ECONOMIC IMPACT DERIVED FROM THE USE OF A CATHETER IMPREGNATED WITH ANTIBiotic TO PATIENTS WITH HydroCepHalus TREATED WITH EXTERNAL SHUNTS IN MEXICO
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OBJECTIVES: To study the economic impact derived from the use of antibiotic-impregnated catheter in hydrocephalus patients with external shunts from a Mexican public hospital perspective (IMSS).

METHODS: An Excel-based decision tree was used to estimate the economic consequences of using an antibiotic-impregnated catheter (treatment group) vs. a catheter without antibiotic (control group) for target population. Given procedure volume variability in comparable hospitals, base-case scenario assumed 100 patients with hydrocephalus and one catheter per patient over a 1-year placement. Antibiotic-impregnated device was assumed as second-line treatment for both groups. Infection rates after catheter placement for considered alternatives were taken from published international meta-analyses (24% vs. 8.7% for treatment and control groups, respectively). Unitary costs were provided by institutional resources (antibiotic-impregnated device) and by public bid results for base-case hospital (traditional catheter).

Considered time horizon was <1 year, thus no annual discount rate for costs was necessary. Inflation-adjusted DRGs from IMSS’s high specialty hospitals were used as hospitalization (catheter placement) and catheter replacement costs. Results are shown in 2015-adjusted USD. Due to low reinfection rates documented in literature, posterior infections and mortality were not considered. RESULTS: The total cost of care for the patient with antibiotic strategy resulted in $1,640,650, with the non-antibiotic catheter strategy in $1,542,200, resulting in additional $684 per patient treated with the antibiotic-impregnated device and $1,400 per avoided infection (ICER). The use of antibiotic-impregnated catheters appears to be a cost-effective alternative to treat hydrocephalus in pediatric patients in the Mexican setting. Local high-specialty hospitals should consider the adoption of this alternative as it yields less infections in target population.

COST-UTILITY OF DEEP BRAIN STIMULATION FOR THE TREATMENT OF ADVANCED PARKINSON’S DISEASE IN THE UNITED STATES
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OBJECTIVES: To study the cost-utility of deep brain stimulation (DBS) alone, using the latest clinical and cost data for the U.S. healthcare system.

METHODS: We used a decision-analytic state-transition (Markov) model to predict Parkinson’s disease progression and associated costs for the two treatment strategies. We estimated the discounted incremental cost-effectiveness ratio (ICER) in U.S. dollars per quality-adjusted life-year (QALY) from the Medicare payer perspective, considering a 10-year horizon. We evaluated the robustness of our projection through extensive deterministic sensitivity analyses. RESULTS: Over 10 years, DBS treatment led to discounted total costs of $129,345 compared to $91,026 for BMT and added 1.69 QALYs more than BMT, resulting in an ICER of $22,713 per QALY. The ICER was relatively insensitive to variations in input parameters, with neurostimulator replacement timepoint, costs related to DBS implantation, and costs related to the treatment of disease-related falls having the greatest effects on the model output. CONCLUSIONS: Our model-based analysis suggests that DBS is a cost-effective treatment strategy in the U.S. healthcare system across a wide range of assumptions. DBS yields substantial improvements in health-related quality of life at a value profile that compares favorably to other well-accepted therapies.

ECONOMIC OUTCOMES AMONG MEDICARE PATIENTS RECEIVING SKIN SUBSTITUTE TREATMENTS FOR DIABETIC FOOT ULCERS
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OBJECTIVES: To compare the real-world medical services utilization and associated costs of Medicare patients with diabetic foot ulcers (DFU) treated with either of the following two types of skin substitutes: bilayered living cellular construct (BLC) or human fibroblast-derived dermal substitute (HFDS) with those receiving conventional care (CC).

METHODS: DFU patients were selected from Medicare de-identified administrative claims using ICD-9-CM codes. The analysis followed an “untethered” cohort, whereas patients assigned based on use-of-ICD (CC) ($3) (≥ ≥ 1 claim for a DFU-related treatment procedure or podiatrist visit and no evidence of skin substitute use) for treatment of DFU in 2006–2012. Propensity score matching was used to identify matched patients between CC patients and both treatments. Data for 502 matched BLC-CC patient pairs and 222 matched HFDS-CC patient pairs were analyzed. Relative to matched CC patients, BLC and HFDS patients had fewer days hospitalized (BLC: -33.5% p < 0.01, HFDS: -24.2% p < 0.01) and fewer emergency department visits (BLC: -32.2% p < 0.01, HFDS: -25.7% p < 0.01), as well as lower amputation rates (BLC: -27.6% p < 0.04, HFDS: -22.2% p < 0.09) during the 18-month follow-up period. While BLC and HFDS patients did have higher costs for outpatient services (BLC: +$7,100 p < 0.01, HFDS: +$11,947 p < 0.01), overall, these patients had lower average per-patient healthcare costs during the 18-month follow-up period compared with their respective matched CC counterparts (BLC-$5,253 p < 0.01, HFDS-$6,951 p < 0.01). The use of BLC or HFDS for DFU may lower overall medical costs through reduced utilization of costly healthcare services.