

# Abstract

According to international standards, patients carrying a cardiac pacemaker have to go through periodic follow-up examinations, in which the basic functions of the pacemaker as well as the discharge level of its battery are tested. In an ongoing study at the LKH Graz it is currently investigated, whether - by the use of telemedicine for pacemaker follow-ups - patient transportations can be reduced, specialized pacemaker ambulances can be disburdened, and overall costs can be reduced. In the course of the present thesis, a web-based viewer for displaying electrocardiograms of pacemaker patients has been developed, which helps optimizing the telemedical aftertreatment of pacemaker patients. A special focus was put on the visualization of all parameters needed for telemedical pacemaker follow-ups, as well as on the simple usability in the daily clinical routine. The viewer was integrated into an existing research network for telemedical pacemaker follow-ups and optimized according to the feedback of the medical personnel. The application has shown to be useful for telemedical pacemaker follow-ups and is currently utilized in a study with 300 patients at the LKH Graz.

**Keywords:** *Telemedicine, Pacemaker, Follow-up, ECG*