



Utilization of Deep Brain Stimulation Across Kaiser Permanente: A Descriptive Epidemiologic Review, 2010-2021

In a retrospective study researchers analyzed outcomes for patients who received DBS implants across four Kaiser Permanente regions, providing a view of DBS practice patterns and patient outcomes over more than a decade.

"This study provides one of the largest real-world evaluations of deep brain stimulation within an integrated healthcare system, offering valuable insights into practice patterns, device utilization, and long-term outcomes. By understanding factors associated with readmissions, emergency visits, and reoperations, we can continue to refine patient selection, perioperative care, and long-term DBS management."- Mark F. Sedrak, MD, Department of Neurosurgery
TPMG, Redwood City, CA Study Co-Author

Study Details

During the 11-year study period, 1,158 patients had a complete DBS system. 769 patients received bilateral systems while 389 received unilateral systems.

- Within 90 Days:
 - 14.3% ED visit rate
 - 8.5% readmission rate
 - 1.2% infections rate
- Median time to implantable pulse generator (IPG) replacement was 3.5 years, with 14.5% of patients requiring replacement and 18.1% undergoing a reoperation within three years.
- Five-year all-cause mortality was 9.3%.

Practice Considerations

This study highlights practice patterns over a decade in a large community-based healthcare system. Implantation techniques varied, and utilization of rechargeable systems increased over time. Understanding factors associated with readmissions, emergency visits, and reoperations may help improve outcomes and reduce complications following DBS implantation.

[Link to Published Manuscript](#)

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