TB, and salmonellosis are likely to be majorly affected by climate change.

CONCLUSIONS: Accelerating climate change carries a profound threat for the increase in certain infectious diseases worldwide. To gain the maximum disease prevention, an understanding of the ecology of infectious diseases must be developed in order to protect vulnerable populations, rather than focusing on single agent of disease.

PIN8 ASSESSMENT OF TUBERCULOSIS BURDEN IN CHINA USING A DYNAMIC DISEASE SIMULATION MODEL
Mehra M1, Fang V2, Chand R3, Cosovan N4
1Janssen, Rahimt, USA, 2Janssen, Beijing, China, 3Janssen, Beijing, China,
4SmartAnalyst, Guanong, India, 5Janssen, Horsham, PA, USA

OBJECTIVES: To forecast and better understand the primary drivers of the incidence and prevalence of and mortality from drug sensitive and multidrug resistant tuberculosis (DS-TB and MDR-TB, respectively). METHODS: The Tuberculosis Simulation Model (TBSM) is a dynamic disease simulation model that uses historical and current disease incidence, treatment success rates, mortality, and transmission trends and can account for expected market events to estimate future DS-TB and MDR-TB incidence, prevalence and mortality in China. RESULTS: The model shows that between 2010 and 2050, DS-TB incidence, prevalence and mortality will decrease by 29%, 52% and 29%, respectively, whereas MDR-TB incidence, prevalence and mortality will fall by 3%, -11% and 10%, respectively. These reductions would be driven by an expected decrease in the pool of people with latent infection (tuberculosis infection but not tuberculosis disease) and a reduction in transmission rates and reduced rate of progression from latent to active TB. CONCLUSIONS: Results from this model demonstrate considerable anticipated decreases in DS-TB and MDR-TB incidence and mortality in China over the next forty years, the decreases are more because of reductions in DS-TB than in MDR-TB. Improvements in MDR-TB diagnosis and improved cure rates due to better MDR-TB treatments can likewise be expected to decrease MDR-TB incidence, prevalence and mortality over the long run. This adaptable TBSM tool has potential value in public health practice by forecasting outcomes of interventions and can also be useful for cost effectiveness modeling by country or by region by defining critical unmet need.

INFECTION – Cost Studies

PIN9 A MULTI-CENTER, RETROSPECTIVE, CHART REVIEW STUDY TO COMPARE DIRECT HEALTH CARE COSTS OF TREATMENT EXPERIENCED PATIENTS WITH HIV/AIDS BEFORE AND AFTER TRIPLE CLASS FAILURE IN THAILAND
Siriponsam K1, Hanvanich M2, Nilaratanaaluk V3, Hiranushiluk N4, Pattanapatree O4, Chongniwitpinyoon S5
1Ramathibodi Infectious Disease Institute, Nonthaburi, Thailand, 2Chulalongkorn University, Bangkok, Thailand, 3Mahidol University, Bangkok, Thailand, 4MSD (Thailand) Ltd., Bangkok, Thailand

OBJECTIVES: To compare direct health care costs of treatment experienced patients with HIV/AIDS before and after triple class failure across participating centers. METHODS: The resource use data for eligible patients were collected two years before and > 90 days following the date of triple class failure (TCF), which was between January 2002 and January 2008. The treatment failure was defined as virological failure to at least one drug from each of three classes (NNRTI, NRTI and PI). Costs of resource use at patient level were estimated by multiplying the number of resource use by unit cost. RESULTS: Costs of resource use at patient level were significantly higher than those before TCF in all 4 periods. Once triple class failure occurred, overall direct expenditures increased significantly as early as 3 months and through 2 years of follow-up. The most dramatic increase was the costs associated with laboratory tests, especially genotyping, and indirect costs associated with hospitalization. CONCLUSIONS: Direct medical costs increased significantly for the first 3, 6 and 12 months. Finally, overall direct expenditures after TCF were significantly higher than those before TCF in all 4 periods.

PIN10 EPIDEMIOLOGY AND ECONOMIC BURDEN OF PNEUMOCOCCAL DISEASE IN OLDER ADULTS IN TAIWAN
Wu DC1, Chang C2, Chen L3, Fang H1, Roberts CR4
1National Yang Ming University, Taipei, Taiwan, 2Chang Gung University, Tao-Yuan, Taiwan, 3Fyer, New Taipei City, Taiwan, 4Fyer, New York, USA

OBJECTIVES: Older adults are in an increasing risk of pneumococcal diseases, including meningitis and bacteremia (invasive pneumococcal disease, IPD), and pneumonia. The objective of this study was to estimate the clinical and economic burden of pneumococcal disease in adults ≥50 years of age in Taiwan. METHODS: Cases of hospitalized IPD and cases of hospitalized and outpatient pneumonia were obtained by ICD-9 codes from Taiwan’s National Health Insurance Reimbursement Database from 2002-2009. Pneumococcal pneumonia was assumed to comprise 23.8% of all-cause pneumonia based on published literature. Data were stratified by age groups 50-64, 65-74, 75-84 and ≥85. Average incidence rates were calculated by dividing cases by age group and year specific population figures. Cost was extracted from the database for inpatient and outpatient cases; mortality estimation was based on hospital mortality. RESULTS: The average incidence per 100,000 person years was 2.4 for IPD, 278.8 for hospitalized pneumococcal pneumonia, and 137.4 for outpatient pneumococcal pneumonia. Mortality was 12.2% for IPD and 10.0% for hospitalized pneumococcal pneumonia. Compared with adults 50-64 years of age, the incidence of pneumococcal hospitalization were 3.7 fold higher in those 65-74, 9.7 fold higher in 75-85 and 19.5 fold higher in those ≥85. The total number of hospitalizations increased by 20% from 2002 to 2009, largely attributable to population growth. In 2009, there were 16,711 pneumococcal hospitalizations, 103,302 outpatient visits, and 1,920 deaths, with a total cost of NT$ 2.92 billion. Hospitalized pneumococcal pneumonia was responsible for 94% of costs and 99% of mortality. CONCLUSIONS: The morbidity and mortality of pneumococcal disease increases sharply in an increasing public health problem. Older adults as the population ages. Expanded utilization of cost-effective treatment and prevention efforts are warranted to alleviate the burden of pneumococcal diseases in Taiwan.

PIN11 ECONOMIC BURDEN OF INFECTIVE PNEUMOCOCCAL DISEASES IN URBAN CHINA
Liu G1, Zhu L2, Li D1, Chen D1, Deng J1, Dong P3, Shi Q4
1Peking University, Beijing, China, 2Peking University, Beijing, Beijing, China,
3Pfizer, Beijing, China, 4Pfizer China, Shanghai, China

OBJECTIVES: To estimate direct medical cost and productivity loss for invasive pneumococcal diseases in child under 2 in urban China. METHODS: Six health status contained pneumococcal meningitis (inpatient), pneumococcal septicaemia (inpatient), pneumonia (all-cause, inpatient), pneumonia (all-cause, outpatient), mild to moderate skin (all-cause, outpatient) and severe otitis media (all-cause, outpatient) were considered. Age-specific cost was collected from electronic patient records (2010) from 14 hospitals in 7 cities in China. 2 hospitals in each city was selected (1 Children’s Hospital, 1 Comprehensive Hospitals) and 7 field cities including Beijing, Guangzhou, Shenzhen, Wuhan, Xian, Chengdu and Shenyang were enrolled. Direct medical cost included registry fee, medications, and diagnostic test fee, hospitalization expenditure. Cost of productivity loss was days for work absent of patient plus time consumed in infirmaries. In first part, weighted average method was used to calculate average direct medical cost. In second part, daily wage rate was applied to estimate cost of productivity loss. RESULTS: The average direct medical cost in all IPD cases (pneumococcal meningitis & pneumococcal septicaemia) was 29,950 Yuan (95%CI: 4,489-101,003). Average 19 working days lost and costs of productivity loss were 1934 Yuan (95%CI: 532-6,412) per patient. CONCLUSIONS: IPD has a serious impact on life quality of child under 2 in Chinese urban areas and it could lead to severe economic burden.

PIN12 THE ANALYSIS FOR INPATIENTS COST AND MEDICAL INSURANCE COVERAGE IN CHINA, 2009
Song S1, Ye L1, Shi Q2
1Fudan University, Shanghai, China, 2Pfizer China, Shanghai, China

OBJECTIVES: To analyze the inpatient direct medical costs of pneumonia among regional medical hospitals, and the difference of paying the medical costs between the Urban Employee Basic Medical Insurance (UEBMI) and Urban Resident Basic Medical Insurance (URBMI) plans were compared. METHODS: Systematic sampling was used to collect data on inpatients costs of pneumonia in 2009 in China. The database includes data from 60 hospitals from 60 cities in China. The patients with pneumonia and reimbursement rate between UEBMI and URBMI plans were analyzed. RESULTS: In 2009, pneumonia was the most frequent disease in children below 5 years old and 5th among people 6 to 65 years old in China. In total 210,421 hospitalization case, the average cost of inpatient pneumonia was 5,415 Yuan ($853) per patient, and the expense in capital cities, prefectural-level cities, and county-level cities were 16,375 Yuan ($2,579), 4,321 Yuan ($681), and 4,434 Yuan ($698), respectively. The average length of hospitalization was 14.6 days for patients covered with UEBMI, and 11.7 days for those covered with URBMI. Almost 67% of the direct medical costs were covered by two medical insurance systems, but differed by system as 73.35% for urban employees and 51.99% for urban residents. Patients below 5 years old paid 64.76% of the direct medical costs out-of-pocket, whereas people over 65 year old only paid 27.2% because they were shielded by two different systems. CONCLUSIONS: In China, pneumonia is a common disease that mainly affects children and elderly people. There was significant difference in direct medical costs and the length of hospitalization among different medical insurance plans. Costs in big cities were much higher than smaller ones because of the unbalanced distribution and uneven economic situations. The reimbursement rate of URBMI was much lower than that of UEBMI.

PIN13 COST OF ANTIBIOTICS USED FOR NOSOCOMIAL INFECTION TREATMENT IN INPATIENT DEPARTMENT AT NAKHON PATHOM HOSPITAL
A667

OBJECTIVES: Nosocomial infection can occur more frequently in patients on admission to the hospital. Patients must result in a longer treatment stays, and increase costs from the use of antibiotics to treat patients. The purpose of this study was aimed to calculate the value of antibiotics used to treat patients with nosocomial infections in inpatient department at Nakhon Pathom Hospital.