CONCLUSIONS: Retrospective database analysis has yielded a previously unavailable resource allocation and cost structure that illuminates our understanding of severe sepsis management economics.

**PIN15**

THE COST OF TREATMENT FAILURE IN ACUTE BACTERIAL MAXILLARY SINUSITIS

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**OBJECTIVE:** Although treatment failure can substantially increase medical-care costs, data on the economic impact of treatment failure in acute bacterial maxillary sinusitis (ABMS) are lacking. The absence of these data undermines efforts to incorporate pharmacoeconomic criteria in clinical decision-making (beyond simplistic comparisons of the acquisition costs of competing antibiotics). We conducted this study to document the cost of treatment failure in ABMS. **METHODS:** Data were obtained from a prospective, randomized, double-blind, equivalence study in which adults with radiographic evidence of ABMS were randomized to treatment with telithromycin 800 mg once a day for 5 days followed by placebo for 5 days (n = 159) or moxifloxacin 400 mg once a day for ten days (n = 163). Patients were asked to record in a study diary all nonprotocol sinusitis-related health-care utilization over a 30-day follow-up period, including outpatient visits, tests and procedures, prescription medications, and over-the-counter remedies. Unit costs were assigned to all measures of health-care utilization using nationally representative published sources. All utilization and cost measures were analyzed irrespective of treatment assignment and compared between patients who were treatment “successes” versus “failures”, as assessed for the primary efficacy endpoint. **RESULTS:** A total of 253 subjects were declared treatment successes and 47 treatment failures. Treatment failures incurred sinusitis-related medical-care costs that were nearly sixfold higher than treatment successes ($126.11 vs $21.98; p < 0.001), reflecting higher mean utilization of unscheduled outpatient services (0.40 vs 0.10 visits; p = 0.009), tests and procedures (0.32 vs 0.08; p = 0.002), and nonstudy prescription medications (1.23 vs 0.39; p < 0.001). Use of over-the-counter drugs did not differ significantly (0.68 vs. 0.54 units purchased; p = 0.763). **CONCLUSIONS:** The cost of treatment failure in ABMS appears to be substantial. Clinical decision-making regarding choice of antibiotic therapy in ABMS should involve consideration of how treatment failure might increase overall costs of sinusitis-related care.

**PIN16**

COST-EFFECTIVENESS OF FOUR ANTIMICROBIAL REGIMENS IN PATIENTS ADMITTED TO THE MEDICAL FLOOR WITH CLASS IV OR V COMMUNITY-ACQUIRED PNEUMONIA

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**OBJECTIVE:** This study evaluates the cost-effectiveness of four antimicrobial regimens (e.g., levofloxacin monotherapy, ceftriaxone monotherapy, ceftriaxone plus a macrolide, and ceftriaxone plus levofloxacin) for the treatment of patients admitted to the medical floor with class IV or V community-acquired pneumonia (CAP). **METHODS:** All adult patients with a principal discharge diagnosis of pneumonia, admitted to Baptist-Health System from November 1, 1999 to April 30, 2000 were evaluated. Medical floor patients who met criteria for Pneumonia Severity Index (PSI) risk class IV or V were included in this analysis. Total hospital charges were converted to costs using the hospital cost-to-charge ratio. Wilcoxon Rank Sum was used to evaluate associations between antimicrobials received (independent variable) and total hospital cost (dependent variable). Cost-effectiveness ratios were determined by dividing the total hospital cost by the percent survival. **RESULTS:** A total of 649 patients were managed on the medical floor with 415 (64%) meeting the criteria for PSI risk class IV (N = 274) or V (N = 141) CAP. Costs (median, 25th and 75th quartile) were as follows: total hospital cost ($4087 [$2590–$6534]), pharmacy costs ($606 [$366–$1092]), and antibiotic costs ($112 [$66–$184]). Total hospital costs were lowest for levofloxacin monotherapy (N = 151, $3506 [$2231–$5870]), followed by ceftriaxone monotherapy (N = 61, $3758 [$2741–$6071]), ceftriaxone plus a macrolide (N = 61, $4163 [$3100–$5726]), and ceftriaxone plus levofloxacin (N = 38, $4830 [$2934–$7393]) (P = 0.0921). Survival was the highest for patients who received ceftriaxone plus a macrolide (98%), followed by ceftriaxone plus levofloxacin (95%), levofloxacin monotherapy (94%), and ceftriaxone monotherapy (87%) (P = 0.0734). The most favorable cost-effectiveness ratio was observed for patients who received levofloxacin monotherapy ($3730 per expected cure), followed by ceftriaxone plus a macrolide ($4248), ceftriaxone monotherapy ($4370), and ceftriaxone plus levofloxacin ($5367). **CONCLUSION:** Among patients admitted to the medical floor for class IV or V CAP, levofloxacin monotherapy is the most cost-effective antimicrobial regimen.

**PIN17**

COST-EFFECTIVENESS MODELING OF TREATMENT APPROACHES TO HEPATITIS C: A MANAGED CARE PERSPECTIVE

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**OBJECTIVES:** To present pharmacoeconomic evidence supporting the relative cost-effectiveness of two pegylated interferon therapies, compared with the standard interferon and ribavirin therapy, for hepatitis C treatment. **METHODS:** Evidence-based decision analysis based on genotypes, treatment dose and duration, comparing the pharmacoeconomic benefits of PEGASYS + COPEGUS (peginterferon alfa-2a + ribavirin) versus REBETRON (interferon alfa-2b + ribavirin) and PEG-Intron + REBETOL (peginterferon alfa-2a + ribavirin) versus REBETRON. Cost effectiveness is calculated in terms of the cost per sustained virological response (SVR); timeframe includes the course of therapy and treatment-free follow-up of 24-weeks. The model adopts a managed care perspective and includes only direct costs. Each therapy efficacy rates, total costs, costs associated with diagnosis, medical treatment, drug acquisition and adverse events are calculated for base-case scenario and sensitivity analyses. **RESULTS:** Drugs accounted for the largest portion of total costs, followed by adverse events, diagnostic procedures and medical treatment. The total costs associated with PEG-Intron+REBETOL ($25,864) imply an incremental cost-effectiveness ratio (ICER) for PEG-Intron+REBETOL versus REBETRON of $60,767. PEGASYS + COPEGUS provide an increased probability of treatment success at a lower cost than REBETRON. Compared with REBETRON, the combination of PEGASYS + COPEGUS is deemed a dominant strategy. The results of the sensitivity analyses. **PERSPECTIVE**
analysis indicate that the results of the model are robust to changes in the base case parameters and the ICERS for PEGASYS + COPEGUS versus REBETRON are consistently lower than the ICERS of PEG-Intron + REBETOL versus REBETRON. CONCLUSIONS: The pegylated interferons provide a cost-effective, if not cost-savings alternative to standard interferon + ribavirin. In addition to the direct cost savings, PEGASYS + COPEGUS dominate REBETRON with better efficacy at a lower cost. The model presented in this study is a critical tool to aid decision-making for therapies that have the potential to improve public health in large populations.

**PIN18**

**DIRECT TREATMENT COSTS OF TINEA CAPITIS AMONG THE UNITED STATES PRIVATELY INSURED POPULATION**

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OBJECTIVES: This study was conducted to examine characteristics of patients with tinea capitis (TC) and project national direct treatment costs in patients with TC from a third-party payers’ perspective. METHODS: This retrospective cohort study is based on the MarketScan® research database during January 1, 1999 to December 31, 2002. Study patients were identified if they had a diagnosis for TC (ICD-9 code: 110) and had continuous medical and prescription coverage. Direct treatment costs included costs associated with physician office visits, hospitalizations, and prescription drugs, calculated from the third-party payers’ perspective after adjusting to 2002 US dollar values. The parametric mean was calculated because treatment costs were observed to be skewed. Appropriate distribution of treatment costs was selected based on testing with mixed exponential, mixed weibull, and mixed log-normal distribution. The nationwide direct treatment costs attributable to TC were projected based on the U.S. privately insured population. RESULTS: In 2001, 2791 diagnosed patients with TC were identified of whom 60% were new (incidence cases) and 40% were recurrent. TC was more prevalent in children under 16 years old (62%), among males (59%), and those in the southern region (64%) of the U.S. The average annual cost per patient was $224 (parametric mean: $220), which was comprised of costs for prescription drugs (63%), outpatient visits (36%), and hospitalizations (1%). Costs for an oral antifungal accounted for 43% of prescription costs and topical antifungal for 11%. Average costs for patients <3 years old were half of those for patients >30 years old ($185 vs. $351). The national direct treatment costs attributable to TC were estimated to be $42,948,362 in US privately insured employees. CONCLUSION: This study demonstrates that patients with TC consume a substantial amount of health care resources from the perspective of the third party payers.

**PIN19**

**THE COST-EFFECTIVENESS ANALYSIS OF COMBINATION OF PEGINTERFERON ALFA-2A AND RIBAVIRIN VERSUS COMBINATION OF PEGINTERFERON ALFA-2B AND RIBAVIRIN IN CHRONIC HEPATITIS C IN POLAND**

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OBJECTIVE: to estimate the cost-effectiveness of peginterferon alfa-2a 180mcg weekly and ribavirin 1000mg/d (PegIFN2a + R) relative to peginterferon alfa-2b 1.5 mcg/kg weekly and ribavirin 800 mg/d (PegIFN2b + R) in chronic hepatitis C patients without preexisting cirrhosis. METHODS: A Markov model was developed to project lifelong clinical and economic outcomes in 45 year-old patients based on published in literature transition probabilities and utility values and Polish data on health care resource utilisation and unit cost. As no clinical trials comparing directly the analysed medications are available, there was used the method of indirect comparison by the common reference such as IFN2b + R. The duration of treatment was 48 weeks and 24 weeks respectively in patients with HCVgenotype-1 (group I) and non-1 (group II). Predictability test was performed after 12 weeks and 24 weeks in those receiving PegIFN2a + R and PegIFN2b + R respectively. Effectiveness was expressed in LY and QALY. Only direct medical costs were analysed from health-care payer’s perspective. Simple one-way sensitivity analyses of the base case were performed. RESULTS: In group I PegIFN2a + R in comparison to PegIFN2b + R showed the same effectiveness (29.4 LY, 12.8 QALY) and lower cost (103,697 vs. 114,469 PLN/patient, fEUR = 4.5 PLN in 2003). In group II PegIFN2a + R relative to PegIFN2b + R increased life expectancy by 1.17 LY or 0.69 QALY and reduced the costs by 23,322 PLN per patient. The main cost drivers were the cost of analysed PegIFNs, regardless of HCV genotype. The sensitivity analysis indicated that the results were sensitive to the rate of sustained virological response. CONCLUSION: The results suggest, that within a Polish context PegIFN2a + R in comparison to PegIFN2b + R appears to be cost-saving treatment option in HCVgenotype-1 infected patients and dominant therapy in HCVgenotype non-1 infected patients.

**PIN20**

**BURDEN OF ILLNESS OF BACTERIAL CELLULITIS AND Erysipelas of the Leg in the Netherlands**

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OBJECTIVES: Recent data suggest that fungal foot infections along with other risk factors are predisposing conditions for bacterial cellulitis and erysipelas of the leg (BCERL). However, there is limited information available on the number of cases of bacterial cellulitis and erysipelas of the leg and related treatment costs. The purpose of this study was to assess the burden of illness of BCERL in the Netherlands in 2001. METHODS: Data for this study were obtained from different linked databases: hospital information was obtained from the Dutch Medical Registry for ICD-9-CM codes 628.6 (bacterial cellulitis) and 035 (erysipelas), including all Dutch citizens. Those patients not admitted to the hospital were estimated using general practitioner data (65,000 residents). These data were extrapolated using age/gender and disease specific standardisation. The same sample was used to assess the localisation of the infection. For all resources reimbursement costs were available. RESULTS: In 2001, approximately 30,000 patients (195 per 100,000 inhabitants) have suffered from BCERL. Twenty-five hundred patients of these patients were admitted to the hospital with an average length of hospital stay of 12.1 days. The average costs per hospitalisation for BCERL were €6700; total costs for The Netherlands were €17.1 million. Consultation costs were the second most important contribution to the total costs; €3.5 million. The contribution of prescription drugs to the total costs was limited; 0.1 million€ for the hospitalised patients and €0.9 million for the outpatients. CONCLUSIONS: BCERL infections are common and serious infections in The Netherlands. Hospitalisation only occurs in less than 10% of the patients but contributes more than 80% to the total costs that cumulate up to €21 million a year. Fungal foot infections along with other risk factors have been identified as predisposing conditions for BCERL. Screening and treatment of patients presenting such risk factors may help reduce the economic burden of BCERL.