Background: The number of implantation of cardiac implantable electric devices (CIEDs) is increasing steadily and rapidly, and as results, hospital workload is also increasing. Many studies showed that remote monitoring system (RMS) in patients with CIEDs is safe and effective for devices follow-up. While the introduction of RMS is expected to reduce the hospital workload, it was required more manpower to analyze transmitted data. To evaluate the efficacy of RMS, we assessed economical benefit of RMS.

Methods and Results: We assessed economical efficacy of RMS in patients with CIEDs by economical simulation model. Economical evaluation was based on the clinical data in Saiseikai Kumamoto Hospital from January 2007 to December 2010. To date, Carelink® (Medtronic), Merlin.net® (S.J.M.), and Biotronik Home Monitoring® (Biotronik) was available as RMS in Japan. We analyzed 1279 patients with pacemaker and 473 patients with ICD/CRT-D who were followed in our hospital. At 2010, 6% of patients in pacemaker, and 37.4% in ICD/CRT-D were introduced to RMS. This simulation model revealed that our hospital could never get economical benefit without reimbursement of RMS. However, when we could accept reimbursement of telemedicine without visiting hospital, the more numbers of RMS could lead the more benefits.

Conclusions: If we want to encourage broad use of RMS, the reimbursement of RMS was needed.

Keywords: remote monitoring, implantable electric devices