



Netherlands Heart Rhythm Association (NHRA)

The Netherlands Heart Rhythm Association is part of the Dutch Society of Cardiology (Nederlandse Vereniging voor Cardiologie, NVVC) and consists of 173 members. It strives to represent all cardiologists (academic and non-academic) in the field of clinical EP and devices. Four times a year a digital meeting is organized.

Board committee:

Chairman:

C.P. Allaart

Vice chairman:

S.C. Yap

Other members:

L. van Erven

V.F. van Dijk

G. Tahapary

Device Committee

In the Netherlands, CIED implantation are subject to volume criteria per cardiologist and center. ICD implantation and follow-up is restricted to white-listed hospitals, where cardiologists and technicians meet prespecified quality standards for both education and experience, such as EHRA certification. Nationwide, around 90 hospitals exist. In most of these, pacemaker implants and follow-up are performed whereas 26 have license to implant and follow-up ICD's. Another 20 are certified for follow-up of ICD's. The Device Committee is a subcommittee of the NHRA consisting of 8-12 cardiologists, concerned with device procedures as well as follow-up and trouble shooting and working in the different hospitals throughout the country. The committee aims to monitor the quality of care regarding CIEDs and to address issues surfacing in the field as far as CIED care is concerned. For field actions and dear doctor letters from the industry, the problem is analyzed, and a joint



recommendation is formulated that can be used by healthcare providers in the country to manage the field action.

Guidelines Committee

Each and every guideline needs to be evaluated on its merits and applicability in the Dutch situation. Therefore, there is an intensive cooperation with the Dutch Society of Cardiology concerning amendments with every (new) ESC guideline, but also in case of guidelines in other fields involving cardiac issues. Recently, the Dutch ministry of Healthcare held a project concerning value based healthcare about ICD implantations. This led to a Dutch position paper (NVVC endorsed) regarding the indications of ICD in case of dilated cardiomyopathy, probably resulting in less implantations.

Some issues are not well represented in international literature, although important. This has led to some important national guidelines (about criteria concerning education in EP and device implantations and standard operating procedures in hospitals). One of the unique features in the Netherlands are minimal volume criteria for EP procedures and implantations.

NHRA congress

The NHRA organizes an annual congress. Traditionally, this congress is held the day before the NVVC fall meeting and offers the audience a varied program on device as well as electrophysiology topics. Speakers are mainly established Dutch electrophysiologists and device cardiologists, but every year there is also a session on Dutch trials often presented by PhD students. Almost every year the organization attracts an international keynote speaker as well. One of the highlights of the meeting is the 'Bert Thalen lecture' accompanied by the Bert Thalen medal, an honorary lecture for a cardiologist in the Dutch field of Electrophysiology with great achievements.

The audience exists besides many Dutch electrophysiologists of device cardiologists, fellows in EP, general cardiologists, PhD students and pacemaker and EP technicians. The congress has over 150 attendants yearly.

Netherlands Heart Registration

Previously, national data concerning device implantations was collected in a database (NCDR, National Cardiac Device Registry). In order to improve quality, feedback and research the database was broadened to more interventions and a cooperation with the National Society of Thoracic Surgery was formed.



The Netherlands Heart Registration is a service-oriented quality and registration organization where high-quality and complete registration of all cardiac interventions and cardiac operations in the Netherlands takes place. In addition, registrations are also designed for various, common syndromes.

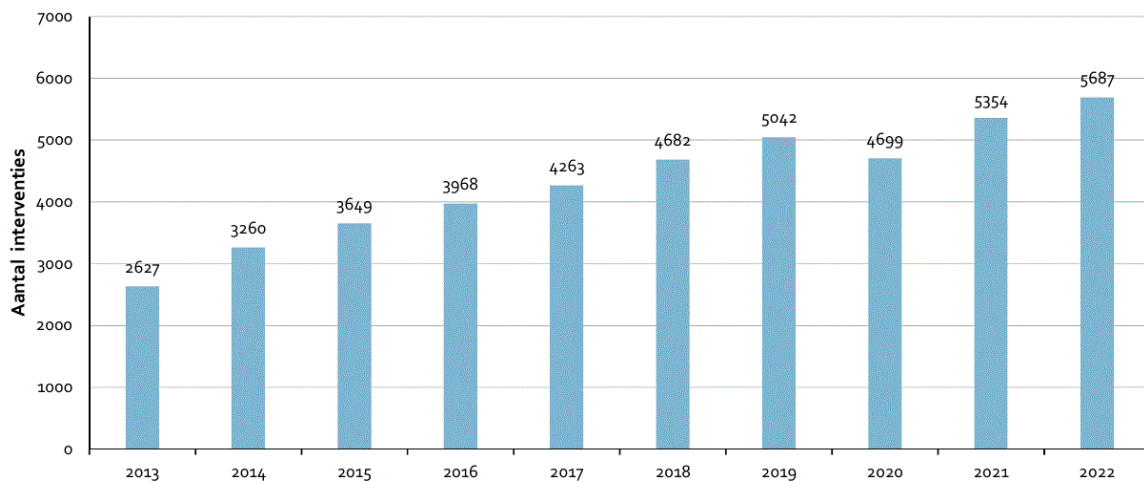
Objective

The objective of the NHR is to contribute to maintaining and further improving quality of care; by collecting, analysing and reporting back relevant data on the treatment of patients with cardiac diseases. Supporting this objective will be:

- Reliable reports at various levels: hospital, pathology, patient etc;
- Scientific research;
- Traceability of implants;
- The strong involvement of medical specialists from the participating centres as well as the involvement of stakeholders. Consultation structures will be set up for both groups;
- Transparency for patients, cardiologists and thoracic surgeons, external regulators, health insurers and other stakeholders.

Figuur 1. Atriumfibrilleren - Katheterablatie - aantal interventies per jaar

Bron: NHR



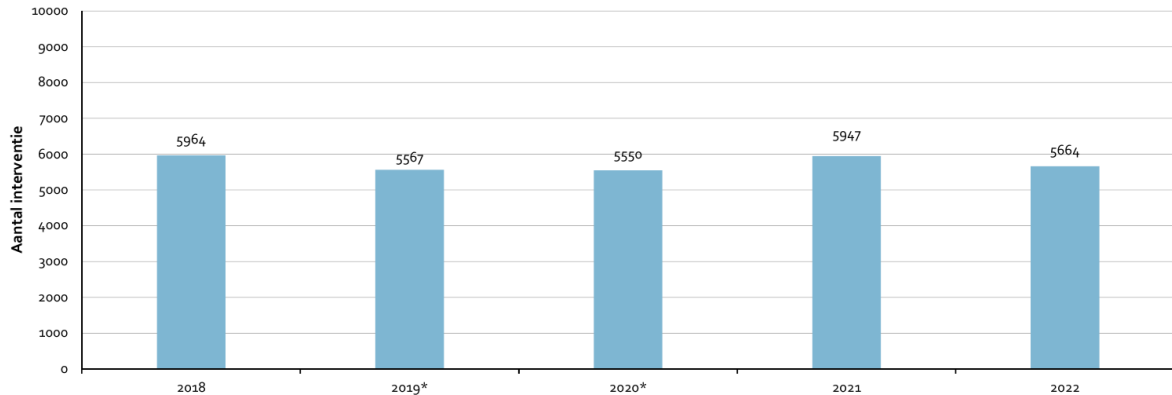
Total number of AF ablations





Figuur 3. Pacemaker/ICD - ICD - aantal interventies per jaar

Bron: NHR



*In 2019 en 2020 ontbreken data van 1 centrum. In 2022 ontbreken data van kwartaal 4 van 1 centrum.

Total number of implanted devices

Education

In 2018, the NHRA published the updated Dutch clinical cardiac electrophysiology curriculum. This document was prepared by the *Commissie Opleiding en Registratie Elektrofysiologie* (CORE). The updated CORE curriculum forms the basis for education in fellowship programs across all 15 EP centers. Only fully certified cardiologists are candidates for a 2-years EP fellowship. The number of required procedures during the EP fellowship is in line with the requirements for level 2 ECES/ECDS.

For registration as a cardiologist-electrophysiologist in the Netherlands, candidates must complete their EP fellowship and be certified in EHRA EP (ECES) and EHRA CP (ECDS). To be recertified as a cardiologist-electrophysiologist, at least 375 catheter ablations should be performed in 5 years as first operator.

The CORE curriculum also describes the requirements for training centers and supervisors. The training center should have at least 2 electrophysiologists and a minimum of 250 catheter ablations should be performed annually. Five centers are also official EHRA recognized training centers (ERTC) (see list below). The ERTC quality label provides a means for hosting EHRA training fellows and EOTP (EHRA Observational Training Programme) fellows.





List of EHRA recognized training centers (ERTC) (alphabetically order):

Center	Programme director
Erasmus MC	Dr. S.C. Yap
Isala Heart Center	-
Leiden UMC	Prof. dr. K. Zeppenfeld
Maastricht UMC	Dr. J. Luermans
OLVG Heart Center	Dr. J. de Jong