Heart Failure Nurse Pan-London Educational Event
4 May 2010

Deactivation of Devices

Whose responsibility?
How to do it well?

Ian Wright

Principal Cardiac Physiologist

Imperial College

“Give me but gentle Death”

Tatler 1709

- "Recently, a hospice patient with cancer endured more than 50 shocks in the last day of life, anguishing between shocks as to whether stopping the now-hated device amounted to a mortal sin.
- Although that is a challenging question, surely it would be better contemplated back at the time of implantation . . . rather than having patient, family, and caregivers caught up in such torment." , **Dr Joanne Lynn** (RAND Health, Arlington, VA)

- ICDs are becoming much more common in the HF population
- All patients with an ICD will die
- Dying patients are at risk of receiving inappropriate and unpleasant shocks from the ICD if they develop VT or VF in their terminal phase of illness.
- Dying patients may prefer measures that relieve suffering and maximize comfort to measures that prolong life.

- General agreement exists that ICD deactivation in dying patients is ethically permissible, especially if done to avoid uncomfortable shocks.
- Multiple shocks are not in themselves normally an indication for device deactivation. Options include VT ablation

- The need for deciding whether to turn off an ICD is a predictable part of the course of dying for any patient with an ICD.

- No consensus guidelines exist for the management of care in dying patients with implanted cardiac devices who request device deactivation.

Identifying the patient's wishes

- One way to discern a dying patient's preferences about implanted cardiac device therapy is to talk with the patient.
- If the patient requests device deactivation, the clinician must ensure that the patient or the surrogate understands the consequences of device deactivation. (and staff)
- Alternatives to device deactivation should be fully explored, and specific plans should be made for the patient's therapy (e.g., palliative care) after device deactivation.

- A recent study found that dying patients who have an ICD often choose to have the device deactivated after discussions with their clinician but:
- Few physicians discuss ICD deactivation with dying patients.

Why are discussions uncommon?

- Physicians and others who manage patients with implanted devices may be uncomfortable with the topics of death and dying.
- Some may perceive a lack of time to discuss device deactivation with dying patients.
- .

- In addition, physicians, nurses, dying patients, and their relatives may be unaware that device deactivation can be ethically and legally permissible or may regard device deactivation as a form of physician-assisted suicide or euthanasia. Thus, they may avoid discussion of device deactivation altogether

How far in advance?

- The clinical status of a patient is dynamic and his or her health care preferences may change, especially at the end of life.

The goal of ICD therapy is to prevent sudden cardiac death

Is it Euthanasia?

- Granting a request to refuse or withdraw a life-sustaining treatment is not the same as physician-assisted suicide or euthanasia.
- In physician-assisted suicide and euthanasia, a new intervention or pathology (e.g. lethal agent) is introduced, the intent of which is the death of a patient.
- In contrast, when a patient dies after a life-sustaining intervention is refused or withdrawn, the underlying disease is the cause of death.

- The intent is freedom from an intervention that is perceived as burdensome.
- (If the intent of the deactivation is to cause death of the patient, then deactivation could be characterized as euthanasia)

DNR orders

- Patients with ICDs often suffer from progressive cardiac or other co-morbid conditions.
- Near the end of life, many of these patients may not want cardio-pulmonary resuscitation (CPR).
- CPR may no longer be medically appropriate.
- The comanagement of “do not resuscitate” orders and implantable defibrillators can be confusing to patients and healthcare professionals.

DNR orders

Title: Deactivating the Implantable Cardioverter-Defibrillator: A Biofixture Analysis
Author: Frederick Paola and Robert Walker
Source: South Med J 93(1): 20-23, 2000

- Although the ICD is imbedded inside the patient it does not have to be removed to be deactivated.
- We believe the ICD falls into that gray area between being a part of the patient - like a transplanted organ - and being just another medical treatment.
- Thus, the patient should decide. So consenting to a DNR does not authorize a doctor to deactivate an ICD without a specific order to do so.

Question	ICD		PM		OR*
	No. of Respondents	Affirmative Responses, %	No. of Respondents	Affirmative Responses, %	
Should a DNR order require deactivation of a PM or an ICD?	759	46.2	757	29.3	2.09†
Should hospice programs require that patients have their PM or ICD deactivated?	762	29.8	750	4.3	10.06†

Pacemaker function (CRT?)

- Less agreement exists for pacemaker deactivation than ICD.
- Most respondents to the survey saw an ethical distinction between deactivating an ICD and deactivating a pacemaker.
- Unlike in ICD deactivation, death may quickly follow pacemaker deactivation.
- Some claim that pacemaker therapy neither prolongs the dying process nor causes physical discomfort (unlike ICD shocks) and that pacemaker deactivation may actually cause discomfort (e.g., worsened heart failure due to bradycardia)

- Do you see any ethical or moral distinction between deactivating a PM and deactivating an ICD?
- 36.4% No
- 63.6% Yes

- ICD shock therapies can be turned off without affecting bradycardia pacing or CRT.

- ATP cannot be left on if all shocks are turned off

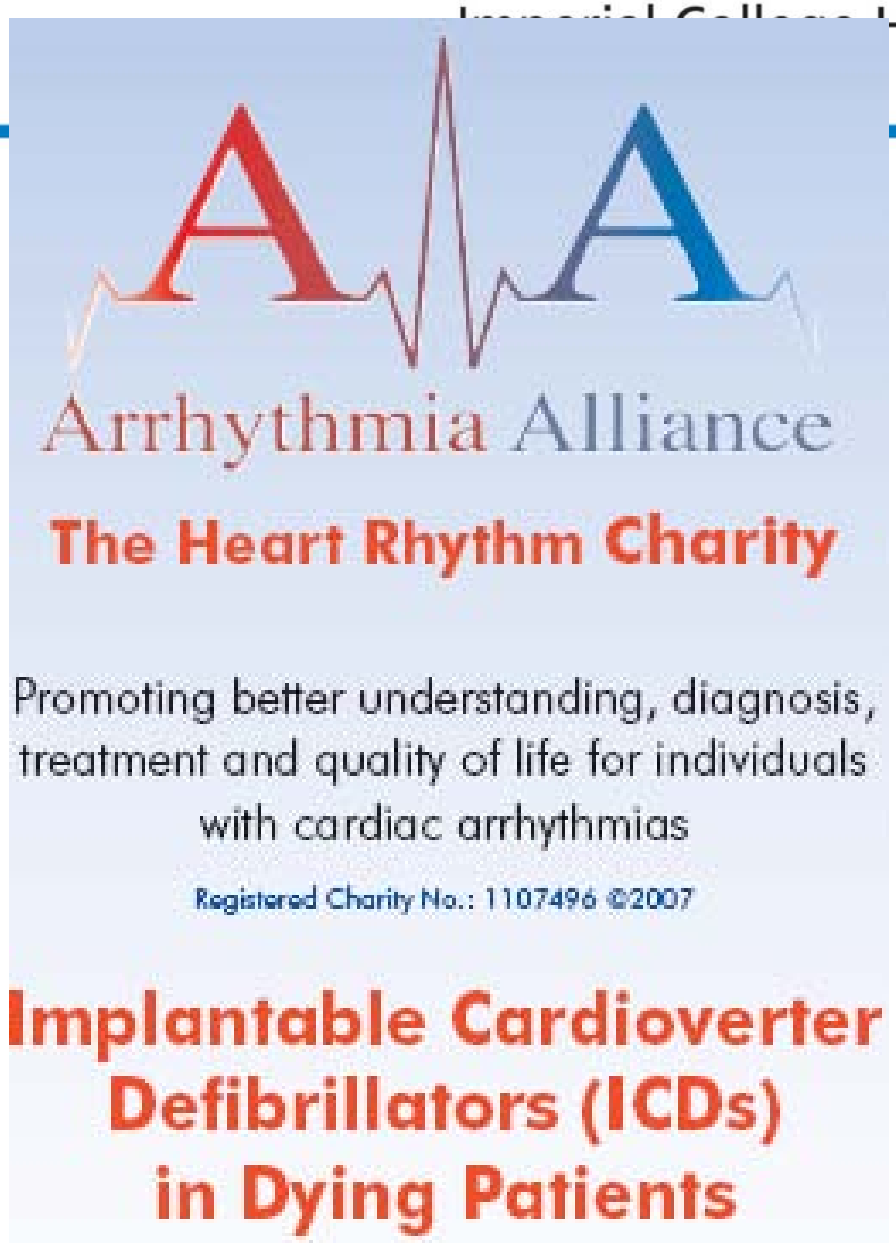
When should turning the ICD off be discussed with the patient?

- Healthcare professionals should anticipate situations in which the ICD is no longer desired by the patient or no longer appropriate, and arrange for the ICD to be deactivated.

Examples

- When other forms of resuscitation are discussed
- After withdrawal of antiarrhythmic therapy,
- On recovery from a crisis typical of the heart-failure-disease trajectory

- Lynn writes that patients should be informed at ICD implantation "that this device should ordinarily be stopped when life is getting to be short and life's continuation is tenuous because of conditions other than arrhythmia or when dying with an arrhythmia becomes a better course than what otherwise awaits."


Arrhythmia Alliance
The Heart Rhythm Charity
Promoting better understanding, diagnosis, treatment and quality of life for individuals with cardiac arrhythmias
Registered Charity No.: 1107496 ©2007
Implantable Cardioverter Defibrillators (ICDs) in Dying Patients

- This will only be carried out at your request and if you have been fully informed of your choices and have signed a consent form.
- Should circumstances change, the ICD can be easily switched back on.

When should Deactivating the ICD be discussed?

- Discussion about deactivating the ICD should take place as early as appropriate to enable proactive care management and to avoid unnecessary distress.

- Once CPR is no longer medically appropriate, the shocking function of the defibrillator should be deactivated. (*considered*)
- Ideally criteria for deactivating a defibrillator should be discussed with a patient and/or their next of kin when resuscitation issues are explored or when a patient's condition is worsening and deactivation may be appropriate.
- The discussion should take place while the patient is still able to be involved in the decision making process.

Who does it?

- In the (US) survey, many respondents thought a physician should be present during device deactivation.
- Yet, when asked who actually deactivates the devices, a majority of respondents replied that the 'industry representative' was the individual 'who deactivates devices most of the time.'

Involvement of industry reps in device deactivations

- First: Industry representatives have dual agency: they represent the device manufacturer at the same time as they represent the physician in carrying out a device deactivation order.
- Second: Many, if not most, industry representatives are not licensed to practice medicine or other forms of health care, and device deactivation is a medical procedure.

- Third, although the industry representative may have a good relationship with the patient, the primary caregiving responsibility belongs to the patient's physician.
- Delegating this role to an industry representative at the end of the patient's life is at odds with the physician's obligations to the patient.

In the UK

- It is the responsibility of the implanting centre to organise device deactivation.
- The ICD is almost always turned off by a cardiac physiologist
- Although deactivation is not a complicated process it may only be possible at certain times, because of the special programmer required and the appropriate staff
- Therefore early planning is required.

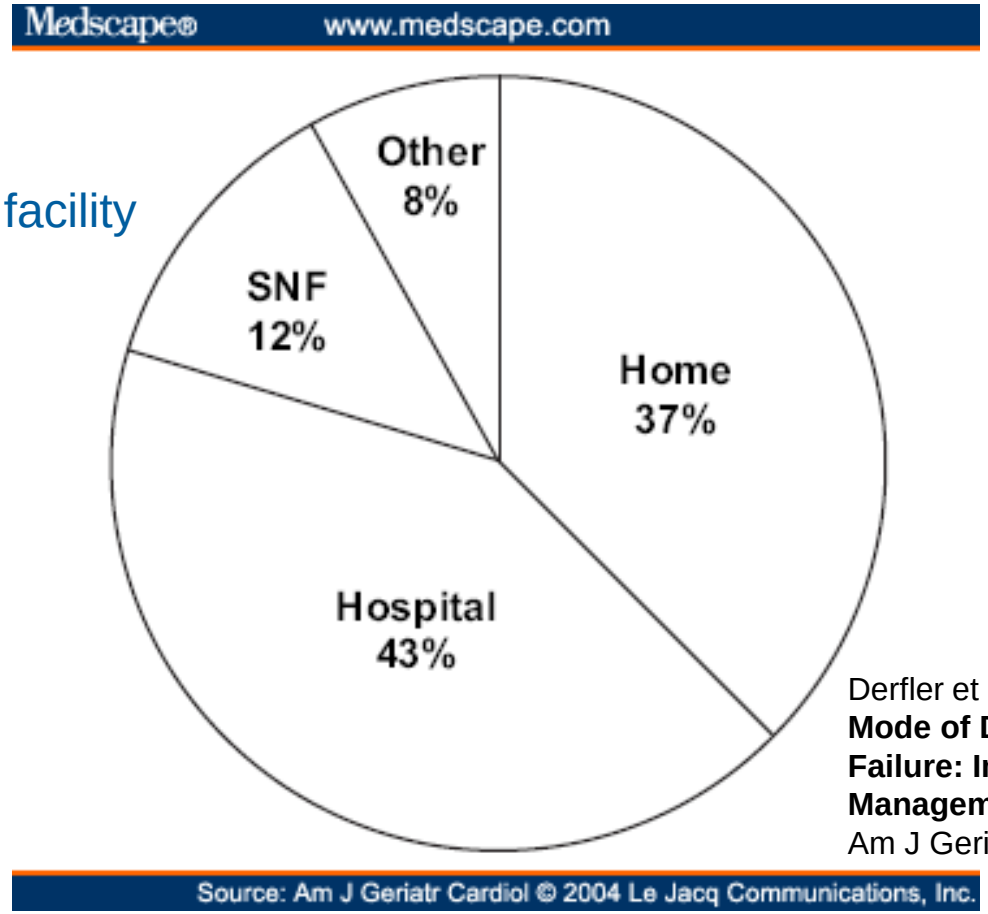
Who shouldn't do it?

- Physicians and others may conscientiously object to and refuse to perform device deactivation in terminally ill patients.
- Of the survey respondents, 43.3% reported that they were un-comfortable with personally deactivating an ICD
- Individuals should not be compelled to participate in a clinical activity that they find morally objectionable.

Where do patients die?

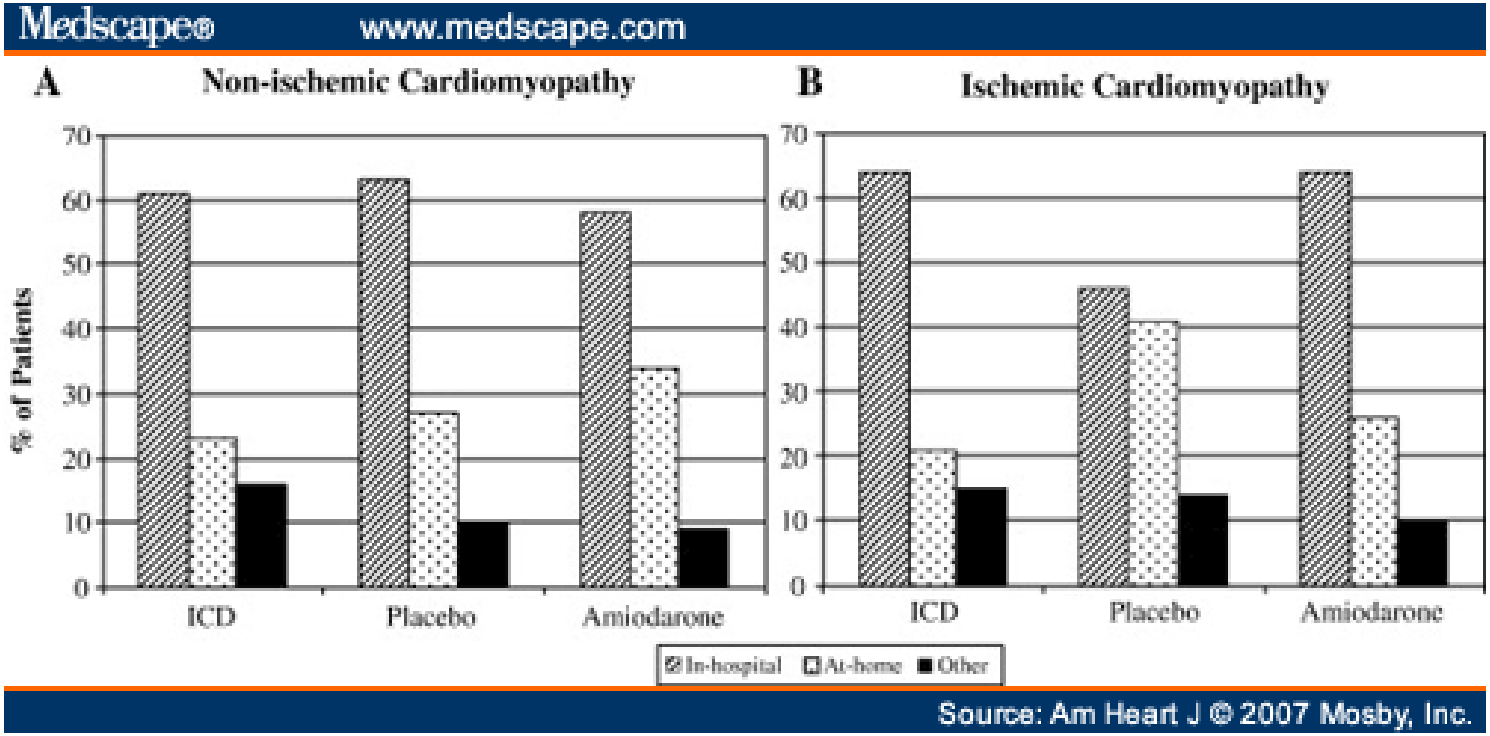
Distribution of place of death.

SNF=skilled nursing facility



Derfler et al 2004
Mode of Death From Congestive Heart Failure: Implications for Clinical Management
Am J Geriatr Cardiol

Where Patients With Mild To Moderate Heart Failure Die: Results From the Sudden Cardiac Death in Heart Failure Trial (SCD-HeFT)



Olshansky et al 2007 American Heart Journal

Cardiac physiologists are:

- Almost exclusively hospital based
- Unfamiliar with systems of working with patients outside of the hospital.
- Concerned about medico-legal status when working outside the hospital
- Limited in number

Summary: How to do it well

- Discussions about device management at the end of life should begin before device implantation and should occur whenever there is a significant change in the patient's clinical status (e.g., terminal illness).
- Patients should be encouraged to incorporate their preferences about device management in an advance directive and clinicians should document the preferences in the patient's medical record.
- In addition, physicians, nurses, device representatives, patients, and their surrogates should understand both the options in device management and the ethical permissibility of device deactivation, especially in terminal illness.
- Ethics consultation should be considered in situations in which disagreement exists among involved parties or when the decision-making capacity of the patient is in question.
- For patients who have undergone device deactivation, palliative care should be implemented to minimize uncomfortable symptoms.

- Communication between teams
- Special documentation?

Summary: Whose responsibility

- All healthcare professionals dealing with the patient
- Organising it: The implanting centre

- Does it have to be a cardiac physiologist?

‘I am not afraid of death, I just don’t want to be there when it happens.’

Woody Allen

Deactivating Implanted Cardiac Devices in Terminally Ill Patients: Practices and Attitudes

Paul S. Mueller, M.D.; Sarah M. Jenkins, M.S.; Katrina A. Bramstedt, Ph.D; David L. Hayes, M.D.

Published: 09/05/2008

- Lynn J. Deactivating implantable cardioverter defibrillators. *Ann Intern Med* 2005; 143:691.
- Beattie JM, Connolly MJ, Ellershaw JE. Deactivating implantable cardioverter defibrillators. *Ann Intern Med* 2005; 143:690-691.
- Berger JT. Deactivating implantable cardioverter defibrillators [author reply]. *Ann Intern Med* 2005; 143:691.
- Berger JT. The ethics of deactivating implanted cardioverter defibrillators. *Ann Intern Med* 2005; 142:631-634.