Key Concepts: Costing of National Immunization Programs

Measuring the costs of providing immunization.

What is costing?
Costs are defined as the value of the resources used to produce or provide a good or service. “Cost” is different from “price” in that price is the amount charged to consumers, usually set by the producer of a good, and it may vary from the actual cost of production of the good.

Costing is the process of identifying and measuring the costs of provision of immunization services. Costing is different than expenditure analysis, which compiles information on how much was spent on a given set of activities over a specific time period—for example, immunization program-specific public expenditures during the past year. A costing analysis differs from an expenditure analysis in that it estimates the actual value of resources used. The quantity of resources used for the good or service is estimated and its value is calculated. For example, for vaccines, the amount of vials opened to vaccinate a given population of children is estimated, taking into account actual coverage and wastage levels. This amount is more precise in estimating the value of resources used than is the amount spent on vaccines in that year.

Why is costing important for immunization programs?
Costing analyses provide useful information about actual resource needs or inputs required to provide a service. Furthermore, costing analyses can provide in-depth information on the efficiency and effectiveness of the use of these resources, as well as estimate the value of additional efforts needed, often in terms of staff labor and inputs.

Costing analyses are useful tools when assessing financing options for national immunization programs. They provide comprehensive information for assessing resource requirements for immunization activities, estimating the share of each component, and identifying potential cost-saving measures. They also allow program managers to evaluate different options for program improvements by estimating the resource requirements for each. The additional costs of improvements, such as the introduction of new vaccines, are an important consideration in deciding whether or not to proceed with their use.
What types of costing analyses are useful, and for what?

**Total costing** involves examining all costs, no matter who bears the cost. These costs include all kinds of costs—fixed and variable, direct and indirect, and investment and recurrent. These include not only the costs of operating the program on a daily basis, but also the costs of setting up the program or investment costs. A total costing analysis provides a picture of the magnitude of the total cost of a program and how much is being spent on each component. This information is useful for planning and, together with information on sources of financing, can be used to evaluate the roles of the government, donors and the private sector in financing the program. Gaps in funding for the program can be estimated with this information as well. It can also be used to determine what percent of the program is being spent on routine immunization versus other types of service delivery.

Typically, total costs are used as the basis for cost-effectiveness analysis, in which a ratio is created to relate the net costs of delivering a particular service (such as immunization) to the effects (such as the years of life gained as a result of the intervention). When such ratios are available for a variety of interventions that compete for resources, the information can help health planners and policymakers determine how to allocate resources to achieve the greatest positive impact.

**Incremental costing** is the assessment of the cost of adding an activity to a program. This analysis provides information on the extra costs of changing program activities or adding additional activities to existing ones. Program managers may do incremental costing to make decisions about the benefits and costs of undertaking additional activities, such as introducing auto-destruct syringes or introducing Hepatitis B vaccine to the existing program. This cost information can be used to make informed decisions about future costs to the program as a whole.

Calculation of average incremental costs also is useful when comparing program options. That is, a program manager may want to compare the incremental cost of introducing auto-destruct syringes or a new vaccine at different levels of coverage. In making these estimates, a program manager can anticipate some of the additional costs that could be incurred in coverage changes. It also is possible that the average incremental cost will decrease if such factors as vaccine wastage decline as coverage increases.

**Marginal costing** examines the additional cost incurred for the production of one additional unit of output. For example, the cost of increasing immunization coverage by one percentage point can be estimated. This information informs program managers or policymakers of how much it will cost to reach a goal of increasing coverage or reaching more children in harder-to-reach areas. In addition, it will provide information on whether costs will increase, stay the same, or decrease as coverage increases. This relationship can change over time because marginal costs may decline as more immunization services are provided, and then increase as more immunizations are provided in hard-to-reach areas.

**Why are different definitions used for total costs?**

Total costs include the proportion of depreciated capital costs—health facilities, vehicles, equipment, etc.—that are estimated to be used for immunization services, as well as the estimated cost of health personnel time used to provide immunization services. In a complete costing study, other types of costs are included as well, such as in-kind contributions.

Total costs are useful to calculate for evaluating the full costs of a program and to estimate the cost per dose and the cost per fully immunized child. The information can be helpful when making comparisons of costs of different services and trends in program costs over time.

**Program-specific costs** of the immunization program include only the costs that are incurred specifically for the delivery of immunization services, over and above the costs shared with other health activities, and regardless of who pays for them. These include all recurrent variable costs required to provide immunization services, such as vaccines, syringes, needles and other vaccine costs; and IEC/social mobilization costs that are related to the immunization program; contributions from non-health sectors for the National Immunization Days; as well as the cost of immunization-related equipment (i.e., cold chain and sterilization equipment). The calculation of this type of total costs is useful for two reasons: (1) it includes costs
specific to the program and leaves out costs that would probably be paid for in any case because they are shared, e.g., personnel time; and (2) it does not necessitate the calculation of shared costs, which are more difficult to calculate and depend greatly on the country-specific personnel arrangements (making international comparisons more complicated). This type of costing is a measure that can be calculated without too much difficulty and could be conducted on an annual basis.

Recurrent, variable, non-personnel costs are the costs that the Ministry of Health (MOH) must mobilize each year for the national immunization program—either from its own budget or from donors. These costs include: vaccines, syringes and other supplies, and other recurrent costs, such as maintenance, transportation costs incurred by the MOH, IEC, and short-term training. This set of costs is useful if calculating the base costs when making cost projections for the program.

For more information . . .

For additional information please contact:

GAVI Secretariat
c/o UNICEF, Palais des Nations
CH 1211 Geneva 10, Switzerland

Tel: 41.22.909.5019
Fax: 41.22.909.59.31
gavi@unicef.org
www.vaccinealliance.org