

More vaccines? Using economic analysis to decide

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In this issue (pp. 264–270), Hinman et al. review the results of economic evaluation studies of rubella vaccine published between 1970 and 2000. Most of the studies they include were designed to answer the question of whether the introduction of rubella vaccine into national immunization systems is economically justified. Five out of the 17 economic evaluation studies they used were carried out in developing countries. In addition, they looked at five cost analyses from developing countries. The overall conclusion of the review is that incorporation of rubella vaccine gives economic benefits comparable to those derived from the use of hepatitis B and *Haemophilus influenzae* type b (Hib) vaccines.

Vaccination is often recognized as a more cost-effective measure than other health interventions, simply because of its preventive nature (1). Furthermore, compared to other preventive measures such as, for instance, promotion of safe water supplies or food safety, it is a relatively easy intervention to deliver because it requires only one contact, or a very small number of them, with a well-defined target group. Caution should however be exercised in generalizing about different vaccines and different epidemiological settings. When considering whether to introduce a new vaccine into a national immunization schedule, the level of disease burden (mortality, morbidity, and disability) in the absence of vaccination, as well as treatment costs avoided from introducing the new vaccine, should be weighed against the costs of delivering the vaccine. In cost-effectiveness analyses of this kind, rubella constitutes a special example, because vaccination of women against rubella prevents birth defects due to rubella virus. The results of a cost-effectiveness analysis should be compared to similar analyses of other available health interventions. Alternatively, in countries with limited infor-

mation about the economic value of other interventions, the results of the analysis should be examined in relation to the national health budget with a view to assessing affordability.

Over the past years there has been a steady rise in economic evaluations of health interventions, including vaccines. However, for vaccines, the large majority of studies have been conducted in industrialized countries. There are still only a few cost-effectiveness studies of high quality available from developing countries, of which Hinman's review provides a good example. In a review of economic evaluations of hepatitis B immunization from 1994–2000, only one developing country study was identified (China), in contrast to 322 from industrialized countries (2). One can only speculate about whether more cost-effectiveness studies on underused vaccines, such as rubella, mumps, hepatitis B, yellow fever and *Haemophilus influenzae* type b (Hib) vaccines, could have led to a faster and more committed introduction of these vaccines into developing countries. While the decision to introduce a new vaccine is influenced by a large number of medical, political and economic factors, there is no doubt that cost-effectiveness evidence is a key tool for rational decision-making in this area.

The quality of economic evaluation studies for interventions against communicable diseases, including vaccines, has been variable (3). In too many cases studies have not complied with appropriate techniques recommended in standard textbooks on economic evaluation (4). Hence, the usefulness of their results must be questioned. Two important responses to this problem have been provided in recent months. First, in early 2002, a consensus statement on appropriate methods for economic evaluation of vaccination programmes was published by Beutels et al. (5). Second, the journal *Vaccine* has

very recently published an editorial policy statement on the submission of economic evaluations of vaccines (6). The editors of *Vaccine* decided to use the guidelines defined by the *British Medical Journal* in 1996 for authors and peer reviewers of economic evaluations to ensure clear standards for submission and editorial management (7).

WHO's priority project on Accelerated Vaccine Introduction for developing countries, which is based in the Department for Vaccines and Biologicals, has issued a number of materials for guiding countries in introducing new vaccines (8). As part of this project, "Guidelines on Estimating Costs of Introducing New Vaccines into the National Immunization System" will soon be released. It is hoped that these guidelines, together with the measures described above, will improve the quality and comparability of future studies. ■

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