INFECTION—Economic Outcomes

INFLUENZA VACCINATION IN A MALAYSIAN COMPANY: WHAT RETURN ON INVESTMENT FOR THE EMPLOYER?
Samad AH1, Aji Usul MHB1, Zakaria D1, Ismael R2, Tasset A3, Baron-Papillon F4, Follet A4, Plun-Favreau J4
1Petronas (Petroliam Nasional Berhad), Kuala Lumpur; Malaysia; 2Aventis Pasteur SA, Petaling Jaya Selangor; Malaysia; 3Aventis Pasteur International, Lyon, France; 4Mapi Values, Lyon, France

OBJECTIVE: To evaluate the influenza vaccination health (decrease of attack rates of influenza-like-illness (ILI)) and economic (work productivity and indirect costs avoided) benefits in a company setting, using the employer perspective. METHODS: A prospective, non-randomised, non-placebo cost-benefit study was conducted in a petrochemical plant in Malaysia, comparing 2 cohorts: the influenza vaccinated (volunteers) and not vaccinated subjects. Influenza vaccination took place between 15th March and 15th April 2001 with a follow-up period of 6 months. Socio-economic and health status information, data on ILI symptoms and sick leaves were collected through self-administered monthly questionnaires, whereas vaccines’ adverse events were reported one week after injection. Immunization benefits were calculated through the avoided absenteeism, itself valued by replacement costs, individual operating income and wages. Costs of vaccination covered the vaccine administration and its adverse events. Loss of productivity was assessed by sick leave days and days of reduced effectiveness at work due to being not well because of ILI.

RESULTS: Among the 504 vaccinated and 518 not-vaccinated subjects, the attack rates of ILI were respectively, 8.13% and 30.31% with presence of fever in 100% of the reported ILI cases. The average length of sick leave taken for ILI was significantly greater in the not-vaccinated cohort (4.22 ± 1.39 vs 3.00 ± 0.98) as well as the number of days until feeling well again (5.80 ± 0.85 vs 5.37 ± 0.58). With an effectiveness of 77.98% in avoiding absenteeism, influenza vaccination lead to a global cost-savings of US$ 357,955 and a cost-savings of US$ 710 per vaccinated employee, when considering the realistic hypothesis of a 30% reduced productivity when the patient is not well because of ILI. CONCLUSIONS: Influenza vaccination showed an important effectiveness in reducing the number of ILI episodes but also indirect costs, leading to high return on investment for the employer.

ROUTINE CHILDHOOD VACCINATION AGAINST INFLUENZA: AN ANALYSIS OF CLINICAL AND ECONOMIC BENEFITS
Weycker DA1, Edelsberg JS1, Halloran ME2, Longini IM2, Nizam A3, Ciuryla V4, Oster G1
1Policy Analysis Inc. (PAI), Brookline, MA, USA; 2Emory University, Atlanta, GA, USA; 3Wyeth Research, Collegeville, PA, USA

OBJECTIVE: Influenza illness rates are high among children; they also are a major pathway for disease transmission to adults. Routine vaccination of children against influenza therefore may prevent not only their own illness, but also that of others in the community. The objective of this study was to estimate the clinical and economic benefits of such a policy, which are currently unknown. METHODS: We developed a stochastic simulation model of infection, disease transmission, clinical illness, and economic costs to assess the population-wide impact of routinely vaccinating children (ages 1–18 years) against influenza. The model depicts the daily interaction of persons in the population in various “mixing” groups (e.g., households, playgroups, schools), and simulates the spread of influenza infection throughout the community and the resulting number of illnesses; associated medical care (direct) and work loss (indirect) costs also are estimated. We used the model to examine the impact of expanded childhood vaccination (40%, 60%, and 80% coverage alternatively) versus current practice (5% coverage) on US influenza-related morbidity, mortality, and economic costs. In all scenarios, adults were assumed to receive influenza vaccine at current US rates. Vaccine efficacy was assumed to be 70%. RESULTS: In the US, there are currently an estimated 31.5 million cases of influenza illness annually, resulting in 119,000 hospitalizations, 11.8 million outpatient visits, $2.3 billion in direct costs, and $9.5 billion in indirect costs. Routine vaccination of 60% of children would reduce the population-wide