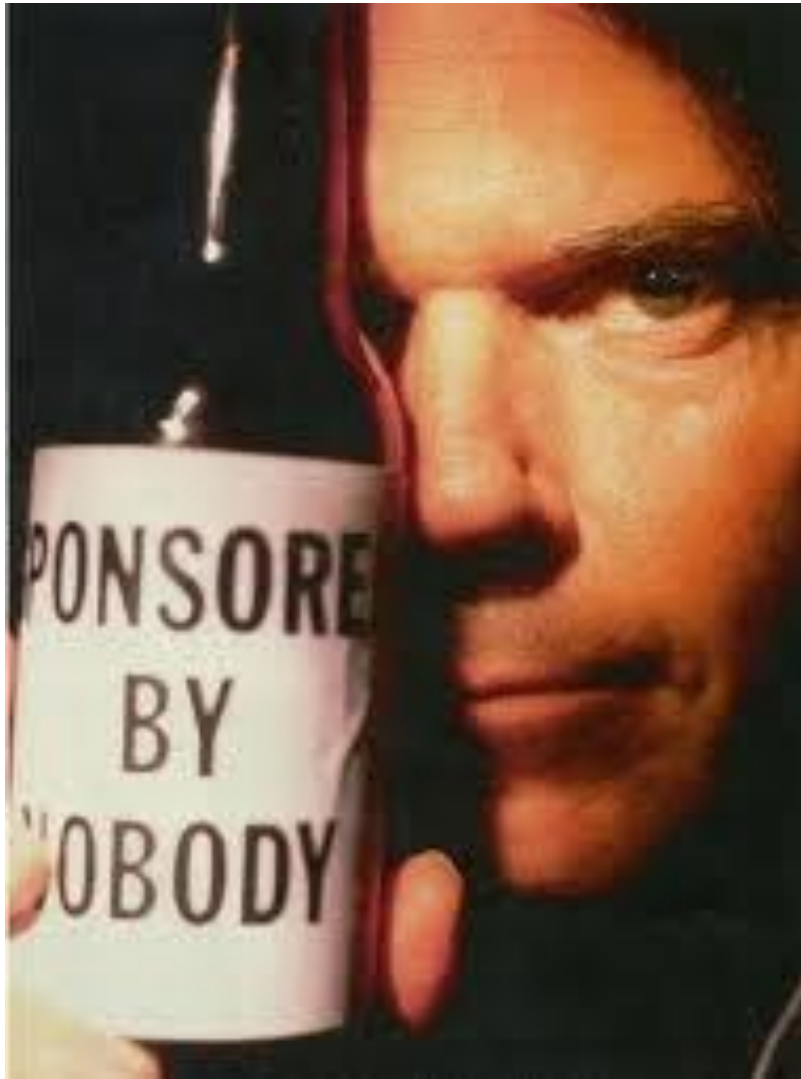


How do my Patients with Defibrillators and/or Pacemakers Die?

Edward (Ted) St. Godard MA MD CCFP
Consulting Physician
WRHA Palliative Care





Sponsored by no one,
on behalf of no one,
representing no one



Objectives

- Be aware of the prevalence of CIEDs
- Be aware of their implication at EOL
- Be aware of some perceived ethical ambiguity



Society Position Statement

Canadian Cardiovascular Society/Canadian Anesthesiologists' Society/Canadian Heart Rhythm Society Joint Position Statement on the Perioperative Management of Patients With Implanted Pacemakers, Defibrillators, and Neurostimulating Devices

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- 200, 000 Canadians living with implantable pacemaker or defibrillator
- 3 million in North America
- 250, 000 implanted annually



National Trends in the Use of Cardiac Resynchronization Therapy With or Without Implantable Cardioverter-Defibrillator

Charlotta Lindvall, MD, PhD; Neal A. Chatterjee, MD; Yuchiao Chang, PhD;
Betty Chernack, MD; Vicki A. Jackson, MD, MPH; Jagmeet P. Singh, MD, PhD;
Joshua P. Metlay, MD, PhD

Circulation January 19, 2016



- Cardiac Resynchronization Therapy (CRT) is an established therapeutic modality
- Improved EF
- Reduced ventricular arrhythmia



- Improved Sx control
- Improved survival



Palliative Care Consultation and Associated End-of-Life Care After Pacemaker or Implantable Cardioverter-Defibrillator Deactivation

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& Palliative Medicine®

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- "Hundreds of thousands...cardiovascular implantable electronic devices (CIEDs)."
- "Although CIEDs prolong life, they also increase the complexity of medical decisions, particularly [at] EOL."



- "About 70% of CIED recipients are older than 65."
- "About 75% have 1 or more coexisting illness."



- "[M]ost physicians believe CIED deactivation should be discussed as part of the advance care planning process."

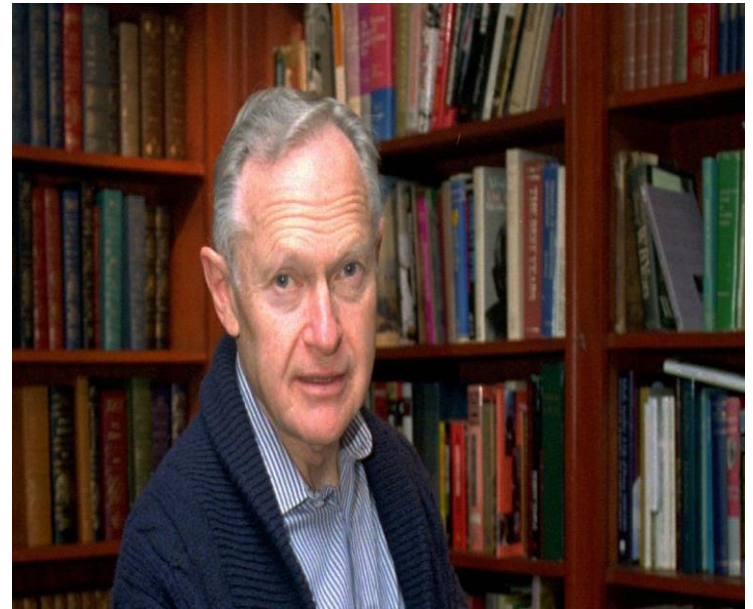
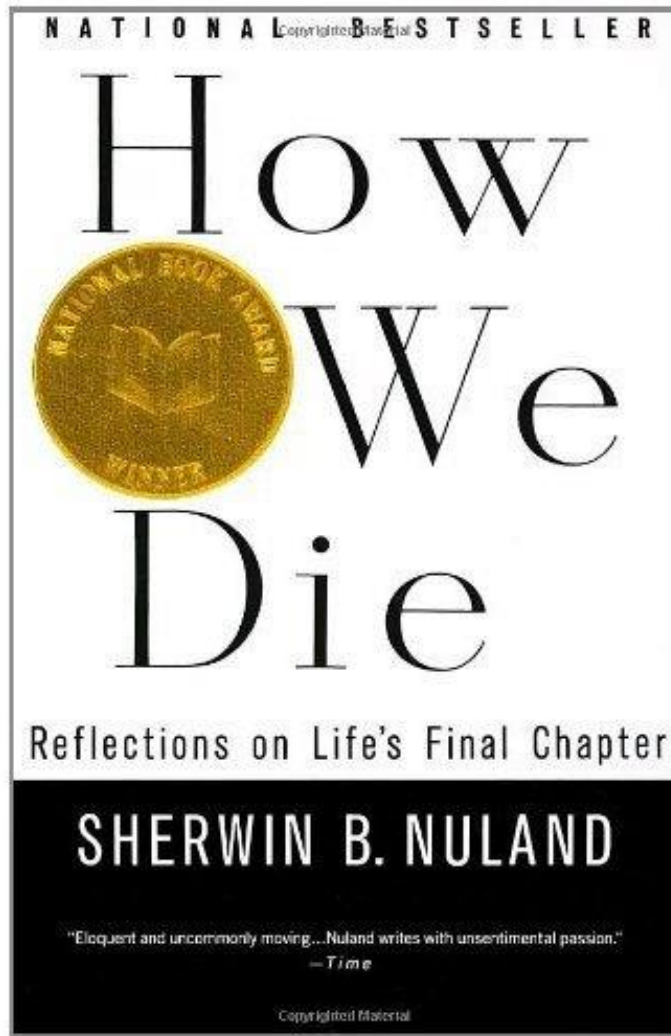


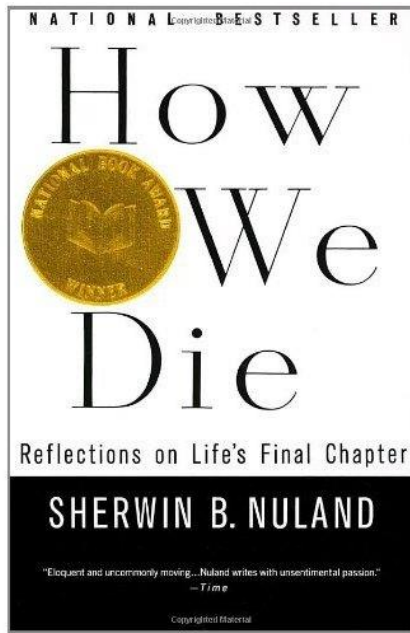
- "Both patient and caretaker discussion with clinicians about CIED deactivation occur infrequently."



How do my patients with
defibrillators and/or
pacemakers die?



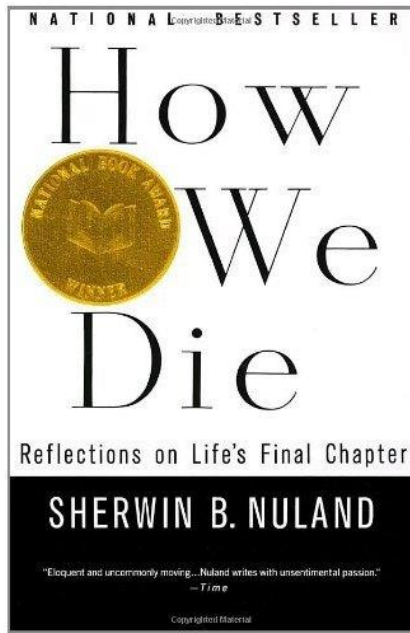




"Humans are obligate aerobes."

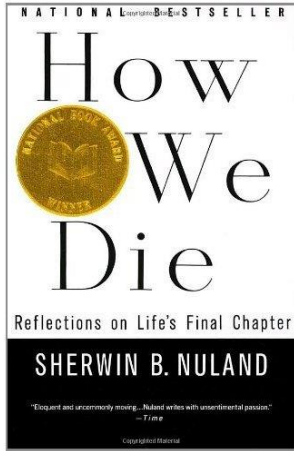
Hippocrates





Consistent underlying
mechanism of death:
not enough O²

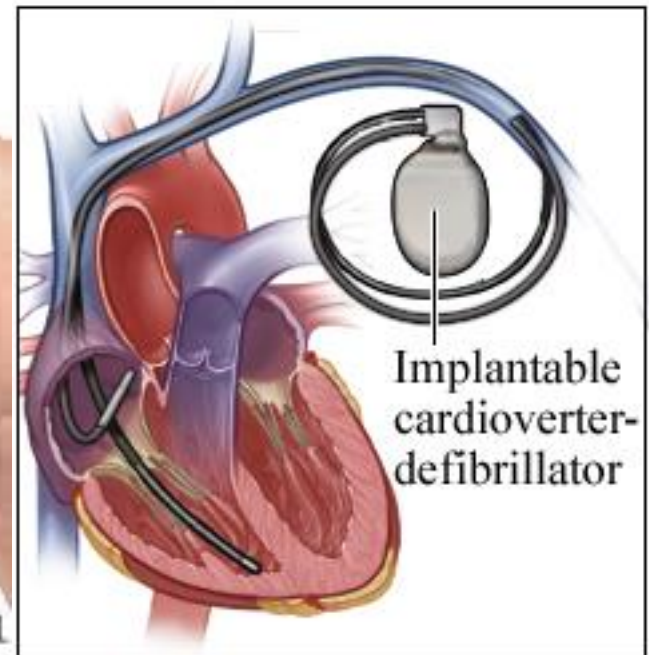
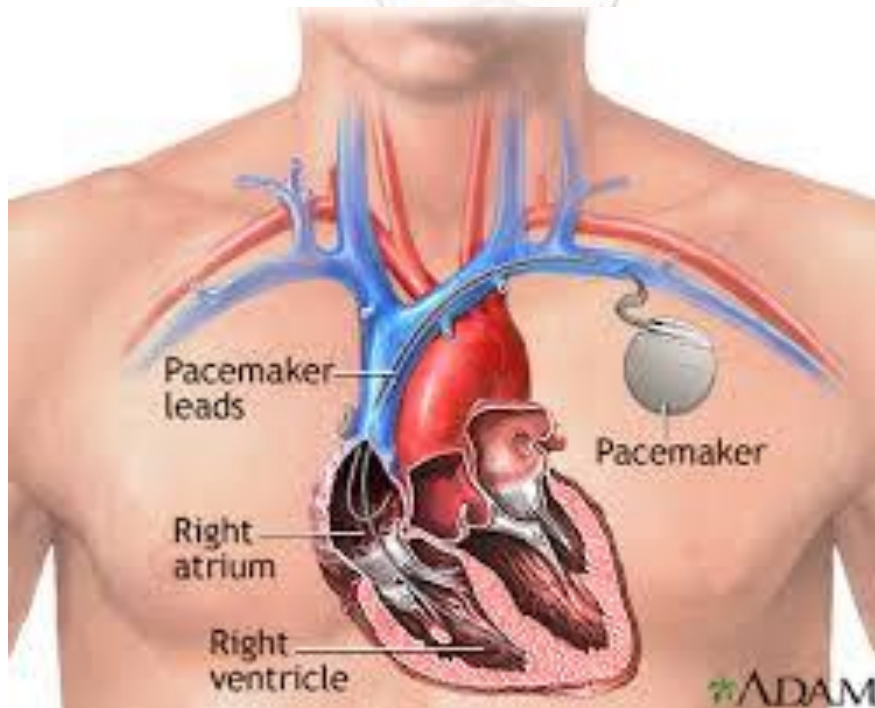




“When circulation ceases, cellular death can complete itself. The central nervous system goes first and the connective tissue of muscle and fibrous structures goes last.In most deaths, the heartbeat ends before the brain ceases to function.”



When circulation ceases.....



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How *can* my patients with
defibrillators and/or
pacemakers die?



Cardiac Implantable Electronic Devices and End-of-Life Care: An Australian Perspective



CrossMark

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Cardiac implantable electronic devices (CIED) have long been used to treat brady-arrhythmias, and, more recently, indications for CIEDs have expanded to include prevention of sudden cardiac death and treatment of congestive heart failure through use of implantable cardiac defibrillators (ICD) and cardiac resynchronisation therapies (CRT) [1].



What fools these mortals be.....



What fools these mortals be.....

Puck, speaking to his king, in
Shakespeare's *A Midsummer Night's
Dream*



- 125 cases explanted ICDs from deceased patients examined
- 13% died of primary arrhythmia
- 31% rec'd shocks in final 24 hours
- 65% of patients with DNR status rec'd ICD shocks in final 24 hours

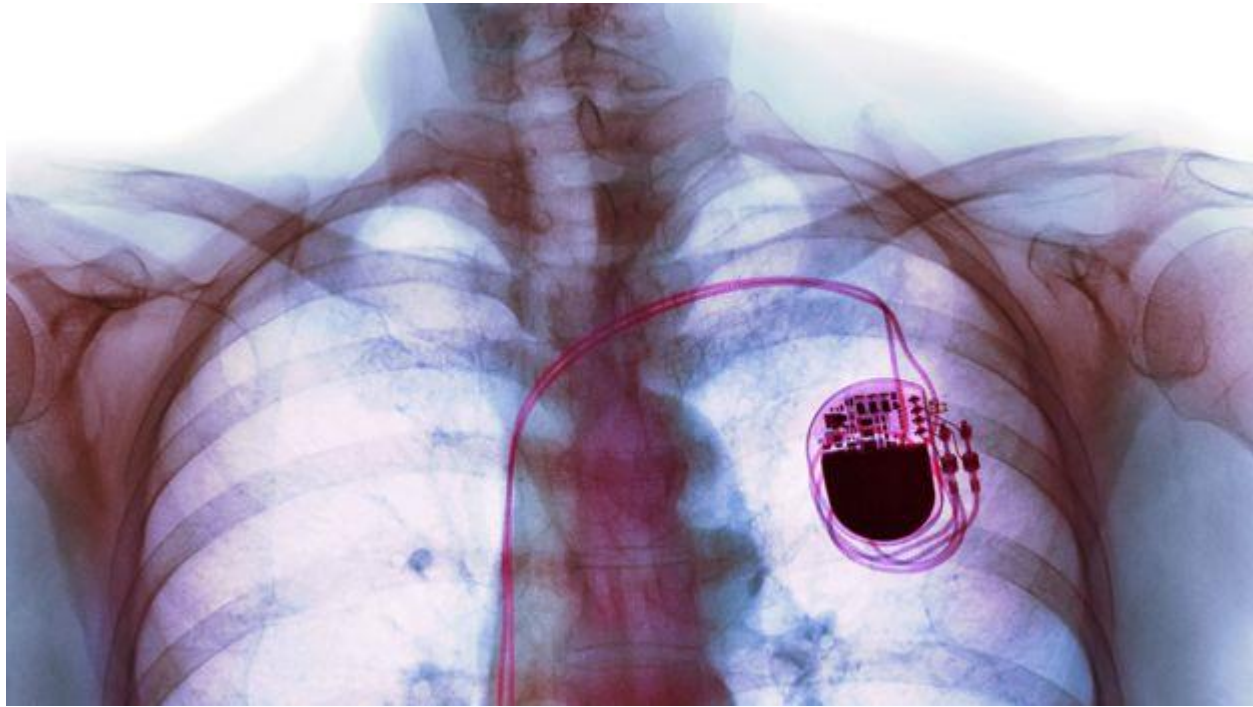
Kinch Westerdahl A, Sjöblom J, Mattiasson AC, Rosenqvist M, Frykman V. Implantable cardioverter-defibrillator therapy before death: high risk for painful shocks at end of life. *Circulation* 2014;129(4):422–9.



How do my Patients with Defibrillators and/or Pacemakers Die?



Potentially badly.....



A patient...

- 82 year-old man
- *n*th admission florid CHF
- ICD
- "Pacemaker dependent."
- "Had enough"



- 82 year-old man
- *n*th admission florid CHF
- ICD turned off at patient's request within hours of admission



- 82 year-old man
- *n*th admission florid CHF
- ICD off
- Patient, wife, and family ask to have pacemaker turned off



The woman who wanted her pacemaker turned off

By Jennifer Tracey
BBC News

24 September 2016 | Magazine

Share



Pacemakers have been used to treat a variety of heart conditions for more than 50 years

A case thought to be the first of its kind in the UK has highlighted a complicated ethical and legal dilemma - is it right to turn off someone's pacemaker, if that's what they want?

Nina Adamowicz was asking for a procedure that would lead to her certain death.

In today's Magazine

Inside France's 'boot camp' for wavering radicals

The angry quilter



How *may* my patients
with defibrillators
and/or pacemakers
die?



Theor Med Bioeth (2012) 33:421–433

DOI 10.1007/s11017-012-9213-5

Pacemaker deactivation: withdrawal of support or active ending of life?

Thomas S. Huddle · F. Amos Bailey

Published online: 18 February 2012

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- "Accepted ethical analysis of withdrawal of these devices have assimilated them to other life-sustaining treatments that physicians readily withdraw, such as hemodialysis or mechanical ventilators."
- "According to such analysis, withdrawal of these medical interventions is justified by the patient's right to refuse treatment."



- "ICDs can clearly be burdensome as death approaches."
- "And refusal of treatment in the form of an ICD or pacemaker ought to be no different than refusal of mechanical ventilation."



- "This has not been the case with pacemakers, which many clinicians remain reluctant to withdraw."
- "Almost one-third of physicians responding to a 2008 survey equated pacemaker deactivation in a pacemaker-dependent patient with [PAS]."



- "[C]linician misgivings about pacemaker deactivation are in fact well-founded."
- "[P]acemaker deactivation (in pacemaker-dependent patients) is better seen as doing than allowing, as active ending-of-life rather than as the withdrawal of an ongoing treatment."



- [T]he physician is a bystander in regard to the pacemaker, which is (in large part) a treatment completed rather than ongoing; and a patient right to refuse treatment cannot apply to completed treatments."



Medical Law Review, Vol. 22, No. 1, pp. 26–47
doi: 10.1093/medlaw/fwt034
Advance Access Publication: January 12, 2014



DOES WITHDRAWING LIFE-SUSTAINING TREATMENT CAUSE DEATH OR ALLOW THE PATIENT TO DIE?

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- "[S]ome cardiologists have not been persuaded that the act of pacemaker deactivation...can avoid equivalence to active euthanasia if the patient... is pacemaker dependent."



balanced out by that power. Any power doctors now have to 'cause death' only exists because technology has been invented and is now being used to *keep people alive* who would otherwise die—without the technology to hold death at bay, the doctors would have no power to 'end life' at all under our current ethical and legal system. All we can do, then, is merely stop the ongoing life-prolonging treatment we have started in a particular case.



A patient...

- 82 year-old man
- *n*th admission florid CHF
- We agree to d/c
pacemaker
- Preparation?



- Pacemaker dependent
- Turning off heart?
- What will happen?



- Talk talk talk, prepare prepare prepare
- Bedside presence
- Sedate with midazolam
- Turn off device
- Monitor
- Prn opioids



- Nicely sedated
- Device turned off
- HR 20s – 30s
- No obvious distress
- Wife disappointed
- Patient allowed to wake up
- Remained somnolent
- Died 4/7 later, peacefully



Questions and comments

