Introduction: Pacemaker therapy for guideline indicated patients with sinus node dysfunction (SND) remains low in developing geographies. We sought to better understand the care pathways of bradycardia patients and to assess if a specific process improvement intervention could increase the adoption of pacemakers in this patient population.

Methods: IMPROVE Brady was a quality improvement initiative conducted at centers in India and Bangladesh for bradycardia patients. The prospective study was conducted sequentially in two phases. Phase I assessed the existing care pathways for diagnosis and treatment of symptomatic SND. Phase II evaluated the impact of specific process improvement interventions consisting of education, diagnostic algorithms, and documentation tools on diagnosis and adoption of pacemaker therapy and quality of care. The study enrolled patients in both Phases with a heart rate of $\leq 50$ beats per minute and symptoms including syncope, dizziness, and/or dyspnea. Patients were followed to identify the proportion diagnosed with symptomatic SND and subsequently treated with pacemaker therapy. SND patients implanted with a Medtronic family pacemaker in Phase II completed a quality of life survey (SF-12) before the implant procedure and at 6 months post implant. The primary caregiver of the patients was asked to complete the Zarit Burden Interview at the same timepoints to assess caregiver burden.

Result: A total of 470 patients were enrolled and met inclusion criteria in Phase II of the IMPROVE Brady study across 8 centers. Patients were on average 58 years of age, 73% were male, and 93% had completed at least a primary education. A SND diagnosis was made in 409 (87%) patients of whom 130 received pacemaker therapy and of whom 76 were implanted with a Medtronic family pacemaker. There was a statistically significant improvement in quality of life at 6 months, with approximately equal improvements in both mental and physical components (see Table). There was a significant reduction in caregiver burden following pacemaker therapy.

Conclusion: Among patients with symptomatic SND from South Asia, significant and clinically meaningful improvements in quality of life and reductions in caregiver burden were observed after receiving guideline-indicated pacemaker therapy. This represents the first report on caregiver burden...
using the Zarit Interview in a bradycardia population.