

PND53 ECONOMIC EVALUATION OF CLINICAL PATHWAYS MANAGEMENT FOR CEREBRAL INFARCTION IN RURAL AREA OF CHINA

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Objectives: Ongoing reforms to China's county-level public hospitals have generated an interest in developing evidence-based clinical pathways (CP). A pilot project in four counties has been embarked, linked with payment reform on cerebral infarction inpatient subjects. This study aimed to understand the impacts of the CP comprehensive intervention on treatment effectiveness and the use of resources. **Methods:** A retrospective observational study was conducted using de-identified data collected from four pilot sites. A mixed-methods approaches have been adopted to process the data analysis, including propensity score matching (PSM), interrupted time series (ITS) with segmented regression, and cost-effectiveness analysis (CEA). Prior to ITS analysis, the PSM was employed to ensure the similarity of baseline characteristics between pre and post groups. Then ITS analysis has been performed to describe the overall effects of the intervention on pre-defined outcomes. Afterwards, a CEA analysis has been developed using Markov model with the help of Tree-age software, to calculate the incremental cost effectiveness ratio (ICER). Meanwhile, the probability sensitivity analysis (PSA) was performed to testify the influential factors. **Results:** Out of 2753 patients, 765 subjects were included after using the nearest neighbor PSM for age, gender, severity of disease, number of complications. The ITS analyses results showed that the advantage of CP intervention in term of average length of stay, total hospitalization expenses, medication costs, laboratory expenses, and quality-adjusted life years (QALY) estimated by EQ-5D. The ICER was 16756 RMB/QALY, which favored the choice of CP intervention compared to threshold. The PSA analysis showed that age, the number of days in hospital, and admittance of CP are the top three influential factors in sensitivity analysis. **Conclusions:** The evaluation findings and lessons learned from the pilots were widely discussed and disseminated to policy-makers to enable evidence-based decision-making for CP implementation in rural China.



PND54 ANNUAL HEALTH INSURANCE TREATMENT COST OF INTRACRANIAL INJURY BASED ON ROUTINELY COLLECTED REAL-WORLD FINANCING DATA

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Objectives: Intracranial injuries cause significant burden for healthcare systems and the society. Our aim was to determine the annual health insurance treatment cost of intracranial injury in Hungary. **Methods:** Data were derived from the financial database of the Hungarian National Health Insurance Fund Administration (NHIFA), for the year 2018. Data analysed included annual health insurance costs, patient numbers and cost distribution calculated for age groups and sex. The following cost categories were included into the study: general practice care, home care, in- and outpatient care, medical imaging, laboratory diagnostics, pharmaceuticals and medical aids. Patients with intracranial injury were identified with the following code of the International Classification of Diseases 10th revision: S06. **Results:** In 2018, the Hungarian NHIFA spent 2.677 billion Hungarian Forints (HUF) on the treatment of patients with intracranial injury which equals to 9.90 million American Dollars (USD), or 8.39 million Euros (EUR). 64.5% of costs was spent on the treatment of male, 35.5% on female patients. The highest patient numbers were in CT diagnostics: 10,019 men (52.8%), and 8,950 women (47.2%), in total 18,969 patients. Acute inpatient care (84.3% of total health insurance costs in men, 79.3% in women), CT diagnostics (9.6% in men, 13.6% in women) and outpatient care (2.1% in men, 3.0% in women) were the main cost drivers, all other forms of medical care amounted to 4.0% in men and 4.1% in women. Annual health care treatment cost per patient was 172,387 HUF (638 USD/541 EUR) in men and 106,162 HUF (393 USD/333 EUR) in women. **Conclusions:** Acute inpatient care was the major cost driver. There was minimal difference in major cost drivers between men and women. Average, annual health insurance costs per patient was 62% higher in men than in women.



Neurological Disorders - Epidemiology & Public Health

PND55 IMPACT OF BAROMETRIC PRESSURE CHANGES AND PROPHYLACTIC MIGRAINE MEDICATION USE ON THE OCCURRENCE OF SEVERE MIGRAINES: A CASE- CROSSOVER STUDY USING LINKED WEATHER AND CLAIMS DATA

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Objectives: Severe migraine patients may use prophylactic medications to reduce the number or severity of their headaches. Patients often experience a migraine after a meteorological change, and the association between these events and occurrence of severe migraines for patients with and without prophylactic use was examined.



Methods: A case-crossover design was implemented utilizing the IBM® MarketScan Weather Database, which links weather data with administrative claims data using metropolitan statistical area (MSA)-specific daily weather data and the patients' MSA from administrative claims. Patients with ≥ 1 severe migraine (a migraine-related inpatient or emergency room visit) between 2015 and 2017 were selected. The date of the first severe migraine was the 'case date.' Patients were stratified by whether or not they had a pharmacy claim for medication commonly used for migraine prophylaxis between 180 days before and 7 days after the case date. Three control dates were selected for comparison: 7 days before, 28 days before, and 7 days after the case date. Weather conditions on the case date versus control dates were compared via conditional logistic regression model to determine if weather conditions were predictive of a severe migraine for patients with or without prophylactic. **Results:** The study included 34,776 patients who met the inclusion criteria. Of these, 17,508 patients used a prophylactic, while 17,268 did not. The conditional logistic regression model revealed that for each 1 inHg increase in daily maximum barometric pressure, the odds of severe migraine increased by 9% (OR: 1.09; $p=0.025$) for patients with prophylactic, and by 56% (OR: 1.56; $p<0.001$) for those without, controlling for other weather conditions. **Conclusions:** This study utilized a novel linked weather and administrative claims database to provide real-world evidence of the impact of prophylactic medication use on severe migraine events after changes in barometric pressure.

PND56 A DESCRIPTIVE EXAMINATION OF TRENDS IN HEALTHCARE RESOURCE UTILIZATION OVER A 5-YEAR PERIOD PRIOR TO DIAGNOSIS OF ALZHEIMER'S DISEASE DEMENTIA

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Objectives: Alzheimer's disease (AD) is part of a continuum, starting with brain pathology in cognitively normal individuals, followed by an extended prodromal period characterized by a progressive decline in cognitive function. Most studies examine the 2 years before AD-dementia diagnosis (AD-DX) at most. We sought to examine trends in healthcare resource utilization (HRU) measures 5 years prior to first AD-DX. **Methods:** Individuals enrolled in a Medicare Advantage Prescription Drug plan and newly diagnosed with AD-dementia between 01/01/2012 and 06/30/2018 were identified and matched on pre-diagnosis characteristics to clinically similar individuals who did not develop AD or related dementia. HRU measures included physician office (PO) visits; inpatient admissions (IA); emergency department (ED) visits. We descriptively examined quarterly HRU rates for the AD vs. non-AD cohorts over the 5-year period prior to AD-DX. **Results:** In total, 27,308 individuals were matched and included in each group. Rates of PO encounters were relatively stable during the pre-diagnosis period. In the quarter immediately preceding AD-DX, PO service use was greater in the AD vs. non-AD cohort (3,067 vs. 2,174 per 1,000). There was an early divergence in IA and ED use 4 years prior to AD-DX: 47 and 139 per 1,000, respectively, for the AD cohort vs. 35 and 96 per 1,000 for the non-AD cohort, increasing to 180 and 590 per 1,000 in the quarter immediately before AD-DX in the AD cohort. In the non-AD cohort, quarterly IA and ED were relatively stable over the pre-diagnosis period (range: 30-41 and 92-125 per 1,000, respectively). **Conclusions:** Trends in HRU among individuals who go on to have an AD-DX showed marked differences compared with matched individuals who do not. Further research should examine specific HRU types that may serve as signals to support early identification, interventions, and patient services for individuals at high risk for AD-DX.



PND57 COMPARISON OF CLAIMS-BASED MULTIPLE SCLEROSIS DISEASE SEVERITY MEASURES IN THE MEDICARE POPULATION

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Objectives: Prior research has employed claims-based algorithms to measure multiple sclerosis (MS) disease severity. This study estimates the risk of traditional claims-based disease severity measures (relapses and hospitalizations) across algorithm determined disease severity levels. **Methods:** A sample of 6,559 patients was identified from Humana Medicare claims data from 1/1/2013-12/31/2015. Patients with MS, over the age of 18 with ≥ 2 years of continuous enrollment were included. A previously developed algorithm was used to categorize MS disease severity (low, moderate, high). Patients were divided into two groups based on Medicare eligibility, the age-eligible (over 65) and the disability-eligible (under 65) groups. Flexible parametric and cox proportional models were used to estimate the hazard ratios (HR) for relapse and MS-related hospitalization associated with disease severity and Medicare eligibility. **Results:** The disability-eligible group had higher risk for MS relapses (HR = 1.76, 95% CI 1.53-2.02) and hospitalizations (HR = 1.38, 95% CI 1.13-1.69) compared to those in the age-eligible group. The risk for MS relapses increased in the moderate (HR = 1.89, 95% CI 1.68-2.14) and high (HR = 3.69, 95% CI 3.09-4.41) disease severity groups compared to the low disease severity group. The same pattern was observed in MS-related hospitalizations, both the moderate (HR = 1.83,

