Analyses were conducted from both the societal and health care system perspective. Sensitivity analyses were performed. **RESULTS:** Reduction in disease outcomes, disease sequelae and cost-of-illness by health state was observed in the time period post-Prevnar®, across all age groups. The total cost of the vaccination program to the Canadian health care system (including herd immunity effects), from a payer perspective amounted to $74,682,790; this decreased to $46,197,274 from a societal perspective. The total number of illnesses avoided was 86,164. The incremental cost-effectiveness ratio (ICER) was $28,551 and $17,661 per additional QALY from the health system and societal perspectives, respectively. When herd immunity effects were excluded from the analysis, the ICER increased to $166,560 and $115,995 per QALY, respectively. Sensitivity analysis indicated that total cost and ICER results were most sensitive to changes in the epidemiology and cost of otitis media. However, these changes did not considerably impact the results, indicating a robust model. **CONCLUSION:** Consistent with previous findings, vaccination with Prevnar® is cost-effective. Administration of Prevnar® results in a substantial reduction in pneumococcal disease in vaccinated children and unvaccinated adults.

PIN19

COST-EFFECTIVENESS OF GARGLING FOR PREVENTION OF UPPER RESPIRATORY TRACT INFECTIONS

Shimbo T[1], Omata K[1], Takahashi Y[1], Satomura K[2], Kitamura T[3], Kawamura T[2]

[1]International Medical Center of Japan, Shinjyuku-ku, Tokyo, Japan, [2]Kyoto University, Kyoto, Kyoto, Japan, [3]Osaka Saiseikai Senri Hospital, Suita, Osaka, Japan

OBJECTIVES: To investigate the cost effectiveness of gargling to prevent upper respiratory tract infections (URI) from a societal perspective. **METHODS:** The effectiveness of gargling for preventing URI has been demonstrated in a randomized controlled trial in which the participants recorded the frequency of gargling, incidence and severity of URI and duration of daily medicine. Costs of gargling, visiting physicians, medicine, and lost productivity were considered. The cost of gargling was estimated as the opportunity cost of the time required. The utility of severe and moderate URI was also considered. Average costs and utility during 60 days of observation in the trial were estimated as the sum of the average daily cost and utility of the participants remaining staying in the trial. The incremental cost effectiveness ratio (ICER) of gargling when compared with the absence of gargling was calculated, and bootstrap sampling generated an acceptability curve. **RESULTS:** The estimated unit cost of gargling was 49.2 yen. Assigned participants gargled 4.5 times per day on average. The gargling group had higher costs and utility than the group that did not gargle. The incremental cost and effectiveness for 60 days were 4750 yen and 0.43 quality-adjusted life days respectively. The gargling group required 8020 yen more for gargling, but saved 3270 yen by preventing URI for 60 days. This showed that the ICER of gargling was 4.07 million yen/QALYs (34,400 US$/QALYs). The acceptability curve showed 67.1% was less than 6 million yen/QALYs, and 88.7% less than 12 million yen/QALYs. **CONCLUSION:** Although it can prevent URI, gargling is more costly than not gargling because the cost of gargling exceeded the savings derived from URI prevention. However, the ICER of gargling was comparable with that of other widespread medical technologies.

PIN20

PHARMACOECONOMIC ANALYSIS OF SEVERE COMMUNITY-ACQUIRED PNEUMONIA TREATMENT

Kulikov A, Krysanov I

Moscow Medical Academy, Moscow, Russia

OBJECTIVES: Selection of the most cost-effective treatment regimen of severe community-acquired pneumonia. **METHODS:** Direct medical expenditure on courses of treatment with levofloxacin and ceftriaxone were evaluated during this trial. "Cost minimization" analysis was chosen as a pharmacoeconomic method, and a "lost opportunities" index was calculated when using less cost-effective drugs. **RESULTS:** Direct medical costs in the group of patients who received levofloxacin amounted to 16,097.99 rubles, and in the group of patients who were treated with ceftriaxone they totaled 32,573.47 rubles per patient. They were made up of levofloxacin and ceftriaxone antibacterial drug treatment costs and the costs of patients' hospital stay. The cost of the drug treatment course amounted to 3,997.99 rubles for the first group (levofloxacin) and to 19,073.47 rubles for the second group (ceftriaxone); the cost of hospital stay amounted to 12,100 rubles and 13,500 rubles respectively. In the breakdown of expenditure on treatment of community-acquired pneumonia with levofloxacin, patients' hospital stay accounted for 75% of expenses, whereas drug treatment accounted for only 25% thereof; when treating with ceftriaxone, the expenditure on patients' hospital stay amounted to 40% and that on drug treatment—to 60%. The "lost opportunities" index equaled one and thus indicated that when using a more cost-effective drug (levofloxacin) for the treatment of one patient compared to a less cost-effective drug (ceftriaxone) it is possible to theoretically treat an additional patient, taking into account the difference in the costs of treatment with the drugs compared, provided the profile of antibiotic resistance is congruent with that under the conditions of the clinical study used herein. **CONCLUSION:** Antibacterial treatment of severe community-acquired pneumonia with levofloxacin is more cost-effective, enabling the reduction of costs by 16,475 rubles per patient compared to treatment with ceftriaxone owing to lower expenditure on drugs.

PIN21

THE CLINICAL AND ECONOMIC BURDEN OF COMPLICATED SKIN AND SKIN STRUCTURE INFECTIONS DUE TO *STAPHYLOCOCCUS AUREUS*: FINDINGS FROM A NATIONAL DATABASE

Marton JP[1], Menzin J[2], Sussman M[2], Friedman M[2], Philburn RT[1], Rothermel CD[1]

[1]Pfizer Global Pharmaceuticals, Pfizer Inc, New York, NY, USA, [2]Boston Health Economics, Inc, Waltham, MA, USA

OBJECTIVES: Complicated skin and skin structure infections (cSSSIs) are a common complication among hospitalized patients. There are limited national data on the costs of cSSSIs due to *Staphylococcus aureus*, a common hospital-acquired pathogen. **METHODS:** This retrospective cohort study used data from the 2004 Health care Cost and Utilization Project Nationwide Inpatient Sample (HCUP-NIS). Patients with *S. aureus* cSSSIs were identified based on ICD-9-CM diagnosis codes and compared to patients without skin infections. Excess mortality, length of stay (LOS), and costs were estimated for both groups. Multivariate models (with log transformation) were used to adjust costs for potential confounding factors, including age, gender, mortality, hospital region, and comorbidity. **RESULTS:** We identified 55,585 hospitalized patients with cSSSIs due to *S. aureus*. The comparison cohort consisted of 7,618,776 patients without skin infections. The mortality rates were similar for the *S. aureus* cSSSI and comparison cohorts (3.9% and 2.0%, respectively). For com-

parison purposes, the mortality rate of all inpatients with *S. aureus* infections was 7.3%. Patients with *S. aureus* cSSSIs were older (mean age 54 years vs. 46 years for the comparison group) and were more likely to have congestive heart failure, diabetes with chronic complications and bacteremia/septicemia. Relative to the comparison group, patients with *S. aureus* cSSSIs had significantly ($P < 0.0001$) longer mean length of stay (9.7 vs. 4.4 days) and higher average costs per stay ($16,941 vs. $9,154). After controlling for potentially confounding factors, the excess mean costs associated with *S. aureus* cSSSIs were estimated to be $3,396. **CONCLUSION:** Our findings suggest that the clinical and economic burden of complicated skin and skin structure infections (cSSSIs) due to *Staphylococcus aureus* among hospitalized patients is substantial.

PIN22

IMPACT OF *S. AUREUS* INFECTIONS ON EXPENDITURES AND LENGTH-OF-STAY IN U.S. HOSPITALS

Noskin G[1], Rubin R[2], Schentag J[3], Kluytmans J[4], Hedblom E[5], Jacobson C[5], Smulders M[6], Gemmen EK[7], Bharmal M[7]

[1]Northwestern University Feinberg School of Medicine, Chicago, IL, USA, [2]Georgetown University, Washington, DC, USA, [3]University at Buffalo School of Pharmacy, Buffalo, NY, USA, [4]Amphia Hospital and VUmc Medical University, Amsterdam, 4800 RK, The Netherlands, [5]3M Medical, St Paul, MN, USA, [6]Quintiles, Falls Church, VA, USA, [7]Quintiles Strategic Research & Safety, Falls Church, VA, USA

OBJECTIVES: Evaluate the incremental impact of *S. aureus* infection stays on hospital charges and length-of-stay in U.S. hospitals in 2003. **METHODS:** The 2003 Nationwide Inpatient Sample data were analyzed. Hospital discharges were classified as either a *S. aureus*–related infection stay or a non-*S. aureus*-related infection stay using a combination of several ICD-9 codes. Incremental effect of *S. aureus* infection on hospital charges and length-of-stay was estimated using multivariate regression models adjusting for hospital fixed effects and patient variables including age, gender, race, payer, diagnosis-related grouping and concomitant conditions including diabetes, dialysis and lung disease. **RESULTS:** *S. aureus* infection was reported as a discharge diagnosis for 1.0% of all hospital inpatients, or 389,963 stays, in 2003. *S. aureus* infection hospital stays were significantly more likely among male, older patients, stays that were paid by Medicare, white or non-Hispanics and hospital stays among individuals with diabetes, lung disease or dialysis. After adjusting for covariates, the mean incremental impact of *S. aureus* infection on hospital charges and length-of-stay was $37,251 (95% Confidence Interval (CI): $34,678–$39,823) and 8.2 days (95% CI: 7.9–8.5) among all inpatient stays, $40,637 (95% CI: $37,683–$43,591) and 9.2 days (95% CI: 8.8–9.6) among surgical stays, $83,952 (95% CI: $75,853–$92,052) and 16.8 days (95% CI:15.7–17.9) among invasive cardiovascular stays, $34,202 (95% CI: $29,612–$38,791) and 9.6 days (95% CI: 9.0–10.2) among invasive orthopedic stays and $119,292 (95% CI: $106,209–$132,374) and 19.8 days (95% CI: 17.5–22.2) among invasive neurosurgical stays. **CONCLUSION:** *S. aureus* infections present a considerable economic burden to U.S hospitals. Based on the prevalence of *S. aureus* infection and its incremental impact, the total economic impact of *S. aureus* among all hospital admissions was estimated at $14.5 billion in 2004 U.S. dollars.

PIN23

DETERMINANTS OF TOTAL HOSPITAL COSTS AMONG INPATIENTS WITH CANDIDEMIA

Lee SP[1], Bunz T[2], Gagne JJ[2], Maio V[2], Goldfarb NI[2], Horn DL[2], Swanson R[3]

[1]Thomas Jefferson Univeristy, Philadelphia, PA, USA, [2]Thomas Jefferson University, Philadelphia, PA, USA, [3]Pfizer Inc, New York, NY, USA

OBJECTIVES: To identify factors associated with total hospital costs among patients with candidemia in a large, urban, tertiary care, teaching hospital. **METHODS:** This retrospective cohort study examined hospitalizations during calendar years 2004 and 2005 at Thomas Jefferson University Hospital in Philadelphia, PA, using data from various hospital systems. Candidemia cases were identified via the microbiological laboratory information system as those patients with at least one confirmed positive blood culture for any Candida species at any point during the study period. Demographic, economic, and clinical data, including length-of-stay (LOS), payer types, total costs, and Diagnosis Related Group (DRG) assignments were collected from the hospital cost accounting system. Pharmacy data (i.e. medications administered and associated costs) were retrieved from the pharmacy electronic information system. A multivariate regression analysis, using the natural logarithm of total hospitalization costs as the dependent variable, was conducted. Independent variables included demographic information, relative DRG weights, and Candida species. **RESULTS:** Among 68,526 total hospitalizations during the study period, 287 cases were confirmed positive for candidemia. The mean age of cases was 58 years, 52% were female, and 60% were Caucasian. The mean LOS was 43.3 days and the average inpatient cost for candidemia cases was $130,759 (SD = $116,560; median, $97,869). The most common Candida species was C. albicans (n = 127; 44%). The most commonly used antifungal treatment was fluconazole (N = 176, 61%). Age, and relative DRG weights ($p < 0.05$) were significantly positively correlated with total hospital costs. Older patients with higher relative DRG weights were associated with the higher total costs. Race, gender, and marital status were not associated with total costs. **CONCLUSION:** Relative DRG weights, as well as age are associated with total hospital costs among patients with candidemia. Candidemia is expensive to treat and results in lengthy hospital stay. Early detection and treatment may significantly reduce resource use as well as improve outcomes.

PIN24

THE ECONOMIC IMPACT OF METHICILLIN RESISTANCE IN STAPHYLOCOCCUS AUREUS BACTEREMIA IN KOREA

Park EJ[1], Lee EK[2], Chae S[3]

[1]Korea Institute for Health and Social Afffairs, Seoul, South Korea, [2]Sookmyung Women's University, Seoul, South Korea, [3]Korea Institute for Health and Social Affairs, Seoul, South Korea

OBJECTIVES: The objective of this study is to examine the economic outcome of Methicillin resistance in Staphylococcus aureus bacteremia in Korea, where MRSA is endemic in majority of hospitals. **METHODS:** We conducted retrospective case-control study of patients admitted to three university-based teaching hospitals in Seoul, Korea in 2005. Cases were defined as patients with Methicillin-resistant S. aureus (MRSA) bacteremia and controls were Methicillin- susceptible S. aureus (MSSA) bacteremia selected according to a priori matching criteria. 58 cases and 58 controls were identified. Hospital charges were collected from hospitals' billing system. **RESULTS:** The median hospital charge after the development of bacteremia was higher for cases with MRSA bacteremia ($8245) than for controls with MSSA bacteremia ($6569). The median hospital