

# **iCARDEA: Practical Data Integration for the Follow-up of Cardiovascular Implantable Electronic Device Patients in Cardiological Departments**

Maohua Yang\*, Catherine E Chronaki, Christian Lüpkes, Andreas Thiel, Manuela Ploessnig, Lynne Hinterbuchner, Elena Arbelo, Asuman Dogac, Marco Eichelberg and Andreas Hein

Oldenburg, Niedersachsen, Germany

**Introduction:** In cardiology departments supporting implantation and follow-up of Cardiovascular Implantable Electronic Device (CIED) patients, patient data reside in autonomous healthcare information systems that support different standards and proprietary formats, and it is up to each organization to choose Electronic Health Records (EHR) integration solutions, underlying technologies, and standards based on their own needs, experience, and budget.

Moreover, the effective use of remote CIED tele-monitoring and Personal Health Records (PHR) can trigger alerts and contribute background information on activity and lifestyle.

However, without efficient data integration, significant gaps in the workflow will continue to hinder immediate availability of the disease and device related data needed by healthcare professionals and their patients, and thus optimal use of clinical information and human resources.

**Methods:** This paper presents the iCARDEA healthcare integration platform from the view point of CIED patient follow-up in a cardiology department, driven by the story of fictitious Mr. Schmidt, who is using the latest remote monitoring technology, manages his own PHR, and hopes to live a long active life, supported by the latest developments in eHealth technology. A revised workflow for the efficient and effective follow-up of CIED patients based on adaptive personalized care plans is presented.

**Results & Conclusions:** Clinical guidelines are used in a practical and incremental approach based on data integration and workflow reengineering to effectively support in-person and remote follow-up of CIED patients, an evidence-based approach that needs to be embraced by professional societies in healthcare.