

district level. **CONCLUSION:** This approach seem to be an original, robust and reproducible technique for risk assessment purpose, which can be applied to a number of diseases and technology assessment when the number of indicators (risk indicators, clinical indicators, biologic indicators, etc) make data interpretation, comparisons and decision making difficult.

WITHDRAWN

PIN6

MRSA: INVESTIGATING THE DANGEROUS HOSPITAL INFECTION

PIN7

Glassford RJ

University of Louisville, Louisville, KY, USA

OBJECTIVE: Methicillin-resistant *Staphylococcus aureus*, or MRSA, is a commonly acquired infection in the hospital environment. We examine data from the National Inpatient Sample (NIS) to diagnose trends to gain more insight about the infection. It is the purpose of this study to determine if race, age or gender are factors in the severity of the infection, and to ascertain what effects any secondary conditions may have on a patient with MRSA. **METHODS:** The data were collected from a 10% sample from 2004 from the NIS with information relevant to 5974 patients diagnosed with MRSA. The data were then imported into SAS Enterprise Guide 4. SAS is used to create tables of data and kernel density estimates, which give an estimate of the data's probability density, to develop a logistic regression model relating death risk to specific diagnoses, and to develop a linear model concerning a patient's total charges. **RESULTS:** There appears to be a correlation between the age of a patient and the length of inpatient stay. Asian American and African American patients experience a higher mortality rate with MRSA. Total charges were similar between males and females, although males showed a slightly higher mean; secondary conditions and age had a much more pronounced effect on charges. The three most common conditions present in patients with MRSA were hypertension, urinary tract infection (UTI), and congestive heart failure—UTI and heart failure appear to raise the risk of death to one with MRSA. **CONCLUSIONS:** Further studies should be conducted to investigate MRSA and how it affects people from various ethnic backgrounds and age groups. By analyzing medical data and performing kernel density estimates, it is possible to uncover important relationships that can be used to treat patients worldwide.

INFECTION—Cost Studies

PIN8

BUDGET IMPACT OF ADDING DORIPENEM TO A HOSPITAL FORMULARYKongnakorn T¹, Merchant S², Akhras K³, Ingham M³, Mody S⁴, Mwamburi M⁵, Caro JJ¹

¹United BioSource Corporation, Concord, MA, USA, ²Johnson & Johnson Pharmaceutical Services, LLC, Raritan, NJ, USA, ³Johnson & Johnson Pharmaceutical Services, L.L.C., Raritan, NJ, USA,

⁴Ortho-McNeil Janssen Scientific Affairs, LLC, Raritan, NJ, USA,

⁵United Biosource Corporation, Medford, MA, USA

OBJECTIVE: Quantify the budgetary impact of adding a new carbapenem, doripenem, to a hospital formulary for treatment of complicated intra-abdominal infection (cIAI), complicated urinary tract infection (cUTI) and nosocomial pneumonia (NP) including ventilator-associated pneumonia (VAP), in the United States. Doripenem has been approved in the US for cIAI and cUTI and is under FDA review for treatment of NP, including

VAP. **METHODS:** This model was developed in accordance with Good Research Practices for Budget Impact Analysis disseminated by ISPOR to estimate the annual impact on a hospital's budget of adding doripenem. Carbapenem (doripenem, imipenem, meropenem) wholesale acquisition costs from 2007 National Drug Data File, hospitalization costs (2006 US dollars) from published literature, annual hospital admissions for NP, VAP, cIAI, and cUTI, current proportional share of imipenem and meropenem (50% each, no doripenem use), treatment duration and length of stay (LOS) from clinical trials were considered. A new proportional share of 50% doripenem, 30% imipenem and 20% meropenem was assumed for this analysis. Sensitivity of results on different proportions of doripenem use was examined. **RESULTS:** Total cost per treated patient was estimated to be \$24,284 (range: \$13,117 (cUTI) to \$71,026 (VAP)), prior to introduction of doripenem. With the new proportional share, it would decrease to \$23,305 (range: \$12,987 (cUTI) to \$65,289 (VAP)), a 4% reduction in the budget. Pharmacy costs made up 4% of overall treatment costs. The majority of savings came from shorter hospital LOS for VAP, observed in clinical trials comparing doripenem to comparators. Scenarios with a greater proportion of doripenem use resulted in larger savings to the hospital budget (\$1927 per patient at 100% doripenem use). Results remained favorable for formulary with doripenem under various sensitivity analyses. **CONCLUSION:** Results indicate that adding doripenem to a hospital formulary will yield potential savings to a hospital's budget.

PIN9

THE WORKFORCE AND COST IMPLICATIONS OF SUBSTITUTING NURSES AND PHARMACISTS FOR DOCTORS IN THE FOLLOW-UP OF PATIENTS WITH AIDS ON ANTIRETROVIRAL THERAPY IN UGANDABabigumira JB¹, Castelnuovo B², Lamorde M², Muwanga A², Kambugu A², Easterbrook P², Garrison L¹

¹University of Washington, Seattle, WA, USA, ²Infectious Diseases Institute, Kampala, Uganda

OBJECTIVE: To quantify the workforce and cost implications of routine doctor-intensive (DI), nurse-intensive (NI) and pharmacist-intensive (PI) ART follow-up algorithms for HIV/AIDS treatment at the Infectious Diseases Institute, a large urban HIV clinic in Kampala, Uganda. **METHODS:** We performed a societal perspective cost analysis including health resource utilization and opportunity cost of patient waiting (PW) time. A time-motion survey was performed to estimate median health worker utilization (HWU) and PW times for different services. Unique personnel requirements were identified to determine hourly HWU per patient, which was multiplied by hourly wages for different cadres. PW times were multiplied by mean hourly wage for Ugandans. National workforce and cost implications were projected. **RESULTS:** Median HWU and PW times per visit (hours) were 0.20 and 0.24 for triage nurses, 0.12 and 1.10 for doctors, 0.08 and 0.27 for pharmacists, and 0.13 and 0.05 for nurses. HWU time for refill pharmacists was 0.03 with no waiting. Hourly wages were: nurses-\$4.6, doctors-\$8.3, and pharmacists-\$3.3. The average Ugandan hourly wage was \$0.99. Total annual societal per-patient cost of follow-up was \$45.2 for DI, \$28.3 for NI and \$16.3 for PI. Total projected national annual follow-up cost was \$13.5 million for DI, \$8.5 million for NI and \$4.9 million for PI. Extrapolating to a national level, we project that the substitution of nurses or pharmacists for doctors would save 404 full-time-equivalent doctors per year, 18.4% of the current number practicing in Uganda. **CONCLUSION:** The use of NI and PI innovations as substitutes for DI follow-up results in

substantial reductions in doctor demand and substantial societal cost savings. Since prior research suggests no adverse impact on adherence to drugs and follow-up of these innovations, serious consideration should be given to policy changes to adopt substituting for doctor for routine HIV follow-up care.

PIN10

COMPARATIVE (POSACONAZOLE VS. OTHER SYSTEMIC ANTIFUNGALS) ALL-CAUSE MORTALITY AND COST ANALYSIS IN PATIENTS WITH REFRACTORY INVASIVE ASPERGILLOSIS

Tahami Monfared AA¹, Rajagopalan S², Danna R³, Papadopoulos G⁴

¹Schering-Plough Canada Inc, Kirkland, QC, Canada, ²Med Data Analytics, Inc, Williamsville, NY, USA, ³META Associates, Morristown, NJ, USA, ⁴Schering-Plough Corp, Kenilworth, NJ, USA

OBJECTIVE: To evaluate all-cause mortality and cost of treatment in patients with refractory invasive aspergillosis (rIA) treated with either posaconazole or other systemic anti-fungal (SAF) therapies. **METHODS:** All-cause mortality and cost of salvage therapy of posaconazole oral suspension (800 mg/day) and other SAF treatments were assessed using a multicenter clinical study in patients with IA refractory to or intolerant of conventional antifungal therapy. Data from external controls were collected retrospectively providing a comparative reference group. All patients had failed to improve or progress with prior SAF therapies. Prior SAF treatments for the majority of patients were liposomal amphotericin B, amphotericin B, or itraconazole. Cases of aspergillosis deemed evaluable by a blinded data review committee included 107 posaconazole and 86 control subjects (modified intent-to-treat population). The populations were comparable regarding pre-specified demographic and clinical characteristics. All-cause mortality were analyzed using the survival technique. Economic evaluations were conducted using survival data and costs of pharmacotherapy one year post therapy (2007 Canadian dollars). **RESULTS:** Significantly more posaconazole-treated patients responded to therapy as compared with other SAF therapies. Patients with rIA treated with posaconazole appeared to confer a highly significant survival benefit over the control cases. The cumulative rates of survival at 30 days and at the end of therapy were 74% and 38%, respectively. For controls, those survival rates were 49% and 22%, respectively. The Kaplan-Meier survival curves were significantly different ($P = 0.0003$). In addition, posaconazole appeared to be a cost-saving option for the treatment of rIA compared with the active comparator receiving standard SAF treatments (\$14,839 vs. \$38,158). Sensitivity analyses demonstrated the robustness of the results over a range of alternative values for costs and outcomes. **CONCLUSION:** Treatment with posaconazole compared with other SAF treatments provided a significant survival benefit in patients with rIA at lower cost of drug therapy.

PIN11

COST SAVINGS FROM REDUCED HIV INCIDENCE ESTIMATES

Flavin JK, Becker RV

Dymaxium Inc, Toronto, ON, Canada

OBJECTIVE: The "AIDS epidemic update" (2007) published by the United Nations (UN) and World Health Organization (WHO), reports lower estimates of incidences of persons infected with HIV globally. This study evaluates the cost savings of these lower estimates on costs associated with patients being treated by antiretroviral (ARV) drugs and opportunistic infection (OI) prophylaxis. **METHODS:** Estimated differences in incidences of persons infected with HIV for the

eight global regions in years 2006 and 2007 were calculated from UN reports. This difference was then multiplied by the average percentage of patients on ARV and OI treatment. Further, to derive the total cost savings associated with the ARV cohort, the number of patients on ARV medication was multiplied by a weighted average of first and second line ARV drug costs, lab costs, counseling costs, inpatient costs and outpatient costs, for each region. Conversely, only counseling and OI drug costs were included in the total cost of patients receiving OI prophylaxis treatment, for each region. Costs were reported in 2006 US dollars. Sensitivity analysis performed on all key parameters. **RESULTS:** The reduction of incidences of persons infected with HIV from 2006 to 2007 resulted in a total cost savings of \$309.5 million, or 42%. Separately, the patients being treated by ARV drugs attributed a cost savings of \$274.7 million, contrary to patients on OI drugs attributing \$34.8 million to cost savings. The greatest savings were shown in the Sub-Saharan Africa region (\$191.1 million). **CONCLUSION:** Based on the revised estimates, the worldwide savings is a large percentage of the treatment budget. Notwithstanding increased incidence rates in subsequent years, these savings should continue beyond 2007.

PIN12

PHARMACOECONOMIC ANALYSIS BASED ON GUIDELINES FOR TREATING MILD DIABETIC FOOT INFECTIONS: A DECISION TREE MODEL FOR COLOMBIA

Lemos EV¹, Castañeda C², Chow I³, Marr P³, Machado M³, Einarson TR³

¹National University Of Colombia, Bogota, Cundinamarca, Colombia, ²Profamilia, Bogota, Cundinamarca, Colombia, ³University of Toronto, Toronto, ON, Canada

OBJECTIVE: Restricted information exists to guide clinicians in selecting antibiotics for diabetic foot infections in Colombia. Because this serious complication causes substantial morbidity, mortality, and incurs major health care costs, we developed a decision tree model to determine, from the Ministry of Health's perspective, the cost-effectiveness in Colombia of the treatments recommended by the Infectious Diseases Society of America guidelines for mild diabetic foot infections. **METHODS:** A decision-tree model was developed using TreeAge® Pro-2007 and clinical experts. Success probabilities were derived from published randomized controlled trials. Drug costs were obtained from the Farmaprecios Guía de precios sugeridos al público, promedio del mercado para farmacias independientes. No 98 September–October 2007. Thomson PLM. S.A. Bogotá D.C. and amputation and hospitalization costs from ISS 2001/2004 database, with values adjusted to 2007 using the Colombian inflation. One-way and two-way sensitivity analyses were performed to test the robustness of the decision tree model by varying the clinical success rates and costs of antibiotics. Probabilistic sensitivity analyses were also performed using Monte Carlo simulations. **RESULTS:** Clindamycin was cost-effective, dominating all other choices, and cephalexin had the next best profile. Expected success rates were 99.4% for clindamycin, 97.8% for cephalexin, 95.4% for amoxicillin-clavulanate, 95.2% for oxacillin and 95.0% for levofloxacin. The expected cost of clindamycin (\$315,200 pesos (USD\$157.28)) was lower than the next best alternative, cephalexin \$366,560 pesos (USD\$182.14); a cost difference of \$51,360 pesos (USD\$24.86) per patient treated. However, success rates were based on a single small trial for each drug ($n < 30$ for each). In sensitivity analyses, the model/decision was sensitive to changes in efficacy rates and costs within plausible ranges for clindamycin and cephalexin. **CONCLUSION:** Clindamycin was cost-effective in treating mild