ECONOMIC EVALUATION OF ROTAVIRUS VACCINATION FOR THE NETHERLANDS
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OBJECTIVES: To estimate the cost-effectiveness of a national rotavirus (RV) vaccination program for the Netherlands, from a societal perspective. METHODS: Three RV-vaccine doses are administered to infants as part of the routine schedule of childhood immunizations. Based on clinical trials we assume a vaccine protection duration of 4 years and a vaccine effectiveness of 55% against mild RV-diarrhea, 65% against moderate RV-diarrhea (outpatient treatment), and 80% against severe RV-diarrhea (inpatient treatment). Resource consumption caused by RV-diarrhea is derived from recent national studies and the findings of expert panels and valued according to the Dutch costing guidelines. Direct medical (e.g., for vaccine administration or RV-tests) and non-medical costs (e.g., for transportation or extra diapers) are considered. Indirect costs include the productivity loss of paid (friction cost method) and unpaid work (substitution approach) caused by parents caring for their sick child. Costs are presented in 1998 EUR and both future costs and effects are discounted at 4%. A decision analysis model is employed to calculate the health outcomes and costs of the vaccination program. RESULTS: RV-vaccination would avoid 34,300 cases of gastroenteritis and 2,300 hospitalizations per year. The break-even dose price of the vaccine is EUR 4 or EUR 9, depending on the exclusion or inclusion of the productivity loss of unpaid work. However, at a dose price of the 1999 withdrawn RV-vaccine (EUR 30) the program would yield costs of EUR 15,000 (paid work only) or EUR 12,100 (paid and unpaid work) per avoided hospitalization. These results are sensitive to the incidence of RV-gastroenteritis, the vaccine effectiveness, the length of hospitalization, and the productivity loss caused by RV-gastroenteritis while variations in outpatient care and direct non-medical costs have limited influence. CONCLUSIONS: Depending on its price the RV-vaccine might be a promising candidate for the Dutch national immunization program.
COST BURDEN OF VARICELLA-ZOSTER VIRUS INFECTION IN A MANAGED CARE SETTING

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Although information exists in the form of projected costs, limited data are available on the overall cost of illness resulting from varicella-zoster virus (VZV) infection. VZV is usually a benign childhood illness, but reactivation of latent VZV can lead to serious complications.

OBJECTIVE: To assess via medical claims the costs associated with VZV infection and its resultant complications from the payers’ perspective.

METHODS: We conducted a retrospective database analysis of 73,869 managed care members continuously enrolled throughout calendar year 1999. Records of members with a diagnosis code of either primary varicella (ICD9-052) or herpes zoster (ICD-053) were selected. Data was extracted and cost information was tallied for all medical claims including inpatient hospitalizations, primary care visits, specialist visits, emergency department visits, and specialty procedures. Cost data are reported in 1999 US dollars.

RESULTS: In 1999, a total of 119 patients were diagnosed with varicella (52%) and herpes zoster (48%). The mean cost to the payer was $496.77/patient. The average amount paid out for members with varicella was $181.87. The average cost per member with herpes zoster was $786.27. Sixty-two (52%) VZV afflicted members were diagnosed with varicella while 57 were diagnosed with herpes zoster. The amount paid for members over age 19 (n = 56) was $640.30/patient. Of these patients, 14% were classified with varicella infection, whereas 86% were classified as having zoster. For members aged <19 (n = 63), the mean amount paid was $369.18/patient. In this group, 78% were diagnosed with varicella infection, whereas 22% were diagnosed with zoster.

CONCLUSION: The above costs document for the first time the true cost of VZV infection from the payers’ perspective. Further efforts to expand vaccination programs should take these costs into consideration.