



ELSEVIER

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/jval

EDITORIAL

Vaccination Programs: Economic and Leadership Considerations



Imagine that you are a government official charged with planning and implementing the public health program in your country. With finite resources available to you, you must ensure to invest wisely to protect and preserve the health of the greater society. Suppose, in particular, you are considering an immunization program that will prevent communicable illness in a large population in a place where health care services are less than ideal. If funds are allocated to immunization, will that choice deprive another program of needed funding? How will you decide how to spend the limited resources? More specifically, what kinds of information are essential in helping you and your fellow ministers decide on which of the numerous competing priorities to invest in?

The International Society for Pharmacoeconomics and Outcomes Research Task Force Report on Economic Analysis of Vaccination Programs [1] sets out a system for such decision making and a guide to inform and assist decision makers at various levels and with different objectives. Aside from government officials, these decision makers may include health professionals, industry and trade organizations, civil society organizers, and international development or donor agencies. These stakeholders are faced with different—sometimes divergent—interests that make judgment extremely difficult. The Task Force Report is a useful instrument to get people on the same page, as it were, and to have a common starting point for decisions, satisfying policy objectives under different economic levels. Taken together, the three methods proposed are of value to high-, middle-, and low-income countries and are universal in approach.

The report clearly presents how the methods, each taken from a different perspective, will achieve policy objectives, and lays out the underlying economic principles and other nuances. On one hand, cost-effectiveness analysis demonstrates what is considered a cost-effective intervention within a fixed budget. Constraint optimization, on the other hand, is about selecting the best combination of interventions under some budgetary cap. The fiscal health modeling has a different objective, which is optimizing net fiscal transfers within a public sector budget. The uniqueness of these three methods is the comparison of outcomes of immunization against outcomes of alternative health/nonhealth interventions. Government budgets and fiscal considerations are the primary basis for decision-making; a long-term big picture view considering social return of investment would be ideal but complex.

Given all this, it is just as important to keep in mind that there are costs to failure of preventable intervention (e.g., hepatitis C infection). These costs can be a direct health cost such as treatment expenditures, and may also have an impact on societal (social benefit cost) and government costs (e.g., tax revenues) [2].

Planning and executing a vaccination program is a complex process. Even before the vaccination program can be considered, there is first the vaccine (the product) that must be understood. There are multiple interacting concerns about vaccines.

Although vaccines have been shown to be beneficial, even eradicating certain diseases, some sectors demand freedom of choice, claim that vaccines cause unacceptable harm, and will accept only zero-risk vaccines. One well-known example was the spurious claim that vaccines caused autism; this greatly damaged vaccine confidence globally and lent ammunition to nonacceptors of immunization as they lobbied for a weaker public health system [3].

Vaccines are both a public good and a commodity of trade. Public benefit cannot be attributed solely to a vaccine; rather, a vaccine is deployed and used in conjunction with other public health interventions. As such, policymakers must take into consideration the delicate balance between the costs and benefits to the individual as well as to society. An individual may choose not to get immunized, but this choice not only risks one's personal health, it also opens others to risk. You can throw herd immunity out the window. I ask, should there be a price one has to pay for such a personal decision [4]?

In many countries, the budget approval is decided not by an individual but by a legislative body such as the parliament. This collective key stakeholder needs to be invested in the understanding of the economic analytical tool and guided in the common understanding of the public good of a health intervention. Translating the methods from this report to simple communication packages and training will greatly assist adopters who do not routinely conduct economic analysis exercises. This article is a clear guidance that argues for good practice and provides its firm rationale for adoption. Whether one is a budget holder or from the parliament, the health ministry, an insurance company, a donor agency, or the government treasury, it will be valuable that these decision makers understand their mutually reinforcing roles and the application of the economic analysis tools toward a better health outcome.

One possible disadvantage some countries may have, particularly those from the low-income group that may make it difficult to apply the methods described in the report, is if certain information is not available. These countries may need to start by putting in place a good local data capture and undertaking epidemiological surveillance.

The report has covered the complexities of the scientific, mathematical, and technical features of introducing a vaccination program. Nevertheless, the difficult part of deciding on the allocation of funds is a complicated aspect of leadership. Often, national policies and guidelines are in place to help decision makers. But countries necessarily have divergent policy goals and make decisions in the context of competing issues.

Economic analysis is a framework and a solid foundation that helps stakeholders appreciate the substantive positives and negatives of a program with the end in view to guide decisions. For the government, these can be decisions on procurement or

decisions to provide health services or insurance coverage. In some ways, this reminds me of the impact evaluation of a program that is meant to demonstrate whether there is in fact a social return of investment. We all know how complex this can be with many interacting moving parts. It also begs to consider the theory of change and looking beyond the data.

Although cost effectiveness and fiscal modeling are certainly very important, there is a steep price to pay for ignoring the human behavior aspect of vaccine acceptance. Because decisions on vaccination are not purely scientific and technical, or economic, there is something important to be said about the need to look into the sociological, psychological, and political factors that affect public trust in vaccines [5]. These are important issues that may benefit from additional research.

Kenneth Y. Hartigan-Go, MD, MD (UK)

Department of Strategic Management

Stephen Zuellig Graduate School of Development Management

Asian Institute of Management, Makati City, The Philippines

1098-3015/\$36.00 – see front matter Copyright © 2018, ISPOR–The Professional Society for Health Economics and Outcomes Research. Published by Elsevier Inc.

<https://doi.org/10.1016/j.jval.2018.08.004>

R E F E R E N C E S

- [1] Mauskopf J, Standaert B, Connolly M, et al. Economic analysis of vaccination programs. *Value Health* 2018;21:1133–49.
- [2] Connolly MP, Kotsopoulos N, Ustianowski A. Modeling the fiscal costs and benefits of alternative treatment strategies in the United Kingdom for chronic hepatitis C. *J Med Econ* 2018;21:19–26.
- [3] Mnookin S. *The Panic Virus: A True Story of Medicine, Science and Fear*. New York, NY: Simon & Schuster, 2011.
- [4] Arrow K. Uncertainty and the welfare economics of medical care. *Am Econ Rev* 1963;53:941–73.
- [5] Larson HJ, Cooper LZ, Eskola J, et al. Addressing the vaccine confidence gap. *Lancet* 2011;278:526–35.