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1: [Arch Intern Med.](#) 2007 Apr 9; 167(7):669-75.

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### Permanent pacemaker and implantable cardioverter defibrillator infection: a population-based study.

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**BACKGROUND:** The incidence of cardiac device infection is not well understood. Bloodstream infection (BSI) in patients with permanent pacemakers or implantable cardioverter-defibrillators (hereafter, defibrillators) may reflect device infection. **METHODS:** Retrospective, population-based cohort study of all adult patients with cardiac devices who resided in Olmsted County, Minnesota, from 1975 to 2004. The medical linkage-system of the Rochester Epidemiology Project and standardized criteria were used to identify all cases of BSI and device infection. The incidence of device infection was calculated with person-years of follow-up after device implantation. **RESULTS:** A total of 1524 patients with cardiac devices were included in the cohort. Total person-time of follow-up was 7578 years. The incidence of definite device infection was 1.9 per 1000 device-years (95% confidence interval [CI], 1.1-3.1). The incidence of pocket infection without BSI was 1.37 per 1000 device-years (95% CI, 0.62-3.05), and pocket infection with BSI or device-related endocarditis 1.14 per 1000 device years (95% CI, 0.47-2.74). The cumulative probability of device infection was higher among patients with defibrillators compared with those with pacemakers,  $P < .001$ . Twelve (54.6%) of 22 cases of *Staphylococcus aureus* BSI had definite or possible cardiac device infection vs 3 (12.0%) of 25 cases of bloodstream infection due to gram-negative bacilli ( $P = .004$ ). **CONCLUSIONS:** To our knowledge, this is the first population-based study to describe the incidence of cardiac device infection. Device infection was common during episodes of *S aureus* BSI. The rate of cardiac device infection was higher in patients with defibrillators than in those with pacemakers.

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