tient diagnostic codes for MS (ICD-9-CM 340) or one inpatient code during the index period (2006–2008) were included. Continuous enrollment required 6 mos pre-index and 12 mos post-index. A sub-group of newly treated patients, defined as MS patients free of DMT claims for 6 mos prior to initial MS diagnosis, were also analyzed for frequencies of relapses. Using a claims-based definition, relapses were defined as an inpatient hospitalization with a primary diagnosis of MS. Moderate relapses were defined as an outpatient visit with a diagnosis of MS in combination with a pharmacy or medical claim for a corticosteroid within 7 days following the outpatient visit. Additional data collected included relapse-related costs and length of inpatient stay. All variables were analyzed descriptively.

RESULTS: Among the 25,503 MS patients identified, mean age was 47 years and 18,027 (77%) were female. Overall, 1,479 (6.3%) patients had a relapse. 940 patients (4.0%) had a severe relapse, with an average length of inpatient stay of 5.6 days. Among the sub-group of newly treated MS patients (NTMS) (N = 15,059), 1,070 (7.1%) were classified as having a relapse, 710 (4.7%) were severe. Mean cost of relapse [NTMS] was $12,558 [$11,485] for severe, and $1,561 [$1,844] for moderate.

CONCLUSIONS: This descriptive analysis provides an updated estimate of the frequency and direct medical costs of both severe and moderate relapses among multiple sclerosis patients. The ranges of health care services used to manage a relapse reflect severity level. Further database analyses evaluating the impact of disease modifying treatment on the rates and costs of relapses is warranted.

PNDS5

USE OF TIME-TO-EVENT ANALYSES TO DEFINE EPISODES OF CARE IN SICKLE CELL DISEASE

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OBJECTIVES: With inter- and intra-patient variation in cost and health resource utilization, standard approaches to defining an episode of care (EOC) may perform poorly. This study takes into account such variation and uses time-to-event analysis within an EOC framework to examine length and cost of care for vaso-occlusive crisis (VOC) in sickle cell disease (SCD).

METHODS: Florida Medicaid administrative data from 2001-2005 were used to examine EOCs. Enrollees under the age of 65 with any inpatient or 1 inpatient or 2 outpatient claims were identified. Any claim for a corticosteroid within 7 days following a diagnosis of SCD (ICD-9 282.xx) and ≥6 months of continuous eligibility were included in the study. Episodes began with the first VOC-related claim. Parametric survival analysis was used to calculate episode length as the number of days by which survivors returned to their pre-diagnosis patient’s pre-diagnosis baseline charge. Episode costs were calculated as the difference between pre- and post-diagnosis payments. EOCs were calculated by subgroups according to age (pediatric and adult), gender, and presence of significant co-morbidity.

RESULTS: Among 2,543 patients included in the study, mean episode length was 14.4 years (standard deviation [SD] = 11.9) and 48.2% were male. Mean episode length was 11.6 days (95% confidence interval [CI]: 10.9-12.3). Pediatric patients had shorter episodes compared to adults (10.5 versus 16.4 days, respectively), but there were no differences by gender. The presence of acute chest syndrome secondary to VOC increased episode length 10.9-12.3 times, significantly. The presence of significant co-morbidity increased episode length 2.5-3.4 times significantly.

CONCLUSIONS: This descriptive analysis provides an updated estimate of the frequency and direct medical costs of both severe and moderate relapses among multiple sclerosis patients. The ranges of health care services used to manage a relapse reflect severity level. Further database analyses evaluating the impact of disease modifying treatment on the rates and costs of relapses is warranted.

PNDS5

TEMPORAL TRENDS AND GEOGRAPHIC DISCREPANCIES IN PUBLIC EXPENDITURES WITH MULTIPLE SCLEROSIS DRUG TREATMENT IN BRAZIL

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OBJECTIVES: This study aims to describe temporal trends and geographic discrepancies on public pharmaceutical expenditures with multiple sclerosis (MS) treatment in Brazil.

METHODS: Longitudinal analysis of Brazilian MS pharmacy claims as reported in the Brazilian Ambulatory Information System Database. Analyses were based on aggregate data from the 27 Brazilian states, observed annually for the period 2006–2009. The total MS-related expenditure in 2006 for each state, drug (Glatiramer 20mg, Betaseron 22mcg, Betaseron 44mcg, Betaseron 30mcg, and Betaseron 300mcg), and year. Per capita calculations were also performed using Brazilian 2009 population.

RESULTS: MS public expenditures with MS drugs had a significant rising from 30,423,938BRL in 2006 to 214,405,349BRL in 2009, a more than 7-fold increasing. Total investments in MS drugs totaled 629,917,685BRL. Federal funding transfers for the state of Roraima presented the highest growth rate (1,497%) rising from 10,549BRL in 2006 to 157,973BRL in 2009. São Paulo (41,384,539 inhabitants, 1/5 of Brazilian population) was responsible for the higher absolute investment (13,130,526BRL and 88,948,997BRL in 2006 and 2009, respectively) and the highest total expenditure for the period (259,591,564BRL, 1/3 of national expenditures). The lowest spending was observed for states in the North Region - Amapá had any MS claim in the 4-year period and Acre had the lowest value (84,764BRL). Both states had similar projected 2009 population and are located at regions with very similar characteristics (both ethnically and geographically). Betaseron 44mcg represented the highest expenditures in 2009 and had the highest annual cost per patient (54,288BRL). Conversely, Betaseron 22mg was the only drug with decrease in the period, decreasing from 94,774,157BRL in 2007 to 32,304,159BRL in 2009. CONCLUSIONS: Our findings highlighted geographic discrepancies within the Brazilian healthcare system in terms of MS treatment funding even when demographic aspects were considered. Nevertheless a constant increasing in public expenditures was observed across most states.

PNDS5

INPATIENT HEALTH RESOURCE UTILIZATION AMONG MULTIPLE SCLEROSIS PATIENTS IN THE BRAZILIAN PUBLIC HEALTH CARE SYSTEM

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OBJECTIVES: To describe inpatient resource use among multiple sclerosis (MS) patients within the Brazilian public healthcare system (BHPS). METHODS: Inpatient admissions were obtained from the Brazilian Hospital Information System Database for the period 2006-2009. Records were included if an ICD-10 code G35 (MS) appeared as primary or secondary reason for hospitalization. The following variables were collected: procedure code for the inpatient admission (relapse management versus other indications), mean length of stay, mean Intensive Care Unit (ICU) days, in-hospital mortality, mean cost per hospitalization. Hospitalization rates were calculated using the estimated MS population under treatment in the BHPS (estimated from pharmacy claims). Relapse-related admissions were separately analyzed.

RESULTS: Annual hospitalizations due to MS were 2,142 in 2006, 2,268 in 2007, 1,648 in 2008, and 1,689 in 2009. The hospitalization rates among MS patients surviving BHPS factors decreased from 0.6% in 2006 to 0.4% in 2009. Among all admissions, 91.7% were relapse-related in 2006 with similar proportions in 2007 and 2008, and a slightly decrement in 2009 (88.0%). The in-hospital mortality rate is generally low, with the highest value in 2008 (3.09%) and the lowest in 2009 (1.6%). There were no differences between relapse-related and non-relapse-related admissions in terms of in-hospital mortality. The mean length of stay was 8.9 days for all MS-related hospitalizations and 7.7 days for those to manage MS. ICU claims were rare in this sample. In 2009, the observed average cost per hospitalization was 675 BRL and the total expenditure with inpatient admission was 1,416,533 BRL (corresponding to 53% of pharmaceutical expenses with MS).

CONCLUSIONS: Relapses are responsible for 90% of all inpatient admissions of MS patients. Although higher health resource consumption is expected in the outpatient setting, therapeutic strategies directed at reducing the incidence of relapses can potentially lead to savings within the BHPS.

PNDS9

MEDICATION TREATMENT PATTERNS FOR MULTIPLE SCLEROSIS PATIENTS IN THE BRAZILIAN PUBLIC HEALTH CARE SYSTEM

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OBJECTIVES: This study aimed to investigate the patterns of medication treatment among patients with Multiple Sclerosis (MS) treated in the Brazilian Public Health-care System (BHPS) and examine possible temporal and spatial trends in those patterns.

METHODS: Longitudinal analysis of Brazilian MS pharmacy claims as reported in the Brazilian Ambulatory Information System Database for the period 2006-2009. Five different drugs currently recommended at BHPS MS guidelines were included in the analysis (Glatiramer 20mg, Betaseron 22mcg, Betaseron 44mcg, Betaseron 30mcg, and Betaseron 300mcg) and the pro-