PM29

ECONOMIC IMPACT DERIVED FROM THE USE OF A CATHETER IMPREGNATED WITH ANTIBiotic IN PEDIATRIC PATIENTS WITH HYDROCEPHALUS TREATED WITH EXTERNAL SHUNTS IN MEXICO

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OBJECTIVES: Evaluate the economic impact derived from the use of antibiotic-impregnated catheter in the treatment of hydrocephalus in pediatric patients with external shunts from a Mexican public hospital perspective (MPPS).

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 pediatric patients with hydrocephalus were operated on during one year. Outpatient placement after meningitis infection was used as second-line treatment for both groups. Infection rates after catheter placement for considered alternatives were taken from published international meta-analyses (2.4% vs. 8.7% for treatment and control groups, respectively). Unitary costs were provided by internal 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 DRG from MPPS’ high specialty hospitals were used as hospitalization (catheter placement) and catheter replacement costs. Results are shown in 2015-adjusted USD. Due to rare infection rates documented in literature, posterior infections and mortality were not considered.

RESULTS: The total cost of the device with antibiotic strategy resulted in $1,610,600, while the non-antibiotic catheter strategy $1,542,200, resulting in an additional $684 per patient treated with the antibiotic-impregnated device and $1,410 per avoided infection. CONCLUSION: 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.

PM30

COST-UTILITY OF DEEP BRAIN STIMULATION FOR THE TREATMENT OF ADVANCED PARKINSON’S DISEASE IN THE UNITED STATES

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OBJECTIVES: Deep brain stimulation (DBS), which uses an implanted device to modulate brain activity, has been shown to be clinically superior to medical therapy for treating advanced Parkinson’s disease. Our objective was to study the cost-impact of combination with medical therapy compared to medical therapy (BMT) 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 project 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 projections 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 the neurostimulator replacement timepoint, costs related to DBS implantation, and costs related to the treatment of disease-related falls having the greatest effects on ICER. Among the investigated scenarios, a 5% discount rate, ICERs remained under $50,000 per QALY. Longer discount rate than 5 years and younger treatment age were associated with greater cost-effectiveness.

CONCLUSIONS: Our findings suggest 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.

PM31

ECONOMIC OUTCOMES AMONG MEDICARE PATIENTS RECEIVING SKIN SUBSTITUTE TREATMENTS FOR TREATMENT OF 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 (HDSD) with those receiving conventional care (CC).

METHODS: DFU patients were selected from Medicare identified administrative claims using ICD-9-CM codes. The analysis followed an “intent-to-treat” basis with cohorts assigned based on use-of-C (C), (i.e., 0.19) during the follow-up period.

RESULTS: 80 percent of the patients were males and their mean age was 72.1 ± 10.3 years. The cohort with DFU included were receiving PCI first time. Socio-demographic, clinical diagnostic and risk factor data was collected using a pilot tested data collection sheet. EQSD was used to measure the health status at the beginning of the treatment for patients and caregivers. Our model-based analysis was conducted in R, simulated a low-risk ward and a high-risk ward (e.g. an intensive care unit). Patients were assumed to move between three states: susceptible, exposed and colonized.

CONCLUSIONS: There is a significant difference in the cost incurred and health related quality of life achieved among both groups due to disparity in economic status.

PM32

COST-EFFECTIVENESS OF THE TREATMENT OF THE SPHENOPALATINE GANGLION (SPG) FOR THE TREATMENT OF CHRONIC CLUSTER HEADACHE: A MODEL-BASED ANALYSIS BASED ON THE PATHWAY-CH1 STUDY

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OBJECTIVES: In the recent Pathway CH1 study, on-demand stimulation of the sphenopalatine ganglion (SPG) by means of an implantable neurostimulation system was proven to be a safe and effective therapy for the treatment of chronic cluster headache (CCH). Our objective was to study the economic and humanistic outcomes among patients with CCH receiving both SPG stimulation and systemic treatment versus those receiving only medical therapy for 4 weeks.

METHODS: Clinical data from the Pathway CH1 study were used as input for a model-based projection of the cost-effectiveness of SPG stimulation treatment for 5 years. Medical management as the comparator treatment was modeled on the basis of clinical events observed during the baseline period of CH-1. The costs of treatment were derived from a previously published cluster headache costing study and 2014 medication, neurostimulator, and procedure costs. We computed the 5-year incremental cost-effectiveness ratio (ICER) in euros per quality-adjusted life year (QALY), with and costs of effects discounted at 3% per year. RESULTS: SPG stimulation was promoted over medical therapy in 325 QALYs during the study period, while adding 681 in cost, resulting in a 5-year ICER of €2,097 per QALY gained. Longer follow-up periods, higher baseline attack frequency, and higher utilization of attack-aborting medications led to overall cost savings from SPG stimulation in either cost-effectiveness or cost-utility across all scenarios investigated in sensitivity analyses.

CONCLUSIONS: Our model-based analysis suggests that SPG stimulation for the treatment of chronic cluster headache, under the assumption of sustained therapy effectiveness, leads to meaningful gains in health-related quality of life and is a cost-effective treatment strategy in the German healthcare system.

PM33

HUMANISTIC AND ECONOMIC OUTCOMES AMONG PATIENTS RECEIVING PERCUTANEOUS INTERVENTION

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OBJECTIVE: The objective was to study the economic and humanistic outcomes among patients undergoing percutaneous coronary intervention (PCI) in a tertiary care setup in South India. METHODS: Total 240 acute coronary syndrome patients visiting to tertiary multispeciality hospital in south India were included in to the study from 2011 to 2013. Prior ethical approval was taken. Patients undergoing the intervention were included in the study. Results were derived from the patients included were receiving PCI first time. Socio-demographic, clinical diagnostic and risk factor data was collected using a pilot tested data collection sheet. EQSD was used to measure the health status at the beginning of the treatment for patients and caregivers. Our model-based analysis was conducted in R, simulated a low-risk ward and a high-risk ward (e.g. an intensive care unit). Patients were assumed to move between three states: susceptible, exposed and colonized.

CONCLUSIONS: There is a significant difference in the cost incurred and health related quality of life achieved among both groups due to disparity in economic status.

PM34

A SYSTEM DYNAMICS MODEL FOR THE COST-EFFECTIVENESS EVALUATION OF INTEGRATED WHOLE-GENOME SEQUENCING FOR DETECTING AND MONITORING OUTBREAKS OF MRSA

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OBJECTIVES: To develop a system dynamics model with a stochastic component to analyse the cost-effectiveness of bacterial whole-genome sequencing (WGS) versus culture methods to detect and monitor outbreaks of methicillin-resistant Staphylococcus aureus (MRSA) in the UK National Health Service (NHS). METHODS: The model, developed in R, simulated a low-risk ward and a high-risk ward (e.g. an intensive care unit). Patients were assumed to move between three states: susceptible, exposed and infected. Healthcare costs included were identified from peer-reviewed primary research papers, systematic reviews, published models, data published in the NHS and from clinical experts. Relevant costs were identified from the Department of Health guidelines on MRSA infection management, and other pub-