

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

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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.

DETERMINANTS OF TOTAL HOSPITAL COSTS AMONG INPATIENTS WITH CANDIDEMIA

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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

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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

charge for pharmaceuticals of MRSA bacteremia patients was \$2411 and that of MSSA bacteremia patients was \$1289. The median length of hospitalization after the development of MRSA patients who survived was 32.5 days and that of MSSA bacteremia control patients who survived was 18 days. **CONCLUSION:** Antibiotic resistance in *Staphylococcus aureus* bacteremia increased direct medical cost by 26%. The results of this study indicate that the MRSA infection is associated with increased medical cost and prolonged hospital stay.

PIN25**DIRECT COSTS OF ANEMIA AMONG PATIENTS TREATED WITH ZIDOVUDINE**

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OBJECTIVES: Zidovudine (ZDV) use has been shown to be associated with anemia. Our objective was to assess the impact of anemia on medical resource use and cost in patients treated with a ZDV-containing HAART regimens. **METHODS:** Case-control study using HIV Insight, which contains medical chart data from 21 US HIV care centers. ZDV-naïve patients who began a ZDV-containing HAART regimen on any date from January 2000 to June 2004 were assessed for baseline anemia (Hb < 11 g/dL). Those without anemia (N = 529) were followed through June, 2005 or until they had anemia or changed to a non-ZDV-containing regimen. Those with anemia (N = 69) were followed until anemia worsened (drop \geq 1.0 g/dL). Patients with an incident anemia event (initiating or worsening) with \geq 12 months of follow-up were selected as cases. Controls were matched on baseline anemia, CD4 < 350, gender and time period. Medical resource use was tabulated during the 1-year post anemia period. Costs were estimated for health care encounters using external data for prices expressed in 2006 \$US. **RESULTS:** Cases included 70 patients with anemia (57 initiating, 13 worsening.) Cases had greater use of medical resources than controls: 9.2 vs 5.0 (P < 0.001) office visits per year, 33% vs 3% hospitalized (P < 0.001), 21% vs 3% treated with EPO (P = 0.001) and 7% vs 0% (P = 0.058) with a transfusion. Cases had higher average annual costs than controls; \$37,124 vs \$25,141 (P = 0.002). Cost components included EPO \$1,369 vs \$181 (P = 0.002), antiretrovirals \$18,299 vs \$19,837 (P = 0.461), other drugs \$12,488 vs \$3,763 (P = 0.005) and hospital stays, \$3,114 vs \$169 (P < 0.001). **CONCLUSION:** Patients treated with ZDV who experienced anemia required significantly more medical care and reported higher medical cost than patients without anemia.

PIN26**IMPACT OF HIV AND HCV CO-INFECTION ON HOSPITALIZATION AND RESOURCE USE AMONG HEMOPHILIA ENROLLEES IN COMMERCIAL HEALTH PLANS**

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OBJECTIVES: Determine the economic impact and resource utilization of adult HIV and HCV co-infected hemophilia patients in a managed care population in the United States. **METHODS:** Retrospective claims database analysis from 1/97 to 4/04. Patients continuously enrolled for at least 6 months and >18 years of age were included. Hemophilia patients were identified using ICD-9CM, HCPCS, and NDC codes. Four cohorts for analysis were established: Hemophilia only Hemophilia + HIV, Hemophilia + HCV, Hemophilia + HIV + HCV. The main out-

comes of study were costs associated with all pharmacy and medical claims, inpatient hospitalizations (frequency and length of stay) and office visit distribution by physician specialty. **RESULTS:** Annual cost of care was \$85,616 for the hemophilia only cohort, \$99,180 for the HIV cohort, \$105,676 for the HCV cohort and \$129,889 for HIV/HCV co-infected cohort in 2004 dollars. Clotting factor accounted for approximately 70–81% of total costs. The Hemophilia only, HCV, HIV, HIV/HCV infected hemophilia cohorts had prescription drug costs of \$2,341, \$8,867, \$6,256 and \$12,060, respectively. Approximately 17% of hemophilia only, 19% of HCV, and 27% of the HIV/HCV cohorts were hospitalized during the study period (p = 0.45). Hospitalizations that were hemophilia related accounted for 43% of total hospitalizations for the hemophilia only cohort and 16% for the HIV/HCV cohort (p = 0.30). No significant difference in inpatient length of stay was found. There was a difference in the mean number of office visits among the cohorts (p = 0.022) with the HIV/HCV cohort having more visits than the hemophilia only group, 18.3 vs. 7.3, respectively (p = 0.05). **CONCLUSION:** Although we were not able to control for severity, the presence of HIV and HCV co-infection in hemophiliacs is associated with an increase in annual costs by up to 52%. Increased clotting factor use and prescription drug costs in the virally infected groups account for most of the increase in costs.

PIN27**USING DECISION SIMULATION MODEL TO EVALUATE THE COST EFFECTIVENESS OF ENTECAVIR COMPARED TO ADEFOVIR THERAPY IN LAMIVUDINE REFRACTORY CHRONIC HEPATITIS B (CHB) PATIENTS: ANALYSES FROM A US PAYER PERSPECTIVE**

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OBJECTIVES: To estimate the long-term health and economic impact of managing CHB with entecavir instead of adefovir treatment in the US, based upon projected clinical benefits from HBV DNA reduction observed in trials. **METHODS:** We took the perspective of a comprehensive payer responsible for all direct health care expenditures. A decision simulation model was developed to consider a hypothetical cohort of 1000 lamivudine refractory CHB patients. Multivariate-adjusted relative risks for five HBV DNA categories were derived from the published R.E.V.E.A.L.-HBV study. These results were applied to the patients with simulation of their HBV DNA data derived from summary statistics reported in separate entecavir and adefovir clinical trials. Entecavir and Adefovir daily costs were assumed \$20.52 and \$19.11 based on the wholesale acquisition prices. Life expectancy estimates, direct medical cost of and utility scores for different phases of CHB were estimated from published US specific data. Viral resistance due to treatment was included. **RESULTS:** Entecavir was superior to adefovir for the mean reduction in serum HBV DNA by PCR assay (log₁₀ copies/mL) adjusted for lamivudine effect, with reductions of 4.97 versus 4.00, respectively. More patients reached undetectable viral load level with entecavir than adefovir treatment at Week 48 (19.5% vs 9.6%). In the reference case, for 1000 patients aged 40 years, compared with adefovir, ten years of entecavir treatment avoided 25 compensated cirrhosis, 3 decompensated cirrhosis, and 15 HCC, resulting in 0.235 quality-adjusted life year (QALY) gain at an incremental cost of \$2563 per patient (3% discounted). The incremental cost of using entecavir was