

## **Abstract**

**In 1997, the Department of Health has approved the use of varicella vaccine in Taiwan. The cost of two thousands dollars each shot and concerns of its adverse events have deferred its availability to all children. Only two local health departments have provided free vaccine to children of 15 months old. Because of the inconsistency in using the vaccine and lack of evaluation program, the impact of introducing this vaccine, including its efficacy, adverse effects, and post-vaccination infection, is hard to assess. The evaluation of economic efficiency and vaccine efficacy is particularly important when government is considering adding the varicella vaccine to the current immunization program.**

**In this study, we used the inpatient and outpatient claim data in the year of 2000 from the Southern, and Kaoping Branch of the Bureau of National Health Insurance to describe the incidence trend, estimate the total medical cost, conduct cost-benefit analysis, and assess vaccine efficacy and survey the report of adverse events. We calculated the direct medical cost of each uncomplicated as well as each complicated case. We also estimated the indirect societal cost by work loss resulting from personal illness or taking care of infected children. Finally, we performed cost-benefit analysis of two programs and recommended a most suitable to government authority.**

**The result showed that the major group of varicella was children from age 1 to 9, with the peak occurred in age 3 to 6. Although the preschool children were the main source of cases, varicella occurred in adulthood has the highest rate of hospitalization, which signified the severity of infection. Adulthood varicella should be carefully managed since its complication rate was usually high.**

**Like in many other countries, 85% of the cost associated with varicella came from indirect societal cost. The symptoms of varicella infection in young children were minor, however, the cost of taking care of an infected child could be tremendous. To preserve a national labor force, an efficacious vaccine that can significantly reduce varicella incidence is helpful.**

**From the experiences of using varicella vaccine over the past 3 years, the safety and efficacy were satisfied. The incidence of breakthrough cases was only 1.37% and the majority of breakthrough cases showed very mild symptoms. The incidence of adverse events was also low. Most of the reported adverse events were fever, rash, and pain in injection site.**

**The result of cost-benefit analysis showed that the implementation of universal immunization program to children 15 months old was efficient. With 90% coverage rate and 85% average efficacy, if the price of vaccine was**

**discounted 4% annually, we can anticipate a saving of 4.6 billion over the next 30 years, which was translated to an extra saving of 0.4 dollar per 1 dollar invested in the immunization program. The estimated was conservative since it did not take into consideration of the benefit of herd immunity, the suffering of varicella cases, and the cost of death from varicella.**

**Key Word : Varicella vaccine 、 Vaccine efficacy 、 Cost-benefit analysis 、 Varicella epidemiology**