

Impact and cost-effectiveness of rotavirus vaccination in Palestine

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Introduction

The Palestinian Ministry of Health (PMOH) has been providing ROTARIX to children in the West Bank and Gaza since 2016 with support from the Rostropovich-Vishnevskaya Foundation. Concurrent with the PMOH taking responsibility for financing the rotavirus vaccine procurement, the decision was made to shift to the newly prequalified ROTAVAC.

The objective of this study is to assess the cost, health impact, and cost-effectiveness of rotavirus vaccination in Palestine compared with no vaccination program and to evaluate the economic implications of the change in vaccine type from ROTARIX to ROTAVAC.

Methods

We collected primary data to estimate the supply chain and service delivery costs for both vaccines. We collected secondary data on introduction costs of ROTARIX, data on costs of switching to ROTAVAC, and procurement data for both vaccines. We used published and local data to inform rotavirus disease incidence rates and modelled treatment costs based on local protocol and price. Using the UNIVAC model, we projected costs and benefits of rotavirus vaccination in Palestine over a 10-year time horizon, exploring the use of ROTARIX versus no vaccination, the use of ROTAVAC versus no vaccination, and finally a head-to-head comparison of ROTAVAC versus ROTARIX.

Results

In Palestine over 10 years, our preliminary analysis projects that rotavirus vaccination averts about 550,000 rotavirus gastroenteritis cases, 300,000 outpatient visits, 80,000 hospitalizations and 100 deaths. Averted cost of care exceeds US\$13.5 million from the health system perspective. Vaccination program costs vary depending on which vaccine is considered. From the health system perspective, ICERs range from \$851 per DALY averted with ROTAVAC to \$1,433 per DALY averted with ROTARIX. From the societal perspective, both vaccines are cost-saving.

Conclusion

Rotavirus vaccination is a cost-effective intervention in Palestine and switching from ROTARIX to ROTAVAC was a cost-saving option because of the lower cost of the vaccination program with ROTAVAC. Countries, especially those sensitive to vaccine prices, should consider newly prequalified rotavirus vaccine products and the economic implications of product choices.