

WEB-ONLY APPENDIX. Sample ICD Deactivation Policy. This policy is a synthesis of actual policies submitted by responding hospices. It provides the core elements that should be included in a policy addressing the management of these devices for patients on hospice. It has not been pilot tested, and should be adapted by hospices once they have identified community partners who will assist with re-programming of patients' devices.

ETHICAL RATIONALE FOR DEACTIVATION:

Implantable Cardioverter Defibrillators (ICDs) are often multi-functional devices that are programmed to meet an individual patient's cardiac needs. These devices are designed to terminate potentially life-threatening arrhythmias in patients, and one way that they do this is to deliver electrical shocks to the heart. Unlike other treatments these devices may deliver to correct arrhythmias, the patient may experience pain or discomfort when the ICD discharges. That an ICD is present does not automatically mean that it will fire as death approaches. Deactivation of the shocking function is not a requirement for admission to hospice, but may be in line with the goals of hospice care to preserve quality of life during the dying process. Defibrillators are medical treatments subject to the same ethical and clinical considerations as any other treatment. ICDs are subject to an analysis of potential benefits and burdens and patients/surrogates have the right to accept or refuse its interventions just like any other treatment. These should not be isolated decisions but instead made in the context of the patient's larger goals of care.

IDENTIFICATION OF DEVICE

At the time of evaluation and admission to hospice (regardless of setting in which care is delivered), all patients/families will be queried about the presence of a pacemaker and/or ICD. On physical examination, the chest wall of each patient should be checked for the presence of a cardiac device. (Devices are usually placed underneath the clavicle and may be visible and/or palpable.) If a device is identified, the patient/family should be asked if they have the card that was provided at the time of implantation to aid in determining the nature of the device. If the card cannot be located, the hospice nurse should contact the patient's primary care physician or cardiologist to determine the nature of the device.

INFORMED CONSENT DISCUSSION ABOUT DEVICE DEACTIVATION

After an ICD has been identified, the hospice nurse should engage in an informed consent discussion with the patient/family/surrogate about the potential benefits and burdens of the device at this point in the patient's illness. In order to make a truly informed choice about whether or not to deactivate the shocking function, the following points should be emphasized during the discussion.

- Leaving the defibrillation function on could potentially cause the patient to experience pain if the device delivers shocks near the end of life.
- Turning off the shocking function means the device will not be able to provide all of the available methods of life-saving therapy in the event of a potentially fatal heart rhythm. Leaving the shocking function active

does not guarantee, however, that in the event of an arrhythmia the heart will return to a normal pattern of beating.

- Turning off the ICD will not cause death.
- Turning off the ICD will not be painful, nor will a patient's death be more painful if it is turned off.
- Decisions about deactivating a pacemaker are often made separately from the decision to turn off a defibrillator, and depend on the indication for the pacemaker and the patient's underlying intrinsic cardiac rhythm. Both are justifiable, however, on ethical grounds depending on the patient's overall goals of care. Deactivating a pacemaker may result in changes in a patient's symptoms. Consultation before deactivation with a cardiologist and/or electrophysiologist is often advisable to assure that appropriate treatments are readily available if the pacemaker is deactivated.

PROCESS FOR RE-PROGRAMMING THE ICD

If a decision has been made to deactivate the shocking function of the ICD, the hospice nurse will inform the medical director to let him/her know the decision has been made to re-program the device so it will no longer deliver shocks.

Note: Re-programming an ICD in this manner will stop it from ever delivering shocks. Placing a magnet over the ICD will stop it from sensing the rhythm and delivering a shock, but only while the magnet is physically present over the device.

If the patient is ambulatory, the nurse will contact the patient's cardiologist or electrophysiologist to arrange for the patient to come to the office to have the device re-programmed so the shocking function can be deactivated.

If the patient is not able to leave his/her place of residence, then the hospice nurse will develop a plan with the attending physician for the re-programming of the patient's ICD, which may include one of the following processes:

- The patient's cardiologist/electrophysiologist or a member of the team will be contacted to come to the patient's place of residence to re-program the device.
- A member of the hospice team with special training in the deactivation of ICDs will arrange to borrow the equipment (similar to a small laptop computer) from the cardiologist/electrophysiologist and bring it to the patient's place of residence to re-program the device. Equipment may be manufacturer specific, so this member of the team must know which manufacturer made the patient's ICD.
- A representative from the device manufacturing company, after appropriate consultation with the hospice medical director and/or the patient's cardiologist/electrophysiologist will come to the patient's place of residence to re-program the ICD.

In any situation where the patient is not ambulatory, the hospice nurse will be present in the place of residence during the re-programming process to provide emotional support to the patient/family/surrogate.

PROCESS FOR DEACTIVATION OF AN ICD IN AN EMERGENT SCENARIO

If there is a decision for the shocking function of the ICD to remain active, a magnet designed for cardiac devices should be left in the patient's place of residence in the event of an emergent scenario where the patient is being repeatedly shocked. It should be explained to the family that if a patient is receiving repeated shocks from the ICD, then placing the magnet over the device will stop it from sensing the cardiac arrhythmia. The magnet will need to be taped in place, as it only stops the ICD from sensing. (An ICD which does not sense will not deliver treatments.) Once the magnet is removed the ICD will begin sensing again and may again deliver shocks.* The magnet is heavy and may not be comfortable if left in place for an extended period of time. If the family is not comfortable performing this procedure themselves, the magnet should still be left in the place of residence so in an emergent situation a hospice nurse who arrives will have the tools necessary to suspend the shocking function of the device.

POST-MORTEM CARE

After a patient has died, the ICD will not deliver a shock. If a magnet has been taped to the chest, it can be removed as soon as a nurse has verified the patient no longer has cardiac function. If the body is to be cremated, the funeral director should be notified of the presence of an ICD, as incinerating the battery can lead to its explosion.

- * Note: At the time this protocol was written, there was one ICD on the market which, when placed in the presences of a magnet for a brief period of time, would be permanently re-programmed to completely deactivate the shocking function. If one is not sure of the exact specifications of a patient's ICD the best practice is to keep the magnet in place.