

EXPLANTED PACEMAKERS AND DEFIBRILLATORS CIRCUITS WITHIN HEALTHCARE FACILITIES

Goals

- Environmental goals: respecting waste disposal rules as regards healthcare waste powered by batteries.
- Humanitarian goals: collecting pacemakers and defibrillators with a satisfactory remaining battery lifetime and shipping them in developing countries.

Device explant

1. Device replacements in operating blocks or interventional rhythm rooms

Most of the time, medical devices must be replaced because battery gets weak or pacemaker / defibrillator system has to be improved. Explanted devices are steeped in a detergent/disinfectant bath such as Anios Clean Excel D ® during 15 minutes. Then, they are forwarded to the death chamber, with a traceability sheet. The up-dated list of validated detergents will be accessible through the following link: <http://cclin-sudest-apps.chu-lyon.fr/ProdHyBase/produit/usage.php>

2. Death in patients with implantable devices

Healthcare procedure in hospital wards

Medical devices should not be removed in hospital wards, even when ward physicians are authorized to do so. It is wiser when mortuary technicians have a delegation to carry out medical device explants by themselves in optimal conditions. Defibrillators are deactivated as far as possible.

The physician specifies on death certificates when there are cardiac implantable electronic devices (CIED), should such devices be explanted or not in the healthcare unit.

The nurse fills out death records, specifies when there are implantable devices and the traceability sheet is forwarded to the death chamber together with the body of the deceased.

Death chamber procedure

The mortuary technician takes notice of the documents, carries out body examination, and removes non explanted devices after applying a magnet if the defibrillator is deactivated. Electrodes are unscrewed from connectors when possible, and left in place before extracting the connector block.

The medical officer will then attest pacemaker explants by signing implantable device explant certificates.

Death certificates and implantable device explant certificates are both forwarded to the government registration services.

The deceased person's family is informed about the possibility of donation for humanitarian goals and when appropriate the family may refuse consent.

Decontamination

Decontamination is carried out in the death chamber by a technician who is protected by wearing nitrile gloves and glasses. Explanted devices are steeped in a detergent/disinfectant bath (as mentioned above) for 15 minutes according to the requested dilution: 1 bag of 25 ml for 5l of water. Then devices are brushed, rinsed under clear water, dried, packed up and labeled with date and hours of beginning and end of disinfection. Traceability sheets related to decontaminated devices are forwarded to the death chamber.

Receiving explanted devices from other healthcare facilities

Devices may be explanted in neighbor healthcare facilities which sometimes are members of the same Hospital Community of Territory. Such devices are forwarded to the death chamber after decontamination in their home establishment, according to a preparation respecting the procedure mentioned above.

Donating medical correspondents and donating thanatopractitioners must respect the same decontamination procedures, individual packing and traceability as regards pacemakers they ship for humanitarian goals. You can seek recommendations online on the association's site <http://stim-developpement.org> where you can print a traceability sheet to be forwarded together with donated pacemakers.

Sorting, disposing of and recycling CIED

The death chamber technician carries out the first sorting according to the device model as defined in the document entitled « Reusable CIED» which is regularly updated by the association and that you can read online. Then, within the cardiology department, rhythmologists or rhythmology healthcare workers achieve sorting devices taking into account date of pacemaker implantation and specific device data.

1. Non-reusable devices

More than 3 years have passed since pacemaker implantation or devices have an estimated residual longevity of less than 5 years. Devices are sorted according to their trademark. Then, they are forwarded to companies destroying healthcare waste powered by batteries or directly shipped to manufacturers.

2. Reusable devices for humanitarian goals

Less than 3 years have passed since pacemaker implantation and devices have an estimated residual longevity of over 5 years. Devices are programmed according to a limiting power consumption mode, defibrillation functions are deactivated.