

COST-EFFECTIVENESS OF ROTAVIRUS VACCINATION AS PART OF THE NATIONAL IMMUNIZATION PROGRAM FOR THAI CHILDREN

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Abstract. Rotavirus infection is a common cause of gastroenteritis in infants and thus, presents an economic burden. Currently, there are effective vaccines against rotavirus licensed for use in Thailand. We evaluated the cost-effectiveness of rotavirus vaccination as part of the national immunization program for Thai children based on information derived from studies of disease burden of rotavirus infection, vaccine effectiveness, expenditure for care according to the WHO CHOICE; average GNP per capita provided by the Bank of Thailand and statistics from the Ministry of Health. The hypothesis of economic cost-effectiveness administering the vaccine along with DPT and OPV at ages 2 and 4 months was derived from a 5-year cohort study of 96% vaccinated children. Evaluation of vaccine cost-effectiveness included reduction of disease burden, cost averted, incremental cost-effectiveness ratio (ICER) to disability adjusted life year (DALY) averted and cost per life saved. Routine rotavirus immunization would prevent 109,918 visits to outpatient departments, 46,542 hospitalizations and 419 deaths in children under 5 years of age. It could reduce cost of care by USD12,066,484 or USD13 per child. As part of the national immunization program, the vaccine would be cost-effective at the direct medical break-even price of USD6.2 per dose. At a maximum vaccine price of USD6.2-10.5 per dose, the cost-effectiveness ratio is approximately USD185-759 per DALY averted. Vaccine price is greatly influenced by vaccine efficacy, mortality and G genotypes of rotavirus. Rotavirus vaccination could reduce gastroenteritis in children but the price, if used as part of the national immunization program should be below USD10 per dose.

Key words: cost-effectiveness, rotavirus vaccine, EPI, Thailand

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