

Immunization Financing Options

A Resource for Policymakers

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Immunization Financing Options

An overview of the briefing sheets and an inventory of financing options and their characteristics.

What are immunization financing options?

Immunization Financing Options are short, user-friendly briefing sheets that outline options for financing national immunization services. Principally intended for policy makers in Ministries of Health, Finance, and Planning and Investment, the briefing sheets bring together up-to-date knowledge about the major advantages and drawbacks of available financing options.

The briefing sheets present a working definition of the financing option, a summary of relevant international policies and practices, essential features of the financing mechanism, and sources of additional information. In several instances, the briefing sheets provide information about keys to successful use of the funding mechanism. The briefing sheets also introduce key concepts related to the financing of immunization services, such as the economics of vaccine production and pricing.

Why is understanding financing options important?

Immunization services can realize their potential for improving the health of children only with adequate and reliable funding. Solid financing is one of the several elements required to ensure continuity in services, and to fund continuous increases in coverage, quality and access to both traditional and newer vaccines. It is an essential contributing

factor to an immunization program's ability to achieve current and future goals for access, utilization, quality, safety, and equity. Therefore, identifying and choosing among financing alternatives is a fundamental task of leaders in the health sector, and should be fully integrated into the planning and management of immunization services.

Decisions about financing arrangements can be complex ones: each source of funds (public, private, domestic and external), and each financial instrument that can be employed to access and use the funds (such as trust funds and revolving funds) carries with it a set of implications. For example, dependence on user fees (private, out-of-pocket payments) to finance immunization services can burden the poor. And creation of trust funds, while generating a steady stream of resources that can be earmarked for immunization, may be administratively costly under certain circumstances. Understanding the implications—and accessing international knowledge about what works and what doesn't work—can improve decision-making, and ultimately benefit immunization program performance.

What are the main options for financing immunization services?

As shown in the table on the following page, there are four basic sources of finance for immunization (and all other) health services in any given country:

- **domestic public**—funds derived from taxation or other sources of public revenues at the central and/or subnational level, and allocated through a formal budgetary process; this may be current spending, or domestically or internationally held loans, which imply future spending;
- **domestic private**—resources from households, employers and/or local philanthropists;
- **external public**—official development assistance, typically funds derived from taxation in donor countries, allocated according to the policies and practices of bilateral and multilateral international aid agencies; this includes the grant (also called concessionary) portion of development loans offered at below-commercial interest rates; and
- **external private**—resources from international philanthropists and/or

commercial enterprises, such as pharmaceutical manufacturers.

The distinction between public and private sources is somewhat artificial. It is important to note that tax revenues, while collected and administered by public agencies, are fundamentally the product of individual citizens' labor and ownership of property. And while the Vaccine Fund forms part of the landscape of international public entities, it is supported in large part by private philanthropic contributions.

Similarly, the line between internal and external sources of funds sometimes is blurred. In particular, loans from global and regional development banks have a mix of "external" and "domestic" features: Loans can be conceptualized as "external" because they represent a source of funds outside of the current national tax revenues, and are often structured like grants from bilateral and

multilateral aid agencies. In addition, loans to low-income countries that carry below-commercial interest rates imply a significant grant component. At the same time, development loans can be conceptualized as "domestic" because eventually domestic resources are used to repay the capital plus any interest. Therefore, in the briefing sheet on development loans, they are referred to as "mixed domestic and external."

In addition to the major sources of financing, there are financing mechanisms or instruments—national trust funds and revolving funds—that do not inject monies into the immunization program, but rather structure and use the existing funds in specific ways. As with the financing sources, the financing mechanisms have important characteristics that determine how well they meet the needs of a given country and its immunization program.

Sources of Financing for Immunization Services

	Domestic	External
Public	<ul style="list-style-type: none"> • Tax revenues (central or subnational) for current spending • Tax revenues (central or subnational) for repayment of domestically or internationally held debt • Social health insurance (compulsory) 	<ul style="list-style-type: none"> • Project grants from bilateral or multilateral agencies • Grant portion of development loans • Budget support • Debt relief proceeds • Sector-wide approach (SWAs)
Private	<ul style="list-style-type: none"> • User fees • Cross-subsidies • Health insurance 	<ul style="list-style-type: none"> • Vaccine Fund • Project grants from philanthropic institutions • Contributions (often in-kind) from vaccine manufacturers

What are the main characteristics of good immunization financing?

Different countries have different goals for their immunization program. For some, achieving higher levels of coverage with traditional vaccines is the highest priority. For others, which have already achieved high coverage for the basic vaccines, the primary aim may be to improve quality, enhance program efficiency and/or expand the immunization schedule.

Whether an immunization program achieves its goals for population coverage, quality and access to both traditional and newer vaccines depends on many factors, ranging from the quality control in national laboratories to the outreach strategy to the maintenance of cold chain equipment. Solid financing is one part of the overall challenge: necessary for the rest of the system to work, but not sufficient to make it work well.

In general, the source of funds and the financing mechanisms do not directly determine how well the program will perform, but can have a powerful indirect effect. For instance, funds from general tax revenues are not necessarily more or less likely to lead to high levels of coverage than are funds from international development agencies. But if there is a higher degree of attention to efficient use of funds for domestic resources than for external ones—or vice versa—then the choice has important implications. Similarly, the application of user fees to mobilize private resources for immunization can have a negative effect on equity and coverage.

The selection among financing options should be made in part on the basis of an estimate of the volume of resources

required to achieve the immunization program goals of access, utilization, quality, safety and equity. As importantly, however, the choice of financing arrangement should be made with an understanding of the specific characteristics of different options.

Immunization program goals are supported by the mobilization of funds in a way that (a) does not burden the poor; (b) minimizes administrative costs and promotes high levels of program efficiency; (c) ensures that necessary resources are available in a timely and reliable manner; (d) engenders accountability in resource use; and (e) encourages the highest level of self-sufficiency. In selecting among the range of financing options, decision makers may wish to evaluate how well the options perform relative to several criteria:

- **Promotes equity**—the financing arrangement ensures that, across the society, the poor are not disproportionately burdened with the responsibility for financing immunization services; and that individuals are not denied access to essential immunization services due to an inability to pay;
- **Achieves efficiency**—the financing arrangement minimizes costs of obtaining and accounting for funds and/or stimulates efficient production of immunization services;
- **Provides resources in an adequate, timely and reliable manner**—the financing arrangement ensures that resources are available in the volume and at the time and place where they are needed to have the greatest health benefits;
- **Engenders accountability**—the financing arrangement is compatible with procedures and documentation that

allow for transparency in the allocation and use of funds; and

- **Encourages the highest level of self-sufficiency**—the financing arrangement materially advances movement toward as high a level as possible of financial, technical and logistical self-reliance in obtaining vaccines and related health products and services of assured quality.

In the immunization finance briefing sheets, to the extent possible each funding source and instrument is assessed against these characteristics. Plus (+) and minus (-) symbols are used to denote positive and negative features. In some cases, a combined symbol (+/-) is used to indicate that there are both positive and negative features to be considered, depending on country circumstances. The null symbol (o) indicates that the financing arrangement has a neutral effect.

What topics are covered in the briefing sheets?

Financing options presented in color-coded briefing sheets are as follows:

For domestic public financing options:

- **General revenues** (central level)
- **General revenues** (subnational level)

For external financing options:

- **Project grants** from bilateral or multilateral agencies
- **Debt relief proceeds** through HIPC II
- **Sector-wide approach** (SWAp)
- **National budget support**
- **Vaccine Fund**

For “mixed” external and domestic financing options:

- **Development loans**

For domestic private financing options:

- **User fees**
- **Cross-subsidies**
- **Health insurance**

For financing instruments:

- National trust funds
- Revolving funds (including PAHO and VII)

In addition, supplementary briefing sheets cover the key concepts of:

- Essential immunization services
- Costing of national immunization programs
- Economics of vaccine production
- Differential pricing
- Sources of additional information

How will the Immunization Finance Resource Kit briefing sheets be made available?

While individual background papers that form the evidence base of the may be published by the commissioning agencies, the set of briefing sheets is published by GAVI as a cohesive entity. The briefs will be available in English, French, Spanish, and Russian.

The briefs will be posted on the Global Alliance for Vaccines and Immunization web site, www.vaccinealliance.org, ultimately as a hypertext document with links among the fact sheets, background papers, and other sources of information on health sector financing and related issues.

We want to hear from you . . .

The briefing sheets are intended to be flexible, evolving information resources. They can be read in any order, and will be updated periodically as new findings become available.

Feedback and suggestions on the Immunization Finance Resource Kit are most welcome and can be directed to the attention of the Financing Task Force at the GAVI Secretariat through the web page (www.vaccinealliance.org) or as follows:

Directly to the WHO or UNICEF office, to the attention of the GAVI Secretariat in countries with WHO or UNICEF offices, or by post or e-mail to the GAVI Secretariat:

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Overview and Comparison of Financing Options

A comparison of the characteristics of the immunization financing options.

No easy choices

Each nation must determine the volume of resources to devote to its immunization services—and where to find those resources. The amount of resources to be allocated depends on the population size and structure, incidence of each vaccine-preventable disease, size of non-immunized age cohort, special demographic and geographic features, as well as availability of resources and competing social priorities. While complete coverage of the at-risk population may be unattainable, sound public health practice, as well as fundamental principles of public finance, demand that countries strive to mobilize sufficient resources to achieve a high level of vaccination with traditional antigens, and with newer antigens when and where they are found to be cost-effective.

Determining the source of funding is a complex exercise in which the advantages and disadvantages of all potential financing options are weighed. Every potential source of financing—from the donor funds that may have policy conditions attached, to the tax revenues that are never able to stretch to meet all needs—has benefits and costs. The decision among financing options depends on availability and appropriateness for specific country conditions.

This overview provides a rapid comparison of the different financing options with respect to the desired char-

acteristics: promoting equity; achieving efficiency; providing resources in an adequate, timely and reliable manner; engendering accountability; and encouraging the highest level of self-sufficiency. It also provides a guide to the financing options that may be most appropriate in different country contexts.

The table at the end of this section presents the strengths and weaknesses of each financing option, in general terms. Good public policymaking depends on a more in-depth look at the characteristics of these options within specific settings, but the table provides an initial perspective on options to consider or to rule out.

How do countries differ?

The most appropriate package of financing options will differ depending on specific country conditions including:

- **Public health policy context:** the priority placed by the government on childhood immunization and other preventive actions, relative to pediatric curative care and/or services for adults.
- **Quality of governance and regulatory structure:** the degree to which financial management is transparent and rigorously monitored.
- **Culture of solidarity:** the level of support from the community for an intervention like immunization that has social benefits, in addition to private ones; and society's willingness to redistribute resources from better-off to poorer com-

munities. This is reflected partially in the progressivity of the tax code.

- **Macroeconomic context:** national income level (which affects eligibility for various types of external funding), the potential for economic growth, the degree of indebtedness, availability of foreign exchange, the stability of the economic system, and inter-regional resource inequities.

- **Relationship with bilateral or multi-lateral donors:** the historical and contemporary nature of the negotiated relationship between national authorities and decision-makers in donor agencies

While it is difficult in the extreme to provide generic recommendations about the “correct” financing mix for a given

country, it is possible to derive some very broad guidelines.

- First, both countries in strong macro-economic positions and those facing some degree of economic instability have good options for financing immunization services, ranging from general revenues at the central level (important in all countries), to budget support from aid agencies, to development loans at commercial or lower-than-commercial interest rates. Some collective forms of private financing—for example, health insurance—may have some limited potential, but point-of-service user fees can be counterproductive for immunization financing. On the other hand, revolving funds and national trust funds can all be useful ways of organizing

financing for immunization services in non-emergency settings.

- Second, for countries that are economically vulnerable (but not in a state of economic or social emergency), there are important additional sources of support that can be tapped, such as the proceeds from debt relief and resources from the Vaccine Fund.

- Third, even for countries that are in emergency conditions due to economic and/or social upheaval, there are viable options for mobilizing resources to sustain the immunization services. These include project grants from aid agencies and resources from the Vaccine Fund. In times of emergency, development banks sometimes can mobilize assistance, as well.

Characteristics of financing options: A summary

Financing option or mechanism	Promotes equity	Achieves efficiency	Provides adequate, timely and reliable resources	Engenders accountability	Encourages self-sufficiency
Domestic public					
General revenues (central level)	+/- depends on tax structure	+ requires no additional resources to manage	-/+ allocation is often lower than program requirements; delays in accessing funds; potential exists for high levels of funding	+/- depends on quality of public administration	+

Table continues on next page

+ = generally positive effect
 - = generally negative effect
 o = no clear positive or negative effect; depends on country conditions

Characteristics of financing options: A summary

Financing option or mechanism	Promotes equity	Achieves efficiency	Provides adequate, timely and reliable resources	Engenders accountability	Encourages self-sufficiency
General revenues (subnational)	- depends on tax structure; poorer subnational units are disadvantaged	+ requires no additional resources to manage	- allocation is often lower than program requirements; delays in accessing funds	+/- depends on quality of public administration	+
Social health insurance (compulsory)	+/- depends on solidarity of system	- may have high administrative costs	+	+	+
External public					
Project grants	0	- requires additional resources to manage	+/- year-to-year allocations can vary greatly	+	-
Debt relief proceeds	+	+ requires no additional resources to manage	+	+/- depends on how procedures are established for tracking	+
Sector-wide approach (SWAps)	+	+	+	+	-
Budget support	0	+ requires few additional resources to manage	+	+	-/+ can contribute to better sectoral planning

Table continues on next page

Characteristics of financing options: A summary

Financing option or mechanism	Promotes equity	Achieves efficiency	Provides adequate, timely and reliable resources	Engenders accountability	Encourages self-sufficiency
GAVI/Vaccine Fund	0	+ requires few additional resources to manage	+	+ accountability based on program results	-/+
Mixed external and domestic public					
Development loans (no interest)	+/- depends on future tax structure	- requires additional resources to manage	+	+	+
Domestic private					
User fees	-	- requires additional resources to manage	+ positive, though small, contribution to volume of resources	-	+
Cross-subsidies	+/- depends on who pays the subsidies	- requires additional resources to manage	+ positive, though small, contribution to volume of resources	-	+
Health insurance	-	- may have high administrative costs	+	0	+

Table continues on next page

Characteristics of financing options: A summary

Financing option or mechanism	Promotes equity	Achieves efficiency	Provides adequate, timely and reliable resources	Engenders accountability	Encourages self-sufficiency
Financing Instruments					
National trust funds	0	- may have high administrative costs	+ steady availability of funding	+	+
Revolving funds	0	+ typically reduces management burden	+ access to foreign exchange on a reliable basis	+	+

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Domestic Public Finance: General Revenues (Central)

Using national resources to finance immunization.

What are general revenues at the central level?

They are any funds allocated from general tax or other public revenues at the national level. The resources may be in national currency and/or in foreign exchange, as is required in many instances for the procurement of vaccines and other supplies obtained on the international market. They typically are administered by a sectoral ministry (e.g., the central Ministry of Health), which obtains the funds as an annual transfer from the general treasury (Ministry of Finance). Or they may be transferred directly to local jurisdictions (provinces, districts) by the Ministry of Finance. The transfers may be earmarked for specific programs, or sent as a block.

National governments raise revenues through a variety of taxes, including income, property, value-added and others. Depending on the specific tax code, the enforcement regime, and taxpayers' patterns of earning and consumption, each type of tax can be progressive or regressive in nature. (A progressive tax is one in which higher income individuals pay a larger fraction of their income than lower income individuals. A regressive tax is one in which higher income individuals pay a smaller fraction of their income than higher income individuals.) As noted later, the degree to which the government's revenue source is progressive or regressive is a strong determinant

of whether the use of general revenues for immunization services is inherently equity-enhancing or not.

What are common international policies and practices in financing immunization services with general revenues at the central level?

While countries have individual perspectives on the relative importance of public and private financing for immunization, general revenues from central or subnational levels are the most common source of financing for immunization services in industrialized, transition and developing economies. Central-level funds are often used for the procurement of vaccines (if this is done with domestic funds), and may also be used to reduce inequalities in funding across subnational units, or promote special initiatives, such as National Immunization Days. In some cases, all immunization-related inputs are financed by national revenues, through the central Ministry of Health.

Over the past decade, there has been a trend toward decentralization in the health sector (and other sectors), with a shift of both financing and management responsibilities from central to subnational authorities. As part of this trend, in many countries, funds for many priority health programs are no longer administered at the central level, but

rather have been transferred to provincial and/or district levels. Experience has shown that unless immunization is explicitly protected during this process—through either the earmarking of budgetary transfers or outcome-related performance agreements with subnational authorities—funding for immunization services loses out to other activities for which demand is more active (e.g., curative services).

What are the main characteristics of funding immunization services with general revenues from the central level?

- **Promoting equity (+/-).** The equity-related implications of using general revenues to finance immunization depend on the country conditions. To some degree, whether using general revenues to finance immunization services is equitable or not depends on whether the tax code and its enforcement are progressive or regressive—and whether funding immunization implies an increase in the tax burden, or a reallocation of existing revenues. If the poor already are disproportionately burdened by taxes (i.e., the situation is regressive), then putting additional demands on the tax revenues does not enhance equity. On the other hand, given that immunization services have a strong potential to provide benefits to poor households, paying for immunization services out of general revenues may be an effective way of increasing the returns that the poor get on their tax payments. Thus, equity can be enhanced by a reallocation of existing tax revenues from hospital-based curative services to immunization and other preventive services.

Equity is also affected by the pattern of transfers from the central to subnational governments. If equity-related considerations, such as the poverty rate, are used to allocate transfers, then using general revenues can substantially enhance equity.

- **Achieving efficiency (+).** While there is variation across countries, in concept government funds from the central level can be made available to immunization services with relatively low administrative costs, through routine procedures. No additional resources are required.
- **Providing adequate, timely and reliable resources (-/+).** In many low-income countries, the central government does not allocate sufficient funds to achieve its immunization program goals, and the funding has been unpredictable. In many cases, there is little correspondence between the program requirements and the amount allocated in national budgets. As a preventive health service for which organized demand is relatively weak, immunization tends to lose out in the political process of resource allocation. In the absence of a concerted advocacy effort—and, in some cases, creation and enforcement of legislation guaranteeing resources for priority health programs—funding levels rise and fall erratically, depending on the political environment.

With respect to timeliness of the availability of central-level funds, the record is also not good. Typically, there are long delays between the time resources are allocated by the legislature and the time they are available to program managers. In addition, in some countries, national legislation and regulations regarding procurement of goods (including vaccines) imply a cumbersome process, which may reduce the immunization

program's ability to respond to outbreaks, or sudden increases in demand.

On the other hand, most middle-income countries (e.g., many in Latin America) have been able to mobilize sufficient funding from national sources to achieve good results for their basic immunization programs. Immunization services require a small share of the overall health budget, and full funding can be easily justified on the basis of cost-benefit and cost-effectiveness arguments. In some middle-income countries, reliability of funding for immunization services has been assured with national legislation that guarantees baseline allocations.

- **Engendering accountability (+/-).** Again, the specific country conditions determine whether use of general revenues helps or hinders the achievement of high levels of accountability. Depending on the sophistication of the public budgeting, accounting and auditing practices, central-level public funds can be monitored through standard procedures, ensuring that they are used for the intended purposes. However, many countries have significant weaknesses in their public administration and accounting.

- **Encouraging self-sufficiency (+).** A central-level budget allocation for an immunization program represents the national government's commitment to an essential and cost-effective public health intervention that has large social (as well as individual) benefits—a core responsibility of the state. If political commitment to immunization is fostered and continuously reinforced through advocacy and good program performance, central-level funding is the major element in movement toward self-sufficiency.

Domestic Public Finance: General Revenues (Subnational)

Using local government resources to finance immunization.

What are general revenues at the subnational level?

They are any funds allocated from subnational budgets. The original source of funds may be from taxes levied at the local level or other local sources of revenue, and/or from non-earmarked transfers (known in some cases as “block grants”) from the national treasury.¹

Local governments raise revenues through a variety of taxes, including income, property, value-added and others. Depending on specific tax code, the enforcement regime, and taxpayers’ earning and consumption patterns, each type of tax can be progressive or regressive in nature.

What are common international policies and practices in financing immunization services with general revenues at the subnational level?

Across countries, there is tremendous variation in the proportion of total immunization program funding coming from the subnational level—largely

depending on the extent of political and fiscal decentralization. In some countries, for example, states, provinces, departments and/or municipalities have primary (or sole) responsibility for funding immunization services for their residents. In many others, the central government provides key inputs, such as vaccines and infrastructure for surveillance and service delivery; salaries and other recurrent expenditures fall under subnational budgets. In still other countries, even those where most health services are funded by the national government, central authorities may have full control (and financing responsibility) for immunization and other priority public health programs.

Even within countries, some regions may benefit from substantial transfers from the central government, earmarked for immunization services, while other regions must finance services independently.

With the trend toward increasing political and fiscal decentralization, immunization programs face the need to closely examine the financing capacity and decision making process at the subnational level. Experience has shown that unless immunization is explicitly protected during the decentralization process—through either the earmarking of budgetary transfers or outcome-related performance agreements with

¹ Readers will note that transfers from the central level are also discussed in the briefing sheet, “Domestic Public Finance: General Revenues (Central).” Some observers consider these funds to be central-level funds, while others consider them to be subnational funds. Thus, they are included in both of the briefing sheets.

subnational authorities—funding for immunization services loses out to other activities for which demand is more active (e.g., curative services).

What are the main characteristics of funding immunization services with general revenues from the subnational level?

- **Promoting equity (-).** Heavy reliance on subnational revenues to finance immunization services often has unfavorable equity implications. Typically, the subnational entities with the lowest capacity to finance immunization services also are the ones most in need of good preventive services, and where the unit costs of providing services are the highest—that is, poorer and more geographically and/or socially marginalized regions of a country. In addition, taxes levied at the local level are often less progressive in nature than central-level taxes. To counter these tendencies, equity-enhancing policies include redistributive transfers from the central level, and reform of local tax laws to increase their progressivity.

- **Achieving efficiency (+).** While there is variation across countries, in concept government funds from the central level can be made available to the immunization program with relatively low administrative costs, through routine public administrative procedures. No additional resources are required.

- **Providing adequate, timely and reliable resources (-).** Subnational entities can make an important contribution to financing immunization services, but rarely can take on the challenge of funding all inputs. As noted earlier, the local areas where the immunization costs are highest typically are precisely those with the most limited ability to generate tax revenues. In addition, local entities are unable to mobilize the foreign exchange required for some inputs, such as the vaccines.

Given the many demands for funding across sectors, and within the health sector, services that are deemed a priority at the national level may not be seen in the same light by subnational authorities, who are in direct contact with many constituencies. Immunization may lose out in the political process of resource allocation. Thus, in many geographic areas funding for immunization is chronically inadequate to meet program goals, and may rise and fall erratically, depending on the political environment.

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External Public Finance: Project Grants from Bilateral or Multilateral Agencies

Using grant resources to finance immunization.

What is a project grant from a bilateral or multilateral agency?

A grant is a set of resources—money, technical assistance and/or goods in-kind—typically transferred from industrialized nations to poorer ones. There is no expectation that they will be repaid. Grants may come directly from individual countries as part of a bilateral assistance package, or may be channelled through multilateral agencies of the United Nations, or the European Union. The World Bank and regional development banks also offer limited grant monies, primarily for pre-investment studies and institutional capacity building. The volume and type of grants offered is the outcome of a combination of technical analyses and political choices by donors and beneficiary countries.

What are common international policies and practices in using grants for immunization financing?

Grant monies constitute a vital source of funding for immunization services, particularly in low-income countries. Grants typically provide a share (or in some cases all) of the financing for essential vaccines, and may also support infrastructure investments, technical assistance, information systems and other inputs. Grants rarely pay health worker salaries, although historically there has been a practice of “topping

up” low government salaries to encourage workers to deliver certain services, such as immunization.

What are the main characteristics of using grants to finance immunization services?

- **Promoting equity (o).** Grants can enhance global equity by redistributing funds from richer to poorer countries. However, their effect on equity within a country depends entirely on programmatic actions, such as whether they are used to improve strategies to deliver services in hard-to-reach areas.
- **Achieving efficiency (-).** Grant financing of immunization services can have important efficiency-related impacts. On the narrow question of the efficiency of financial management, grant financing may be associated with a lengthy and bureaucratic process. Administrative, accounting and auditing resources above and beyond those required for routine government financing often are required by granting agencies.

On the broader question of program efficiency, grant funding can also have negative consequences. Because grants tend to reflect donor priorities, they sometimes distort program budgeting and activities, leading to inefficiencies. As a simple example, if grant funding is available for four-wheel drive vehicles but not motorcycles, total fuel costs may

end up higher than they otherwise would be, and/or outreach activities may be more limited.

- **Providing adequate, timely and reliable resources (-/+).** The availability of development aid is subject to a variety of political and other forces that may result in substantial and unpredictable increases and decreases in funding levels over a short period of time. There is little correlation between need and the availability of grant funding. Many observers believe that the contribution of external development assistance to immunization programs could be enhanced by multi-year commitments, tied to specific program goals.

With respect to timeliness, grants can provide important supplementary resources that permit program benefits to be sustained, particularly during periods when there is a shortfall in government resources due to macroeconomic or other crises.

- **Engendering accountability (+).** Accounting and oversight procedures required by development agencies can increase the level of accountability in procurement and financial management.

- **Encouraging self-sufficiency (-).** Seeing that donors are willing to pay for immunization services, governments may devote national resources to other needs. Over the long term, there may be—and in some countries has been—an erosion in the national commitment to immunization. In addition, extensive reliance on foreign technical assistance may come at the price of decreasing domestic technical and managerial capacity.

It is important to note that, in concept, external funds could promote self-sufficiency if, for example, they required an increasing “match” of domestic funds over time, and/or they financed efficiency-enhancing improvements in organization and management of the program.

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External Public Finance: Debt Relief through HIPC II

Using the proceeds from debt relief to finance immunization.

What is HIPC?

The Highly Indebted Poor Countries II (HIPC II)¹ is a program of accelerated debt relief introduced by the Group of Seven (G7) countries in 1999. Countries can use HIPC II debt relief proceeds to help support and strengthen programs in social sectors, including immunization services.

What are international policies and practices related to HIPC?

To be eligible for HIPC II debt relief, a country must: have a low enough per capita income to be eligible for concessional/grant support from the International Monetary Fund (IMF), World Bank and regional development banks; face an unsustainable burden of debt; and have a track record of reform and sound policies through IMF- and World Bank-supported programs.

Under HIPC II, debt relief proceeds must be used for poverty reduction. How countries plan to attack poverty utilizing both national and external resources is outlined in a Poverty Reduction Strategy Paper (PRSP) or an interim Poverty Reduction Strategy Paper (I-PRSP), both of which must be produced in a compre-

hensive and participatory fashion. (The I-PRSPs are simpler, shorter versions of PRSPs and can be developed more quickly than PRSPs, allowing debt relief proceeds to be programmed in the short-term while the longer PRSP document is in preparation.)

Countries that qualify for debt relief under HIPC II may:

- Significantly reduce their long-term debt service, transitioning from unsustainable indebtedness into sustainable indebtedness thereby improving their credit rating and encouraging greater foreign investment; and
- strengthen development efforts more quickly through an increased allocation of funds to the social sectors.

What are the main characteristics of using HIPC funds for immunization services?

- Promoting equity (+). Whether the funds freed-up through debt relief have an equity-enhancing effect depends entirely on how they are used. If used as intended—for investments that alleviate poverty—HIPC does have the potential to improve conditions for the poorest of the poor.

¹ As of October 2001, the following countries are eligible to receive HIPC II support: Angola, Benin, Bolivia, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Cote d'Ivoire, Democratic Republic of the Congo, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Guyana, Honduras, Kenya, Lao PDR, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nicaragua, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda, Vietnam, Yemen, and Zambia.

- **Achieving efficiency (+).** Debt relief does not imply significant additional outlays for administration or management of funds.
- **Encouraging self-sufficiency, and providing adequate, timely and reliable resources (+).** The HIPC II debt relief initiative provides countries an opportunity to increase national financial support for health and immunization programs by reducing the drain of national funds for debt servicing.

It is important to note, however, that the actual volume of funds made available for social programs through the HIPC process may in reality be small. This is the case, first, because much of the savings accrues over time, rather than in terms of current budgets. Second, there are a tremendous number of competing demands on the resources that are freed up, and if a country currently is in deficit spending, those funds have already been committed. In addition, although debt relief can cut a country's external debt by more than 60 percent, many countries will continue to have large outstanding external debt.

While potentially useful, the incremental increase in national health budgets as a result of debt relief is expected to be modest. A World Bank analysis on the financial impact of the HIPC initiative noted that average social spending as a percent of GDP is expected to increase by less than one percentage point in Africa, from 4.4 to 5.1 percent over the period 1999-2003 and by about 3 percentage points, from 10.8 to 13.5 percent in Latin America. Average social spending as a percent of national revenues is only expected to increase by less than 5

percentage points in both Africa and Latin America regions.

- **Engendering accountability (+/-).** With respect to the transparency of use of debt relief proceeds, the track record so far is mixed. Many HIPC countries are establishing poverty funds, designed to be transparent and accountable mechanisms to administer funds gained through debt relief efforts. At the same time, some country experiences indicate that it has been extremely difficult to track the funds made available under debt relief, and there are chronic questions about whether funding for social programs has been positively affected.

What are some keys to success for using the HIPC process to support immunization financing?

Countries and development partners can make a strong case within the I-PRSPs/ PRSPs for focusing resources released through the HIPC process on immunization. Arguments include the following:

- Vaccine-preventable diseases are both causes and effects of poverty.
- Essential immunizations are highly cost-effective.
- Poor children are less likely to have access to high quality curative care so preventive services are particularly important for this age group.
- Immunization costs are a very small share of government and health-sector spending.
- Immunizations can help break the cycle of poverty and ill health.

For each program element I-PRSPs and PRSPs require:

- The identification of a development target and strategy (e.g., increase immunization coverage for the poor).
- Establishment of a program indicator (e.g., increase immunization coverage using DTP3 as an indicator).
- Choice of an impact indicator (e.g., reduction of infant mortality rate in the lowest two income quintiles by a given percent).

For more information . . .

Financial Impact of the HIPC Initiative: First 22 Country Cases, March 2001. The World Bank, Washington, DC.

Fairbank, A., M. Makinen, W. Schott and B. Sakagawa. (2000) *Poverty Reduction and Immunizations*. Abt Associates Inc. Bethesda, MD. This document is also posted on the Global Alliance for Vaccines and Immunization web site at: www.vaccinealliance.org

Poverty Reduction Strategy Paper Sourcebook—Health, Nutrition and Population chapter. The World Bank, Washington DC. Available on-line in English, French, Russian, Spanish and Portuguese at: <http://www.worldbank.org/poverty/strategies/sourctoc.htm>.

See the HIPC website operated by the World Bank, <http://www.worldbank.org/hipc/>

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External Public Finance: Sector-Wide Approach

Using pooled external support to finance immunization.

What is a “Sector-Wide Approach”

A sector-wide program of external support, commonly known as a Sector-wide Approach (or by the acronym SWAp), is a relatively new way for donor and lending agencies to organize their support to a developing country’s health sector. The fundamental idea is that development partners work with the beneficiary government to agree upon a comprehensive vision and strategy for the health sector as a whole, and then provide all external support within that framework—rather than as isolated categorical programs determined solely by external interests and priorities.

What are international policies and practices related to SWAps?

In concept, a fully evolved SWAp has the following characteristics, among others: external funds are not earmarked; external financing does not go directly to a project unit, but rather to an overall budget; the government sets priorities; and reviews and reporting processes are consolidated.

In many instances, SWAps are associated with sectoral reform processes—that is, the development partners seek to work with the government to define a vision and implement a strategy for more efficient and equitable functioning of the sector, rather than maintenance and expansion of the government’s cur-

rent “way of doing business.” That said, there is not necessarily a one-to-one correspondence between a SWAp and sector reform.

There currently are no examples of fully-evolved SWAps—i.e., where unearmarked budget support is provided by all donors, based on an agreed-upon framework. However, in several countries (e.g., Ghana, Bangladesh, Zambia, Tanzania and others) there is a range of variants of the concept, and popularity of such arrangements appears to be increasing.

What are the main characteristics of using a SWAp for immunization programs?

- **Promoting equity (+).** Grants from bilateral or multilateral agencies, whether part of a SWAp or not, can enhance global equity by redistributing funds from richer to poorer countries. However, their effect within a country depends on programmatic actions, such as whether they are used to improve strategies to deliver services in hard-to-reach areas. The negotiations between the funding agencies and the government, which form the basis for a SWAp, usually include discussions about actions to improve targeting of services to the poor or other equity-enhancing approaches.
- **Achieving efficiency (+).** Compared to traditional project-specific external funding, SWAps can imply lower transaction costs to access funding: Once the framework and performance targets for a

SWAp are agreed to, in concept the external financiers simply provide budget support, which can be used through regular channels. Few additional administrative and accounting resources are required.

SWAps also have the potential to enhance program efficiency, if they provide the government with greater flexibility in resource allocation than project-specific funding.

- **Providing adequate, timely and reliable resources (+).** In concept, a SWAp for external grants and loans can make an important contribution to health sector funding, particularly in the poorest countries, and therefore can help to ensure adequate funding for all priority programs. There has been some concern among the immunization community that shifting from a project-specific to a SWAp arrangement might reduce the funding available for support of immunization programs. While it is certainly true that earmarking of donor funds—

for example, for vaccines or for cold chain rehabilitation—is anathema to SWAps, allocation of government funds for priority public health programs at the national level is strongly encouraged by the SWAp process: All partners participate in negotiations about how public spending patterns can be reoriented to improve health conditions. Thus, a SWAp can ensure higher levels of funding for immunization.

- **Engendering accountability (+).** A SWAp can be negotiated around health output and/or outcome targets.

- **Encouraging self-sufficiency (-).** Potentially, external funds could promote self-sufficiency if, for example, they required an increasing “match” of domestic funds over time, and/or they financed efficiency-enhancing improvements in organization and management of the program. However, any injection of external funding runs the high risk of engendering greater dependence on aid.

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External Public Finance: National Budget Support

Using national budget support from donor agencies to finance immunization.

What is national budget support?

National budget support is financial input from external sources (principally bilateral and multilateral donor agencies) delivered to the national treasury or the account of a particular government ministry.

What are common international policies and practices on budget support for immunization?

Typically, funds are provided conditional on the creation of a budget line for particular items, such as vaccines, or donor consultation on a sector budget. For example, the European Union program of budget support for Sahelian countries—known as *Appui au Renforcement de l'Indépendance Vaccinale en Afrique Sahélienne* (ARIVAS)—requires that participating countries establish budget lines for vaccines. In most cases, some form of reporting is required, although it is less detailed than for project grants. In some instances, foreign technical assistance in budgeting and financial management accompanies the budget support.

Not all donors have the option of using budget support (rather than project support), although there is a trend among international agencies toward this option, and away from project grants.

What are the main characteristics of using budget support to finance immunization services?

- **Promoting equity (o).** Whether national budget support has equity-enhancing effects depends on programmatic decisions.
- **Achieving efficiency (+).** In concept, national budget support requires relatively few additional resources to manage the funds.
- **Providing adequate, timely and reliable resources (+).** Budget support can take years to implement as it often requires the development of trust among partners, a structure for consensus building on goals and priorities, and a monitoring and reporting system. However, once established, national budget support represents an important contribution to ensuring that there are sufficient financial resources to achieve program goals; it implies reliable, multi-year commitments by development partners.
- **Engendering accountability (+).** High levels of accountability are required to maintain donor confidence in the system and to promote efficient and effective use of resources.
- **Encouraging self-sufficiency (-/+).** Whether long-term self-sufficiency is enhanced or hampered by national budget support depends on how it is structured and managed. On the positive side, budget support is considered

to promote capacity building by putting the national government in control of the disbursement of funds and supporting the development of accounting and reporting systems. In concept, under budget support, donor priorities and project reporting procedures no longer dominate the time of policy-makers. Governments can therefore concentrate on longer term strategic health policy-making that is incorporated into the budgetary process of the country. The fact that resource allocation decisions are made by the government rather than by donors alone may increase the likelihood that these allocations will be maintained after the withdrawal of external assistance.

On the negative side, whenever there is an external source of funding, the national government may depend on those external funds for priority programs, and fail to take measures to increase its own financial contribution.

What are some keys to success of budget support?

Budget support works best when the following conditions are in place or where there is a willingness to put them in place:

- A positive policy environment.
- A rigorous system of financial accountability or the means to build one.
- Strong program monitoring systems or the means to build them.
- A shared vision of the strategic direction for the health sector.

- A willingness to view the budget support as part of a process of improving health sector management and implementation.
- A rigorous annual review process that involves the main stakeholders.
- Mutual trust, strong government ownership of the program and agreement on the “rules of the game.”
- Flexibility on the side of donors and a willingness to take the broad view.
- Donors’ willingness to deliver contributions on time.
- Broad participation in planning and design.
- An appreciation of the complexities and difficulties to be encountered in moving from a project-based to sector-based program and a plan for dealing with these challenges.

For more information . . .

Foster, M. A. Brown, T. Conway. (2000) *Sector-Wide Approaches for Health Development*. World Health Organization Strategies for Cooperation and Partnership, Global Programme on Evidence for Health Policy. World Health Organization, Geneva, 2000. WHO/GPE/00.1

Kaddar, M, B. Sakagawa. (2001) *Analysis of International Mechanisms Supporting Immunization Programs: The European Union’s ARIVAS*. Abt Associates, Bethesda, MD.

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External Public Finance: Vaccine Fund

Using Vaccine Fund resources to finance immunization.

What is the Vaccine Fund?

The Vaccine Fund is a multi-million dollar trust fund established to support countries to strengthen their immunization services and introduce new and under-used vaccines. The Fund makes its awards based on recommendations from the Board of the Global Alliance for Vaccines and Immunization (GAVI). Countries with a GNP per capita equal to or below US\$1,000 are eligible for support.

The Vaccine Fund was established in January 2000 with an initial grant of US\$750 million from the Bill and Melinda Gates Foundation. Since that time, there have been significant contributions from many national governments. Total commitments for the Vaccine Fund exceed US\$1 billion for 2001-2005.

What are common international policies and practices in using the Vaccine Fund for the procurement of new and under used vaccines and strengthening immunization services?

There are three basic conditions for support from the Vaccine Fund. Countries must have:

- a fully functioning Inter-agency Coordination Committee (ICC) or equivalent;
- an assessment of immunization services conducted during last three years;

- a multi-year plan for immunization program

The Vaccine Fund currently provides support from two sub-accounts: immunization services, and new and under-used vaccines.

Immunization services sub-account:
To access the immunization services sub-account, countries must have:

- National DTP3 coverage < 80%
- Annual targets for increasing number of children to receive DTP3
- Action plans as part of the multi-year plan to achieve:
 - safe injections and safe management of sharps waste
 - a reduction of vaccine wastage and immunization drop-out rates.

The Vaccine Fund allocates support from the immunization sub-account through the awarding of shares. Each share conceptually represents the Vaccine Fund's contribution toward immunizing one child. The initial share value is set at US\$20. Share values are divided into two parts:

- Up-front investment in plans to reach additional children for the first two years. The investment is calculated based on the number of children the government plans to reach in the future.
- Retrospective reward for additional children having been immunized. The reward is to be calculated at the end of each year based on the number of addi-

tional children actually immunized with DTP3 by age 12 months during the preceding year.

If countries do not show any increases in numbers of children immunized after two years, support from the immunization services sub-account will be suspended until satisfactory progress is shown.

New and under-used vaccines sub-account:

To access the new and under-used vaccine sub-account for the procurement of hepatitis b, Haemophilus influenzae type b, (either as single antigens or in combination with DTwP) and yellow fever, countries must have a:

- National DTP3 coverage >50%
- Plan for the introduction of new vaccines
- Action plans as part of the multi-year plan to achieve:
 - safe injections and safe management of sharps waste
 - a reduction of vaccine wastage and immunization drop-out rates

Monitoring

Countries are expected to submit annual reports to GAVI with a more extensive mid-term review two years from the start of initial disbursement. Overall performance as measured by DTP3 coverage rates at the district level are to be externally verified through a Data Quality Audit (DQA), which was first performed on a pilot basis in 2001. This process will be the first of its kind to verify achievements in health services performance.

What are the major characteristics of using the Vaccine Fund for the procurement of vaccines and supplies and strengthening of immunization services?

- **Promoting equity (o).** Whether use of the Vaccine Fund has equity-enhancing effects depends on programmatic decisions.
- **Achieving efficiency (+).** With respect to efficiency of financial management, there are no special procedures or costs required to access the Vaccine Fund resources.

In terms of programmatic efficiency, the use of the Vaccine Fund is linked to UNICEF's procurement mechanism and facilitates access to vaccines of assured quality at the best available price.

- **Providing adequate, timely and reliable resources (+).** While the process of submitting and obtaining approval for the application can take several months, support from the Vaccine Fund can be mobilized relatively quickly once a country's application is approved.
- **Engendering accountability (+).** The Vaccine Fund concentrates on accountability for results, rather than spending. Countries are expected to monitor and show an increasing number of children being immunized with DTP3. They are free to allocate the grant funding as they choose to support immunization services.
- **Encouraging self-sufficiency (-/+).** As an external source of funding, there is a risk that use of the Vaccine Fund will undermine efforts to increase national financial commitments to the immunization services, and/or stimulate an expansion in the program that ultimately is unaffordable. However, steps are being taken to mediate this risk.

GAVI is providing support to strengthen the financial management and institutional capacities within recipient countries, and thereby improve the chances of long-term sustainability. At the half-way point in funding, countries are required to submit a financial sustainability plan, specifying how future funding requirements will be met. If the process of preparing the plan is undertaken as a serious effort to obtain commitments from the beneficiary government, as well as development partners, it can represent important progress toward sustainability. GAVI also is making efforts on the vaccine supply side, working with private sector manufacturers to ensure a reliable supply of both traditional and newer products, at affordable prices.

For more information . . .

See the Global Alliance for Vaccines and Immunization website:
www.vaccinealliance.org.

See the Vaccine Fund website:
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Mixed Domestic and External Public Finance: Development Loans

Financing immunization with public debt.

What is a development loan?

A development loan is money borrowed by a government from a regional development bank or from the World Bank. The government guarantees the loan and is responsible for repaying it in full, with the interest rate varying depending on the country's economic situation. Loans may also be referred to as debt financing; in the case of no-interest loans, they are called credits.

Loans usually are negotiated with Ministries of Finance, and then used as part of a funding package for a sector ministry, such as a Ministry of Health.

There are two types of loans:

- Loans offered at market or near-market interest rates, such as those from the International Bank for Reconstruction and Development (IBRD) of the World Bank, the Asian Development Bank and the Inter-American Development Bank, the African Development Bank, the Asian Development Bank and the Inter-American Development Bank. Interest-bearing loans are fundamentally types of domestic finance.
- Highly concessionary loans with only an administrative fee, and a below-commercial market (or no) interest rate charged for use of the funds, and repayment periods of up to 40 years. The International Development Association (IDA) of the World Bank, and the regional development banks, provide these interest-free loans, called "soft" loans or credits. Taking into considera-

tion inflation and other factors, these highly concessionary loans are estimated to be approximately 65 percent grant. The remaining 35 percent constitutes the amount which is repaid with domestic resources in real (as opposed to nominal) terms.

What are common international policies and practices in using development loans for immunization service financing?

The World Bank and regional development banks are able to provide loan financing in support of immunization. Generally, loans for immunization form part of a larger health sector loan but there has been at least one World Bank loan solely for immunization (for polio eradication in India).

The GAVI Board has stated that countries' willingness to use development bank credits for immunization may be seen as evidence of countries' financial and political commitments to immunization.

IBRD loans typically are taken by middle-income countries and have interest rates which vary with market conditions. IBRD borrowers generally receive a 15- to 20-year repayment term with an initial five-year grace period.

IDA loans are specifically targeted at countries with per capita incomes less than US\$885, with exceptions for some small island states. Seventy-eight countries currently are eligible for IDA loans.

What are the main characteristics of using development loans to finance immunization services?

- **Promoting equity (+/-).** Whether there are inherent equity-enhancing characteristics of development loans depends largely on whether the future tax structure is progressive.

- **Achieving efficiency (-).** With respect to the efficiency of financial management, accessing funds through loans can imply cumbersome and costly administrative procedures.

In terms of programmatic efficiency—the per child cost of immunization—the substitution of loans for grants will lead to a higher cost to the government per fully immunized child, taking into consideration the requirement of repayment plus interest.

- **Providing adequate, timely and reliable resources (+).** Development loans can provide accessible resources over a relatively long period (5-8 years), with a high degree of certainty regarding the level of financing. Development loans also can provide needed access to foreign exchange.

In some instances, funds from development loans can be made available quickly to respond to urgent needs. This has happened many times in response to natural disasters and sudden shortfalls in government outlays for essential services, such as immunization.

- **Engendering accountability (+).** Accounting and oversight procedures required by development banks can increase the level of accountability in procurement and funds management.

- **Encouraging self-sufficiency (+).** Loan financing of immunization, in contrast to grant financing, may be inter-

preted by donors and international agencies as evidence of a government's financial and political commitment to immunization as a national priority. Using development loans to finance immunization services represents a national commitment to immunization—albeit by committing future national financial resources in the form of loan repayment.

In addition, there are ways in which development loans stimulate self-sufficiency in the near term. Development loans typically require some level of matching national counterpart; thus, national governments are required to demonstrate their commitment to a program in a very immediate way. Second, development loans must be repaid, which implies a long-term financial commitment on the part of the government.

The policy conditions on loan funds can provide leverage for focusing national resources on priority programs such as immunization. Governments able to use loans to mobilize additional, sustainable national resources for immunization are best situated to use loan financing effectively.

What are some keys to success of development loans?

Because immunization represents only a fraction of health sector costs, a loan for immunization generally is included as a small part of a broader loan package. For these multipurpose loans, performance criteria should be structured to prevent funds for immunization being cut off if overall health sector performance fails to meet targets.

All loans have to be repaid. Loans make sense when a government is not heavily indebted, when there is little danger of a substantial currency devalua-

tion, when the economy is expected to grow, and when the country can obtain a competitive interest rate. Most importantly, loans make sense when the value of the immediate and long-term benefits to be generated by project activities is greater than the sum of the loan, fees and interest over time, if any.

Where additional financing is needed, the decision to take a loan should be based on the benefits associated with the increase in coverage and/or antigens that could be financed; availability of lower cost financing options; strength of the policy environment; and capacity of the national economy to support the debt load when repayment comes due.

For more information . . .

The World Bank: In developing countries, contact through your World Bank resident representative or liaison officer, or at the World Bank web site: www.worldbank.org.

Information about the African Development Bank can be found at www.afdb.org.

Information about the Asian Development Bank can be found at www.adb.org.

Information about the Inter-American Development Bank can be found at www.iadb.org.

“*The Role of Loans in Financing Immunization in Developing Countries*” by Matthew Hodge, which is posted on the Global Alliance for Vaccines and Immunization web site: www.vaccinealliance.org.

Assessing Aid, David Dollar ed., (1999) The World Bank, Washington DC.

Domestic Private Finance: User Fees

Recovering costs for immunization.

What are user fees in health?

User fees are any official charges to the consumer applied by the government health service. Typically, user fees are applied at the point-of-service, and are intended to generate revenues to improve public health services. They may also be applied to encourage consumers to use one type of health service instead of another. For example, user fees may be charged for primary care obtained in hospitals but not at health posts, in an effort to direct patients toward the lower-level facilities when seeking basic care.

What are common international policies and practices in financing immunization services with user fees?

Based on research findings showing that user fees deter utilisation of preventive health services in most settings, the World Bank, the United Nations and many other agencies discourage the application of user fees for childhood immunization. Major recent statements include:

Global Alliance for Vaccines and Immunization (June 2001), *“The GAVI Board recognizes that countries are exploring a variety of mechanisms to fund essential and routine immunization services. User fees have been shown to be a disincentive to the utilization of preventive health services including immunization, in particular. The GAVI Board therefore*

recommends that in the absence of compelling country or regional data unequivocally documenting their value, user fees should not be levied in publicly financed national immunization services.”

United Nations Economic Commission for Africa, Addis Ababa Consensus on Principles of Cost sharing in Education and Health in June 1997 (in collaboration with UNICEF and the World Bank) states that *“cost sharing in health should exempt preventive care, in which benefits extend beyond users (e.g. immunization) as well as selected primary health services”*.

Convention on the Rights of the Child (Article 24) specifies that *“States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.”*

A **PAHO/Caricom/UNDP** project policy round table (May 1999) concluded that *“user fees have no potential to make a positive contribution as part of a health care financing strategy.”* The related policy document noted that, in Caribbean countries, user fees have added administrative burden while failing to contribute discernibly to revenue. User fees were shown to be a barrier to health services for the poor.

What are the main characteristics of funding immunization services with user fees?

- **Promoting equity (-).** As a source of financing for immunization services, the application of user fees is inequitable. There is solid evidence to indicate that in developing countries user fees discourage the poor from seeking vaccination for themselves and their children.
- **Achieving efficiency (-).** Typically, additional administrative costs are incurred to manage a user fee system. Income-based exemption mechanisms are costly.
- **Providing adequate, timely and reliable resources (+).** User fees can mobilize incremental resources for health services, and thus can contribute to overall financial balance. However, user fees generally are able to generate only a small portion of total costs of a health service. Thus, the potential benefits of user fees for sustainability of the immunization services would not offset the negative effects on equity.
- **Engendering accountability (-).** The level of accountability depends entirely on the transparency of the collection, aggregation, safeguarding and distribu-

tion of funds. The availability and movement of cash often represents a temptation to illicit behavior, so in settings where there is inadequate policing a user fee scheme can engender substantial leakage of funds.

- **Encouraging self-sufficiency (+).** In concept, user fees can be an important source of funding for vaccines that are not yet on the list of essential immunization services that the government has deemed appropriate and necessary for all children.

For more information . . .

England, S., Kaddar, M. Nigam, A., and Pinto, M. (2001). *Fact Sheet—User fees for immunization in developing countries*, (WHO/V&B/01.06)

England, S., Kaddar, M. Nigam, A., and Pinto, M. (2001). *Practice and policies on user fees for immunization in developing countries* (WHO/V&B/01.07) Department of Vaccines and Biologicals, World Health Organization, Geneva. This paper is posted on the Global Alliance for Vaccines and Immunization web site: www.vaccinealliance.org. It is also available on the WHO web site: www.who.int/vaccines. It has been translated into French and Russian.

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Domestic Private Finance: Cross-subsidies

Using “extra” revenues from other health services to finance immunization.

What are cross-subsidies?

A cross-subsidy is a charge for one group of goods or services above cost, with the surplus then used to finance revenue shortfalls when other goods or services are sold at prices below-cost or provided free.

For example, charges for some aspects of curative care, such as sales of some drugs, might be set high enough to generate revenues to cover some of the costs of providing free immunization. This extra charge may be referred to as a surcharge or tax. The financing source is the private individuals who use the higher-priced services.

What are common international policies and practices in financing immunization services through cross-subsidies?

The UNICEF-WHO Bamako Initiative endorses the cross-subsidization of immunization services, which are free. The subsidies are derived from user fees for other health services, particularly drug charges. This cross-subsidization covers only a portion of the cost of running the immunization services. The Bamako Initiative aims to improve service quality in low-income countries through user fees for curative, but not for preventive health services.

What are the main characteristics of financing immunization services through cross-subsidies?

- **Promoting equity (+/-).** The extent to which cross-subsidies can promote equity depends entirely on how they are structured, and the consumption patterns of different income and social groups. If the source of the subsidy is relatively well-off households, a cross-subsidy strategy can contribute to income redistribution—albeit in a very modest way. It is worth remembering, however, that if the extra charge is essentially a tax on the sick—often the poor—cross-subsidies will have a regressive effect.
- **Achieving efficiency (-).** Collecting, safeguarding and distributing revenues can require considerable administrative resources, particularly if a means-tested or other exemption mechanism is required to ensure that the poor are excluded from paying fees.
- **Providing adequate, timely and reliable resources (+).** Cross-subsidization can augment limited public resources by mobilizing private funds—without jeopardizing utilization of immunization services. However, it is important to note that the potential amounts that can be mobilized through cross-subsidization are very small. There are only a limited

number of goods and services produced in the government health system that can generate a profit.

- **Engendering accountability (-).** The level of accountability depends entirely on the transparency of the collection, aggregation, safeguarding and distribution of funds. The availability and movement of cash often represents a temptation to illicit behavior, so in settings where there is inadequate policing a cross-subsidization scheme can engender substantial leakage of funds.

- **Encouraging self-sufficiency (+).** Cross-subsidization can contribute to national efforts to finance immunization services, although the contribution is a modest one.

What are some keys to success of cross-subsidization schemes?

If the government has a desire to redistribute income from the rich to the poor,

then goods and services consumed primarily by the better-off should be subject to a higher surcharge than others.

For example, luxury goods such as a private hospital room could be subject to a surcharge (see table below).

Surcharges on goods and services whose consumption is more responsive to price changes should be lower than taxes on other goods and services.

When banking services are limited, problems with safe-keeping of fees can argue against facility-based revenue collection.

Example of a cross-subsidy: Ghana

As of early 2001, the Ghanaian public health service charged user fees. Exemptions to user fees are officially provided for the elderly and the very poor, for prenatal care and for services to children under five years of age. Immunization

services are provided free of charge. All user fees remain in the facility where they are collected and are fully accounted for as “internally generated funds”. They are used at the discretion of the facility. In some cases, the funds are used to pay for the travel costs of staff involved in immunization outreach, or for fuel and maintenance of vehicles used to transport vaccines.

For more information . . .
 Jack, William. (1999). *Principles of Health Economics for Developing Countries*. World Bank Institute, The World Bank, Washington, DC.

Possible sources of cross subsidies for immunization within a health facility

Source	Performance
Other drugs and other medical supplies	Charging extra for some drugs could induce more rational use, but prescription rates could actually increase if the provider seeks to increase revenues. Administrative costs of collection and safe-keeping could be high.
Hotel services in hospitals (e.g.: meals)	These sources probably are well-targeted to the better-off and would require an exemption scheme for the poor, which could be difficult to administer. This form of cross-subsidization has the same problems of administration as other fees.
Priority treatment	Charging higher prices to individuals who see doctors earlier or who see better doctors may leave the poor without urgently needed care, and could discourage use of curative care as well as immunizations. However, charging for non-emergency access to tertiary care without referral from a primary health care provider is an option.
Non-medical goods	Some hospitals and health centers have financial interests in other commercial activities. This tends to divert scarce administrative resources away from the delivery of care, and reduces the transparency of financial operations.

Domestic Private Finance: Health Insurance

Health insurance coverage for immunization services.

What is health insurance?

A working definition of health insurance is: “A group of persons contributing funds to a common pool, usually held by a third party. These funds are then used to pay for *part* or *all* of the costs of a *defined set of health services* for the members of the pool. This third party can either be a governmental social security, a public insurance fund pool, or a private insurance fund pool” (adopted from Chawla and Berman, 1996).

What are international policies and practices related to health insurance financing of immunization services?

Insurance is not an obvious choice for financing immunization services because of the nature of vaccination itself: required at a predictable time, by all children, and available at low cost. Insurance is most useful for financing health services that are rarely required within a population, and are so costly that they exceed a household’s ability to pay out-of-pocket. Small periodic payments by all the members of an insured group provide the financing for specific individuals when they require costly services.

Insurance also is not an obvious choice for the populations of greatest interest to those wishing to extend

immunization coverage. An insurance program generally requires relatively sophisticated administrative and accounting systems, as well as the ability to collect premiums, such as through formal sector wages. This reduces their utility in many of the lowest income countries, and for populations outside of the formal labor market.

There is little evidence that commercial health insurance provides significant levels of financing for immunization services, particularly in low-income developing countries where the insurance market tends to be very small and the package of benefits is limited.

On the other hand, experiences from the middle-income countries of Romania, Bulgaria, Turkey and the Philippines suggest that social health insurance—a government-run mechanism to pool contributions from the whole population to meet the costs of defined health services—can be used to finance immunization services, as part of a larger package of benefits. For example, in Bulgaria (as well as some other countries), vaccines are procured directly by the Ministry of Health, but the general practitioners providing vaccination services are compensated through contracts with the National Health Insurance Fund.

What are the main characteristics of using health insurance to finance immunization services?

- **Promoting Equity (-).** If there is universal coverage of a social insurance program, all segments of the population may benefit from essential immunization services. However, if there is partial coverage concentrated in the formal sector—a more common scenario—informal sector, rural poor may be excluded from coverage.
- **Achieving Efficiency (-).** The costs of raising funds through health insurance can vary with the method chosen to generate the income. Mandated social health insurance can have relatively low administrative costs, compared to private insurance arrangements. However, in all

cases insurance implies administrative costs that are additional to those associated with tax-based financing.

- **Providing Adequate, Timely and Reliable Resources (+).** Potentially, a well-run insurance program can provide a steady flow of funds to compensate service providers.
- **Engendering Accountability (o).** If financing of immunization services is dispersed over multiple insurers, keeping track of expenditures and financing sources can be challenging.
- **Encouraging Self-sufficiency (-).** To the extent that private funds are mobilized for an insurance program that includes immunization in the benefit package, the goal of self-sufficiency can be advanced. However, for the reasons stated above and others, it is unlikely

that insurance coverage can play a major role in immunization service financing.

For more information . . .

“The Role of Health Insurance and Community Financing in Funding Immunization in Developing Countries,” by Afsar Akal and Roy Harvey, June 2001. This background paper was prepared for the GAVI Financing Task Force and is available on the Global Alliance for Vaccines and Immunization website: www.vaccinealliance.org.

Community Financing as a Special Type of Insurance

Community financing is a special form of social health insurance in which a defined community group cooperates to raise funds with which to finance defined health services for some or all members of the community. Community financing can sometimes involve the provision of in-kind services by members of the community to the provision of services. Community financing schemes usually focus on primary care, particularly drugs, but may also include referral services and often have a broad community development orientation. Commonly, community financing is based on some type of traditional self-help arrangements, and is part of a broad development initiative, often fostered by a non-governmental organization. Examples of community financing schemes can be found in Guinea-Bissau, Indonesia, Taiwan, Viet Nam and Thailand, among other places.

Community financing arrangements are so setting-specific that it is impossible to arrive at generic advice regarding their use. As a general rule, however, they operate at a relatively small scale, and often do best if they develop out of existing grassroots community efforts, rather than being fostered through public sector and/or donor action. Experiences in attempting to transfer community financing models from one cultural setting to another have rarely succeeded.

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Financing Instrument: National Trust Funds

Placing funds for immunization in trust funds.

What are national trust funds?

National trust funds are funds set aside to generate income for a particular purpose, with specific rules about how the proceeds can be used. They are flexible financial tools in which a relatively large sum is provided, under a specific legal arrangement, and the capital and/or interest is used over time. Depending on the capital base, a trust fund can provide a reliable income stream, grants, short-term credit, loan guarantees and/or foreign exchange. The original capital can come from domestic and/or external sources.

Trust funds can be organized as foundations, funds-in-trust, charities, cooperatives, social enterprise funds, credit unions or non-profit organizations.

A trust fund must be legally incorporated and have a capital base, statutes and articles of constitution that stipulate purpose and beneficiaries as well as governing, operating and controlling organs. It must have procedures for planning and outside supervision.

What are common international policies and practices in using national trust funds for immunization service financing?

Trust funds are emerging as promising financial instruments for funding immunization services because they have the potential to “protect” resources over a long period, but experience to date is limited.

When trust funds are held by the World Bank or a UN agency as trustee,

they are not subject to taxation. In many countries, contributions to charitable trust funds benefit from tax relief. Investment proceeds are generally tax exempt.

What are the main characteristics of using national trust funds to finance immunization services?

- **Promoting equity (o).** Whether national trust funds have equity-enhancing effects depends on programmatic decisions.
- **Achieving efficiency (-).** National trust funds require administrative resources. However, countries with initially low levels of management and operational capacities are suitable candidates for trust funds that pool multiple donor contributions and thus reduce the need for countries to conform to each separate donor’s rules and procedures. In this sense, trust funds are consistent with sector-wide approaches to health finance (SWAps), and with the reduction in administrative costs.
- **Providing adequate, timely and reliable resources (+).** If capitalized at a relatively high level, trust funds can make an important contribution to the financing of an immunization program over the long-term. A trust fund can ensure significant resources will be available on a steady basis. In addition, trust funds can be structured to have some degree of flexibility to respond to urgent resource requirements.

- **Engendering accountability (+).** As autonomous bodies, trust funds can operate in a businesslike fashion within the national legal and regulatory system.
- **Encouraging self-sufficiency (+).** The legal status and financial autonomy of trust funds can shield program funding from economic and political volatility, which is not the case with some forms of traditional project finance. Trust funds can expand and leverage additional funds as the capacity to absorb funds grows. In addition, trust funds can act to hold funds while absorption capacity is developed or to gather funds together from a variety of sources for a common goal. For example, they can be used to channel debt relief funds. Finally, off-shore investment of the capital can lessen foreign exchange constraints.

The value of an extended cash flow must be weighed against the opportunity cost of not spending the funds immediately to satisfy urgent needs. Tying up capital makes the most sense when capital is available suddenly (due to debt relief or a gift) and absorption capacity is low. Investing capital to provide an income stream is appropriate only if some difficult conditions are met, including:

- The resource requirements can be reasonably well estimated over the medium term: the demographic demand for the services can be clearly forecast, and the services contemplated can be accurately costed.
- The needed revenue stream can be achieved through investment of capital within an acceptable range of risk.
- There is enough leeway to build up reserves to protect the fund's operational purchasing power against the effects of inflation and currency fluctuations.

- Additional domestic sources of finance can be tapped to cover administrative costs.

What are some keys to success of national trust funds?

The mission of the trust fund, the available capital and donor preferences will determine investment and cost recovery strategies. A key document to be produced to create common ground among the potential partners to the trust fund is the Memorandum of Understanding (MoU). It spells out the responsibilities, rights and obligations of the founding partners and contributors, the goals to be attained, organs to be created, operations envisaged, reporting required, and when and how result are to be reviewed based on performance and achievement criteria.

Establishing the governing board and selecting its members are decisive steps for the trust fund's future. The directors/trustees are charged with the responsibility of bringing the Statute or Charter and the MoU to life. Their role is to establish the fund's strategy, adopt its business plan, select the management for operations, and as the case may be, the asset/investment managers.

Three tiers of competence are needed in the trust fund architecture:

- Technical operations are in the hands of those who are competent in that area.
- Policy and financial management is provided by the board of directors/trustees, including planning and evaluating activities, reporting, control, supervision and guidance.
- Asset management and investment are usually handled by professional investment managers, whose job it is to protect, place and increase the capital, with maximum return at desired levels of risk.

For additional information . . .

Becher, Ernst. (2001). *National Trust Funds to Finance Immunization in Developing Countries*. This paper is posted on the Global Alliance for Vaccines and Immunization website: www.vaccinealliance.org.

"Experience with Conservation Trust Funds," Evaluation Report #1-99, Global Environment Facility, Washington DC.

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Financing Instrument: Revolving Funds

Using revolving funds for procurement of key inputs.

What is a revolving fund?

A revolving fund is a pool of capital—from domestic and/or external sources—that is used to provide short-term credit—and is then replenished in full by the countries or agencies that have used the funds. Such funds can be linked with a currency exchange mechanism, a procurement mechanism, technical assistance, and/or financial support to national budgets. Revolving funds also can provide loan guarantees, which can reduce the cost of borrowing. Revolving funds can charge interest or an administrative fee, or they can provide free credit.

What are common international policies and practices in using revolving funds for the procurement of vaccines and supplies?

Many international agencies, governments and non-governmental organizations have launched revolving funds for health supplies. These include the World Health Organization and its regional offices, UNICEF, Médecins Sans Frontières, the International Federation of the Red Cross, and the European Union.

Current revolving funds for immunization finance include the International Coordinating Group for Epidemic Meningitis Control Revolving Fund, the Pan American Health Organization (PAHO) Revolving Fund, and the coun-

try-specific lines of credit for vaccine purchase through UNICEF that form part of the Vaccine Independence Initiative (VII).

What are the main characteristics of using revolving funds for procurement of vaccines and supplies?

- **Promoting equity (o).** There are no clear equity-related effects of using revolving funds.
- **Achieving efficiency (+).** The use of revolving funds can be linked to United Nations bulk procurement mechanisms to facilitate access to vaccines of assured quality at the best available price
- **Providing adequate, timely and reliable Resources (+).** The short-term credit for vaccine purchase provided under revolving funds can bridge the gaps among the vaccine procurement schedule, government budget disbursements and the release of donor funds.
- **Engendering accountability (+).** The standard procedures for procurement and disbursement used by many international revolving funds promote transparency in the use of funds for procurement of vaccines.
- **Encouraging self-sufficiency (+).** If revolving funds permit repayment of the funds' foreign exchange outlays in local currency, they can alleviate the difficulty that many governments have securing

sufficient amounts of convertible currency for imported vaccines, syringes and waste disposal boxes.

What are some keys to success of revolving funds?

A revolving fund should respond to a clearly defined need, which will determine the fund mission, structure and functions. Revolving funds can be simple lines of credit with few conditions, providing a purely financial service. However, they can also be elements of a more complex inter-connected system of technical assistance for procurement, immunization service improvement and expansion, and tiered pricing.

The mission of the fund will determine what the trade-off should be between simplicity on the one hand, and complexity on the other. A fund designed to provide incentives for improved immunization service performance at the lowest feasible cost will involve considerably more complexity than a fund intended simply to provide short-term credit for vaccine purchase.

Example of revolving funds: PAHO and VII

The PAHO Revolving Fund is part of a system for immunization expansion and improvement in the Americas. When countries can justify the integration of new vaccines into their programs on epidemiological and technical grounds, they become candidates to use the PAHO revolving fund for the purchase of these vaccines.

To be eligible for the PAHO Revolving Fund, countries must have:

- a national budget line for the purchase of vaccines and syringes

- a five-year plan for the immunization system that conforms to the general policies of Expanded Programme of Immunization in the Americas,
- a national program manager with sufficient authority to implement the program.

The Fund obtains low prices for vaccines through bulk purchasing and market intelligence. Payment for the vaccines by governments can be made in local currencies within 60 days of the invoice. PAHO charges a 3 percent administrative fee that covers fund expansion, losses due to fluctuations in currency exchanges, and overhead. Except in the case of a national disaster, a missed payment results in the suspension of purchasing privileges. PAHO also works with donors to find financial support for countries which cannot cover the whole cost of a new vaccine introduction.

The results have been the growth of the fund from US\$1 million in 1979 to US\$145 million in 1999, and substantially improved access to new and under-used vaccines at lower prices. The national plans have provided a means of forecasting vaccine demand. The fund also functions to re-route vaccine deliveries in the case of emergency outbreaks.

Success factors include a learning organization and institutional memory that has allowed the evolution of policies and implementation over a 20-year period; intense market surveillance and intelligence; ease of communication among partners, most of whom speak Spanish and Portuguese; an excellent technical advisory committee that is trusted and respected by the client countries and donors; transparency in determining country eligibility through a

process that encourages good planning and management at country level; and long staffing continuity at PAHO.

The Vaccine Independence Initiative (VII), launched by WHO and UNICEF in 1991 with financing from several bilateral agencies, provides countries with a limited line of credit for vaccine purchase using local or hard currency through the UNICEF procurement system. It is a special type of revolving fund, and since 1999 has been a guarantee fund.

Participating countries must establish a national budget line for vaccines and have a national immunization plan so that vaccine needs can be projected. They must commit to raising the proportion of vaccine purchase costs that are paid through the national budget.

VII's purpose is to increase the self-reliance of countries in financing their immunization services and to ensure a sustainable supply of vaccines in those countries. The intent is to transfer the responsibility for vaccine finance from external donors to government budgets in the context of decreasing donor support.

WHO and UNICEF promote self-sufficiency in financing of vaccine purchases. The VII provides participating low- or middle-income countries with a ceiling line of credit for the purchase of vaccines and related materials through the UNICEF procurement system. Countries can pay for vaccines using hard or local currency. Lines of credit are financed by donors and are capitalized at over US\$9.1 million. There are plans to increase the capitalization by another US\$10 million. UNICEF charges a 6 percent administration fee for vaccines procured through its system and an 8 percent administration fee for

vaccine-related supplies. Low-income countries have been assisted in meeting VII criteria by the support of financial contributions to their national budgets by donors.

Local currency is exchanged using convertible currency derived from the UNICEF program budget. UNICEF country programs typically spend in-country in local currency, but they are financed in convertible currency, so they are a source of foreign exchange. Countries that do not have a UNICEF program must pay in convertible currency. In some cases, the UNDP or other UN country program budgets can be used for currency exchange.

Countries have 45 to 60 days to pay for vaccines (including freight) they have received. Lines of credit and spending limits are specific to each participating country, and dependent to some extent on the local country office's capacity to absorb local currency. There are increasing possibilities to purchase new and additional vaccines through the VII.

To qualify for the VII, countries must establish a national budget line for vaccines and related consumables, and must have a national immunization plan to project vaccine needs. They must commit to raising the proportion of vaccine purchase costs that are paid through the national budget.

Since 1996, more than 30 countries have used the VII, although not all have ceilings in operation. Twelve of these countries pay for 100 percent of vaccine purchase through their national budget.

The European Union program of budget support for Sahelian countries participating in the VII—known as *Appui au Renforcement de l'Indépendance Vaccinale en Afrique Sahélienne* (ARIVAS)—involved eight countries initially. All of these have set up budget lines for vaccines. Six have increased the vaccine budget over the first two years of the initiative.

For more information . . .

England, S. (1999). *Options for a Global Fund for New Vaccines*. Department of Vaccines and Other Biologicals, World Health Organization, Geneva. WHO/V&B/99.13

For information on the PAHO Revolving Fund, please contact PAHO Division of Vaccines and Immunization through their web site, www.paho.org, or through WHO representative offices in developing countries.

For information on the Vaccine Independence Initiative, please contact UNICEF through your country office or at UNICEF Headquarters in New York through their web site: www.unicef.org.

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Key Concepts: Essential Immunization Services

Defining basic immunisation.

What are essential immunization services?

Essential immunization services can be defined as the safe and timely delivery of effective vaccines of public health importance and assured quality to those who need them. Essential vaccines have been identified by the World Health Organization, but vary across regions and countries depending on disease burden.

What are international policies and practices related to defining essential vaccines?

While national governments determine the list of vaccines deemed essential for their immunization services, WHO provides a Model List of Essential Drugs as a guideline for policy-makers at the national level. This list is based on disease prevalence, product efficacy, product safety and availability.

The WHO Model List of Essential Drugs, 11th edition (November, 1999) lists the following vaccines for universal

immunization: BCG, diphtheria, hepatitis B, measles, pertussis, oral poliomyelitis and tetanus.

For specific groups of individuals, such as inhabitants of areas with high disease burden, the following additional vaccines are deemed essential on the model list: Influenza, meningitis, poliomyelitis injection, rabies, rubella, typhoid and yellow fever.¹

Although it is not yet on the model list, WHO encourages the introduction of Haemophilus influenzae type b vaccine where there is high disease burden.² Technical assistance is available for countries that wish to determine the burden of disease of Haemophilus influenzae type b in their population.

For more information . . .

For information on which vaccines WHO recommends as essential for a specific country, please contact the Department of Vaccines and Biologicals at WHO, Geneva.

¹ Countries which should incorporate vaccination against yellow fever into the national immunization programme are identified in the WHO publication by J. Vainio and F. Cutts, *Yellow Fever*, WHO Geneva, 1998. WHO/EPI/GEN/98.11 distributed by the Department of Vaccines and Biologicals, World Health Organization, Geneva. 34 African countries are at high risk and should consider yellow fever vaccine as essential. Medium risk countries may also consider the vaccine essential.

² The WHO position paper on Haemophilus influenzae type b (Hib) conjugate vaccines. *Weekly Epidemiological Record*, Vol. 73, No. 10, pp. 64-68. 6 March 1998. World Health Organization,

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 pro-

gram. 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 . . .

“Costing of National Immunization Programs: The Whys and Whens,” by Ann Levin and Janet Edmond, August 2001.

Posted on the Global Alliance for Vaccines and Immunization web site:

www.vaccinalliance.org.

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Key Concepts: Economics of Vaccine Production

Understanding vaccine prices.

Why are there so few vaccine manufacturers?

Vaccine production involves high investment costs for research and development, and for production facilities. It also requires significant know-how. Know-how is difficult to acquire and so technology transfer requires a strong cooperative relationship between the partners. All of these factors create barriers of entry into vaccine production. As a result of these high barriers to entry, there are relatively few vaccine producers, compared with producers of other classes of pharmaceuticals. In addition, the world's vaccine market is very small—less than 2 percent of the pharmaceutical market—attracting few suppliers.

Why have prices for traditional vaccines gone down over time?

Vaccine production costs have a significant fixed cost component, reaching up to 90 percent of total costs. These costs include research and development (R&D), quality control and quality assurance, selling and distribution overhead, and the construction and maintenance of production facilities.

Vaccine production costs per unit can be reduced significantly through gains in productivity (the “learning curve”) and through economies of scale. Because of the high fixed cost element, the cost of

production per dose decreases with increasing batch size.

The traditional six vaccines of the Expanded Programme on Immunization (EPI), measles, diphtheria, pertussis, tetanus, oral polio and BCG, are mature products. Because the fixed costs of production of these vaccines have been covered long ago, and because their production costs have been lowered due to the learning curve and economies of scale, their prices are relatively low.

How did developing countries benefit in the past?

In the past, high- and middle-income countries have paid the initially higher price of vaccines while the fixed costs were paid off. Low income countries have adopted the vaccines once the price came down following this paying off of fixed costs such as R&D, the entrance of competitors into the market, the reduction in cost of production that results from learning, and economies of scale following widespread adoption of the vaccine into national programs.

Historically, there has been excess production capacity of these vaccines as new producers have entered the market, thus sales to developing countries at low prices covered the variable costs of producing extra doses of vaccine, and did not require additional capacity.

What will the future bring for traditional vaccines?

Excess capacity is disappearing as manufacturers reallocate their production capacity to vaccines with higher added value. Therefore, we can expect the price of vaccines from traditional manufacturers to go up. However, manufacturers from developing and emerging economies are entering the vaccine market, offering significant quantities at low prices. Therefore, the net increase in prices is difficult to predict.

What about new vaccines?

High fixed costs and steep learning curve make new vaccines relatively more expensive, as the investments in R&D and production facilities need to be paid off and optimum production techniques need to be perfected to bring down variable production costs.

New vaccines that involve recombinant DNA technology or conjugation of a polysaccharide with a protein may not be

as amenable to large-scale production as vaccines produced by more traditional techniques. Therefore, the prices for these vaccines may never reach the same low level as the traditional six EPI vaccines.

Consumers used to purchasing the traditional six EPI vaccines at low prices may be unwilling to pay the high price demanded for innovative new products, especially where financial constraints are tight. The market for new products has been limited to middle- and high-income countries until very recently. There has been little financial incentive for manufacturers to develop and produce new products for the developing country market.

As new vaccines come into the market to address diseases of huge public health importance such as tuberculosis, malaria and HIV/AIDS, there will be tremendous pressure to make these vaccines available immediately to all those who need them. This might be facilitated through tiered pricing with the richer countries paying

the full cost and the lower income countries paying the marginal cost of production (mainly variable costs).

An acceptable strategy for a supplier and the most appropriate strategy to increase access is to maximize production volume to meet demand from all potential markets, in combination with tiered pricing. This is a way to ensure equitable access to vaccines for the poor, and a profit incentive for vaccine producers through sales in higher-income countries.

For additional information . . .

Batson, Amie. *Win-win interactions between the public and private sectors*. Nature Medicine Vaccine Supplement. 1998, 4(5): 487-491.

Mercer Management Consulting. (1997). *Economic Framework for Global Vaccines: Optimal Methods to Meet Global Demand*. Commissioned by the Children's Vaccine Initiative.

Managing the product lifecycle (adapted from Mercer Management Consulting, 1997)

Global supply of new vaccines can be optimized if new strategies are developed to manage the product lifecycle

Factor	New Product Launch	Market Penetration	Product Maturity	Optimal Situation
Number of producers	One or few	Several producers in high income countries	Several producers in both high income and developing countries	
Pricing	High, uniform	Tiered within and across markets. High average price mainly for rich countries and the private market in over income countries	Tiered within and across markets (global): low average price	Tiered within and across markets (global): low average price
Cost	High	Medium	Low	Low
Profitability	Uncertain	High	Low	Uncertain
Capacity	Low	High	Surplus	High
Vaccine availability	Poor	Good in high income countries	Good world-wide	Good world-wide
Market demand	Low	High demand in high income countries and the private sector of lower income countries	High world-wide	High world-wide

Key Concepts: Tiered Pricing

Understanding a new approach to vaccine pricing.

What is differential pricing?

Differential pricing, also known as tiered pricing, means that different classes of buyers are charged different prices for the same product. In the context of vaccines, low-income countries are charged a reduced price compared to the open market rate through bulk procurement systems established by UNICEF and PAHO.

The idea behind differential pricing is to reduce financial barriers to vaccine access for low-income countries while providing manufacturers with a profitable market in richer markets so that they will have an incentive to invest in sufficient production capacity and new product research and development.

What are international policies and practices on differential pricing of vaccines?

WHO's Director-General has publicly called for movement toward "equity pricing" meaning a significantly lower manufacturers' selling price for a selected number of essential health goods for low-income countries.

The prices of the basic six vaccines of the Expanded Programme on Immunization (EPI) as procured by UNICEF and PAHO for the developing country market are frequently less than 10 percent of the price of those vaccines in the richer countries.

Differential prices also exist in the special low prices for hepatitis B and Haemophilus influenzae type b vaccine and combinations containing them obtained by UNICEF for vaccines procured GAVI/VF for countries with GNP per capita lower than US\$1000.

Does differential pricing make sense?

Two factors influence vaccine costs and prices. The first is the volume of production. As most of the costs of vaccine production are fixed, larger batches cost less per dose to produce than smaller batches. The second factor is the stage of the product lifecycle. When a product is new, the price tends to be high to pay off investments in research and development and production facilities and to generate profit while there is a monopoly position. Later in the product cycle there may be competitors, leading to surplus production capacity, and investments may have been paid off, so prices come down. Traditionally, it was at a later stage of production that developing countries began to adopt a vaccine, as it became affordable.

Vaccine price tiering could work because there is very little danger of the re-export of vaccines procured by UNICEF or PAHO from a developing country for re-sale in a rich country. In

addition, the bulk procurement systems make this market inexpensive to service in terms of transaction costs, since a single UNICEF or PAHO tender comprises such a large volume of vaccine.

For the basic six vaccines of the EPI, differential pricing makes economic sense for the manufacturers because there is a richer country market for these vaccines, so they can recover the fixed costs of production through sales to the rich countries at higher prices. Because there has historically been excess production capacity of these vaccines as new producers have entered the market, sales to developing countries at low prices covered the variable costs of producing extra doses of vaccine, and did not require capital investment for additional capacity. This situation is beginning to change as excess capacity is disappearing, manufacturers are reallocating their production capacity to vaccines with higher added value. Therefore we can expect prices for these vaccines to go up, although there are compensatory influences with the emergence of manufacturers in developing and emerging economies.

Differential pricing has worked well to bring down the prices of traditional vaccines, but this low price in developing countries means to manufacturers that the developing country market is not profitable. Therefore, vaccines aimed only at the developing world, such as malaria vaccines, have suffered from inadequate

research and development investment. One solution to this problem could be further tiering of the developing country market into higher and lower income groups, so that the higher end developing country market is seen as profitable. Another solution could be to accept to pay a reasonable price for such vaccines, whereby the price to the poorest countries would be subsidized by donors, for example through a purchase fund.

Until recently, new vaccines have not been taken up by developing countries until they reached a stage in their product lifecycles at which their prices went down. However, there is international momentum to reduce or eliminate the lengthy delay in the introduction of new vaccines of public health importance into developing countries. Differential pricing, coupled with assured uptake of the new vaccines, may be a means of speeding up the process of introduction of vaccines into low-income countries at affordable prices. However, this would require early investment by manufacturers in high production capacity. This would only be feasible if the international community could assure manufacturers of a viable market.

The ultimate test of a differential pricing strategy is the long term impact on burden of disease through the use of present and future vaccines.

For more information . . .

“More Equitable Pricing for Essential Drugs: What do We Mean and What Are the Issues.” Background paper prepared by the WHO secretariat for the WHO-WTO secretariat workshop on differential pricing and financing of essential drugs, Høsbjør, Norway, 8-11 April 2001.

Whitehead, Piers. (2000). *Public Sector Vaccine Procurement Approaches*. Paper prepared for the Global Alliance for Vaccines and Immunization. Mercer Management Consulting, London. Available on the Global Alliance for Vaccines and Immunization website: www.vaccinealliance.org.

For additional information please contact:

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Tel: 41.22.909.5019

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www.vaccinealliance.org

Key Concepts: Information Sources

Selected sources for more information.

Global Alliance on Vaccines and Immunization (GAVI):

GAVI can provide information on partner agencies, on the Vaccine Fund which finances new and underused vaccine introduction and service delivery infrastructure in lowest income countries, and on the Financing Task Force which has commissioned this resource kit. Comments and feedback on the Immunization Finance Resource Kit can be directed to GAVI. GAVI and the Vaccine Fund can be contacted through UNICEF or WHO offices in developing countries or directly at:

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c/o UNICEF
Palais des Nations
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Tel: 41.22.909.50.19
Fax: 41.22.909.59.31
Email: Gavi@unicef.org

Le Fonds Mondial pour Les Vaccins
(Lyon, France)
36 Quai Fulchiron
69005 Lyon
France
Tel: 33.4.7842.6389
Fax: 33.4.7842.3424
Email: info@vaccinefund.org

Vaccine Fund (Washington, D.C., USA)
The Vaccine Fund
601 13th St, NW
Suite 820 N
Washington, DC 20005
USA
Tel: 202.628.4910
Fax: 202.628.4909
Email: info@vaccinefund.org

PAHO:

For information on the PAHO revolving fund, PAHO can be contacted through WHO representative offices in developing countries or directly at the following address:

Pan American Health Organization
Pan American Sanitary Bureau
Regional Office of the
World Health Organization
Division of Vaccines and Immunization
525 Twenty-third Street, N.W.
Washington, D.C. 20037-2895
USA
Tel: 202.974.3000
Fax: 202.974.3663
www.paho.org

UNICEF

UNICEF can be contacted through their offices in developing countries, through their regional office, or through their headquarters in New York or through their supply division in Copenhagen.

UNICEF NYHQ
Health Section/Programme Division
3 UN Plaza
New York, NY 10017
USA
Tel: 212. 824.6340
Fax: 212. 824.6460
www.unicef.org

UNICEF Supply Division
UNICEF Plads, Freeport
2100 Copenhagen Ø
Denmark
Tel: 45.35.27.35.27
Fax: 45.35.26.94.21
Email: supply@unicef.dk or
customer@unicef.dk

UNICEF New York Supply Center
UNICEF House
3 UN Plaza, H-6L
New York, N.Y. 10017
USA
Tel: 212.326.7490
Fax: 212.326.7477

***The World Bank, African
Development Bank, Asian
Development Bank and Inter-
American Development Bank***

The World Bank and regional develop-
ment banks can be contacted through its
representative offices in developing
countries, through regional liaison offi-
cers, or their headquarters:

The World Bank
Health, Nutrition and Population
1818 H Street NW
Washington, DC 20433
USA
Tel: 202.477.1234
Fax: 202.477.6391
www.worldbank.org

The African Development Bank
Rue Joseph Anoma
01 BP 1387 Abidjan 01
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Tel: 225.20.20.44.44
Fax: 225.20.20.49.59
www.afdb.org

The Asian Development Bank
P.O. Box 789
0980 Manila
Philippines
Tel: 632.632.4444
Fax: 632.636.2444
www.adb.org

**The Inter-American Development
Bank**
1300 New York Ave, NW
Washington, DC 20577
USA
Tel: 202 623 1000
www.iadb.org

World Health Organization:

The World Health Organization can be
contacted through its representatives in
developing countries, through regional
offices, or through its headquarters in
Geneva:

World Health Organization
Department of Vaccines and Biologicals
20, avenue Appia
CH-1211 Geneva 27
Switzerland
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Fax: 41.22.791.4384
www.who.int/vaccines

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