ECONOMIC IMPACT OF 13-VALENT PNEUMOCOCCAL CONJUGATE VACCINE WITHIN THE PRIVATE MARKET IN BRAZIL

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OBJECTIVES: To evaluate the cost-effectiveness (CE) immunization with 13-Valent Pneumococcal Conjugate Vaccine (PCV13) compared with no vaccination and also comparing with PCV10, considering direct effects in the Brazilian private market.

METHODS: A cost tree model was used to estimate the total number of cases of disease and disease sequelae caused by S. pneumoniae and the clinical outcomes were mortality and incidence rates. The vaccination coverage rate was 90% considering a four-dose schedule, the pneumococcal disease according to the Brazilian label and the target population was a hypothetical birth cohort in Brazil followed 5 years from the Brazilian Private Market Health care system perspective. RESULTS: Considering only direct costs and benefits, the program with PCV13 compared with PCV10 will avoid 60,652 cases of disease including pneumonia and invasive disease, and also 133,615 saved life years. At a current vaccination’s price (PCV13 cost of R$ 198,11 and PCV10 R$ 150,90) the CE results will be R$ 3,976,00 for life years gained and R$ 3,760,00 for disease averted. Considering the same price for PCV13 and PCV10, PCV13 will achieve cost-saving results. The program with PCV13 compared with no vaccination will avoid 204,307 cases of disease including AOM, pneumonia and invasive disease, and also 162,239 saved life years. The CE results will be R$ 13,974,00 for life years. At a current vaccination’s price (PCV13 cost of R$ 198,11 and PCV10 R$ 150,90) the CE results will be R$ 3,976,00 for life years gained and R$ 3,760,00 for disease averted. CONCLUSIONS: The analysis suggests that the PCV13 within the Brazilian private market expected to be very cost-effective relative to PCV10 and to no vaccination. Considering the same price, PCV13 compared to PCV10 may result in reduction of mortality with resultant cost saving (R$ 35 Million).

OBJECTIVES: To evaluate the cost-effectiveness of the Advisory Committee on Immunization Practices (ACIP) recommended schedule of adult immunizations in the US.

METHODS: A cost-effectiveness calculator was constructed for the ACIP recommended adult immunization schedule following ACIP’s 2009 recommendations and for the 2010 influenza season. Costs and direct QALYs were derived from existing cost-effectiveness studies of target vaccinations vs. no vaccination. Two approaches were taken—cross-sectional and longitudinal. In the cross-sectional approach, members of a hypothetical US age-weighted cohort were assumed to receive the vaccinations for which they were eligible in a single year, lifetime incremental costs and QALYs were summed over the cohort, and an aggregate ICER was calculated. In the longitudinal approach, incremental costs and QALYs from existing studies were applied to a cohort of 18 year-olds at the appropriate age for each vaccine costs and QALYs for the present study were summed, and an aggregate incremental cost-effectiveness ratio (ICER) was calculated.

RESULTS: Estimated ICERs were $3730/QALY and $8000/QALY for the cross-sectional and longitudinal approaches, respectively. Both approaches are influenced by inclusion of influenza vaccinations; however excluding influenza still results in cost-effective ICERs (below $30,000/QALY) for the longitudinal approach. CONCLUSIONS: Independent of the analytic approach, adult immunization according to the current ACIP schedule is cost effective.

COST-EFFECTIVENESS ANALYSIS OF LINEZOLID VS VANCOMYCIN IN EMPIRIC TREATING MECHANIC VENTILATION-ASSOCIATED PNEUMONIA BY METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (VAP-MRSA) IN COLOMBIA

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OBJECTIVES: To evaluate the cost-effectiveness of linezolid (LIN) vs vancomycin (VAN) for the empiric treatment of VAP-MRSA in Colombia. METHODS: A decision tree (validated by three infectologists, two intensivists) was designed to assess cost-effectiveness of the two medications. The model simulated costs and outcomes in a temporal horizon of 12 weeks, a third-payer perspective was used. Effectiveness and outcome measures were defined as life-years gained (LYs). Clinical efficacy and node probabilities were obtained by systematic literature review of published clinical trials, which estimated direct costs associated with VAP-MRSA treatment (drugs, hospitalization, and costs associated with adverse events). Medical costs from 3 major Colombian cities were used; drug costs were taken from a standard costing source. Incremental cost per successfully treated patient (ICERs), one and two-way sensitivity analyses for key variables were performed and incremental cost effectiveness ratios were estimated with sensitivity analyses. RESULTS: Patients treated with LIN experienced the highest outcomes (6.6 LYs) followed by VAN (4.2 LYs). Mean cost per patient was lower for LIN ($US3150) compared to VAN ($US4000). The CE Rate was better for LIN ($US474/LYs) compared to VAN ($US100). CONCLUSIONS: Linezolid is cost saving treatment compared to vancomycin in empiric treating mechanical ventilation associated pneumonia by methicillin-resistant Staphylococcus aureus in Colombia.

COST-EFFECTIVENESS OF THE ACIP RECOMMENDED ADULT IMMUNIZATION SCHEDULE IN THE US

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OBJECTIVES: To estimate the cost-effectiveness of the Advisory Committee on Immunization Practices (ACIP) recommended schedule of adult immunizations in the US.

METHODS: A cost-effectiveness calculator was constructed for the ACIP recommended adult immunization schedule following ACIP’s 2009 recommendations and for the 2010 influenza season. Costs and direct QALYs were derived from existing cost-effectiveness studies of target vaccinations vs. no vaccination. Two approaches were taken—cross-sectional and longitudinal. In the cross-sectional approach, members of a hypothetical US age-weighted cohort were assumed to receive the vaccinations for which they were eligible in a single year, lifetime incremental costs and QALYs were summed over the cohort, and an aggregate ICER was calculated. In the longitudinal approach, incremental costs and QALYs from existing studies were applied to a cohort of 18 year-olds at the appropriate age for each vaccine costs and QALYs for the present study were summed, and an aggregate incremental cost-effectiveness ratio (ICER) was calculated.

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AN INITIAL COST-EFFECTIVENESS ANALYSIS OF THE NEW 13-VALENT PNEUMOCOCCAL CONJUGATE VACCINE (PCV-13) VERSUS PCV-7 IN THE PUBLIC SECTOR OF HONG KONG

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OBJECTIVES: Local cost-effectiveness studies using local health data have supported the long-term health and economic benefits of the PCV-7 due to herd immunity and have led to its inclusion in the routine immunization programme for infants in Hong Kong since September 2009. PCV-13 is due to be introduced in 2010. The aim of the present study is to compare its clinical and economic impacts to those of the existing PCV-7 on the whole population of Hong Kong. METHODS: A decision-analytical model developed from the recent Prevent-13 Economic Impact (PREVENT) model (RTI Health Solution) was used for the analysis of the outcomes of vaccination. The number of people in Hong Kong of around 7 million were assessed with an ICER of 11,465 (US$540/QALY). The number of people in Hong Kong with PCV-7 was around 7 million and was assessed with an ICER of 2,702. RESULTS: The ICERs were around 11,465 (US$540/QALY) and 2,702 (US$48,044, cost/QALY was US$3150) for the cross-sectional and longitudinal approaches, respectively. Both approaches are influenced by inclusion of influenza vaccinations; however excluding influenza still results in cost-effective ICERs (below $30,000/QALY). CONCLUSIONS: Independent of the analytic approach, adult immunization according to the current ACIP schedule is cost effective.

COST-EFFECTIVENESS ANALYSIS OF LINEZOLID VS VANCOMYCIN IN EMPIRIC TREATING MECHANIC VENTILATION-ASSOCIATED PNEUMONIA BY METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (VAP-MRSA) IN COLOMBIA

Diabetic foot infection is a frequent complication for diabetes patients that lead to high economical costs. The purpose of this study was to develop an economic analysis of linezolid vs vancomycin (VAN) for the empiric treatment of VAP-MRSA in Colombia. METHODS: A decision tree (validated by three infectologists, two intensivists) was designed to assess cost-effectiveness of the two medications. The model simulated costs and outcomes in a temporal horizon of 12 weeks, a third-payer perspective was used. Effectiveness and outcome measures were defined as life-years gained (LYs). Clinical efficacy and node probabilities were obtained by systematic literature review of published clinical trials, which estimated direct costs associated with VAP-MRSA treatment (drugs, hospitalization, and costs associated with adverse events). Medical costs from 3 major Colombian cities were used; drug costs were taken from a standard costing source. Incremental cost per successfully treated patient (ICERs), one and two-way sensitivity analyses for key variables were performed and incremental cost effectiveness ratios were estimated with sensitivity analyses. RESULTS: Patients treated with LIN experienced the highest outcomes (6.6 LYs) followed by VAN (4.2 LYs). Mean cost per patient was lower for LIN ($US3150) compared to VAN ($US4000). The CE Rate was better for LIN ($US474/LYs) compared to VAN ($US100). CONCLUSIONS: Linezolid is cost saving treatment compared to vancomycin in empiric treating mechanical ventilation associated pneumonia by methicillin-resistant Staphylococcus aureus in Colombia.