vancomycin US$3909.2, daptomycin US$6131.2 and tigecycline US$5509.0. The treatment with linezolid was associated with a shorter stay in the intensive care unit (7 days on average) which reduces the cost of treatment because it allowed the switch from intravenous to oral administration (5 days on average). Results for each alternative in QALYs were: linezolid 0.063, vancomycin 0.060, daptomycin 0.061 and tigecycline 0.059. The results for each alternative in terms of percentage of patients cured were: linezolid 84.4%, vancomycin 74.7%, daptomycin 78.1% and tigecycline 70.4%. The model results indicate that linezolid is dominant compared to vancomycin, daptomycin and tigecycline. Probabilistic sensitivity analyses showed the robustness of these findings. **CONCLUSIONS:** Linezolid is a cost-saving alternative in the treatment of cSSTI in the Chilean National Fund of Health (FONASA).

PIN53

COST-EFFECTIVENESS EVALUATION OF LINEZOLID, VANCOMYCIN AND TEICOPLANIN IN TREATING NOSOCOMIAL PNEUMONIA CAUSED BY METHICILIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) – PRIVATE HEALTH CARE SYSTEM PERSPECTIVE

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OBJECTIVES: The objective of this research is to evaluate the cost-effectiveness of linezolid 600mgBID(LI), vancomycin 1gBID(VA) and teicoplanin 400mgBID(TE) in the treatment of nosocomial pneumonia caused by MRSA under the private health care system perspective. **METHODS:** To compare the options, a decision tree model was built considering an arm per treatment option, from which patients could respond to the initial treatment and continue to maintenance treatment using the same antibiotics, or do not respond, and repeat the treatment with assumed 50% chance to use one of the other two antibiotics. Clinical or microbiological effectiveness could be used as determinants of response. Effectiveness measures were mortality, clinical and microbiological responses, calculated by an indirect comparison of a literature systematic review. Hospitalization days were evaluated. Only direct costs were considered, and were obtained from CBHPM2010 for medical procedures, CMED December2012, considering X-factory price plus 18% tax for medications and BRASINDICE December2012 for materials. Values were represented in 2012USD. A time horizon of 1 year was considered. **RESULTS:** Clinical response rates were 66.5%(VA), 68.3%(TE), 72.6%(LI), microbiological response rates were 56.1%(VA), 55.9%(TE), 64.4%(LI), mortality rates were 15.74%(VA), 13.56%(TE), 10.13%(LI). If clinical response was considered as a determinant of success, the treatment costs would be US$33,190.76(VA), US$41,657.71(TE), US$27,036.62(LI), hospitalization days would be 41(VA), 39(TE), 26(LI), and if microbiological response was considered, the treatment costs would be US$34,597.12(VA); US$42,574.61(TE), US$28,514.48(LI) and hospitalization days would be 42(VA), 40(TE), 28(LI). Incremental cost-effectiveness ratios for TE and LI when compared to VA for clinical response were US$470,386.13, -US$100,887.50(dominant), and for microbiological response were -US$398,874.67(dominated), -US$73,284.78(dominant) respectively. **CONCLUSIONS:** Compared to vancomycin, teicoplanin was either dominated or did not reach cost-effectiveness considering a willingness to pay of US$32,621.93 (3xBrazilian GDP per capita), whereas linezolid was dominant, presenting lower mortality while offsetting costs, mainly driven by less hospitalization days at private health care services.

PIN54

COST-EFFECTIVENESS EVALUATION OF AMPHOTERICIN B, AMPHOTERICIN B LIPOSOMAL, CASPOFUNGIN AND VORICONAZOL IN TREATING ASPERGILLOSIS UNDER THE BRAZILIAN PUBLIC HEALTH CARE SYSTEM PERSPECTIVE

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OBJECTIVES: Aspergillosis is the second cause of invasive fungal infections with high mortality rates. The objective of this research is to evaluate the cost-effectiveness of amphotericin B(AB) 1.5mg/kg/day, amphotericin B liposomal(AL) 3mg/kg/day, caspofungin(CA) 50mg/day, voriconazol 8mg/kg/day(VO) including maintenance oral Voriconazol 400mg/day scheme in the treatment of aspergillosis under the Brazilian public health care system perspective. **METHODS:** To compare the options, a decision tree model was built considering sequential treatments, from which patients could respond to one initial treatment and continue to a maintenance phase of the same medication, or do not respond due to either inefficacy or adverse events and switch treatments with assumed equal chance to use one of the other options. Effectiveness measures were mortality, clinical response and days of hospitalization, calculated by indirect comparison of a literature systematic review. Only direct costs were considered, and were obtained from the publicly available databases of DATASUS. Values were represented in 2012USD. A time horizon no longer than 4 weeks was considered, thus discounting was not applied. One-way sensitivity analysis considered de-hospitalization in maintenance phases while using oral Voriconazol. **RESULTS:** Clinical response rates were 36.40%(AB), 34.60%(AL), 34.20%(CA), 56.67%(VO), mortality rates were 50.90%(AB), 48.70%(AL), 44.70%(CA), 34.10%(VO) and hospitalization days were 26.35(AB), 24.68(AL), 25.33(CA), 22.55(VO). Expected treatment costs were 18,380.91USD(AB), 53,076.12USD(AL), 27,145.04USD(CA) and 24,510.88USD(VO). Considering AB as the baseline for cost-effectiveness, VO presented an incremental cost-effectiveness ratio(ICER) of 30,241.60 while other options were dominated with higher costs and lower effectiveness. If de-hospitalization was considered, VO arm would sum 14.62 hospitalization days, treatment cost of 23,299.90USD and an ICER of 24,267.34USD. **CONCLUSIONS:** Assuming a willingness to pay of 32,621.93USD (3 times Brazilian 2011GDP per capita), VO was the only cost-effective option compared to AB, additionally presenting lower mortality and less hospitalization days while allowing early de-hospitalization at public health care services.

PIN55

ECONOMIC EVALUATIONS OF ANTIRETROVIRAL THERAPY MONITORING USING ROUTINE HIV VIRAL LOAD TESTING IN LOW-INCOME SETTINGS: A SYSTEMATIC REVIEW

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OBJECTIVES: Strategies for monitoring antiretroviral therapy (ART) include clinical assessment, CD4 testing, and viral load (VL) testing. Although benefits of VL monitoring have been established, it is considered too expensive to implement in low-income settings. Several studies have found varying levels of cost-effectiveness (CE) of VL monitoring. We reviewed the studies and evaluated their quality to identify gaps in evidence of potential CE of VL testing in low-income settings. **METHODS:** We performed a systematic review of studies with a cost analysis using a Medline search from 1980-2012 with keywords 'cost', 'economic', 'viral load', and 'HIV'. We assessed study quality using the validated Quality of Health Economic Scales (QHES) questionnaire and the Drummond criteria. **RESULTS:** We identified and included eight studies. QHES scores ranged from 44 to 83 (on a scale of 0-100). Two methodologically strong studies used Markov models, and three used high quality cohort data. One study was performed among children, one used clinical trial data that may not be generalizable, and one did not include a CD4 monitoring strategy. Incremental CE ratios ranged from $86/life-year to $68,698/quality-adjusted life-year and were most sensitive to cost of VL test kits, followed by treatment failure rates and utilities. Two studies found VL testing to be CE (<3 times gross domestic product (GDP)/capita), and three found it to be highly CE (<1 times GDP/capita). Only one study included a societal perspective, which found VL monitoring to be cost saving. **CONCLUSIONS:** This evidence suggests that VL testing may be CE in low-income settings. The five studies that were methodologically strong and utilized high quality data found VL monitoring CE or highly CE. Reduced costs of VL test kits may further enhance CE. Future studies are needed to address methodological and data quality issues as well as use of a societal perspective.

PIN56

GEMIFLOXACIN AS FIRST LINE TREATMENT FOR COMMUNITY ACQUIRED PNEUMONIA IN MEXICO: A COST—EFFECTIVENESS STUDY

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OBJECTIVES: Community acquired pneumonia (CAP) still represents an important disease in Mexico. The study of both economic and clinical outcomes of treatments remains relevant. The aim of this study was to assess the consequences of the use of antibiotics to treat CAP, from the perspective of Instituto Mexicano del Seguro Social (IMSS). **METHODS:** A decision tree model that considers clinical success and failure either whit first and second line treatments, presentation or not of adverse events (AE´s), as well as death was developed. The antibiotics considered in the assessment were: clarithromycin (1,000 mg/day), levofloxacin (1,000 mg/day), ceftriaxone (1,000 mg/day), cefuroxime (1,500 mg/day), moxifloxacin (400 mg/day) and gemifloxacin (320 mg/day). The last option is not listed in IMSS formulary. Clinical data were extracted from international literature. Effectiveness measures were clinical success rate and length of stay (LOS). The model considered direct medical costs (2012 US$): drugs, diagnostic tests, physician visits, LOS, emergency room and intensive care unit; cost were extracted from institutional sources. Resource use for CAP was extracted from clinical files (n=94 adult patients) treated at one IMSS hospital, whereas resource use for AE´s treatment was obtained through expert opinion (panel). One-way sensitivity analysis and acceptability curves were performed. **RESULTS:** The alternative that presented the most favorable pharmacoeconomic profile was gemifloxacin ($3237 per patient, 95.3% of success rate and 6.22 days of LOS), followed by levofloxacin and clarithromycin, with marginal differences in clinical success but around $1600 of incremental cost. The alternative with the less favorable profile was moxifloxacin: $1784.52 of incremental cost, -8.8% of clinical success and +6.6 days of LOS regarding gemifloxacin. The results were robust to +10% acquisition cost and +5% AE´s incidence for gemifloxacin. **CONCLUSIONS:** Alternatives with potential to promote savings in the management of CAP (like gemifloxacin) are valuable, which becomes more relevant in contexts with limited resources.

PIN57

POTENTIAL BENEFITS ANALYSIS OF QUADRIVALENT INFLUENZA VACCINE (QIV) ON INFLUENZA DISEASE BURDEN IN THE UNITED KINGDOM, YEAR BY YEAR ANALYSIS (2000-2010)

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OBJECTIVES: Benefits of QIV over trivalent inactivated vaccine (TIV) are dependent on the proportion of influenza circulation attributable to influenza-B and the extent of vaccine matching with respect to circulating B-lineages. Applying the 2000-2010 influenza data from the Health Protection Agency, the impact of vaccination with QIV versus TIV on influenza morbidity and mortality in the UK was evaluated to estimate potential benefits of QIV if it had been available during this time. **METHODS:** Using current influenza management guidance (vaccination of those at-risk and the elderly), a multi-cohort, static, 1-year decision model was used. Influenza A and B was accounted for separately. Vaccine efficacy data was derived from Cochrane Databases (TIV) and meta-analyses (QIV). The model considers the perspective of the UK National Health Service. **RESULTS:** Using the average influenza-B circulation and vaccine

matching data over 2000-2010, 17,088 additional cases, 337 additional hospitalizations and 168 additional deaths could potentially be avoided annually with QIV versus TIV. There would be no additional benefits for well-matched years 2000-03 and 2009-10. In mismatched years benefits could range from minor, such as 2003-4 (100% mismatched, 0.4% influenza-B circulation) where 578 additional cases, 11 additional hospitalizations and 6 additional deaths potentially avoided to significant impact, such as 2005-6 (98.8% mismatched, 70% influenza-B circulation) with 100,296 additional cases, 1,976 additional hospitalizations and 988 additional deaths potentially avoided. **CONCLUSIONS:** Our analysis predicts that using recent influenza-B circulation and vaccine matching data, in 6 out of 10 years, a strategy of vaccination with QIV would have been more effective than TIV in reducing the number of influenza cases, and associated hospitalisations and deaths. Retrospective analysis of influenza circulation suggests that co-circulation of influenza-B lineages persists and that mismatch is frequent and unpredictable. The use of QIV might aid in reducing the associated burden of mismatched influenza-B.

PIN58

COST-EFFECTIVENESS ANALYSIS OF INTRODUCTION OF MENINGOCOCCAL CONJUGATE VACCINE IN COLOMBIA, 2011

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OBJECTIVES: Meningococcal disease (MD) is a serious public health problem worldwide. It mainly affects low-income countries with higher impact in the 'meningococcal belt' located at the African Sub Sahara. Children younger than 5 years old are the most affected age group, with the highest incidence in the first year of life. Our aim is to evaluate the cost-effectiveness of the introduction of routine vaccination with a tetravalent meningococcal conjugate vaccine (MCV-4) in the Colombian EPI. **METHODS:** An age-dependent Markov model, which followed a cohort of children under one year of age up to their life expectancy, was developed. Parameters of occurrence and care costs were based on data from National Surveillance System, official data sources, and literature review. Serotype coverage was taken from SIREVA NM Colombia surveillances from 2007 to 2010. A 3 + 1 schedule and a vaccination price of US$ 30.00 per dose were assumed in the base case, compared against no vaccination (only treatment the disease). All cost are expressed in 2011 US dollars. **RESULTS:** Introduction of MCV-4 would avoid 34 cases of meningococcal meningitis (MM), 27 cases of meningococcal sepsis, and 10 deaths in the lifespan of each infant's cohort evaluated. MCV-4 vaccination avoids 126 years of life (LY), or 165 disability adjusted life years (DALYs). Vaccination would costs raises to US$ 71 million. The ICER of vaccination strategy compared to no vaccination was estimated at US$ 441,998, which is very higher than the Colombian GPD (US$ 6,883). **CONCLUSIONS:** Routine vaccination against *Neisseria meningitides* with MCV-4in Colombia would not be cost-effective with tetravalent conjugate vaccine in the base case analysis.

PIN59

COST EFFECTIVENESS ANALYSIS OF VACCINATION WITH 13-VALENT (PCV13) AND 23-VALENT (PPSV23) PNEUMOCOCCAL VACCINES FOR ADULTS IN A PRIVATE COLOMBIAN INSTITUTION

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OBJECTIVES: Streptococcus pneumoniae causes significant morbidity and mortality worldwide in both children and adults. The aim of this analysis is to evaluate the cost-effectiveness of vaccinating colombian population over 50 years with 13-valent pneumococcal conjugated vaccine (PCV 13) from the institutional perspective in Colombia. **METHODS:** A Markov model was adapted to Colombian settings, using a time horizon of 5 years (3% annual discount rate). Comparators were PCV13, PPSV23 and no vaccination, vaccine coverage was 70%. Population size over 50 years of a Colombian insurance institution (n: 775,301) adjusted according with Colombian data was included, transition probabilities were extracted from a literature review, medical costs were taken from a local study developed by the "Fundación Cardio Infantil", vaccines costs were taken from local report (SISMED), the diseases incidence was retrieved from literature (Castañeda et al. 2010, Dickinson et al 2001), vaccines efficacies were taken from literature (for PCV13 children data from PCV7 studies were adjusted by immunosenescence) and costs are expressed in 2012 US$. Effectiveness measures were the number of pneumococcal diseases and deaths prevented, as well as life years (LY) gained saved. Probabilistic sensitivity analyses were performed. **RESULTS:** Over a 5-year period, vaccinating with PCV13 prevents 1,427 cases of invasive pneumococcal disease compared to PPSV23 and 1847 compared no vaccination; 1691 and 1470 cases of invasive pneumonia and 188 and 256 deaths, respectively. PCV13 saves 101,564 LY's compared to PPSV23 and 92,261 LY's compared to no vaccination. Total expected costs (vaccination + medical costs) were US$164.0M for PCV13, US$ 164.4 PPSV23 and US$155.0M for no vaccination. **CONCLUSIONS:** Vaccinating adults over 50 years with PCV13 in a Colombian insurance institution is a cost-saving alternative in comparison to PPSV23 and a cost-effectiveness alternative to no vaccination (ICER = US$ 96.6 /LY).

PIN60

COST EFFECTIVENESS ANALYSIS OF VACCINATION WITH 13-VALENT (PCV13) AND 23-VALENT (PPSV23) PNEUMOCOCCAL VACCINES FOR ADULTS IN BOGOTA, COLOMBIA – PUBLIC SCENARIO

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OBJECTIVES: Streptococcus pneumoniae causes significant morbidity and mortality worldwide in both children and adults. The aim of this analysis is to evaluate the cost-effectiveness of vaccinating the Bogota adult citizens (over 50 years) with 13-valent pneumococcal conjugated vaccine (PCV 13) versus 23-valent pneumococcal polysaccharide vaccine (PPSV23) and no vaccination from the public payer's perspective in Colombia. **METHODS:** A Markov model was adapted to the Colombian public setting, using a time horizon of 4 years (3% annual discount rate). Comparators were PCV13, PPSV23 and no vaccination, vaccine coverage of 70% and projected Colombian population for 2013 were assumed, transition probabilities were extracted from literature review, medical costs were taken from a local study developed by the "Fundacion CardioInfantil"; vaccine prices were taken from the PAHO revolving fund price list, vaccines efficacies were taken from literature (for PCV13 children data from PCV7 studies were adjusted by immunosenescence), diseases incidences were retrieved from literature (Castañeda et al. 2010, Dickinson et al 2001) and costs were expressed in 2012 US$. Effectiveness measures were the number of pneumococcal diseases and deaths prevented, as well as life years (LY) saved. **RESULTS:** Over a 4-year period, vaccinating with PCV13 and PPSV23 against no vaccination prevents 2587 and 1804 cases of invasive pneumococcal disease; 2365 and 11 cases of invasive pneumonia and 357 and 139 deaths respectively. PCV13 saves 518 LY's compared to PPSV23 and 44.9 LY's compared to no vaccination. Total expected saving (vaccination + medical costs) for PCV13 was US$5.8M against PPSV23 and US$3.2 against no vaccination (total expected costs: US$54.5M; US$60.3M and US$57.7M respectively). **CONCLUSIONS:** Vaccinating adults over 50 years with PCV13 in Bogota is a cost-saving alternative in comparison to PPSV23 and no vaccination (US$3.5 and US$1.9 savings per patient, respectively). Study findings could support the decision-making process in favor of PCV13.

PIN61

COST-EFFECTIVENESS ANALYSIS OF PNEUMOCOCCAL CONJUGATE VACCINATION IN URBAN CHINA

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OBJECTIVES: To evaluate the cost-effectiveness results of introducing PCV7 into City Immunization Programs in 7 urban China. **METHODS:** Six health status contained pneumococcal meningitis (inpatient), pneumococcal septicemia (inpatient), pneumonia (all-cause, inpatient), pneumonia (all-cause, outpatient), mild otitis media (all-cause, outpatient) and sever 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. Two hospitals in each city was selected (1 Children's Hospital, 1 Comprehensive Hospitals) and 7 field cities including Beijing, Guangzhou, Shenzhen, Wuhan, Xi'an, Chengdu and Shenyang were enrolled. Direct medical cost included registry fee, medications, diagnostic tests fee, and hospitalization expenditure. A discount rate of 5% was applied. One-way sensitivity analyses were performed to evaluate the sensitivity of the results to data inputs. **RESULTS:** As Category II vaccinePCV7 was not cost effective due to the private market unit price and low penetration rate. However, vaccination of children under 2 years old from 7 urban China in a CIP is estimated to prevent 366,337 cases from infection and 3,415 cases from death compared to no vaccination. From a payer perspective, a PCV7 CIP had an ICER of RMB17, 977/QALY in Beijing, RMB79,180/ QALY in Chengdu, RMB72,406/QALY in Guangzhou, RMB70,896/QALY in Shenyang,RMB69,792/QALY in Shenzhen, RMB64,152/QALY in Wuhan and RMB76,864/ QALY in Xian. **CONCLUSIONS:** The empirical results show that under the current situation with a 860 Yuan/ dose vaccination price and a 85% vaccination rate, when take PCV7 into the city immunization plan, the spending of the cost is worth in Beijing, Guangzhou and Shenzhen and is acceptable in Wuhan, Shenyang, Chengdu and Xi'an.

PIN62

COST-EFFECTIVENESS COMPARISON OF QUADRIVALENT VERSUS TRIVALENT INFLUENZA VACCINES IN THE UNITED STATES

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OBJECTIVES: Trivalent influenza vaccines contain two influenza A and one influenza B strains. The Food and Drug Administration has approved live attenuated and inactivated quadrivalent vaccines (containing two influenza A and both influenza B strains). Our aim was to compare the cost-effectiveness of vaccination with quadrivalent versus trivalent seasonal influenza vaccines. **METHODS:** A dynamic transmission model was used to estimate the age stratified temporal trend in influenza virus infection incidence. The population was divided into 5 subgroups: Susceptible, Exposed, Infectious, Recovered, and Vaccinated. We estimated health service resource utilisation from published disease-specific probabilities of consulting a primary care physician, hospitalization, and death. Disease burden was expressed in clinical (health service utilization and death), quality of life, and economic terms. Both a payer and societal perspectives were adopted. We compared the costs and outcomes of quadrivalent vaccination with those of trivalent vaccination, assuming price parity between vaccines. All costs and benefits were discounted at a rate of 3% per annum. Probabilistic sensitivity analyses were conducted. **RESULTS:** Adding a second influenza B strain to the trivalent seasonal influenza vaccines at the same vaccine prices was estimated to be cost-saving in the US. Estimated mean annual cost savings totalled $3.9 billion (societal perspective) and $1.6 billion (third-party payer perspective). On average, annual clinical benefits included over 13.5 million averted infections, over 510,000 averted primary care consultations, approximately 80,000 averted hospitalizations and 5,000 deaths prevented. The quadrivalent vaccines dominated their trivalent equivalents, saving cost and generating QALY's. All sensitivity analyses were cost-saving.