

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 hospitalizations 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.

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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 of 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 meningitidis* with MCV-4 in Colombia would not be cost-effective with tetravalent conjugate vaccine in the base case analysis.

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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).

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COST EFFECTIVENESS ANALYSIS OF VACCINATION WITH 13-VALENT (PCV13) AND 23-VALENT (PPSV23) PNEUMOCOCCAL VACCINES FOR ADULTS IN BOGOTÁ, 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 "Fundación 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.

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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 vaccine PCV7 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.

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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.