burden of influenza by 79–85%. Estimated direct cost savings (excluding the cost of vaccination) would be $47 per vaccinated child; indirect cost savings would be $199 per vaccinee. Assumed coverage levels of 40% and 80% yielded similar findings. **CONCLUSIONS:** Routine vaccination of children and the resulting reduction in disease transmission would reduce substantially the clinical and economic burden of influenza in the US.

PIN20

COST-CONSEQUENCES OF INFLUENZA VACCINATION FOR SCHOOL-AGED CHILDREN IN JAPAN

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Although influenza vaccination had been performed on mandatory basis for Japanese school-aged children until the mid of 1980s, thereafter the government changed the policy into individual-initiated basis. It caused the recipient rate of influenza vaccination rapidly decreasing. Consequently, there emerged a controversy about vaccination policy, mandatory vs. voluntary, for high-risk population. **OBJECTIVE:** Evaluate cost-consequences of the controversial strategies for influenza vaccination compared with no vaccination for healthy school-aged children in Japan. **METHODS:** A cost-consequence analysis was performed by decision analytic modeling using data from the literature. The decision tree models a healthy school-aged child facing the alternatives toward influenza: 1) individual-initiated voluntary vaccination; 2) mandatory vaccination in school; or 3) no vaccination. Direct costs included medical costs for vaccination (the costs of the vaccine, supplies, personnel, etc.), physician visits, and treatments. Also, indirect costs were included in the form of lost productivity in which the parents are burdened by taking children to a physician's office for vaccination or staying home to care for their ill children. The total cost of each scenario was compared with that of no vaccination consequence. We assumed the vaccine has no side effects for the base case, and then a sensitivity analysis was conducted to evaluate the impact of side effects with low-grade fever. **RESULTS:** Performing mandatory vaccination could save US$13 (JY1571) per child vaccinated comparing with no vaccination, whereas voluntary vaccination additionally cost US$36 (JY4428). Also, the total cost of mandatory scenario had an advantage of marginal saving of US$50 (JY6000) comparing to the voluntary basis. The sensitivity analysis indicated that results in the base case were rather robust. **CONCLUSION:** Mandatory vaccination for children in Japanese school could have substantial cost savings. Considering the target population of 18,000,000 school children in Japan, turning into mandatory is recommended with great potentiality of economic impact on the society.

PIN21

COST-EFFECTIVENESS OF SELECTED INTERVENTIONS TO REDUCE THE BURDEN OF CHILDHOOD PNEUMONIA AND DIARRHEA: A STANDARDISED ANALYSIS

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OBJECTIVES: The World Health Report 2002 attributes 15% of the burden of disease associated with major risk factors in developing countries to malnutrition and about 3% each to Vitamin A and zinc deficiency. Most of the burden is from diarrhea and pneumonia in children aged less than five years. This paper analyses the costs and effectiveness of selected personal and non-personal curative and preventive interventions, singly and in combination. **METHODS:** For each of 11 epidemiological subregions, the population health impact for each intervention or combination of interventions at different levels of coverage has been evaluated using a state transition model. Efficacy data come from systematic reviews or evaluations. Costs are estimated using the standardized WHO ingredients approach. An intervention is considered cost-effective if the cost-effectiveness ratio is <3 GDP per capita for the subregion. **RESULTS:** The highest health gains from a single intervention are from case management for pneumonia and oral rehydration therapy. The lowest costs are with fortification with Vitamin A and zinc. Cost-effectiveness ratios cluster in three groups with fortification with zinc and Vitamin A as the most cost-effective, and provision of supplementary food and nutrition counseling as the least cost-effective. In between are oral rehydration therapy, case management for pneumonia and Vitamin A and zinc supplementation. **CONCLUSIONS:** On the grounds of cost-effectiveness, Vitamin A and zinc fortification or supplementation should be considered for routine provision, together with oral rehydration therapy and case management for pneumonia.

PIN22

TELITHROMYCIN (TEL) IS AN EFFECTIVE THERAPY FOR ADULT OUTPATIENTS WITH COMMUNITY-ACQUIRED PNEUMONIA (CAP) AND IS ASSOCIATED WITH LOWER OVERALL HEALTHCARE COSTS THAN CLARITHROMYCIN (CLA): A POOLED ANALYSIS OF DATA FROM TWO INDEPENDENT, RANDOMIZED, DOUBLE-BLIND STUDIES

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OBJECTIVES: To compare the clinical and economic impact of oral TEL and CLA in adult outpatients with

CAP. **METHODS:** In 2 independent, randomized, double-blind, multicenter clinical studies, 1023 adult out-patients (Study 1, n = 448; Study 2, n = 575) with CAP received TEL 800 mg once daily for 10 (Study 1) or 5 or 7 days (Study 2), or CLA 500 mg twice daily for 10 days (comparator regimen, both studies). Clinical and economic outcomes were followed for four weeks. The primary statistical hypothesis was equivalence of clinical efficacy (per-protocol populations). Economic outcomes in the intent to treat populations were assessed by non-protocol-driven CAP-related resource use. Unit costs were assigned as follows (Study 1/2): additional antibiotics/medications using 1999/2000 Redbook average wholesale prices; physician visits/tests/procedures using Medicare's Resource Based Relative Value Scale; and hospitalizations using 1999/2000 American Hospital Association national average daily rates for short-term hospitalization. Data from the two studies were pooled and analyzed. **RESULTS:** The clinical efficacy of TEL and CLA was equivalent (88.8% [428/482] vs 90.1% [272/302], respectively). Patients treated with TEL had fewer CAP-related hospitalizations vs CLA patients (13/612 [2.6%] vs 15/411 [3.6%], respectively). The length of stay in hospital was shorter for TEL vs CLA patients (16.8 vs 33.8 hospital days per 100 patients, respectively). Concomitant antibiotics were required by 135/612 (22.1%) TEL vs 110/411 (26.8%) CLA patients. The average per-patient cost of additional resource use for TEL ($309) was considerably less than that for CLA ($622), with per-patient savings of $313 for TEL. Greater savings were observed for the subset of patients aged 65 years: average per-patient cost of additional resource use for TEL of $305 vs $896 for CLA, with per-patient savings of $591 for TEL. **CONCLUSIONS:** TEL is an effective therapy for outpatients with CAP and is associated with lower direct healthcare costs than CLA.

ECONOMIC IMPACT OF ANTIBIOTIC RESISTANCE IN THE TREATMENT OF COMMUNITY-ACQUIRED PNEUMONIA

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OBJECTIVES: Treatment of CAP is becoming more difficult because of changes in the antibiotic resistance patterns of pathogens causing CAP, particularly S. pneumoniae. This purpose of this study is to assess the economic impact of changes in hospitalization and mortality rates in CAP due to antimicrobial resistance. **METHODS:** The costs of CAP were determined from an administrative claims database from 1996–1998 for an employed population and their dependents under the age of 65 (N > 100,000). The economic impact of antibiotic resistance on CAP costs was simulated under different scenarios. The simulations were based on the assumptions that antibiotic resistance might increase the mortality rate, the hospitalization rate, or both the mortality and hospitalization rates in CAP. **RESULTS:** We identified 7,249 episodes of CAP. The hospitalization rate was 19.6% and the mortality rate among inpatient CAP episodes was 9.1%. The average cost of treatment for an inpatient episode of CAP (including all inpatient and outpatient medical care) was $10,227. Costs for inpatients who died during hospitalization ($15,822) were higher than for episodes in which patients were discharged alive ($9,595). Increasing the mortality rate by an additional 5% (to 14.1%) led to a 3% increase in the total costs of treatment. Increasing the hospitalization rate from the observed rate of 20% to 25% increased total costs by 28%. **CONCLUSIONS:** Simulations indicate that, if antibiotic resistant organisms increase outpatient treatment failures and resultant hospitalization rates for CAP, there would be a substantial economic impact. The total annual economic impact of treating CAP in the U.S. is estimated to be $12.1 billion. If resistance leads to higher mortality rates and hospitalization rates, the total annual economic impact of treating CAP in the U.S. could rise by 23% to $14.9 billion.

COST EFFECTIVENESS ANALYSIS OF LINEZOLID VS. TEICOPLANIN FOR THE TREATMENT OF SERIOUS GRAM-POSITIVE BACTERIAL INFECTIONS IN A MULTINATIONAL RANDOMIZED TRIAL

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OBJECTIVES: To evaluate the cost-effectiveness of linezolid, compared to teicoplanin, for serious gram-positive infections from a randomized trial, which showed that linezolid had superior efficacy especially in bacteremia (ICAAC 2001; L-1481), a trend toward shorter LOS (ECCMID 2002; O140) and lower mean adjusted total cost of treatment (SCCM 2003; 200). **METHODS:** Hospitalized patients from 6 European (n = 227) and 7 South American (n = 203) countries with serious gram-positive infections including pneumonia, complicated skin/soft tissue infections, or bacteremia were treated with linezolid (intravenous followed by optional oral) or teicoplanin (intravenous followed by optional intra-muscular) for up to 4 weeks, followed by up to 3 weeks of observation. Investigator-assessed end-of-treatment success/failure was used to determine effectiveness, missing/indeterminate evaluations were either scored as failures or imputed using logistic regressions. Resource use during the 49-day study period was collected and