

Summary report on the

# Training workshop on cost–effectiveness analysis of new vaccines

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Sharm El Sheikh, Egypt  
22–24 June 2013



**World Health  
Organization**

Regional Office for the Eastern Mediterranean

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## 1. Introduction

A training workshop on conducting a cost-effectiveness analysis of the introduction of new vaccines with a focus on pneumococcal conjugate vaccine was organized by the WHO Regional Office for the Eastern Mediterranean, in collaboration with the Agence de Médecine Préventive and within the framework of the ProVac International Working Group (ProVac IWG) project, in Sharm El Sheikh, Egypt, from 22 to 24 June 2013. The workshop was held to build country capacity to undertake cost-effectiveness analysis for the introduction of new vaccines.

Representatives from the Centers for Disease Control and Prevention (CDC), Atlanta, the London School of Hygiene and Tropical Medicine, the Pan American Health Organization's ProVac Initiative, the Program for Appropriate Technology in Health and the Sabin Vaccine Institute attended the meeting. Representatives from six countries of the Region – Egypt, Islamic republic of Iran, Iraq, Jordan, Lebanon and Tunisia – also attended.

The main objectives of the workshop were to:

- raise awareness of the value of evidence-based decision-making methods related to immunization policy-making and programme management;
- introduce the basic concepts of economic evaluations applied to immunization, with an emphasis on cost-effectiveness analysis;
- present the ProVac Initiative's TRIVAC model developed for three vaccines: *Haemophilus influenzae* type b (Hib) vaccine, pneumococcal conjugate vaccine and rotavirus vaccine;
- perform exercises focusing on pneumococcal conjugate vaccine in the TRIVAC model and provide explanations on its

assumptions, its functioning, the types of results it can yield and the questions it can address;

- discuss possible data sources for a cost–effectiveness analysis and the quality of available data; and
- present a strategy to facilitate the effective communication of evidence to decision-makers.

The Global Vaccine Action Plan (2011–2020) was endorsed by the 194 Member States of the World Health Assembly in May 2012 to achieve the Decade of Vaccines vision by delivering universal access to immunization. Its mission is to improve health by extending by 2020 and beyond the full benefits of immunization to all people, regardless of where they are born, who they are or where they live. The objectives of the Global Vaccine Action Plan are to: achieve a world free of poliomyelitis, meet global and regional elimination targets, meet vaccination coverage targets in every region, country and community, develop and introduce new and improved vaccines and technologies and exceed the Millennium Development Goal (MDG) 4 target to reduce child mortality. Diarrhoea and pneumonia are the two main causes of child mortality globally, including in the Region.

As recommended by the Fifty-eighth Session of the Regional Committee for the Eastern Mediterranean in 2011 and in WHO vaccine-specific position papers, all countries should introduce new vaccines (Hib vaccine, pneumococcal conjugate vaccine and rotavirus vaccine) into children’s routine immunization programmes, as soon as possible. However, the process of introducing new vaccines is beset by challenges, such as delays in the decision-making process, particularly in middle-income countries.

Also, in terms of vaccine affordability for middle-income countries, there are other constraints, such as the high price of new vaccines, competing priorities, low government allocations, lack of data on cost-effectiveness or costing analysis, and inadequate procurement mechanisms with potential issues for sustainability.

## **2. Summary of discussions**

The principal outcomes of the workshop were: increased knowledge and understanding of the use of economic evaluation to inform the introduction of new vaccines policy; improved awareness of country-owned cost-effectiveness analyses; and communication of country interest and the way forward regarding immunization policies and the introduction of new vaccines.

The workshop was divided in five sessions. During the first session, the context of the WHO Eastern Mediterranean Region, and details on the ProVac Initiative, the ProVac IWG and Agence de Médecine Préventive were presented.

The second session provided an overview of economic evaluations of immunization programmes, especially in low- and middle-income countries. Conducting economic evaluation is a criterion for decision-making in new vaccine introduction. Then, the TRIVAC model, which is a ProVac tool to conduct a cost-effectiveness analysis for Hib vaccine, rotavirus vaccine and pneumococcal conjugate vaccine was presented. This session ended with the presentation of country experiences from Egypt and the Islamic Republic of Iran. They presented their ongoing cost-effectiveness analysis, conducted in collaboration with Agence de Médecine Préventive and the ProVac IWG, for the introduction of



the pneumococcal conjugate vaccine and rotavirus vaccine, respectively, into their national immunization schedules.

The third session focused on methodology in conducting a cost–effectiveness analysis of pneumococcal conjugate vaccine using the TRIVAC model. Plenary and working group sessions facilitated discovery of the model step by step. The plenary sessions dealt with essential steps, concepts and issues raised in cost–effectiveness analyses of the introduction of new vaccines.

Presentations focused on: estimating the burden of disease; vaccine efficacy; waning protection and herd effects at global, regional and national level; estimation of vaccination programme costs and health services utilization and costs; interpretation of cost–effectiveness analysis results and scenario analysis.

During working group sessions, participants were separated into country working groups and performed exercises on each essential step of a cost–effectiveness analysis for the introduction of the pneumococcal conjugate vaccine by using the TRIVAC model. This session highlighted TRIVAC model functioning.

The fourth session focused on a strategy for identifying key stakeholders and effectively communicating evidence to decision-makers.

Finally, the last session was dedicated to country perspectives. Each country presented its immunization policy context, needs and interest in conducting a cost–effectiveness analysis, data availability on disease burden, and future plans for the introduction of new vaccines.

All participating countries expressed their interest and determination to collaborate with Agence de Médecine Préventive and the WHO Regional Office in conducting country-led cost-effectiveness analyses of the introduction of new vaccines, either for pneumococcal conjugate, rotavirus or both vaccines.

Iraq said that their country plan aimed to introduce pneumococcal conjugate vaccine 13 in mid-2015, and that the National Immunization Technical Advisory Group (NITAG) had requested a cost-effectiveness analysis to support its recommendation.

In Jordan, the NITAG recommended introducing both rotavirus and pneumococcal conjugate vaccine by the end of 2015 but this recommendation had not yet been implemented due to budget constraints. Thus, Jordan expressed its interest in conducting a cost-effectiveness analysis on pneumococcal conjugate vaccine and requested technical support to do so.

Lebanon also expressed interest in conducting a cost-effectiveness analysis for the introduction of rotavirus and human papillomavirus vaccines.

In Tunisia, the NITAG recommended the introduction of pneumococcal conjugate vaccine, rotavirus and human papillomavirus by 2015, and expressed interest in receiving technical support to undertake a cost-effectiveness analysis to prioritize the introduction of these vaccines.

This workshop represented an opportunity for middle-income countries of the Region to: increase their knowledge on the use of economic evaluation to inform policy on the introduction of new

vaccines; improve country capacity to conduct country-owned cost-effectiveness analyses, share experiences, and present national immunization plans.

The ProVac IWG project aims to support an evidence-based decision-making process in immunization. Cost-effectiveness analysis is one of the tools that a country can use to inform the decision-making process, especially requested in middle-income countries. As developed through fruitful discussions during the workshop, the needs for a cost-effectiveness analysis on the introduction of new vaccines can be explained by diverse reasons: to build country capacity to conduct cost-effectiveness analysis, to justify decision-making on immunization policy, to convince ministers of finance to allocate resources, to prioritize decisions and ensure sustainability and to develop a critical point of view regarding the selection of needed data.

Country teams shared their experiences and knowledge with other countries of the Region and with international experts. They expressed keen interest in becoming involved in the ProVac IWG project.

The experiences of Egypt and the Islamic Republic of Iran and the work of countries in other WHO regions illustrate that a collaborative approach is feasible, as long as it is initiated with a formal request from the government and the assignment of a national focal point and a multidisciplinary country team with determination to accomplish the task within a stipulated time period.

### **3. Recommendations**

1. Within the framework of the ProVac IWG project, conduct training in health economic evaluations and involve the people who would benefit most from the project in order to ensure continuity of benefits and optimal capacity-building.
2. Send an official expression of interest to the WHO Regional Office for the Eastern Mediterranean to request technical support from the ProVac IWG.



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