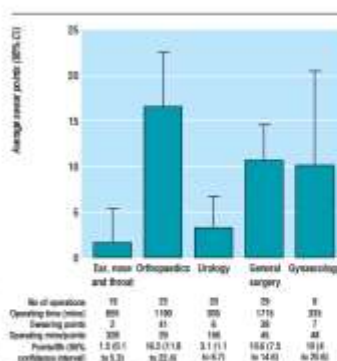
One hundred consecutive elective operations under general anaesthesia performed at a single hospital were assessed for the incidence of swearing by the operating surgeon. Without the surgeon's knowledge a swearing score was kept during surgery. The scoring was always undertaken by the same person (OJW). Other data recorded comprised the speciality of the surgeon, the length of the operation, and the type of foul language used. The swear words were classified into three groups, with points assigned to each swear word to reflect its strength: heaven and hell (such as "God," "bloody hell," "bugger"), 1 point; bodily products (such as "sh*t", "p*ss"), 2 points; so called four letter words (such as "f***", "c***", "b***ard") 3 points.

For strings of swear words, the highest scoring obscenity alone was counted. To guarantee the anonymity of surgeons, no distinction was made between their grade and sex. The swear rate was calculated from the total operating time and total scores for each speciality.

The 100 operations from five surgical specialities totalled 80 hours 50 minutes' operating time. Ninety four swearing points were scored, with an average of one point scored every 51.4 minutes. Different surgical specialities had different swearing rates (figure). Rates for a typical eight hour operating day were 16.5 swearing points from the orthopaedic surgeons and 10.6, 10, and 3.1 from the general surgeons, gynaecologists, and urologists respectively. In contrast, during eight hours of ear, nose, and throat surgery, little more than one "bugger!" is likely (figure).

Comment

Surgeons do swear when operating but the rate differs by speciality. Orthopaedic surgeons on average register one swear point every 29 minutes, almost twice as often as surgeons overall. Although orthopaedic surgeons triumph in the field of foul language, general surgeons are by no means without sin, being only slightly less foul mouthed than their orthopaedic colleagues. Gynaecologists also seem anything but angelic but may have been penalised by a small sample size of operating time. The 95% confidence interval shows that gynaecologists may actually use more foul



Rates of swearing during 100 operations, by speciality

language than general surgeons. Meanwhile the mild mannered ear, nose, and throat surgeons contribute little, with nearly five hours of operating time on average without any obscenity.

The reasons for the differential swearing pattern is difficult to establish. The brevity of the operations in some specialities may be a determinant. The orthopaedic operations lasted an average of 51.7 minutes, compared with 34.4 minutes per ear, nose, and throat operation. However, the average gynaecological procedure lasted just 37.2 minutes—during which time there was nevertheless a good chance of hearing an expletive. Does the use of complicated orthopaedic tools encourage bad language in the theatre? Does the good or bad language of a surgeon lead to a greater or lesser chance of career progression, depending on the speciality? Unanswered questions for the next millennium.

Given that the operations were elective, this may be the tip of the iceberg as even more foul language might occur in out of hours operating. However, the increasing practice of routine surgery under local and regional anaesthesia may already be enforcing some restraint of the surgical tongue. Is perhaps 1 January 2000 a good time for surgeons to resolve to stop swearing in theatre, or should we not surrender one of the last bastions of surgical tradition and privilege?

We thank the surgeons of the Royal Berkshire Hospital, Reading, for their good natured participation in this study.

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Final result

